



# DP-750 DP-760



# SERVICE MANUAL

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Rev. 1

## **CAUTION**

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

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

## **ATTENTION**

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

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

## Revision history

Revision	Date	Replaced pages	Remarks
1	November 26, 2008	1-3-2, 1-3-3, 1-3-5, 1-3-8, 1-3-13, 1-3-17 to 1-3-19, 2-4-1	-

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# Safety precautions


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

## Safety warnings and precautions


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

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

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

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

### Symbols

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



General warning.



Warning of risk of electric shock.



Warning of high temperature.

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



General prohibited action.



Disassembly prohibited.

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



General action required.





Remove the power plug from the wall outlet.





Always ground the copier.


## 1. Installation Precautions


### WARNING



- Do not use a power supply with a voltage other than that specified. Avoid multiple connections to one outlet: they may cause fire or electric shock. When using an extension cable, always check that it is adequate for the rated current. .... 
- Connect the ground wire to a suitable grounding point. Not grounding the copier may cause fire or electric shock. Connecting the earth wire to an object not approved for the purpose may cause explosion or electric shock. Never connect the ground cable to any of the following: gas pipes, lightning rods, ground cables for telephone lines and water pipes or faucets not approved by the proper authorities. .... 


### CAUTION:


- Do not place the copier on an infirm or angled surface: the copier may tip over, causing injury. .... 
- Do not install the copier in a humid or dusty place. This may cause fire or electric shock. .... 
- Do not install the copier near a radiator, heater, other heat source or near flammable material.

This may cause fire. .... 

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











- Always handle the machine by the correct locations when moving it. .... 
- Always use anti-toppling and locking devices on copiers so equipped. Failure to do this may cause the copier to move unexpectedly or topple, leading to injury. .... 

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





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

## 2.Precautions for Maintenance

### WARNING

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

### CAUTION

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



• Do not remove the ozone filter, if any, from the copier except for routine replacement. ....



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



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



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



• Remove toner completely from electronic components. ....



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



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



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



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



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

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



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



### 3.Miscellaneous

#### WARNING

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



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# CONTENTS

<b>1-1 Specifications</b>	
1-1-1 Specifications .....	1-1-1
1-1-2 Parts names .....	1-1-2
1-1-3 Machine cross section .....	1-1-3
<b>1-2 Installation</b>	
1-2-1 Installation environment .....	1-2-1
1-2-2 Unpacking .....	1-2-2
(1) Unpacking .....	1-2-2
(2) Remove the tapes and pad .....	1-2-3
<b>1-3 Maintenance Mode</b>	
1-3-1 Maintenance mode .....	1-3-1
(1) Executing a maintenance item .....	1-3-1
(2) Maintenance mode item list .....	1-3-2
(3) Contents of maintenance mode items .....	1-3-3
<b>1-4 Troubleshooting</b>	
1-4-1 Original misfeed detection .....	1-4-1
(1) Original misfeed indication .....	1-4-1
(2) Original misfeed detection conditions .....	1-4-1
(3) Paper misfeeds .....	1-4-4
1-4-2 Self-diagnosis .....	1-4-6
(1) Self-diagnostic function .....	1-4-6
(2) Self diagnostic codes .....	1-4-6
1-4-3 Electric problems .....	1-4-8
1-4-4 Mechanical problems .....	1-4-9
<b>1-5 Assembly and Disassembly</b>	
1-5-1 Precautions for assembly and disassembly .....	1-5-1
(1) Precautions .....	1-5-1
1-5-2 Assembly and disassembly .....	1-5-2
(1) Detaching and refitting the DP original feed belt and DP forwarding pulley .....	1-5-2
(2) Detaching and refitting the DP separation pulley .....	1-5-5
(3) Detaching and refitting the CIS (dual scan DP only) .....	1-5-6
1-5-3 Image adjustment .....	1-5-11
(1) Adjusting the angle of leading edge .....	1-5-11
(2) Adjusting the angle of trailing edge .....	1-5-13
<b>1-6 Requirements on PWB Replacement</b>	
1-6-1 Remarks on DP driver PWB replacement .....	1-6-1
<b>2-1 Mechanical Construction</b>	
2-1-1 Original feed section .....	2-1-1
2-1-2 Original conveying section .....	2-1-3
2-1-3 Original switchback/eject sections .....	2-1-5
(1) Reverse duplex scanning operation .....	2-1-7
<b>2-2 Electrical Parts Layout</b>	
2-2-1 Electrical parts layout .....	2-2-1
(1) PWBs .....	2-2-1
(2) Switches and sensors .....	2-2-2
(3) Motors .....	2-2-3
(4) Others .....	2-2-4
<b>2-3 Operation of the PWBs</b>	
2-3-1 DP driver PWB .....	2-3-1
2-3-2 SHD PWB (dual scan DP only) .....	2-3-7

## 2-4 Appendixes

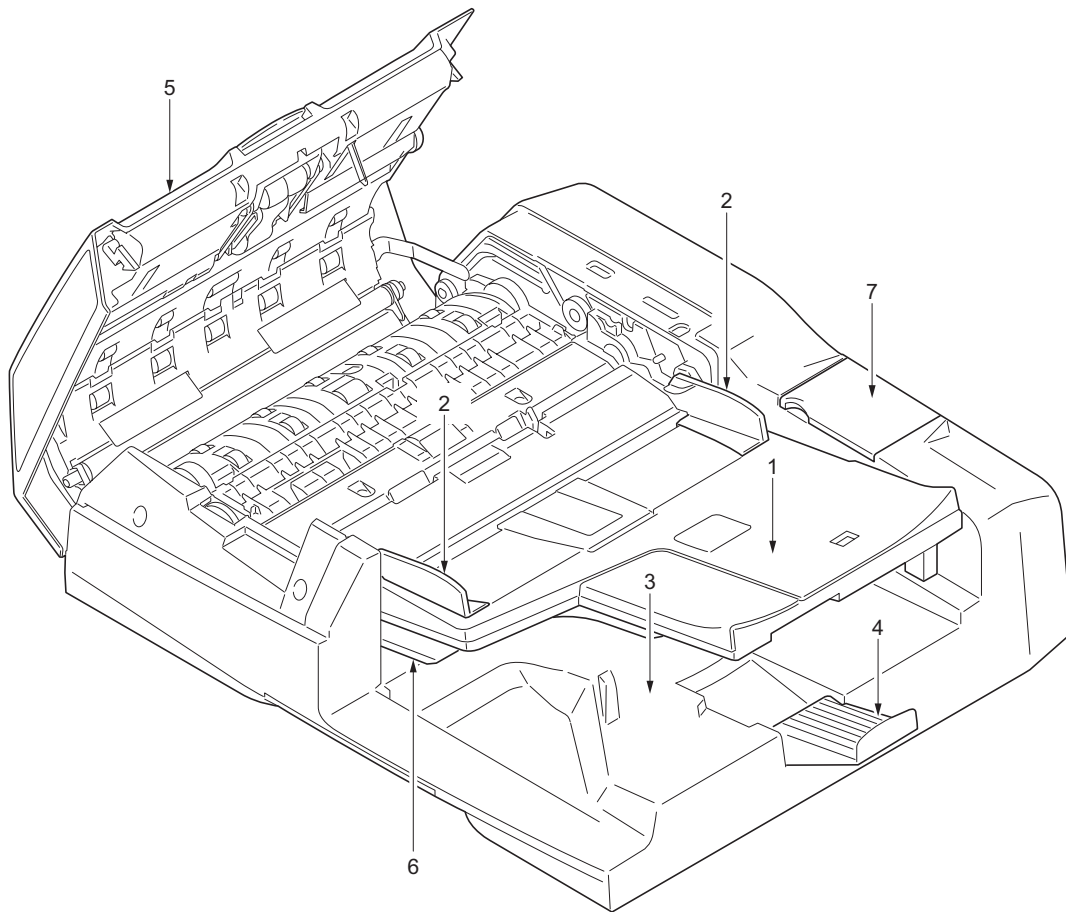
List of maintenance parts .....	2-4-1
Periodic maintenance procedures .....	2-4-2
Wiring diagram (reversed DP) .....	2-4-5
Wiring diagram (dual scan DP) .....	2-4-6

**1-1-1 Specifications**

Original feed method .....	Automatic feed
Supported original types .....	Sheet originals
Original sizes .....	A3/Ledger to A5R/StatementR
Original weights .....	45 to 160 g/m <sup>2</sup>
Loading capacity .....	100 sheets (50 to 80 g/m <sup>2</sup> ) maximum
	Mixed original sizes (auto selection): 30 sheets (50 to 80 g/m <sup>2</sup> ) maximum
Power source .....	Electrically connected to the machine.
Dimensions .....	577 (W) x 534 (D) x 180 (H) mm
	22 11/16" (W) x 21" (D) x 7 1/16" (H)
Weight.....	Reversed DP: 12 kg or less/26.4 lbs. or less
	Dual scan DP: 13 kg or less/28.6 lbs. or less

