



DP-420

SERVICE MANUAL



Published in May 2009
843MX110
3MXSM060
First Edition

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


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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

Type	Duplex sheet-through document feeder
Original feed method	Automatic feed
Original weight	Single-sided original mode: 45 to 160 g/m ² Double-sided original mode: 50 to 120 g/m ²
Original type	Sheet originals
Original size	A3 to A5R/Ledger to StatementR
Original No. of sheets	50 sheets or less (50 to 80 g/m ²) Mixed original sizes: 30 sheets or less (50 to 80 g/m ²)
Original scanning speed	53.5 to 107 mm/s
Power source	Electrically connected to the machine
Dimensions	559 (W) x 487 (D) x 131 (H) mm 22" (W) x 19 3/16" (D) x 5 3/16" (H)
Weight	7 kg/15.4 lbs or less

NOTE: These specifications are subject to change without notice.

1-1-2 Parts names

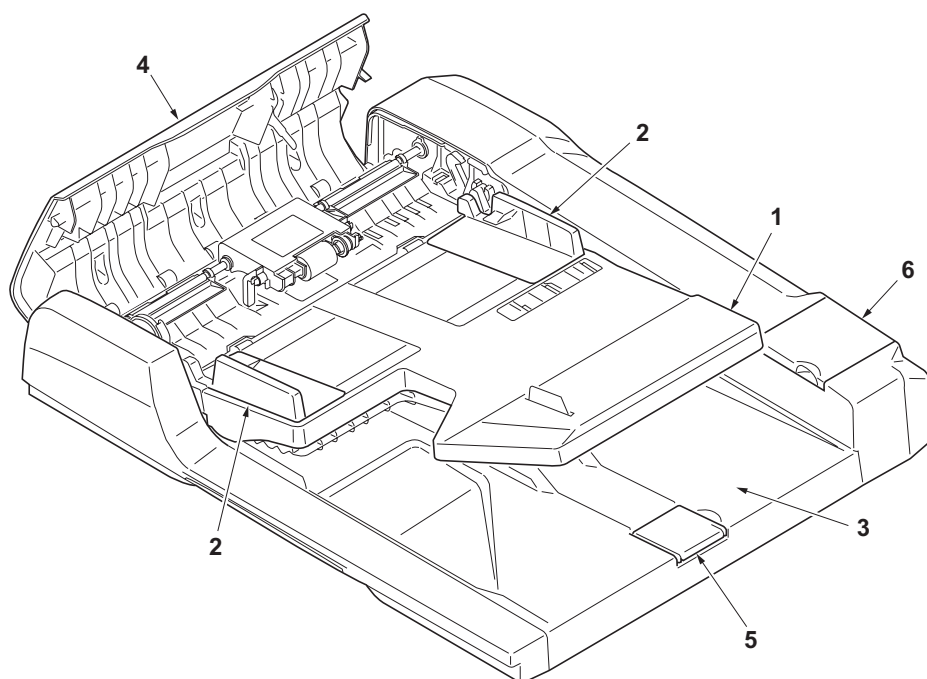
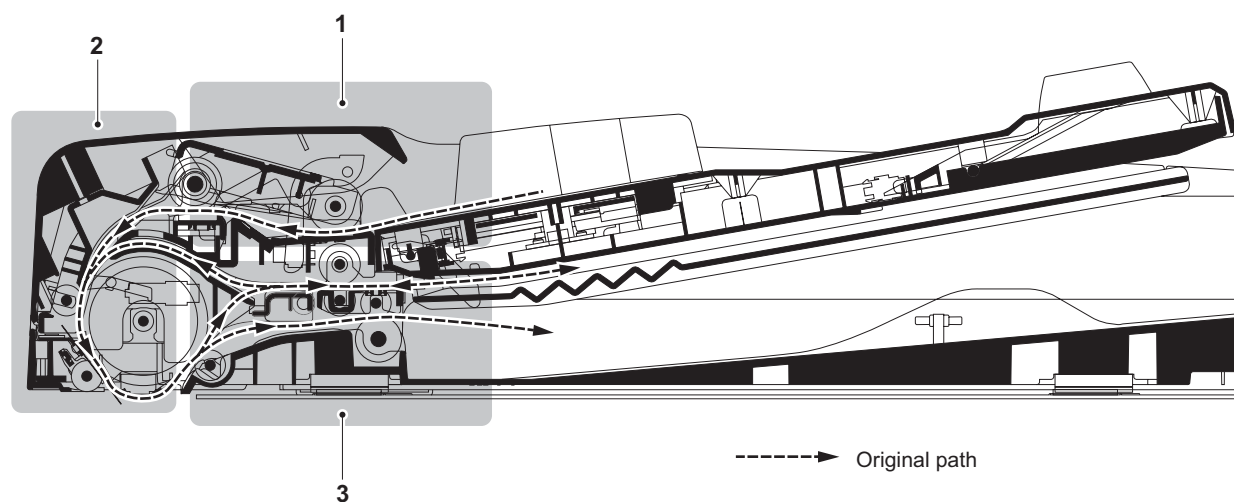


Figure 1-1-1

1. Original table
2. Original width guides
3. Original eject table
4. Document processor top cover
5. Original stopper
6. Cleaning cloth compartment

1-1-3 Machine cross section**Figure 1-1-2 Machine cross section**

1. Original feed section
2. Original conveying section
3. Original switchback 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

(1) Unpacking

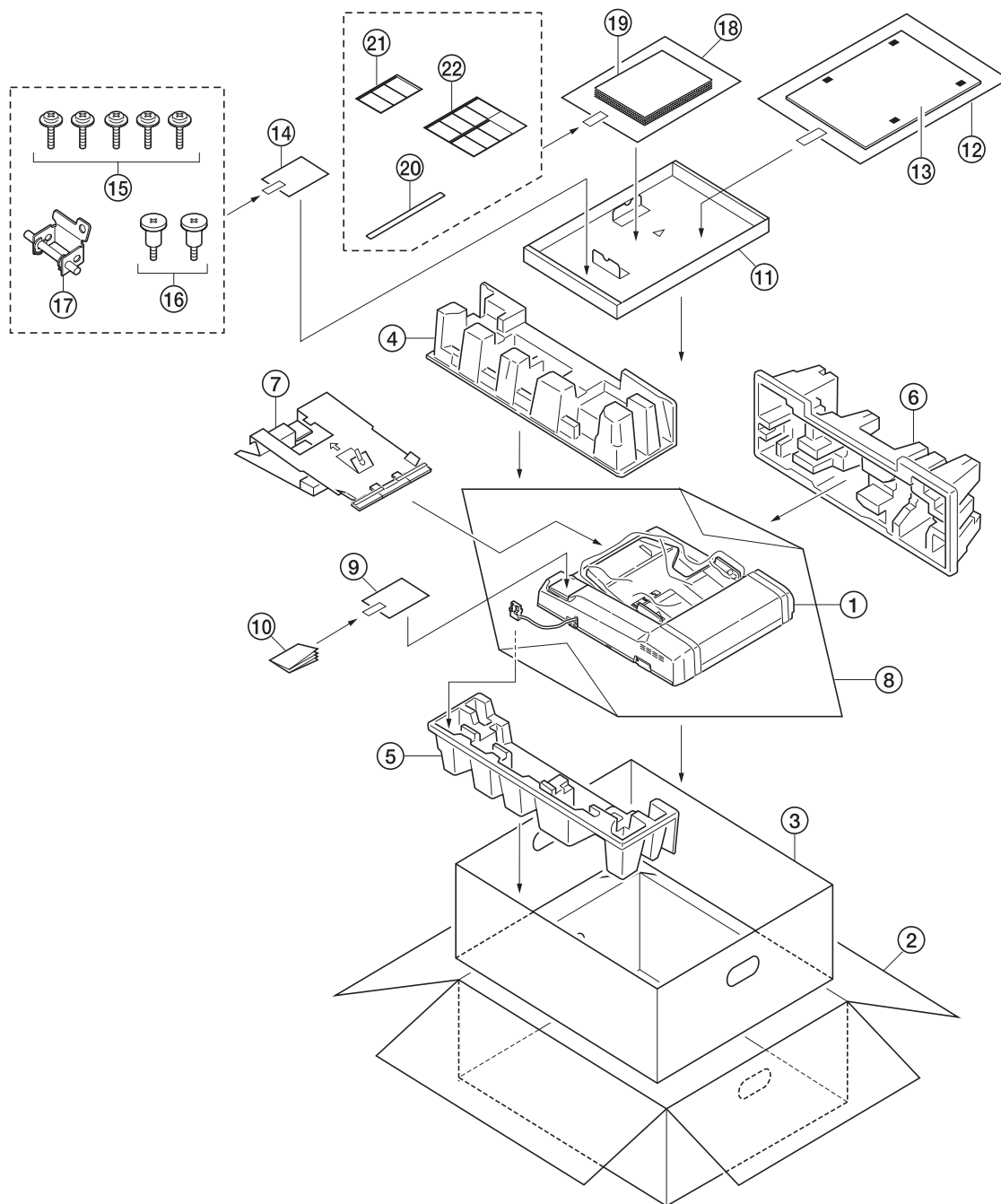


Figure 1-2-1 Unpacking

- | | | |
|-----------------------|--------------------|---|
| 1. Document processor | 9. Plastic bag | 17. Angle adjusting plate |
| 2. Outer case | 10. Cleaning cloth | 18. Plastic bag |
| 3. Inner case | 11. Tray spacer | 19. Installation guide |
| 4. Rear upper pad | 12. Plastic bag | 20. Film |
| 5. Rear lower pad | 13. Original mat | 21. Label A |
| 6. Front pad | 14. Plastic bag | 22. Label B (220 V - 240 V specifications only) |
| 7. Spacer | 15. M4 x 14 screws | |
| 8. Plastic sheet | 16. Pins | |

Caution: See the Installation Guide for installation.

(2) Removing the tapes and the spacer

Procedure

1. Remove two tapes.

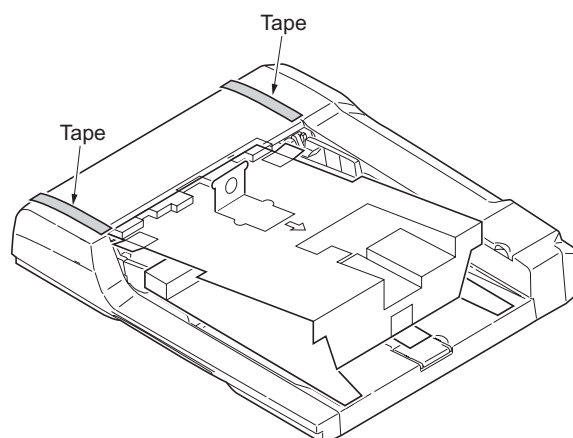


Figure 1-2-2

2. Open the document processor top cover.
3. Raise the DP feed pulley unit.
4. Open the spacer.
5. Raise the original table.
6. Remove the spacer.
7. Remove the plastic bag.

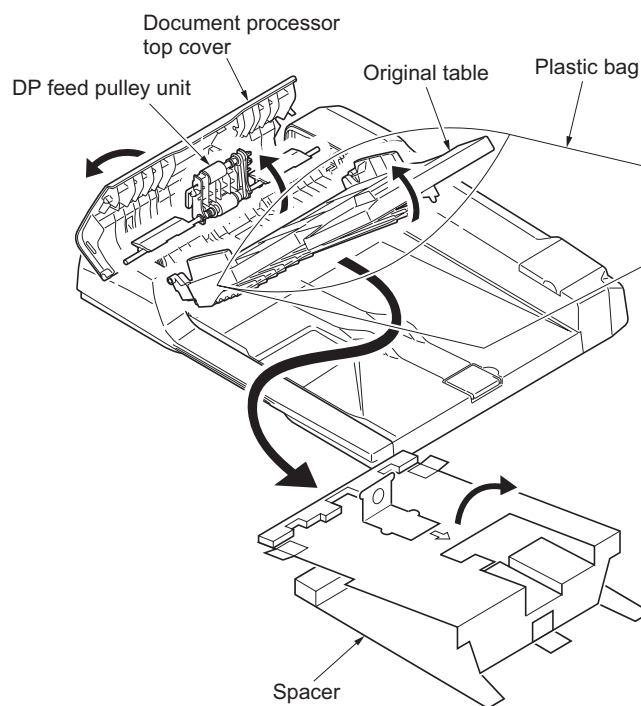


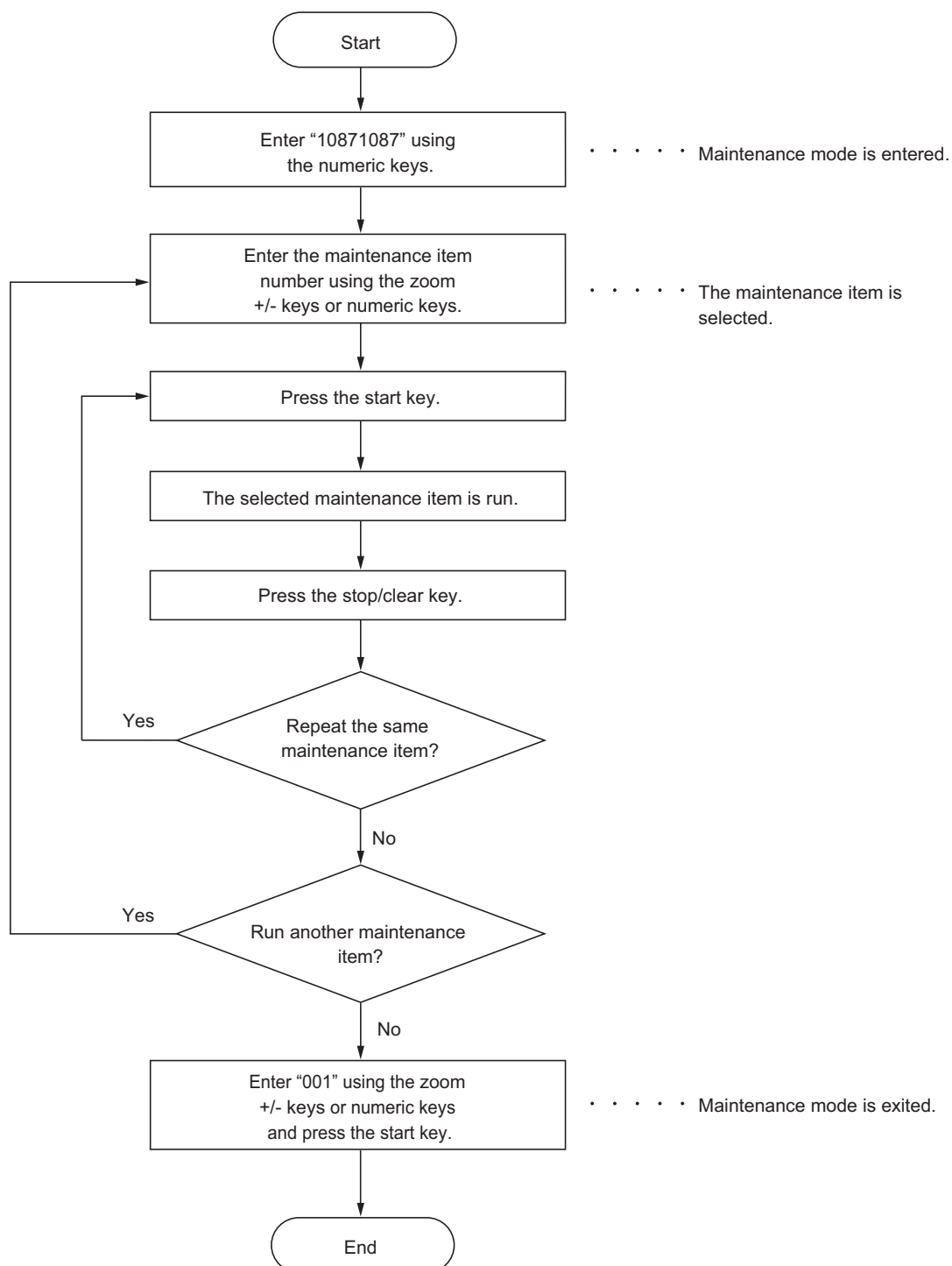
Figure 1-2-3

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1-3-1 Maintenance mode (operation panel is a 7-segment type)

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	-
Optical	U068	Adjusting the scanning position for originals from the DP	0*1
	U070	Adjusting the DP magnification	0/0*1
	U071	Adjusting the DP scanning timing	0/0/0/0*1
	U072	Adjusting the DP center line	0/0*1
	U074	Adjusting the DP input light luminosity	1*1
	U076	Adjusting the DP automatically	-
	U087	Setting DP reading position modification operation	ON/35*1
Operation panel and support equipment	U203	Checking DP operation	-
	U243	Checking the operation of the DP motors	-
	U244	Checking the DP switches	-
Image processing	U404	Adjusting margins for scanning an original from the DP	2.0/3.0/2.0/2.0*1
Other	U905	Checking/clearing counts by optional devices	-
	U942	Setting of deflection for feeding from DP	0/0*1




*Initial setting for executing U020, *1: The item initialized for executing U020, *2: The item initialized for executing U021

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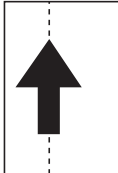
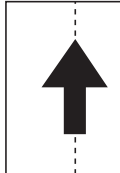
(3) Contents of maintenance mode items

