



PF-760/PF-760(B)

SERVICE MANUAL

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Rev.4

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	November 26, 2008	1-3-2, 1-3-3, 1-3-5, 1-3-6, 1-3-8, 1-4-5, 1-4-6	-
2	August 6, 2009	CONTENTS, 1-2-1, 1-2-2, 1-2-4, 1-3-1, 1-3-2, 1-3-7, 1-3-8, 1-3-10 to 1-3-16, 1-4-2, 1-4-3, 1-4-5 to 1-4-7, 1-4-9, 1-4-10	-
3	November 26, 2009	CONTENTS, 1-3-1, 1-3-3, 1-3-4, 1-3-8 to 1-3-10, 1-3-17 to 1-3-25, 1-4-2, 2-4-1	-
4	February 2, 2010	1-3-13, 1-3-14, 1-3-17	-

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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 feed (No. sheets: 3000, 80 g/m²)
Paper size A4, B5, Letter
Paper weight..... 60 - 105 g/m²
Paper types..... Standard, recycled, color
Power source Electrically connected to the machine
Dimensions 23 1/16" (W) x 23 5/8" (D) x 12 3/8" (H)
585 (W) x 600 (D) x 314 (H) mm
Weight..... Approx. 23 kg / Approx. 50.71 lbs

NOTE: These specifications are subject to change without notice.

1-1-2 Parts names

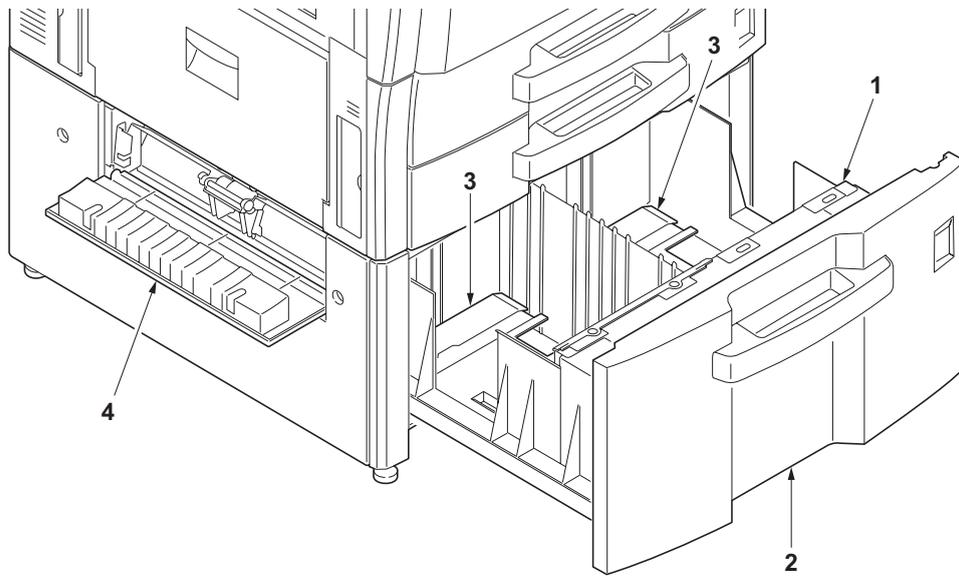


Figure 1-1-1

- 1. Cassette 3
- 2. Cassette front cover
- 3. Lifts
- 4. Left cover 4

1-1-3 Machine cross section

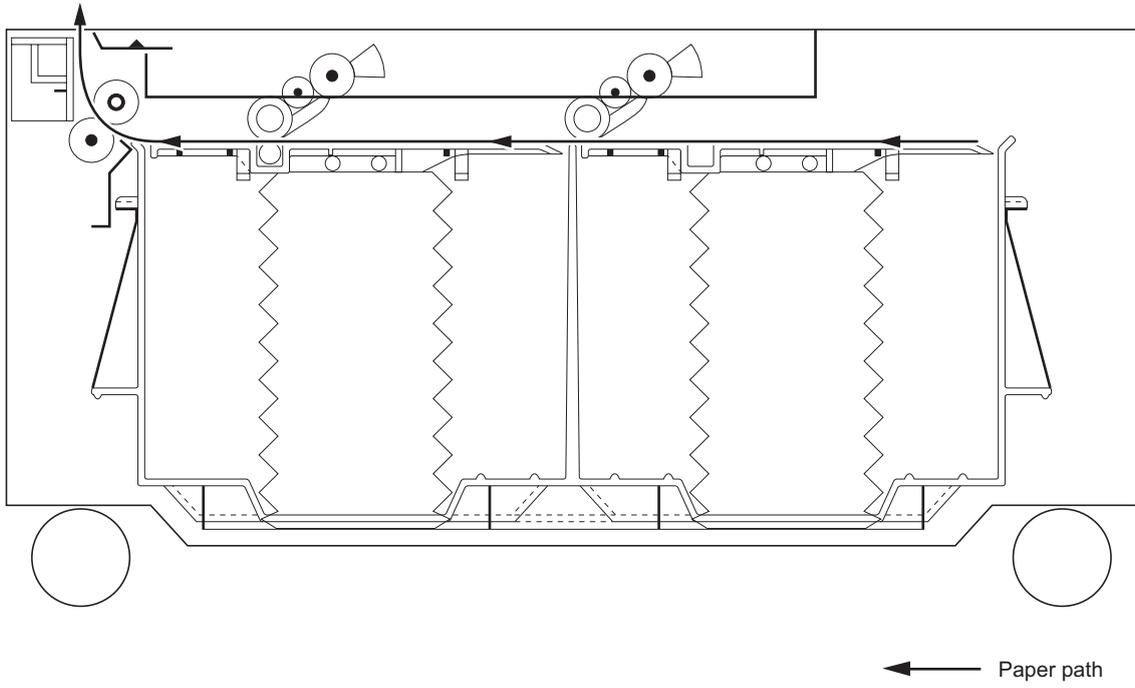


Figure 1-1-2 Machine cross section

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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 photoconductor 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 photoconductor, 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

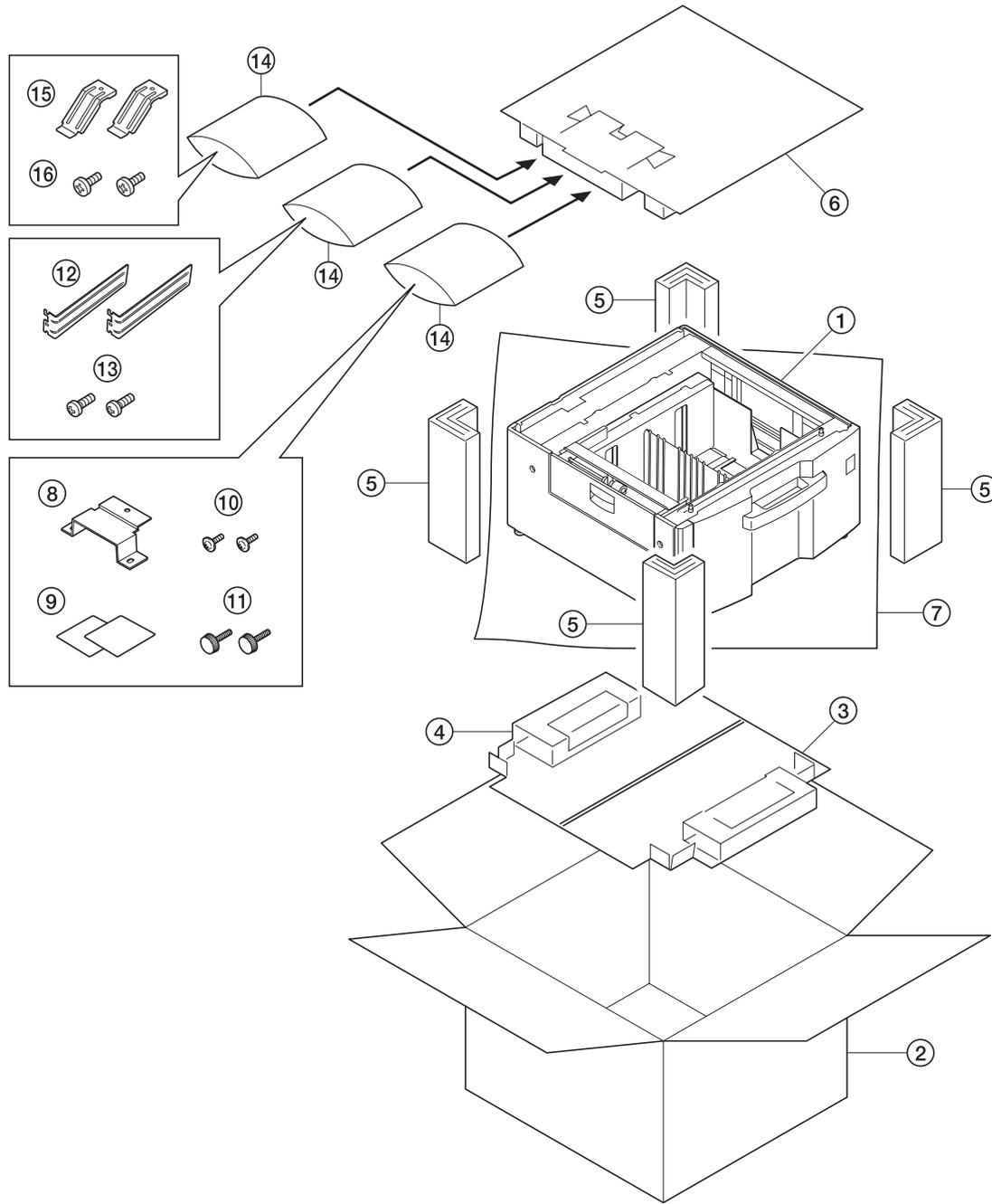


Figure 1-2-1 Unpacking

- | | |
|----------------------------|--|
| 1. 3000-sheet paper feeder | 10. M4 x 16 TP screws |
| 2. Outer case | 11. Pins |
| 3. Lower front pad | 12. Longitudinal size adjusters* |
| 4. Lower rear pad | 13. Round cross-head tapping screws, M3 x 8* |
| 5. Supports | 14. Plastic bag |
| 6. Upper pad | 15. Stoppers |
| 7. Machine cover | 16. S Tight screws M4 x 8 |
| 8. Retainer | |
| 9. Paper size plates | |

*: Inch specifications only.

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

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

Installing the cassette heater requires the following component:

Cassette heater set (P/N 305H094020): for 220 - 240 V specifications

Cassette heater set (P/N 305H094010): for 120 V specifications

Supplied parts of cassette heater set:

Two (2) cassette heaters (P/N 302FB25061): for 220 - 240 V specifications

Two (2) cassette heaters (P/N 302FB25052): for 120 V specifications

Two (2) cassette heater retainers (P/N 305A707691)

Six (6) M4 x 6 IT tap-tight (S-tight) screws (P/N 305H080540)

One (1) relay wire (P/N 305H081000)

Nine (9) wire saddles (P/N M2109000)

Procedure

1. Remove two screws from each of the right cover and left cover 4 and then the covers.
2. Remove three screws holding the paper feeder rear cover and then the cover.
3. Open the paper feeder.
4. Remove two screws holding the paper conveying unit assembly and then the assembly.

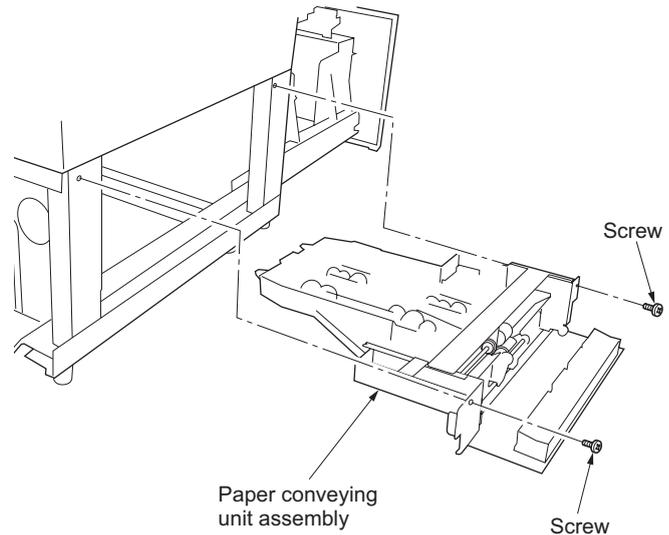


Figure 1-2-2

5. Fit the cassette heaters to the cassette heater retainers using two screws and wire saddle for each.
6. Fit the cassette heater retainers to the left and right of the paper feeder using one screw for each.

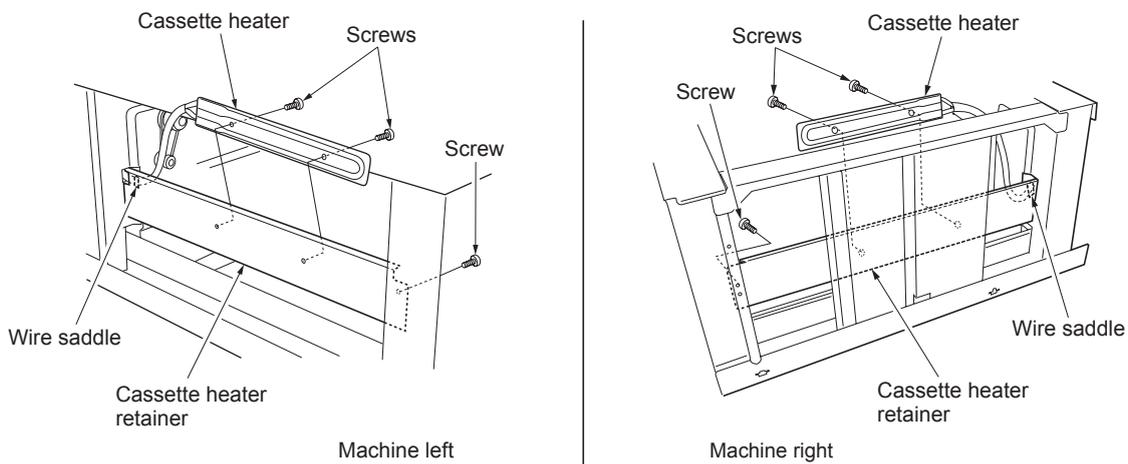


Figure 1-2-3

7. Pull the cassette heater cable out to the machine rear through the cable hole.

8. Insert the cassette heater connectors into the relay wire connectors.
9. Insert the main harness connector into the relay wire connector.
10. Tidy up the cassette heater cable and relay wire using eight wire saddles and route the cable and wire while clipping the wire saddles into the holes in the rear frame.
11. Refit the paper feeder rear cover.
12. Refit the right cover and left cover 4.

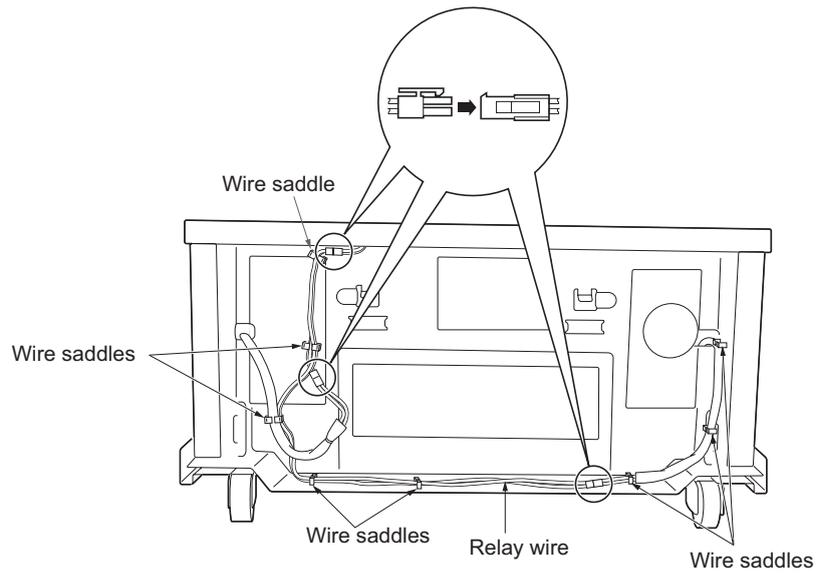


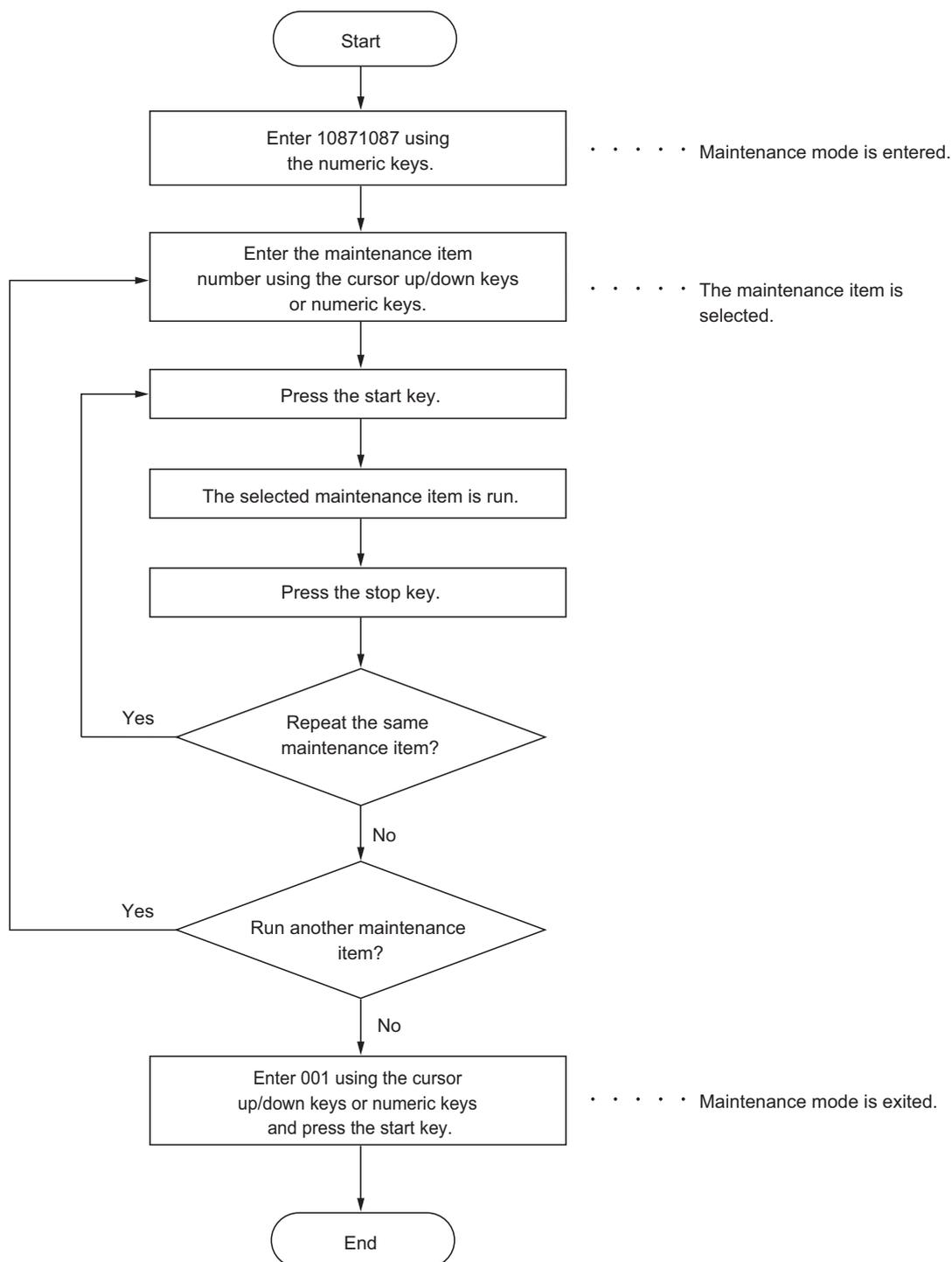
Figure 1-2-4

13. Only for fullcolor machine.
Run maintenance item U327 and select "Option Heater". The setting is changed to "EXISTS" (see page 1-3-8).