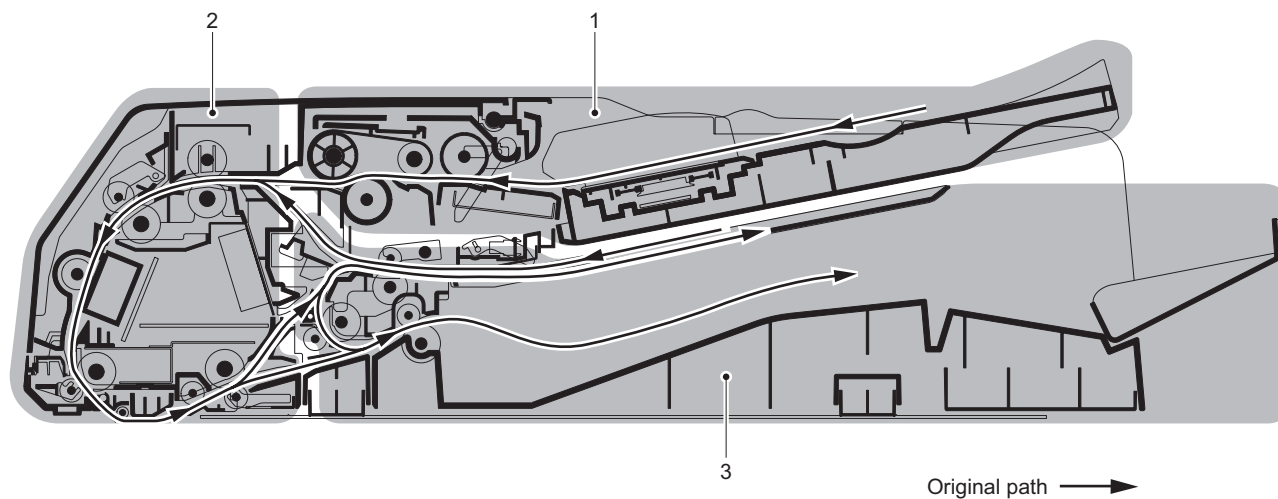
NOTE: These specifications are subject to change without notice.

## 1-1-2 Parts names



**Figure 1-1-1**

1. Original tray
2. Original width guides
3. Original eject table
4. Original stopper
5. DP top cover
6. Switchback tray
7. 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/eject sections

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### 1-2-1 Installation environment

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

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

Avoid extremes of temperature and humidity, abrupt ambient temperature changes, and hot or cold air directed onto the machine.

Avoid dust and vibration.

Choose a surface capable of supporting the weight of the machine.

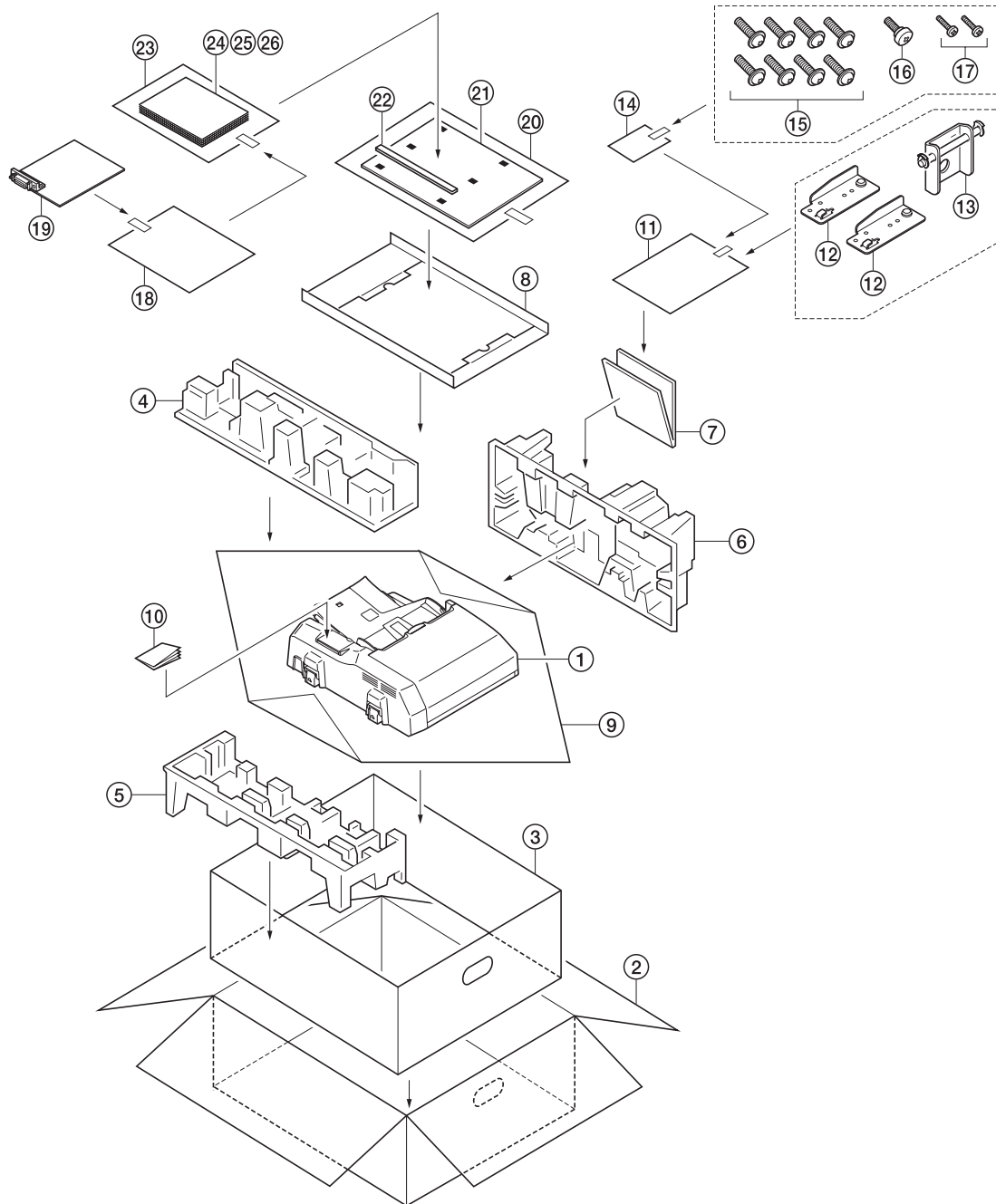
Place the machine on a level surface (maximum allowance inclination: 1°).

Avoid air-borne substances that may adversely affect the machine or degrade the photo-conductor, such as mercury, acidic or alkaline vapors, inorganic gasses, NOx, SOx gases and chlorine-based organic solvents.

Select a room with good ventilation.

## 1-2-2 Unpacking

### (1) Unpacking



**Figure 1-2-1 Unpacking**

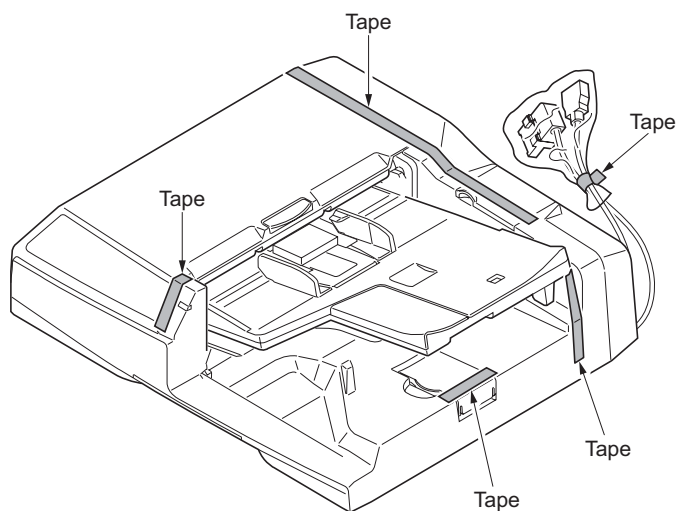
- |                        |                           |                               |
|------------------------|---------------------------|-------------------------------|
| 1. Document processor  | 10. Cleaning cloth        | 19. DP relay PWB*             |
| 2. Outer case          | 11. Air-padded bag        | 20. Plastic bag               |
| 3. Inner frame         | 12. Fixing fittings       | 21. Original mat              |
| 4. Rear top pad        | 13. Angle control fitting | 22. Gasket                    |
| 5. Rear bottom pad     | 14. Plastic bag           | 23. Plastic bag               |
| 6. Front pad           | 15. M4 x 14 TP screws     | 24. Installation guide        |
| 7. Accessory case      | 16. Pin                   | 25. Operation procedure label |
| 8. Original mat holder | 17. M2.6 x 8 TP screws*   | 26. Original face up label    |
| 9. Plastic sheet       | 18. Air-padded bag*       |                               |

\*: Dual scan DP only.

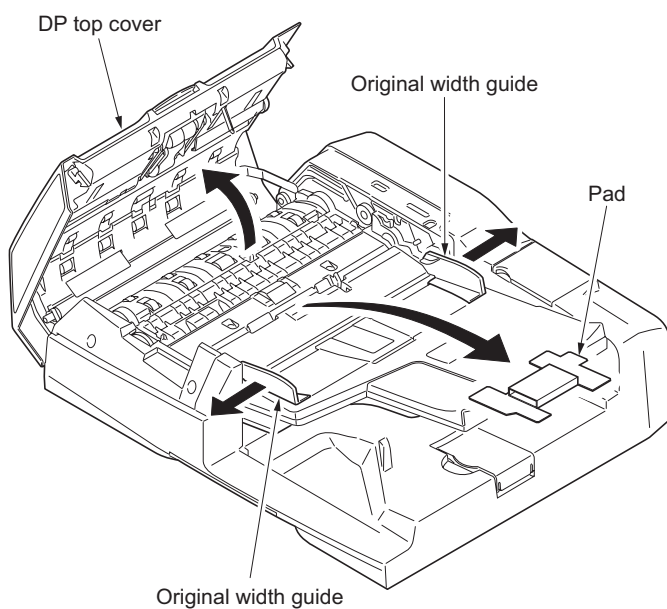
Caution: See the Installation Guide for installation.