Maintenance item No.	Description																					
U019	<p>Displaying the ROM version</p> <p>Description Displays the part number of the ROM fitted to each board.</p> <p>Purpose To check the part number or to decide if the ROM version is new from the last digit of the number.</p> <p>Method</p> <ol style="list-style-type: none">1. Press the start key.2. Select the item to be displayed using the image mode selection key and exposure adjustment keys. <table><tr><th>Image mode LEDs</th><th>Exposure indicator</th><th>Copy quantity display</th></tr><tr><td><p><input type="radio"/> Text & Photo</p><p><input type="radio"/> Photo</p><p><input checked="" type="radio"/> Text</p></td><td><p>Exp. 1 (lit)</p><p>Exp. 2 (lit)</p><p>Exp. 3 (lit)</p><p>Exp. 4 (lit)</p></td><td><p>“A” Part Code: Main PWB</p><p>Change history of the main PWB</p><p>Number of the main ROM</p><p>Number of the main ROM sub</p></td></tr><tr><td><p><input type="radio"/> Text & Photo</p><p><input checked="" type="radio"/> Photo</p><p><input checked="" type="radio"/> Text</p></td><td><p>Exp. 1 (lit)</p><p>Exp. 2 (lit)</p><p>Exp. 3 (lit)</p><p>Exp. 4 (lit)</p><p>Exp. 5 (lit)</p><p>Exp. 1 (flashing)</p></td><td><p>“E” Part Code: Engine PWB</p><p>Change history of the engine PWB</p><p>Number of the engine ROM</p><p>Number of the engine ROM sub</p><p>Change history of the engine PWB BOOT</p><p>Number of the engine PWB BOOT</p></td></tr><tr><td><p><input checked="" type="radio"/> Text & Photo</p><p><input checked="" type="radio"/> Photo</p><p><input checked="" type="radio"/> Text</p></td><td><p>Exp. 1 (lit)</p><p>Exp. 2 (lit)</p><p>Exp. 3 (lit)</p><p>Exp. 4 (lit)</p><p>Exp. 5 (lit)</p></td><td><p>“L” Part Code: Language</p><p>Change history of the standard language</p><p>Number of the standard language ROM</p><p>Change history of the optional language</p><p>Number of the optional language ROM</p></td></tr><tr><td><p><input checked="" type="radio"/> Text & Photo</p><p><input checked="" type="radio"/> Photo</p><p><input checked="" type="radio"/> Text</p></td><td><p>Exp. 1 (lit)</p><p>Exp. 2 (lit)</p><p>Exp. 3 (lit)</p><p>Exp. 4 (lit)</p></td><td><p>“C” Part Code: Cassette</p><p>Number of the optional first paper feeder ROM</p><p>Number of the optional second paper feeder ROM</p><p>Number of the optional third paper feeder ROM</p></td></tr><tr><td><p><input checked="" type="radio"/> Text & Photo</p><p><input checked="" type="radio"/> Photo</p><p><input checked="" type="radio"/> Text</p></td><td><p>Exp. 1 (lit)</p><p>Exp. 2 (lit)</p></td><td><p>“d” Part Code: DP</p><p>Number of the DP ROM</p></td></tr><tr><td><p><input checked="" type="radio"/> Text & Photo</p><p><input checked="" type="radio"/> Photo</p><p><input checked="" type="radio"/> Text</p></td><td><p>Exp. 1 (lit)</p><p>Exp. 2 (lit)</p><p>Exp. 3 (lit)</p></td><td><p>“P” Part Code: Printer</p><p>Change history of the optional printer</p><p>Number of the optional printer ROM</p></td></tr></table> <p><input type="radio"/> : Off, <input checked="" type="radio"/> : On, : Flashing</p> <p>When the optional equipment is not installed, [non] is displayed.</p> <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Image mode LEDs	Exposure indicator	Copy quantity display	<p><input type="radio"/> Text & Photo</p> <p><input type="radio"/> Photo</p> <p><input checked="" type="radio"/> Text</p>	<p>Exp. 1 (lit)</p> <p>Exp. 2 (lit)</p> <p>Exp. 3 (lit)</p> <p>Exp. 4 (lit)</p>	<p>“A” Part Code: Main PWB</p> <p>Change history of the main PWB</p> <p>Number of the main ROM</p> <p>Number of the main ROM sub</p>	<p><input type="radio"/> Text & Photo</p> <p><input checked="" type="radio"/> Photo</p> <p><input checked="" type="radio"/> Text</p>	<p>Exp. 1 (lit)</p> <p>Exp. 2 (lit)</p> <p>Exp. 3 (lit)</p> <p>Exp. 4 (lit)</p> <p>Exp. 5 (lit)</p> <p>Exp. 1 (flashing)</p>	<p>“E” Part Code: Engine PWB</p> <p>Change history of the engine PWB</p> <p>Number of the engine ROM</p> <p>Number of the engine ROM sub</p> <p>Change history of the engine PWB BOOT</p> <p>Number of the engine PWB BOOT</p>	<p><input checked="" type="radio"/> Text & Photo</p> <p><input checked="" type="radio"/> Photo</p> <p><input checked="" type="radio"/> Text</p>	<p>Exp. 1 (lit)</p> <p>Exp. 2 (lit)</p> <p>Exp. 3 (lit)</p> <p>Exp. 4 (lit)</p> <p>Exp. 5 (lit)</p>	<p>“L” Part Code: Language</p> <p>Change history of the standard language</p> <p>Number of the standard language ROM</p> <p>Change history of the optional language</p> <p>Number of the optional language ROM</p>	<p><input checked="" type="radio"/> Text & Photo</p> <p><input checked="" type="radio"/> Photo</p> <p><input checked="" type="radio"/> Text</p>	<p>Exp. 1 (lit)</p> <p>Exp. 2 (lit)</p> <p>Exp. 3 (lit)</p> <p>Exp. 4 (lit)</p>	<p>“C” Part Code: Cassette</p> <p>Number of the optional first paper feeder ROM</p> <p>Number of the optional second paper feeder ROM</p> <p>Number of the optional third paper feeder ROM</p>	<p><input checked="" type="radio"/> Text & Photo</p> <p><input checked="" type="radio"/> Photo</p> <p><input checked="" type="radio"/> Text</p>	<p>Exp. 1 (lit)</p> <p>Exp. 2 (lit)</p>	<p>“d” Part Code: DP</p> <p>Number of the DP ROM</p>	<p><input checked="" type="radio"/> Text & Photo</p> <p><input checked="" type="radio"/> Photo</p> <p><input checked="" type="radio"/> Text</p>	<p>Exp. 1 (lit)</p> <p>Exp. 2 (lit)</p> <p>Exp. 3 (lit)</p>	<p>“P” Part Code: Printer</p> <p>Change history of the optional printer</p> <p>Number of the optional printer ROM</p>
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Maintenance item No.	Description								
U068	<p>Adjusting the scanning position for originals from the DP</p> <p>Description Adjusts the position for scanning originals from the DP.</p> <p>Purpose Used when the image fogging occurs because the scanning position is not proper when the DP is used. Run U071 to adjust the timing of DP leading edge when the scanning position is changed.</p> <p>Setting</p> <ol style="list-style-type: none">1. Press the start key.2. Change the setting using the zoom +/- keys. <table><tr><th>Description</th><th>Setting range</th><th>Initial setting</th><th>Change in value per step</th></tr><tr><td>Scanning position</td><td>-17 to 17</td><td>0</td><td>0.17 mm</td></tr></table> <p>Increasing the value moves the image backward, and decreasing it moves the image forward.</p> <p>Supplement While this maintenance item is being executed, copying from an original is available in interrupt copying mode (which is activated by pressing the interrupt key).</p> <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Description	Setting range	Initial setting	Change in value per step	Scanning position	-17 to 17	0	0.17 mm
Description	Setting range	Initial setting	Change in value per step						
Scanning position	-17 to 17	0	0.17 mm						

Maintenance item No.	Description															
U070	<p>Adjusting the DP magnification</p> <p>Description Adjusts the DP original scanning speed.</p> <p>Purpose Make the adjustment if the magnification is incorrect in the auxiliary scanning direction when the optional DP is used.</p> <p>Adjustment</p> <ol style="list-style-type: none">1. Press the start key.2. Select the item using the exposure adjustment keys. <table><tr><th>Display</th><th>Description</th><th>Setting range</th><th>Initial setting</th><th>Change in value per step</th></tr><tr><td>Exp. 1</td><td>Magnification in the auxiliary scanning direction (first page)</td><td>-25 to 25</td><td>0</td><td>0.2 mm</td></tr><tr><td>Exp. 2</td><td>Magnification in the auxiliary scanning direction (second page)</td><td>-25 to 25</td><td>0</td><td>0.2 mm</td></tr></table> <ol style="list-style-type: none">3. Press the interrupt key.4. Place an original on the DP and press the start key to make a test copy.5. Change the setting value using the zoom +/- keys. For copy example 1, increase the value. For copy example 2, decrease the value. <div><div> Original</div><div> Copy example 1</div><div> Copy example 2</div></div> <p>Figure 1-3-1</p> <ol style="list-style-type: none">6. Press the start key. The value is set. <p>Caution Check the copy image after the adjustment. If the image is still incorrect, perform the following adjustments in maintenance mode.</p> <div><div>U070</div><div>→</div><div>U071 (P.1-3-6)</div><div>→</div><div>U404 (P.1-3-13)</div></div> <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	Setting range	Initial setting	Change in value per step	Exp. 1	Magnification in the auxiliary scanning direction (first page)	-25 to 25	0	0.2 mm	Exp. 2	Magnification in the auxiliary scanning direction (second page)	-25 to 25	0	0.2 mm
Display	Description	Setting range	Initial setting	Change in value per step												
Exp. 1	Magnification in the auxiliary scanning direction (first page)	-25 to 25	0	0.2 mm												
Exp. 2	Magnification in the auxiliary scanning direction (second page)	-25 to 25	0	0.2 mm												

Maintenance item No.	Description																									
U071	<p>Adjusting the DP scanning timing</p> <p>Description Adjusts the DP original scanning timing.</p> <p>Purpose Make the adjustment if there is a regular error between the leading or trailing edges of the original and the copy image when the optional DP is used.</p> <p>Method</p> <div><div><div>1. Press the start key.</div><div>2. Select the item using the exposure adjustment keys.</div></div><table><thead><tr><th>Exposure indicator</th><th>Description</th><th>Setting range</th><th>Initial setting</th><th>Change in value per step</th></tr></thead><tbody><tr><td>Exp. 1</td><td>DP leading edge registration (first side)</td><td>-32 to 32</td><td>0</td><td>0.2 mm</td></tr><tr><td>Exp. 2</td><td>DP trailing edge registration (first side)</td><td>-42 to 32</td><td>0</td><td>0.2 mm</td></tr><tr><td>Exp. 3</td><td>DP leading edge registration (second side)</td><td>-32 to 32</td><td>0</td><td>0.2 mm</td></tr><tr><td>Exp. 4</td><td>DP trailing edge registration (second side)</td><td>-42 to 32</td><td>0</td><td>0.2 mm</td></tr></tbody></table><div><div><div>3. Press the interrupt key.</div><div>4. Place an original on the DP and press the start key to make a test copy.</div><div>5. Change the setting value using the zoom +/- keys. For copy example 1, decrease the value of exp.1. For copy example 2, increase the value of exp.1.</div></div><div><div><div><div><div></div><div></div></div><div></div></div><div>Original</div></div><div><div><div><div></div><div></div></div><div></div></div><div>Copy example 1</div></div><div><div><div><div></div><div></div></div><div></div></div><div>Copy example 2</div></div></div></div><p>Figure 1-3-2</p><div><div>6. Press the start key. The value is set.</div></div><p>Caution Check the copy image after the adjustment. If the image is still incorrect, perform the following adjustments in maintenance mode.</p><div><div><div>U071</div><div></div><div>U404 (P.1-3-13)</div></div></div><p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p></div>	Exposure indicator	Description	Setting range	Initial setting	Change in value per step	Exp. 1	DP leading edge registration (first side)	-32 to 32	0	0.2 mm	Exp. 2	DP trailing edge registration (first side)	-42 to 32	0	0.2 mm	Exp. 3	DP leading edge registration (second side)	-32 to 32	0	0.2 mm	Exp. 4	DP trailing edge registration (second side)	-42 to 32	0	0.2 mm
Exposure indicator	Description	Setting range	Initial setting	Change in value per step																						
Exp. 1	DP leading edge registration (first side)	-32 to 32	0	0.2 mm																						
Exp. 2	DP trailing edge registration (first side)	-42 to 32	0	0.2 mm																						
Exp. 3	DP leading edge registration (second side)	-32 to 32	0	0.2 mm																						
Exp. 4	DP trailing edge registration (second side)	-42 to 32	0	0.2 mm																						

Maintenance item No.	Description															
U072	<p>Adjusting the DP center line</p> <p>Description</p> <p>Adjusts the scanning start position for the DP original.</p> <p>Purpose</p> <p>Make the adjustment if there is a regular error between the centers of the original and the copy image when the optional DP is used.</p> <p>Adjustment</p> <ol style="list-style-type: none">Press the start key.Select the item using the exposure adjustment keys. <table><tr><th>Exposure indicator</th><th>Description</th><th>Setting range</th><th>Initial setting</th><th>Change in value per step</th></tr><tr><td>Exp. 1</td><td>DP center line (first side)</td><td>-6.6 to 6.6</td><td>0</td><td>0.15 mm</td></tr><tr><td>Exp. 2</td><td>DP center line (second side)</td><td>-3.0 to 3.0</td><td>0</td><td>0.15 mm</td></tr></table> <ol style="list-style-type: none">Press the interrupt key.Place an original on the DP and press the start key to make a test copy.Change the setting value using the zoom +/- keys. For copy example 1, increase the value. For copy example 2, decrease the value. <div><div></div><div>Original</div><div></div><div>Copy example 1</div><div></div><div>Copy example 2</div></div> <p>Figure 1-3-3</p> <ol style="list-style-type: none">Press the start key. The value is set. <p>Caution</p> <p>Check the copy image after the adjustment. If the image is still incorrect, perform the following adjustments in maintenance mode.</p> <div><div>U072</div><div>→</div><div>U404 (P.1-3-13)</div></div> <p>Completion</p> <p>Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Exposure indicator	Description	Setting range	Initial setting	Change in value per step	Exp. 1	DP center line (first side)	-6.6 to 6.6	0	0.15 mm	Exp. 2	DP center line (second side)	-3.0 to 3.0	0	0.15 mm
Exposure indicator	Description	Setting range	Initial setting	Change in value per step												
Exp. 1	DP center line (first side)	-6.6 to 6.6	0	0.15 mm												
Exp. 2	DP center line (second side)	-3.0 to 3.0	0	0.15 mm												

Maintenance item No.	Description						
U074	<p>Adjusting the DP input light luminosity</p> <p>Description Adjusts the luminosity of the exposure lamp for scanning originals from the DP.</p> <p>Purpose Used if the exposure amount differs significantly between when scanning an original on the platen and when scanning an original from the DP.</p> <p>Setting</p> <ol style="list-style-type: none">1. Press the start key.2. Change the setting using the zoom +/- keys. <table><tr><th>Description</th><th>Setting range</th><th>Initial setting</th></tr><tr><td>DP input light luminosity</td><td>0 to 8</td><td>1</td></tr></table> <p>Increasing the setting makes the luminosity higher, and decreasing it makes the luminosity lower.</p> <ol style="list-style-type: none">3. Press the start key. The value is set. <p>Supplement While this maintenance item is being executed, copying from an original is available in interrupt copying mode (which is activated by pressing the interrupt key).</p> <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Description	Setting range	Initial setting	DP input light luminosity	0 to 8	1
Description	Setting range	Initial setting					
DP input light luminosity	0 to 8	1					

Maintenance item No.	Description										
U076	<p>Adjusting the DP automatically</p> <p>Description Uses a specified original and automatically adjusts the following items in the DP scanning section. Adjusting the DP magnification (U070) Adjusting the DP scanning timing (U071) Adjusting the DP center line (U072) When you run this maintenance mode, the preset values of U070, U071 and U072 will also be updated.</p> <p>Purpose To perform automatic adjustment of various items in the DP scanning section.</p> <p>Method</p> <ol style="list-style-type: none"> Set a specified original (P/N: 302AC68243) in the DP. Cut the trailing edge of the original. <div data-bbox="480 636 1214 896" data-label="Image"> </div> <p style="text-align: center;">Figure 1-3-4</p> <ol style="list-style-type: none"> Press the start key. "on" appears. Press the start key. Auto adjustment starts. When adjustment is complete, "Gd" appears. Display each setting value after adjustment using the exposure adjustment keys. <table border="1"> <thead> <tr> <th>Exposure indicator</th><th>Description</th></tr> </thead> <tbody> <tr> <td>Exp. 1</td><td>Execution result</td></tr> <tr> <td>Exp. 2</td><td>DP scanning timing</td></tr> <tr> <td>Exp. 3</td><td>DP center line</td></tr> <tr> <td>Exp. 4</td><td>DP magnification</td></tr> </tbody> </table> <p>If a problem occurs during auto adjustment, "nG" is displayed and operation stops. Determine the details of the problem and either repeat the procedure from the beginning, or adjust the remaining items manually by running the corresponding maintenance items.</p> <p>Completion Press the stop/clear key after auto adjustment is complete. The screen for selecting a maintenance item No. is displayed. If the stop/clear key is pressed during auto adjustment, adjustment stops and no settings are changed.</p>	Exposure indicator	Description	Exp. 1	Execution result	Exp. 2	DP scanning timing	Exp. 3	DP center line	Exp. 4	DP magnification
Exposure indicator	Description										
Exp. 1	Execution result										
Exp. 2	DP scanning timing										
Exp. 3	DP center line										
Exp. 4	DP magnification										

Maintenance item No.	Description																		
U087	<p>Setting DP reading position modification operation</p> <p>Description</p> <p>The presence or absence of dust is determined by comparing the scan data of the original trailing edge and that taken after the original is conveyed past the DP original scanning position. If dust is identified, the DP original scanning position is adjusted for the following originals.</p> <p>Purpose</p> <p>When using DP, to solve the problem when black lines occurs due to the dust with respect to original reading position.</p> <p>Setting</p> <ol style="list-style-type: none">Press the start key.Select the item to be set using the exposure adjustment keys. <table><tr><th>Exposure indicator</th><th>Description</th></tr><tr><td>Exp. 1</td><td>Setting the mode on/off</td></tr><tr><td>Exp. 2</td><td>Setting the reference data for identifying dust</td></tr></table> <p>Setting the mode on/off</p> <ol style="list-style-type: none">Select "on" or "oFF" using the zoom +/- keys. <table><tr><th>Display</th><th>Description</th></tr><tr><td>on</td><td>DP scanning position adjust mode on</td></tr><tr><td>oFF</td><td>DP scanning position adjust mode off</td></tr></table> <p>Initial setting: on</p> <ol style="list-style-type: none">Press the start key. The setting is set. <p>Setting the reference data for identifying dust</p> <p>Available only when the mode is turned on.</p> <ol style="list-style-type: none">Change the setting using the zoom +/- keys. <table><tr><th>Description</th><th>Setting range</th><th>Initial setting</th></tr><tr><td>Minimum density to be regarded as dust</td><td>10 to 95</td><td>35</td></tr></table> <p>Example</p> <p>The figure indicates the density in 256 levels of gray (0: white, 255: black). When the setting is 35, data of the level of 35 or higher is regarded as dust and data of lower level is regarded as the background (scan data taken when there is no original).</p> <ol style="list-style-type: none">Press the start key. The value is set. <p>Completion</p> <p>Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Exposure indicator	Description	Exp. 1	Setting the mode on/off	Exp. 2	Setting the reference data for identifying dust	Display	Description	on	DP scanning position adjust mode on	oFF	DP scanning position adjust mode off	Description	Setting range	Initial setting	Minimum density to be regarded as dust	10 to 95	35
Exposure indicator	Description																		
Exp. 1	Setting the mode on/off																		
Exp. 2	Setting the reference data for identifying dust																		
Display	Description																		
on	DP scanning position adjust mode on																		
oFF	DP scanning position adjust mode off																		
Description	Setting range	Initial setting																	
Minimum density to be regarded as dust	10 to 95	35																	

