



PF-680

SERVICE MANUAL

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Rev. 1

CAUTION

RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE. DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS.

It may be illegal to dispose of this battery into the municipal waste stream. Check with your local solid waste officials for details in your area for proper disposal.

ATTENTION

IL Y A UN RISQUE D'EXPLOSION SI LA BATTERIE EST REMPLACÉE PAR UN MODÈLE DE TYPE INCORRECT. METTRE AU REBUT LES BATTERIES UTILISÉES SELON LES INSTRUCTIONS DONNÉES.

Il peut être illégal de jeter les batteries dans des eaux d'égout municipales. Vérifiez avec les fonctionnaires municipaux de votre région pour les détails concernant des déchets solides et une mise au rebut appropriée.

Revision history

Revision	Date	Replaced pages	Remarks
1	February 4, 2010	1-1-1, 2-4-1	-


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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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1-1-1 Specifications

Paper supply method	Friction retard method (No. sheets: 500, 80 g/m ² , 2 cassettes)
Paper weight	60 to 120 g/m ²
Paper type	Plain, Recycled, Color (Colour)
Paper size	A3, B4, A4, A4R, B5, B5R, A5R, Folio, Ledger, Legal, Oficioll, 8.5 x 13.5", Letter, LetterR, StatementR, 8K, 16K, 16KR
Power source	Electrically connected to the machine.
Dimensions	570 (W) x 619 (D) x 309 (H) mm 22 7/16" (W) x 24 3/8" (D) x 12 3/16" (H)
Weight	25 kg/55 lbs or less

a: 570 mm/22 7/16"

b: 619 mm/24 3/8"

c: 309 mm/12 3/16"

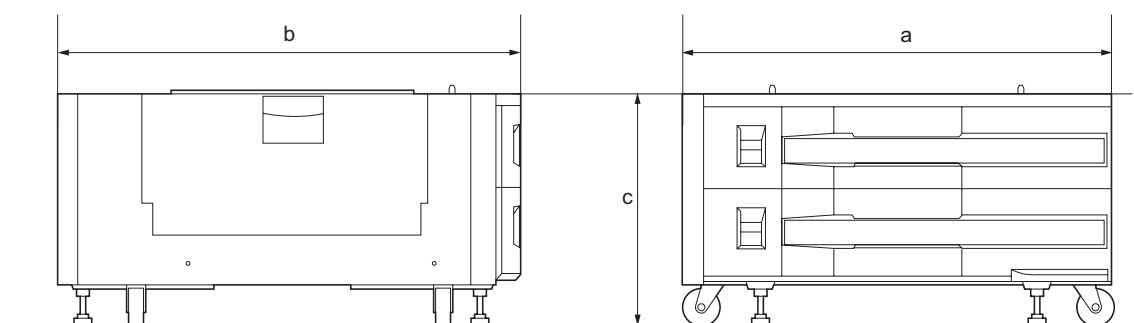


Figure 1-1-1

NOTE: These specifications are subject to change without notice.

1-1-2 Parts names

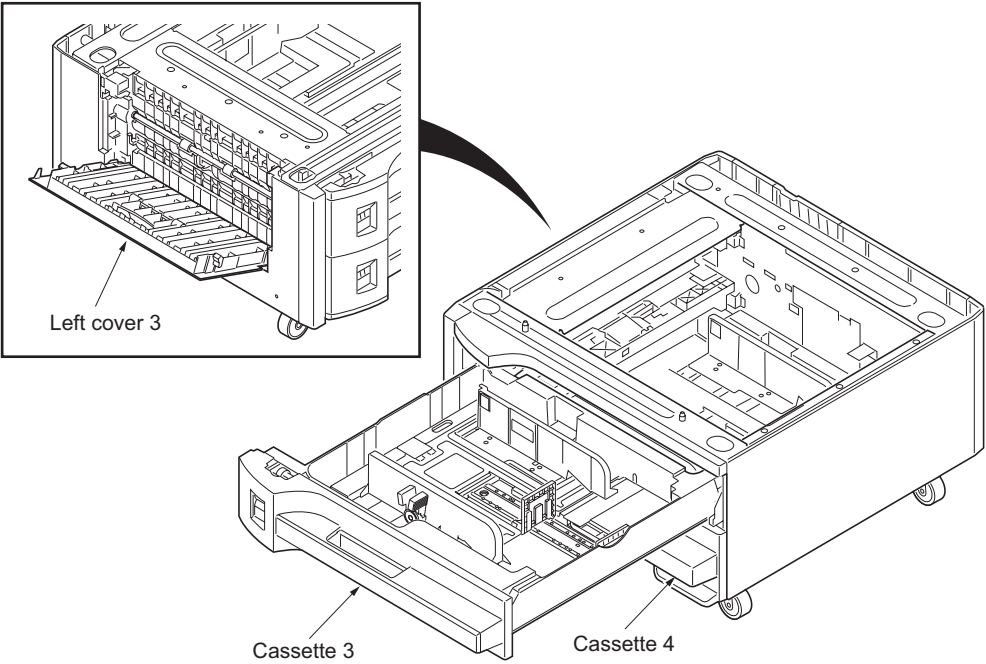


Figure 1-1-2

1-1-3 Machine cross section

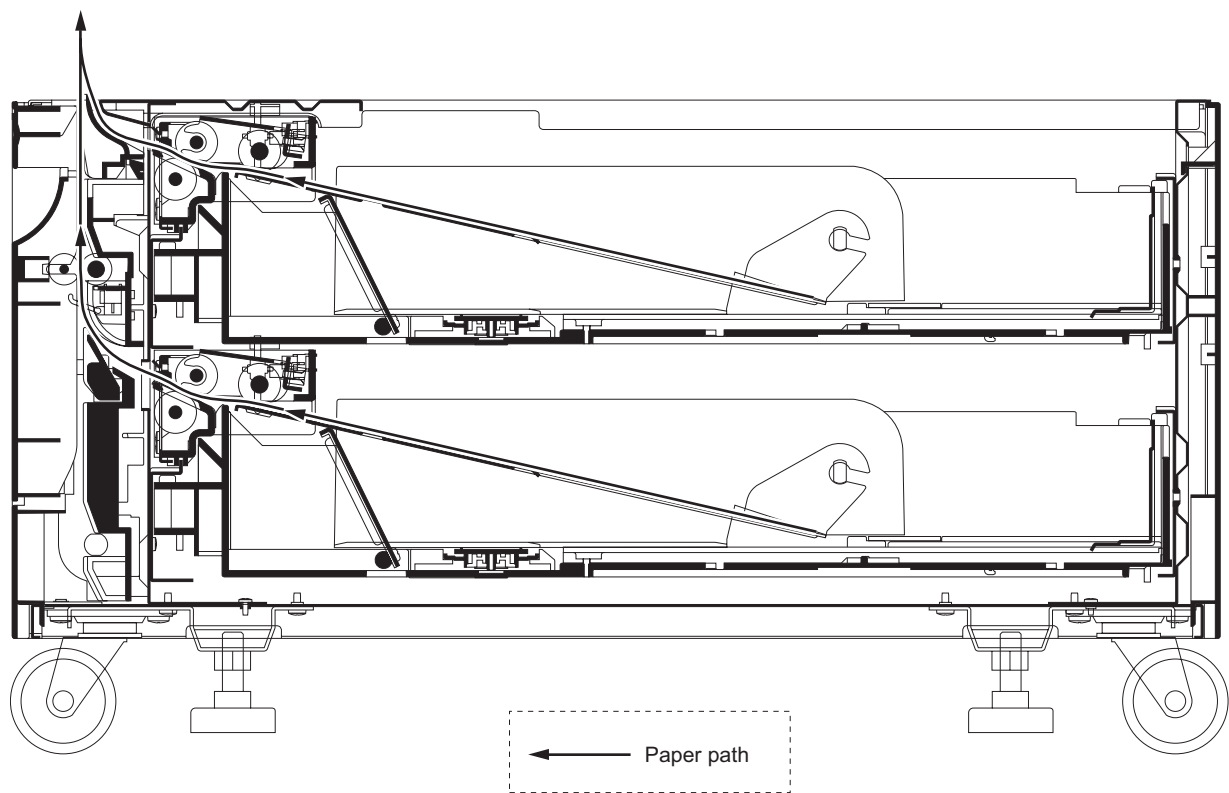


Figure 1-1-3 Machine cross section

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1-2-1 Installation environment

Installation location (Be based on the machine establishment place.)

Avoid direct sunlight or bright lighting. Ensure that the photo-conductor will not be exposed to direct sunlight or other strong light when removing paper jams.

Avoid locations subject to high temperature and high humidity or low temperature and low humidity; an abrupt change in the environmental temperature; and cool or hot, direct air.

Avoid places subject to dust and vibrations.

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 well-ventilated location.

1-2-2 Unpacking

Unpacking.

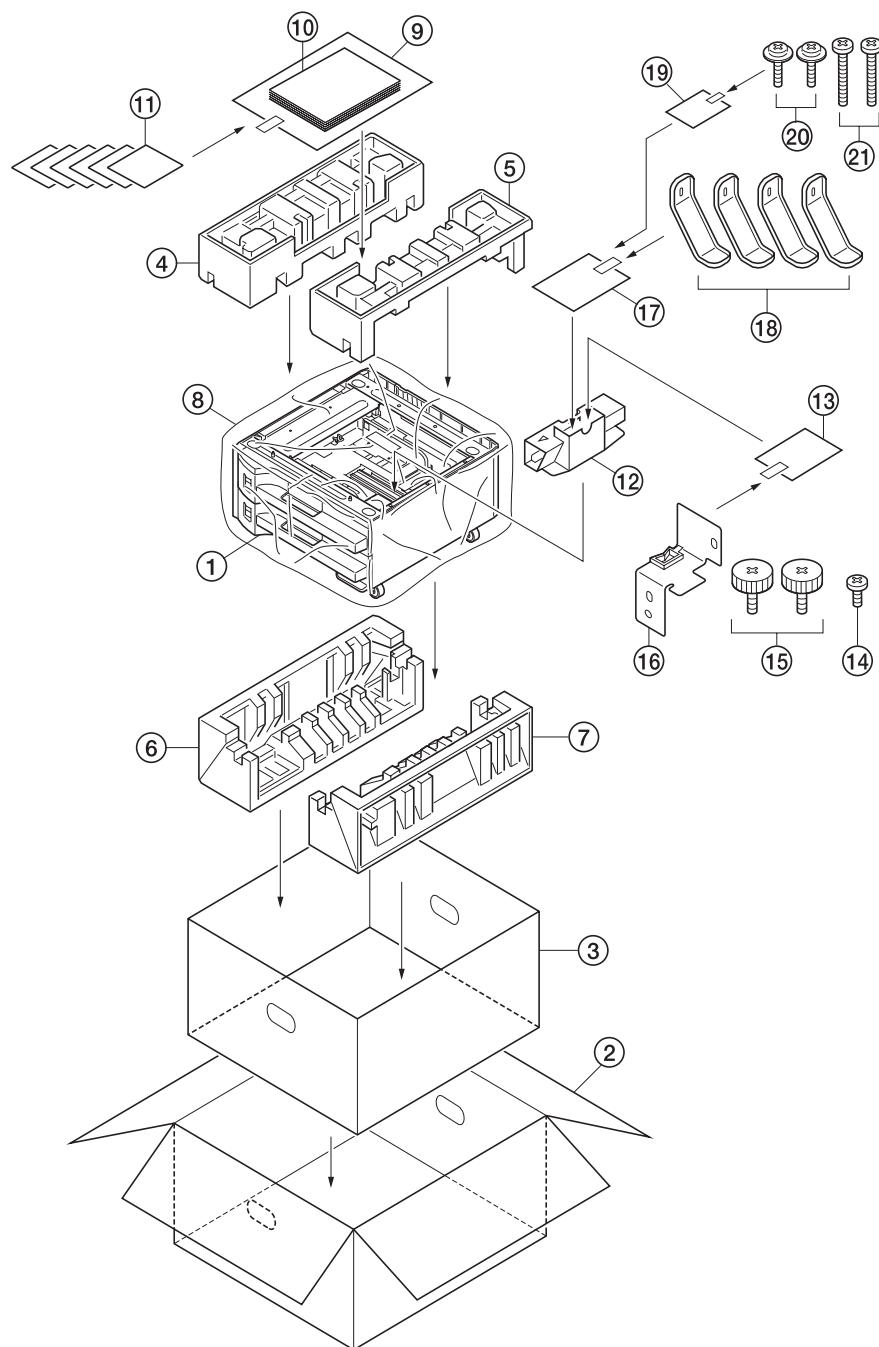


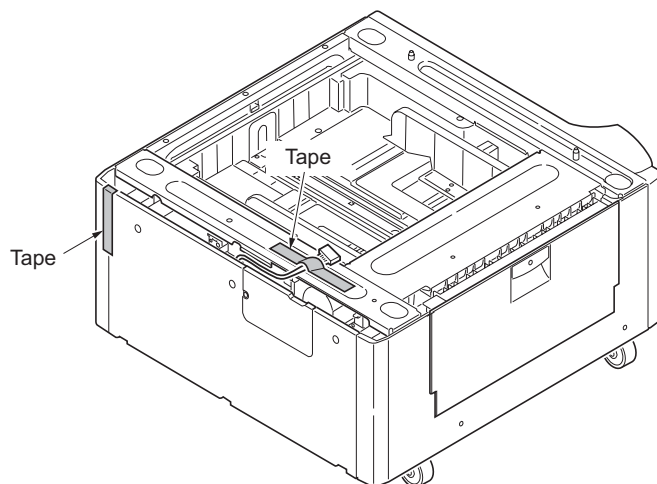
Figure 1-2-1 Unpacking

- | | | |
|---------------------|------------------------|--------------------|
| 1. Paper feeder | 8. Plastic sheet | 15. Pins |
| 2. Outer case | 9. Plastic bag | 16. Stays |
| 3. Inner case | 10. Installation guide | 17. Plastic bag |
| 4. Upper left pad | 11. Paper sheet | 18. Retainer |
| 5. Upper right pad | 12. Accessory case | 19. Plastic bag |
| 6. Bottom left pad | 13. Plastic bag | 20. M4 x 10 screws |
| 7. Bottom right pad | 14. M3 x 6 screw | 21. M4 x 20 screws |

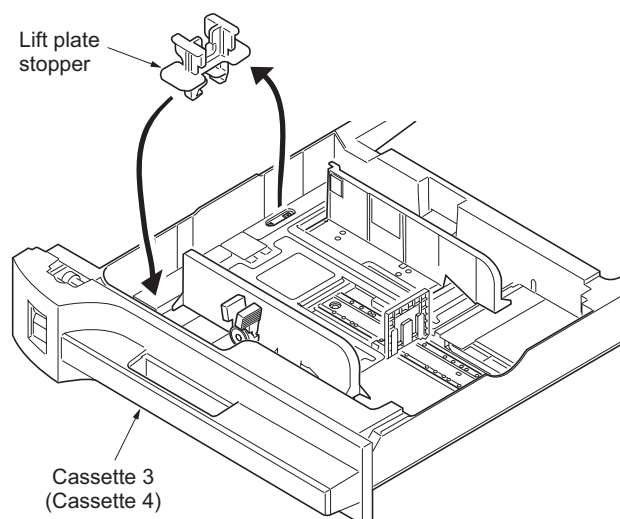
Caution: Place the machine on a level surface. See the Installation Guide for installation.