**(2) Remove the tapes and pad****Procedure**

1. Remove five tapes.

**Figure 1-2-2**

2. Open the DP top cover and original width guides.
3. Remove the pad.

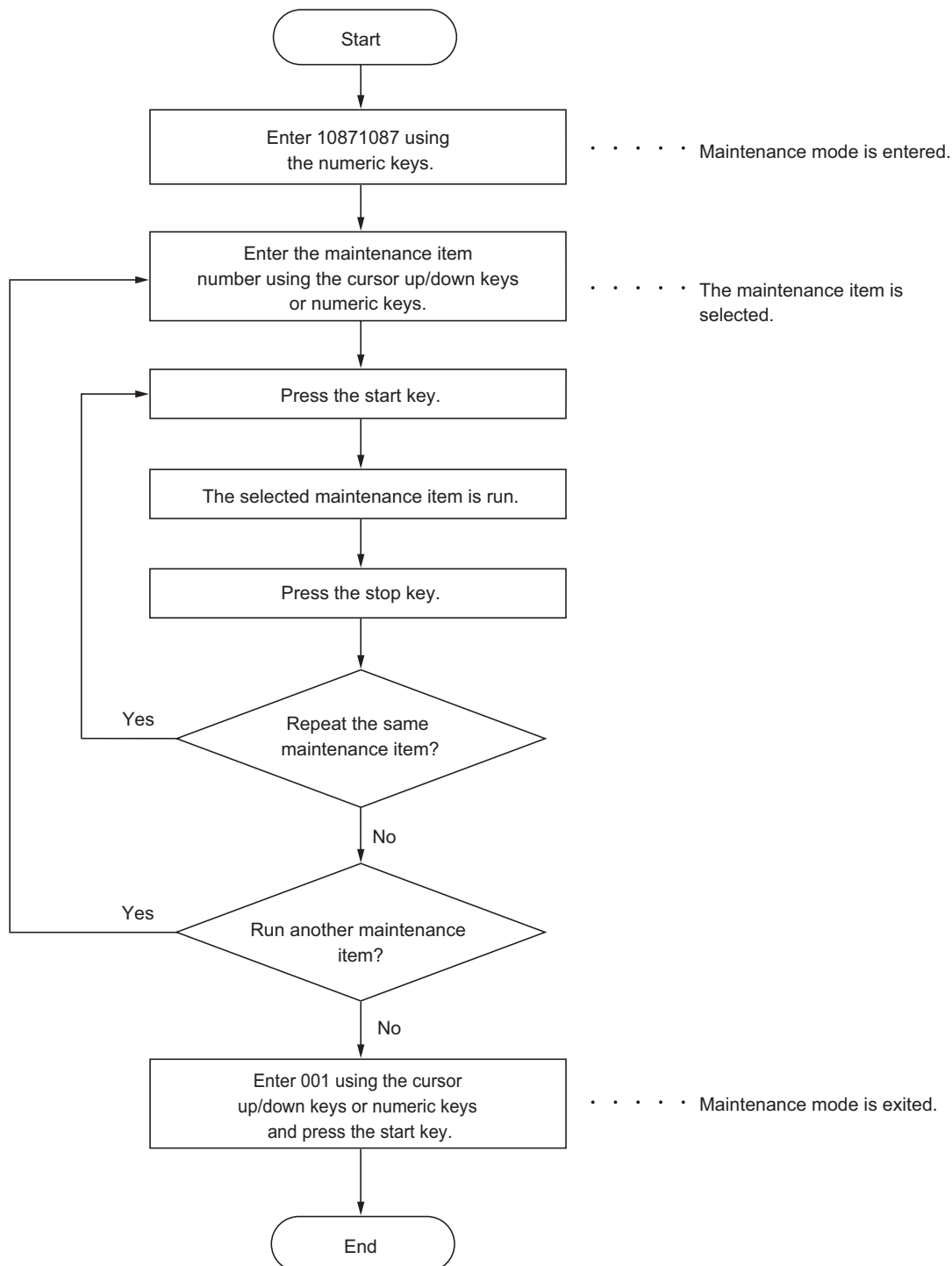
**Figure 1-2-3**

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### 1-3-1 Maintenance mode

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

#### (1) Executing a maintenance item



## (2) Maintenance mode item list

Section	Item No.	Content of maintenance item	Initial setting*
General	U019	Displaying the ROM version	-
Optical	U061	Checking the operation of the exposure lamp	-
	U068	Adjusting the scanning position for originals from the DP	0/0
	U070	Adjusting the DP magnification	0/0/0/0
	U071	Adjusting the DP scanning timing	0/0/0/0/0/0
	U072	Adjusting the DP center line	0/0/0
	U087	Setting DP reading position modification operation	145/145/145
	U091	Setting the white line correction	
Operation panel and support	U203	Operating the DP separately	-
	U243	Checking the operation of the DP motors	-
	U244	Checking the DP switches	-
Mode setting	U326	Setting the black line cleaning indication	ON/8*1
Image processing	U404	Adjusting margins for scanning an original from the DP	3.0/2.5/3.0/4.0 3.0/2.5/3.0/4.0
	U411	Adjusting the scanner automatically	-
	U425	Setting the target	-
Other	U905	Checking counts by optional devices	-
	U942	Setting of deflection for feeding from DP	0/0/0
	U990	Checking/clearing the time for the exposure lamp to light	-

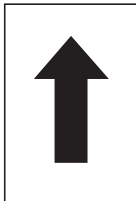
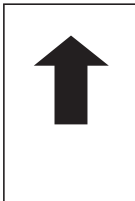

\*Initial setting for executing U020, \*1: The item initialized for executing U021