1-3-1 Maintenance mode (fullcolor MFP)

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

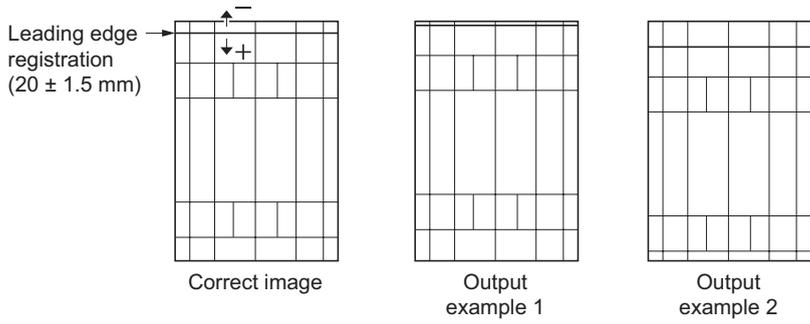
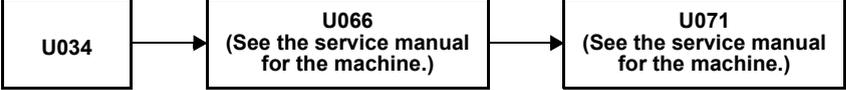
Section	Item No.	Content of maintenance item	Initial setting*
General	U019	Displaying the ROM version	-
Drive, paper feed and paper conveying system	U034	Adjusting the print start timing LSUOUT TOP LSUOUT LEFT LSUOUT TOP B/W	0/0/0/0/0/0/0/0/0/0/0 0/0/0/0/0/0 0/0/0/0/0/0
Operation panel and support equipment	U208	Setting the paper size for the paper feeder	Letter (Inch)/A4 (Metric)*1.
	U247	Setting the paper feed device	-
Mode setting	U327	Setting the cassette heater ON/OFF	MODE2/NONE
	U341	Specific paper feed location setting for printing function	-
Other	U901	Checking 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" data-bbox="335 577 1396 1944"> <thead> <tr> <th data-bbox="335 577 715 616">Display</th> <th data-bbox="715 577 1396 616">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>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>Framework</td></tr> <tr><td>COLOR TABLE1</td><td>Color table1</td></tr> <tr><td>COLOR TABLE2</td><td>Color table2</td></tr> <tr><td>MOTOR CPU</td><td>Motor CPU</td></tr> <tr><td>MOTOR CPU BOOT</td><td>Motor CPU booting</td></tr> <tr><td>H VLT CPU</td><td>High voltage CPU</td></tr> <tr><td>H VLT CPU BOOT</td><td>High voltage CPU booting</td></tr> <tr><td>SLEEP CPU</td><td>Sleep CPU</td></tr> <tr><td>SLEEP CPU BOOT</td><td>Sleep CPU booting</td></tr> <tr><td>DP</td><td>Optional DP ROM</td></tr> <tr><td>500x2PF</td><td>Optional paper feeder ROM</td></tr> <tr><td>3000PF</td><td>3000-sheet paper feeder ROM</td></tr> <tr><td>1000DF</td><td>Optional document finisher ROM</td></tr> <tr><td>3000DF MAIN</td><td>Optional 3000-sheet document finisher main ROM</td></tr> <tr><td>3000DF MIDDLE</td><td>Optional 3000-sheet document finisher Inner tray ROM</td></tr> <tr><td>MAIL BOX</td><td>Optional mailbox ROM</td></tr> <tr><td>BOOKLET</td><td>Optional center-folding unit 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	SCANNER	Scanner ROM	BROWSER	Browser ROM	OPTION LANGUAGE	Optional language ROM	DICTIONARY	-	DBA	Database connection	Solution Framework	Framework	COLOR TABLE1	Color table1	COLOR TABLE2	Color table2	MOTOR CPU	Motor CPU	MOTOR CPU BOOT	Motor CPU booting	H VLT CPU	High voltage CPU	H VLT CPU BOOT	High voltage CPU booting	SLEEP CPU	Sleep CPU	SLEEP CPU BOOT	Sleep CPU booting	DP	Optional DP ROM	500x2PF	Optional paper feeder ROM	3000PF	3000-sheet paper feeder ROM	1000DF	Optional document finisher ROM	3000DF MAIN	Optional 3000-sheet document finisher main ROM	3000DF MIDDLE	Optional 3000-sheet document finisher Inner tray ROM	MAIL BOX	Optional mailbox ROM	BOOKLET	Optional center-folding unit 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"> 1. Press the start key. 2. Select the item to be adjusted. <table border="1" data-bbox="335 566 1398 730"> <thead> <tr> <th>Display</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>LSUOUT TOP</td> <td>Leading edge registration adjustment</td> </tr> <tr> <td>LSUOUT LEFT</td> <td>Center line adjustment</td> </tr> <tr> <td>LSUOUT TOP B/W*</td> <td>Leading edge registration adjustment in black/white mode</td> </tr> </tbody> </table> <p>*: 50/40, 55/50 ppm model only.</p> <p>Adjustment: Leading edge registration adjustment</p> <ol style="list-style-type: none"> 1. Select [LSUOUT TOP] or [LSUOUT TOP B/W]. 2. Select the item. When [LSUOUT TOP] is selected. <table border="1" data-bbox="335 922 1398 1854"> <thead> <tr> <th>Display</th> <th>Description</th> <th>Setting range</th> <th>Default setting</th> <th>Change in value per step</th> </tr> </thead> <tbody> <tr> <td>LSUOUT TOP MPT (L)</td> <td>Paper feed from MP tray (when large size paper is used)</td> <td>-3.0 to 3.0</td> <td>0</td> <td>0.1 mm</td> </tr> <tr> <td>LSUOUT TOP MPT Half (L)</td> <td>Paper feed from MP tray (when large size thick paper is used)</td> <td>-3.0 to 3.0</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>-3.0 to 3.0</td> <td>0</td> <td>0.1 mm</td> </tr> <tr> <td>LSUOUT TOP CAS Half (L)</td> <td>Paper feed from cassette (when large size thick paper is used)</td> <td>-3.0 to 3.0</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>-3.0 to 3.0</td> <td>0</td> <td>0.1 mm</td> </tr> <tr> <td>LSUOUT TOP DUP Half (L)</td> <td>Duplex mode (second) (when large size thick paper is used)</td> <td>-3.0 to 3.0</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>-3.0 to 3.0</td> <td>0</td> <td>0.1 mm</td> </tr> <tr> <td>LSUOUT TOP MPT Half (S)</td> <td>Paper feed from MP tray (when small size thick paper is used)</td> <td>-3.0 to 3.0</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>-3.0 to 3.0</td> <td>0</td> <td>0.1 mm</td> </tr> <tr> <td>LSUOUT TOP CAS Half (S)</td> <td>Paper feed from cassette (when small size thick paper is used)</td> <td>-3.0 to 3.0</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>-3.0 to 3.0</td> <td>0</td> <td>0.1 mm</td> </tr> <tr> <td>LSUOUT TOP DUP Half (S)</td> <td>Duplex mode (second) (when small size thick paper is used)</td> <td>-3.0 to 3.0</td> <td>0</td> <td>0.1 mm</td> </tr> </tbody> </table> <p>Large size: 218 mm or more in width of paper.</p>	Display	Description	LSUOUT TOP	Leading edge registration adjustment	LSUOUT LEFT	Center line adjustment	LSUOUT TOP B/W*	Leading edge registration adjustment in black/white mode	Display	Description	Setting range	Default setting	Change in value per step	LSUOUT TOP MPT (L)	Paper feed from MP tray (when large size paper is used)	-3.0 to 3.0	0	0.1 mm	LSUOUT TOP MPT Half (L)	Paper feed from MP tray (when large size thick paper is used)	-3.0 to 3.0	0	0.1 mm	LSUOUT TOP CAS (L)	Paper feed from cassette (when large size paper is used)	-3.0 to 3.0	0	0.1 mm	LSUOUT TOP CAS Half (L)	Paper feed from cassette (when large size thick paper is used)	-3.0 to 3.0	0	0.1 mm	LSUOUT TOP DUP (L)	Duplex mode (second) (when large size paper is used)	-3.0 to 3.0	0	0.1 mm	LSUOUT TOP DUP Half (L)	Duplex mode (second) (when large size thick paper is used)	-3.0 to 3.0	0	0.1 mm	LSUOUT TOP MPT (S)	Paper feed from MP tray (when small size paper is used)	-3.0 to 3.0	0	0.1 mm	LSUOUT TOP MPT Half (S)	Paper feed from MP tray (when small size thick paper is used)	-3.0 to 3.0	0	0.1 mm	LSUOUT TOP CAS (S)	Paper feed from cassette (when small size paper is used)	-3.0 to 3.0	0	0.1 mm	LSUOUT TOP CAS Half (S)	Paper feed from cassette (when small size thick paper is used)	-3.0 to 3.0	0	0.1 mm	LSUOUT TOP DUP (S)	Duplex mode (second) (when small size paper is used)	-3.0 to 3.0	0	0.1 mm	LSUOUT TOP DUP Half (S)	Duplex mode (second) (when small size thick paper is used)	-3.0 to 3.0	0	0.1 mm
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Maintenance item No.	Description				
U034	When [LSUOUT TOP B/W] is selected.				
	Display	Description	Setting range	Default setting	Change in value per step
	LSUOUT TOP MPT (L) B/W	Paper feed from MP tray (when large size paper is used)	-3.0 to 3.0	0	0.1 mm
	LSUOUT TOP CAS (L) B/W	Paper feed from cassette (when large size paper is used)	-3.0 to 3.0	0	0.1 mm
	LSUOUT TOP DUP (L) B/W	Duplex mode (second) (when large size paper is used)	-3.0 to 3.0	0	0.1 mm
	LSUOUT TOP MPT (S) B/W	Paper feed from MP tray (when small size paper is used)	-3.0 to 3.0	0	0.1 mm
	LSUOUT TOP CAS (S) B/W	Paper feed from cassette (when small size paper is used)	-3.0 to 3.0	0	0.1 mm
	LSUOUT TOP DUP (S) B/W	Duplex mode (second) (when small size paper is used)	-3.0 to 3.0	0	0.1 mm
	Large size: 218 mm or more in width of paper.				
	<ol style="list-style-type: none"> 3. Press the system menu key. 4. Press the start key to output a test pattern. 5. Press the system menu key. 6. Change the setting value using the +/- or numeric keys. For output example 1, increase the value. For output example 2, decrease the value. 				
					
Figure 1-3-1					
<ol style="list-style-type: none"> 7. 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>					
<p>Caution Check the copy image after the adjustment. If the image is still incorrect, perform the following adjustments in maintenance mode.</p>					
					

Maintenance item No.	Description																																			
<p>U034</p>	<p>Adjustment: Center line adjustment</p> <ol style="list-style-type: none"> Select the item. <table border="1" data-bbox="331 331 1396 831"> <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 optional 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 optional 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> <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 data-bbox="539 1014 1193 1400" style="text-align: center;"> <p>Center line of printing (within ± 0.5 mm)</p> <p>Correct image Output example 1 Output example 2</p> </div> <ol style="list-style-type: none"> Press the start key. The value is set. <p>Remark If the setting value for feeding from the MP tray is changed, the difference from the former value is added to or subtracted from the values of other items.</p> <p>Caution Check the copy image after the adjustment. If the image is still incorrect, perform the following adjustments in maintenance mode.</p> <div data-bbox="284 1731 1129 1825" style="text-align: center;"> <pre> graph LR U034[U034] --> U067[U067 (See the service manual for the machine.)] U067 --> U072[U072 (See the service manual for the machine.)] </pre> </div> <p>Completion Press the stop key. The screen for selecting a maintenance item No. is displayed.</p>	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 optional cassette 3	-3.0 to 3.0	0	0.1 mm	LSUOUT LEFT (CAS 4)	Paper feed from optional 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																																
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LSUOUT LEFT (DUP)	Duplex mode (second)	-3.0 to 3.0	0	0.1 mm																																

Maintenance item No.	Description															
U208	<p>Setting the paper size for the paper feeder</p> <p>Description Sets the size of paper used in 3000-sheet paper feeder.</p> <p>Purpose To change the setting when installing the 3000-sheet paper feeder or the size of paper used in the paper feeder is changed.</p> <p>Setting</p> <ol style="list-style-type: none"> 1. Press the start key. 2. Select the paper size (A4, B5 or Letter). Initial setting: Letter (Inch specifications) A4 (Metric specifications) 3. Press the start key. The setting is set. 4. Turn the main power switch off and on. 															
U247	<p>Setting the paper feed device</p> <p>Description Turns on motor and clutches of 3000-sheet paper feeder.</p> <p>Purpose To check the operation of motor and clutches of paper feed device.</p> <p>Method</p> <ol style="list-style-type: none"> 1. Press the start key. The value varies depending to the option furnished. 2. Select the item to be operated. 3. Press the start key. The operation starts. <table border="1" data-bbox="331 1014 1398 1223"> <thead> <tr> <th>Display</th> <th>Motor and clutches</th> <th>Operation</th> </tr> </thead> <tbody> <tr> <td>LCF FEED</td> <td>PF conveying motor (PFCM)</td> <td>In operation</td> </tr> <tr> <td>CLUTCH B</td> <td>PF conveying clutch (PFCCL)</td> <td>On for 1 s</td> </tr> <tr> <td>CLUTCH P1</td> <td>PF paper feed clutch 1 (PFPFCL1)</td> <td>On for 1 s</td> </tr> <tr> <td>CLUTCH P2</td> <td>PF paper feed clutch 2 (PFPFCL2)</td> <td>On for 1 s</td> </tr> </tbody> </table> <ol style="list-style-type: none"> 4. To turn each motor off, press the stop key. <p>Completion Press the stop key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Motor and clutches	Operation	LCF FEED	PF conveying motor (PFCM)	In operation	CLUTCH B	PF conveying clutch (PFCCL)	On for 1 s	CLUTCH P1	PF paper feed clutch 1 (PFPFCL1)	On for 1 s	CLUTCH P2	PF paper feed clutch 2 (PFPFCL2)	On for 1 s
Display	Motor and clutches	Operation														
LCF FEED	PF conveying motor (PFCM)	In operation														
CLUTCH B	PF conveying clutch (PFCCL)	On for 1 s														
CLUTCH P1	PF paper feed clutch 1 (PFPFCL1)	On for 1 s														
CLUTCH P2	PF paper feed clutch 2 (PFPFCL2)	On for 1 s														

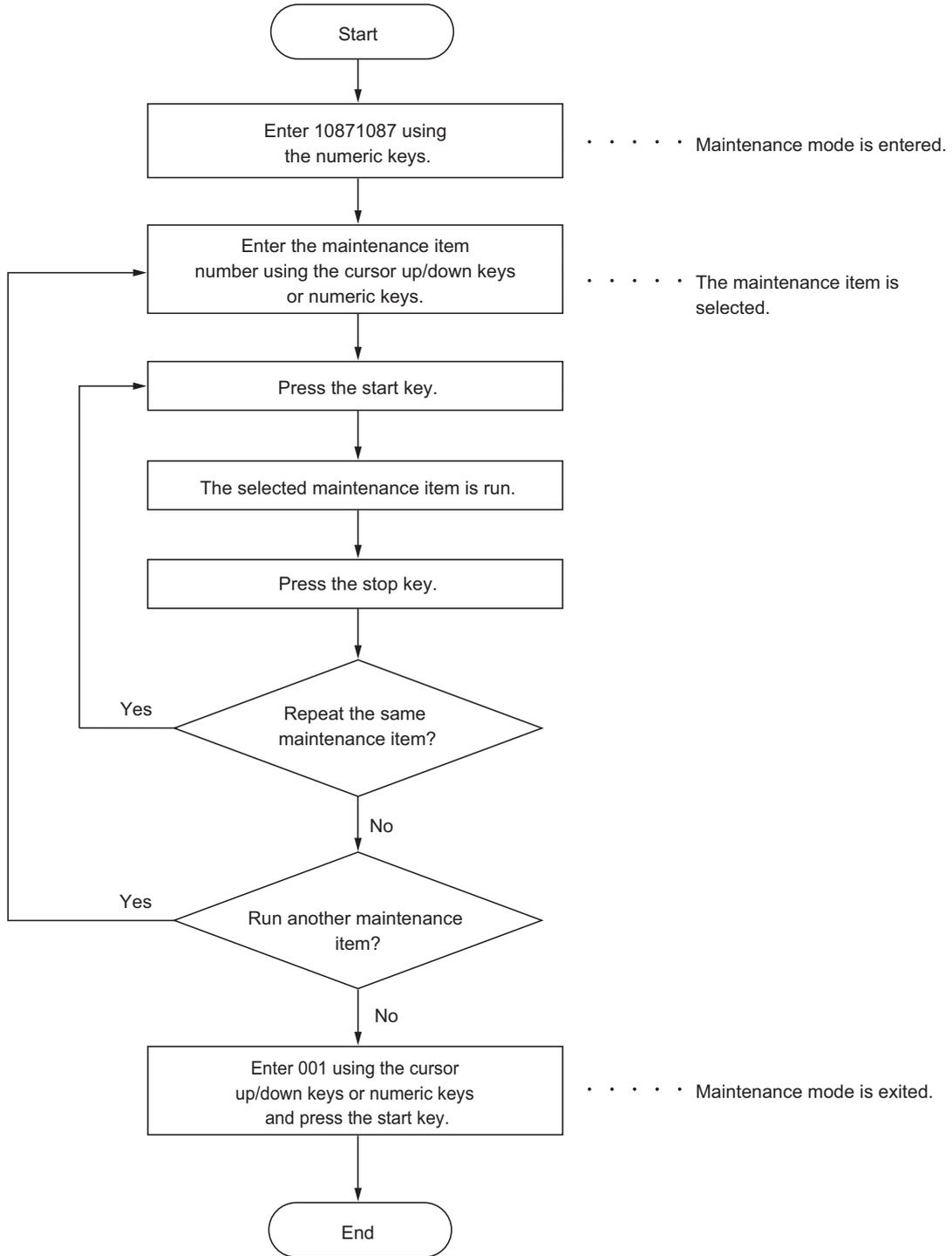
Maintenance item No.	Description																				
<p>U327</p>	<p>Setting the cassette heater ON/OFF</p> <p>Description Sets ON/OFF of the cassette heater.</p> <p>Purpose To change the setting according to the machine installation environment.</p> <p>Method</p> <ol style="list-style-type: none"> 1. Press the start key. 2. Select the item. <table border="1" data-bbox="333 535 1398 660"> <thead> <tr> <th>Display</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>MODE Setting</td> <td>Setting the cassette heater control</td> </tr> <tr> <td>Option Heater</td> <td>Optional cassette heater installed/not Installed setting</td> </tr> </tbody> </table> <p>Setting: [MODE Setting]</p> <ol style="list-style-type: none"> 1. Select the item. <table border="1" data-bbox="333 761 1398 927"> <thead> <tr> <th>Display</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>OFF</td> <td>Cassette heater OFF</td> </tr> <tr> <td>MODE1</td> <td>Cassette heater ON during sleep mode</td> </tr> <tr> <td>MODE2</td> <td>Cassette heater ON during sleep mode and standby</td> </tr> </tbody> </table> <p>Initial setting: OFF</p> <ol style="list-style-type: none"> 2. Press the start key. The setting is set. <p>Setting: [Option Heater]</p> <ol style="list-style-type: none"> 1. Select the item. <table border="1" data-bbox="333 1088 1398 1214"> <thead> <tr> <th>Display</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>NONE</td> <td>Optional cassette heater not Installed</td> </tr> <tr> <td>EXISTS</td> <td>Optional cassette heater installed</td> </tr> </tbody> </table> <p>Initial setting: NONE</p> <ol style="list-style-type: none"> 2. Press the start key. The setting is set. <p>Completion Press the stop key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	MODE Setting	Setting the cassette heater control	Option Heater	Optional cassette heater installed/not Installed setting	Display	Description	OFF	Cassette heater OFF	MODE1	Cassette heater ON during sleep mode	MODE2	Cassette heater ON during sleep mode and standby	Display	Description	NONE	Optional cassette heater not Installed	EXISTS	Optional cassette heater installed
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NONE	Optional cassette heater not Installed																				
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Maintenance item No.	Description																
U341	<p>Specific paper feed location setting for printing function</p> <p>Description Sets a paper feed location specified for printer output (only if a printer kit is installed).</p> <p>Purpose 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> <ol style="list-style-type: none"> 1. Press the start key. 2. Select the paper feed location for the printer. Two or more cassette can be selected. <table border="1" data-bbox="331 593 1396 842"> <thead> <tr> <th>Display</th> <th>Description</th> </tr> </thead> <tbody> <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 (optional paper feeder)</td> </tr> <tr> <td>CASSETTE 4</td> <td>Cassette 4 (optional paper feeder)</td> </tr> <tr> <td>LCF</td> <td>3000-sheet paper feeder</td> </tr> </tbody> </table> <p>When an optional paper feed device is not installed, the corresponding count is not displayed.</p> <ol style="list-style-type: none"> 3. Press the start key. The setting is set. <p>Completion 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 (optional paper feeder)	CASSETTE 4	Cassette 4 (optional paper feeder)	LCF	3000-sheet paper feeder				
Display	Description																
CASSETTE 1	Cassette 1																
CASSETTE 2	Cassette 2																
CASSETTE 3	Cassette 3 (optional paper feeder)																
CASSETTE 4	Cassette 4 (optional paper feeder)																
LCF	3000-sheet paper feeder																
U901	<p>Checking 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.</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 1249 1396 1581"> <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 (optional paper feeder)</td> </tr> <tr> <td>CASSETTE 4</td> <td>Cassette 4 (optional paper feeder)</td> </tr> <tr> <td>DUPLEX</td> <td>Duplex unit</td> </tr> <tr> <td>LCF</td> <td>3000-sheet paper feeder</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, CASSETTE 4 and LCF 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 (optional paper feeder)	CASSETTE 4	Cassette 4 (optional paper feeder)	DUPLEX	Duplex unit	LCF	3000-sheet paper feeder
Display	Description																
MP TRAY	MP tray																
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CASSETTE 2	Cassette 2																
CASSETTE 3	Cassette 3 (optional paper feeder)																
CASSETTE 4	Cassette 4 (optional paper feeder)																
DUPLEX	Duplex unit																
LCF	3000-sheet paper feeder																