Remove the tapes.

1. Remove two tapes.

**Figure 1-2-2****Release of cassette lift plate.**

1. Pull cassette 3 and 4 out. Remove the lift plate stopper from each cassette and attach it to the storage location. When moving the machine, attach the lift plate stopper in original position.

**Figure 1-2-3**

2. Gently push cassette 3 and 4 back in.

Completion of the unpacking.

1-2-3 Installing the cassette heater (option)

Installing the cassette heater requires the following component:

Cassette heater (P/N 303J494040): for 220 to 240 V specifications only

Cassette heater (P/N 303J494030): for 120 V specifications only

Two (2) M4 x 8 S tight screws (P/N B1A54080)

Procedure

1. Remove cassette 3 and 4.
2. Remove the three screws holding the paper feeder rear cover and then the cover.
3. Fasten the cassette heater cable to the wire saddle.
4. Pass the cassette heater cable to the machine rear through the cable hole in the machine right.
5. Attach the cassette heater using the two M4 x 8 S tight screws.

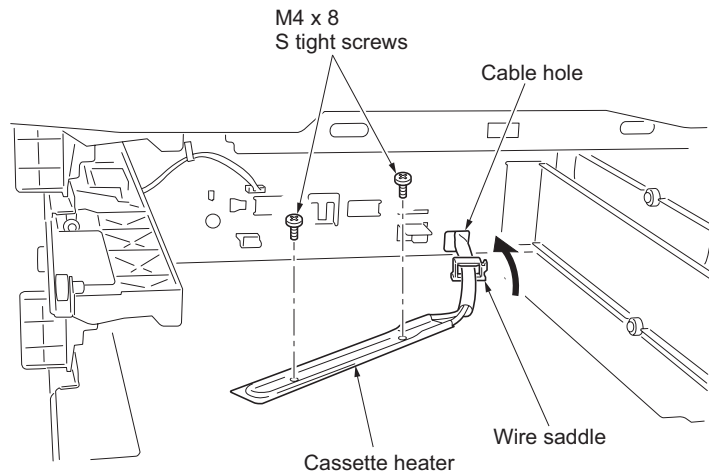


Figure 1-2-4

6. Release the wire of paper feeder from the wire saddle.
7. Remove the connector holder from the wire of the paper feeder.

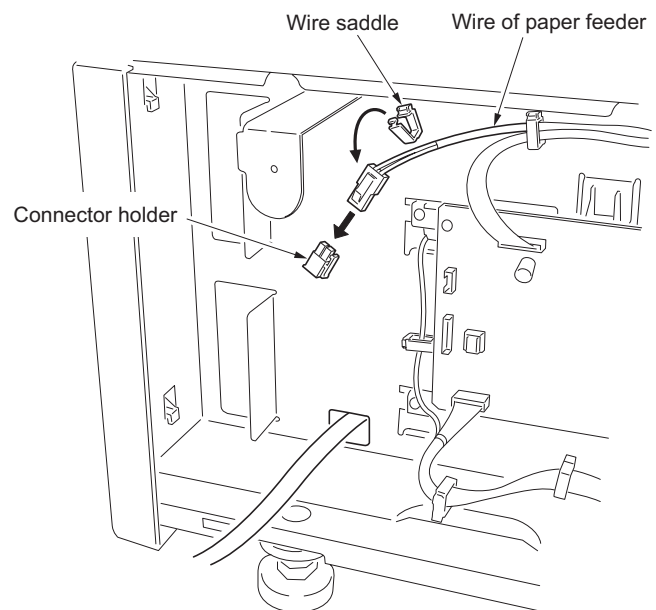


Figure 1-2-5

8. Insert the connector of cassette heater cable into the wire of paper feeder.

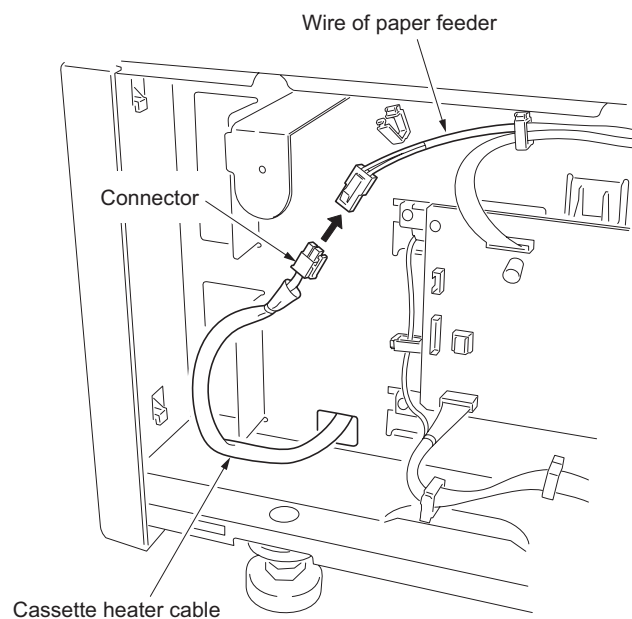


Figure 1-2-6

9. Fix the cassette heater cable on the two wire saddles.
The wire saddle shown above must be affixed at the narrowest part of the connector.
10. Refit the paper feeder rear cover.
11. Refit cassette 3 and 4.

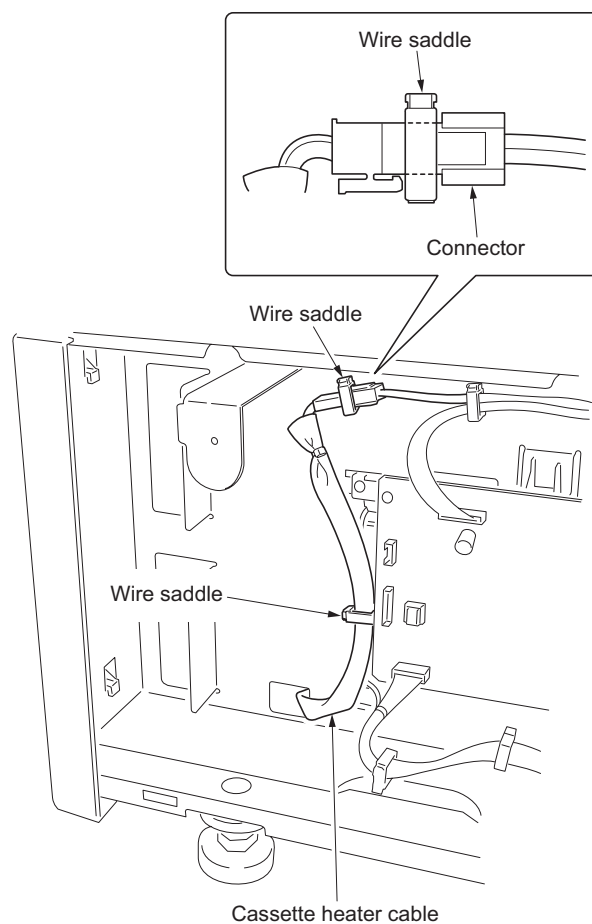


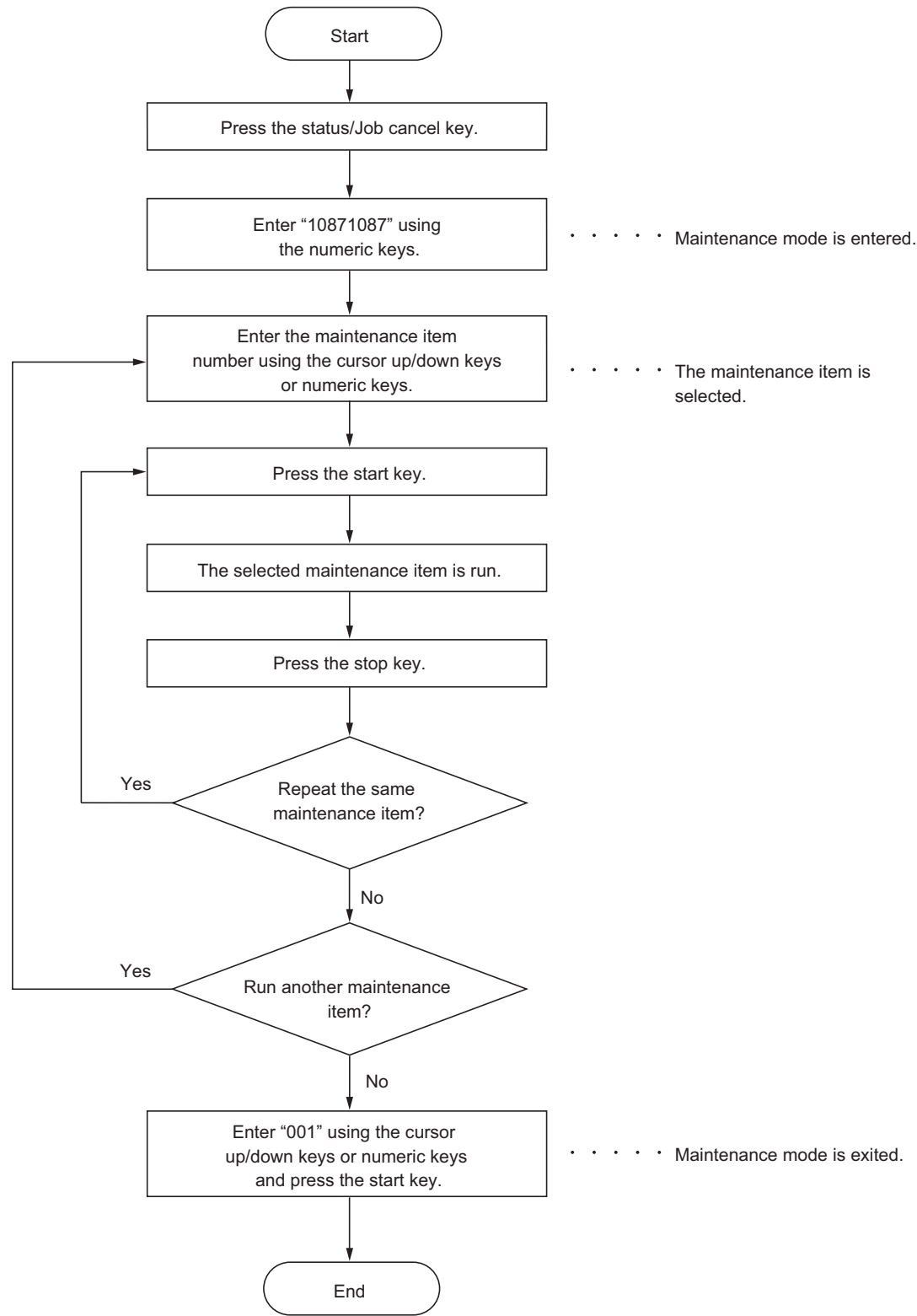
Figure 1-2-7

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1-3-1 Maintenance mode

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

(1) Executing a maintenance item



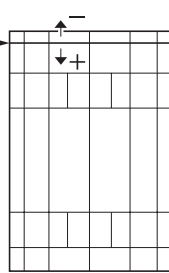
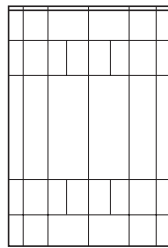
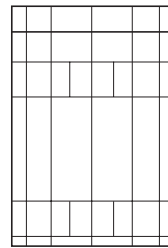
(2) Maintenance mode item list

Section	Item No.	Content of maintenance item	Initial setting*
General	U019	Displaying the ROM version	-
Drive, paper feed and paper conveying system	U034	Adjusting the print start timing Adjusting the leading edge registration Adjusting the center line	0/0/0/0/0/0 0/0/0/0/0/0
Operation panel and support equipment	U247	Setting the paper feed device	-
Mode setting	U341	Specific paper feed location setting for printing function	-
Other	U901	Checking/clearing copy counts by paper feed locations	-