Maintenance item No.	Description																		
U203	<p>Checking DP operation</p> <p>Description Simulates the original conveying operation separately in the DP.</p> <p>Purpose To check the DP operation.</p> <p>Method</p> <ol style="list-style-type: none">1. Press the start key.2. Place an original on the DP if running this simulation with paper.3. Select the item to be operated using the exposure adjustment keys. <table><tr><th>Exposure indicator</th><th>Display</th><th>Motor</th></tr><tr><td>Exp. 1</td><td>d-P</td><td>With paper</td></tr><tr><td>Exp. 2</td><td>d-n</td><td>Without paper (continuous operation)</td></tr><tr><td>Exp. 3</td><td>dp2</td><td>With paper (duplex mode)</td></tr><tr><td>Exp. 4</td><td>dn2</td><td>Without paper (duplex mode)</td></tr></table> <ol style="list-style-type: none">4. Press the start key. The operation starts.5. To stop continuous operation, press the stop/clear key. <p>Completion Press the stop/clear key when the operation stops. The screen for selecting a maintenance item No. is displayed.</p>	Exposure indicator	Display	Motor	Exp. 1	d-P	With paper	Exp. 2	d-n	Without paper (continuous operation)	Exp. 3	dp2	With paper (duplex mode)	Exp. 4	dn2	Without paper (duplex mode)			
Exposure indicator	Display	Motor																	
Exp. 1	d-P	With paper																	
Exp. 2	d-n	Without paper (continuous operation)																	
Exp. 3	dp2	With paper (duplex mode)																	
Exp. 4	dn2	Without paper (duplex mode)																	
U243	<p>Checking the operation of the DP motors</p> <p>Description Turns the motors or solenoids in the optional DP on.</p> <p>Purpose To check the operation of the DP motors or solenoids.</p> <p>Method</p> <ol style="list-style-type: none">1. Press the start key.2. Select the motor or solenoid to be operated using the exposure adjustment keys.3. Press the start key. The operation starts. <table><tr><th>Exposure indicator</th><th>Display</th><th>Motor</th></tr><tr><td>Exp. 1</td><td>F-0</td><td>Original feed motor (OFM)</td></tr><tr><td>Exp. 2</td><td>C-0</td><td>Original conveying motor (OCM)</td></tr><tr><td>Exp. 3</td><td>r-0</td><td>Original switchback motor (OSBM)</td></tr><tr><td>Exp. 4</td><td>b-S</td><td>Switchback feedshift solenoid (SBFSSOL)</td></tr><tr><td>Exp. 5</td><td>P-S</td><td>Switchback pressure solenoid (SBPSOL)</td></tr></table> <ol style="list-style-type: none">4. To turn each motor off, press the stop/clear key. <p>Completion Press the stop/clear key when operation stops. The screen for selecting a maintenance item No. is displayed.</p>	Exposure indicator	Display	Motor	Exp. 1	F-0	Original feed motor (OFM)	Exp. 2	C-0	Original conveying motor (OCM)	Exp. 3	r-0	Original switchback motor (OSBM)	Exp. 4	b-S	Switchback feedshift solenoid (SBFSSOL)	Exp. 5	P-S	Switchback pressure solenoid (SBPSOL)
Exposure indicator	Display	Motor																	
Exp. 1	F-0	Original feed motor (OFM)																	
Exp. 2	C-0	Original conveying motor (OCM)																	
Exp. 3	r-0	Original switchback motor (OSBM)																	
Exp. 4	b-S	Switchback feedshift solenoid (SBFSSOL)																	
Exp. 5	P-S	Switchback pressure solenoid (SBPSOL)																	

Maintenance item No.	Description														
U244	<p>Checking the DP switches</p> <p>Description Displays the status of the respective switches in the DP.</p> <p>Purpose To check if respective switches in the DP operate correctly.</p> <p>Method</p> <ol style="list-style-type: none"> 1. Press the start key. 2. Turn each switch on and off manually to check the status. When the on-status of a switch is detected, the LEDs on the operation panel corresponding to the operated switch lights. <table border="1"> <thead> <tr> <th>LEDs</th><th>Switch</th></tr> </thead> <tbody> <tr> <td>Auto Exp.</td><td>Original set switch (OSSW)</td></tr> <tr> <td>Text & Photo</td><td>DP timing switch (DPTSW)</td></tr> <tr> <td>Photo</td><td>Original detection switch (ODSW)</td></tr> <tr> <td>Text</td><td>DP original cover switch (DPOCSW)</td></tr> <tr> <td>EcoPrint</td><td>Original switchback switch (OSBSW)</td></tr> <tr> <td>Program</td><td>Original size length switch (OSLSW)</td></tr> </tbody> </table> <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	LEDs	Switch	Auto Exp.	Original set switch (OSSW)	Text & Photo	DP timing switch (DPTSW)	Photo	Original detection switch (ODSW)	Text	DP original cover switch (DPOCSW)	EcoPrint	Original switchback switch (OSBSW)	Program	Original size length switch (OSLSW)
LEDs	Switch														
Auto Exp.	Original set switch (OSSW)														
Text & Photo	DP timing switch (DPTSW)														
Photo	Original detection switch (ODSW)														
Text	DP original cover switch (DPOCSW)														
EcoPrint	Original switchback switch (OSBSW)														
Program	Original size length switch (OSLSW)														

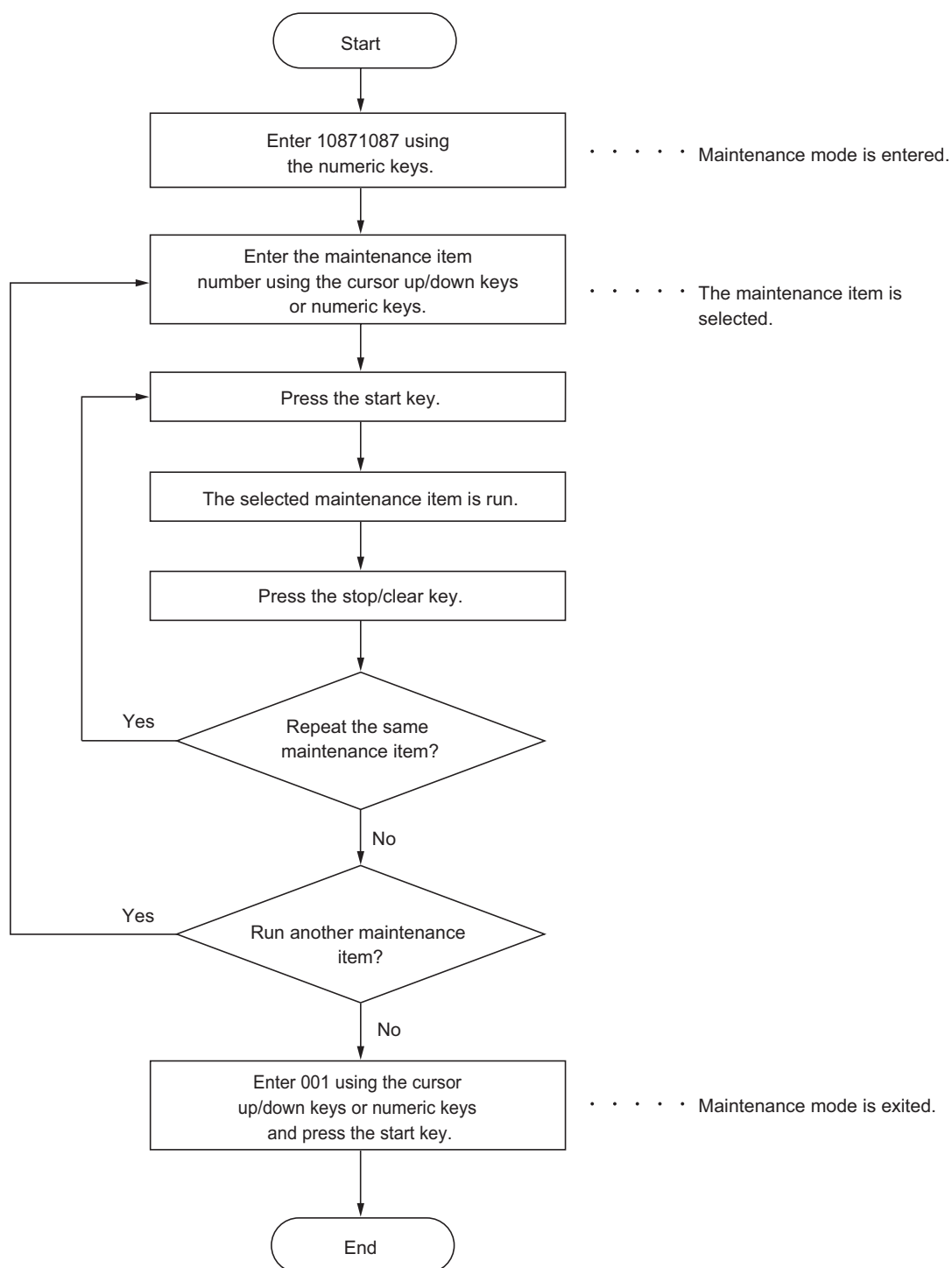
Maintenance item No.	Description																									
U404	<p>Adjusting margins for scanning an original from the DP</p> <p>Description Adjusts margins for scanning the original from the DP.</p> <p>Purpose Make the adjustment if margins are incorrect when the optional DP is used.</p> <p>Caution Before making this adjustment, ensure that the following adjustments have been made in maintenance mode.</p> <div><div>U402 (See the service manual for the machine.))</div><div>→</div><div>U403 (See the service manual for the machine.))</div><div>→</div><div>U404</div></div> <p>Adjustment</p> <div><div><div>1. Press the start key.</div><div>2. Select the item using the exposure adjustment keys.</div></div><table><tr><th>Exposure indicator</th><th>Description</th><th>Setting range</th><th>Initial setting</th><th>Change in value per step</th></tr><tr><td>Exp. 1</td><td>Left margin</td><td>0.0 to 10.0</td><td>2.0</td><td>0.5 mm</td></tr><tr><td>Exp. 2</td><td>Leading edge margin</td><td>0.0 to 10.0</td><td>3.0</td><td>0.5 mm</td></tr><tr><td>Exp. 3</td><td>Right margin</td><td>0.0 to 10.0</td><td>2.0</td><td>0.5 mm</td></tr><tr><td>Exp. 4</td><td>Trailing edge margin</td><td>0.0 to 10.0</td><td>2.0</td><td>0.5 mm</td></tr></table><div><div>3. Press the interrupt key.</div><div>4. Place an original on the DP and press the start key to make a test copy.</div><div>5. Change the setting value using the zoom +/- keys. Increasing the value makes the margin wider, and decreasing it makes the margin narrower.</div></div><div><div><div>Leading edge margin (3.0±2.5 mm)</div><div>Left margin (2.5+1.5/-2.0 mm)</div><div>Right margin (2.5+1.5/-2.0 mm)</div><div>Trailing edge margin (3.0±2.5 mm)</div></div><div>Figure 1-3-5</div></div><div><div>6. Press the start key. The value is set.</div><p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p></div></div>	Exposure indicator	Description	Setting range	Initial setting	Change in value per step	Exp. 1	Left margin	0.0 to 10.0	2.0	0.5 mm	Exp. 2	Leading edge margin	0.0 to 10.0	3.0	0.5 mm	Exp. 3	Right margin	0.0 to 10.0	2.0	0.5 mm	Exp. 4	Trailing edge margin	0.0 to 10.0	2.0	0.5 mm
Exposure indicator	Description	Setting range	Initial setting	Change in value per step																						
Exp. 1	Left margin	0.0 to 10.0	2.0	0.5 mm																						
Exp. 2	Leading edge margin	0.0 to 10.0	3.0	0.5 mm																						
Exp. 3	Right margin	0.0 to 10.0	2.0	0.5 mm																						
Exp. 4	Trailing edge margin	0.0 to 10.0	2.0	0.5 mm																						

Maintenance item No.	Description												
U905	<p>Checking/clearing counts by optional devices</p> <p>Description Displays the counts of DP or finisher.</p> <p>Purpose To check the use of DP and finisher.</p> <p>Method</p> <ol style="list-style-type: none">1. Press the start key.2. Select the count (group No.) to be checked using the image mode selection key.3. Select the item using the exposure adjustment keys. <table><tr><th>Image mode LED (group No.)</th><th>Exposure indicator</th><th>Copy quantity display (count value)</th></tr><tr><td>1<ul style="list-style-type: none"><input type="radio"/> Text & Photo<input type="radio"/> Photo<input checked="" type="radio"/> Text</td><td>Exp. 1 Exp. 2</td><td>First 3 digits of the no. of single-sided originals that has passed through the DP Last 3 digits of the no. of single-sided originals that has passed through the DP</td></tr><tr><td>2<ul style="list-style-type: none"><input type="radio"/> Text & Photo<input checked="" type="radio"/> Photo<input checked="" type="radio"/> Text</td><td>Exp. 1 Exp. 2</td><td>First 3 digits of the no. of double-sided originals that has passed through the DP Last 3 digits of the no. of double-sided originals that has passed through the DP</td></tr></table> <p>○ : Off, ● : On</p> <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Image mode LED (group No.)	Exposure indicator	Copy quantity display (count value)	1 <ul style="list-style-type: none"><input type="radio"/> Text & Photo<input type="radio"/> Photo<input checked="" type="radio"/> Text	Exp. 1 Exp. 2	First 3 digits of the no. of single-sided originals that has passed through the DP Last 3 digits of the no. of single-sided originals that has passed through the DP	2 <ul style="list-style-type: none"><input type="radio"/> Text & Photo<input checked="" type="radio"/> Photo<input checked="" type="radio"/> Text	Exp. 1 Exp. 2	First 3 digits of the no. of double-sided originals that has passed through the DP Last 3 digits of the no. of double-sided originals that has passed through the DP			
Image mode LED (group No.)	Exposure indicator	Copy quantity display (count value)											
1 <ul style="list-style-type: none"><input type="radio"/> Text & Photo<input type="radio"/> Photo<input checked="" type="radio"/> Text	Exp. 1 Exp. 2	First 3 digits of the no. of single-sided originals that has passed through the DP Last 3 digits of the no. of single-sided originals that has passed through the DP											
2 <ul style="list-style-type: none"><input type="radio"/> Text & Photo<input checked="" type="radio"/> Photo<input checked="" type="radio"/> Text	Exp. 1 Exp. 2	First 3 digits of the no. of double-sided originals that has passed through the DP Last 3 digits of the no. of double-sided originals that has passed through the DP											
U942	<p>Setting of deflection for feeding from DP</p> <p>Description Adjusts the deflection generated when the DP is used.</p> <p>Purpose Use this mode if an original non-feed jam, oblique feed or wrinkling of original occurs when the DP is used.</p> <p>Setting</p> <ol style="list-style-type: none">1. Press the start key.2. Select the item using the exposure adjustment keys. <table><tr><th>Exposure indicator</th><th>Description</th><th>Setting range</th><th>Initial setting</th></tr><tr><td>Exp. 1</td><td>Original feed motor (OFM) (in simplex feed)</td><td>-10 to 20</td><td>0</td></tr><tr><td>Exp. 2</td><td>Original switchback motor (OSBM) (in duplex feed)</td><td>-10 to 20</td><td>0</td></tr></table> <ol style="list-style-type: none">3. Press the interrupt key.4. Place an original on the DP and press the start key to make a test copy.5. Change the setting value using the zoom +/- keys. The greater the value, the larger the amount of slack; the smaller the value, the smaller the amount of slack. If an original non-feed jam or oblique feed occurs, increase the setting value. If wrinkling of original occurs, decrease the value.6. Press the start key. The value is set. <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Exposure indicator	Description	Setting range	Initial setting	Exp. 1	Original feed motor (OFM) (in simplex feed)	-10 to 20	0	Exp. 2	Original switchback motor (OSBM) (in duplex feed)	-10 to 20	0
Exposure indicator	Description	Setting range	Initial setting										
Exp. 1	Original feed motor (OFM) (in simplex feed)	-10 to 20	0										
Exp. 2	Original switchback motor (OSBM) (in duplex feed)	-10 to 20	0										

1-3-2 Maintenance mode (operation panel is an LCD type)

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	-
Optical	U068	Adjusting the scanning position for originals from the DP	0* ¹
	U070	Adjusting the DP magnification	0/0* ¹
	U071	Adjusting the DP scanning timing	0/0/0/0* ¹
	U072	Adjusting the DP center line	0/0/0* ¹
	U074	Adjusting the DP input light luminosity	0* ¹
	U076	Executing DP automatic adjustment	-
	U087	Setting DP reading position modification operation	ON/35* ¹
Operation panel and support equipment	U203	Checking DP operation	-
	U243	Checking the operation of the DP motors	-
	U244	Checking the DP switches	-
Mode setting	U326	Setting the black line cleaning indication	ON* ^{1,2}
Image processing	U404	Adjusting margins for scanning an original from the DP	2.0/3.0/2.0/2.0* ¹
Other	U905	Checking counts by optional devices	-
	U942	Setting of deflection for feeding from DP	0/0* ¹




*Initial setting for executing U020, *1: The item initialized for executing U020, *2: The item initialized for executing U021




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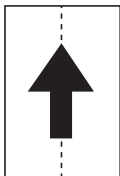

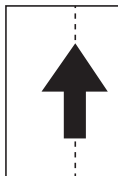
(3) Contents of maintenance mode items

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><tr><th>Display</th><th>Description</th></tr><tr><td>MAIN</td><td>Main ROM</td></tr><tr><td>ENGINE</td><td>Engine ROM</td></tr><tr><td>LANG(St)</td><td>Standard language ROM</td></tr><tr><td>LANG(Op)</td><td>Optional language ROM</td></tr><tr><td>MAIN BOOT</td><td>Boot of main ROM</td></tr><tr><td>PRINTER</td><td>Printer ROM</td></tr><tr><td>NWS</td><td>Optional network scanner ROM</td></tr><tr><td>DP</td><td>DP ROM</td></tr><tr><td>FINISHER</td><td>Optional built-in finisher ROM</td></tr><tr><td>CASS2</td><td>Optional first paper feeder ROM (standard for 22 ppm model)</td></tr><tr><td>CASS3</td><td>Optional second paper feeder ROM</td></tr><tr><td>CASS4</td><td>Optional third paper feeder ROM</td></tr></table> <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	MAIN	Main ROM	ENGINE	Engine ROM	LANG(St)	Standard language ROM	LANG(Op)	Optional language ROM	MAIN BOOT	Boot of main ROM	PRINTER	Printer ROM	NWS	Optional network scanner ROM	DP	DP ROM	FINISHER	Optional built-in finisher ROM	CASS2	Optional first paper feeder ROM (standard for 22 ppm model)	CASS3	Optional second paper feeder ROM	CASS4	Optional third paper feeder ROM
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CASS4	Optional third paper feeder ROM																										
U068	<p>Adjusting the scanning position for originals from the DP</p> <p>Description Adjusts the position for scanning originals from the DP.</p> <p>Purpose Used when the image fogging occurs because the scanning position is not proper when the DP is used. Run U071 to adjust the timing of DP leading edge when the scanning position is changed.</p> <p>Setting</p> <ol style="list-style-type: none">1. Press the start key.2. Change the setting using the cursor left/right keys. <table><tr><th>Description</th><th>Setting range</th><th>Initial setting</th><th>Change in value per step</th></tr><tr><td>Starting position adjustment forscanning originals</td><td>-17 to 17</td><td>0</td><td>0.17 mm</td></tr></table> <p>Increasing the value moves the image backward, and decreasing it moves the image forward.</p> <ol style="list-style-type: none">3. Press the start key. The value is set. <p>Supplement While this maintenance item is being executed, copying from an original is available in interrupt copying mode (which is activated by pressing the interrupt key).</p> <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Description	Setting range	Initial setting	Change in value per step	Starting position adjustment forscanning originals	-17 to 17	0	0.17 mm																		
Description	Setting range	Initial setting	Change in value per step																								
Starting position adjustment forscanning originals	-17 to 17	0	0.17 mm																								