1-3-2 Maintenance mode (monochrome MFP)

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 LSUOUT TOP LSUOUT LEFT	0/0/0/0/0/0 0/0/0/0/0/0
Operation panel and support equipment	U208	Setting the paper size for the paper feeder	Letter (Inch)/A4 (Metric)*1.
	U247	Setting the paper feed device	-
Mode setting	U341	Specific paper feed location setting for printing function	-
Other	U901	Checking 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" data-bbox="331 577 1398 1659"> <thead> <tr> <th data-bbox="338 586 715 622">Display</th> <th data-bbox="715 586 1391 622">Description</th> </tr> </thead> <tbody> <tr><td data-bbox="338 622 715 658">MAIN</td><td data-bbox="715 622 1391 658">Main ROM</td></tr> <tr><td data-bbox="338 658 715 694">MMI</td><td data-bbox="715 658 1391 694">Operation ROM</td></tr> <tr><td data-bbox="338 694 715 730">ENGINE</td><td data-bbox="715 694 1391 730">Engine ROM</td></tr> <tr><td data-bbox="338 730 715 766">ENGINE BOOT</td><td data-bbox="715 730 1391 766">Engine booting</td></tr> <tr><td data-bbox="338 766 715 801">SCANNER</td><td data-bbox="715 766 1391 801">Scanner ROM</td></tr> <tr><td data-bbox="338 801 715 837">BROWSER</td><td data-bbox="715 801 1391 837">Browser ROM</td></tr> <tr><td data-bbox="338 837 715 873">OPTION LANGUAGE</td><td data-bbox="715 837 1391 873">Optional language ROM</td></tr> <tr><td data-bbox="338 873 715 909">DICTIONARY</td><td data-bbox="715 873 1391 909">-</td></tr> <tr><td data-bbox="338 909 715 945">DBA</td><td data-bbox="715 909 1391 945">Database connection</td></tr> <tr><td data-bbox="338 945 715 981">Solution Framework</td><td data-bbox="715 945 1391 981">Framework</td></tr> <tr><td data-bbox="338 981 715 1016">DP</td><td data-bbox="715 981 1391 1016">Optional DP ROM</td></tr> <tr><td data-bbox="338 1016 715 1052">500x2PF</td><td data-bbox="715 1016 1391 1052">Paper feeder ROM</td></tr> <tr><td data-bbox="338 1052 715 1088">3000PF</td><td data-bbox="715 1052 1391 1088">Optional 3000-sheet paper feeder ROM</td></tr> <tr><td data-bbox="338 1088 715 1124">1000DF</td><td data-bbox="715 1088 1391 1124">Optional document finisher ROM</td></tr> <tr><td data-bbox="338 1124 715 1160">3000DF MAIN</td><td data-bbox="715 1124 1391 1160">Optional 3000-sheet document finisher main ROM</td></tr> <tr><td data-bbox="338 1160 715 1196">3000DF MIDDLE</td><td data-bbox="715 1160 1391 1196">Optional 3000-sheet document finisher Inner tray ROM</td></tr> <tr><td data-bbox="338 1196 715 1232">MAIL BOX</td><td data-bbox="715 1196 1391 1232">Optional mailbox ROM</td></tr> <tr><td data-bbox="338 1232 715 1267">BOOKLET</td><td data-bbox="715 1232 1391 1267">Optional center-folding unit ROM</td></tr> <tr><td data-bbox="338 1267 715 1303">INNER DF</td><td data-bbox="715 1267 1391 1303">Optional built-in finisher ROM</td></tr> <tr><td data-bbox="338 1303 715 1339">FAX BOOT1</td><td data-bbox="715 1303 1391 1339">Optional fax control PWB booting (port 1)</td></tr> <tr><td data-bbox="338 1339 715 1375">FAX APL1</td><td data-bbox="715 1339 1391 1375">Optional fax control PWB APL (port 1)</td></tr> <tr><td data-bbox="338 1375 715 1411">FAX IPL1</td><td data-bbox="715 1375 1391 1411">Optional fax control PWB IPL (port 1)</td></tr> <tr><td data-bbox="338 1411 715 1447">FAX BOOT2</td><td data-bbox="715 1411 1391 1447">Fax control PWB booting (port 2: optional dual FAX)</td></tr> <tr><td data-bbox="338 1447 715 1482">FAX APL2</td><td data-bbox="715 1447 1391 1482">Fax control PWB APL (port 2: optional dual FAX)</td></tr> <tr><td data-bbox="338 1482 715 1518">FAX IPL2</td><td data-bbox="715 1482 1391 1518">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	SCANNER	Scanner ROM	BROWSER	Browser ROM	OPTION LANGUAGE	Optional language ROM	DICTIONARY	-	DBA	Database connection	Solution Framework	Framework	DP	Optional DP ROM	500x2PF	Paper feeder ROM	3000PF	Optional 3000-sheet paper feeder ROM	1000DF	Optional document finisher ROM	3000DF MAIN	Optional 3000-sheet document finisher main ROM	3000DF MIDDLE	Optional 3000-sheet document finisher Inner tray ROM	MAIL BOX	Optional mailbox ROM	BOOKLET	Optional center-folding unit 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"> 1. Press the start key. 2. Select the item to be adjusted. The setting screen for the selected item is displayed. <table border="1" data-bbox="331 562 1398 689"> <thead> <tr> <th>Display</th> <th>Description</th> </tr> </thead> <tbody> <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> </tbody> </table> <p>Adjustment: Leading edge registration adjustment</p> <ol style="list-style-type: none"> 1. Select the item to be adjusted. <table border="1" data-bbox="331 790 1398 1292"> <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 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> </tbody> </table> <p>Large size: 218 mm or more in width of paper.</p> <ol style="list-style-type: none"> 2. Press the system menu key. 3. Press the start key to output a test pattern. 4. Press the system menu key. 5. Change the setting value using the +/- or numeric keys. For output example 1, increase the value. For output example 2, decrease the value. <div data-bbox="427 1496 1236 1809" style="text-align: center;"> <p>Leading edge registration (20 ± 1.0 mm)</p> <p>Correct image Output example 1 Output example 2</p> </div> <p>Figure 1-3-3</p> <ol style="list-style-type: none"> 6. 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																																			
<p>U034</p> <p>Caution Check the copy image after the adjustment. If the image is still incorrect, perform the following adjustments in maintenance mode.</p> <div style="text-align: center; border: 1px solid black; padding: 5px; margin: 10px 0;"> <div style="display: inline-block; border: 1px solid black; padding: 5px; margin-right: 10px;">U034</div> <div style="display: inline-block; border: 1px solid black; padding: 5px; margin-right: 10px;"> U066 (See the service manual for the machine.) </div> <div style="display: inline-block; border: 1px solid black; padding: 5px;"> U071 (See the service manual for the machine.) </div> </div> <p>Adjustment: Center line adjustment</p> <ol style="list-style-type: none"> Select the item to be adjusted. <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Display</th> <th style="text-align: left;">Description</th> <th style="text-align: left;">Setting range</th> <th style="text-align: left;">Initial setting</th> <th style="text-align: left;">Change in value per step</th> </tr> </thead> <tbody> <tr> <td>LSUOUT LEFT (MPT)</td> <td>Paper feed from MP tray</td> <td>-10.0 to 10.0</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>-10.0 to 10.0</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>-10.0 to 10.0</td> <td>0</td> <td>0.1 mm</td> </tr> <tr> <td>LSUOUT LEFT (CAS 3)</td> <td>Paper feed from optional cassette 3</td> <td>-10.0 to 10.0</td> <td>0</td> <td>0.1 mm</td> </tr> <tr> <td>LSUOUT LEFT (CAS 4)</td> <td>Paper feed from optional cassette 4</td> <td>-10.0 to 10.0</td> <td>0</td> <td>0.1 mm</td> </tr> <tr> <td>LSUOUT LEFT (DUP)</td> <td>Duplex mode (second)</td> <td>-10.0 to 10.0</td> <td>0</td> <td>0.1 mm</td> </tr> </tbody> </table> <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 style="text-align: center; margin: 10px 0;"> <p>Center line of printing (within ± 0.5 mm)</p> <p>Correct image Output example 1 Output example 2</p> </div> <p>Figure 1-3-4</p> <ol style="list-style-type: none"> Press the start key. The value is set. <p>Remark If the setting value for feeding from the MP tray is changed, the difference from the former value is added to or subtracted from the values of other items.</p>	Display	Description	Setting range	Initial setting	Change in value per step	LSUOUT LEFT (MPT)	Paper feed from MP tray	-10.0 to 10.0	0	0.1 mm	LSUOUT LEFT (CAS 1)	Paper feed from cassette 1	-10.0 to 10.0	0	0.1 mm	LSUOUT LEFT (CAS 2)	Paper feed from cassette 2	-10.0 to 10.0	0	0.1 mm	LSUOUT LEFT (CAS 3)	Paper feed from optional cassette 3	-10.0 to 10.0	0	0.1 mm	LSUOUT LEFT (CAS 4)	Paper feed from optional cassette 4	-10.0 to 10.0	0	0.1 mm	LSUOUT LEFT (DUP)	Duplex mode (second)	-10.0 to 10.0	0	0.1 mm	
Display	Description	Setting range	Initial setting	Change in value per step																																
LSUOUT LEFT (MPT)	Paper feed from MP tray	-10.0 to 10.0	0	0.1 mm																																
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LSUOUT LEFT (CAS 2)	Paper feed from cassette 2	-10.0 to 10.0	0	0.1 mm																																
LSUOUT LEFT (CAS 3)	Paper feed from optional cassette 3	-10.0 to 10.0	0	0.1 mm																																
LSUOUT LEFT (CAS 4)	Paper feed from optional cassette 4	-10.0 to 10.0	0	0.1 mm																																
LSUOUT LEFT (DUP)	Duplex mode (second)	-10.0 to 10.0	0	0.1 mm																																

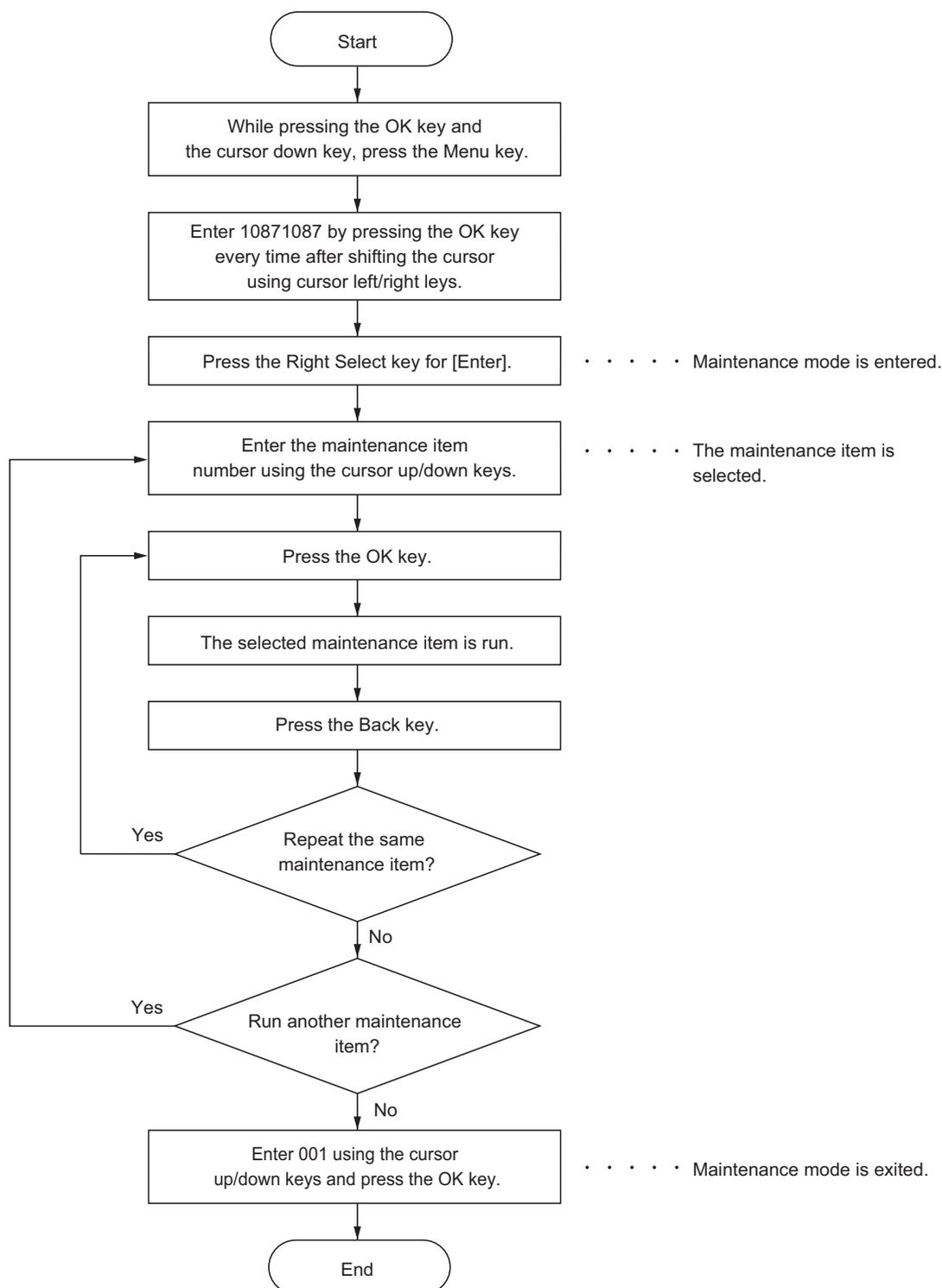
Maintenance item No.	Description															
U034	<p>Caution Check the copy image after the adjustment. If the image is still incorrect, perform the following adjustments in maintenance mode.</p> <div data-bbox="284 360 1129 456" style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <pre> graph LR U034[U034] --> U067[U067 (See the service manual for the machine.)] U067 --> U072[U072 (See the service manual for the machine.)] </pre> </div> <p>Completion Press the stop key. The screen for selecting a maintenance item No. is displayed.</p>															
U208	<p>Setting the paper size for the paper feeder</p> <p>Description Sets the size of paper used in 3000-sheet paper feeder.</p> <p>Purpose To change the setting when the size of paper used in the paper feeder is changed.</p> <p>Setting</p> <ol style="list-style-type: none"> 1. Press the start key. 2. Select the paper size (A4, B5 or Letter). Initial setting: Letter (Inch specifications)/A4 (Metric specifications) 3. Press the start key. The setting is set. 4. Turn the main power switch off and on. 															
U247	<p>Setting the paper feed device</p> <p>Description Turns on motors and clutches of 3000-sheet paper feeder.</p> <p>Purpose To check the operation of motors and clutches of paper feed device.</p> <p>Method</p> <ol style="list-style-type: none"> 1. Press the start key. The value varies depending to the option furnished. 2. Select the item to be operated. 3. Press the start key. The operation starts. <table border="1" data-bbox="331 1285 1398 1496" style="width: 100%; border-collapse: collapse; margin: 10px 0;"> <thead> <tr> <th>Display</th> <th>Motor and clutches</th> <th>Operation</th> </tr> </thead> <tbody> <tr> <td>LCF FEED</td> <td>PF conveying motor (PFCM)</td> <td>In operation</td> </tr> <tr> <td>CLUTCH B</td> <td>PF conveying clutch (PFCCL)</td> <td>On for 1 s</td> </tr> <tr> <td>CLUTCH P1</td> <td>PF paper feed clutch 1 (PFPFCL1)</td> <td>On for 1 s</td> </tr> <tr> <td>CLUTCH P2</td> <td>PF paper feed clutch 2 (PFPFCL2)</td> <td>On for 1 s</td> </tr> </tbody> </table> <ol style="list-style-type: none"> 4. To turn each motor off, press the stop key. <p>Completion Press the stop key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Motor and clutches	Operation	LCF FEED	PF conveying motor (PFCM)	In operation	CLUTCH B	PF conveying clutch (PFCCL)	On for 1 s	CLUTCH P1	PF paper feed clutch 1 (PFPFCL1)	On for 1 s	CLUTCH P2	PF paper feed clutch 2 (PFPFCL2)	On for 1 s
Display	Motor and clutches	Operation														
LCF FEED	PF conveying motor (PFCM)	In operation														
CLUTCH B	PF conveying clutch (PFCCL)	On for 1 s														
CLUTCH P1	PF paper feed clutch 1 (PFPFCL1)	On for 1 s														
CLUTCH P2	PF paper feed clutch 2 (PFPFCL2)	On for 1 s														