*Initial setting for executing U020, *1: The item initialized for executing U021

(3) Contents of maintenance mode items

Maintenance item No.	Description																																												
U019	<p>Displaying the ROM version</p> <p>Description Displays the part number of the ROM fitted to each PWB.</p> <p>Purpose To check the part number or to decide, if the newest version of ROM is installed.</p> <p>Method</p> <ol style="list-style-type: none"> 1. Press the start key. The ROM version are displayed. 2. Change the screen using the cursor up/down keys. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr><td>MAIN</td><td>Main ROM</td></tr> <tr><td>MMI</td><td>Operation ROM</td></tr> <tr><td>ENGINE</td><td>Engine ROM</td></tr> <tr><td>ENGINE BOOT</td><td>Engine booting</td></tr> <tr><td>ENGINE POWER</td><td>Engine power</td></tr> <tr><td>SCANNER</td><td>Scanner ROM</td></tr> <tr><td>BROWSER</td><td>Browser ROM</td></tr> <tr><td>OPTION LANGUAGE</td><td>Optional language ROM</td></tr> <tr><td>DICTIONARY</td><td>-</td></tr> <tr><td>DBA</td><td>Database connection</td></tr> <tr><td>Solution Framework</td><td>Solution framework</td></tr> <tr><td>DP</td><td>Optional DP ROM</td></tr> <tr><td>500x2PF</td><td>Paper feeder ROM</td></tr> <tr><td>1000DF</td><td>Optional document finisher ROM</td></tr> <tr><td>INNER DF</td><td>Optional built-in finisher ROM</td></tr> <tr><td>FAX BOOT1</td><td>Optional fax control PWB booting (port 1)</td></tr> <tr><td>FAX APL1</td><td>Optional fax control PWB APL (port 1)</td></tr> <tr><td>FAX IPL1</td><td>Optional fax control PWB IPL (port 1)</td></tr> <tr><td>FAX BOOT2</td><td>Fax control PWB booting (port 2: optional dual FAX)</td></tr> <tr><td>FAX APL2</td><td>Fax control PWB APL (port 2: optional dual FAX)</td></tr> <tr><td>FAX IPL2</td><td>Fax control PWB IPL (port 2: optional dual FAX)</td></tr> </tbody> </table> <p>Completion Press the stop key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	MAIN	Main ROM	MMI	Operation ROM	ENGINE	Engine ROM	ENGINE BOOT	Engine booting	ENGINE POWER	Engine power	SCANNER	Scanner ROM	BROWSER	Browser ROM	OPTION LANGUAGE	Optional language ROM	DICTIONARY	-	DBA	Database connection	Solution Framework	Solution framework	DP	Optional DP ROM	500x2PF	Paper feeder ROM	1000DF	Optional document finisher ROM	INNER DF	Optional built-in finisher ROM	FAX BOOT1	Optional fax control PWB booting (port 1)	FAX APL1	Optional fax control PWB APL (port 1)	FAX IPL1	Optional fax control PWB IPL (port 1)	FAX BOOT2	Fax control PWB booting (port 2: optional dual FAX)	FAX APL2	Fax control PWB APL (port 2: optional dual FAX)	FAX IPL2	Fax control PWB IPL (port 2: optional dual FAX)
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Maintenance item No.	Description																																									
U034	<p>Adjusting the print start timing</p> <p>Description Adjusts the leading edge registration or center line.</p> <p>Purpose Make the adjustment if there is a regular error between the leading edges of the copy image and original. Make the adjustment if there is a regular error between the center lines of the copy image and original.</p> <p>Method</p> <ol style="list-style-type: none">Press the start key.Select the item to be adjusted. The setting screen for the selected item is displayed. <table><tr><th>Display</th><th>Description</th></tr><tr><td>LSU OUT TOP</td><td>Leading edge registration adjustment</td></tr><tr><td>LSU OUT LEFT</td><td>Center line adjustment</td></tr></table> <p>Adjustment: Leading edge registration adjustment</p> <ol style="list-style-type: none">Select the item to be adjusted. <table><tr><th>Display</th><th>Description</th><th>Setting range</th><th>Initial setting</th><th>Change in value per step</th></tr><tr><td>LSUOUT TOP MPT (L)</td><td>Paper feed from MP tray (when large size paper is used)</td><td>-10.0 to 10.0</td><td>0</td><td>0.1 mm</td></tr><tr><td>LSUOUT TOP CAS (L)</td><td>Paper feed from cassette (when large size paper is used)</td><td>-10.0 to 10.0</td><td>0</td><td>0.1 mm</td></tr><tr><td>LSUOUT TOP DUP (L)</td><td>Duplex mode (second) (when large size paper is used)</td><td>-10.0 to 10.0</td><td>0</td><td>0.1 mm</td></tr><tr><td>LSUOUT TOP MPT (S)</td><td>Paper feed from MP tray (when small size paper is used)</td><td>-10.0 to 10.0</td><td>0</td><td>0.1 mm</td></tr><tr><td>LSUOUT TOP CAS (S)</td><td>Paper feed from cassette (when small size paper is used)</td><td>-10.0 to 10.0</td><td>0</td><td>0.1 mm</td></tr><tr><td>LSUOUT TOP DUP (S)</td><td>Duplex mode (second) (when small size paper is used)</td><td>-10.0 to 10.0</td><td>0</td><td>0.1 mm</td></tr></table> <p>Large size: 218 mm or more in width of paper.</p> <ol style="list-style-type: none">Press the system menu key.Press the start key to output a test pattern.Press the system menu key.Change the setting value using the +/- or numeric keys. For output example 1, increase the value. For output example 2, decrease the value. <div><div>Leading edge registration (20 ± 1.0 mm)</div><div></div><div>Correct image</div><div></div><div>Output example 1</div><div></div><div>Output example 2</div></div> <p style="text-align: center;">Figure 1-3-1</p> <ol style="list-style-type: none">Press the start key. The value is set. <p>Remark When changing the setting value of [Large] each item is modified, equal to amount of the value which is changed adds also the value of [Small] each item and is pulled.</p>	Display	Description	LSU OUT TOP	Leading edge registration adjustment	LSU OUT LEFT	Center line adjustment	Display	Description	Setting range	Initial setting	Change in value per step	LSUOUT TOP MPT (L)	Paper feed from MP tray (when large size paper is used)	-10.0 to 10.0	0	0.1 mm	LSUOUT TOP CAS (L)	Paper feed from cassette (when large size paper is used)	-10.0 to 10.0	0	0.1 mm	LSUOUT TOP DUP (L)	Duplex mode (second) (when large size paper is used)	-10.0 to 10.0	0	0.1 mm	LSUOUT TOP MPT (S)	Paper feed from MP tray (when small size paper is used)	-10.0 to 10.0	0	0.1 mm	LSUOUT TOP CAS (S)	Paper feed from cassette (when small size paper is used)	-10.0 to 10.0	0	0.1 mm	LSUOUT TOP DUP (S)	Duplex mode (second) (when small size paper is used)	-10.0 to 10.0	0	0.1 mm
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LSUOUT TOP DUP (S)	Duplex mode (second) (when small size paper is used)	-10.0 to 10.0	0	0.1 mm																																						

Maintenance item No.	Description																																			
U034	<div><div>Caution</div><div>Check the copy image after the adjustment. If the image is still incorrect, perform the following adjustments in maintenance mode.</div><div><div>U034</div><div>U066 (See the service manual for the machine.)</div><div>U071 (See the service manual for the machine.)</div></div><div><div>Adjustment: Center line adjustment</div><div><div>1. Select the item to be adjusted.</div><table><thead><tr><th>Display</th><th>Description</th><th>Setting range</th><th>Initial setting</th><th>Change in value per step</th></tr></thead><tbody><tr><td>LSUOUT LEFT (MPT)</td><td>Paper feed from MP tray</td><td>-3.0 to 3.0</td><td>0</td><td>0.1 mm</td></tr><tr><td>LSUOUT LEFT (CAS 1)</td><td>Paper feed from cassette 1</td><td>-3.0 to 3.0</td><td>0</td><td>0.1 mm</td></tr><tr><td>LSUOUT LEFT (CAS 2)</td><td>Paper feed from cassette 2</td><td>-3.0 to 3.0</td><td>0</td><td>0.1 mm</td></tr><tr><td>LSUOUT LEFT (CAS 3)</td><td>Paper feed from cassette 3</td><td>-3.0 to 3.0</td><td>0</td><td>0.1 mm</td></tr><tr><td>LSUOUT LEFT (CAS 4)</td><td>Paper feed from cassette 4</td><td>-3.0 to 3.0</td><td>0</td><td>0.1 mm</td></tr><tr><td>LSUOUT LEFT (DUP)</td><td>Duplex mode (second)</td><td>-3.0 to 3.0</td><td>0</td><td>0.1 mm</td></tr></tbody></table><div><div>2. Press the system menu key.</div><div>3. Press the start key to output a test pattern.</div><div>4. Press the system menu key.</div><div>5. Change the setting value using the +/- or numeric keys.</div><div>For output example 1, increase the value. For output example 2, decrease the value.</div></div><div><div>Center line of printing (within ± 0.5 mm)</div><div><div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div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range	Initial setting	Change in value per step	LSUOUT LEFT (MPT)	Paper feed from MP tray	-3.0 to 3.0	0	0.1 mm	LSUOUT LEFT (CAS 1)	Paper feed from cassette 1	-3.0 to 3.0	0	0.1 mm	LSUOUT LEFT (CAS 2)	Paper feed from cassette 2	-3.0 to 3.0	0	0.1 mm	LSUOUT LEFT (CAS 3)	Paper feed from cassette 3	-3.0 to 3.0	0	0.1 mm	LSUOUT LEFT (CAS 4)	Paper feed from cassette 4	-3.0 to 3.0	0	0.1 mm	LSUOUT LEFT (DUP)	Duplex mode (second)	-3.0 to 3.0	0	0.1 mm
Display	Description	Setting range	Initial setting	Change in value per step																																
LSUOUT LEFT (MPT)	Paper feed from MP tray	-3.0 to 3.0	0	0.1 mm																																
LSUOUT LEFT (CAS 1)	Paper feed from cassette 1	-3.0 to 3.0	0	0.1 mm																																
LSUOUT LEFT (CAS 2)	Paper feed from cassette 2	-3.0 to 3.0	0	0.1 mm																																
LSUOUT LEFT (CAS 3)	Paper feed from cassette 3	-3.0 to 3.0	0	0.1 mm																																
LSUOUT LEFT (CAS 4)	Paper feed from cassette 4	-3.0 to 3.0	0	0.1 mm																																
LSUOUT LEFT (DUP)	Duplex mode (second)	-3.0 to 3.0	0	0.1 mm																																

Maintenance item No.	Description															
U034	<p>Caution</p> <p>Check the copy image after the adjustment. If the image is still incorrect, perform the following adjustments in maintenance mode.</p> <div><div>U034</div><div>→</div><div>U067 (See the service manual for the machine.)</div><div>→</div><div>U072 (See the service manual for the machine.)</div></div> <p>Completion</p> <p>Press the stop key. The screen for selecting a maintenance item No. is displayed.</p>															
U247	<p>Setting the paper feed device</p> <p>Description</p> <p>Turns on motors and clutches of paper feeder.</p> <p>Purpose</p> <p>To check the operation of motors and clutches of paper feed device.</p> <p>Method</p> <div><div><div>1. Press the start key. The value varies depending to the option furnished.</div><div>2. Select the item to be operated.</div><div>3. Press the start key. The operation starts.</div></div><table><tr><th>Display</th><th>Motor and clutches</th><th>Operation</th></tr><tr><td>DESK FEED</td><td>PF drive motor (PFDM)</td><td>In operation</td></tr><tr><td>CLUTCH FEED</td><td>PF paper conveying clutch (PFCCL)</td><td>On for 1 s</td></tr><tr><td>CLUTCH U</td><td>PF paper feed clutch 1 (PFPFCL1)</td><td>On for 1 s</td></tr><tr><td>CLUTCH L</td><td>PF paper feed clutch 2 (PFPFCL2)</td><td>On for 1 s</td></tr></table><div><div>4. To turn each motor off, press the stop key.</div></div></div> <p>Completion</p> <p>Press the stop key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Motor and clutches	Operation	DESK FEED	PF drive motor (PFDM)	In operation	CLUTCH FEED	PF paper conveying clutch (PFCCL)	On for 1 s	CLUTCH U	PF paper feed clutch 1 (PFPFCL1)	On for 1 s	CLUTCH L	PF paper feed clutch 2 (PFPFCL2)	On for 1 s
Display	Motor and clutches	Operation														
DESK FEED	PF drive motor (PFDM)	In operation														
CLUTCH FEED	PF paper conveying clutch (PFCCL)	On for 1 s														
CLUTCH U	PF paper feed clutch 1 (PFPFCL1)	On for 1 s														
CLUTCH L	PF paper feed clutch 2 (PFPFCL2)	On for 1 s														
U341	<p>Specific paper feed location setting for printing function</p> <p>Description</p> <p>Sets a paper feed location specified for printer output.</p> <p>Purpose</p> <p>To use a paper feed location only for printer output. A paper feed location specified for printer output cannot be used for copy output.</p> <p>Method</p> <div><div><div>1. Press the start key.</div><div>2. Select the paper feed location for the printer.</div></div><div>Two or more cassette can be selected.</div><table><tr><th>Display</th><th>Description</th></tr><tr><td>CASSETTE 1</td><td>Cassette 1</td></tr><tr><td>CASSETTE 2</td><td>Cassette 2</td></tr><tr><td>CASSETTE 3</td><td>Cassette 3 (paper feeder)</td></tr><tr><td>CASSETTE 4</td><td>Cassette 4 (paper feeder)</td></tr></table><div>When an optional paper feed device is not installed, the corresponding count is not displayed.</div><div><div>3. Press the start key. The setting is set.</div></div></div> <p>Completion</p> <p>Press the stop key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	CASSETTE 1	Cassette 1	CASSETTE 2	Cassette 2	CASSETTE 3	Cassette 3 (paper feeder)	CASSETTE 4	Cassette 4 (paper feeder)					
Display	Description															
CASSETTE 1	Cassette 1															
CASSETTE 2	Cassette 2															
CASSETTE 3	Cassette 3 (paper feeder)															
CASSETTE 4	Cassette 4 (paper feeder)															

Maintenance item No.	Description														
U901	<p>Checking/clearing copy counts by paper feed locations</p> <p>Description Displays or clears copy counts by paper feed locations.</p> <p>Purpose To check the time to replace consumable parts. Also to clear the counts after replacing the consumable parts.</p> <p>Method</p> <ol style="list-style-type: none"> 1. Press the start key. The counts by paper feed locations are displayed. <table border="1" data-bbox="331 506 1399 797"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>MP TRAY</td><td>MP tray</td></tr> <tr> <td>CASSETTE 1</td><td>Cassette 1</td></tr> <tr> <td>CASSETTE 2</td><td>Cassette 2</td></tr> <tr> <td>CASSETTE 3</td><td>Cassette 3 (paper feeder)</td></tr> <tr> <td>CASSETTE 4</td><td>Cassette 4 (paper feeder)</td></tr> <tr> <td>DUPLEX</td><td>Duplex unit</td></tr> </tbody> </table> <p>When an optional paper feed device is not installed, the corresponding count is not displayed.</p> <p>Clearing</p> <ol style="list-style-type: none"> 1. Select the counts to be cleared. CASSETTE 3 and CASSETTE 4 cannot be cleared. 2. Select the counts for all and press [ALL CLEAR]. 3. Press the start key. The counts is cleared. <p>Completion Press the stop key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	MP TRAY	MP tray	CASSETTE 1	Cassette 1	CASSETTE 2	Cassette 2	CASSETTE 3	Cassette 3 (paper feeder)	CASSETTE 4	Cassette 4 (paper feeder)	DUPLEX	Duplex unit
Display	Description														
MP TRAY	MP tray														
CASSETTE 1	Cassette 1														
CASSETTE 2	Cassette 2														
CASSETTE 3	Cassette 3 (paper feeder)														
CASSETTE 4	Cassette 4 (paper feeder)														
DUPLEX	Duplex unit														

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1-4-1 Paper misfeed detection

(1) Paper misfeed indication

When a paper misfeed occurs, the machine immediately stops copying and displays the jam location on the operation panel.