Maintenance item No.	Description															
U070	<p>Adjusting the DP magnification</p> <p>Description Adjusts the DP original scanning speed.</p> <p>Purpose Make the adjustment if the magnification is incorrect in the auxiliary scanning direction when the optional DP is used.</p> <p>Adjustment</p> <ol style="list-style-type: none">1. Press the start key.2. Select the item to be adjusted using the cursor up/down keys. <table><tr><th>Display</th><th>Description</th><th>Setting range</th><th>Initial setting</th><th>Change in value per step</th></tr><tr><td>CONVEY SPEED 1</td><td>Magnification in the auxiliary scanning direction (first page)</td><td>-25 to 25</td><td>0</td><td>0.2 mm</td></tr><tr><td>CONVEY SPEED 2</td><td>Magnification in the auxiliary scanning direction (second page)</td><td>-25 to 25</td><td>0</td><td>0.2 mm</td></tr></table> <ol style="list-style-type: none">1. Press the interrupt key.2. Place an original on the DP and press the start key to make a test copy.3. Change the setting value using the cursor left/right keys. For copy example 1, increase the value. For copy example 2, decrease the value. <div><div></div><div>Original</div><div></div><div>Copy example 1</div><div></div><div>Copy example 2</div></div> <p>Figure 1-3-6</p> <ol style="list-style-type: none">4. Press the start key. The value is set. <p>Caution Check the copy image after the adjustment. If the image is still incorrect, perform the following adjustments in maintenance mode.</p> <div><div>U070</div><div>→</div><div>U071 (P.1-3-19)</div><div>→</div><div>U404 (P.1-3-27)</div></div> <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	Setting range	Initial setting	Change in value per step	CONVEY SPEED 1	Magnification in the auxiliary scanning direction (first page)	-25 to 25	0	0.2 mm	CONVEY SPEED 2	Magnification in the auxiliary scanning direction (second page)	-25 to 25	0	0.2 mm
Display	Description	Setting range	Initial setting	Change in value per step												
CONVEY SPEED 1	Magnification in the auxiliary scanning direction (first page)	-25 to 25	0	0.2 mm												
CONVEY SPEED 2	Magnification in the auxiliary scanning direction (second page)	-25 to 25	0	0.2 mm												

Maintenance item No.	Description																									
U071	<p>Adjusting the DP scanning timing</p> <p>Description Adjusts the DP original scanning timing.</p> <p>Purpose Make the adjustment if there is a regular error between the leading or trailing edges of the original and the copy image when the optional DP is used.</p> <p>Method</p> <ol style="list-style-type: none">1. Press the start key.2. Select the item to be adjusted using the cursor up/down keys. <table><tr><th>Display</th><th>Description</th><th>Setting range</th><th>Initial setting</th><th>Change in value per step</th></tr><tr><td>LEAD 1</td><td>Leading edge registration (first page)</td><td>-32 to 22</td><td>0</td><td>0.2 mm</td></tr><tr><td>TRAIL 1</td><td>Trailing edge registration (first page)</td><td>-22 to 32</td><td>0</td><td>0.2 mm</td></tr><tr><td>LEAD 2</td><td>Leading edge registration (second page)</td><td>-32 to 22</td><td>0</td><td>0.2 mm</td></tr><tr><td>TRAIL 2</td><td>Trailing edge registration (second page)</td><td>-22 to 32</td><td>0</td><td>0.2 mm</td></tr></table> <p>Adjustment: Leading edge registration</p> <ol style="list-style-type: none">1. Select [LEAD 1] or [LEAD 2] using the cursor up/down keys.2. Press the interrupt key.3. Place an original on the DP and press the start key to make a test copy.4. Change the setting value using the cursor left/right keys. For copy example 1, increase the value. For copy example 2, decrease the value. <div><div> Original</div><div> Copy example 1</div><div> Copy example 2</div></div> <p>Figure 1-3-7</p> <ol style="list-style-type: none">5. Press the start key. The value is set. <p>Caution Check the copy image after the adjustment. If the image is still incorrect, perform the following adjustments in maintenance mode.</p> <div><div>U071</div><div>→</div><div>U404 (P.1-3-27)</div></div>	Display	Description	Setting range	Initial setting	Change in value per step	LEAD 1	Leading edge registration (first page)	-32 to 22	0	0.2 mm	TRAIL 1	Trailing edge registration (first page)	-22 to 32	0	0.2 mm	LEAD 2	Leading edge registration (second page)	-32 to 22	0	0.2 mm	TRAIL 2	Trailing edge registration (second page)	-22 to 32	0	0.2 mm
Display	Description	Setting range	Initial setting	Change in value per step																						
LEAD 1	Leading edge registration (first page)	-32 to 22	0	0.2 mm																						
TRAIL 1	Trailing edge registration (first page)	-22 to 32	0	0.2 mm																						
LEAD 2	Leading edge registration (second page)	-32 to 22	0	0.2 mm																						
TRAIL 2	Trailing edge registration (second page)	-22 to 32	0	0.2 mm																						

Maintenance item No.	Description
U071	<p>Adjustment: Trailing edge registration</p> <ol style="list-style-type: none">1. Select [TRAIL 1] or [TRAIL 2] using the cursor up/down keys.2. Press the interrupt key.3. Place an original on the DP and press the start key to make a test copy.4. Change the setting value using the cursor left/right keys. For copy example 1, increase the value. For copy example 2, decrease the value. <div><div><p>Original</p></div><div><p>Copy example 1</p></div><div><p>Copy example 2</p></div></div> <p>Figure 1-3-8</p> <ol style="list-style-type: none">5. Press the start key. The value is set. <p>Caution Check the copy image after the adjustment. If the image is still incorrect, perform the following adjustments in maintenance mode.</p> <div><div>U071</div><div>→</div><div>U404 (P.1-3-27)</div></div> <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>

Maintenance item No.	Description																				
U072	<p>Adjusting the DP center line</p> <p>Description Adjusts the scanning start position for the DP original.</p> <p>Purpose Make the adjustment if there is a regular error between the centers of the original and the copy image when the optional DP is used.</p> <p>Adjustment</p> <ol style="list-style-type: none">1. Press the start key.2. Select the item to be adjusted using the cursor up/down keys. <table><thead><tr><th>Display</th><th>Description</th><th>Setting range</th><th>Initial setting</th><th>Change in value per step</th></tr></thead><tbody><tr><td>1sided</td><td>DP center line (simplex mode)</td><td>-39 to 39</td><td>0</td><td>0.15 mm</td></tr><tr><td>2sided front</td><td>DP center line (first page of duplex mode)</td><td>-39 to 39</td><td>0</td><td>0.15 mm</td></tr><tr><td>2sided back</td><td>DP center line (second page of duplex mode)</td><td>-39 to 39</td><td>0</td><td>0.15 mm</td></tr></tbody></table> <ol style="list-style-type: none">3. Press the interrupt key.4. Place an original on the DP and press the start key to make a test copy.5. Change the setting value using the cursor left/right keys. For copy example 1, increase the value. For copy example 2, decrease the value. <div><div><p>Original</p></div><div><p>Copy example 1</p></div><div><p>Copy example 2</p></div></div> <p>Figure 1-3-9</p> <ol style="list-style-type: none">6. Press the start key. The value is set. <p>Caution Check the copy image after the adjustment. If the image is still incorrect, perform the following adjustments in maintenance mode.</p> <div><div>U072</div><div>→</div><div>U404 (P.1-3-27)</div></div> <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	Setting range	Initial setting	Change in value per step	1sided	DP center line (simplex mode)	-39 to 39	0	0.15 mm	2sided front	DP center line (first page of duplex mode)	-39 to 39	0	0.15 mm	2sided back	DP center line (second page of duplex mode)	-39 to 39	0	0.15 mm
Display	Description	Setting range	Initial setting	Change in value per step																	
1sided	DP center line (simplex mode)	-39 to 39	0	0.15 mm																	
2sided front	DP center line (first page of duplex mode)	-39 to 39	0	0.15 mm																	
2sided back	DP center line (second page of duplex mode)	-39 to 39	0	0.15 mm																	

Maintenance item No.	Description						
U074	<p>Adjusting the DP input light luminosity</p> <p>Description Adjusts the luminosity of the exposure lamp for scanning originals from the DP.</p> <p>Purpose Used if the exposure amount differs significantly between when scanning an original on the platen and when scanning an original from the DP.</p> <p>Setting</p> <ol style="list-style-type: none">1. Press the start key.2. Change the setting value using the cursor left/right keys. <table><tr><th>Description</th><th>Setting range</th><th>Initial setting</th></tr><tr><td>DP input light luminosity</td><td>0 to 8</td><td>0</td></tr></table> <p>Increasing the setting makes the luminosity higher, and decreasing it makes the luminosity lower.</p> <ol style="list-style-type: none">3. Press the start key. The value is set. <p>Supplement While this maintenance item is being executed, copying from an original is available in interrupt copying mode (which is activated by pressing the interrupt key).</p> <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Description	Setting range	Initial setting	DP input light luminosity	0 to 8	0
Description	Setting range	Initial setting					
DP input light luminosity	0 to 8	0					

Maintenance item No.	Description								
U076	<p>Executing DP automatic adjustment</p> <p>Description Uses a specified original and automatically adjusts the following items in the DP scanning section. Adjusting the DP magnification (U070) Adjusting the DP scanning timing (U071) Adjusting the DP center line (U072) When you run this maintenance mode, the preset values of U070, U071 and U072 will also be updated.</p> <p>Purpose To perform automatic adjustment of various items in the DP scanning section.</p> <p>Method</p> <ol style="list-style-type: none"> Set a specified original (P/N: 302AC68243) in the DP. Cut the trailing edge of the original. <div data-bbox="478 638 1220 896"> </div> <p style="text-align: center;">Figure 1-3-10</p> <ol style="list-style-type: none"> Press the start key. Press the start key. Auto adjustment starts. When adjustment is complete, each adjusted value is displayed. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>CONVEY SPEED</td><td>DP magnification in the auxiliary scanning direction</td></tr> <tr> <td>LEAD EDGE ADJ</td><td>DP leading edge registration</td></tr> <tr> <td>DP CENTER</td><td>DP original center line</td></tr> </tbody> </table> <p>If a problem occurs during auto adjustment, DATA: XX (XX is replaced by an error code) is displayed and operation stops. Should this happen, determine the details of the problem and either repeat the procedure from the beginning, or adjust the remaining items manually by running the corresponding maintenance items.</p> <p>Completion Press the stop/clear key after auto adjustment is complete. The screen for selecting a maintenance item is displayed. If the stop/clear key is pressed during auto adjustment, adjustment stops and no settings are changed.</p>	Display	Description	CONVEY SPEED	DP magnification in the auxiliary scanning direction	LEAD EDGE ADJ	DP leading edge registration	DP CENTER	DP original center line
Display	Description								
CONVEY SPEED	DP magnification in the auxiliary scanning direction								
LEAD EDGE ADJ	DP leading edge registration								
DP CENTER	DP original center line								

Maintenance item No.	Description												
U087	<p>Setting DP reading position modification operation</p> <p>Description The presence or absence of dust is determined by comparing the scan data of the original trailing edge and that taken after the original is conveyed past the DP original scanning position. If dust is identified, the DP original scanning position is adjusted for the following originals.</p> <p>Purpose When using DP, to solve the problem when black lines occurs due to the dust with respect to original reading position.</p> <p>Setting</p> <ol style="list-style-type: none">Press the start key.Select ON or OFF using the cursor up/down keys. <table><tr><th>Display</th><th>Description</th></tr><tr><td>ON</td><td>DP scanning position adjust mode on</td></tr><tr><td>OFF</td><td>DP scanning position adjust mode off</td></tr></table> <p>Initial setting: ON</p> <ol style="list-style-type: none">Press the start key. The setting is set. <p>Setting the reference data for identifying dust Available only when the mode is turned on.</p> <ol style="list-style-type: none">Change the setting using the cursor left/right keys. <table><tr><th>Description</th><th>Setting range</th><th>Initial setting</th></tr><tr><td>Minimum density to be regarded as dust</td><td>10 to 95</td><td>35</td></tr></table> <p>Example The figure indicates the density in 256 levels of gray (0: white, 255: black). When the setting is 35, data of the level of 35 or higher is regarded as dust and data of lower level is regarded as the background (scan data taken when there is no original).</p> <ol style="list-style-type: none">Press the start key. The value is set. <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	ON	DP scanning position adjust mode on	OFF	DP scanning position adjust mode off	Description	Setting range	Initial setting	Minimum density to be regarded as dust	10 to 95	35
Display	Description												
ON	DP scanning position adjust mode on												
OFF	DP scanning position adjust mode off												
Description	Setting range	Initial setting											
Minimum density to be regarded as dust	10 to 95	35											
U203	<p>Checking DP operation</p> <p>Description Simulates the original conveying operation separately in the DP.</p> <p>Purpose To check the DP operation.</p> <p>Method</p> <ol style="list-style-type: none">Press the start key.Place an original in the DP if running this simulation with paper.Select the item to be operated using the cursor up/down keys. <table><tr><th>Display</th><th>Operation</th></tr><tr><td>ADP</td><td>With paper, single-sided original</td></tr><tr><td>RADP</td><td>With paper, double-sided original</td></tr><tr><td>ADP (NON P)</td><td>Without paper, single-sided original (continuous operation)</td></tr><tr><td>RADP (NON P)</td><td>Without paper, double-sided original (continuous operation)</td></tr></table> <ol style="list-style-type: none">Press the start key. The operation starts.To stop continuous operation, press the stop/clear key. <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Operation	ADP	With paper, single-sided original	RADP	With paper, double-sided original	ADP (NON P)	Without paper, single-sided original (continuous operation)	RADP (NON P)	Without paper, double-sided original (continuous operation)		
Display	Operation												
ADP	With paper, single-sided original												
RADP	With paper, double-sided original												
ADP (NON P)	Without paper, single-sided original (continuous operation)												
RADP (NON P)	Without paper, double-sided original (continuous operation)												

Maintenance item No.	Description														
U243	<p>Checking the operation of the DP motors</p> <p>Description Turns the motors and solenoids in the DP on.</p> <p>Purpose To check the operation of the DP motors or solenoids.</p> <p>Method</p> <ol style="list-style-type: none"> 1. Press the start key. 2. Select the item to be operated using the cursor up/down keys. 3. Press the start key. The operation starts. <table border="1"> <thead> <tr> <th>Display</th><th>Motors and solenoids</th></tr> </thead> <tbody> <tr> <td>F MOT</td><td>Original feed motor (OFM) is turned on.</td></tr> <tr> <td>C MOT</td><td>Original conveying motor (OCM) is turned on.</td></tr> <tr> <td>R MOT</td><td>Original switchback motor (OSBM) is turned on.</td></tr> <tr> <td>RJ SL</td><td>Switchback feedshift solenoid (SBFSSOL) is turned on.</td></tr> <tr> <td>RP SL</td><td>Switchback pressure solenoid (SBPSOL) is turned on.</td></tr> </tbody> </table> <ol style="list-style-type: none"> 4. To stop operation, press the stop/clear key. <p>Completion Press the stop/clear key when operation stops. The screen for selecting a maintenance item No. is displayed.</p>	Display	Motors and solenoids	F MOT	Original feed motor (OFM) is turned on.	C MOT	Original conveying motor (OCM) is turned on.	R MOT	Original switchback motor (OSBM) is turned on.	RJ SL	Switchback feedshift solenoid (SBFSSOL) is turned on.	RP SL	Switchback pressure solenoid (SBPSOL) is turned on.		
Display	Motors and solenoids														
F MOT	Original feed motor (OFM) is turned on.														
C MOT	Original conveying motor (OCM) is turned on.														
R MOT	Original switchback motor (OSBM) is turned on.														
RJ SL	Switchback feedshift solenoid (SBFSSOL) is turned on.														
RP SL	Switchback pressure solenoid (SBPSOL) is turned on.														
U244	<p>Checking the DP switches</p> <p>Description Displays the status of the respective switches in the DP.</p> <p>Purpose To check if respective switches in the DP operate correctly.</p> <p>Method</p> <ol style="list-style-type: none"> 1. Press the start key. 2. Turn the respective switches on and off manually to check the status. When a switch is detected to be in the ON position, the display for that switch will be highlighted. <table border="1"> <thead> <tr> <th>Display</th><th>Switches</th></tr> </thead> <tbody> <tr> <td>SET SW</td><td>Original set switch (OSSW)</td></tr> <tr> <td>TMG SW</td><td>DP timing switch (DPTSW)</td></tr> <tr> <td>MAT SW</td><td>DP open/close switch (DPOCSW)</td></tr> <tr> <td>COV SW</td><td>DP interlock switch (DPILSW)</td></tr> <tr> <td>REV SW</td><td>Original switchback switch (OSBSW)</td></tr> <tr> <td>SZ A SW</td><td>Original size length switch (OSLSW)</td></tr> </tbody> </table> <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Switches	SET SW	Original set switch (OSSW)	TMG SW	DP timing switch (DPTSW)	MAT SW	DP open/close switch (DPOCSW)	COV SW	DP interlock switch (DPILSW)	REV SW	Original switchback switch (OSBSW)	SZ A SW	Original size length switch (OSLSW)
Display	Switches														
SET SW	Original set switch (OSSW)														
TMG SW	DP timing switch (DPTSW)														
MAT SW	DP open/close switch (DPOCSW)														
COV SW	DP interlock switch (DPILSW)														
REV SW	Original switchback switch (OSBSW)														
SZ A SW	Original size length switch (OSLSW)														

Maintenance item No.	Description						
U326	<p>Setting the black line cleaning indication</p> <p>Description Sets whether to display the cleaning guidance when detecting the black line.</p> <p>Purpose Displays the cleaning guidance in order to make the call for service with the black line decrease by the rubbish on the platen when scanning from the DP.</p> <p>Setting</p> <ol style="list-style-type: none"> 1. Press the start key. 2. Select ON or OFF using the cursor up/down keys. <table border="1" data-bbox="331 533 1399 660"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>ON</td><td>Displays the cleaning guidance</td></tr> <tr> <td>OFF</td><td>Not to display the cleaning guidance</td></tr> </tbody> </table> <p>Initial setting: ON</p> <ol style="list-style-type: none"> 3. Press the start key. The setting is set. <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	ON	Displays the cleaning guidance	OFF	Not to display the cleaning guidance
Display	Description						
ON	Displays the cleaning guidance						
OFF	Not to display the cleaning guidance						