Maintenance item No.	Description																
U341	<p>Specific paper feed location setting for printing function</p> <p>Description Sets a paper feed location specified for printer output.</p> <p>Purpose 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> <ol style="list-style-type: none"> 1. Press the start key. 2. Select the paper feed location for the printer. Two or more cassette can be selected. <table border="1" data-bbox="333 593 1396 842"> <thead> <tr> <th>Display</th> <th>Description</th> </tr> </thead> <tbody> <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 (optional paper feeder)</td> </tr> <tr> <td>CASSETTE 4</td> <td>Cassette 4 (optional paper feeder)</td> </tr> <tr> <td>LCF</td> <td>3000-sheet paper feeder</td> </tr> </tbody> </table> <p>When an optional paper feed device is not installed, the corresponding count is not displayed.</p> <ol style="list-style-type: none"> 3. Press the start key. The setting is set. <p>Completion 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 (optional paper feeder)	CASSETTE 4	Cassette 4 (optional paper feeder)	LCF	3000-sheet paper feeder				
Display	Description																
CASSETTE 1	Cassette 1																
CASSETTE 2	Cassette 2																
CASSETTE 3	Cassette 3 (optional paper feeder)																
CASSETTE 4	Cassette 4 (optional paper feeder)																
LCF	3000-sheet paper feeder																
U901	<p>Checking 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="333 1247 1396 1581"> <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 (optional paper feeder)</td> </tr> <tr> <td>CASSETTE 4</td> <td>Cassette 4 (optional paper feeder)</td> </tr> <tr> <td>DUPLEX</td> <td>Duplex unit</td> </tr> <tr> <td>LCF</td> <td>3000-sheet paper feeder</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, CASSETTE 4 and LCF 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 (optional paper feeder)	CASSETTE 4	Cassette 4 (optional paper feeder)	DUPLEX	Duplex unit	LCF	3000-sheet paper feeder
Display	Description																
MP TRAY	MP tray																
CASSETTE 1	Cassette 1																
CASSETTE 2	Cassette 2																
CASSETTE 3	Cassette 3 (optional paper feeder)																
CASSETTE 4	Cassette 4 (optional paper feeder)																
DUPLEX	Duplex unit																
LCF	3000-sheet paper feeder																

1-3-3 Maintenance mode (fullcolor printer)

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

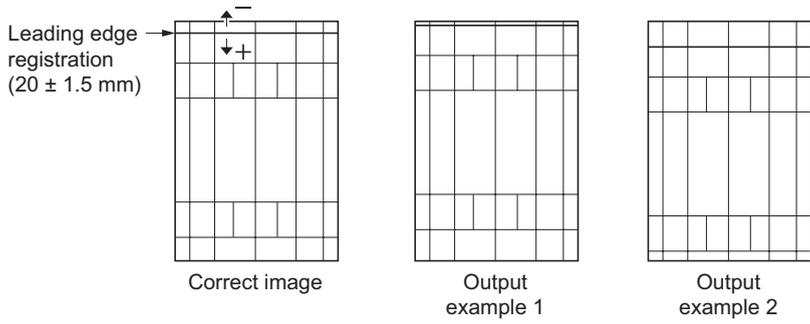
Section	Item No.	Content of maintenance item	Initial setting*
General	U019	Displaying the ROM version	-
Drive, paper feed and paper conveying system	U034	Adjusting the print start timing LSUOUT TOP LSUOUT LEFT LSUOUT TOP B/W	0/0/0/0/0/0/0/0/0/0/0 0/0/0/0/0/0 0/0/0/0/0/0
Operation panel and support equipment	U208	Setting the paper size for the paper feeder	Letter (Inch)/A4 (Metric)*1.
	U247	Setting the paper feed device	-
Mode setting	U327	Setting the cassette heater ON/OFF	MODE2/NONE
Other	U901	Checking 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 OK key. The ROM version are displayed. 2. Change the screen using the cursor up/down keys. <table border="1" data-bbox="331 573 1396 1406"> <thead> <tr> <th data-bbox="336 573 635 613">Display</th> <th data-bbox="635 573 1391 613">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>Color Table1</td><td>Color table 1</td></tr> <tr><td>Color Table2</td><td>Color table 2</td></tr> <tr><td>Motor CPU</td><td>Motor CPU</td></tr> <tr><td>Motor CPU Boot</td><td>Motor CPU booting</td></tr> <tr><td>H VLT CPU</td><td>High voltage CPU</td></tr> <tr><td>H VLT CPU Boot</td><td>High voltage CPU booting</td></tr> <tr><td>Sleep CPU</td><td>Sleep CPU</td></tr> <tr><td>Sleep CPU Boot</td><td>Sleep CPU booting</td></tr> <tr><td>500x2PF</td><td>Optional paper feeder ROM</td></tr> <tr><td>3000PF</td><td>3000-sheet paper feeder ROM</td></tr> <tr><td>1000DF</td><td>Optional document finisher ROM</td></tr> <tr><td>3000DF Main</td><td>Optional 3000-sheet document finisher main ROM</td></tr> <tr><td>3000DF Middle</td><td>Optional 3000-sheet document finisher Inner tray ROM</td></tr> <tr><td>Mail Box</td><td>Optional mailbox ROM</td></tr> <tr><td>Booklet</td><td>Optional center-folding unit ROM</td></tr> </tbody> </table> <p>Completion Press the Back 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	Color Table1	Color table 1	Color Table2	Color table 2	Motor CPU	Motor CPU	Motor CPU Boot	Motor CPU booting	H VLT CPU	High voltage CPU	H VLT CPU Boot	High voltage CPU booting	Sleep CPU	Sleep CPU	Sleep CPU Boot	Sleep CPU booting	500x2PF	Optional paper feeder ROM	3000PF	3000-sheet paper feeder ROM	1000DF	Optional document finisher ROM	3000DF Main	Optional 3000-sheet document finisher main ROM	3000DF Middle	Optional 3000-sheet document finisher Inner tray ROM	Mail Box	Optional mailbox ROM	Booklet	Optional center-folding unit ROM
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H VLT CPU Boot	High voltage CPU booting																																								
Sleep CPU	Sleep CPU																																								
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3000PF	3000-sheet paper feeder ROM																																								
1000DF	Optional document finisher ROM																																								
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3000DF Middle	Optional 3000-sheet document finisher Inner tray ROM																																								
Mail Box	Optional mailbox ROM																																								
Booklet	Optional center-folding unit ROM																																								

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"> 1. Press the OK key. 2. Select the item to be adjusted. <table border="1" data-bbox="335 566 1398 730"> <thead> <tr> <th>Display</th> <th>Description</th> </tr> </thead> <tbody> <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> <tr> <td>LSU Out Top B/W</td> <td>Leading edge registration adjustment in black/white mode</td> </tr> </tbody> </table> <p>Adjustment: Leading edge registration adjustment</p> <ol style="list-style-type: none"> 1. Select [LSU Out Top] or [LSU Out Top B/W]. 2. Press the OK key. 3. Select the item. <p>When [LSU Out Top] is selected.</p> <table border="1" data-bbox="335 952 1398 1883"> <thead> <tr> <th>Display</th> <th>Description</th> <th>Setting range</th> <th>Default setting</th> <th>Change in value per step</th> </tr> </thead> <tbody> <tr> <td>MPT (L)</td> <td>Paper feed from MP tray (when large size paper is used)</td> <td>-3.0 to 3.0</td> <td>0</td> <td>0.1 mm</td> </tr> <tr> <td>MPT Half (L)</td> <td>Paper feed from MP tray (when large size thick paper is used)</td> <td>-3.0 to 3.0</td> <td>0</td> <td>0.1 mm</td> </tr> <tr> <td>Cas (L)</td> <td>Paper feed from cassette (when large size paper is used)</td> <td>-3.0 to 3.0</td> <td>0</td> <td>0.1 mm</td> </tr> <tr> <td>Cas Half (L)</td> <td>Paper feed from cassette (when large size thick paper is used)</td> <td>-3.0 to 3.0</td> <td>0</td> <td>0.1 mm</td> </tr> <tr> <td>Dup (L)</td> <td>Duplex mode (second) (when large size paper is used)</td> <td>-3.0 to 3.0</td> <td>0</td> <td>0.1 mm</td> </tr> <tr> <td>Dup Half (L)</td> <td>Duplex mode (second) (when large size thick paper is used)</td> <td>-3.0 to 3.0</td> <td>0</td> <td>0.1 mm</td> </tr> <tr> <td>MPT (S)</td> <td>Paper feed from MP tray (when small size paper is used)</td> <td>-3.0 to 3.0</td> <td>0</td> <td>0.1 mm</td> </tr> <tr> <td>MPT Half (S)</td> <td>Paper feed from MP tray (when small size thick paper is used)</td> <td>-3.0 to 3.0</td> <td>0</td> <td>0.1 mm</td> </tr> <tr> <td>Cas (S)</td> <td>Paper feed from cassette (when small size paper is used)</td> <td>-3.0 to 3.0</td> <td>0</td> <td>0.1 mm</td> </tr> <tr> <td>Cas Half (S)</td> <td>Paper feed from cassette (when small size thick paper is used)</td> <td>-3.0 to 3.0</td> <td>0</td> <td>0.1 mm</td> </tr> <tr> <td>Dup (S)</td> <td>Duplex mode (second) (when small size paper is used)</td> <td>-3.0 to 3.0</td> <td>0</td> <td>0.1 mm</td> </tr> <tr> <td>Dup Half (S)</td> <td>Duplex mode (second) (when small size thick paper is used)</td> <td>-3.0 to 3.0</td> <td>0</td> <td>0.1 mm</td> </tr> </tbody> </table> <p>Large size: 218 mm or more in width of paper.</p>	Display	Description	LSU Out Top	Leading edge registration adjustment	LSU Out Left	Center line adjustment	LSU Out Top B/W	Leading edge registration adjustment in black/white mode	Display	Description	Setting range	Default setting	Change in value per step	MPT (L)	Paper feed from MP tray (when large size paper is used)	-3.0 to 3.0	0	0.1 mm	MPT Half (L)	Paper feed from MP tray (when large size thick paper is used)	-3.0 to 3.0	0	0.1 mm	Cas (L)	Paper feed from cassette (when large size paper is used)	-3.0 to 3.0	0	0.1 mm	Cas Half (L)	Paper feed from cassette (when large size thick paper is used)	-3.0 to 3.0	0	0.1 mm	Dup (L)	Duplex mode (second) (when large size paper is used)	-3.0 to 3.0	0	0.1 mm	Dup Half (L)	Duplex mode (second) (when large size thick paper is used)	-3.0 to 3.0	0	0.1 mm	MPT (S)	Paper feed from MP tray (when small size paper is used)	-3.0 to 3.0	0	0.1 mm	MPT Half (S)	Paper feed from MP tray (when small size thick paper is used)	-3.0 to 3.0	0	0.1 mm	Cas (S)	Paper feed from cassette (when small size paper is used)	-3.0 to 3.0	0	0.1 mm	Cas Half (S)	Paper feed from cassette (when small size thick paper is used)	-3.0 to 3.0	0	0.1 mm	Dup (S)	Duplex mode (second) (when small size paper is used)	-3.0 to 3.0	0	0.1 mm	Dup Half (S)	Duplex mode (second) (when small size thick paper is used)	-3.0 to 3.0	0	0.1 mm
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Dup Half (S)	Duplex mode (second) (when small size thick paper is used)	-3.0 to 3.0	0	0.1 mm																																																																						

Maintenance item No.	Description				
U034	When [LSU Out Top B/W] is selected.				
	Display	Description	Setting range	Default setting	Change in value per step
	MPT (L) B/W	Paper feed from MP tray (when large size paper is used)	-3.0 to 3.0	0	0.1 mm
	Cas (L) B/W	Paper feed from cassette (when large size paper is used)	-3.0 to 3.0	0	0.1 mm
	Dup (L) B/W	Duplex mode (second) (when large size paper is used)	-3.0 to 3.0	0	0.1 mm
	MPT (S) B/W	Paper feed from MP tray (when small size paper is used)	-3.0 to 3.0	0	0.1 mm
	Cas (S) B/W	Paper feed from cassette (when small size paper is used)	-3.0 to 3.0	0	0.1 mm
	Dup (S) B/W	Duplex mode (second) (when small size paper is used)	-3.0 to 3.0	0	0.1 mm
	<p>Large size: 218 mm or more in width of paper.</p> <p>4. Press the Menu key.</p> <p>5. Press the OK key to output a test pattern.</p> <p>6. Press the Menu key.</p> <p>7. Change the setting value using the Left/Right Select keys.</p> <p>For output example 1, increase the value. For output example 2, decrease the value.</p>				
					
	<p>8. Press the OK key. The value is set.</p>				
	<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>				

Maintenance item No.	Description																																			
U034	<p>Adjustment: Center line adjustment</p> <ol style="list-style-type: none"> 1. Select [LSU Out Left]. 2. Press the OK key. 3. Select the item. <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Display</th> <th style="text-align: left;">Description</th> <th style="text-align: left;">Setting range</th> <th style="text-align: left;">Initial setting</th> <th style="text-align: left;">Change in value per step</th> </tr> </thead> <tbody> <tr> <td>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>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>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>Cas 3</td> <td>Paper feed from optional cassette 3</td> <td>-3.0 to 3.0</td> <td>0</td> <td>0.1 mm</td> </tr> <tr> <td>Cas 4</td> <td>Paper feed from optional cassette 4</td> <td>-3.0 to 3.0</td> <td>0</td> <td>0.1 mm</td> </tr> <tr> <td>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> <ol style="list-style-type: none"> 4. Press the Menu key. 5. Press the OK key to output a test pattern. 6. Press the Menu key. 7. Change the setting value using the Left/Right Select keys. For output example 1, increase the value. For output example 2, decrease the value. <div style="text-align: center; margin: 10px 0;"> <p>Center line of printing (within ± 0.5 mm)</p> <p>Correct image Output example 1 Output example 2</p> </div> <p style="text-align: center;">Figure 1-3-6</p> <ol style="list-style-type: none"> 8. Press the OK key. The value is set. <p>Remark If the setting value for feeding from the MP tray is changed, the difference from the former value is added to or subtracted from the values of other items.</p> <p>Completion Press the Back key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	Setting range	Initial setting	Change in value per step	MPT	Paper feed from MP tray	-3.0 to 3.0	0	0.1 mm	Cas 1	Paper feed from cassette 1	-3.0 to 3.0	0	0.1 mm	Cas 2	Paper feed from cassette 2	-3.0 to 3.0	0	0.1 mm	Cas 3	Paper feed from optional cassette 3	-3.0 to 3.0	0	0.1 mm	Cas 4	Paper feed from optional cassette 4	-3.0 to 3.0	0	0.1 mm	Dup	Duplex mode (second)	-3.0 to 3.0	0	0.1 mm
Display	Description	Setting range	Initial setting	Change in value per step																																
MPT	Paper feed from MP tray	-3.0 to 3.0	0	0.1 mm																																
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Cas 3	Paper feed from optional cassette 3	-3.0 to 3.0	0	0.1 mm																																
Cas 4	Paper feed from optional cassette 4	-3.0 to 3.0	0	0.1 mm																																
Dup	Duplex mode (second)	-3.0 to 3.0	0	0.1 mm																																

Maintenance item No.	Description																								
U208	<p>Setting the paper size for the paper feeder</p> <p>Description Sets the size of paper used in 3000-sheet paper feeder.</p> <p>Purpose To change the setting when installing the 3000-sheet paper feeder or the size of paper used in the paper feeder is changed.</p> <p>Setting</p> <ol style="list-style-type: none"> 1. Press the OK key. 2. Select the paper size (A4, B5 or Letter). Initial setting: Letter (Inch specifications) A4 (Metric specifications) 3. Press the OK key. The setting is set. 4. Turn the main power switch off and on. 																								
U247	<p>Setting the paper feed device</p> <p>Description Turns on motor and clutches of 3000-sheet paper feeder.</p> <p>Purpose To check the operation of motor and clutches of paper feed device.</p> <ol style="list-style-type: none"> 1. Press the OK key. 2. Select [Feed] or [Clutch]. 3. Select the item to be operated using the Left/Right Select keys. 4. Press the OK key. The operation starts. <p>Feed</p> <table border="1" data-bbox="331 1043 1398 1169"> <thead> <tr> <th>Display</th> <th>Motor and clutches</th> <th>Operation</th> </tr> </thead> <tbody> <tr> <td>N/A</td> <td>Not Available</td> <td>-</td> </tr> <tr> <td>LCF</td> <td>PF conveying motor (PFCM)</td> <td>In operation</td> </tr> </tbody> </table> <p>Clutch</p> <table border="1" data-bbox="331 1223 1398 1429"> <thead> <tr> <th>Display</th> <th>Motor and clutches</th> <th>Operation</th> </tr> </thead> <tbody> <tr> <td>N/A</td> <td>Not Available</td> <td>-</td> </tr> <tr> <td>B</td> <td>PF conveying clutch (PFCCL)</td> <td>On for 1 s</td> </tr> <tr> <td>P1</td> <td>PF paper feed clutch 1 (PFPFCL1)</td> <td>On for 1 s</td> </tr> <tr> <td>P2</td> <td>PF paper feed clutch 2 (PFPFCL2)</td> <td>On for 1 s</td> </tr> </tbody> </table> <ol style="list-style-type: none"> 5. To turn each motor off, press the Back key. <p>Completion Press the Back key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Motor and clutches	Operation	N/A	Not Available	-	LCF	PF conveying motor (PFCM)	In operation	Display	Motor and clutches	Operation	N/A	Not Available	-	B	PF conveying clutch (PFCCL)	On for 1 s	P1	PF paper feed clutch 1 (PFPFCL1)	On for 1 s	P2	PF paper feed clutch 2 (PFPFCL2)	On for 1 s
Display	Motor and clutches	Operation																							
N/A	Not Available	-																							
LCF	PF conveying motor (PFCM)	In operation																							
Display	Motor and clutches	Operation																							
N/A	Not Available	-																							
B	PF conveying clutch (PFCCL)	On for 1 s																							
P1	PF paper feed clutch 1 (PFPFCL1)	On for 1 s																							
P2	PF paper feed clutch 2 (PFPFCL2)	On for 1 s																							

Maintenance item No.	Description																				
U327	<p>Setting the cassette heater ON/OFF</p> <p>Description Sets ON/OFF of the cassette heater.</p> <p>Purpose To change the setting according to the machine installation environment.</p> <p>Method</p> <ol style="list-style-type: none"> 1. Press the OK key. 2. Select the item. <table border="1" data-bbox="333 535 1398 660"> <thead> <tr> <th>Display</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>Mode</td> <td>Setting the cassette heater control</td> </tr> <tr> <td>Option Heater</td> <td>Optional cassette heater installed/not Installed setting</td> </tr> </tbody> </table> <p>Setting: [Mode]</p> <ol style="list-style-type: none"> 1. Change the setting using the Left/Right Select keys. <table border="1" data-bbox="333 761 1398 927"> <thead> <tr> <th>Display</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>Off</td> <td>Cassette heater OFF</td> </tr> <tr> <td>M1</td> <td>Cassette heater ON during sleep mode</td> </tr> <tr> <td>M2</td> <td>Cassette heater ON during sleep mode and standby</td> </tr> </tbody> </table> <p>Initial setting: Off</p> <ol style="list-style-type: none"> 2. Press the OK key. The setting is set. <p>Setting: [Option Heater]</p> <ol style="list-style-type: none"> 1. Change the setting using the Left/Right Select keys. <table border="1" data-bbox="333 1090 1398 1216"> <thead> <tr> <th>Display</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>Off</td> <td>Optional cassette heater not Installed</td> </tr> <tr> <td>On</td> <td>Optional cassette heater installed</td> </tr> </tbody> </table> <p>Initial setting: Off</p> <ol style="list-style-type: none"> 2. Press the OK key. The setting is set. <p>Completion Press the Back key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	Mode	Setting the cassette heater control	Option Heater	Optional cassette heater installed/not Installed setting	Display	Description	Off	Cassette heater OFF	M1	Cassette heater ON during sleep mode	M2	Cassette heater ON during sleep mode and standby	Display	Description	Off	Optional cassette heater not Installed	On	Optional cassette heater installed
Display	Description																				
Mode	Setting the cassette heater control																				
Option Heater	Optional cassette heater installed/not Installed setting																				
Display	Description																				
Off	Cassette heater OFF																				
M1	Cassette heater ON during sleep mode																				
M2	Cassette heater ON during sleep mode and standby																				
Display	Description																				
Off	Optional cassette heater not Installed																				
On	Optional cassette heater installed																				

Maintenance item No.	Description																
U901	<p>Checking 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.</p> <p>Method</p> <ol style="list-style-type: none"> 1. Press the OK key. The counts by paper feed locations are displayed. <table border="1" data-bbox="335 504 1396 840"> <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 (optional paper feeder)</td> </tr> <tr> <td>Cassette 4</td> <td>Cassette 4 (optional paper feeder)</td> </tr> <tr> <td>Duplex</td> <td>Duplex unit</td> </tr> <tr> <td>LCF</td> <td>3000-sheet paper feeder</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, Cassette 4 and LCF cannot be cleared. 2. Enter 0 using the Right Select key. 3. Press the OK key. The counts is cleared. <p>Completion Press the Back 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 (optional paper feeder)	Cassette 4	Cassette 4 (optional paper feeder)	Duplex	Duplex unit	LCF	3000-sheet paper feeder
Display	Description																
MP Tray	MP tray																
Cassette 1	Cassette 1																
Cassette 2	Cassette 2																
Cassette 3	Cassette 3 (optional paper feeder)																
Cassette 4	Cassette 4 (optional paper feeder)																
Duplex	Duplex unit																
LCF	3000-sheet paper feeder																

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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 4 to turn left cover 4 switch off and on.