Paper misfeed detection can be reset by opening and closing the left cover 3 to turn left cover 3 switch off and on.

(2) Paper misfeed detection conditions

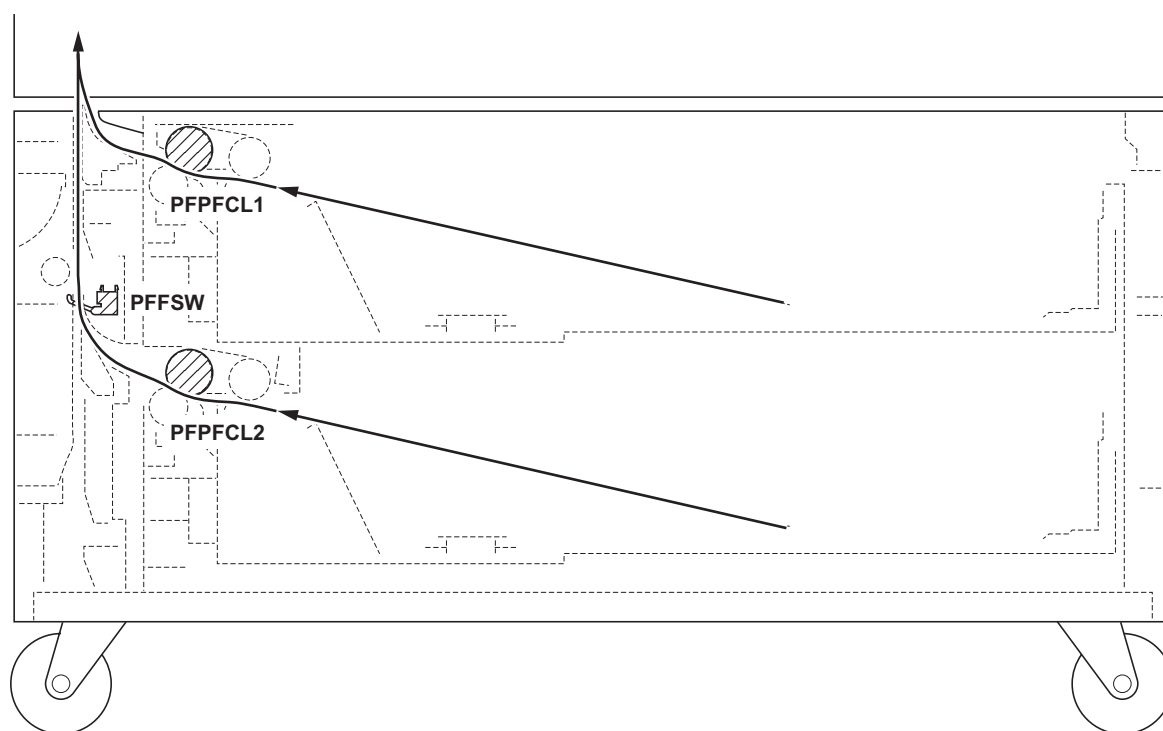


Figure 1-4-1

Section	Jam code	Conditions	Specified time
Paper feed section	12 No paper feed from cassette 3	Feed switch 3 (FSW3) does not turn on within the specified time of PF paper feed clutch 1 (PFPFCL1) turning on; the clutch is then successively turned off for 1 s and turned back on, but the switch again fails to turn on within the specified time.	-
		Left cover 3 is opened in prior to feed switch 3 (FSW3) is turned on.	-
	13 No paper feed from cassette 4	The PF feed switch (PFFSW) does not turn on within the specified time of PF paper feed clutch 2 (PFPFCL2) turning on; the clutch is then successively turned off for 1 s and turned back on, but the switch again fails to turn on within the specified time.	-
		Left cover 3 is opened in prior to the PF feed switch (PFFSW) is turned on.	-
	19 Misfeed in paper feeder vertical paper conveying section	The feed switch 3 (FSW3) does not turn off within specified time of its turning on (paper feed from optional cassette 3).	1429 ms + Paper length
		Feed switch 3 (FSW3) does not turn off within specified time of the PF feed switch (PFFSW) turning on (paper feed from optional cassette 4).	1064 ms
		The feed switch 3 (FSW3) does not turn off within specified time of its turning on (paper feed from optional cassette 4).	1064 ms
		Feed switch 3 (FSW3) does not turn on within specified time of the PF feed switch (PFFSW) turning on (paper feed from optional cassette 4).	2000 ms
	21 Multiple sheets in paper feed section	The feed switch 3 (FSW3) does not turn off within specified time of its turning on (paper feed from cassette 3, 4/detected by the machine).	1429 ms + Paper length
		The feed switch 3 (FSW3) does not turn off within specified time of its turning on (paper feed from cassette 3, 4/detected by the paper feeder).	4300 ms
		The feed switch 2 (FSW2) does not turn off within specified time of its turning on (paper feed from cassette 3).	1686 ms
		The PF feed switch (PFFSW) does not turn off within specified time of its turning on (paper feed from cassette 4).	4300 ms
		The feed switch 3 (FSW3) does not turn off within specified time of the PF paper feed clutch 1 (PFPFCL1) turning on.	2036 ms

(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 3). Jam code 12	Paper is extremely curled.	Change the paper.
	Check if the paper feed pulley, forwarding pulley and separation pulley of optional cassette 3 are deformed.	Check visually and replace any deformed pulleys.
	Broken feed switch 3 actuator.	Check visually and replace switch.
	Defective feed switch 3.	Run maintenance item U031 and turn feed switch 3 on and off manually. Replace feed switch 3 if indication of the corresponding switch on the touch panel is not displayed in reverse.
	Check if PF paper feed clutch 1 malfunctions.	Run maintenance item U247 and select PF paper feed clutch 1 on the touch panel to be turned on and off. Check the status and remedy if necessary.
	Electrical problem with PF paper feed clutch 1.	Check (see page 1-4-7).
(2) A paper jam in the paper feed section is indicated during copying (no paper feed from cassette 4). Jam code 13	Paper is extremely curled.	Change the paper.
	Check if the paper feed pulley, forwarding pulley and separation pulley of optional cassette 4 are deformed.	Check visually and replace any deformed pulleys.
	Broken PF feed switch actuator.	Check visually and replace switch.
	Defective PF feed switch.	With 5 V DC present at YC2-8 on the PF main PWB, check if YC2-7 on the PF main PWB remains low when the PF feed switch is turned on and off. If it does, replace the PF feed switch.
	Check if PF paper feed clutch 2 malfunctions.	Run maintenance item U247 and select PF paper feed clutch 2 on the touch panel to be turned on and off. Check the status and remedy if necessary.
	Electrical problem with PF paper feed clutch 2.	Check (see page 1-4-7).
(3) A paper jam in the paper feed section is indicated during copying (jam in paper feeder vertical paper conveying section). Jam code 19	Broken feed switch 3 actuator.	Check visually and replace switch.
	Defective feed switch 3.	Run maintenance item U031 and turn feed switch 3 on and off manually. Replace the switch if indication of the corresponding switch on the touch panel is not displayed in reverse.
	Broken PF feed switch actuator.	Check visually and replace switch.
	Defective PF feed switch.	With 5 V DC present at YC2-8 on the PF main PWB, check if YC2-7 on the PF main PWB remains low when the PF feed switch is turned on and off. If it does, replace the PF feed switch.

Problem	Causes/check procedures	Corrective measures
(4) A paper jam in the paper feed section is indicated during copying (multiple sheets in paper feed section). Jam code 21	Broken feed switch 3 actuator.	Check visually and replace switch.
	Defective feed switch 3.	Run maintenance item U031 and turn feed switch 3 on and off manually. Replace the switch if indication of the corresponding switch on the touch panel is not displayed in reverse.
	Broken PF feed switch actuator.	Check visually and replace switch.
	Defective PF feed switch.	With 5 V DC present at YC2-8 on the PF main PWB, check if YC2-7 on the PF main PWB remains low when the PF feed switch is turned on and off. If it does, replace the PF feed switch.
	Check if PF paper feed clutch 1 malfunctions.	Run maintenance item U247 and select PF paper feed clutch 1 on the touch panel to be turned on and off. Check the status and remedy if necessary.
	Electrical problem with PF paper feed clutch 1.	Check (see page 1-4-7).

1-4-2 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, 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 the main power switch off and back on.

(2) Self diagnostic codes

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C0420	Paper feeder communication problem The engine PWB and the paper feeder are unable to communicate with each other.	Poor contact in the connector terminals.	Check the connection of connector YC22 on the engine PWB and the connector on the paper feeder main PWB, and the continuity across the connector terminals. Repair or replace if necessary.
		Defective PWB.	Replace the engine PWB or paper feeder main PWB and check for correct operation.
C1030	PF lift motor 1 error After cassette 3 is inserted, PF lift switch 1 does not turn on within 12 s. This error is detected four times successively.	Poor contact in the connector terminals.	Check the connection of connector YC22 on the engine PWB and the connector on the PF main PWB, and the continuity across the connector terminals. Repair or replace if necessary.
		Broken gears or couplings of PF lift motor 1.	Replace PF lift motor 1.
		Defective PF lift motor 1.	Check for continuity across the coil. If none, replace PF lift motor 1.
		Defective PF lift switch 1.	Check if YC1-5 on the PF main PWB goes low when PF lift switch 1 is turned off. If not, replace PF lift switch 1.
C1040	PF lift motor 2 error After cassette 4 is inserted, PF lift switch 2 does not turn on within 12 s. This error is detected four times successively.	Poor contact in the connector terminals.	Check the connection of connector YC22 on the engine PWB and the connector on the PF main PWB, and the continuity across the connector terminals. Repair or replace if necessary.
		Broken gears or couplings of PF lift motor 2.	Replace PF lift motor 2.
		Defective PF lift motor 2.	Check for continuity across the coil. If none, replace PF lift motor 2.
		Defective PF lift switch 2.	Check if YC1-7 on the PF main PWB goes low when PF lift switch 2 is turned off. If not, replace PF lift switch 2.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C2600	PF paper drive motor error The lock signal of the motor is detected above 500 ms.	Poor contact in the connector terminals.	Check the connection of connector YC22 on the engine PWB and the connector on the PF main PWB, and the continuity across the connector terminals. Repair or replace if necessary.
		Defective drive transmission system.	Check if the rollers and gears rotate smoothly. If not, grease the bushings and gears. Check for broken gears and replace if any.
		Defective PF paper drive motor.	Replace the PF paper drive motor.
		Defective PWB.	Replace the PF main PWB or engine PWB and check for correct operation.

1-4-3 Electric problems

Troubleshooting to each failure must be in the order of the numbered symptoms.

Problem	Causes	Check procedures/corrective measures
(1) The paper feeder does not operate when the main power switch is turned on.	1. Poor contact in the connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	2. Defective left cover 3 switch.	Check for continuity across the contacts. If none, replace the left cover 3 switch.
(2) The PF drive motor does not operate.	1. Poor contact in the connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	2. Broken the gear.	Check visually and replace the gear if necessary.
	3. Defective PF drive motor.	Run maintenance item U247 and check if the PF drive motor operates when YC4-3 on the PF main PWB goes low. If not, replace the PF drive motor.
	4. Defective PF main PWB.	Run maintenance item U247 and check if YC4-3 on the PF main PWB goes low. If not, replace the PF main PWB.
(3) The PF paper feed clutch 1/2 or PF paper conveying clutch does not operate.	1. Broken clutch coil.	Check for continuity across the coil. If none, replace the clutch.
	2. Poor contact in the connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	3. Defective PF main PWB.	Run maintenance item U247 and check if following terminals on the PF main PWB goes low. If not, replace the PF main PWB. PF paper feed clutch 1: YC1-14 PF paper feed clutch 2: YC1-13 PF paper conveying clutch: YC2-1
(4) The PF lift motor 1/2 does not operate.	1. Poor contact in the connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	2. Broken motor coil.	Check for continuity across the coil. If none, replace the motor.
(5) The size of paper on the cassette 3 is not displayed correctly.	1. Poor contact in the connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	2. Defective PF paper size length switch 1.	Check if YC3-7 on the PF main PWB goes low when the PF paper size length switch 1 is turned on. If not, replace the PF paper size length switch 1.
	3. Defective PF paper size width switch 1.	Check for continuity between YC3-9 and YC3-1, YC3-2, and YC3-3 on the PF main PWB. If the continuity is unaffected by movement of the width guides in the cassette 3 (i.e. either remains present or remains absent), then replace the PF paper size width switch 1.
(6) The size of paper on the cassette 4 is not displayed correctly.	1. Poor contact in the connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	2. Defective PF paper size length switch 2.	Check if YC3-8 on the PF main PWB goes low when the PF paper size length switch 2 is turned on. If not, replace the PF paper size length switch 2.
	3. Defective PF paper size width switch 2.	Check for continuity between YC3-10 and YC3-4, YC3-5, and YC3-6 on the PF main PWB. If the continuity is unaffected by movement of the width guides in the cassette 4 (i.e. either remains present or remains absent), then replace the PF paper size width switch 2.