## (3) Contents of maintenance mode items

Maintenance item No.	Description																																																														
U019	<p><b>Displaying the ROM version</b></p> <p><b>Description</b> Displays the part number of the ROM fitted to each PWB.</p> <p><b>Purpose</b> To check the part number or to decide, if the newest version of ROM is installed.</p> <p><b>Method</b></p> <ol style="list-style-type: none"> <li>1. Press the start key. The ROM version are displayed.</li> <li>2. Change the screen using the cursor up/down keys.</li> </ol> <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr><td>MAIN</td><td>Main ROM IC</td></tr> <tr><td>MMI</td><td>Operation ROM IC</td></tr> <tr><td>ENGINE</td><td>Engine ROM IC</td></tr> <tr><td>ENGINE BOOT</td><td>Engine booting</td></tr> <tr><td>SCANNER</td><td>Scanner ROM IC</td></tr> <tr><td>BROWSER</td><td>Browser ROM IC</td></tr> <tr><td>OPTION LANGUAGE</td><td>Optional language ROM IC</td></tr> <tr><td>DICTIONARY</td><td>-</td></tr> <tr><td>DBA</td><td>Database connection</td></tr> <tr><td>Solution Framework</td><td>Framework</td></tr> <tr><td>MOTOR CPU</td><td>Motor CPU</td></tr> <tr><td>MOTOR CPU BOOT</td><td>Motor CPU booting</td></tr> <tr><td>H VLT CPU</td><td>High voltage CPU</td></tr> <tr><td>H VLT CPU BOOT</td><td>High voltage CPU booting</td></tr> <tr><td>SLEEP CPU</td><td>Sleep CPU</td></tr> <tr><td>SLEEP CPU BOOT</td><td>Sleep CPU booting</td></tr> <tr><td>DP</td><td>DP ROM IC</td></tr> <tr><td>500x2PF</td><td>Optional paper feeder ROM IC</td></tr> <tr><td>3000PF</td><td>Optional 3000-sheet paper feeder ROM IC</td></tr> <tr><td>1000DF</td><td>Optional document finisher ROM IC</td></tr> <tr><td>3000DF MAIN</td><td>Optional 3000-sheet document finisher main ROM IC</td></tr> <tr><td>3000DF MIDDLE</td><td>Optional 3000-sheet document finisher Inner tray ROM IC</td></tr> <tr><td>MAIL BOX</td><td>Optional mailbox ROM IC</td></tr> <tr><td>BOOKLET</td><td>Optional center-folding unit ROM IC</td></tr> <tr><td>FAX BOOT1</td><td>Optional fax control PWB booting (port 1)</td></tr> <tr><td>FAX APL1</td><td>Optional fax control PWB APL (port 1)</td></tr> <tr><td>FAX IPL1</td><td>Optional fax control PWB IPL (port 1)</td></tr> <tr><td>FAX BOOT2</td><td>Fax control PWB booting (port 2: optional dual FAX)</td></tr> <tr><td>FAX APL2</td><td>Fax control PWB APL (port 2: optional dual FAX)</td></tr> <tr><td>FAX IPL2</td><td>Fax control PWB IPL (port 2: optional dual FAX)</td></tr> </tbody> </table> <p><b>Completion</b> Press the stop key. The screen for selecting a maintenance item No. is displayed.</p> <p>www.tonerplus.com.ua</p>	Display	Description	MAIN	Main ROM IC	MMI	Operation ROM IC	ENGINE	Engine ROM IC	ENGINE BOOT	Engine booting	SCANNER	Scanner ROM IC	BROWSER	Browser ROM IC	OPTION LANGUAGE	Optional language ROM IC	DICTIONARY	-	DBA	Database connection	Solution Framework	Framework	MOTOR CPU	Motor CPU	MOTOR CPU BOOT	Motor CPU booting	H VLT CPU	High voltage CPU	H VLT CPU BOOT	High voltage CPU booting	SLEEP CPU	Sleep CPU	SLEEP CPU BOOT	Sleep CPU booting	DP	DP ROM IC	500x2PF	Optional paper feeder ROM IC	3000PF	Optional 3000-sheet paper feeder ROM IC	1000DF	Optional document finisher ROM IC	3000DF MAIN	Optional 3000-sheet document finisher main ROM IC	3000DF MIDDLE	Optional 3000-sheet document finisher Inner tray ROM IC	MAIL BOX	Optional mailbox ROM IC	BOOKLET	Optional center-folding unit ROM IC	FAX BOOT1	Optional fax control PWB booting (port 1)	FAX APL1	Optional fax control PWB APL (port 1)	FAX IPL1	Optional fax control PWB IPL (port 1)	FAX BOOT2	Fax control PWB booting (port 2: optional dual FAX)	FAX APL2	Fax control PWB APL (port 2: optional dual FAX)	FAX IPL2	Fax control PWB IPL (port 2: optional dual FAX)
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Maintenance item No.	Description																														
U061	<p><b>Checking the operation of the exposure lamp</b></p> <p><b>Description</b> Lights the exposure lamp.</p> <p><b>Purpose</b> To check whether the exposure lamp are turned ON.</p> <p><b>Method</b></p> <ol style="list-style-type: none"><li>1. Press the start key.</li><li>2. Select the item.</li></ol> <table><tr><th>Display</th><th>Description</th></tr><tr><td>CCD</td><td>The exposure lamp lights</td></tr><tr><td>CIS</td><td>The CIS lights (when dual scan DP is installed)</td></tr></table> <ol style="list-style-type: none"><li>3. Press the start key. The lamp lights.</li><li>4. To turn the lamp off, press the stop key.</li></ol> <p><b>Completion</b> Press the stop key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	CCD	The exposure lamp lights	CIS	The CIS lights (when dual scan DP is installed)																								
Display	Description																														
CCD	The exposure lamp lights																														
CIS	The CIS lights (when dual scan DP is installed)																														
U068	<p><b>Adjusting the scanning position for originals from the DP</b></p> <p><b>Description</b> Adjusts the position for scanning originals from the DP. Performs the test copy at the four scanning positions after adjusting.</p> <p><b>Purpose</b> 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><b>Setting</b></p> <ol style="list-style-type: none"><li>1. Press the start key. 40/40, 50/40 ppm model</li></ol> <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>ADJUST DATA</td><td>Starting position adjustment for scanning originals</td><td>-55 to 55</td><td>0</td><td>0.113 mm</td></tr><tr><td>TEST POSITION</td><td>Scanning position for the test copy originals</td><td>0 to 3</td><td>0</td><td>-</td></tr></table> <p>25/25, 30/30 ppm model</p> <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>ADJUST DATA</td><td>Starting position adjustment for scanning originals</td><td>-70 to 70</td><td>0</td><td>0.085 mm</td></tr><tr><td>TEST POSITION</td><td>Scanning position for the test copy originals</td><td>0 to 3</td><td>0</td><td>-</td></tr></table> <ol style="list-style-type: none"><li>2. Select [ADJUST DATA] of the screen for selecting an item.</li><li>3. Change the setting using the +/- or numeric keys. When the setting value is increased, the scanning position moves to the right and it moves to the left when the setting value is decreased.</li><li>4. Press the start key. The value is set.</li><li>5. Select [TEST POSITION] of the screen for selecting an item.</li><li>6. Select the scanning position using the +/- or numeric keys.</li><li>7. Press the start key. The value is set.</li><li>8. Set the original (the one which density is known) in the DP and press the system menu key. The screen for the test copy mode is displayed.</li><li>9. Press the start key. Test copy is executed.</li><li>10. Perform the test copy at each scanning position with the setting value from 0 to 3 and check that no black line appears and the image is normally scanned.</li></ol> <p><b>Completion</b> Press the stop key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	Setting range	Initial setting	Change in value per step	ADJUST DATA	Starting position adjustment for scanning originals	-55 to 55	0	0.113 mm	TEST POSITION	Scanning position for the test copy originals	0 to 3	0	-	Display	Description	Setting range	Initial setting	Change in value per step	ADJUST DATA	Starting position adjustment for scanning originals	-70 to 70	0	0.085 mm	TEST POSITION	Scanning position for the test copy originals	0 to 3	0	-
Display	Description	Setting range	Initial setting	Change in value per step																											
ADJUST DATA	Starting position adjustment for scanning originals	-55 to 55	0	0.113 mm																											
TEST POSITION	Scanning position for the test copy originals	0 to 3	0	-																											
Display	Description	Setting range	Initial setting	Change in value per step																											
ADJUST DATA	Starting position adjustment for scanning originals	-70 to 70	0	0.085 mm																											
TEST POSITION	Scanning position for the test copy originals	0 to 3	0	-																											



Maintenance item No.	Description																									
U070	<p><b>Adjusting the DP magnification</b></p> <p><b>Description</b> Adjusts the DP original scanning speed.</p> <p><b>Purpose</b> Make the adjustment if the magnification is incorrect in the auxiliary scanning direction when the DP is used.</p> <p><b>Adjustment</b></p> <ol style="list-style-type: none"><li>1. Press the start key.</li><li>2. Select the item to be adjusted.</li></ol> <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 SPEED1</td><td>Magnification in the auxiliary scanning direction of CCD (first side)</td><td>-25 to 25</td><td>0</td><td>0.1 %</td></tr><tr><td>CONVEY SPEED2</td><td>Magnification in the auxiliary scanning direction of CCD (second side)</td><td>-25 to 25</td><td>0</td><td>0.1 %</td></tr><tr><td>CIS MAIN ADJ*</td><td>Magnification in the main scanning direction of CIS</td><td>-20 to 20</td><td>0</td><td>0.1 %</td></tr><tr><td>CIS SUB ADJ*</td><td>Magnification in the auxiliary scanning direction of CIS</td><td>-50 to 50</td><td>0</td><td>0.05 %</td></tr></table> <p>*: Dual scan DP only.</p> <ol style="list-style-type: none"><li>3. Press the system menu key.</li><li>4. Place an original on the DP and press the start key to make a test copy.</li><li>5. Press the system menu key.</li><li>6. Change the setting value using the +/- or numeric keys. For copy example 1, increase the value. For copy example 2, decrease the value.</li></ol> <div><div><p>Original</p></div><div><p>Copy example 1</p></div><div><p>Copy example 2</p></div></div> <p><b>Figure 1-3-1</b></p> <ol style="list-style-type: none"><li>7. Press the start key. The value is set.</li></ol> <p><b>Caution</b> 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.1-3-14)</div></div> <p><b>Completion</b> Press the stop key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	Setting range	Initial setting	Change in value per step	CONVEY SPEED1	Magnification in the auxiliary scanning direction of CCD (first side)	-25 to 25	0	0.1 %	CONVEY SPEED2	Magnification in the auxiliary scanning direction of CCD (second side)	-25 to 25	0	0.1 %	CIS MAIN ADJ*	Magnification in the main scanning direction of CIS	-20 to 20	0	0.1 %	CIS SUB ADJ*	Magnification in the auxiliary scanning direction of CIS	-50 to 50	0	0.05 %
Display	Description	Setting range	Initial setting	Change in value per step																						
CONVEY SPEED1	Magnification in the auxiliary scanning direction of CCD (first side)	-25 to 25	0	0.1 %																						
CONVEY SPEED2	Magnification in the auxiliary scanning direction of CCD (second side)	-25 to 25	0	0.1 %																						
CIS MAIN ADJ*	Magnification in the main scanning direction of CIS	-20 to 20	0	0.1 %																						
CIS SUB ADJ*	Magnification in the auxiliary scanning direction of CIS	-50 to 50	0	0.05 %																						