(2) Paper misfeed detection conditions

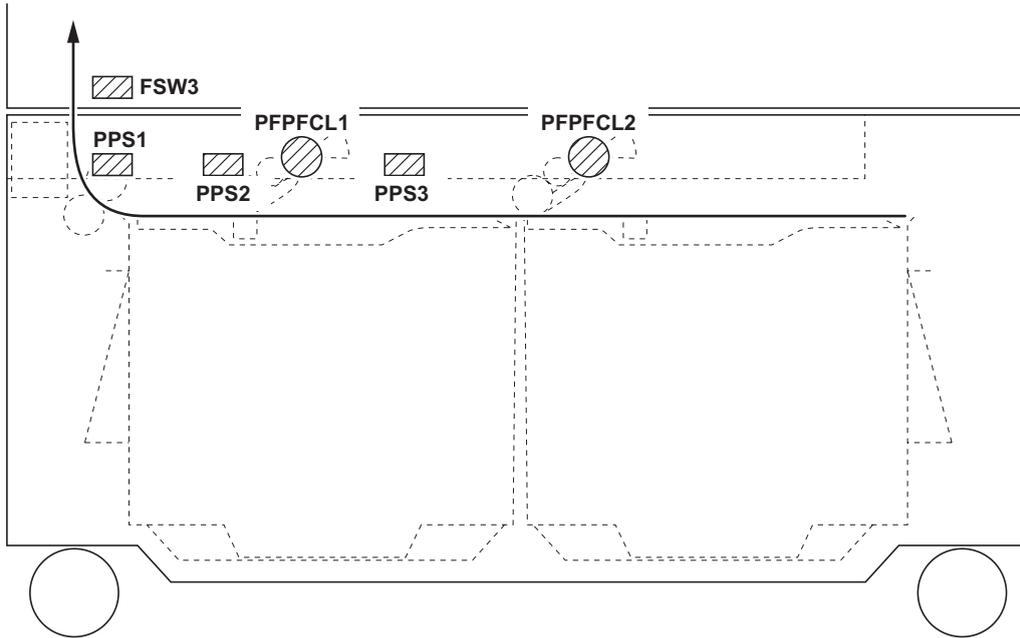


Figure 1-4-1

Fullcolor machine

Section	Jam code	Conditions	Specified time
Paper feed section	09 Sequence error JAM	Sequence error is occurred between the machine and 3000-sheet paper feeder.	-
	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 (PFCL1) turning on.	620 ms
	15 Misfeed in paper feeder horizontal paper conveying section 1	Paper path sensor 3 (PPS3) does not turn on within specified time of PF paper feed clutch 2 (PFCL2) turning on.	360 ms
	16 Misfeed in paper feeder horizontal paper conveying section 2	Paper path sensor 2 (PPS2) does not turn on within specified time of the paper path sensor 3 (PPS3) turning on.	380 ms
	17 Misfeed in paper feeder horizontal paper conveying section 3	Paper path sensor 1 (PPS1) does not turn on within specified time of the paper path sensor 2 (PPS2) turning on.	250 ms
	24 Multiple sheets in cassette 3 paper feed section	Feed switch 3 (FSW3) does not turn off within specified time of its turning on.	950 ms

Monochrome machine

Section	Jam code	Conditions	Specified time
Paper feed section	09 Sequence error jam	A communication sequence error occurs between the machine and the 3000-sheet paper feeder.	-
	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 (PFCL1) turning on.	780 ms
	15 Misfeed in paper feeder horizontal paper conveying section 1	Paper path sensor 3 (PPS3) does not turn on within specified time of PF paper feed clutch 2 (PFCL2) turning on.	360 ms
	16 Misfeed in paper feeder horizontal paper conveying section 2	Paper path sensor 2 (PPS2) does not turn on within specified time of the paper path sensor 3 (PPS3) turning on.	380 ms
	17 Misfeed in paper feeder horizontal paper conveying section 3	Paper path sensor 1 (PPS1) does not turn on within specified time of the paper path sensor 2 (PPS2) turning on.	250 ms
	21 Multiple sheets in paper feed section	The feed switch 3 (FSW3) does not turn off within specified time of its turning on.	1050 ms

(3) Paper misfeeds**Fullcolor machine**

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.
	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.
	Check if the clutch malfunctions.	Run maintenance item U247 and select following clutch on the touch panel to be turned on and off. Check the status and remedy if necessary. PF paper feed clutch 1/2, PF paper conveying clutch
(2) A paper jam in the paper feed section is indicated during copying (jam in paper feeder horizontal paper conveying section). Jam code 15	Electrical problem with clutch.	Check (see page 1-4-11).
	Paper is extremely curled.	Change the paper.
	Check if the paper side guides are deformed.	Check visually and replace.
	Defective paper path sensor 3.	With 5 V DC present at CN6-12 on the PF main PWB, check if CN6-11 on the PF main PWB remains low or high when paper path sensor 3 is turned on and off. If it does, replace paper path sensor 3.
(3) A paper jam in the paper feed section is indicated during copying (jam in paper feeder horizontal paper conveying section). Jam code 16	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 1-4-11).
	Paper is extremely curled.	Change the paper.
	Check if the paper side guides are deformed.	Check visually and replace.
Defective paper path sensor 2.	With 5 V DC present at CN6-9 on the PF main PWB, check if CN6-8 on the PF main PWB remains low or high when paper path sensor 2 is turned on and off. If it does, replace paper path sensor 2.	
	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 1-4-11).

Problem	Causes/check procedures	Corrective measures
(4) A paper jam in the paper feed section is indicated during copying (jam in paper feeder horizontal paper conveying section). Jam code 17	Paper is extremely curled.	Change the paper.
	Check if the paper side guides are deformed.	Check visually and replace.
	Defective paper path sensor 1.	With 5 V DC present at CN6-6 on the PF main PWB, check if CN6-5 on the PF main PWB remains low or high when paper path sensor 1 is turned on and off. If it does, replace paper path sensor 1.
	Check if PF paper conveying clutch malfunctions.	Run maintenance item U247 and select PF paper conveying clutch on the touch panel to be turned on and off. Check the status and remedy if necessary.
	Electrical problem with PF paper conveying clutch.	Check (see page 1-4-11).
(5) A paper jam in the paper feed section is indicated during copying (multiple sheets in cassette 3). Jam code 24	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.
	Defective feed pulleys or feed rollers.	Check visually and replace.
	Defective PF paper feed clutch 1.	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 1-4-11).

Monochrome machine

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.	Replace the paper.
	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 the clutch malfunctions.	Run maintenance item U247 and select following clutch on the touch panel to be turned on and off. Check the status and remedy if necessary. PF paper feed clutch 1/2, PF paper conveying clutch
	Electrical problem with clutch.	Check (see page 1-4-11).
(2) A paper jam in the paper feed section is indicated during copying (jam in paper feeder horizontal paper conveying section). Jam code 15	Paper is extremely curled.	Replace the paper.
	Check if the paper side guides are deformed.	Check visually and replace.
	Defective paper path sensor 3.	With 5 V DC present at CN6-12 on the PF main PWB, check if CN6-11 on the PF main PWB remains low or high when paper path sensor 3 is turned on and off. If it does, replace paper path sensor 3.
	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 1-4-11).
(3) A paper jam in the paper feed section is indicated during copying (jam in paper feeder horizontal paper conveying section). Jam code 16	Paper is extremely curled.	Replace the paper.
	Check if the paper side guides are deformed.	Check visually and replace.
	Defective paper path sensor 2.	With 5 V DC present at CN6-9 on the PF main PWB, check if CN6-8 on the PF main PWB remains low or high when paper path sensor 2 is turned on and off. If it does, replace paper path sensor 2.
	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 1-4-11).

Problem	Causes/check procedures	Corrective measures
(4) A paper jam in the paper feed section is indicated during copying (jam in paper feeder horizontal paper conveying section). Jam code 17	Paper is extremely curled.	Replace the paper.
	Check if the paper side guides are deformed.	Check visually and replace.
	Defective paper path sensor 1.	With 5 V DC present at CN6-6 on the PF main PWB, check if CN6-5 on the PF main PWB remains low or high when paper path sensor 1 is turned on and off. If it does, replace paper path sensor 1.
	Check if PF paper conveying clutch malfunctions.	Run maintenance item U247 and select PF paper conveying clutch on the touch panel to be turned on and off. Check the status and remedy if necessary.
	Electrical problem with PF paper conveying clutch.	Check (see page 1-4-11).
(5) 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 feed switch 3 if indication of the corresponding switch on the touch panel is not displayed in reverse.

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 cover switch off and back on.

(2) Self diagnostic codes

Fullcolor machine

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C1100	PF lift motor 1 error A motor over-current signal is detected continuously for 1 s or longer.	Poor contact in the connector terminals.	Check the connection of connector YC27 on the engine PWB and the connector on the PF main PWB, and the continuity across the connector terminals. Repair or replace if necessary.
		PF lift motor 1 does not rotate correctly (the motor is overloaded).	Check the gears and remedy if necessary.
C1110	PF lift motor 2 error A motor over-current signal is detected continuously for 1 s or longer.	Poor contact in the connector terminals.	Check the connection of connector YC27 on the engine PWB and the connector on the PF main PWB, and the continuity across the connector terminals. Repair or replace if necessary.
		PF lift motor 2 does not rotate correctly (the motor is overloaded).	Check the gears and remedy if necessary.
C1120	PF left lift position problem Level switch 1 does not turn on within 30 s of PF lift motor 1 turning on.	Poor contact in the connector terminals.	Check the connection of connector YC27 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 level switch 1.	Check if YC5-4 on the PF main PWB goes low when level switch 1 is turned off. If not, replace level switch 1.
		Defective PF lift motor 1.	Check for continuity across the coil. If none, replace PF lift motor 1.
		The PF left lift does not rise properly.	Check the gears and belts, and remedy if necessary.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C1130	PF right lift position problem Level switch 2 does not turn on within 30 s of PF lift motor 2 turning on.	Poor contact in the connector terminals.	Check the connection of connector YC27 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 level switch 2.	Check if YC5-7 on the PF main PWB goes low when level switch 2 is turned off. If not, replace level switch 2.
		Defective PF lift motor 2.	Check for continuity across the coil. If none, replace PF lift motor 2.
		The PF right lift does not rise properly.	Check the gears and belts, and remedy if necessary.
C1800	Paper feeder communication error A communication error from paper feeder is detected 10 times in succession.	Poor contact in the connector terminals.	Check the connection of connector YC27 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 PWB.	Replace the PF main PWB or engine PWB and check for correct operation.
C1900	Paper feeder EEPROM error When writing the data, the write data and the read data is not continuously in agreement three times.	Poor contact in the connector terminals.	Check the connection of connector YC27 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 engine PWB.	Replace the engine PWB and check for correct operation.
		Defective paper feeder.	Replace the paper feeder with another unit and check the operation. If the operation is normal, replace or repair optional paper feeder.
C2600	PF paper conveying motor error The lock signal of the motor is detected above 450 ms.	Poor contact in the connector terminals.	Check the connection of connector 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 conveying motor.	Replace the PF paper conveying motor.
		Defective PWB.	Replace the PF main PWB or engine PWB and check for correct operation.

Monochrome machine

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C1100	PF lift motor 1 error A motor over-current signal is detected continuously for 1 s or longer.	Poor contact in the connector terminals.	Check the connection of connector YC15 on the engine PWB and the connector on the PF main PWB, and the continuity across the connector terminals. Repair or replace if necessary.
		PF lift motor 1 does not rotate correctly (the motor is overloaded).	Check the gears and remedy if necessary.
C1110	PF lift motor 2 error A motor over-current signal is detected continuously for 1 s or longer.	Poor contact in the connector terminals.	Check the connection of connector YC15 on the engine PWB and the connector on the PF main PWB, and the continuity across the connector terminals. Repair or replace if necessary.
		PF lift motor 2 does not rotate correctly (the motor is overloaded).	Check the gears and remedy if necessary.
C1120	PF left lift position problem Level switch 1 does not turn on within 30 s of PF lift motor 1 turning on.	Poor contact in the connector terminals.	Check the connection of connector YC15 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 level switch 1.	Check if YC5-4 on the PF main PWB goes low when level switch 1 is turned off. If not, replace level switch 1.
		Defective PF lift motor 1.	Check for continuity across the coil. If none, replace PF lift motor 1.
		The PF left lift does not rise properly.	Check the gears and belts, and remedy if necessary.
C1130	PF right lift position problem Level switch 2 does not turn on within 30 s of PF lift motor 2 turning on.	Poor contact in the connector terminals.	Check the connection of connector YC15 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 level switch 2.	Check if YC5-7 on the PF main PWB goes low when level switch 2 is turned off. If not, replace level switch 2.
		Defective PF lift motor 2.	Check for continuity across the coil. If none, replace PF lift motor 2.
		The PF right lift does not rise properly.	Check the gears and belts, and remedy if necessary.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C1800	Paper feeder communication error A communication error from paper feeder is detected 10 times in succession.	Poor contact in the connector terminals.	Check the connection of connector YC15 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 PWB.	Replace the PF main PWB or engine PWB and check for correct operation.
C1900	Paper feeder EEPROM error When writing the data, the write data and the read data is not continuously in agreement three times.	Poor contact in the connector terminals.	Check the connection of connector YC15 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 engine PWB.	Replace the engine PWB and check for correct operation.
		Defective paper feeder.	Replace the paper feeder with another unit and check the operation. If the operation is normal, replace or repair optional paper feeder.
C2600	PF paper conveying motor error The lock signal of the motor is detected above 450 ms.	Poor contact in the connector terminals.	Check the connection of connector YC15 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 conveying motor.	Replace the PF paper conveying 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) The PF paper conveying 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 paper conveying motor.	Run maintenance item U247 and check if the PF paper conveying motor operates when CN2-2 on the PF main PWB goes low. If not, replace the PF paper conveying motor.
	4. Defective PF main PWB.	Run maintenance item U247 and check if CN2-2 on the PF main PWB goes low. If not, replace the PF main PWB.
(3) The PF lift motor 1/2 does not operate.	1. Broken motor coil.	Check for continuity across the coil. If none, replace the motor.
	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.	Check if CN7-13 or CN7-6 on the PF main PWB goes low right after the cassette is installed. If not, replace the PF main PWB.
(4) 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: CN4-3 PF paper feed clutch 2: CN4-1 PF paper conveying clutch: CN4-5 PF separation clutch: CN4-7

1-4-4 Mechanical problems

Problem	Causes/check procedures	Corrective measures
(1) No primary paper feed.	Check if the PF separation roller 1 or 2 is soiled with paper powder.	Clean with isopropyl alcohol.
	Check if PF paper feed roller 1 or 2 is soiled with paper powder.	Clean with isopropyl alcohol.
	Check if the PF separation roller 1 or 2 is worn or deformed.	Replace (see page 1-5-2).
	Check if PF paper feed roller 1 or 2 is worn or deformed.	Replace (see page 1-5-3).
	Check if PF paper feed clutch 1, 2, PF paper conveying clutch or PF separation clutch mal-functions.	Remedy or replace.
(2) Skewed paper feed.	Check if the PF separation roller 1 or 2 is worn or deformed.	Replace (see page 1-5-2).
	Check if PF paper feed roller 1 or 2 is worn or deformed.	Replace (see page 1-5-3).
	Check if the paper side guides are deformed.	Remedy or replace.
(3) Multiple sheets of paper are fed at one time.	Check if the paper is excessively curled.	Change the paper.
	Paper is not loaded correctly.	Correct.
	Check if the PF separation roller 1 or 2 is worn or deformed.	Replace (see page 1-5-2).
(4) Paper jams.	Check if the paper is excessively curled.	Change the paper.
	Check if the paper side guides are deformed.	Remedy or replace.
(5) Abnormal noise is heard.	Check if rollers and gears operate smoothly.	Grease the bushings and gears.
	Check for any abnormality with motors and clutches.	Replace.
	Check for any drive belt out of place.	Remedy if necessary.

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 PF separation roller 1 and 2

Clean or replace PF separation roller 1 and 2 as follows.

Procedure

1. Open left cover 4.
2. Remove two stop rings (a).
3. Remove the shaft.
4. Remove the PF separation roller assembly.
5. Remove stop ring (b) securing PF separation roller 2 and then the roller.
6. Remove stop ring (c) securing PF separation roller 1 and then the roller.
7. Clean or replace PF separation roller 1 and 2.
8. Refit all removed parts.

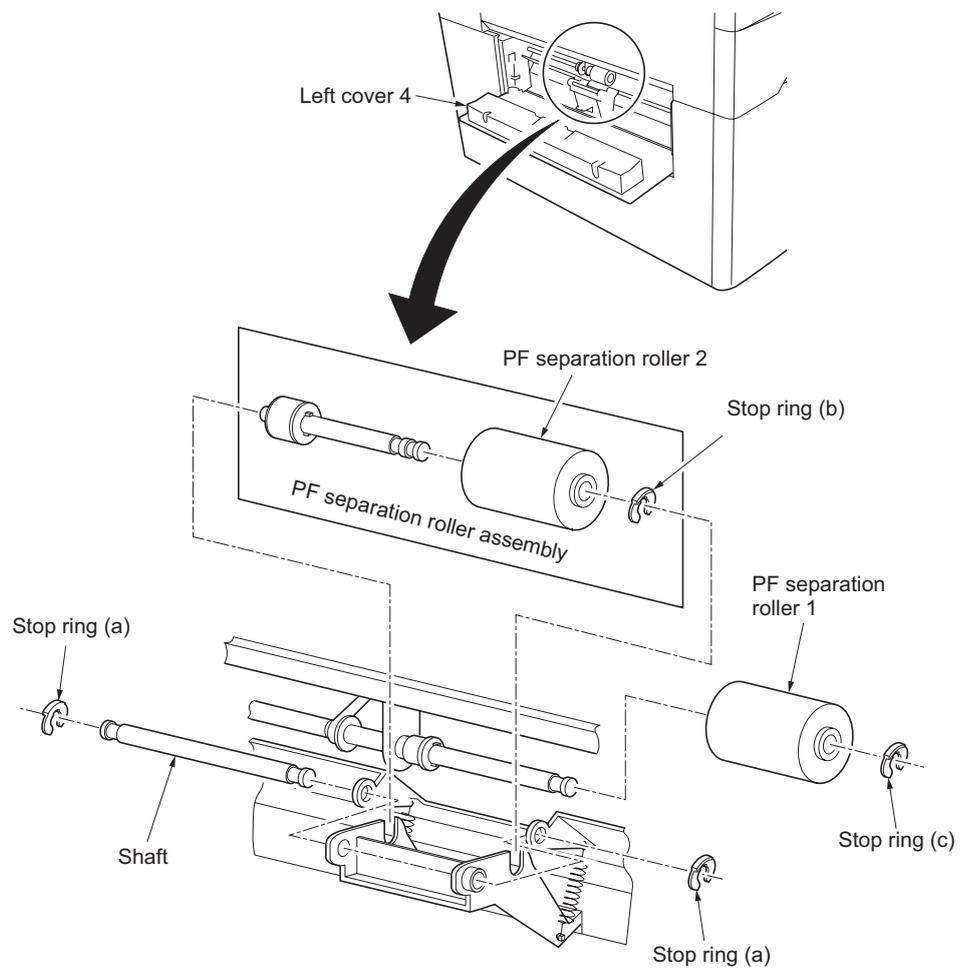


Figure 1-5-1

(2) Detaching and refitting the PF paper conveying unit

Procedure

1. Pull the cassette out.
2. Remove left cover 4.
3. Remove two screws holding the PF paper conveying unit and then the unit.