Problem	Causes	Check procedures/corrective measures
(7) The message requesting covers to be closed is displayed when the left cover 3 is closed.	1. Poor contact of the left cover 3 switch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	2. Defective left cover 3 switch.	Check for continuity across the contacts. If there is no continuity when the left cover 3 switch is on, replace it.
(8) Others.	1. Wiring is broken, shorted or makes poor contact.	Check for continuity. If none, repair.

1-4-4 Mechanical problems

Problem	Causes/check procedures	Corrective measures
(1) No primary paper feed.	Check if the surfaces of the following rollers and pulleys are dirty with paper powder: forwarding pulley, paper feed pulley, separation pulley, feed roller and feed pulley.	Clean with isopropyl alcohol.
	Check if the paper feed pulley or separation pulley is deformed.	Replace (see page 1-5-2).
	Check if the forwarding pulley is deformed.	Replace (see page 1-5-2).
	Electrical problem with the following electromagnetic clutches: PF paper feed clutch 1/2 and PF paper conveying clutch.	See page 1-4-7.
(2) Skewed paper feed.	Width guide in the cassette installed incorrectly.	Check the width guide visually and remedy or replace if necessary.
	Deformed width guide in the cassette.	Check the width guide visually and remedy or replace if it is deformed.
(3) Multiple sheets of paper are fed at one time.	Check if the separation pulley is deformed.	Replace the separation pulley if it is worn (see page 1-5-2).
	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.	Check visually and remedy or replace any deformed guides.
(5) Abnormal noise is heard.	Check if the pulleys, rollers and gears operate smoothly.	Grease the bushings and gears.
	Check if the PF paper feed clutch 1/2 and the PF paper conveying clutch are installed correctly.	Remedy.

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1-5-1 Precautions for assembly and disassembly

(1) Precautions

Before starting disassembly, press the Power key on the operation panel to off. Make sure that the Power lamp is off before turning off the main power switch. And then unplug the power cable from the wall outlet. Turning off the main power switch before pressing the Power key to off may cause damage to the equipped hard disk.

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.

When replacing battery on a PWB, dispose properly according to laws and regulations.

When removing the hook of the connector, be sure to release the hook.

Take care not to get the cables caught.

To reassemble the parts, use the original screws. If the types and the sizes of screws are not known, refer to the PARTS LIST.

1-5-2 Paper feed section

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

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

Procedure

Removing the primary paper feed units

1. Remove cassette 3 and 4.
2. Remove the one screw and release two hooks, and then remove the front left cover.

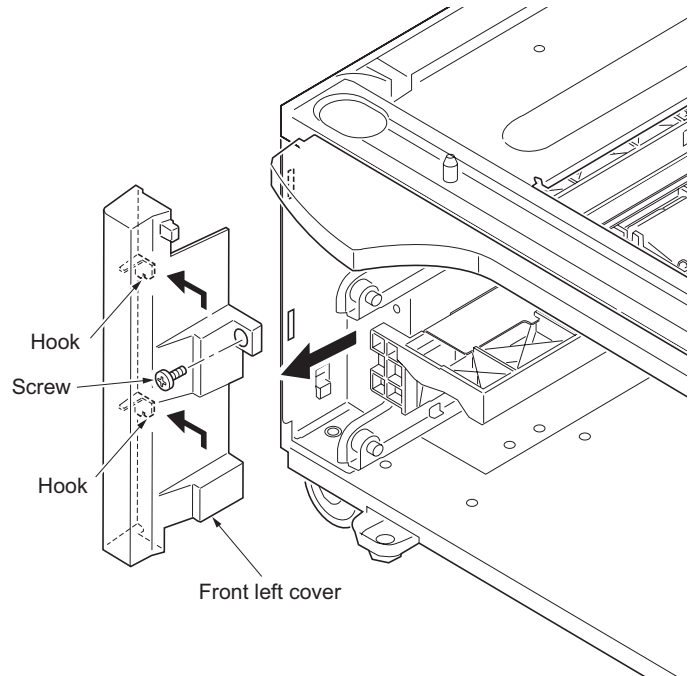


Figure 1-5-1

3. While pressing the latch all the way in, slide the front upper cover toward the left.
4. Remove the latch and two hooks, and then remove the front upper cover.

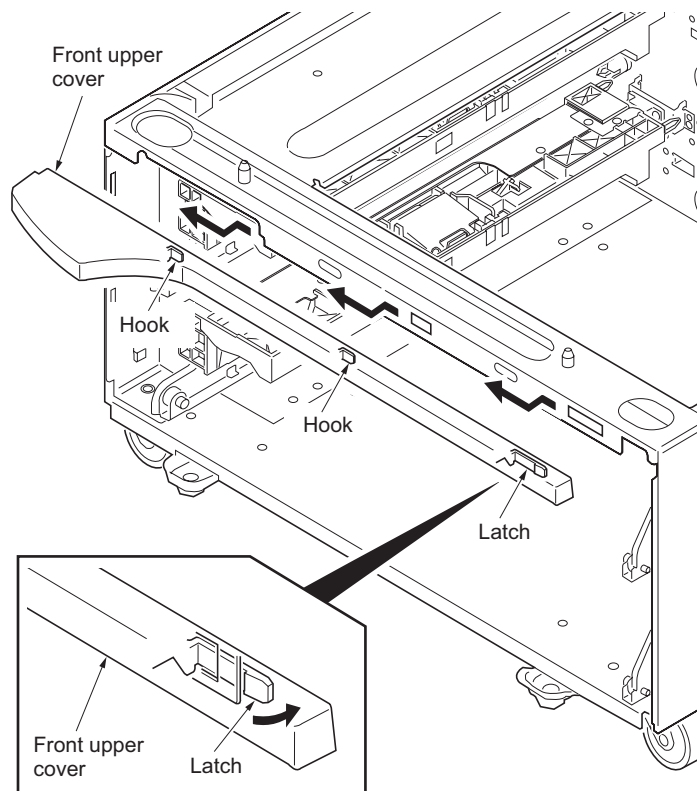


Figure 1-5-2

5. Remove the one screw from each of the primary paper feed units and then the units.

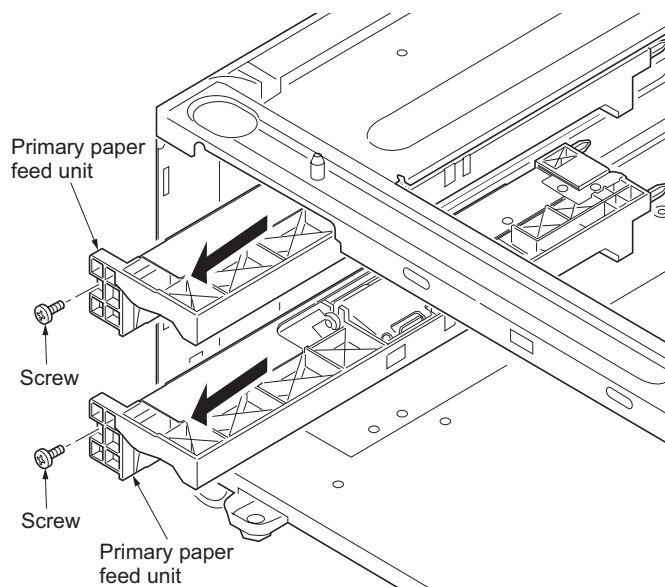


Figure 1-5-3

Removing the forwarding pulley

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

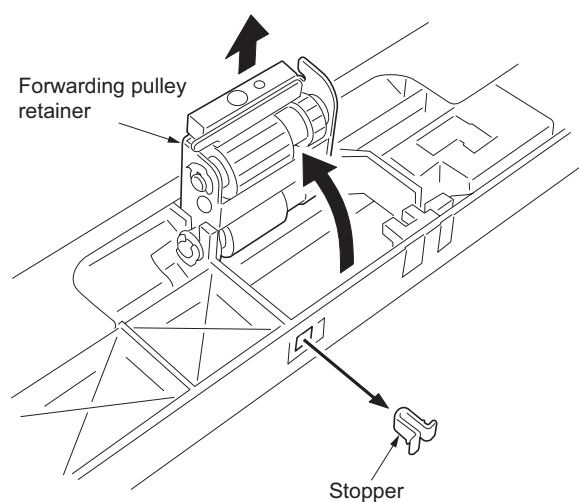


Figure 1-5-4

6. Remove the stop ring from the forwarding pulley retainer. Remove the forwarding pulley from the forwarding pulley shaft.

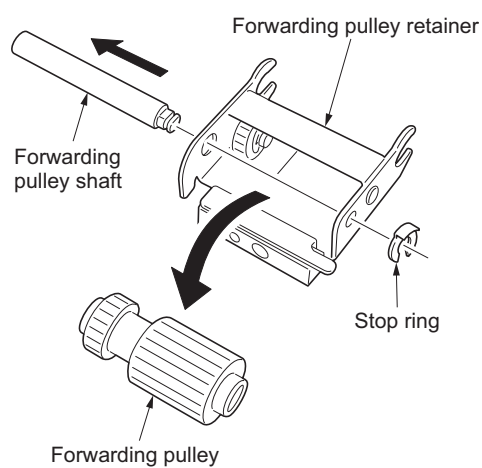
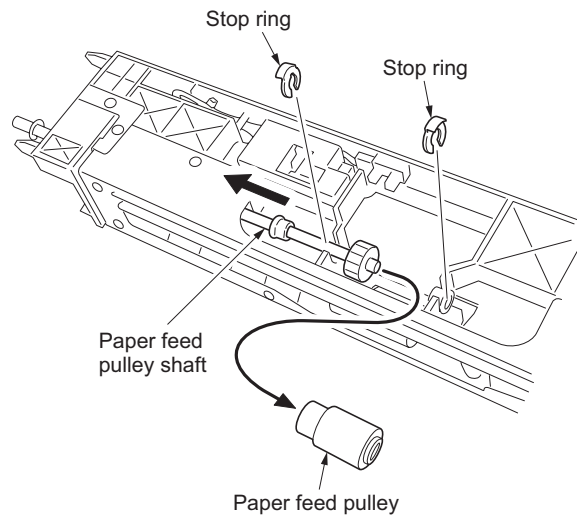


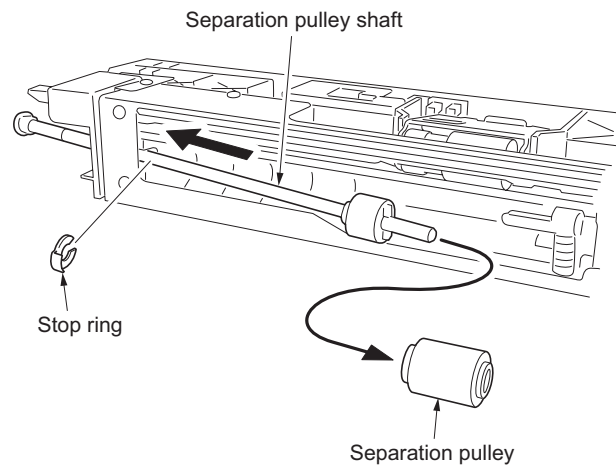
Figure 1-5-5

Removing the paper feed pulley

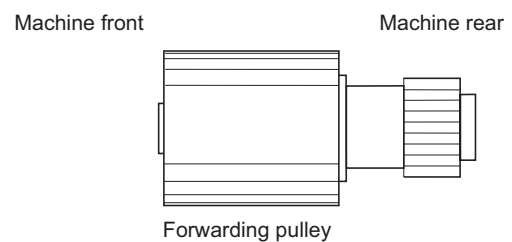
7. Remove two stop rings from the primary paper feed unit.
8. Pull the paper feed pulley shaft in the direction of the arrow and remove the paper feed pulley.

**Figure 1-5-6****Removing the separation pulley**

9. Remove the stop ring from the primary paper feed unit.
10. Pull the separation pulley shaft in the direction of the arrow and remove the separation pulley.

**Figure 1-5-7**

11. Replace the forwarding, paper feed and separation pulleys.
12. Refit all the removed parts.
When refitting the forwarding pulley, orient it correctly as shown in Figure 1-5-8.

**Figure 1-5-8**

(2) Replacing PF paper size width switch 1, 2

Replace PF paper size width switch 1 and 2 as follows.

Caution:

After replacing PF paper size width switch, be sure to perform (4) Adjusting the position of the rack adjuster.