Maintenance item No.	Description																																			
U071	<p><b>Adjusting the DP scanning timing</b></p> <p><b>Description</b> Adjusts the DP original scanning timing.</p> <p><b>Purpose</b> Make the adjustment if there is a regular error between the leading or trailing edges of the original and the copy image when the DP is used.</p> <p><b>Method</b></p> <ol style="list-style-type: none"><li>1. Press the start key.</li><li>2. Select the item to be adjusted.</li></ol> <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>ADJUST DATA1</td><td>Leading edge registration of CCD (first side)</td><td>-32 to 32</td><td>0</td><td>0.174 mm</td></tr><tr><td>ADJUST DATA2</td><td>Trailing edge registration of CCD (first side)</td><td>-32 to 28</td><td>0</td><td>0.174 mm</td></tr><tr><td>ADJUST DATA3</td><td>Leading edge registration of CCD (second side)</td><td>-32 to 32</td><td>0</td><td>0.174 mm</td></tr><tr><td>ADJUST DATA4</td><td>Trailing edge registration of CCD (second side)</td><td>-32 to 32</td><td>0</td><td>0.174 mm</td></tr><tr><td>ADJUST DATA5*</td><td>Leading edge registration of CIS</td><td>-45 to 45</td><td>0</td><td>0.174 mm</td></tr><tr><td>ADJUST DATA6*</td><td>Trailing edge registration of CIS</td><td>-45 to 45</td><td>0</td><td>0.174 mm</td></tr></table> <p>*: Dual scan DP only.</p> <p><b>Adjustment: Leading edge registration</b></p> <ol style="list-style-type: none"><li>1. Press the system menu key.</li><li>2. Place an original on the DP and press the start key to make a test copy.</li><li>3. Press the system menu key.</li><li>4. Change the setting value using the +/- or numeric keys. For copy example 1, increase the value. For copy example 2, decrease the value.</li></ol> <div><div> Original</div><div> Copy example 1</div><div> Copy example 2</div></div> <p><b>Figure 1-3-2</b></p> <ol style="list-style-type: none"><li>5. Press the start key. The value is set.</li></ol> <p><b>Caution</b> If the CCD first side is adjusted, check the CCD second side and if adjustment is required, carry out the adjustment. 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.1-3-14)</div></div>	Display	Description	Setting range	Initial setting	Change in value per step	ADJUST DATA1	Leading edge registration of CCD (first side)	-32 to 32	0	0.174 mm	ADJUST DATA2	Trailing edge registration of CCD (first side)	-32 to 28	0	0.174 mm	ADJUST DATA3	Leading edge registration of CCD (second side)	-32 to 32	0	0.174 mm	ADJUST DATA4	Trailing edge registration of CCD (second side)	-32 to 32	0	0.174 mm	ADJUST DATA5*	Leading edge registration of CIS	-45 to 45	0	0.174 mm	ADJUST DATA6*	Trailing edge registration of CIS	-45 to 45	0	0.174 mm
Display	Description	Setting range	Initial setting	Change in value per step																																
ADJUST DATA1	Leading edge registration of CCD (first side)	-32 to 32	0	0.174 mm																																
ADJUST DATA2	Trailing edge registration of CCD (first side)	-32 to 28	0	0.174 mm																																
ADJUST DATA3	Leading edge registration of CCD (second side)	-32 to 32	0	0.174 mm																																
ADJUST DATA4	Trailing edge registration of CCD (second side)	-32 to 32	0	0.174 mm																																
ADJUST DATA5*	Leading edge registration of CIS	-45 to 45	0	0.174 mm																																
ADJUST DATA6*	Trailing edge registration of CIS	-45 to 45	0	0.174 mm																																

Maintenance item No.	Description
U071	<p><b>Adjustment: Trailing edge registration</b></p> <ol style="list-style-type: none"> <li>1. Press the system menu key.</li> <li>2. Place an original on the DP and press the start key to make a test copy.</li> <li>3. Press the system menu key.</li> <li>4. Change the setting value using the +/- or numeric keys. For copy example 1, increase the value. For copy example 2, decrease the value.</li> </ol> <div data-bbox="671 459 1031 692" data-label="Image"> </div> <p style="text-align: center;"><b>Figure 1-3-3</b></p> <ol style="list-style-type: none"> <li>5. Press the start key. The value is set.</li> </ol> <p><b>Caution</b> If the CCD first side is adjusted, check the CCD second side and if adjustment is required, carry out the adjustment. Check the copy image after the adjustment. If the image is still incorrect, perform the following adjustments in maintenance mode.</p> <div data-bbox="285 987 624 1061" data-label="Diagram"> <pre> graph LR     U071[U071] --&gt; U404[U404 (P.1-3-14)]   </pre> </div> <p><b>Completion</b> Press the stop key. The screen for selecting a maintenance item No. is displayed.</p>

Maintenance item No.	Description																																								
U072	<p><b>Adjusting the DP center line</b></p> <p><b>Description</b> Adjusts the scanning start position for the DP original.</p> <p><b>Purpose</b> Make the adjustment if there is a regular error between the centers of the original and the copy image when the DP is used.</p> <p><b>Adjustment</b></p> <div><div><div>1. Press the start key.</div><div>2. Select the item to be adjusted.</div></div><div>40/40, 50/40 ppm model</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>ADJUST DATA1</td><td>DP center line of CCD (first side)</td><td>-35 to 60</td><td>0</td><td>0.085 mm</td></tr><tr><td>ADJUST DATA2</td><td>DP center line of CCD (second side)</td><td>-35 to 60</td><td>0</td><td>0.085 mm</td></tr><tr><td>ADJUST DATA3*</td><td>DP center line of CIS</td><td>-39 to 39</td><td>0</td><td>0.085 mm</td></tr></table><div>25/25, 30/30 ppm model</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>ADJUST DATA1</td><td>DP center line of CCD (first side)</td><td>-40 to 40</td><td>0</td><td>0.085 mm</td></tr><tr><td>ADJUST DATA2</td><td>DP center line of CCD (second side)</td><td>-40 to 40</td><td>0</td><td>0.085 mm</td></tr><tr><td>ADJUST DATA3*</td><td>DP center line of CIS</td><td>-39 to 39</td><td>0</td><td>0.085 mm</td></tr></table><div>*: Dual scan DP only.</div><div><div><div>3. Press the system menu key.</div><div>4. Place an original on the DP and press the start key to make a test copy.</div><div>5. Press the system menu key.</div><div>6. Change the setting value using the +/- or numeric keys.</div></div><div>For copy example 1, increase the value. For copy example 2, decrease the value.</div><div><div><div><div></div><div>Original</div></div><div><div></div><div>Copy example 1</div></div><div><div></div><div>Copy example 2</div></div></div></div><p><b>Figure 1-3-4</b></p><div>7. Press the start key. The value is set.</div></div><div><p><b>Caution</b></p><p>If the CCD first side is adjusted, check the CCD second side and if adjustment is required, carry out the adjustment.</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.1-3-14)</div></div></div><div><p><b>Completion</b></p><p>Press the stop key. The screen for selecting a maintenance item No. is displayed.</p></div></div>	Display	Description	Setting range	Initial setting	Change in value per step	ADJUST DATA1	DP center line of CCD (first side)	-35 to 60	0	0.085 mm	ADJUST DATA2	DP center line of CCD (second side)	-35 to 60	0	0.085 mm	ADJUST DATA3*	DP center line of CIS	-39 to 39	0	0.085 mm	Display	Description	Setting range	Initial setting	Change in value per step	ADJUST DATA1	DP center line of CCD (first side)	-40 to 40	0	0.085 mm	ADJUST DATA2	DP center line of CCD (second side)	-40 to 40	0	0.085 mm	ADJUST DATA3*	DP center line of CIS	-39 to 39	0	0.085 mm
Display	Description	Setting range	Initial setting	Change in value per step																																					
ADJUST DATA1	DP center line of CCD (first side)	-35 to 60	0	0.085 mm																																					
ADJUST DATA2	DP center line of CCD (second side)	-35 to 60	0	0.085 mm																																					
ADJUST DATA3*	DP center line of CIS	-39 to 39	0	0.085 mm																																					
Display	Description	Setting range	Initial setting	Change in value per step																																					
ADJUST DATA1	DP center line of CCD (first side)	-40 to 40	0	0.085 mm																																					
ADJUST DATA2	DP center line of CCD (second side)	-40 to 40	0	0.085 mm																																					
ADJUST DATA3*	DP center line of CIS	-39 to 39	0	0.085 mm																																					

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Maintenance item No.	Description																						
U087	<p><b>Setting DP reading position modification operation</b></p> <p><b>Description</b> 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><b>Purpose</b> When using DP, to solve the problem when black lines occurs due to the dust with respect to original reading position.</p> <p><b>Method</b></p> <ol style="list-style-type: none"><li>1. Press the start key.</li><li>2. Select the item to be set.</li></ol> <table><tr><th>Display</th><th>Description</th></tr><tr><td>CCD</td><td>Setting of standard data when dust is detected.</td></tr><tr><td>BLACK LINE</td><td>Initialization of original reading position.</td></tr></table> <p><b>Setting: [CCD]</b></p> <ol style="list-style-type: none"><li>1. Select the item to be set.</li><li>2. Change the value using the +/- or numeric keys.</li></ol> <table><tr><th>Display</th><th>Description</th><th>Setting range</th><th>Initial setting</th></tr><tr><td>CCD R</td><td>Lowest density of the R regard as the dust</td><td>0 to 255</td><td>145</td></tr><tr><td>CCD G</td><td>Lowest density of the G regard as the dust</td><td>0 to 255</td><td>145</td></tr><tr><td>CCD B</td><td>Lowest density of the B regard as the dust</td><td>0 to 255</td><td>145</td></tr></table> <ol style="list-style-type: none"><li>3. Press the start key. The value is set.</li></ol> <p><b>Method: [BLACK LINE]</b></p> <ol style="list-style-type: none"><li>1. Select [CLEAR].</li><li>2. Press the start key. The setting is cleared.</li></ol> <p><b>Completion</b> Press the stop key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	CCD	Setting of standard data when dust is detected.	BLACK LINE	Initialization of original reading position.	Display	Description	Setting range	Initial setting	CCD R	Lowest density of the R regard as the dust	0 to 255	145	CCD G	Lowest density of the G regard as the dust	0 to 255	145	CCD B	Lowest density of the B regard as the dust	0 to 255	145
Display	Description																						
CCD	Setting of standard data when dust is detected.																						
BLACK LINE	Initialization of original reading position.																						
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CCD R	Lowest density of the R regard as the dust	0 to 255	145																				
CCD G	Lowest density of the G regard as the dust	0 to 255	145																				
CCD B	Lowest density of the B regard as the dust	0 to 255	145																				