Maintenance item No.	Description																									
U404	<p>Adjusting margins for scanning an original from the DP</p> <p>Description Adjusts margins for scanning the original from the DP.</p> <p>Purpose Make the adjustment if margins are incorrect when the optional DP is used.</p> <p>Caution Before making this adjustment, ensure that the following adjustments have been made in maintenance mode.</p> <div><div>U402 (See the service manual for the machine.))</div><div>→</div><div>U403 (See the service manual for the machine.))</div><div>→</div><div>U404</div></div> <p>Adjustment</p> <div><div>1. Press the start key.</div><div>2. Select the item to be adjusted using the cursor up/down keys.</div></div> <table><tr><th>Display</th><th>Description</th><th>Setting range</th><th>Initial setting</th><th>Change in value per step</th></tr><tr><td>A MARGIN</td><td>DP left margin</td><td>0 to 10.0</td><td>2.0</td><td>0.1 mm</td></tr><tr><td>B MARGIN</td><td>DP leading edge margin</td><td>0 to 10.0</td><td>3.0</td><td>0.1 mm</td></tr><tr><td>C MARGIN</td><td>DP right margin</td><td>0 to 10.0</td><td>2.0</td><td>0.1 mm</td></tr><tr><td>D MARGIN</td><td>DP trailing edge margin</td><td>0 to 10.0</td><td>2.0</td><td>0.1 mm</td></tr></table> <div><div>3. Press the interrupt key.</div><div>4. Place an original on the DP and press the start key to make a test copy.</div><div>5. Change the setting value using the cursor left/right keys. Increasing the value makes the margin wider, and decreasing it makes the margin narrower.</div></div> <div><div>Leading edge margin (3.0±2.5 mm)</div><div>Left margin (2.5+1.5/-2.0 mm)</div><div>Right margin (2.5+1.5/-2.0 mm)</div><div>Trailing edge margin (3.0±2.5 mm)</div></div> <p>Figure 1-3-11</p> <div><div>6. Press the start key. The value is set.</div></div> <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	Setting range	Initial setting	Change in value per step	A MARGIN	DP left margin	0 to 10.0	2.0	0.1 mm	B MARGIN	DP leading edge margin	0 to 10.0	3.0	0.1 mm	C MARGIN	DP right margin	0 to 10.0	2.0	0.1 mm	D MARGIN	DP trailing edge margin	0 to 10.0	2.0	0.1 mm
Display	Description	Setting range	Initial setting	Change in value per step																						
A MARGIN	DP left margin	0 to 10.0	2.0	0.1 mm																						
B MARGIN	DP leading edge margin	0 to 10.0	3.0	0.1 mm																						
C MARGIN	DP right margin	0 to 10.0	2.0	0.1 mm																						
D MARGIN	DP trailing edge margin	0 to 10.0	2.0	0.1 mm																						

Maintenance item No.	Description																				
U905	<p>Checking counts by optional devices</p> <p>Description Displays the counts of DP or finisher.</p> <p>Purpose To check the use of DP and finisher.</p> <p>Method</p> <ol style="list-style-type: none">1. Press the start key.2. Select the device, the count of which is to be checked using the cursor up/down keys.3. Press the start key. The count of the selected device is displayed. <table><tr><th>Display</th><th>Description</th></tr><tr><td>DP</td><td>Counts of DP</td></tr><tr><td>FINISHER</td><td>Counts of optional finisher</td></tr></table> <p>DP</p> <table><tr><th>Display</th><th>Description</th></tr><tr><td>ADP</td><td>No. of single-sided originals that has passed through the DP</td></tr><tr><td>RADP</td><td>No. of double-sided originals that has passed through the DP</td></tr></table> <p>Finisher</p> <table><tr><th>Display</th><th>Description</th></tr><tr><td>CP CNT</td><td>No. of copies that has passed</td></tr><tr><td>STAPLE</td><td>Frequency the stapler has been activated</td></tr><tr><td>BUNDLE EJECT</td><td>Frequency the bundle discharge has been activated</td></tr></table> <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	DP	Counts of DP	FINISHER	Counts of optional finisher	Display	Description	ADP	No. of single-sided originals that has passed through the DP	RADP	No. of double-sided originals that has passed through the DP	Display	Description	CP CNT	No. of copies that has passed	STAPLE	Frequency the stapler has been activated	BUNDLE EJECT	Frequency the bundle discharge has been activated
Display	Description																				
DP	Counts of DP																				
FINISHER	Counts of optional finisher																				
Display	Description																				
ADP	No. of single-sided originals that has passed through the DP																				
RADP	No. of double-sided originals that has passed through the DP																				
Display	Description																				
CP CNT	No. of copies that has passed																				
STAPLE	Frequency the stapler has been activated																				
BUNDLE EJECT	Frequency the bundle discharge has been activated																				
U942	<p>Setting of deflection for feeding from DP</p> <p>Description Adjusts the deflection generated when the DP is used.</p> <p>Purpose Use this mode if an original non-feed jam, oblique feed or wrinkling of original occurs when the DP is used.</p> <p>Setting</p> <ol style="list-style-type: none">1. Press the start key.2. Select the item to be adjusted using the cursor up/down keys. <table><tr><th>Display</th><th>Description</th><th>Setting range</th><th>Initial setting</th></tr><tr><td>FEED MOT</td><td>Deflection in the original feed motor</td><td>-10 to 20</td><td>0</td></tr><tr><td>REV MOT</td><td>Deflection in the original switchback motor</td><td>-10 to 20</td><td>0</td></tr></table> <ol style="list-style-type: none">3. Press the interrupt key.4. Place an original on the DP and press the start key to make a test copy.5. Change the setting value using the cursor left/right keys. The greater the value, the larger the deflection; the smaller the value, the smaller the deflection. If an original non-feed jam or oblique feed occurs, increase the setting value. If wrinkling of original occurs, decrease the value.6. Press the start key. The value is set. <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	Setting range	Initial setting	FEED MOT	Deflection in the original feed motor	-10 to 20	0	REV MOT	Deflection in the original switchback motor	-10 to 20	0								
Display	Description	Setting range	Initial setting																		
FEED MOT	Deflection in the original feed motor	-10 to 20	0																		
REV MOT	Deflection in the original switchback motor	-10 to 20	0																		

TONER

1-4-1 Original misfeed detection

(1) Original misfeed indication

When an original jams, the machine immediately stops operation and a message is shown on the machine operation panel.

To remove the jammed original, open the document processor top cover.

To reset the original misfeed detection, open and close the document processor top cover.

(2) Original misfeed detection conditions

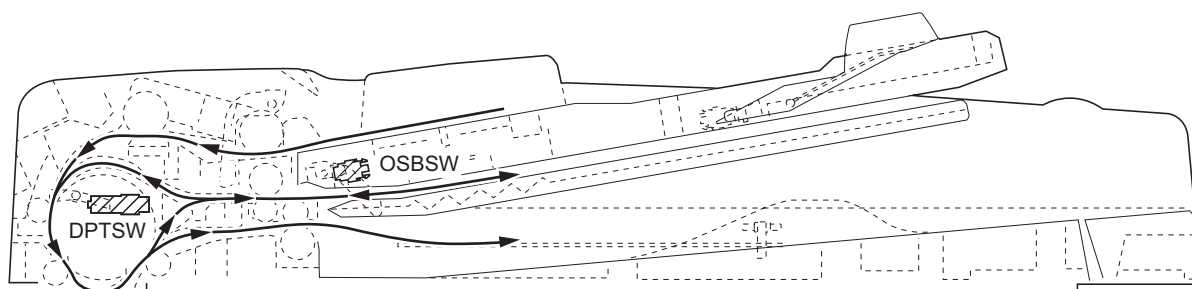


Figure 1-4-1

Section	Jam code	Conditions	Specified time
Document processor	70 No original feed	During primary feed of the second original in the simplex or duplex mode, even if retry operation is performed five times, primary original feed is not performed.	-
	71 An original jam in the original conveying section 1	During the secondary original feed in the simplex mode, DP timing switch (DPTSW) does not turn off within specified time of the original conveying motor (OCM) turning on.	9900 pulses
	72 An original size error jam	DP timing switch (DPTSW) turns off within the specified time of period of the original conveying motor (OCM) turning on in the simplex or duplex mode.	1145 pulses
	73 An original jam in the original conveying section 2	During original conveying in the duplex mode, DP timing switch (DPTSW) does not turn off within specified time of the original conveying motor (OCM) turning on.	9900 pulses
	74 An original jam in the original conveying section 3	During secondary original feed in the duplex mode, DP timing switch (DPTSW) does not turn on within specified time of the original switchback motor (OSBM) turning on.	2300 pulses
	75 An original jam in the original switchback section	During original switchback in the duplex mode, the original switchback switch (OSBSW) does not turn on within specified time of the original conveying motor (OCM) turning on.	10700 pulses
	78 Document processor cover open	The document processor or document processor top cover is opened during original feeding. The original set switch (OSSW) or original size length switch (OSLSW) turns on when starting the original paper feed.	-

(3) Paper misfeeds

Problem	Causes/check procedures	Corrective measures
(1) An original jams in DP is indicated during copying (no original feed). Jam code 70	Defective original set switch.	Run maintenance item U244 and turn the original set switch on and off manually. Replace the switch if indication of the corresponding switch is not light.
	Check if the original feed motor malfunctions.	Run maintenance item U243 and select the original feed motor to be turned on and off. Check the status and remedy if necessary.
	Check if the DP paper feed pulley or DP separation pad is deformed.	Check visually and replace.
(2) An original jams in DP is indicated during copying (an original jam in the original conveying section 1). Jam code 71	Defective DP timing switch.	Run maintenance item U244 and turn the DP timing switch on and off manually. Replace the switch if indication of the corresponding switch is not light.
	Check if the original conveying motor malfunctions.	Run maintenance item U243 and select the original conveying motor to be turned on and off. Check the status and remedy if necessary.
(3) An original jams in DP is indicated during copying (an original size error jam). Jam code 72	Defective DP timing switch.	Run maintenance item U244 and turn the DP timing switch on and off manually. Replace the switch if indication of the corresponding switch is not light.
	Check if the original conveying motor malfunctions.	Run maintenance item U243 and select the original conveying motor to be turned on and off. Check the status and remedy if necessary.
(4) An original jams in DP is indicated during copying (an original jam in the original conveying section 2). Jam code 73	Defective DP timing switch.	Run maintenance item U244 and turn the DP timing switch on and off manually. Replace the switch if indication of the corresponding switch is not light.
	Check if the original conveying motor malfunctions.	Run maintenance item U243 and select the original conveying motor to be turned on and off. Check the status and remedy if necessary.
(5) An original jams in DP is indicated during copying (an original jam in the original conveying section 3). Jam code 74	Defective DP timing switch.	Run maintenance item U244 and turn the DP timing switch on and off manually. Replace the switch if indication of the corresponding switch is not light.
	Check if the original conveying motor malfunctions.	Run maintenance item U243 and select the original conveying motor to be turned on and off. Check the status and remedy if necessary.
(6) An original jams in DP is indicated during copying (an original jam in the original switchback section). Jam code 75	Defective DP timing switch.	Run maintenance item U244 and turn the DP timing switch on and off manually. Replace the switch if indication of the corresponding switch is not light.
	Check if the original switchback motor malfunctions.	Run maintenance item U243 and select the original switchback motor to be turned on and off. Check the status and remedy if necessary.

1-4-2 Self-diagnosis

(1) Self-diagnostic function (operation panel is a 7-segment type)

When an unexpected error is detected for some reason, a system error (A call error) will be indicated. After a system error (A call error) is indicated, the error can be cleared by turning the main power switch off and then on. If a system error (A call error) occurs frequently, a fault may have occurred. Check the details of the C call to take proper measures.

(2) Self diagnostic codes (operation panel is a 7-segment type)

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
A0410	Document processor communication problem Communication fails five times successively.	Document processor installed incorrectly.	Check the installation state of the document processor and adjust it if it is not properly installed.
		Defective PWB.	Replace the main/engine PWB or DP driver PWB and check for correct operation.

(3) Self-diagnostic function (operation panel is an LCD type)

When an unexpected error is detected for some reason, a system error will be indicated. After a system error is indicated, the error can be cleared by turning the main power switch off and then on. If the error is detected continuously, however, perform the operation shown in Table 1-4-1. If a system error occurs frequently, a fault may have occurred. Check the details of the C call to take proper measures.

System error	Contents	Operation
0410	Document processor communication problem	System error → service call

Table 1-4-1

(4) Self diagnostic codes (operation panel is an LCD type)

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C0410	Document processor communication problem Communication fails five times successively.	Document processor installed incorrectly.	Check the installation state of the document processor and adjust it if it is not properly installed.
		Defective PWB.	Replace the engine PWB or DP driver 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 original feed motor, original conveying motor or original switchback 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. 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.
	3. Defective motor.	Run maintenance item U243 and check if the motor operates. If not, replace the motor.
	4. Defective DP main PWB.	Run maintenance item U243 and check if the motor operates. If not, replace the DP main PWB.
(2) The DP cooling fan 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 motor coil.	Check for continuity across the coil. If none, replace the motor.
(3) The switchback feed-shift solenoid or switchback pressure solenoid does not operate.	1. Defective solenoid coil.	Check for continuity across the coil. If none, replace the solenoid.
	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 DP main PWB.	Run maintenance item U243 and check if the solenoid operates. If not, replace the DP main PWB.
(4) A message indicating cover open is displayed when the document processor top cover is closed correctly.	1. Poor contact in the connector terminals of DP interlock switch.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	2. Defective DP interlock switch.	Check for continuity across the contacts of the switch. If none when the switch is on, replace DP interlock switch.
(5) An original jams when the main power switch is turned on.	1. A piece of paper torn from an original is caught around the switch.	Remove any found.
	2. Defective DP timing switch or original switchback switch.	Run maintenance item U244 and turn the switch on and off manually. Replace the switch if indication of the corresponding switch is not light.

1-4-4 Mechanical problems

Problem	Causes/check procedures	Corrective measures
(1) No primary original feed.	The surfaces of the DP forwarding pulley, DP feed pulley or DP separation pad are dirty with paper powder.	Check and clean them with isopropyl alcohol if they are dirty.
	Check if the DP forwarding pulley or the DP feed pulley is deformed.	Replace the pulley if it is deformed (see page 1-5-2).
	Electrical problem with the original feed motor.	See page 1-4-5.
(2) Originals jam.	Originals outside the specifications are used.	Use only originals conforming to the specifications.
	The surfaces of the DP forwarding pulley, DP original feed pulley or DP separation pad are dirty with paper powder.	Check and clean them with isopropyl alcohol if they are dirty.
	Check if the contact between the eject roller and eject pulley is correct.	Check visually and remedy if necessary.
	Check if the contact between the switchback roller and switchback pulley is correct.	Check visually and 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 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.

Output Connector for Interconnecting Cable is non-LPS.

Output: 114.5 VA max.

Please use the item below Interconnecting Cable/

P/N: 303MX46010

1-5-2 Original feed section

(1) Detaching and refitting the DP forwarding pulley and DP feed pulley

Follow the procedure below to clean or replace the DP forwarding pulley or DP feed pulley.

Procedure

Removing the DP forwarding pulley

1. Open the document processor top cover.
2. Raise the DP feed pulley unit.
Release the claw holding the DP forwarding pulley shaft and then pull out the shaft.
3. Remove the DP forwarding pulley.

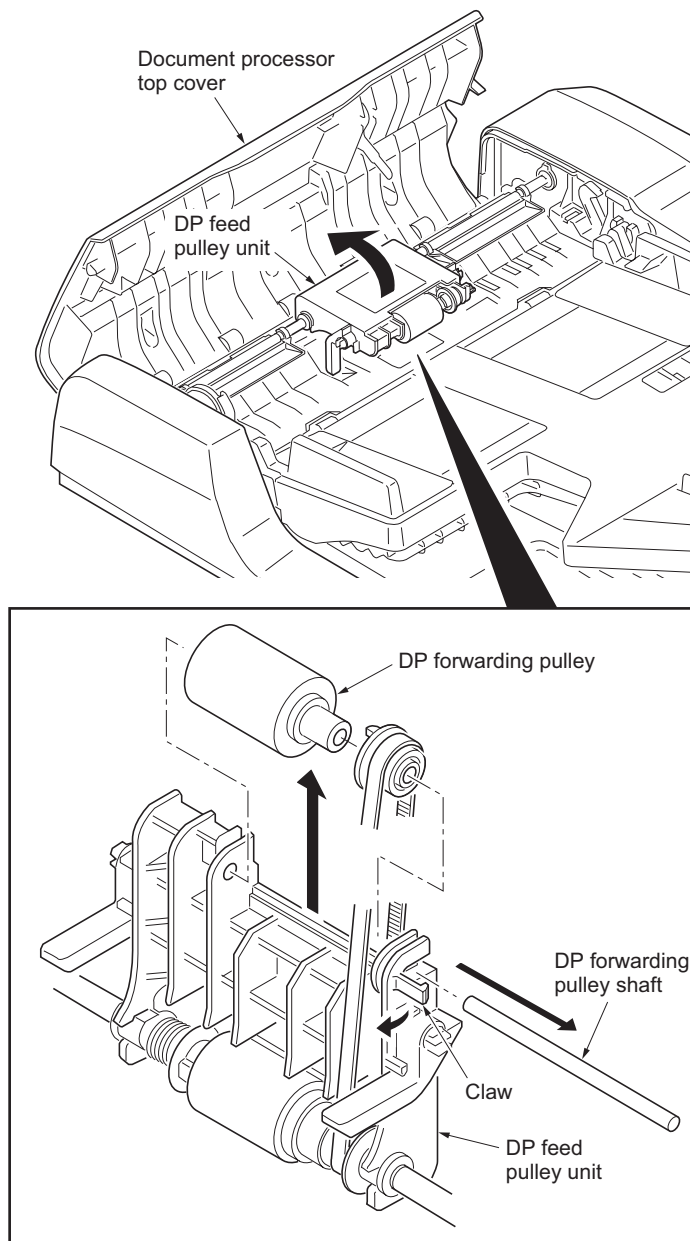


Figure 1-5-1

Removing the DP feed pulley

4. Remove the stop ring and two original feed guides of the DP feed pulley shaft.
When mounting the original feed guide, fit the projection of the original feed guide into the groove of the DP feed pulley shaft. Align the original feed guide with the side affixed with a C label facing the front side of the machine.
5. Remove the DP feed pulley unit from the DP.