Procedure

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

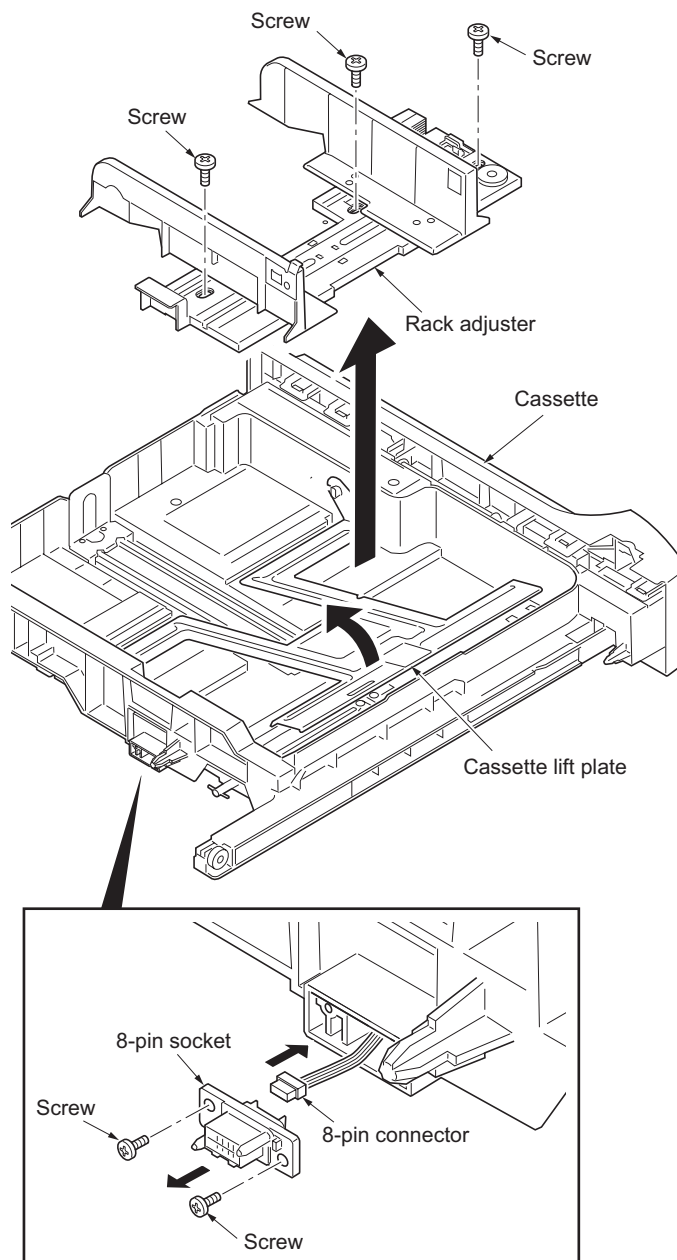


Figure 1-5-9

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

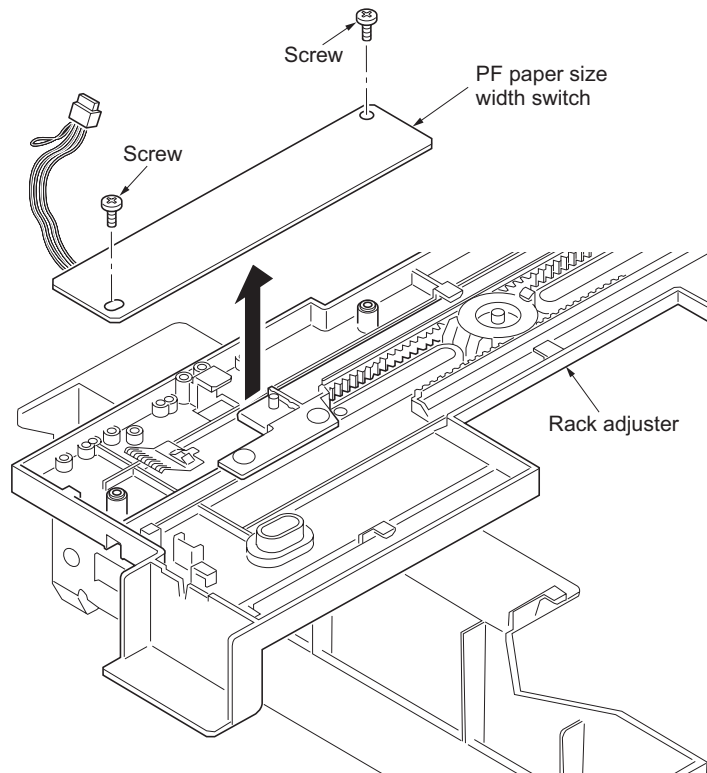


Figure 1-5-10

7. Apply the specified grease to the printed surface of the new PF paper size width switch (shaded area in the diagram) and fit the switch to the rack adjuster.
8. Refit all removed parts.

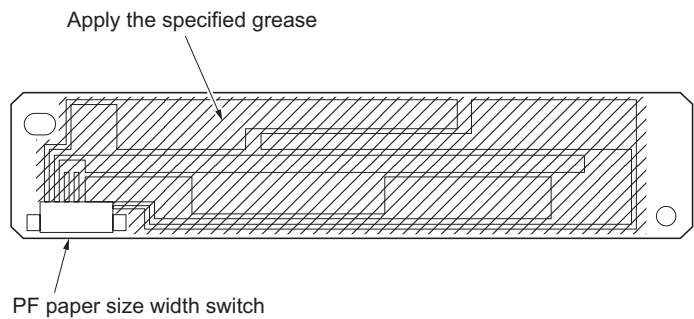


Figure 1-5-11

(3) Replacing PF paper feed clutch 1, 2

Replace PF paper feed clutch 1/2 as follows.

Procedure

1. Remove three screws and remove the rear cover.

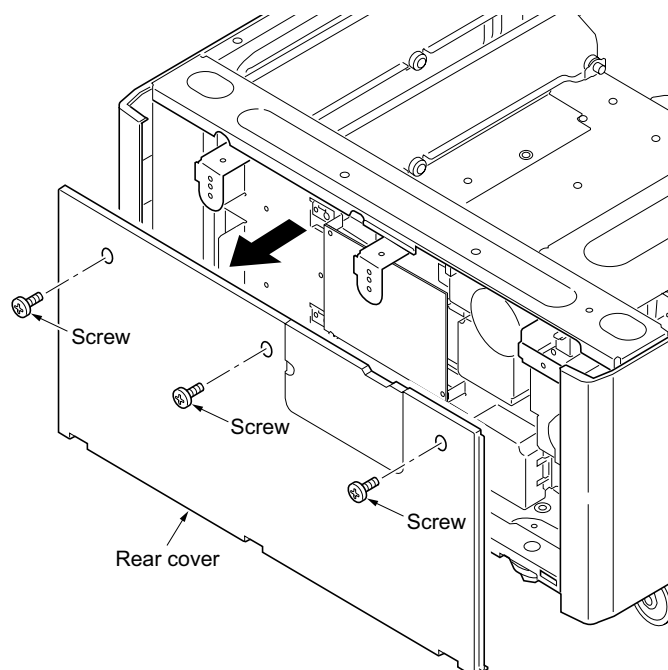


Figure 1-5-12

2. Release two wire saddle.
3. Remove the connector A.
4. Remove two screws and remove the rear cover mount and bush.
5. Remove the PF paper feed clutch 1.
6. Remove the connector B.
7. Remove three claws and remove the clutch holder.
8. Remove the PF paper feed clutch 2.
9. Replace each clutch.
10. Refit all removed parts.
When fitting the clutches, be sure to refit the whirl-stops.

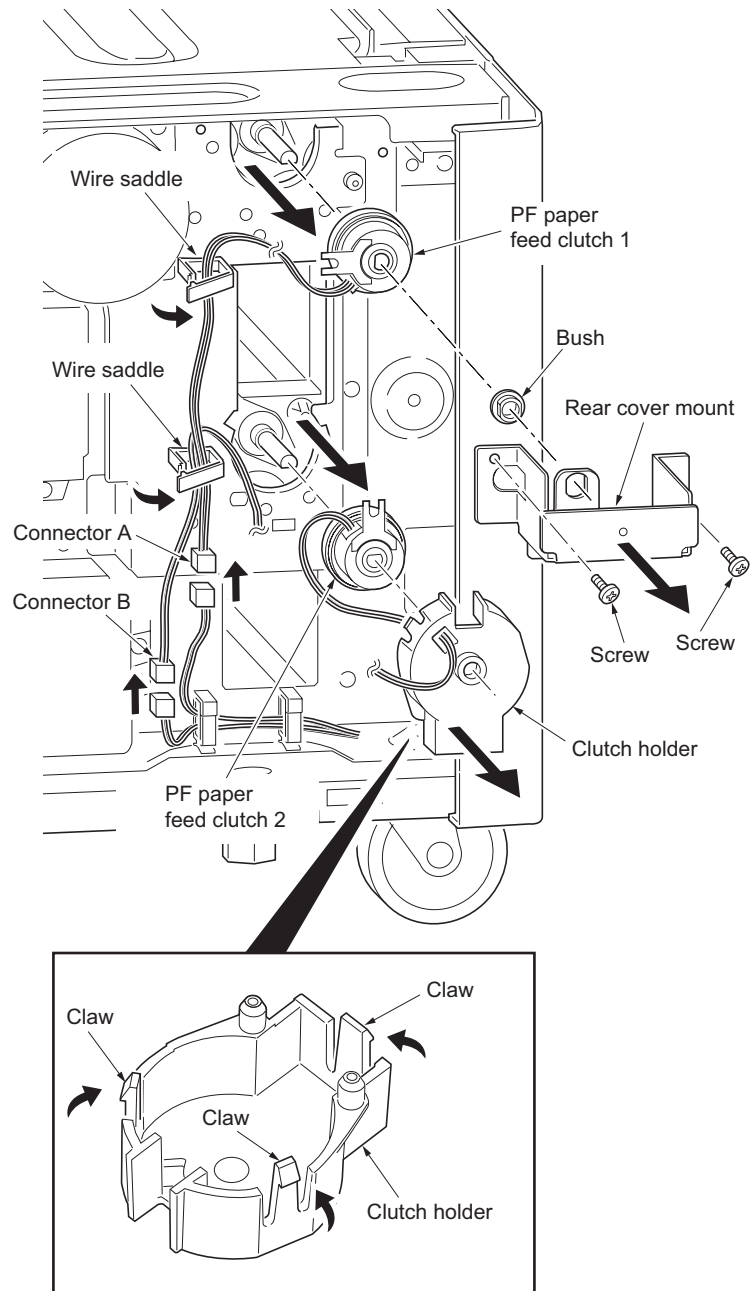


Figure 1-5-13

(4) Adjusting the position of the rack adjuster

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

Procedure

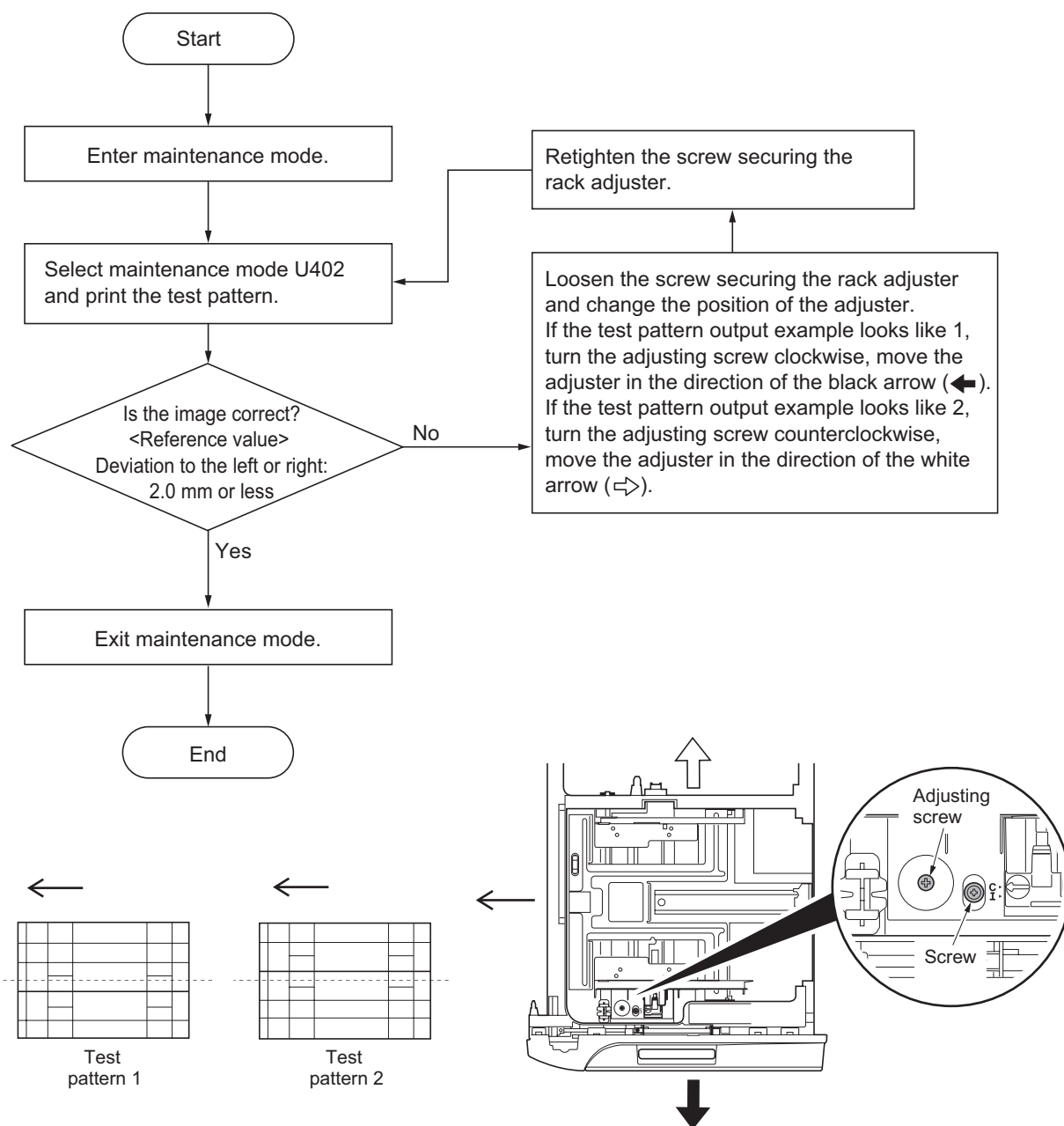


Figure 1-5-14 Adjusting the position of the rack adjuster

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2-1-1 Mechanical construction

The paper feeder feeds paper from either of its two cassettes to the machine. When paper is fed from cassette 3 of the paper feeder, the PF paper conveying clutch (PFCCL) is operated to rotate the feed roller and pulley to carry the paper into the machine.