Maintenance item No.	Description																																
U091	<p><b>Setting the white line correction</b></p> <p><b>Description</b> Sets the error detection threshold value for white line correction and displays the count result of abnormal pixels.</p> <p><b>Purpose</b> To perform when replacing the CIS or DP driver PWB.</p> <p><b>Method</b></p> <ol style="list-style-type: none"><li>1. Press the start key.</li><li>2. Press [EXECUTE].</li><li>3. Press the start key. Holding of white reference data is started.</li><li>4. The count result of abnormal pixels is displayed.</li></ol> <table><tr><th>Display</th><th>Description</th></tr><tr><td>Calculation(R)</td><td>Abnormal pixel count result for color R</td></tr><tr><td>Calculation(G)</td><td>Abnormal pixel count result for color G</td></tr><tr><td>Calculation(B)</td><td>Abnormal pixel count result for color B</td></tr></table> <p><b>Setting: Threshold value setting</b></p> <ol style="list-style-type: none"><li>1. Select the item to be set.</li><li>2. Change the value using the +/- or numeric keys.</li></ol> <table><tr><th>Display</th><th>Description</th><th>Setting range</th><th>Initial setting</th></tr><tr><td>Threshold(R)</td><td>Setting of abnormal pixel detection threshold value for color R</td><td>0 to 1023</td><td>112</td></tr><tr><td>Threshold(G)</td><td>Setting of abnormal pixel detection threshold value for color G</td><td>0 to 1023</td><td>112</td></tr><tr><td>Threshold(B)</td><td>Setting of abnormal pixel detection threshold value for color B</td><td>0 to 1023</td><td>112</td></tr><tr><td>Abnorm Pixel Threshold</td><td>Abnormal pixel threshold value setting</td><td>0 to 8191</td><td>75</td></tr><tr><td>MODE</td><td>Switching between white line correction mode ON/OFF</td><td>0: OFF 1: ON 2: Test mode</td><td>0</td></tr></table> <ol style="list-style-type: none"><li>3. Press the start key. The value is set.</li></ol> <p><b>Completion</b> Press the stop key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	Calculation(R)	Abnormal pixel count result for color R	Calculation(G)	Abnormal pixel count result for color G	Calculation(B)	Abnormal pixel count result for color B	Display	Description	Setting range	Initial setting	Threshold(R)	Setting of abnormal pixel detection threshold value for color R	0 to 1023	112	Threshold(G)	Setting of abnormal pixel detection threshold value for color G	0 to 1023	112	Threshold(B)	Setting of abnormal pixel detection threshold value for color B	0 to 1023	112	Abnorm Pixel Threshold	Abnormal pixel threshold value setting	0 to 8191	75	MODE	Switching between white line correction mode ON/OFF	0: OFF 1: ON 2: Test mode	0
Display	Description																																
Calculation(R)	Abnormal pixel count result for color R																																
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Threshold(B)	Setting of abnormal pixel detection threshold value for color B	0 to 1023	112																														
Abnorm Pixel Threshold	Abnormal pixel threshold value setting	0 to 8191	75																														
MODE	Switching between white line correction mode ON/OFF	0: OFF 1: ON 2: Test mode	0																														

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Maintenance item No.

Description

U203

Operating the DP separately

Description

Simulates the original conveying operation separately in the DP.

Purpose

To check the DP operation.

Method

1. Press the start key.

2. Place an original in the DP if running this simulation with paper.

3. Select the item to be operated.

Display	Description	Setting range	Initial setting
CCD ADP (NON P)	Without paper, single-sided original of CCD (continuous operation)	-	-
CCD ADP	With paper, single-sided original of CCD	-	-
CCD RADP (NON P)	Without paper, double-sided original of CCD (continuous operation)	-	-
CCD RADP	With paper, double-sided original of CCD	-	-
CIS RADP (NON P)*	Without paper, double-sided original of CIS (continuous operation)	-	-
CIS RADP*	With paper, double-sided original of CIS	-	-
SPEED	Switching between normal reading (600 dpi) and high-speed reading	0 (Normal)/ 1 (High-speed)	0

\*: Dual scan DP only.

4. Press the start key. The operation starts.

5. To stop continuous operation, press the stop key.

Completion

Press the stop key when the operation stops. The screen for selecting a maintenance item No. is displayed.

U243

Checking the operation of the DP motors

Description

Turns the motors or solenoids in the DP on.

Purpose

To check the operation of the DP motors and solenoids.

Method

1. Press the start key.

2. Select the item to be operated.

3. Press the start key. The operation starts.

Display	Motor and solenoid	Operation
DP FEED MOT	Original feed motor (OFM)	In operation
DP CON MOT	Original conveying motor (OCM)	In operation
DP REV MOT	Original switchback motor (OSBM)	In operation
DP LIFT MOT	DP lift motor (DPLM)	In operation
DP REV PRS SOL	Switchback pressure solenoid (SBPSOL)	On for 0.5 s
DP REV BRCH SOL	Switchback feedshift solenoid (SBFSSOL)	On for 0.5 s
CIS FAN*	DP fan motor (DPFM)	In operation

\*: Dual scan DP only.

4. To turn each motor off, press the stop key.

Completion

Press the stop key when operation stops. The screen for selecting a maintenance item No. is displayed.

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Maintenance item No.	Description																										
U244	<p><b>Checking the DP switches</b></p> <p><b>Description</b> Displays the status of the respective switches in the DP.</p> <p><b>Purpose</b> To check if respective switches in the DP operate correctly.</p> <p><b>Method</b></p> <ol style="list-style-type: none"> <li>1. Press the start key.</li> <li>2. Turn the respective switches on and off manually to check the status.</li> </ol> <p>If the on-status of a switch is detected, the corresponding switch is displayed in reverse.</p> <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>FD SW</td><td>Original feed switch (OFSW)</td></tr> <tr> <td>REG SW</td><td>Original registration switch (ORSW)</td></tr> <tr> <td>TMG SW</td><td>DP timing switch 1 (DPTSW1)</td></tr> <tr> <td>EJT SW</td><td>Original eject switch (OESW)</td></tr> <tr> <td>TRY SW</td><td>Switchback tray switch (SBTSW)</td></tr> <tr> <td>SET SW</td><td>Original set switch (OSSW)</td></tr> <tr> <td>SZ SW A</td><td>Original size length switch (OSLSW)</td></tr> <tr> <td>L F U SW</td><td>Tray upper limit switch (TULSW)</td></tr> <tr> <td>L F L SW</td><td>Tray lower limit switch (TLLSW)</td></tr> <tr> <td>COV OP SW</td><td>DP interlock switch (DPILSW)</td></tr> <tr> <td>P OP SW</td><td>DP open/close switch (DPOCSW)</td></tr> <tr> <td>CIS SW*</td><td>DP timing switch 2 (DPTSW2)</td></tr> </tbody> </table> <p>*: Dual scan DP only.</p> <p><b>Completion</b> Press the stop key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	FD SW	Original feed switch (OFSW)	REG SW	Original registration switch (ORSW)	TMG SW	DP timing switch 1 (DPTSW1)	EJT SW	Original eject switch (OESW)	TRY SW	Switchback tray switch (SBTSW)	SET SW	Original set switch (OSSW)	SZ SW A	Original size length switch (OSLSW)	L F U SW	Tray upper limit switch (TULSW)	L F L SW	Tray lower limit switch (TLLSW)	COV OP SW	DP interlock switch (DPILSW)	P OP SW	DP open/close switch (DPOCSW)	CIS SW*	DP timing switch 2 (DPTSW2)
Display	Description																										
FD SW	Original feed switch (OFSW)																										
REG SW	Original registration switch (ORSW)																										
TMG SW	DP timing switch 1 (DPTSW1)																										
EJT SW	Original eject switch (OESW)																										
TRY SW	Switchback tray switch (SBTSW)																										
SET SW	Original set switch (OSSW)																										
SZ SW A	Original size length switch (OSLSW)																										
L F U SW	Tray upper limit switch (TULSW)																										
L F L SW	Tray lower limit switch (TLLSW)																										
COV OP SW	DP interlock switch (DPILSW)																										
P OP SW	DP open/close switch (DPOCSW)																										
CIS SW*	DP timing switch 2 (DPTSW2)																										