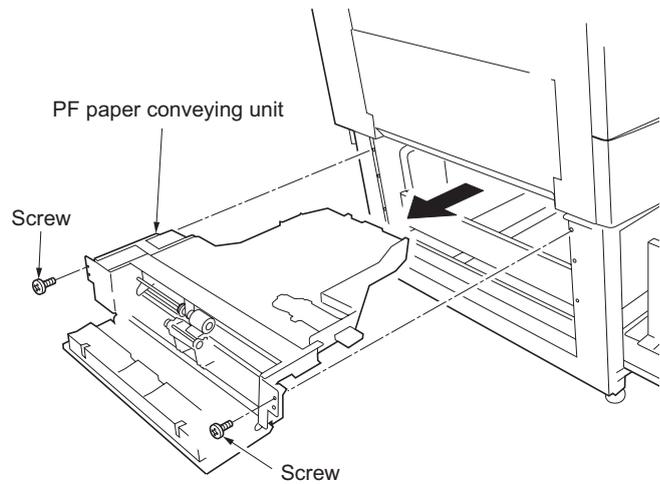


Figure 1-5-2

(3) Detaching and refitting PF paper feed rollers 1 and 2

Clean or replace PF paper feed roller 1 and 2 as follows.

Procedure

1. Turn the PF paper conveying unit over.
2. Remove the stop ring while lifting the paper feed roller section.
3. Pull out the shifting shaft and then PF paper feed rollers 1 and 2.
4. Clean or replace PF paper feed rollers 1 and 2.
5. Refit all removed parts.

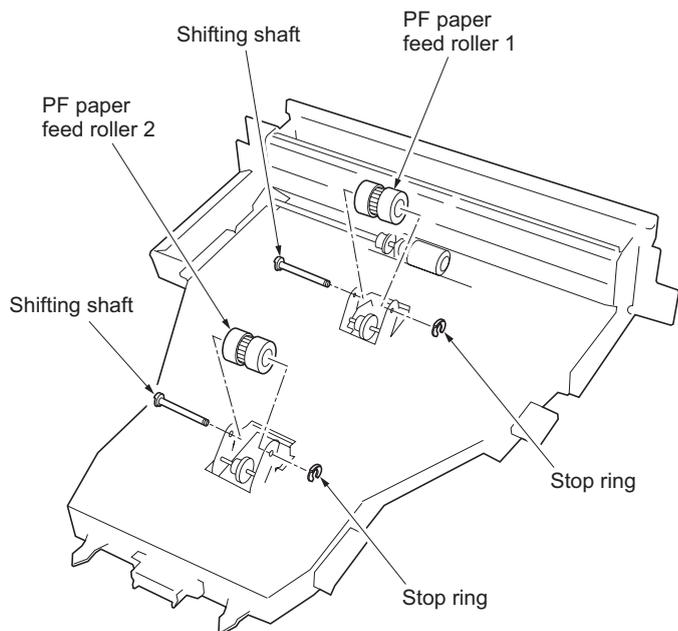


Figure 1-5-3

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

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

Procedure

1. Connect the power plug to the wall outlet and turn the main power switch on.
2. Run maintenance item 402 and output the test pattern.
3. If the center of the paper and that of the test pattern output do not meet the reference value, perform the following adjustment.
<Reference value> Deviation to the left or right: 1.5 mm or less
4. Pull out the cassette of the paper feeder and loosen three screws securing the adjuster.
If the test pattern output looks like A, move the adjuster in the direction of the black arrow (←) and retighten three screws.
If the test pattern output looks like B, move the adjuster in the direction of the white arrow (→) and retighten three screws.

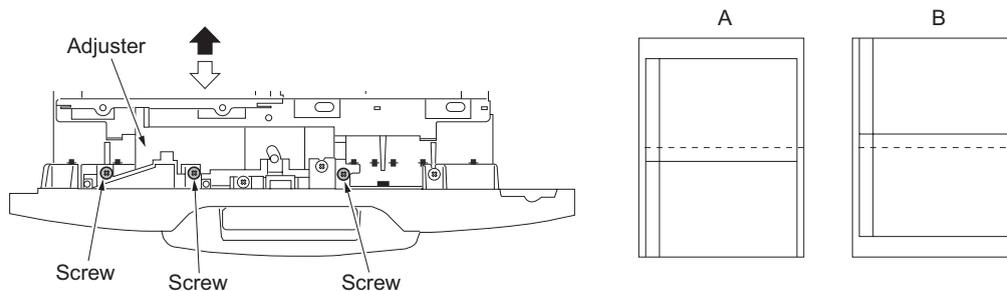


Figure 1-5-4

5. Close the cassette.
6. Output a test pattern again.
7. Repeat steps 4 to 6 until the centers of the paper and the test pattern meet the reference value.
8. If the position of the adjuster is changed, adjust the front cover position.
If the front cover position is not proper, the cassette may not be fixed with the magnet or the gap between the front cover and the paper feeder may be opened.
9. Loosen six screws.
10. Move the position of the front cover by the amount of divisions of the level that corresponds to the movement of the adjuster (amount of movement of the level (a) using the level (b)).
11. Retighten six screws.

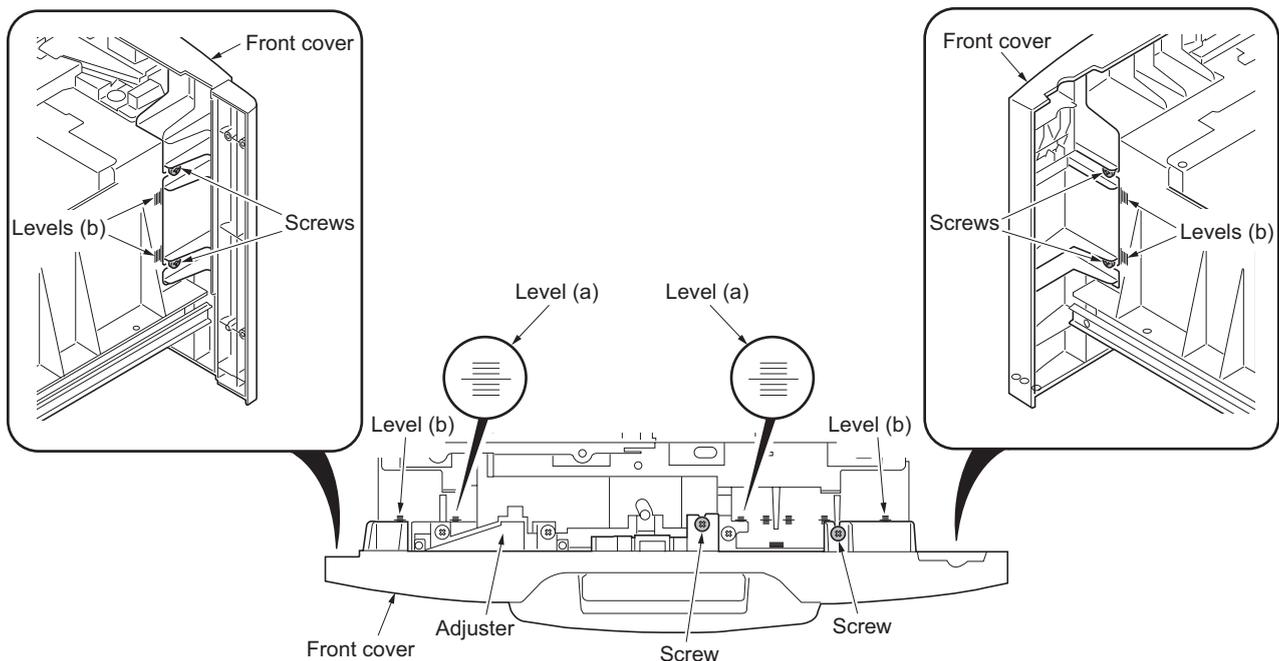


Figure 1-5-5

(5) Setting the paper size

Procedure

1. Pull out the cassette of the paper feeder. Remove the lower cassette from the machine.
2. Move the sliders at front and rear inward (two at each point).
3. Remove the screw from each of the front and rear lateral size adjusters.

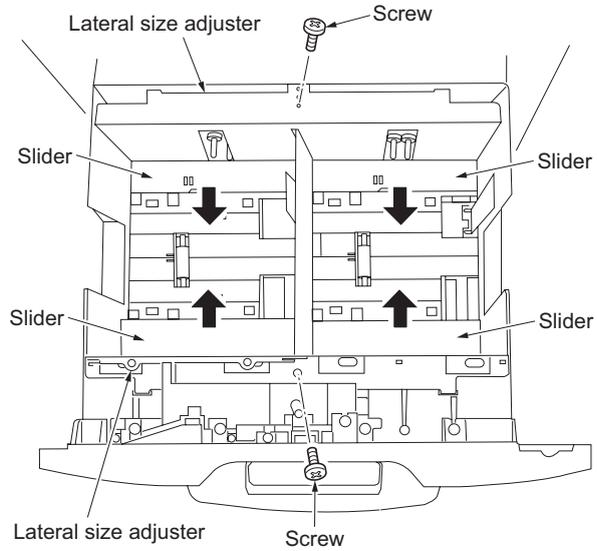


Figure 1-5-6

4. Insert the upper tabs and lower tabs of the front and rear lateral size adjusters into the upper slots and lower slots respectively such that the size indicators point to the size of paper to be used. Secure the lateral size adjusters using the screw for each. Check the paper size at the position with the front and rear upper tabs inserted into the upper slots.
 - Upper slots positions on the front side:
Front (A4), middle (Letter), rear (B5)
 - Upper slots positions on the rear side:
Front (B5), middle (Letter), rear (A4)
5. Move the front and rear sliders (two at each point) outward until they make contact with the lateral size adjusters.

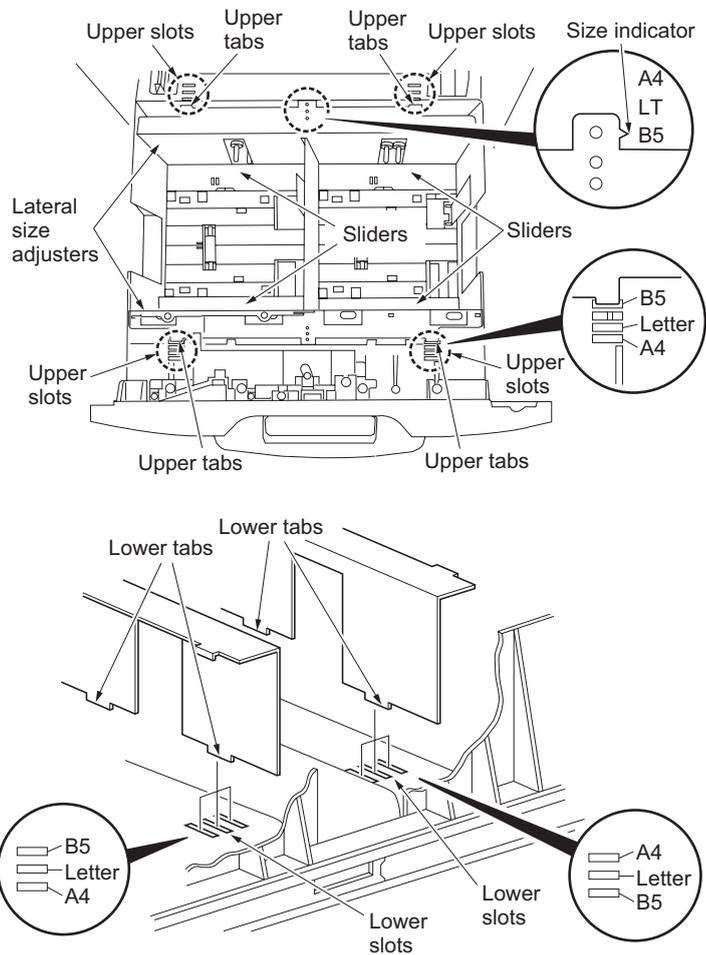


Figure 1-5-7

6. Remove the screw and remove the longitudinal size adjusters.
7. Depending on the paper size, align either the A4 pins or the B5 pins with the pin holes in the longitudinal size adjusters, fit the adjusters and secure each of them with a screw.
For inch specifications, use the supplied longitudinal size adjuster and screw.

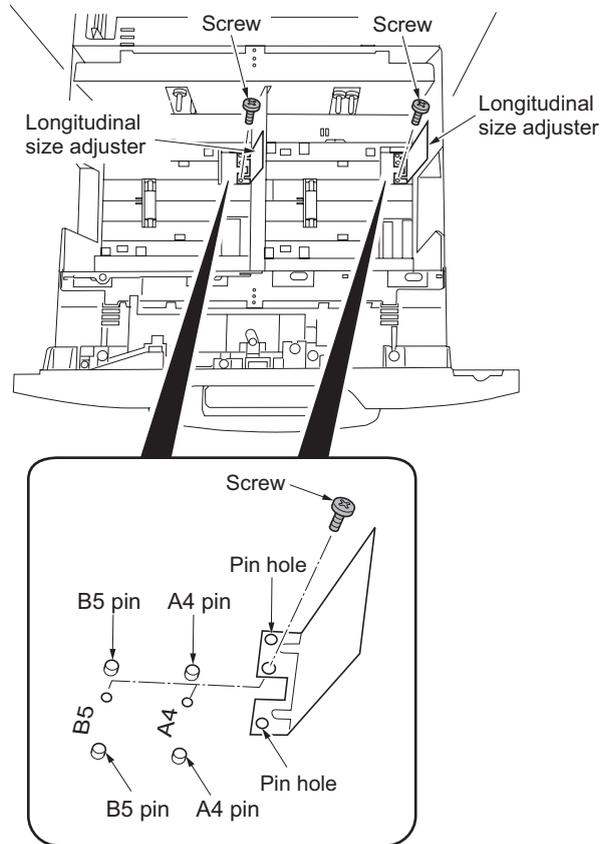


Figure 1-5-8

8. Refit the cassette.
9. Connect the power plug to the wall outlet and turn the main power switch on.
10. Run maintenance item U208 and set the paper size for the paper feeder (B5/A4/Letter).

2-1-1 Mechanical construction

The paper feeder consists mainly of the left and right cassettes and separation section.

The left cassette paper feed section sends paper from the lift to PF separation rollers 1 and 2. When the left cassette becomes empty, the right cassette paper feed section conveys paper onto the lift of the left cassette.

The PF separation rollers 1 and 2 in the separation section convey paper received from the left cassette paper feed section into the machine, preventing multiple sheets from being fed at one time.

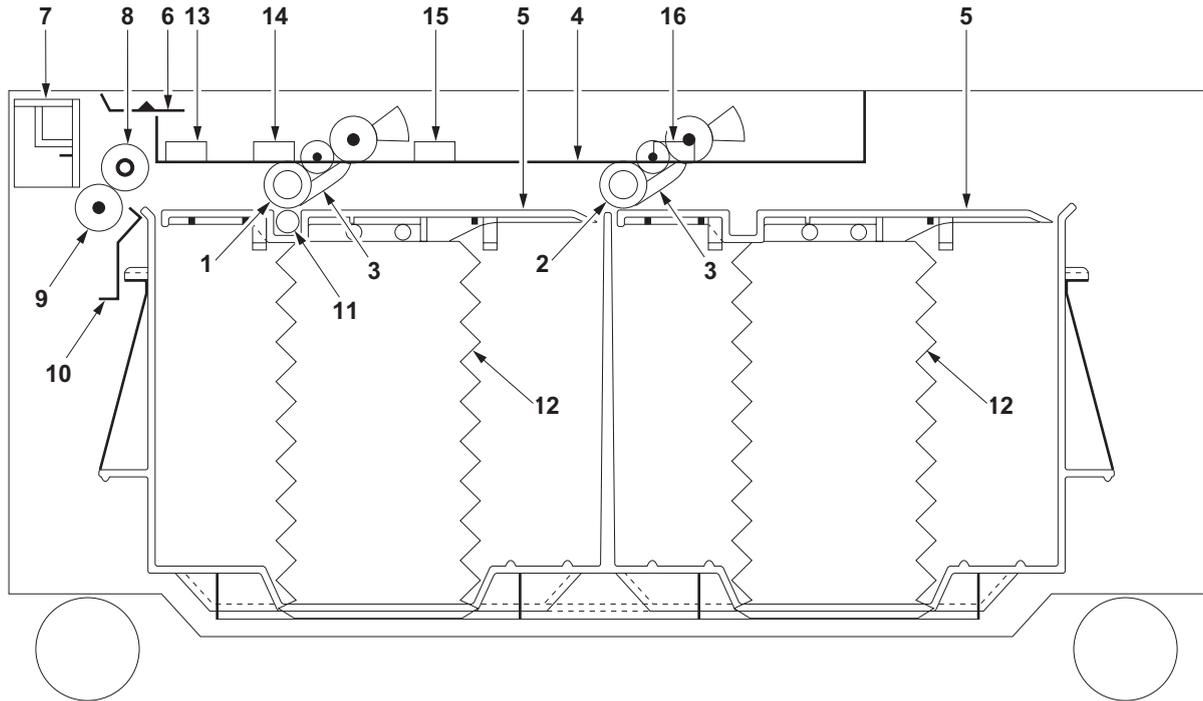


Figure 2-1-1

- | | |
|----------------------------|---------------------------------|
| (1) PF paper feed roller 1 | (9) PF separation roller 2 |
| (2) PF paper feed roller 2 | (10) Paper guide D |
| (3) Pickup arms | (11) Guide pulley |
| (4) Paper conveying base | (12) Air dampers |
| (5) Lifts | (13) Paper path sensor 1 (PPS1) |
| (6) Paper guide U | (14) Paper path sensor 2 (PPS2) |
| (7) Left cover 4 | (15) Paper path sensor 3 (PPS3) |
| (8) PF separation roller 1 | (16) Paper empty sensor (PES) |

(1) Left cassette paper feed

As the PF paper conveying clutch (PFCCL) and PF separation clutch (PFSCCL) turns on, the drive is transmitted to PF separation rollers 1 and 2, starting paper feed from the left cassette.

The PF separation rollers 1 and 2 ensure that the paper is fed one sheet at a time and that it is fed into the machine correctly. To prevent multiple sheets from being fed, there is a torque limiter on PF separation roller 2.

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

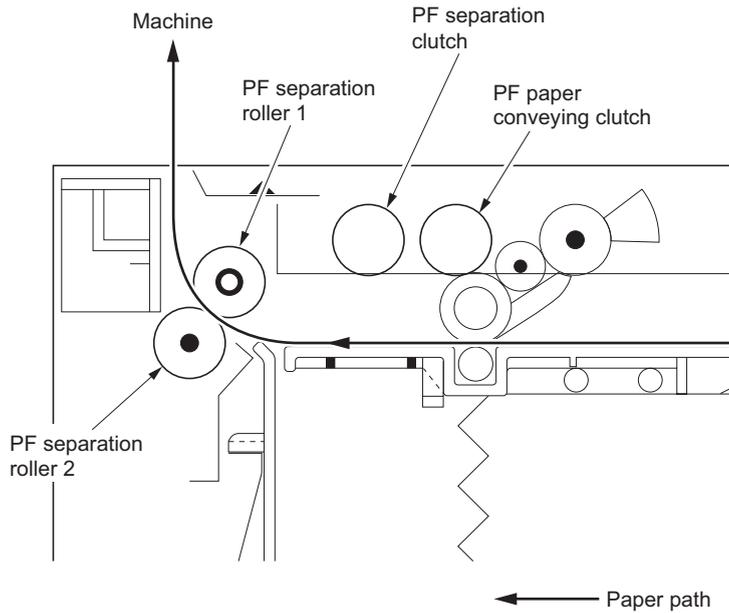


Figure 2-1-2 Left cassette paper feed section

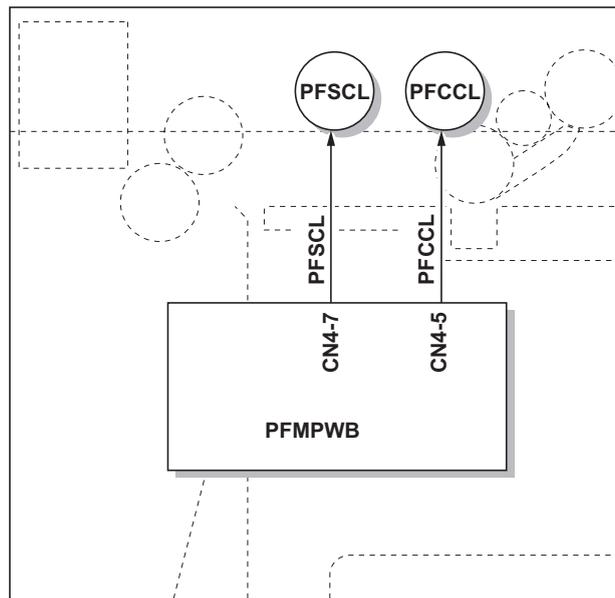


Figure 2-1-3 Left cassette paper feed section block diagram

(2) Right cassette paper feed

As the last sheet in the left cassette is fed, PF paper feed clutch 2 (PFPFCL2) and PF paper feed clutch 1 (PFPFCL1) turn on for paper feed from the right cassette. PF paper feed rollers 1 and 2 start to rotate to convey paper from the right cassette onto the left cassette lift.