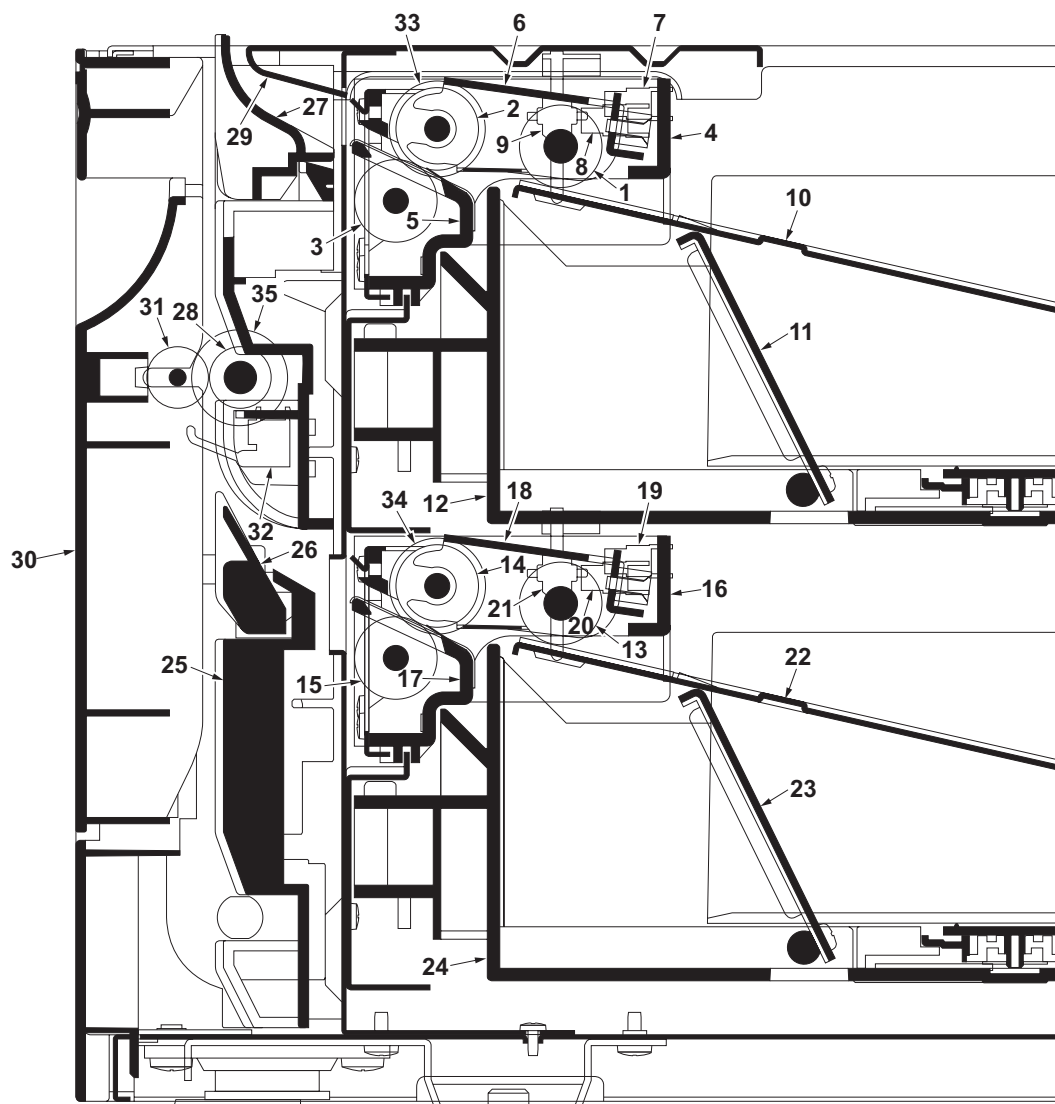


Figure 2-1-1

- | | |
|----------------------------------|----------------------------------------|
| (1) Forwarding pulley | (19) PF lift switch 2 (PFLSW2) |
| (2) Paper feed pulley | (20) PF paper switch 2 (PFPSW2) |
| (3) Separation pulley | (21) Actuator (PF paper switch 2) |
| (4) Paper feed upper housing | (22) Cassette 4 operation plate |
| (5) Paper feed lower housing | (23) Lift operation plate |
| (6) Paper feed retainer | (24) Cassette 4 |
| (7) PF lift switch 1 (PFLSW1) | (25) Vertical paper conveying flame |
| (8) PF paper switch 1 (PFPSW1) | (26) Vertical guide |
| (9) Actuator (PF paper switch 1) | (27) Conveying guide B |
| (10) Cassette 3 operation plate | (28) Feed roller |
| (11) Lift operation plate | (29) Left upper flame |
| (12) Cassette 3 | (30) Left cover 3 |
| (13) Forwarding pulley | (31) Feed pulley |
| (14) Paper feed pulley | (32) PF feed switch (PFFSW) |
| (15) Separation pulley | (33) PF paper feed clutch 1 (PFPFCL1) |
| (16) Paper feed upper housing | (34) PF paper feed clutch 2 (PFPFCL2) |
| (17) Paper feed lower housing | (35) PF paper conveying clutch (PFCCL) |
| (18) Paper feed retainer | |

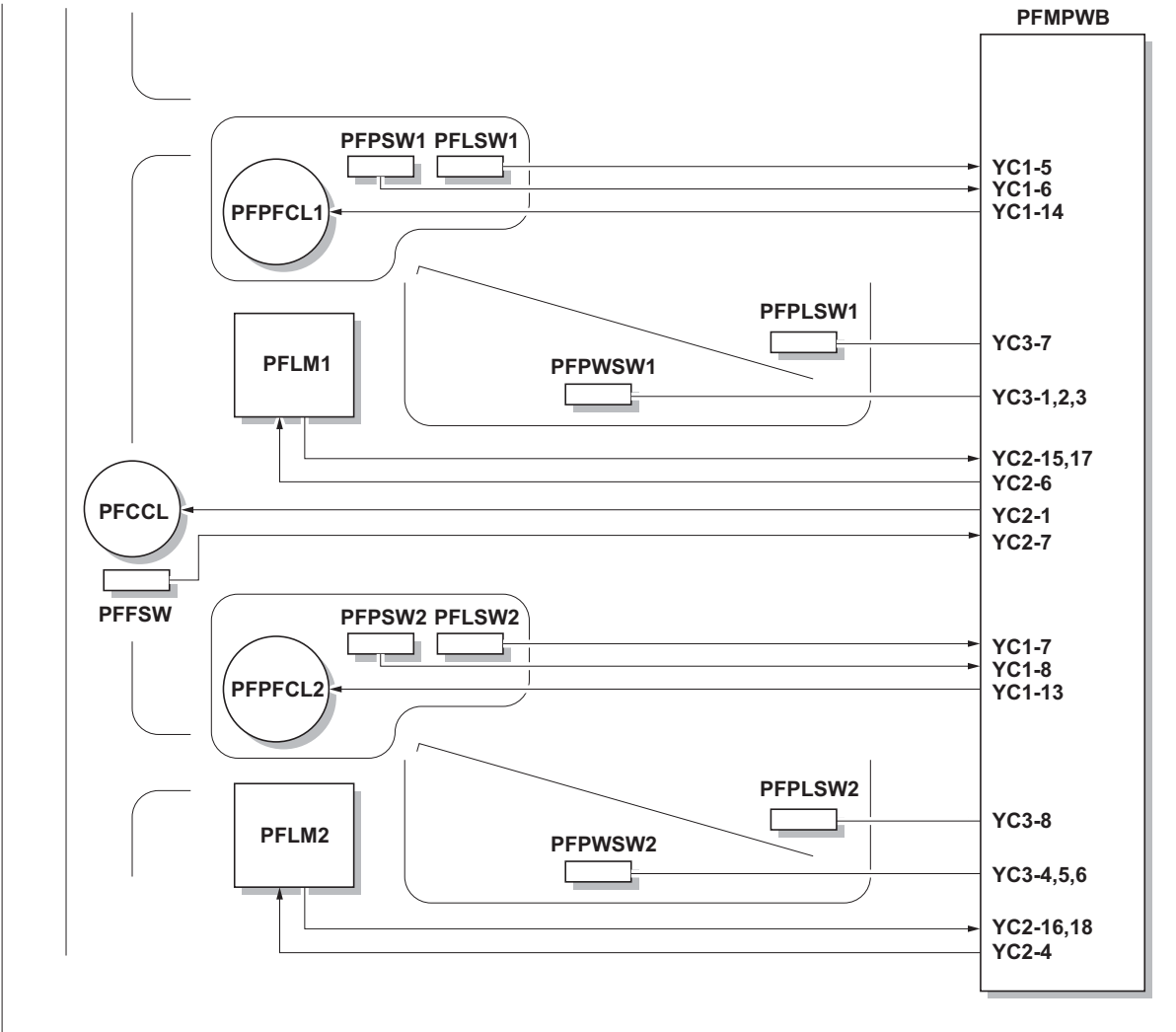


Figure 2-1-2

2-2-1 Electrical parts layout

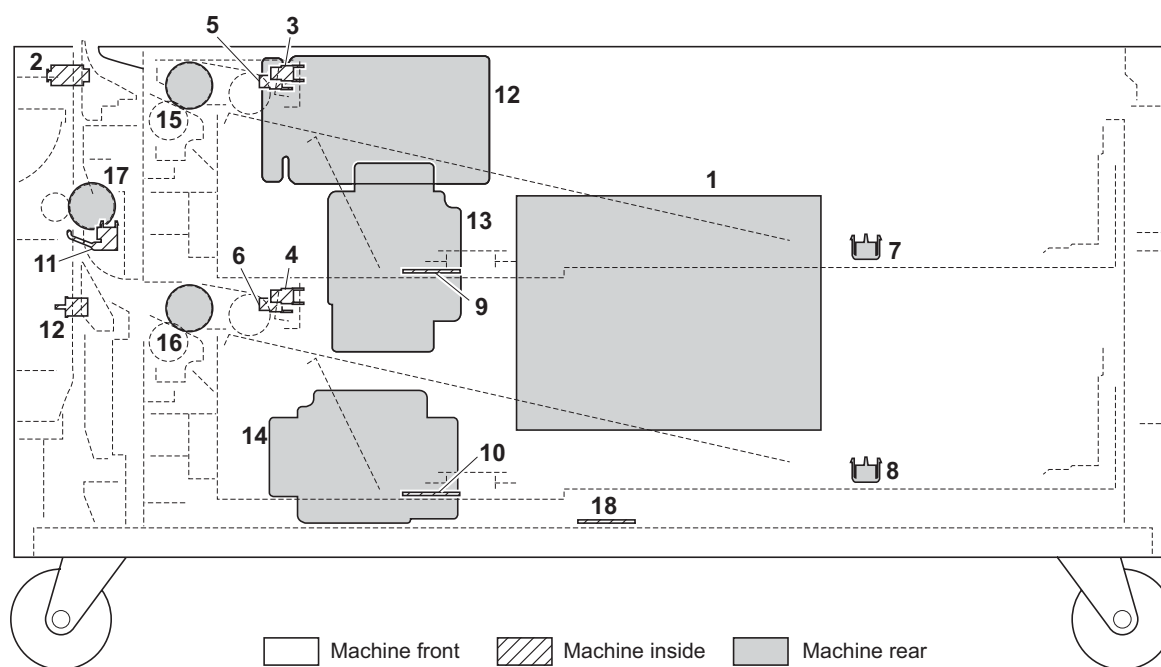


Figure 2-2-1 Layout of electrical parts

- | | |
|--------------------------------------------|----------------------------------------------------------------------------------------|
| 1. PF main PWB (PFMPWB) | Controls electrical parts. |
| 2. Left cover 3 switch (LC3SW) | Breaks the safety circuit when left cover 3 is opened, and resets paper jam detection. |
| 3. PF paper switch 1 (PFPSW1) | Detects the presence of paper in cassette 3. |
| 4. PF paper switch 2 (PFPSW2) | Detects the presence of paper in cassette 4. |
| 5. PF lift switch 1 (PFLSW1) | Detects the cassette lift of cassette 3 reaching the upper limit. |
| 6. PF lift switch 2 (PFLSW2) | Detects the cassette lift of cassette 4 reaching the upper limit. |
| 7. PF paper size length switch 1 (PFPLSW1) | Detects the length of paper in cassette 3. |
| 8. PF paper size length switch 2 (PFPLSW2) | Detects the length of paper in cassette 4. |
| 9. PF paper size width switch 1 (PFPWSW1) | Detects the width of paper in cassette 3. |
| 10. PF paper size width switch 2 (PFPWSW2) | Detects the width of paper in cassette 4. |
| 11. PF feed switch (PFFSW) | Controls PF paper feed clutch 2. |
| 12. PF drive motor (PFDM) | Drives the paper feeder. |
| 13. PF lift motor 1 (PFLM1) | Drives the cassette lift of cassette 3. |
| 14. PF lift motor 2 (PFLM2) | Drives the cassette lift of cassette 4. |
| 15. PF paper feed clutch 1 (PFPFCL1) | Primary paper feed from cassette 3. |
| 16. PF paper feed clutch 2 (PFPFCL2) | Primary paper feed from cassette 4. |
| 17. PF paper conveying clutch (PFCCL) | Conveys paper to the machine. |
| 18. PF cassette heater* (PFCH) | Dehumidifies paper. |

*Optional.