Maintenance item No.	Description																				
U326	<p><b>Setting the black line cleaning indication</b></p> <p><b>Description</b> Sets whether to display the cleaning guidance when detecting the black line.</p> <p><b>Purpose</b> Displays the cleaning guidance in order to make the call for service with the black line decrease by the rubbish on the contact glass when scanning from the DP.</p> <p><b>Setting</b></p> <ol style="list-style-type: none"><li>1. Press the start key.</li><li>2. Select the item to set. The screen for setting each item is displayed.</li></ol> <table><tr><th>Display</th><th>Description</th></tr><tr><td>BLACK LINE MODE</td><td>Black line cleaning guidance ON/OFF setting</td></tr><tr><td>BLACK LINE COUNT</td><td>Setting counts of the cleaning guidance indication</td></tr></table> <p><b>Setting: [BLACK LINE MODE]</b></p> <ol style="list-style-type: none"><li>1. Select ON or OFF.</li></ol> <table><tr><th>Display</th><th>Description</th></tr><tr><td>ON</td><td>Displays the cleaning guidance</td></tr><tr><td>OFF</td><td>Not to display the cleaning guidance</td></tr></table> <p>Initial setting: ON Setting count value is displayed only if the setting is ON.</p> <ol style="list-style-type: none"><li>2. Press the start key. The setting is set.</li></ol> <p><b>Setting: [BLACK LINE COUNT]</b></p> <ol style="list-style-type: none"><li>1. Change the setting value using the +/- or numeric keys.</li></ol> <table><tr><th>Display</th><th>Description</th><th>Setting range</th><th>Initial setting</th></tr><tr><td>COUNT</td><td>Setting counts of the cleaning guidance indication ( x 1000 sheets)</td><td>0 to 255</td><td>8</td></tr></table> <p>When setting is 0, the black line cleaning indication is displayed only if the black line is detected.</p> <ol style="list-style-type: none"><li>2. Press the start key. The value is set.</li></ol> <p><b>Completion</b> Press the stop key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	BLACK LINE MODE	Black line cleaning guidance ON/OFF setting	BLACK LINE COUNT	Setting counts of the cleaning guidance indication	Display	Description	ON	Displays the cleaning guidance	OFF	Not to display the cleaning guidance	Display	Description	Setting range	Initial setting	COUNT	Setting counts of the cleaning guidance indication ( x 1000 sheets)	0 to 255	8
Display	Description																				
BLACK LINE MODE	Black line cleaning guidance ON/OFF setting																				
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Maintenance item No.	Description																																													
U404	<p><b>Adjusting margins for scanning an original from the DP</b></p> <p><b>Description</b> Adjusts margins for scanning the original from the DP.</p> <p><b>Purpose</b> Make the adjustment if margins are incorrect.</p> <p><b>Caution</b> 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><b>Adjustment</b></p> <div><div>1. Press the start key.</div><div>2. Select the item.</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>Left margin</td><td>0 to 10.0</td><td>3.0</td><td>0.5 mm</td></tr><tr><td>B MARGIN</td><td>Leading edge margin</td><td>0 to 10.0</td><td>2.5</td><td>0.5 mm</td></tr><tr><td>C MARGIN</td><td>Right margin</td><td>0 to 10.0</td><td>3.0</td><td>0.5 mm</td></tr><tr><td>D MARGIN</td><td>Trailing edge margin</td><td>0 to 10.0</td><td>4.0</td><td>0.5 mm</td></tr><tr><td>A MARGIN (BACK)*</td><td>Left margin (second side)</td><td>0 to 10.0</td><td>3.0</td><td>0.5 mm</td></tr><tr><td>B MARGIN (BACK)*</td><td>Leading edge margin (second side)</td><td>0 to 10.0</td><td>2.5</td><td>0.5 mm</td></tr><tr><td>C MARGIN (BACK)*</td><td>Right margin (second side)</td><td>0 to 10.0</td><td>3.0</td><td>0.5 mm</td></tr><tr><td>D MARGIN (BACK)*</td><td>Trailing edge margin (second side)</td><td>0 to 10.0</td><td>4.0</td><td>0.5 mm</td></tr></table> <p>*: Dual scan DP only.</p> <div><div>3. Press the system menu key.</div><div>4. Place an original on the DP and press the start key to make a test copy.</div><div>5. Press the system menu key.</div><div>6. Change the setting value using the +/- keys.</div></div> <p>Increasing the value makes the margin wider, and decreasing it makes the margin narrower.</p> <div><div>Leading edge margin (3.0 ± 1.5 mm)</div><div>Left margin (2.0 ± 1.0 mm)</div><div>Right margin (2.0 ± 1.0 mm)</div><div>Trailing edge margin (2.0 ± 1.0 mm)</div></div> <p><b>Figure 1-3-5</b></p> <div><div>7. Press the start key. The value is set.</div></div> <p><b>Completion</b> Press the stop key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	Setting range	Initial setting	Change in value per step	A MARGIN	Left margin	0 to 10.0	3.0	0.5 mm	B MARGIN	Leading edge margin	0 to 10.0	2.5	0.5 mm	C MARGIN	Right margin	0 to 10.0	3.0	0.5 mm	D MARGIN	Trailing edge margin	0 to 10.0	4.0	0.5 mm	A MARGIN (BACK)*	Left margin (second side)	0 to 10.0	3.0	0.5 mm	B MARGIN (BACK)*	Leading edge margin (second side)	0 to 10.0	2.5	0.5 mm	C MARGIN (BACK)*	Right margin (second side)	0 to 10.0	3.0	0.5 mm	D MARGIN (BACK)*	Trailing edge margin (second side)	0 to 10.0	4.0	0.5 mm
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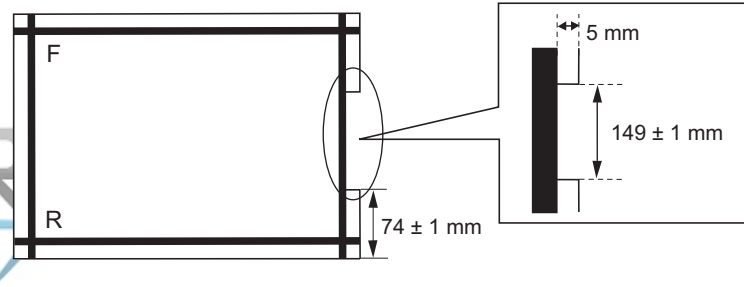
Maintenance item No.	Description																										
U411	<p><b>Adjusting the scanner automatically</b></p> <p><b>Description</b> Uses a specified original and automatically adjusts the following items in the scanner and the DP scanning sections.</p> <p><b>Purpose</b> To perform automatic adjustment of various items in the scanner and the DP scanning sections.</p> <p><b>Method</b></p> <ol style="list-style-type: none"> <li>Press the start key.</li> <li>Select the item. The screen for executing is displayed.</li> </ol> <table> <tr> <th>Display</th><th>Description</th><th>Original to be used for adjustment (P/N)</th></tr> <tr> <td>SCANNER</td><td>Automatic adjustment in the scanner section</td><td>302FZ56990</td></tr> <tr> <td>DP(FACE UP)</td><td>Automatic adjustment in the DP scanning section (first page)</td><td>302AC68243</td></tr> <tr> <td>DP(FACE DOWN)*</td><td>Automatic adjustment in the DP scanning section (second page)</td><td>302AC68243/303JX57010/303JX57020</td></tr> </table> <p>*: Dual scan DP only.</p> <p><b>Method: [SCANNER]</b></p> <ol style="list-style-type: none"> <li>Enter the target values which are shown on the specified original (P/N: 302FZ56990) executing maintenance item U425.</li> <li>Set a specified original (P/N: 302FZ56990) on the platen.</li> <li>Select the item.</li> </ol> <table> <tr> <th>Display</th><th>Description</th></tr> <tr> <td>ALL</td><td>Automatic adjustment using the platen for: original size magnification/leading edge timing/center line, input gamma, chromatic aberration filter, MTF filter and matrix.</td></tr> <tr> <td>INPUT</td><td>Automatic adjustment using the platen for: original size magnification/leading edge timing/center line.</td></tr> <tr> <td>C.A.</td><td>Automatic adjustment using the platen for: chromatic aberration filter.</td></tr> <tr> <td>MTF</td><td>Automatic adjustment using the platen for: MTF filter.</td></tr> <tr> <td>GAMMA</td><td>Automatic adjustment using the platen for: input gamma.</td></tr> <tr> <td>MATRIX</td><td>Automatic adjustment using the platen for: matrix.</td></tr> </table> <ol style="list-style-type: none"> <li>Press the start key. Auto adjustment starts. When automatic adjustment has normally completed, [COMPLETE] is displayed. If a problem occurs during auto adjustment, [ERROR 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.</li> </ol> <p><b>Method: DP(FACE UP)</b></p> <ol style="list-style-type: none"> <li>Measure the leading edge, main scanning, and auxiliary scanning of the specified original (P/N: 302AC68243) and enter the values by executing maintenance item U425.</li> <li>Set a specified original (P/N: 302AC68243) in the DP. Cut the trailing edge of the original.</li> </ol> 	Display	Description	Original to be used for adjustment (P/N)	SCANNER	Automatic adjustment in the scanner section	302FZ56990	DP(FACE UP)	Automatic adjustment in the DP scanning section (first page)	302AC68243	DP(FACE DOWN)*	Automatic adjustment in the DP scanning section (second page)	302AC68243/303JX57010/303JX57020	Display	Description	ALL	Automatic adjustment using the platen for: original size magnification/leading edge timing/center line, input gamma, chromatic aberration filter, MTF filter and matrix.	INPUT	Automatic adjustment using the platen for: original size magnification/leading edge timing/center line.	C.A.	Automatic adjustment using the platen for: chromatic aberration filter.	MTF	Automatic adjustment using the platen for: MTF filter.	GAMMA	Automatic adjustment using the platen for: input gamma.	MATRIX	Automatic adjustment using the platen for: matrix.
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GAMMA	Automatic adjustment using the platen for: input gamma.																										
MATRIX	Automatic adjustment using the platen for: matrix.																										
<p><b>Figure 1-3-6</b></p>																											