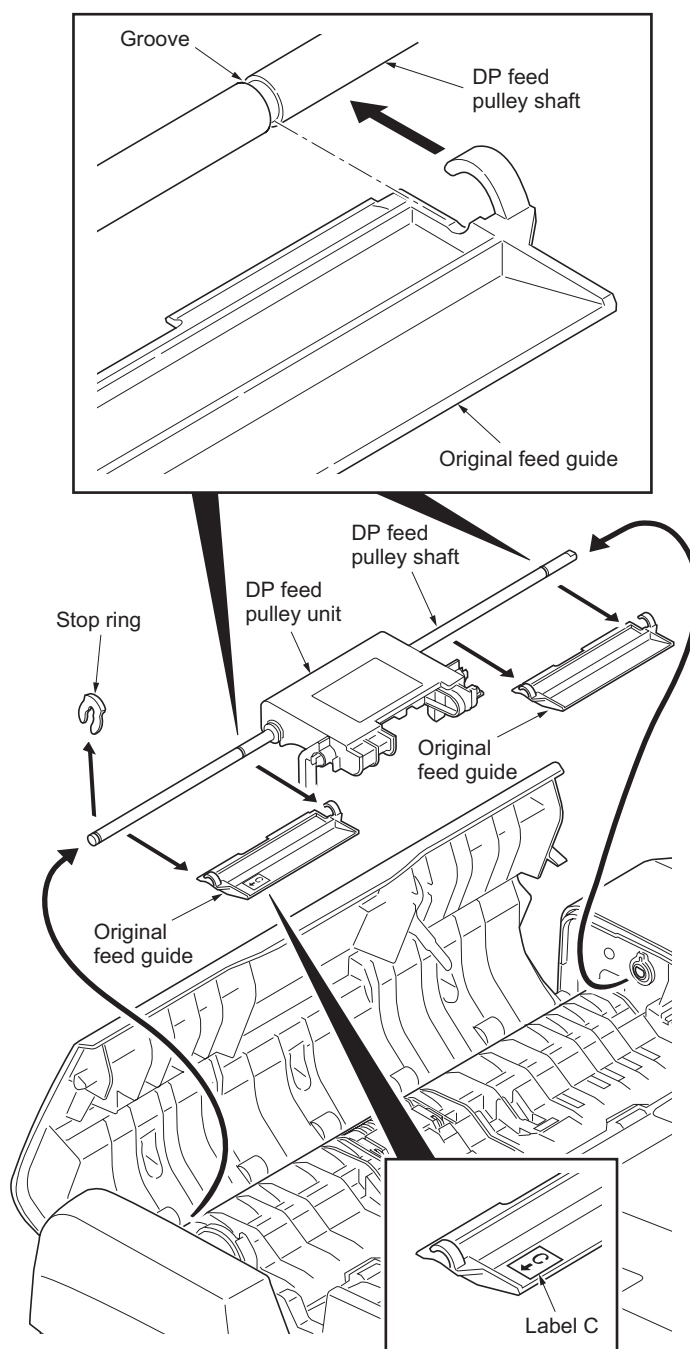
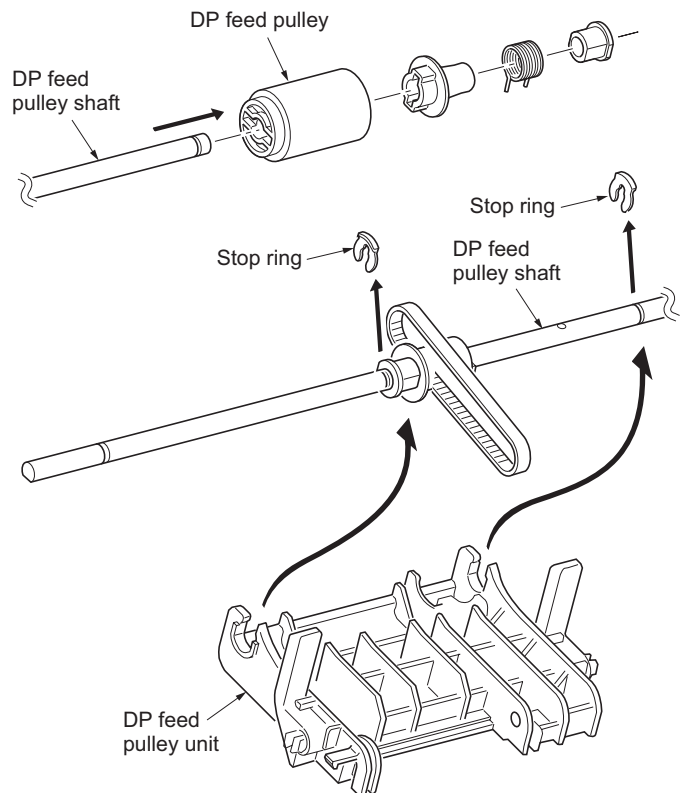


Figure 1-5-2

6. Remove two stop rings and then remove DP feed pulley shaft from the DP feed pulley unit.
7. Remove DP feed pulley from the DP feed pulley shaft.
8. Clean or replace the DP forwarding pulley and the DP feed pulley. Refit all the removed parts.

**Figure 1-5-3**

(2) Detaching and refitting the DP separation pad

Follow the procedure below to clean or replace the DP separation pad.

Procedure

1. Remove the DP feed pulley unit. (see page 1-5-2)
2. Push the inserted parts of the DP separation pad and then remove the DP separation pad.
3. Clean or replace the DP separation pad. Refit all the removed parts.

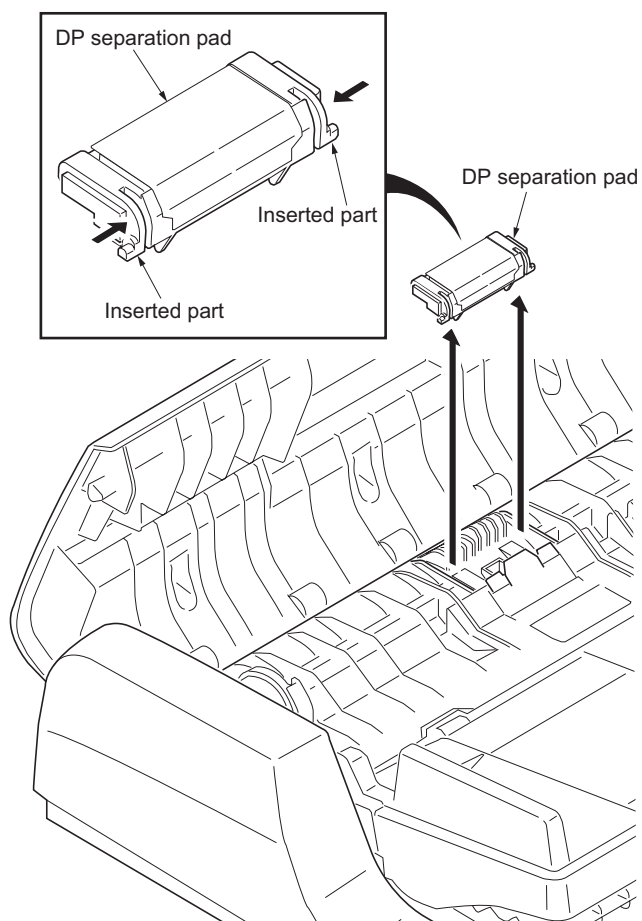


Figure 1-5-4

1-5-3 Image adjustment

(1) Adjusting the angle of leading edge

Perform the following adjustment if the leading edge of the copy image is laterally skewed.

Procedure

1. Place an original on the DP and press the start key to make a test copy.
2. If the gap of leading edge exceeds the reference value, perform the following adjustment.

Reference value

For simplex copying: Within ± 3.0 mm

For duplex copying: Within ± 4.0 mm

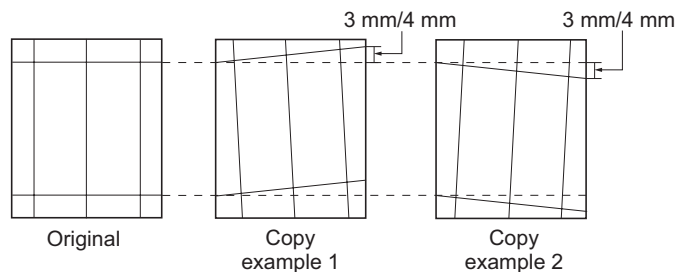


Figure 1-5-5

3. Open the DP and loosen two adjusting screws of right hinge.
4. Adjust the position of the DP.
For copy example 1: Move the DP down (⇩).
For copy example 2: Move the DP up (⇧).
Amount of change per scale: Approx. 0.5 mm
5. Tighten two adjusting screws.

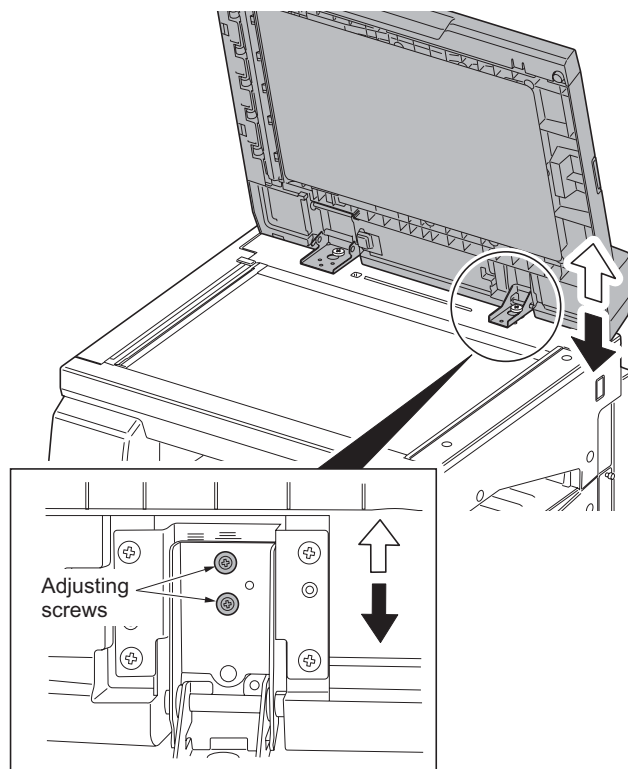
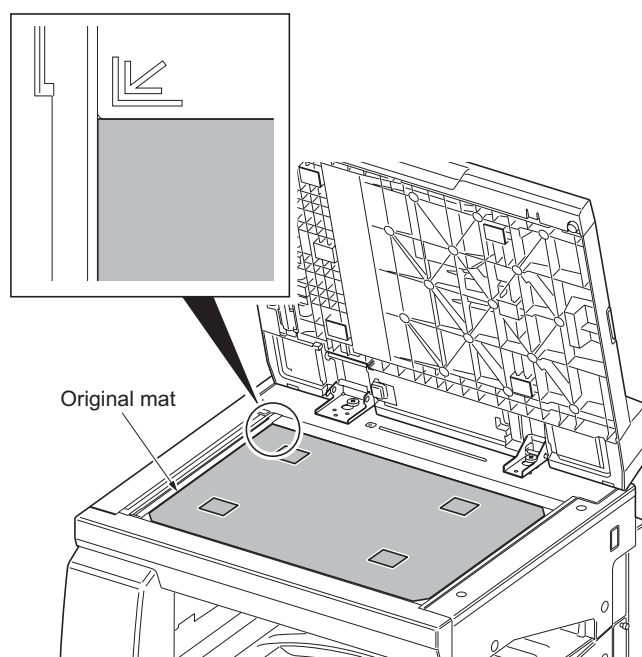


Figure 1-5-6

6. Remove the original mat.
7. Place the original mat with its hook and loop fasteners up over the platen.
Align original mat corner that has 90 degrees of angle with the inner left corner of the original instruction panel.
8. Close the DP slowly to attach the original mat.
9. Make a test copy again.
10. Repeat steps 3 to 9 above until the gap of the leading edge falls within the reference values.

**Figure 1-5-7**

(2) Adjusting the angle of trailing edge

Perform the following adjustment if the trailing edge of the copy image is laterally skewed.

Procedure

1. Place an original on the DP and press the start key to make a test copy.
2. If the gap of trailing edge exceeds the reference value, perform the following adjustment.

Reference value

For simplex copying: Within ± 3.0 mm

For duplex copying: Within ± 4.0 mm

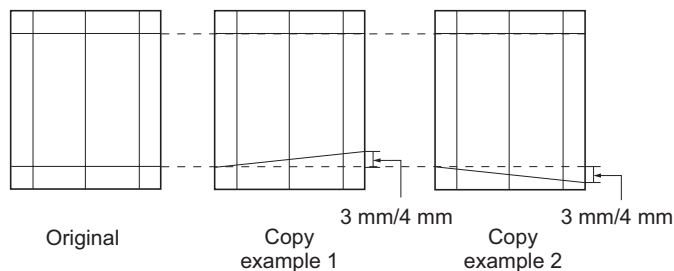


Figure 1-5-8

3. Open the DP and release two latches using a flat-head screwdriver.

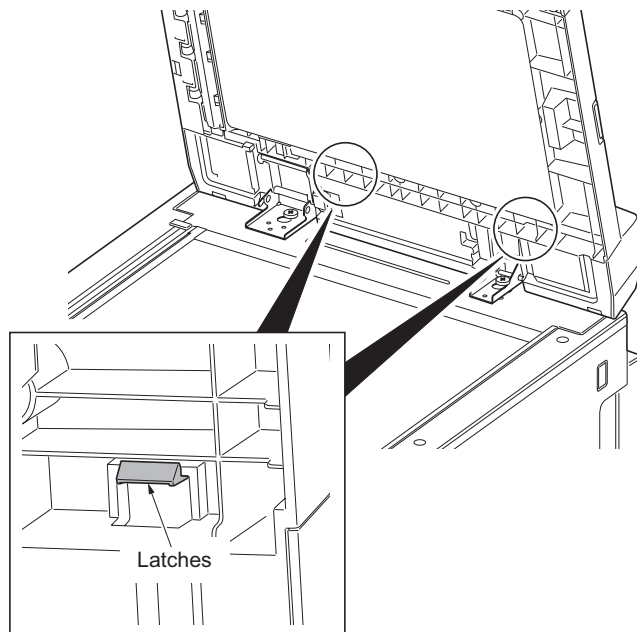


Figure 1-5-9

4. Release three latches using a flat-head screwdriver and remove the document processor rear cover.

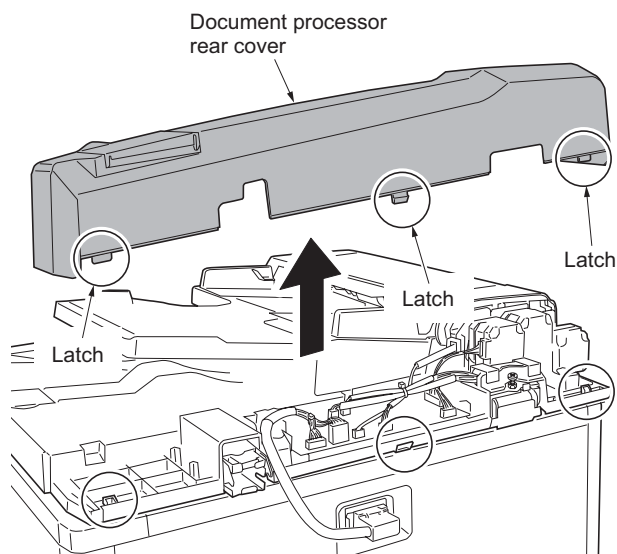


Figure 1-5-10

5. Adjust the height of DP.
 - 1) Loosen the nut.
 - 2) For copy example 1:
Loosen the adjusting screw (➡).
 - For copy example 2:
Tighten the adjusting screw (⇨).
 - 3) Tighten the nut.
6. Refit the document processor rear cover.

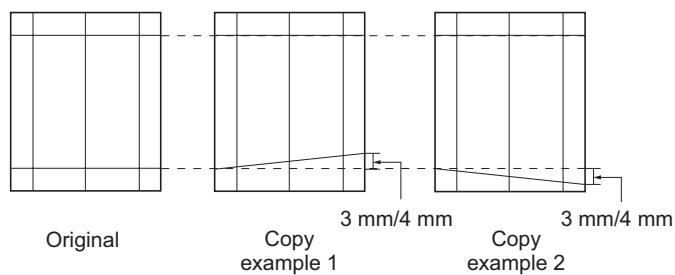


Figure 1-5-11

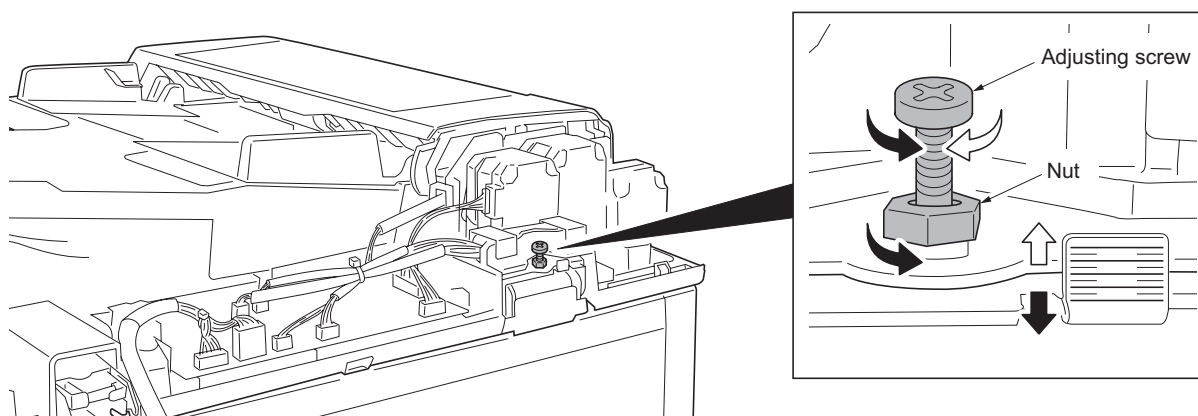


Figure 1-5-12

7. Remove the original mat.
8. Place the original mat with its hook and loop fasteners up over the platen.
Align original mat corner that has 90 degrees of angle with the inner left corner of the original instruction panel.
9. Close the DP slowly to attach the original mat.
10. Make a test copy again.
11. Repeat steps 3 to 10 above until the gap of the trailing edge falls within the reference values.