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2-3-1 PF main PWB

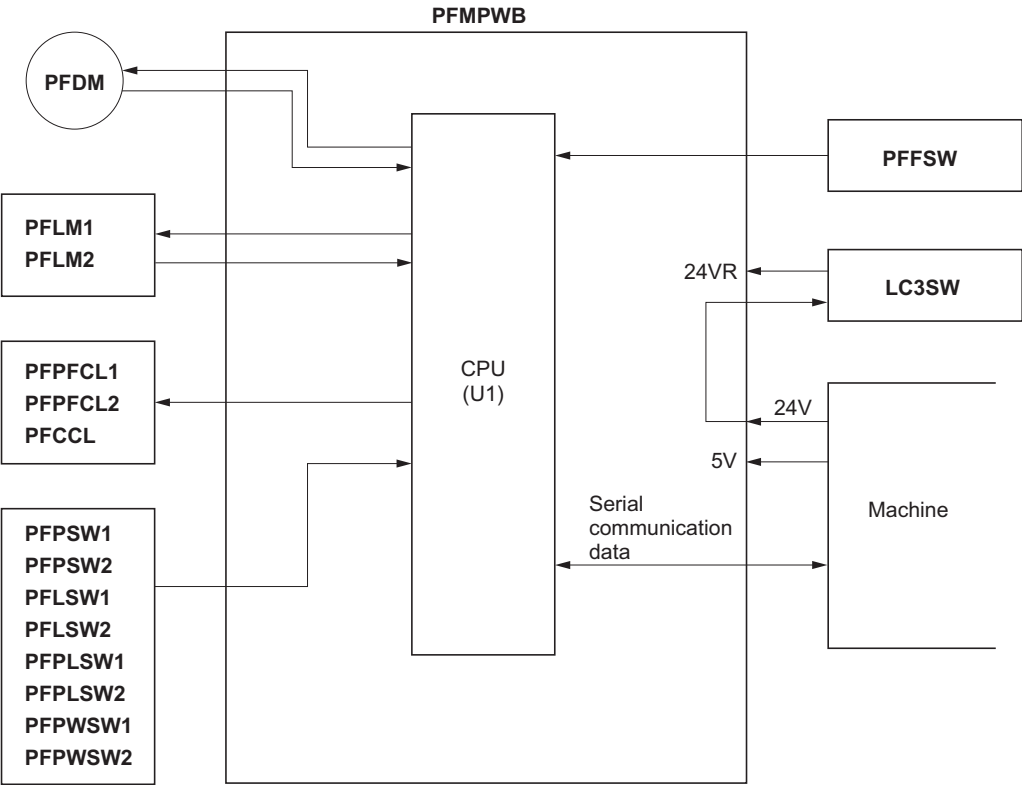


Figure 2-3-1 PF main PWB diagram

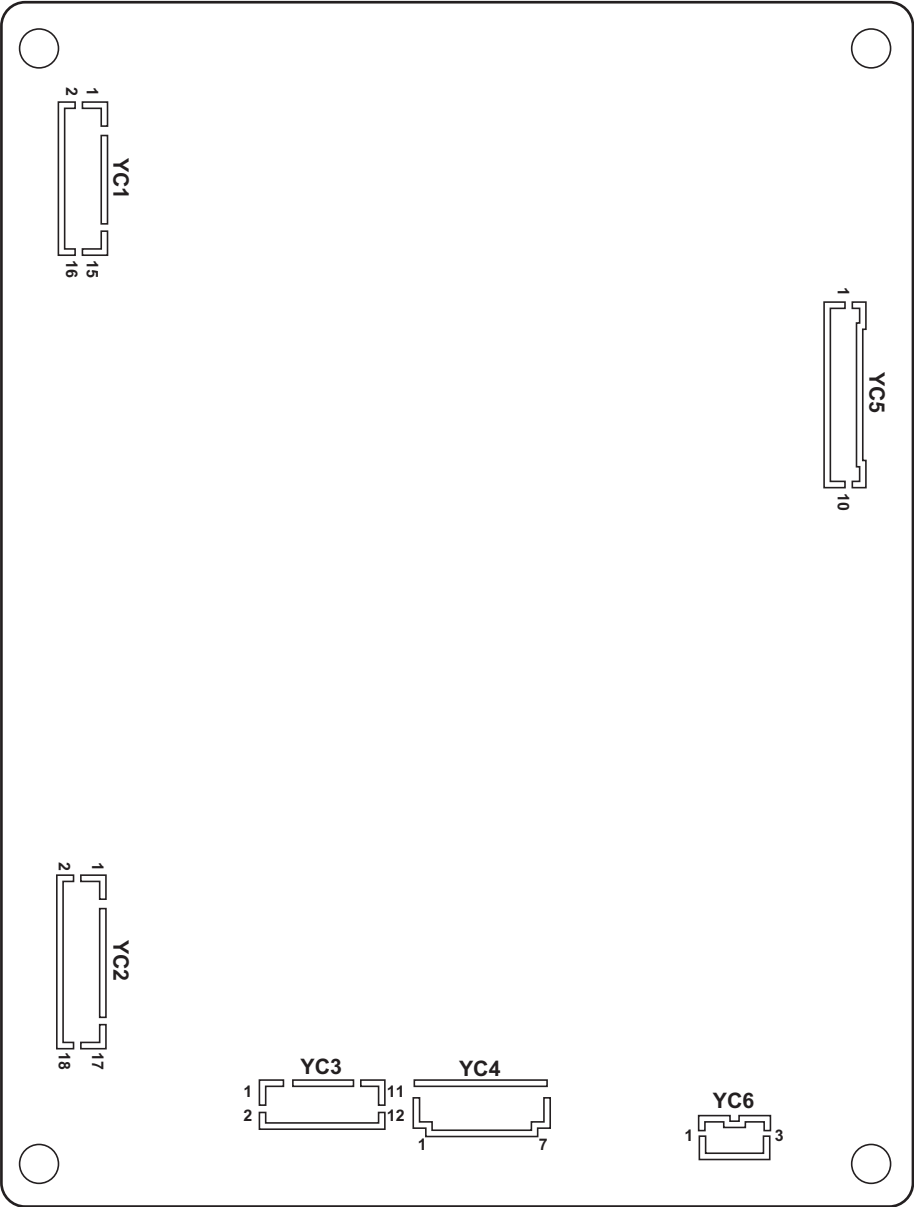


Figure 2-3-2 PF main PWB silk-screen diagram

Connector	Pin No.	Signal	I/O	Voltage	Description
YC1 Connected to the PF paper switch 1/2, PF lift switch 1/2 and PF paper feed clutch 1/2	1	5V	O	5 V DC	5 V DC supply for PFLSW1
	2	5V	O	5 V DC	5 V DC supply for PFPSW1
	3	5V	O	5 V DC	5 V DC supply for PFLSW2
	4	5V	O	5 V DC	5 V DC supply for PFPSW2
	5	UCLLSW	I	5/0 V DC	PFLSW1: On/Off
	6	UCPESW	I	0/5 V DC	PFPSW1: On/Off
	7	LCLLSW	I	5/0 V DC	PFLSW2: On/Off
	8	LCPESW	I	0/5 V DC	PFPSW2: On/Off
	9	SGND	-	-	Ground
	10	SGND	-	-	Ground
	11	SGND	-	-	Ground
	12	SGND	-	-	Ground
	13	LFCL REM	O	0/24 V DC	PFPFCL2: On/Off
	14	UFCL REM	O	0/24 V DC	PFPFCL1: On/Off
	15	24VR	O	24 V DC	24 V DC supply for PFPFCL1
	16	24VR	O	24 V DC	24 V DC supply for PFPFCL2
YC2 Connected to the PF paper con- veying clutch, PF feed switch and PF lift motor 1/2	1	FCL REM	O	0/24 V DC	PFCCL: On/Off
	2	24VR	O	24 V DC	24 V DC supply for PFCCL
	3	PGND	-	-	Ground
	4	LLM REM	O	24 V DC	PFLM2: On/Off
	5	PGND	-	-	Ground
	6	ULM REM	O	24 V DC	PFLM1: On/Off
	7	LFEED SW	I	5 V DC	PFFSW: On/Off
	8	5V	O	5 V DC	5 V DC supply for PFFSW
	9	SGND	-	-	Ground
	10	NC	-	-	Not used
	11	NC	-	-	Not used
	12	NC	-	-	Not used
	13	SGND	-	-	Ground
	14	SGND	-	-	Ground
	15	UP SIG1	I	0/5 V DC	PFLM1 paper gauge signal (1)
	16	LO SIG1	I	0/5 V DC	PFLM2 paper gauge signal (1)
	17	UP SIG2	I	0/5 V DC	PFLM1 paper gauge signal (2)
	18	LO SIG2	I	0/5 V DC	PFLM2 paper gauge signal (2)

Connector	Pin No.	Signal	I/O	Voltage	Description
YC3	1	UP DIG0	I	0/5 V DC	PFPWSW1: On/Off
Connected to the PF paper size length switch 1/2 and PF paper size width switch 1/2	2	UP DIG1	I	0/5 V DC	PFPWSW1: On/Off
	3	UP DIG2	I	0/5 V DC	PFPWSW1: On/Off
	4	LO DIG0	I	0/5 V DC	PFPWSW2: On/Off
	5	LO DIG1	I	0/5 V DC	PFPWSW2: On/Off
	6	LO DIG2	I	0/5 V DC	PFPWSW2: On/Off
	7	UPCLE SW	I	0/5 V DC	PFPLSW1: On/Off
	8	LOCLE SW	I	0/5 V DC	PFPLSW2: On/Off
	9	SGND	-	-	Ground
	10	SGND	-	-	Ground
	11	SGND	-	-	Ground
	12	SGND	-	-	Ground
YC4	1	24VR	O	24 V DC	24 V DC supply for PFDM
Connected to the PF drive motor	2	PGND	-	-	Ground
	3	ON	O	0/5 V DC	PFDM: On/Off
	4	LOCK	I	0/5 V DC	PFDM lock signal
	5	CLOCK	O	0/5 V DC (pulse)	PFDM clock signal
YC5	1	UFEED SW	I	0/5 V DC	Paper feeder control signal
Connected to the machine	2	READY	O	0/5 V DC	Paper feeder ready signal
	3	SDI	I	0/5 V DC (pulse)	Paper feeder serial communication data signal
	4	SDO	O	0/5 V DC (pulse)	Paper feeder serial communication data signal
	5	SCLK	I	0/5 V DC (pulse)	Paper feeder serial communication clock signal
	6	5V	I	5 V DC	5 V DC supply for paper feeder
	7	SGND	-	-	Ground
	8	PGND	-	-	Ground
	9	SEL	I	0/5 V DC	Paper feeder select signal
	10	24V	I	24 V DC	24 V DC supply for paper feeder
YC6	1	24VR	I	24 V DC/0V	LC3SW: On/Off
Connected to the left cover 3 switch	2	NC	-	-	Not used
	3	24V	O	24 V DC	24 V DC supply for LC3SW

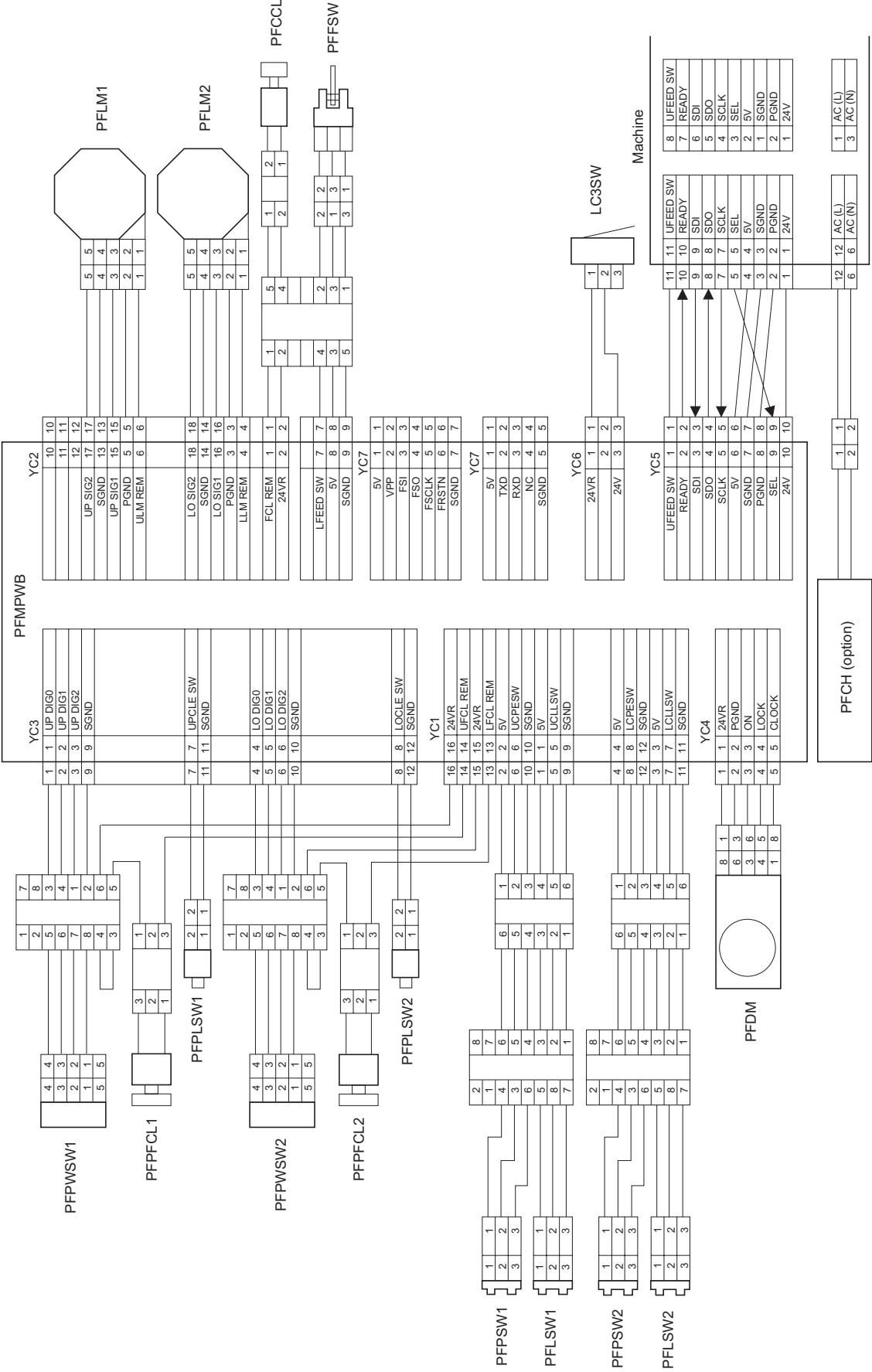
List of maintenance parts

Maintenance part name		Part No.	Alternative part No.
Name used in service manual	Name used in parts list		
Paper feed pulley	PULLEY,PAPER FEED	2AR07220	-
Separation pulley	PULLEY,SEPARATION	2AR07230	-
Forwarding pulley	PULLEY FEED A	2BJ06010	-
Feed pulley	PULLEY 15 DUPLEX	3HY07120	-
Feed roller	PARTS ROLLER VERTICAL FEED A	302H094091	2H094091

Periodic maintenance procedures

Section	Maintenance part/location	User call	300K	Points and cautions	Page
Paper feed section	Paper feed pulley	Check Clean	Replace	Clean with alcohol. Replace after feeding 300,000 sheets.	P.1-5-2
	Separation pulley	Check Clean	Replace	Clean with alcohol. Replace after feeding 300,000 sheets.	P.1-5-2
	Forwarding pulley	Check Clean	Replace	Clean with alcohol. Replace after feeding 300,000 sheets.	P.1-5-2
	Feed pulley	Check Clean	Clean	Clean with alcohol.	
	Feed roller	Check Clean	Clean	Clean with alcohol.	

Wiring diagram



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