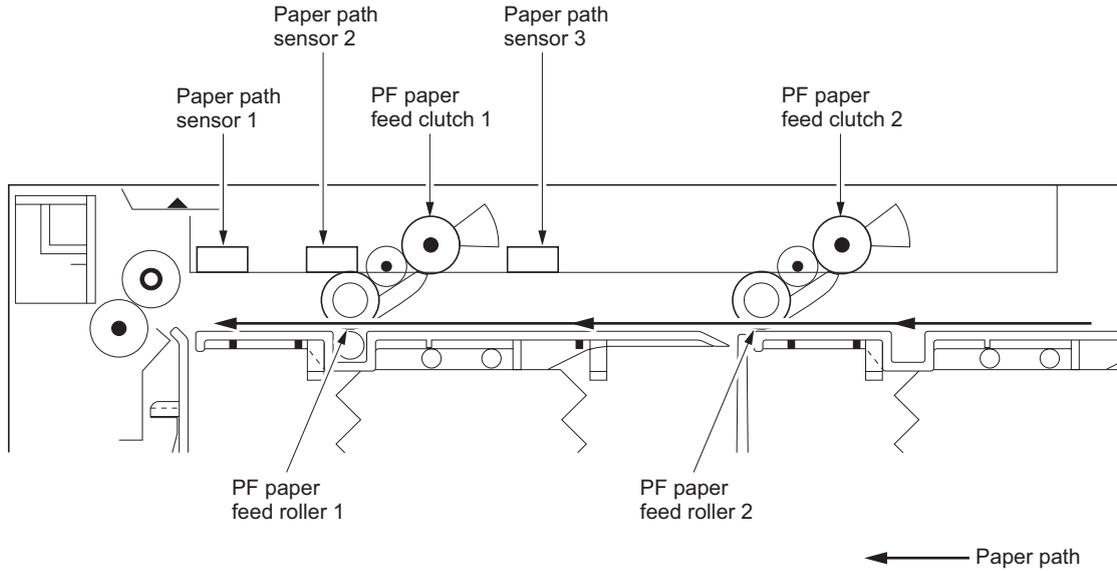


Figure 2-1-4 Right cassette paper feed section

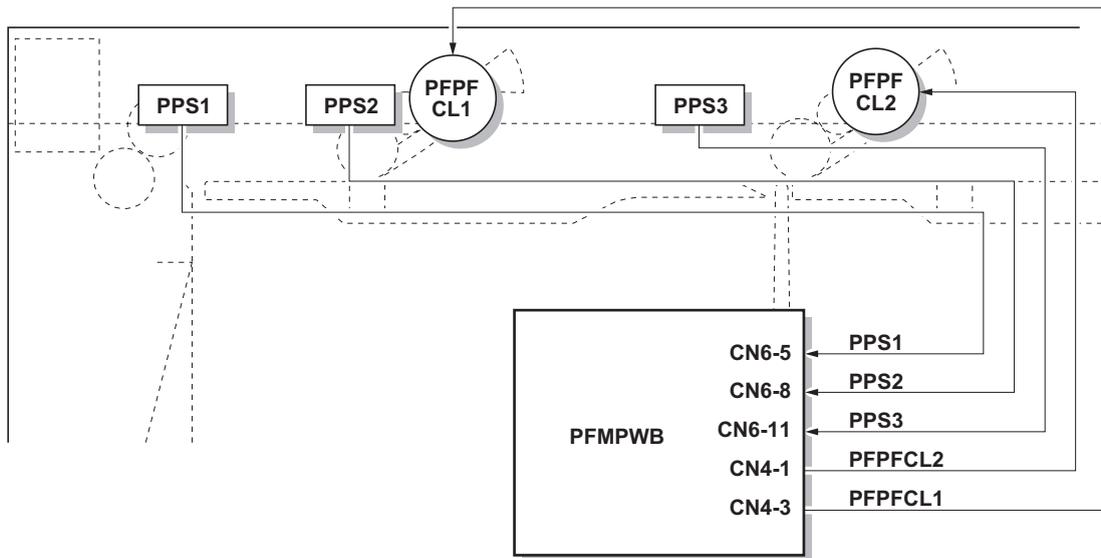


Figure 2-1-5 Right cassette paper feed section block diagram

(3) Raising and lowering the lifts

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

PF lift motor 2 (PFLM2) drives the right lift belt assembly that winches the belt up and hence raises the lift until it is stopped by level switch 2 (LSW2).

When paper is loaded on the lift and the deck is closed, the lift is raised until level switch 2 (LSW2) turns on.

When level switch 2 (LSW2) is turned off as the paper on the lift is used, PF lift motor 2 (PFLM2) starts to raise the lift until the switch turns on.

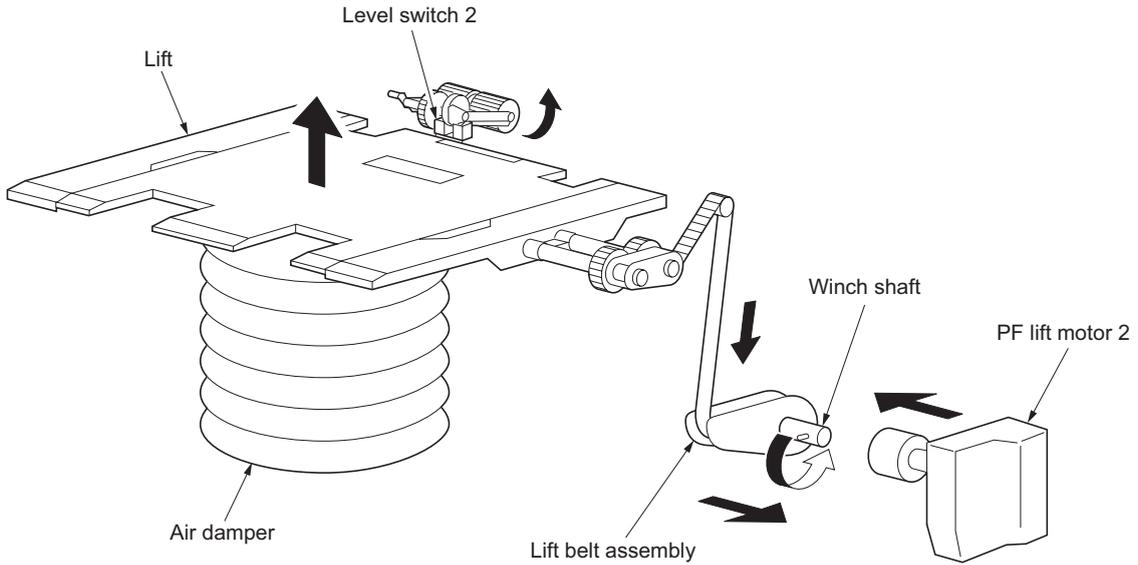


Figure 2-1-6 Raising and lowering the lift

When the cassette is opened for removing a jammed paper or other purposes, the winch shaft is released from its holder on PF lift motor 2 (PFLM2), allowing the lift to descend under its own weight. The air damper buffers the impact of the descending lift.

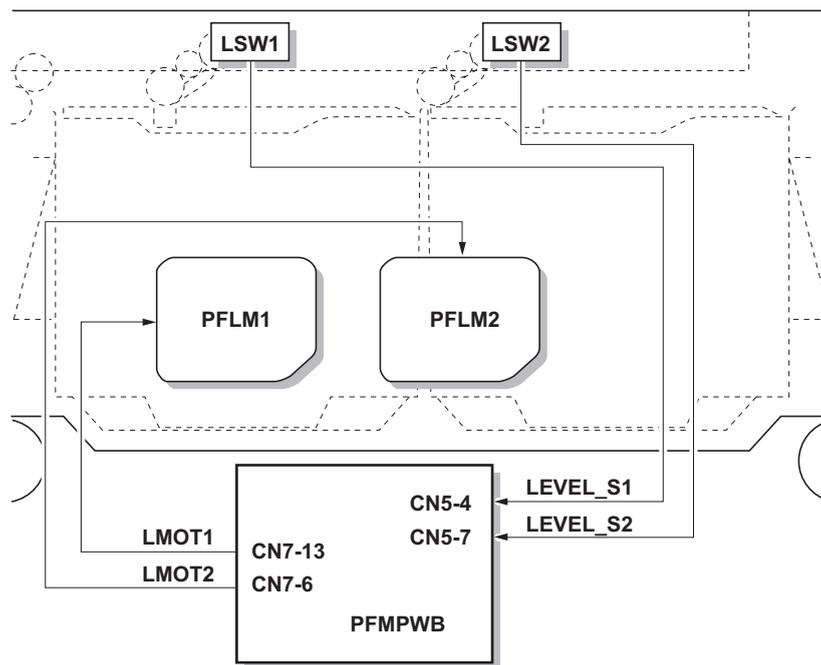


Figure 2-1-7 Lift block diagram

(4) Detecting the paper level

The lift rises as paper in the cassette is used.

When the remaining number of sheets in either right or left cassette reduces to around 100 to 250 sheets, the projection on the lift belt assembly pushes against the sensor lever which turns the relevant paper level sensor 1 or 2 (PLS1/2) on.

When both paper level sensors 1 and 2 (PLS1/2) have turned on, the message [Low on paper.] is shown on the machine message display. This message is not shown when only one of them is on.

As more copies are made with the message on, paper path sensors 1, 2 and 3 (PPS1/2/3) or the paper empty sensor (PES) start to detect absence of paper, and the message [Add paper in cassette 3.(Add paper cassette 3.)] is shown.

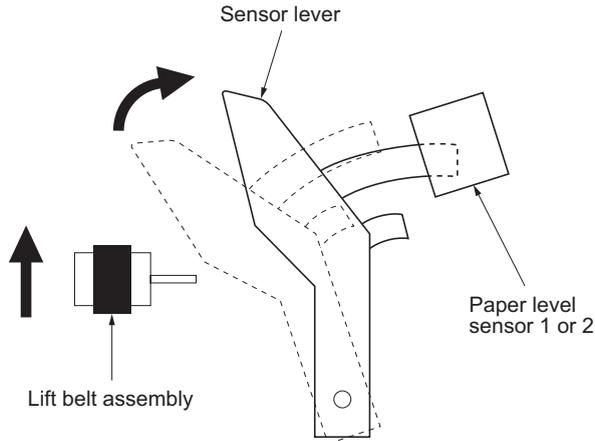


Figure 2-1-8 Detecting the paper level

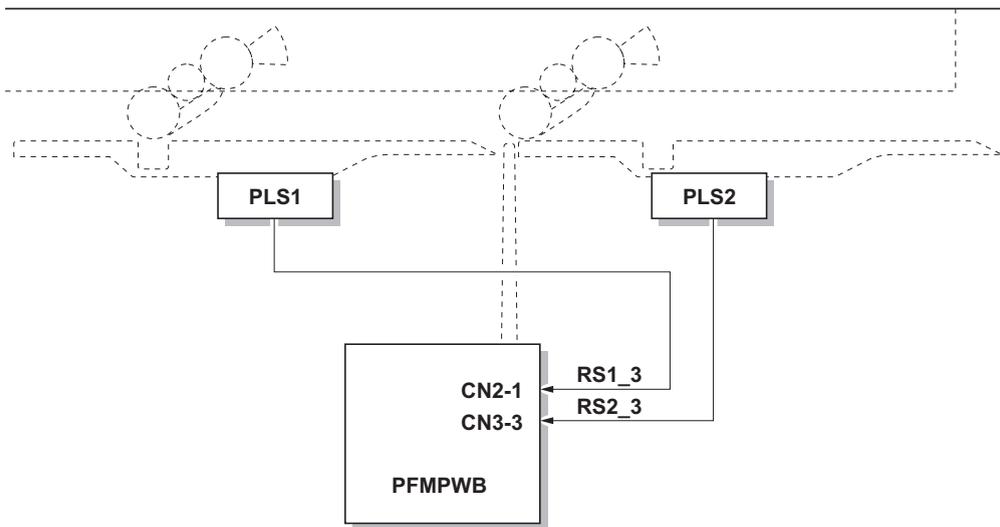


Figure 2-1-9 Paper level detection system block diagram

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2-2-1 Electrical parts layout

(1) PWBs

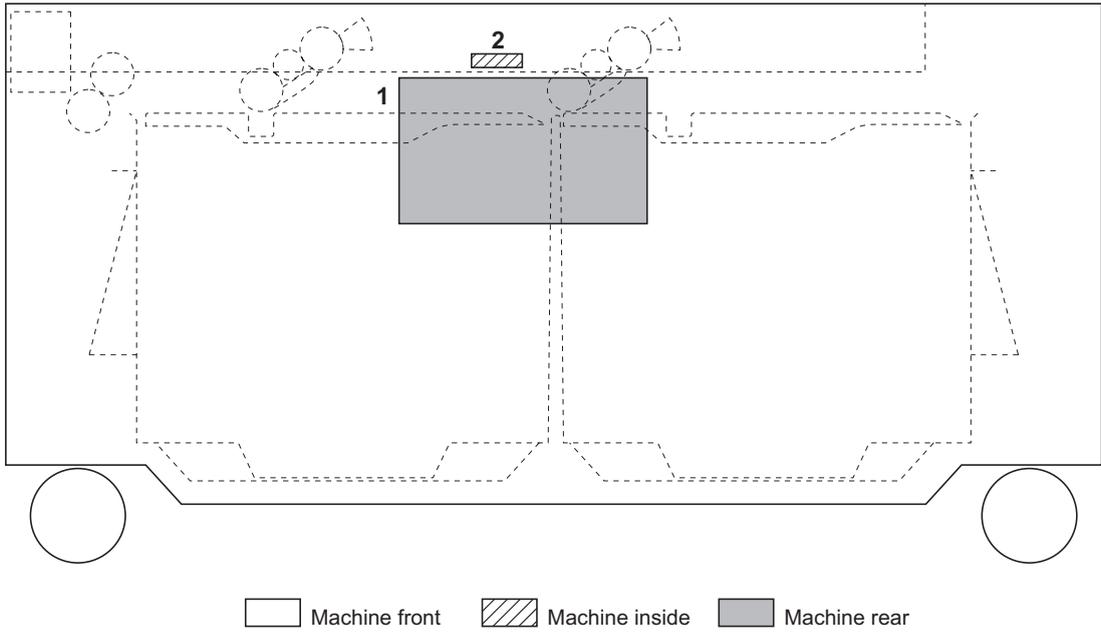


Figure 2-2-1 PWBs

- 1. PF main PWB (PFMPWB) Controls electrical components and communications with the machine.
- 2. Sensor relay PWB (SENRPWB) Distributes the power source to the level switch1 and paper feeder open/closed safety switch.

(2) Switches and sensors

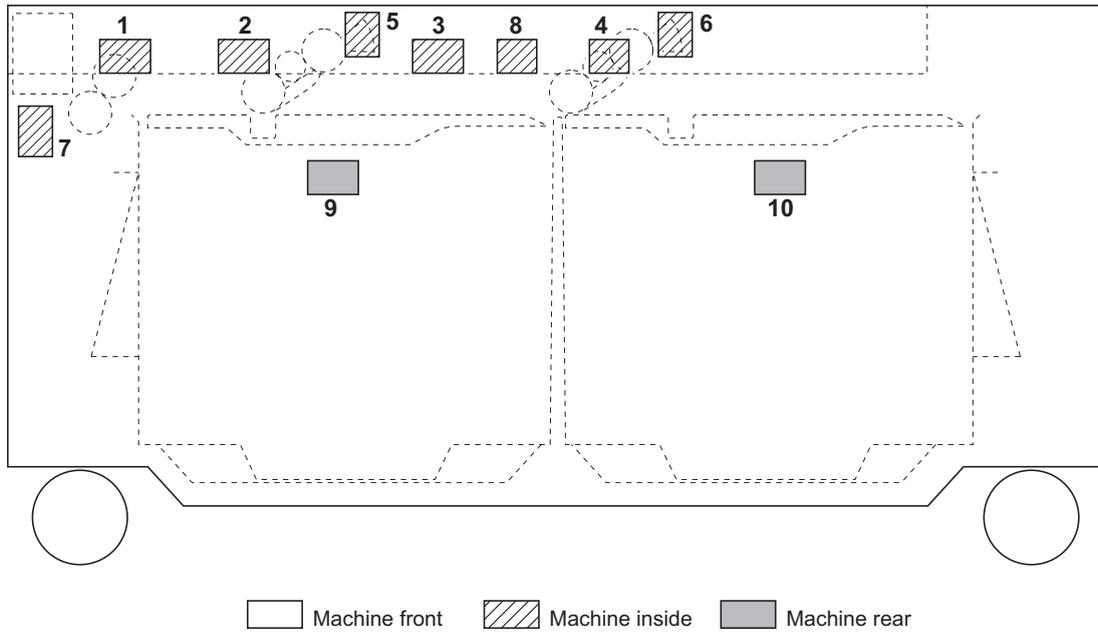


Figure 2-2-2 Switches and sensors

1. Paper path sensor 1 (PPS1) Detect paper jams and the absence of paper on the lifts.
2. Paper path sensor 2 (PPS2) Detect paper jams and the absence of paper on the lifts.
3. Paper path sensor 3 (PPS3) Detect paper jams and the absence of paper on the lifts.
4. Paper empty sensor (PES) Detects the absence of paper in the right cassette.
5. Level switch 1 (LSW1) Detects the left cassette lift in the home position.
6. Level switch 2 (LSW2) Detects the right cassette lift in the home position.
7. Left cover 4 switch (LC4SW) Detects if left cover 4 is open or closed.
8. PF safety switch (PFSSW) Detects if the paper feeder is open or closed.
9. Paper level sensor 1 (PLS1) Detects the paper level in the left cassette.
10. Paper level sensor 2 (PLS2) Detects the paper level in the right cassette.