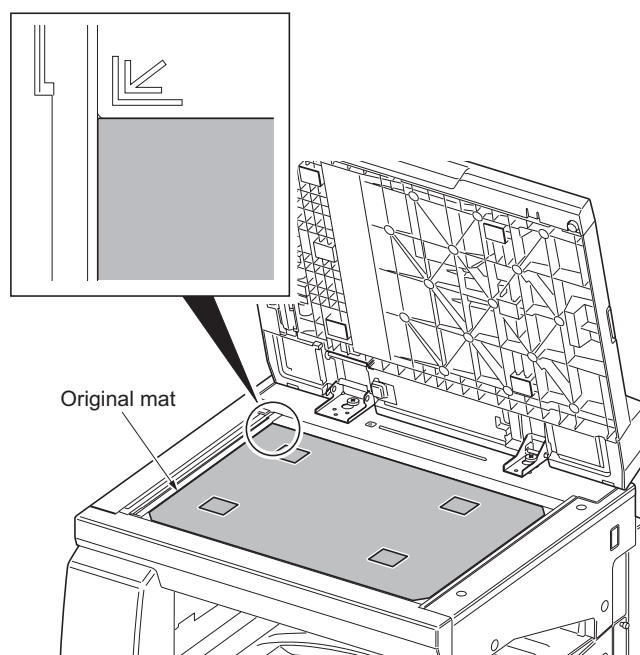


Figure 1-5-13

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2-1-1 Mechanical construction

The DP consists of the original feed section, original conveying section and original switchback section.

The original feed section conveys an original set on the original table to the original conveying section in synchronization with original scanning of the scanner on the machine.

The original conveying section conveys an original onto the slit glass and ejects it after scanning is complete.

The original switchback section reverses an original conveyed from the original conveying section and conveys it again to the original conveying section in the double-sided original mode.

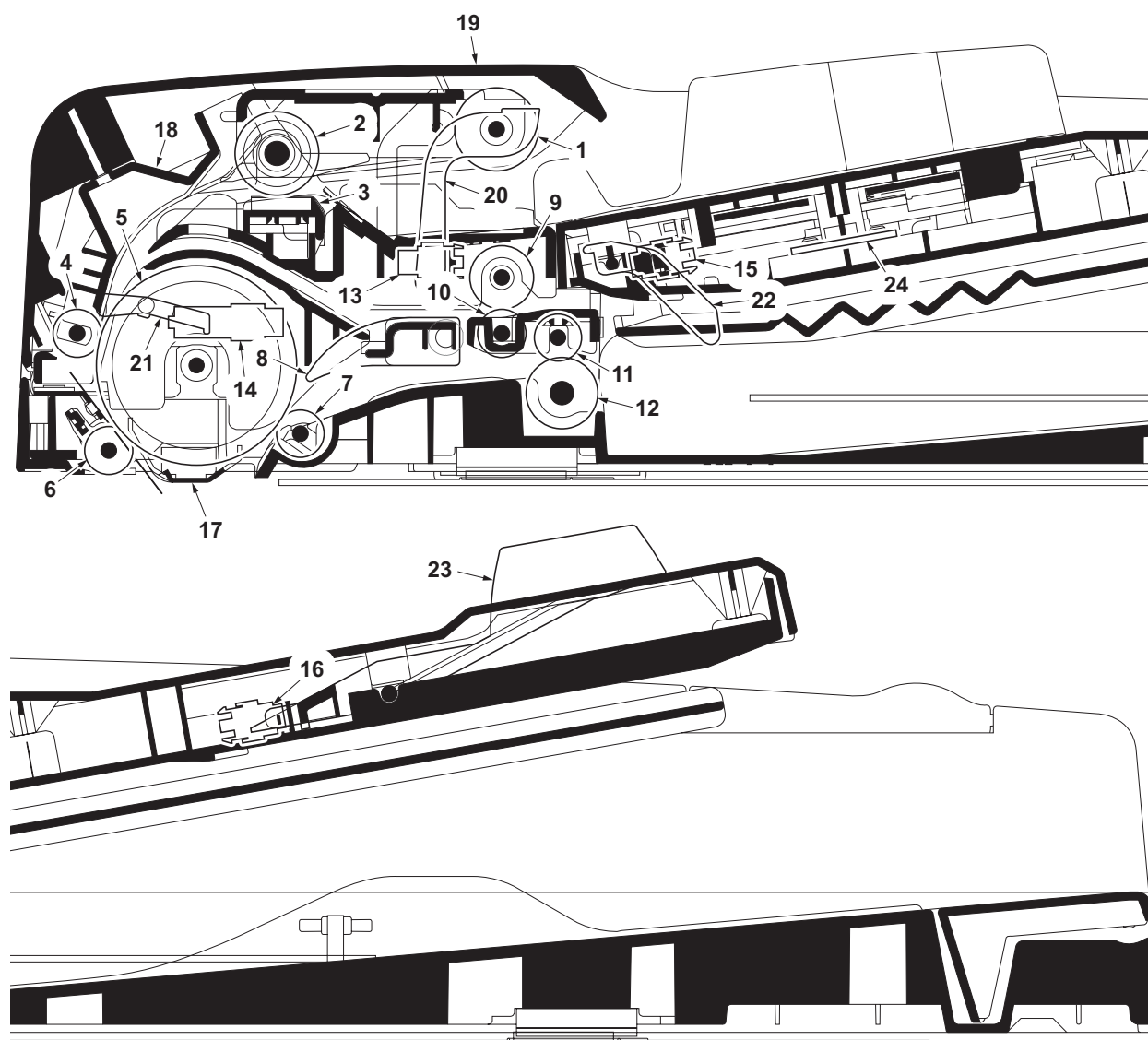


Figure 2-1-1 Original feed section

- | | |
|--------------------------------|---|
| (1) DP forwarding pulleys | (13) Original set switch (OSSW) |
| (2) DP feed pulley | (14) DP timing switch (DPTSW) |
| (3) DP separation pad | (15) Original switchback switch (OSBSW) |
| (4) Conveying pulley | (16) Original size length switch (OSLSW) |
| (5) Conveying roller | (17) Scanning guide |
| (6) Conveying pulley | (18) Conveying upper guide |
| (7) Conveying pulley | (19) Document processor top cover |
| (8) Switchback feedshift guide | (20) Actuator (Original set switch) |
| (9) Switchback roller | (21) Actuator (DP timing switch) |
| (10) Switchback pulley | (22) Actuator (Original switchback switch) |
| (11) Eject pulley | (23) Actuator (Original size length switch) |
| (12) Eject roller | (24) Original size width switch (OSWSW) |

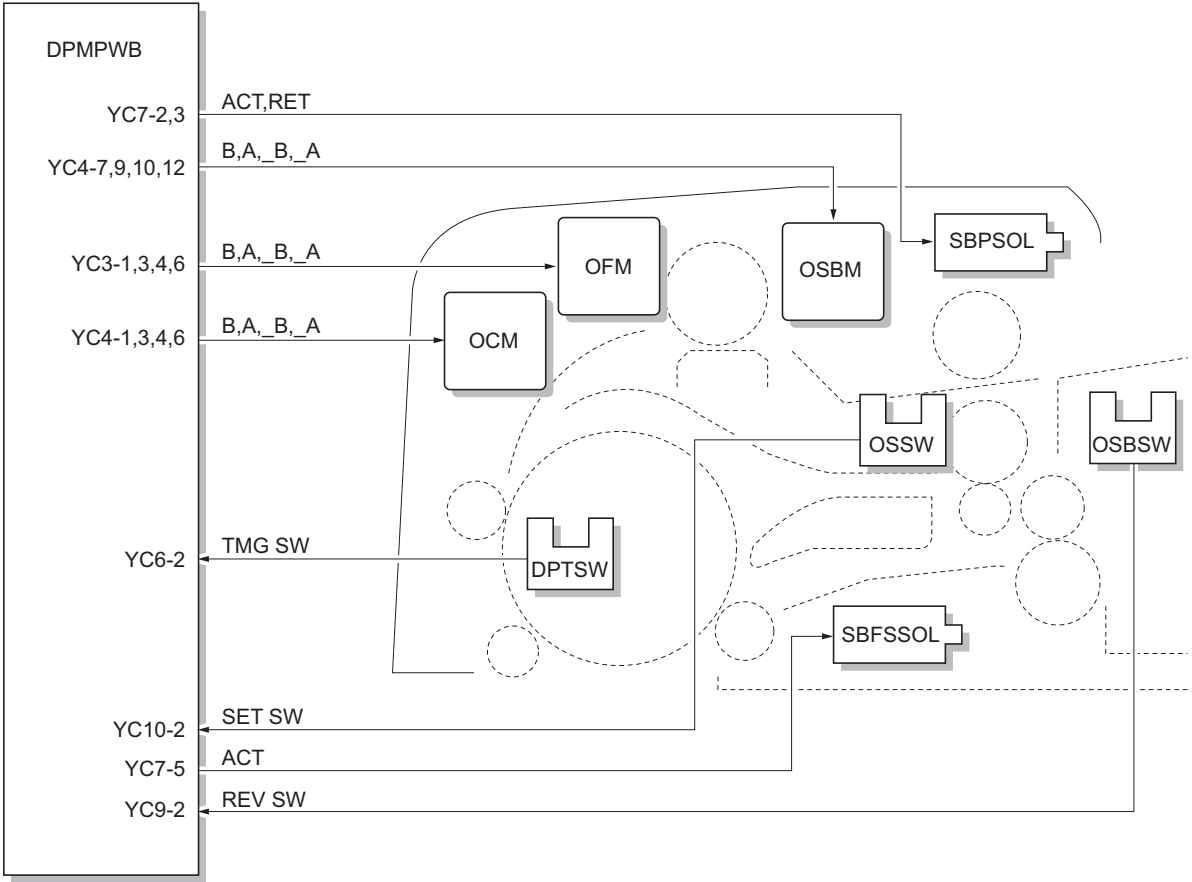
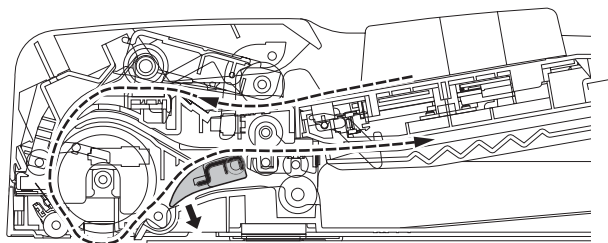


Figure 2-1-2

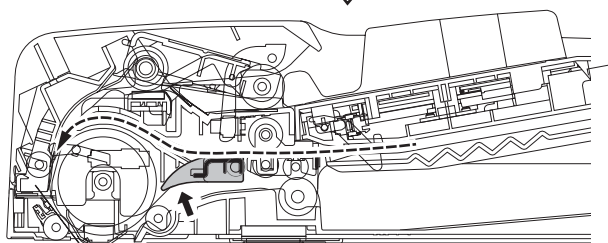
(1) Operation of original switchback

In the double-sided original mode, after the first side of an original is scanned, the switchback feedshift guide is activated to switch the conveying path to the switchback tray side and the original is fed to the switchback tray. Then, the original is reversed by the reverse rotation of the original switchback motor (OSBM) and conveyed again to the original conveying section. After the second side is scanned, the original is fed temporarily to the switchback tray, is reversed, is conveyed without scanning, and then is ejected to the exit tray. Also the switchback press solenoid (SBPSOL) is activated to release the switchback pulley for preventing original jams in the original switchback section.



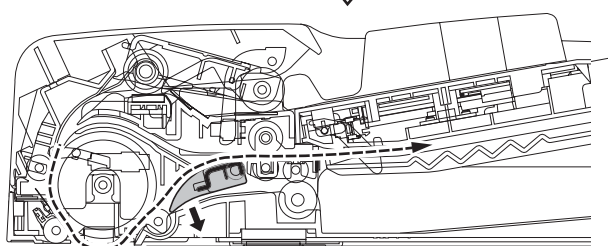
First side scanning → Switchback tray

Original conveying motor (OCM): Forward rotation
Original switchback motor (OSBM): Forward rotation
Switchback feedshift solenoid (SBFSSOL): ON



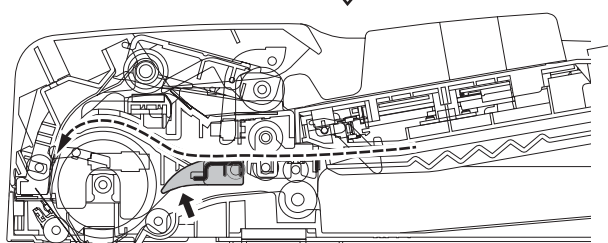
Original switchback operate

Original conveying motor (OCM): Stop
Original switchback motor (OSBM): Reverse rotation
Switchback feedshift solenoid (SBFSSOL): OFF



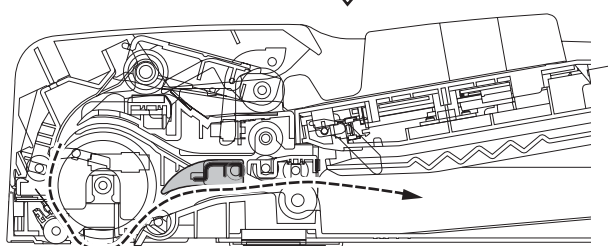
Second side scanning → Switchback tray

Original conveying motor (OCM): Forward rotation
Original switchback motor (OSBM): Forward rotation
Switchback feedshift solenoid (SBFSSOL): ON



Original switchback operate

Original conveying motor (OCM): Stop
Original switchback motor (OSBM): Reverse rotation
Switchback feedshift solenoid (SBFSSOL): OFF



Conveyed without scanning → Eject tray

Original conveying motor (OCM): Forward rotation
Original switchback motor (OSBM): Forward rotation
Switchback feedshift solenoid (SBFSSOL): OFF

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2-2-1 Electrical parts layout

(1) PWBs

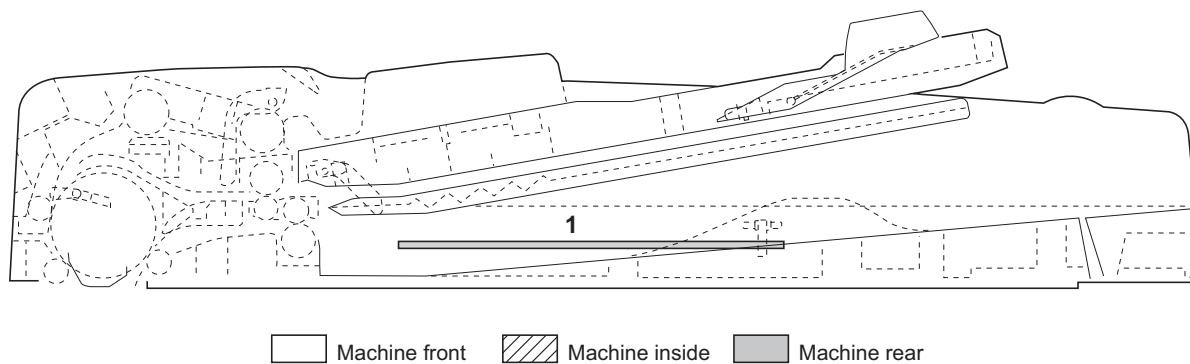
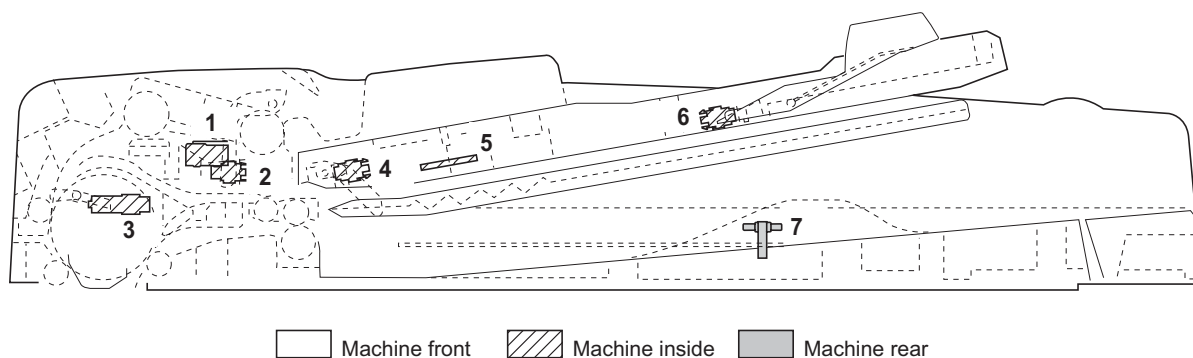
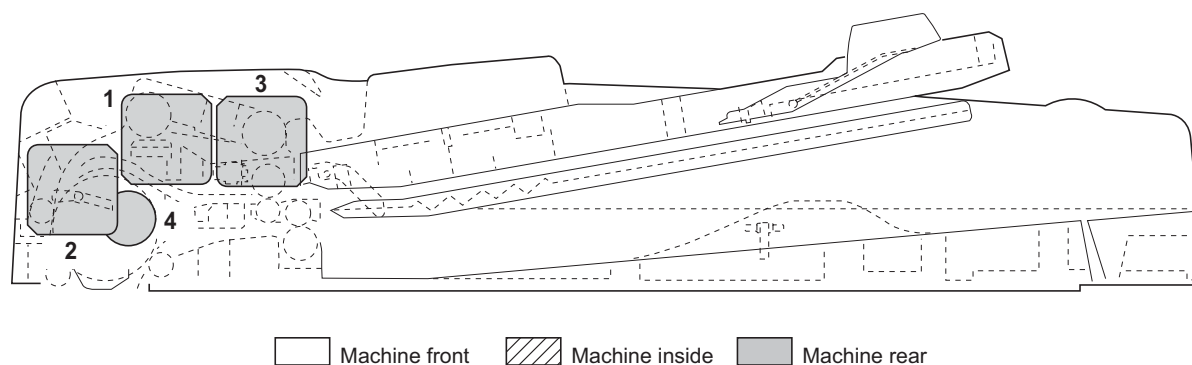


Figure 2-2-1 PWBs

1. DP main PWB (DPMPWB) Controls electrical components of the DP.

(2) Switches and sensors**Figure 2-2-2 Switches and sensors**

1. DP interlock switch (DPILSW) Breaks the safety circuit when the document processor top cover is opened; resets original misfeed detection.
2. Original set switch (OSSW) Detects the presence of an original.
3. DP timing switch (DPTSW) Detects the original scanning timing.
4. Original switchback switch (OSBSW) Detects an original misfeed in the original switchback section.
5. Original size width switch (OSWSW) Detects the width of the original.
6. Original size length switch (OSLSW) Detects the length of the original.
7. DP open/close switch (OPOCSW) Detects the opening/closing of the DP.

(3) Motors**Figure 2-2-3 Motors**

1. Original feed motor (OFM) Drives the original feed section.
2. Original conveying motor (OCM) Drives the original conveying section.
3. Original switchback motor (OSBM)..... Drives the original switchback section.
4. DP cooling fan motor (DPCFM) Cools the drive section.

(4) Solenoids

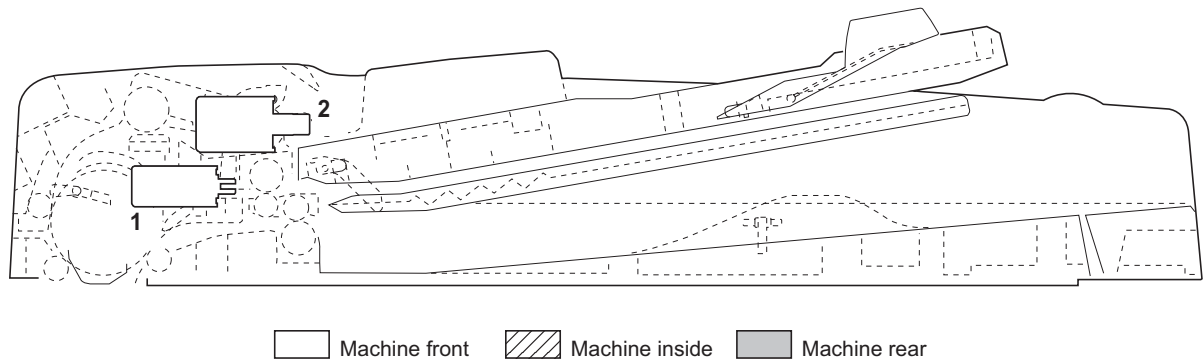


Figure 2-2-4 Solenoids

1. Switchback feedshift solenoid (SBFSSOL).. Operates the switchback feedshift guide.
2. Switchback pressure solenoid (SBPSOL).... Operates the switchback pulley.

2-3-1 DP main PWB

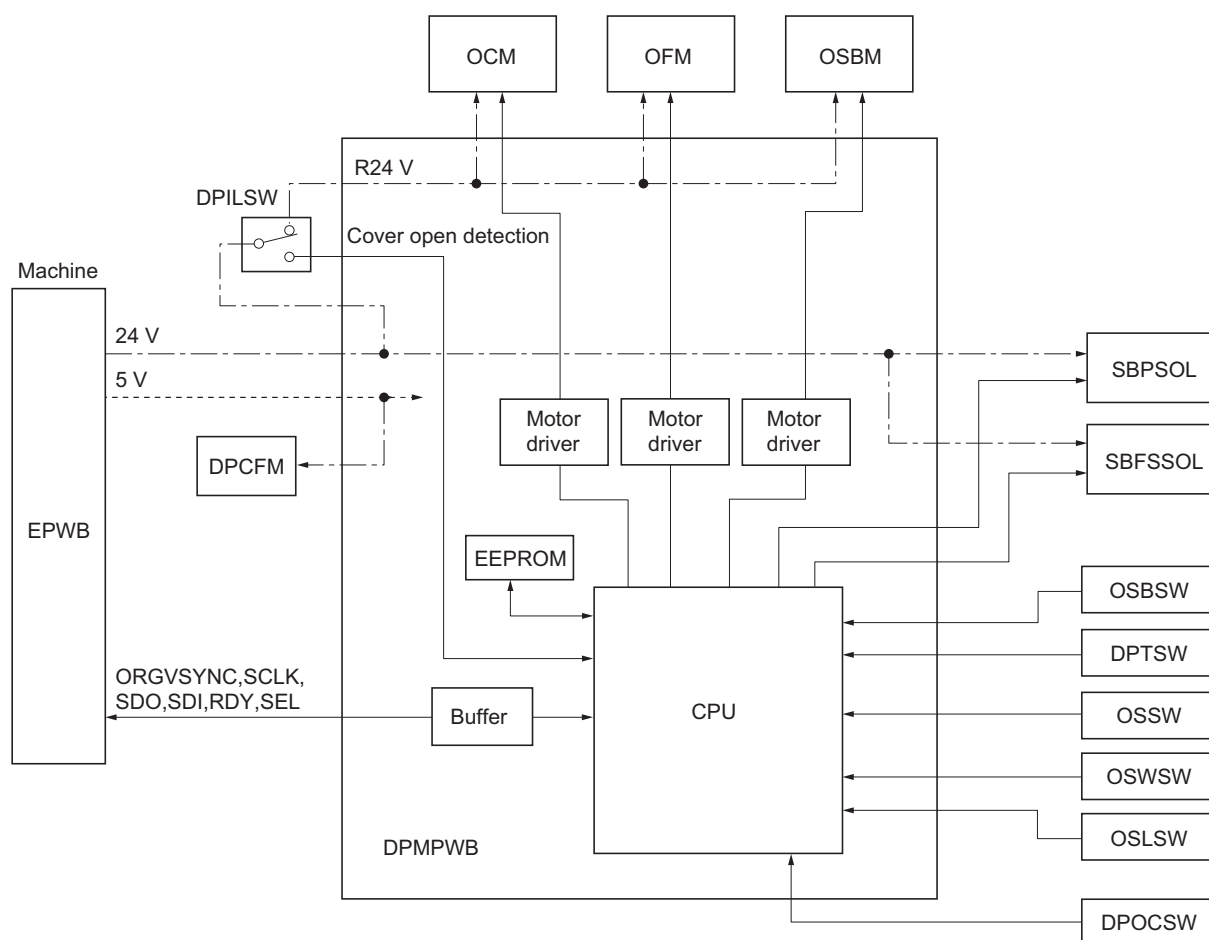


Figure 2-3-1 DP main PWB block diagram

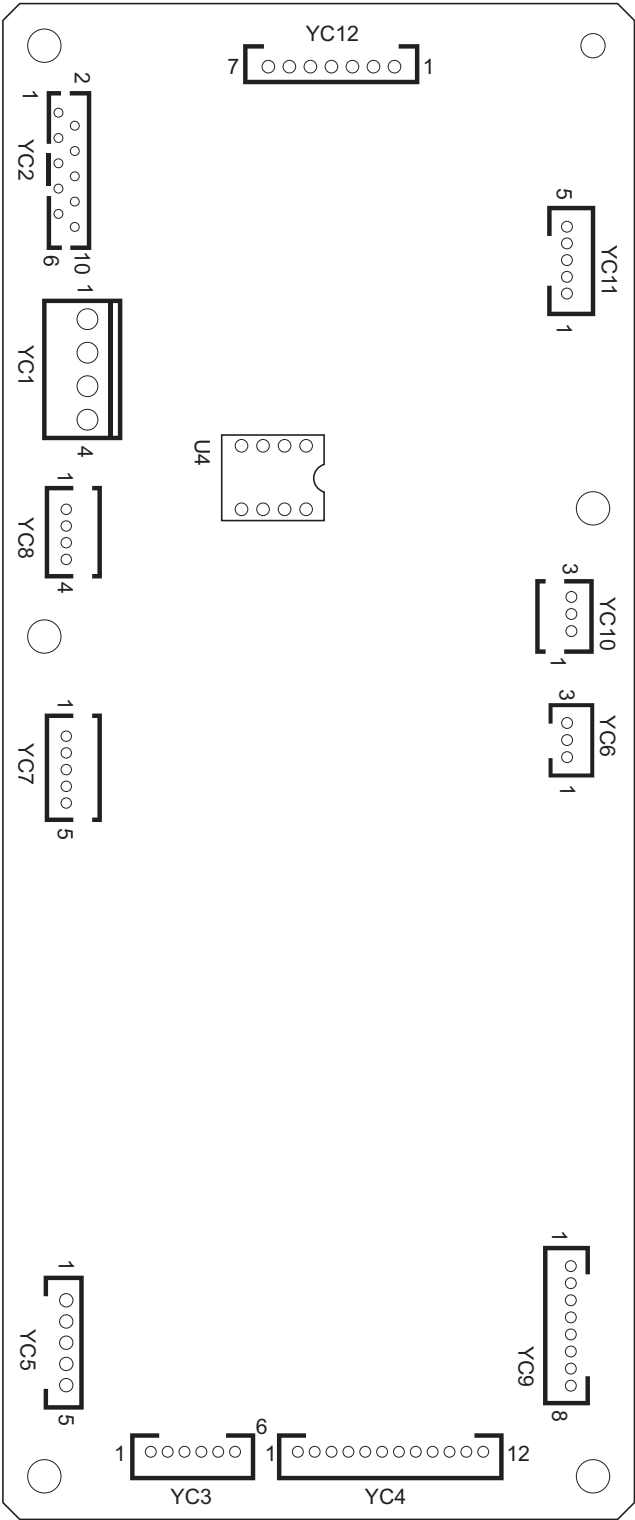


Figure 2-3-2 DP main PWB silk-screen diagram

Connector	Pin No.	Signal	I/O	Voltage	Description
YC1 Connected to the machine.	1	FG	-	-	Ground
	2	5V	I	5 V DC	5 V DC supply
	3	GND	-	-	Ground
	4	24V	I	24 V DC	24 V DC supply
YC2 Connected to the machine.	1	SDI	I	0/5 V DC (pulse)	Serial communication data signal
	2	SDO	O	0/5 V DC (pulse)	Serial communication data signal
	3	SCLK	I	0/5 V DC (pulse)	Serial communication clock signal
	4	DPSEL	I	0/5 V DC	DP select signal
	5	DPRDY	O	0/5 V DC	DP ready signal
	6	ORGVSYNC	O	5 V DC	DP original scanning interval signal
	7	GND	-	-	Ground
	8	GND	-	-	Ground
	9	GND	-	-	Ground
	10	GND	-	-	Ground
YC3 Connected to the original feed motor.	1	B	O	0/24 V DC (pulse)	OFM drive control signal (B)
	2	COM_A(R24V)	O	24 V DC	24 V DC supply
	3	A	O	0/24 V DC (pulse)	OFM drive control signal (A)
	4	_B	O	0/24 V DC (pulse)	OFM drive control signal (_B)
	5	COM_B(R24V)	O	24 V DC	24 V DC supply
	6	_A	O	0/24 V DC (pulse)	OFM drive control signal (_A)
YC4 Connected to the original conveying motor and original switchback motor.	1	B	O	0/24 V DC (pulse)	OCM drive control signal (B)
	2	COM_A(R24V)	O	24 V DC	24 V DC supply
	3	A	O	0/24 V DC (pulse)	OCM drive control signal (A)
	4	_B	O	0/24 V DC (pulse)	OCM drive control signal (_B)
	5	COM_B(R24V)	O	24 V DC	24 V DC supply
	6	_A	O	0/24 V DC (pulse)	OCM drive control signal (_A)
	7	B	O	0/24 V DC (pulse)	OSBM drive control signal (B)
	8	COM_A(R24V)	O	24 V DC	24 V DC supply
	9	A	O	0/24 V DC (pulse)	OSBM drive control signal (A)
	10	_B	O	0/24 V DC (pulse)	OSBM drive control signal (_B)
	11	COM_B(R24V)	O	24 V DC	24 V DC supply
	12	_A	O	0/24 V DC (pulse)	OSBM drive control signal (_A)
YC5 Connected to the DP interlock switch.	1	24V	O	24 V DC	24 V DC supply
	2	N.C.	-	-	Not used
	3	R24V	I	0/24 V DC	24 V DC supply
	4	N.C.	-	-	Not used
	5	COV_OPN	I	24/0 V DC	DPILSW: On/Off
YC6 Connected to the DP timing switch.	1	5V	O	5 V DC	5 V DC supply
	2	TMG SW	I	0/5 V DC	DPTSW: On/Off
	3	GND	-	-	Ground

Connector	Pin No.	Signal	I/O	Voltage	Description
YC7	1	24V	O	24 V DC	24 V DC supply
Connected to the switchback presser solenoid and switch-back feed-shift solenoid.	2	ACT	O	0/24 V DC	SBPSOL (ACT): On/Offd
	3	RET	O	0/24 V DC	SBPSOL (RET): On/Off
	4	24V	O	24 V DC	24 V DC supply
	5	ACT	O	0/24 V DC	SBFSSOL: On/Off
YC9	1	5V	O	5 V DC	5 V DC supply
Connected to the original switch-back switch, original size length switch and original size width switch.	2	REV SW	I	0/5 V DC	OSBSW: On/Off
	3	GND	-	-	Ground
	4	SZ_SW_L	I	0/5 V DC	OSLSW: On/Off
	5	5V	O	5 V DC	5 V DC supply
	6	GND	-	-	Ground
	7	SZ_SW_W	I	Analog	OSWSW detection voltage
	8	5V	O	5 V DC	5 V DC supply
YC10	1	GND	-	-	Ground
Connected to original set switch.	2	SET SW	I	0/5 V DC	OSSW: On/Off
	3	5V	O	5 V DC	5 V DC supply
YC11	1	5V	O	5 V DC	5 V DC supply
Connected to DP cooling fan motor.	2	N.C.	-	-	Not used
	3	N.C.	-	-	Not used
	4	N.C.	-	-	Not used
	5	GND	-	-	Ground

List of maintenance parts

Maintenance part name		Part No.	Alternative part No.	Fig. No.	Ref. No.
Name used in service man-	Name used in parts list				
DP forwarding pulley	PULLEY,LEADING FEED ADF	36211110	-	3	41
DP feed pulley	PULLEY PAPER FEED	3BR07040	-	3	45
DP separation pad	PAD SEPARATION	303K507060	3K507060	3	57
Friction plate	FRICTION PLATE,CASSETTE	2A107060	-	3	46
Conveying roller	PARTS CONVEYING ROLLER ASSY SP	303K594010	3K594010	4	9
Conveying pulley	PULLEY CONVEYING	3HL08080	-	3	61
Conveying pulley	PULLEY CONVEYING	3HL08080	-	4	37
Conveying pulley	PULLEY LOOP	3HL10140	-	4	46
Scanning guide	GUIDE READING	303K524010	3K524010	2	17
Switchback roller	PARTS ROLLER LOOP SP	303K594050	3K594050	4	19
Switchback pulley	PULLEY LOOP	3HL10140	-	4	46
Eject roller	PARTS ROLLER EJECT SP	303MX94010	3MX94010	4	18
Eject pulley	PULLEY CONVEYING	3HL08080	-	4	37
Original holder mat	PLARTE ORIGINAL	303JC04200	3JC04200	1	7

Periodic maintenance procedures

Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Test copy and test print	Perform at the maximum copy size	Clean	Every service.		



Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Original feed section	DP forwarding pulley	Replace	150K	Replace (Clean with alcohol when user call occurs).	P.1-5-2
	DP feed pulley	Replace	150K	Replace (Clean with alcohol when user call occurs).	P.1-5-2
	DP separation pad	Replace	150K	Replace (Clean with alcohol when user call occurs).	P.1-5-5
	Friction plate	Clean	Every service.	Clean with alcohol.	



Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Original conveying section	Conveying roller	Clean	Every service	Clean with alcohol or a dry cloth.	
	Conveying pulley	Check or clean	150K	Clean with alcohol or a dry cloth if it is dirty.	
	Scanning guide	Clean	Every service	Clean with alcohol or a dry cloth.	



Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Original switchback section	Switchback roller	Clean	Every service	Clean with alcohol or a dry cloth.	
	Switchback pulley	Check or clean	150K	Clean with alcohol or a dry cloth if it is dirty.	
	Eject roller	Clean	Every service	Clean with alcohol or a dry cloth.	
	Eject r pulley	Check or clean	150K	Clean with alcohol or a dry cloth if it is dirty.	



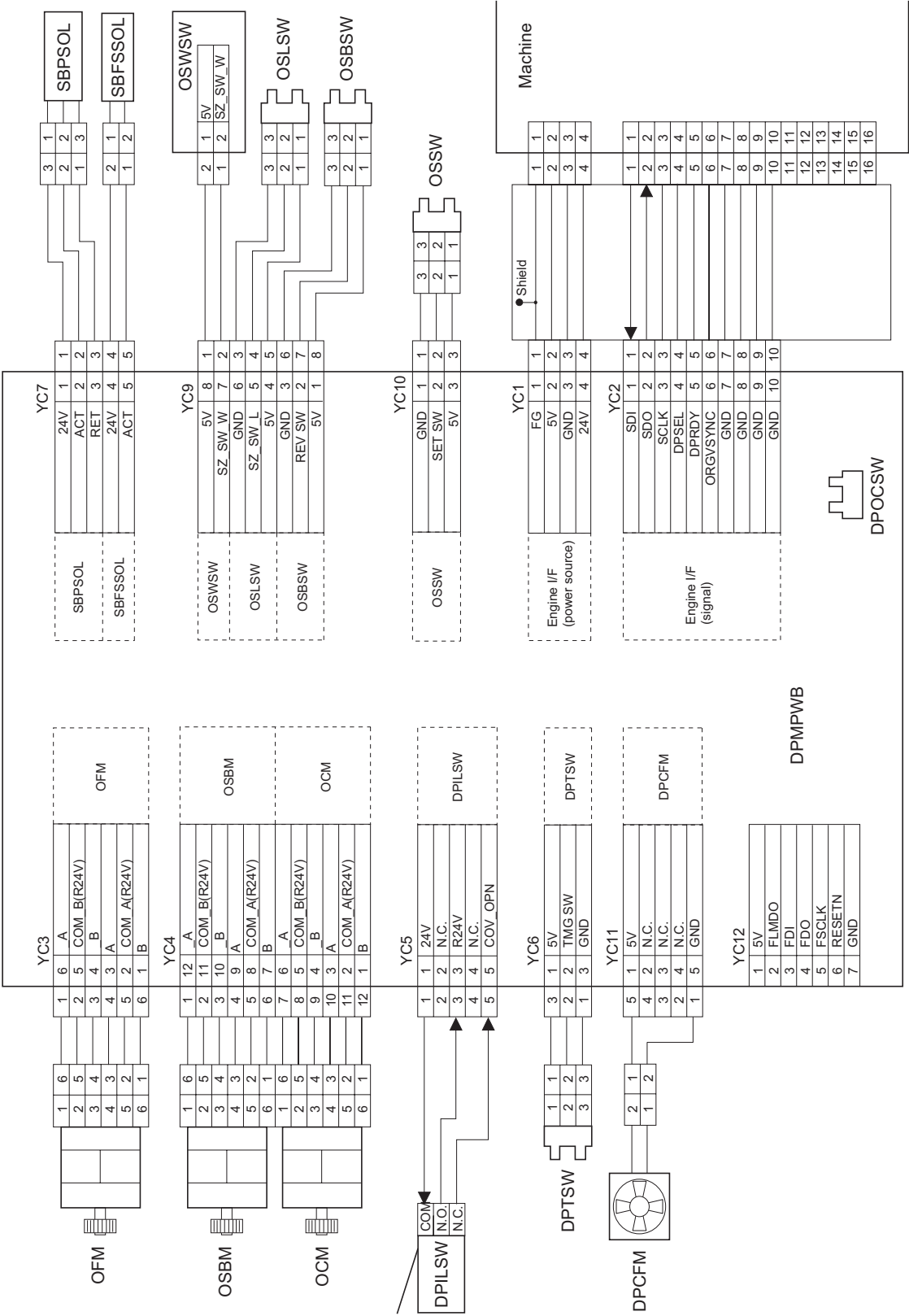
Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Other	Original holder mat	Clean	150K	Clean with alcohol or a dry cloth.	



Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Covers	Covers Slit glass*	Clean Check or clean	Every service Every service	Clean with alcohol. Clean with a dry cloth (do not clean with a wet cloth or alcohol).	

*: Equipped with the machine.

Wiring diagram



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