(3) Others

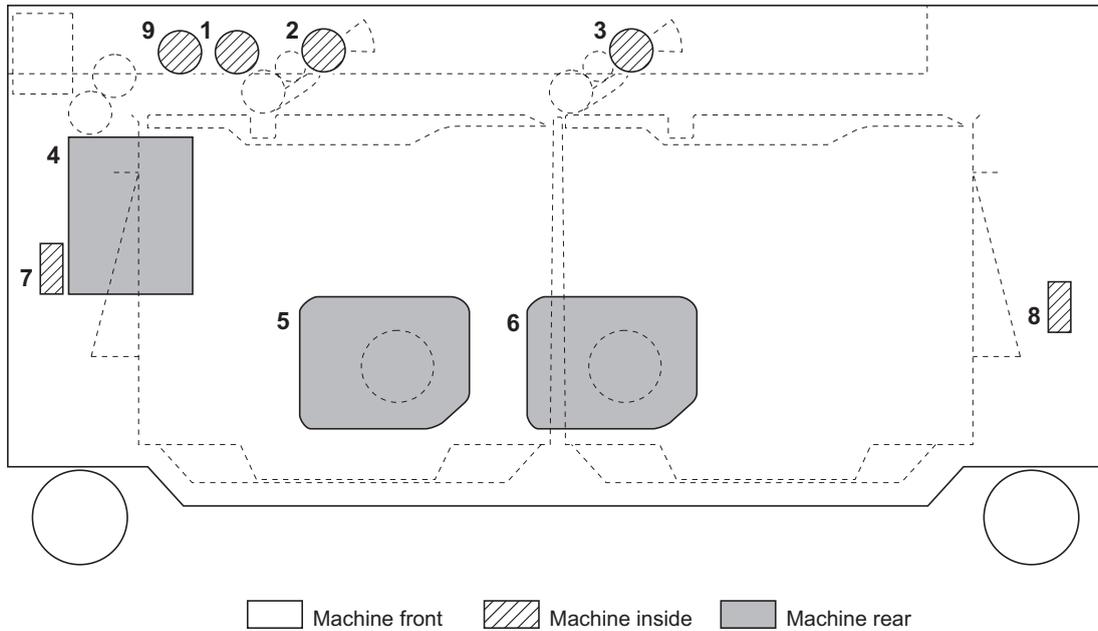


Figure 2-2-3 Others

- | | | |
|----|---|--|
| 1. | PF paper conveying clutch (PFCCL) | Regulates drive transmission to PF separation rollers 1 and 2. |
| 2. | PF paper feed clutch 1 (PFPFCL1)..... | Regulates drive transmission to PF paper feed roller 1. |
| 3. | PF paper feed clutch 2 (PFPFCL2)..... | Regulates drive transmission to PF paper feed roller 2. |
| 4. | PF paper conveying motor (PFCM) | Drives the paper feeder. |
| 5. | PF Lift motor 1 (PFLM1) | Raises the left cassette lift. |
| 6. | PF Lift motor 2 (PFLM2) | Raises the right cassette lift. |
| 7. | PF cassette heater 1 (PFCH1)* | Dehumidifies paper in the left cassette. |
| 8. | PF cassette heater 2 (PFCH2)* | Dehumidifies paper in the right cassette. |
| 9. | PF separation clutch (PFSCL) | Runs the PF separation rollers 1 and 2 continuously, and controls them separately. |

*Option.

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2-3-1 PF main PWB

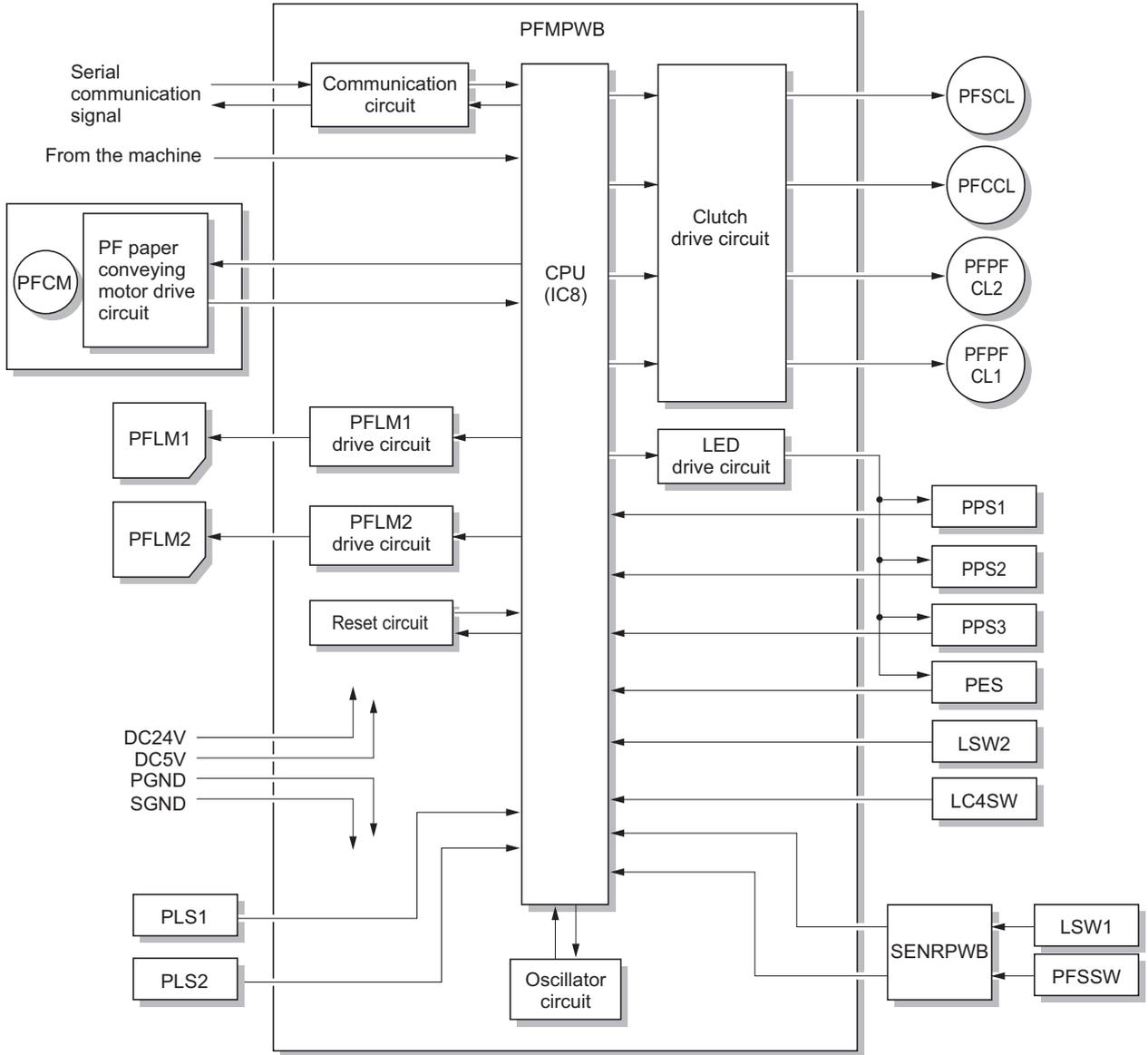


Figure 2-3-1 PF main PWB block diagram

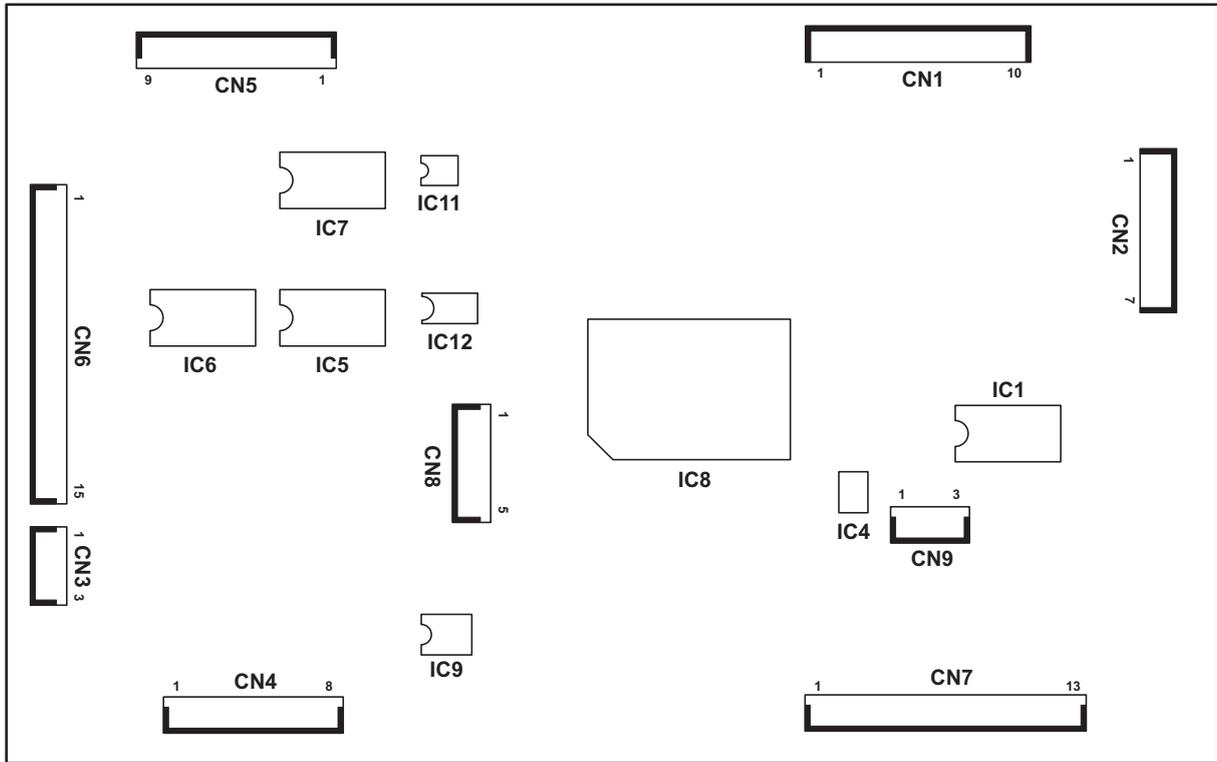


Figure 2-3-2 PF main PWB silk-screen diagram

Connector	Pin No.	Signal	I/O	Voltage	Description
CN1 Connected to the machine	1	FEED SW SIG	I	0/5 V DC	FSW3 On/Off signal from the machine
	2	READY	O	0/5 V DC	Ready signal to the machine
	3	SDO(IN)	I	0/5 V DC (pulse)	Serial communication signal from the machine
	4	SDI(OUT)	O	0/5 V DC (pulse)	Serial communication signal to the machine
	5	CLK	I	0/5 V DC (pulse)	Clock signal from the machine
	6	SELECT	I	0/5 V DC	Select signal from the machine
	7	DC5V	I	5 V DC	5 V DC power supply
	8	SGND	-	-	Signal ground
	9	PGND	-	-	Power ground
	10	DC24V	I	24 V DC	24 V DC power supply
CN2 Connected to the paper level sensor 1 and PF paper conveying motor	1	RS1_3	I	0/5 V DC	PLS1: On/Off
	2	SGND	-	-	Signal ground
	3	DC5V	O	5 V DC	5 V DC supply to PLS1
	4	PGND	-	-	Power ground
	5	DC24V	O	24 V DC	24 V DC supply to PFCM
	6	MOT_ON	O	0/24 V DC	PFCM: On/Off
	7	LD	I	0/5 V DC	PFCM lock signal

Connector	Pin No.	Signal	I/O	Voltage	Description
CN3 Connected to the paper level sensor 2	1	DC5V	O	5 V DC	5 V DC supply to PLS2
	2	SGND	-	-	Signal ground
	3	RS2_3	I	0/5 V DC	PLS2: On/Off
CN4 Connected to the PF paper feed clutch 1/2, PF paper conveying clutch and PF separation clutch	1	P2_CL	O	0/24 V DC	PFPFCL2: On/Off
	2	DC24V	O	24 V DC	24 V DC supply to PFPFCL2
	3	P1_CL	O	0/24 V DC	PFPFCL1: On/Off
	4	DC24V	O	24 V DC	24 V DC supply to PFPFCL1
	5	B_CL	O	0/24 V DC	PFCCL: On/Off
	6	DC24V	O	24 V DC	24 V DC supply to PFCCL
	7	B_CL	O	0/24 V DC	PFSCCL: On/Off
	8	DC24V	O	24 V DC	24 V DC supply to PFSCCL
CN5 Connected to the sensor relay PWB and level switch 1/2	1	FRONT_COVER	I	5/0 V DC	PFSSW: On/Off
	2	SGND	-	-	Signal ground
	3	DC5V	O	5 V DC	5 V DC supply to SENRPWB
	4	LEVEL_S1	I	0/5 V DC	LSW1: On/Off
	5	N.C.	-	-	Not used
	6	N.C.	-	-	Not used
	7	LEVEL_S2	I	0/5 V DC	LSW2: On/Off
	8	SGND	-	-	Signal ground
	9	DC5V	O	5 V DC	5 V DC supply to LSW2
CN6 Connected to the left cover 4 switch, paper path sensor 1/2/3 and paper empty sensor	1	SIDE_COVER	I	5/0 V DC	LC4SW: On/Off
	2	SGND	-	-	Signal ground
	3	DC5V	O	5 V DC	5 V DC supply to LC4SW
	4	PPS0_CLK	O	5/0 V DC (pulse)	PPS1 (emitting)
	5	PPS0	I	5/0 V DC (pulse) /0 V DC	PPS1: Off/On (receiving)
	6	DC5V	O	5 V DC	5 V DC supply to PPS1
	7	PPS1_CLK	O	5/0 V DC (pulse)	PPS2 (emitting)
	8	PPS1	I	5/0 V DC (pulse) /0 V DC	PPS2: Off/On (receiving)
	9	DC5V	O	5 V DC	5 V DC supply to PPS2
	10	PPS2_CLK	O	5/0 V DC (pulse)	PPS3 (emitting)
	11	PPS2	I	5/0 V DC (pulse) /0 V DC	PPS3: Off/On (receiving)
	12	DC5V	O	5 V DC	5 V DC supply to PPS3
	13	EMP_S_CLK	O	5/0 V DC (pulse)	PES (emitting)
	14	EMP_S	I	5/0 V DC (pulse) /0 V DC	PES: Off/On (receiving)
	15	DC5V	O	5 V DC	5 V DC supply to PES

Connector	Pin No.	Signal	I/O	Voltage	Description
CN7 Connected to the PF lift motor 1/2	1	RS2_2	I	0/5 V DC	PFLM2 paper gauge signal (2)
	2	SGND	-	-	Signal ground
	3	RS2_1	I	0/5 V DC	PFLM2 paper gauge signal (1)
	4	NC	-	-	Not used
	5	DC24V	O	24 V DC	24 V DC supply to PFLM2
	6	LMOT2	I	0/24 V DC	PFLM2: On/Off
	7	NC	-	-	Not used
	8	RS1_2	I	0/5 V DC	PFLM1 paper gauge signal (2)
	9	SGND	-	-	Signal ground
	10	RS1_1	I	0/5 V DC	PFLM1 paper gauge signal (1)
	11	NC	-	-	Not used
	12	DC24V	O	24 V DC	24 V DC supply to PFLM1
	13	LMOT1	O	0/24 V DC	PFLM1: On/Off

List of maintenance parts

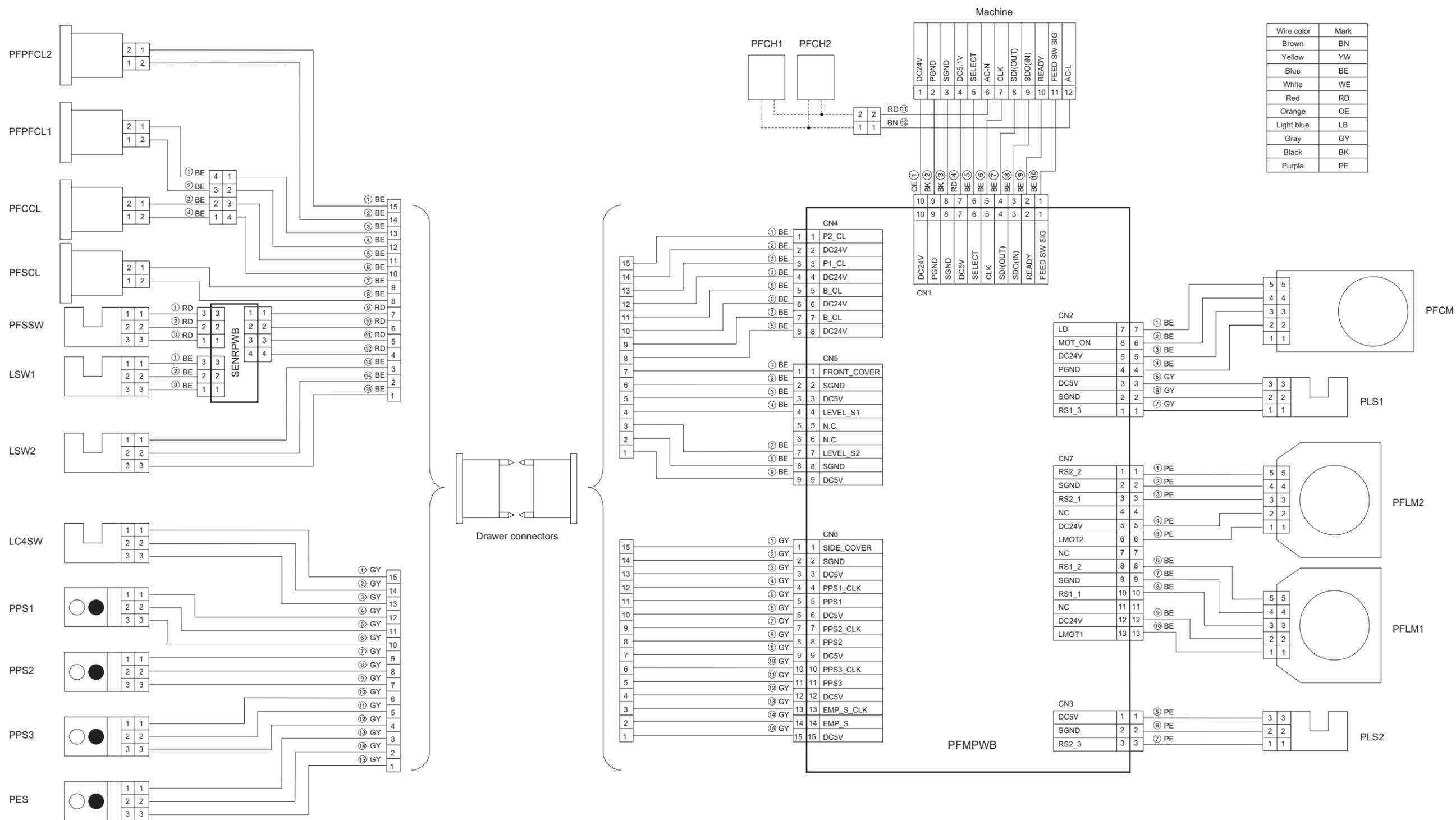
Maintenance part name		Part No.	Alternative part No.
Name used in service manual	Name used in parts list		
PF paper feed roller 1/2	H-PICK ROLLER	5A707600	-
PF separation roller 1	PULLEY,PAPER FEED	5FH06010	-
PF separation roller 2	PULLEY,SEPARATION	5FH06020	-
Guide pulley	C-PICK PULLEY	5A707580	-
Level switch 1/2	TLP1241(C5,F)	305H080320	5H080320
PF safety switch	TLP1241(C5,F)	305H080320	5H080320
Paper path sensor 1/2/3	SNS-SPI-338	305A707981	5A707981
Paper empty sensor	SNS-SPI-338	305A707981	5A707981

Periodic maintenance procedures

Section	Maintenance part/location	User call	Periodic maintenance	Points and cautions	Page
Paper feed section	PF paper feed roller 1/2	Check Clean	Check Replace	Clean with alcohol or a dry cloth.	P.1-5-3
	PF separation roller 1	Check Clean	Check Replace	Clean with alcohol or a dry cloth.	P.1-5-2
	PF separation roller 2	Check Clean	Check Replace	Clean with alcohol or a dry cloth.	P.1-5-2
	Guide pulley	Check Clean	Check Replace	Clean with alcohol or a dry cloth.	
	Level switch 1/2	-	Clean	Air brush	
	PF safety switch	-	Clean	Air brush	
	Paper path sensor 1/2/3	-	Clean	Air brush	
	Paper empty sensor	-	Clean	Air brush	
Clutches	Check Replace	Check	Check state of paper feed.		

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Wiring diagram



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