Figure 1-3-6

Maintenance item No.	Description		
U411	3. Press [INPUT].		
	Display	Description	
	INPUT	Automatic adjustment of first page using the DP for: original size magnification/leading edge timing/center line.	
	4. Press the start key. Auto adjustment starts. When automatic adjustment has normally completed, [COMPLETE] is displayed. If a problem occurs during auto adjustment, [ERROR 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.		
	<b>Method: DP(FACE DOWN)</b>		
	1. Place the specified original for acquiring gamma target data (P/N: 303JX57010) on the platen, and press the start key.		
	2. Place the specified original for acquiring matrix target data (P/N: 303JX57020) on the platen, and press the start key. When normally completed, [COMPLETE] is displayed.		
	3. Select the item (place all originals face down).		
	Display	Description	Original to be used for adjustment (P/N)
	ALL	Automatic adjustment of second page using the DP for: original size magnification/leading edge timing/center line, input gamma, chromatic aberration filter, MTF filter and matrix.	302AC68243/303JX57010/303JX57020
INPUT	Automatic adjustment of second page using the DP for: original size magnification/leading edge timing/center line.	302AC68243	
MTF/GAMMA	Automatic adjustment of second page using the DP for: MTF filter and input gamma.	303JX57010	
MATRIX	Automatic adjustment of second page using the DP for: matrix.	303JX57020	
<b>[INPUT]</b>			
1. Select [INPUT].			
2. Place a specified original (P/N: 302AC68243).			
3. Press the start key. Auto adjustment starts.			
<b>[GAMMA]</b>			
1. Select [MTF/GAMMA].			
2. Place a specified original (P/N: 303JX57010).			
3. Press the start key. Auto adjustment starts.			
<b>[MTF/MATRIX]</b>			
1. Select [MATRIX].			
2. Place a specified original (P/N: 303JX57020).			
3. Press the start key. Auto adjustment starts.			
When [ALL] is selected, the adjustment of [INPUT], [MTF/GAMMA] and [MATRIX] can be executed at once. When adjusting, place the three specified originals, and then press the start key. Set the original 303JX57020, and then place 303JX57010 and 302AC68243 in order on the top of the original.			
When automatic adjustment has normally completed, [COMPLETE] is displayed. If a problem occurs during auto adjustment, [ERROR 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.			
<b>Completion</b> Press the stop key. The screen for selecting a maintenance item is displayed.			

Maintenance item No.	Description																																																						
U411	<b>Error Codes</b> <table> <tr> <th>Codes</th><th>Description</th></tr> <tr> <td>ERROR 01</td><td>Black band detection error (scanner leading edge registration)</td></tr> <tr> <td>ERROR 02</td><td>Black band detection error (scanner center line)</td></tr> <tr> <td>ERROR 03</td><td>Black band detection error (scanner main scanning direction magnification)</td></tr> <tr> <td>ERROR 04</td><td>Black band is not detected (scanner leading edge registration)</td></tr> <tr> <td>ERROR 05</td><td>Black band is not detected (scanner center line)</td></tr> <tr> <td>ERROR 06</td><td>Black band is not detected (scanner main scanning direction magnification)</td></tr> <tr> <td>ERROR 07</td><td>Black band is not detected (scanner auxiliary scanning direction magnification)</td></tr> <tr> <td>ERROR 08</td><td>Black band is not detected (DP main scanning direction magnification far end)</td></tr> <tr> <td>ERROR 09</td><td>Black band is not detected (DP main scanning direction magnification near end)</td></tr> <tr> <td>ERROR 0a</td><td>Black band is not detected (DP auxiliary scanning direction magnification leading edge)</td></tr> <tr> <td>ERROR 0b</td><td>Black band is not detected (DP auxiliary scanning direction magnification leading edge original check)</td></tr> <tr> <td>ERROR 0c</td><td>Black band is not detected (DP auxiliary scanning direction trailing edge)</td></tr> <tr> <td>ERROR 0d</td><td>Black band is not detected (DP auxiliary scanning direction trailing edge 2)</td></tr> <tr> <td>ERROR 0e</td><td>DMA time out</td></tr> <tr> <td>ERROR 0f</td><td>Auxiliary scanning direction magnification error</td></tr> <tr> <td>ERROR 10</td><td>Auxiliary scanning direction leading edge detection error</td></tr> <tr> <td>ERROR 11</td><td>Auxiliary scanning direction trailing edge detection error</td></tr> <tr> <td>ERROR 12</td><td>Auxiliary scanning direction skew 1.5 error</td></tr> <tr> <td>ERROR 13</td><td>Maintenance request error</td></tr> <tr> <td>ERROR 14</td><td>Main scanning direction center line error</td></tr> <tr> <td>ERROR 15</td><td>Main scanning direction skew 1.5 error</td></tr> <tr> <td>ERROR 16</td><td>Main scanning direction magnification error</td></tr> <tr> <td>ERROR 17</td><td>Carriage error</td></tr> <tr> <td>ERROR 18</td><td>Service call error</td></tr> <tr> <td>ERROR 19</td><td>DP status error</td></tr> <tr> <td>ERROR 1a</td><td>DP open error</td></tr> </table>	Codes	Description	ERROR 01	Black band detection error (scanner leading edge registration)	ERROR 02	Black band detection error (scanner center line)	ERROR 03	Black band detection error (scanner main scanning direction magnification)	ERROR 04	Black band is not detected (scanner leading edge registration)	ERROR 05	Black band is not detected (scanner center line)	ERROR 06	Black band is not detected (scanner main scanning direction magnification)	ERROR 07	Black band is not detected (scanner auxiliary scanning direction magnification)	ERROR 08	Black band is not detected (DP main scanning direction magnification far end)	ERROR 09	Black band is not detected (DP main scanning direction magnification near end)	ERROR 0a	Black band is not detected (DP auxiliary scanning direction magnification leading edge)	ERROR 0b	Black band is not detected (DP auxiliary scanning direction magnification leading edge original check)	ERROR 0c	Black band is not detected (DP auxiliary scanning direction trailing edge)	ERROR 0d	Black band is not detected (DP auxiliary scanning direction trailing edge 2)	ERROR 0e	DMA time out	ERROR 0f	Auxiliary scanning direction magnification error	ERROR 10	Auxiliary scanning direction leading edge detection error	ERROR 11	Auxiliary scanning direction trailing edge detection error	ERROR 12	Auxiliary scanning direction skew 1.5 error	ERROR 13	Maintenance request error	ERROR 14	Main scanning direction center line error	ERROR 15	Main scanning direction skew 1.5 error	ERROR 16	Main scanning direction magnification error	ERROR 17	Carriage error	ERROR 18	Service call error	ERROR 19	DP status error	ERROR 1a	DP open error
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Maintenance item No.	Description																																										
U425	<p><b>Setting the target</b></p> <p><b>Description</b> Enters the lab values that is indicated on the back of the chart (P/N: 302FZ56990) used for adjustment. Also enters the measurement value of the chart (P/N: 302AC68243) used for adjustment.</p> <p><b>Purpose</b> Performs data input in order to correct for differences in originals during automatic adjustment.</p> <p><b>Method</b></p> <ol style="list-style-type: none"><li>1. Press the start key.</li><li>2. Select the item to be set.</li></ol> <table><tr><th>Display</th><th>Description</th></tr><tr><td>CCD</td><td>Entering the target values of the chart (P/N: 302FZ56990) used for adjustment</td></tr><tr><td>DP</td><td>Entering the measurement value of the chart (P/N: 302AC68243) used for adjustment</td></tr><tr><td>CIS</td><td>Execution is not required</td></tr></table> <p><b>Setting: [CCD]</b></p> <ol style="list-style-type: none"><li>1. Select the item to be set.</li></ol> <table><tr><th>Display</th><th>Description</th></tr><tr><td>N875</td><td>Setting the N875 patch for the original for adjustment</td></tr><tr><td>N475</td><td>Setting the N475 patch for the original for adjustment</td></tr><tr><td>N125</td><td>Setting the N125 patch for the original for adjustment</td></tr><tr><td>CYAN</td><td>Setting the cyan patch for the original for adjustment</td></tr><tr><td>MAGENTA</td><td>Setting the magenta patch for the original for adjustment</td></tr><tr><td>YELLOW</td><td>Setting the yellow patch for the original for adjustment</td></tr><tr><td>RED</td><td>Setting the red patch for the original for adjustment</td></tr><tr><td>GREEN</td><td>Setting the green patch for the original for adjustment</td></tr><tr><td>BLUE</td><td>Setting the blue patch for the original for adjustment</td></tr><tr><td>ADJUST ORIGINAL</td><td>Setting the main and auxiliary scanning directions</td></tr></table> <ol style="list-style-type: none"><li>2. Select the item to be set.</li></ol> <table><tr><th>Display</th><th>Description</th><th>Setting range</th></tr><tr><td>L</td><td>Setting the L value</td><td>0.0 to 100.0</td></tr><tr><td>A</td><td>Setting the A value</td><td>-200.0 to 200.0</td></tr><tr><td>B</td><td>Setting the B value</td><td>-200.0 to 200.0</td></tr></table> <ol style="list-style-type: none"><li>3. Enters the value that is indicated on the back of the chart using the +/- or numeric keys.</li><li>4. Press the start key. The value is set.</li></ol>	Display	Description	CCD	Entering the target values of the chart (P/N: 302FZ56990) used for adjustment	DP	Entering the measurement value of the chart (P/N: 302AC68243) used for adjustment	CIS	Execution is not required	Display	Description	N875	Setting the N875 patch for the original for adjustment	N475	Setting the N475 patch for the original for adjustment	N125	Setting the N125 patch for the original for adjustment	CYAN	Setting the cyan patch for the original for adjustment	MAGENTA	Setting the magenta patch for the original for adjustment	YELLOW	Setting the yellow patch for the original for adjustment	RED	Setting the red patch for the original for adjustment	GREEN	Setting the green patch for the original for adjustment	BLUE	Setting the blue patch for the original for adjustment	ADJUST ORIGINAL	Setting the main and auxiliary scanning directions	Display	Description	Setting range	L	Setting the L value	0.0 to 100.0	A	Setting the A value	-200.0 to 200.0	B	Setting the B value	-200.0 to 200.0
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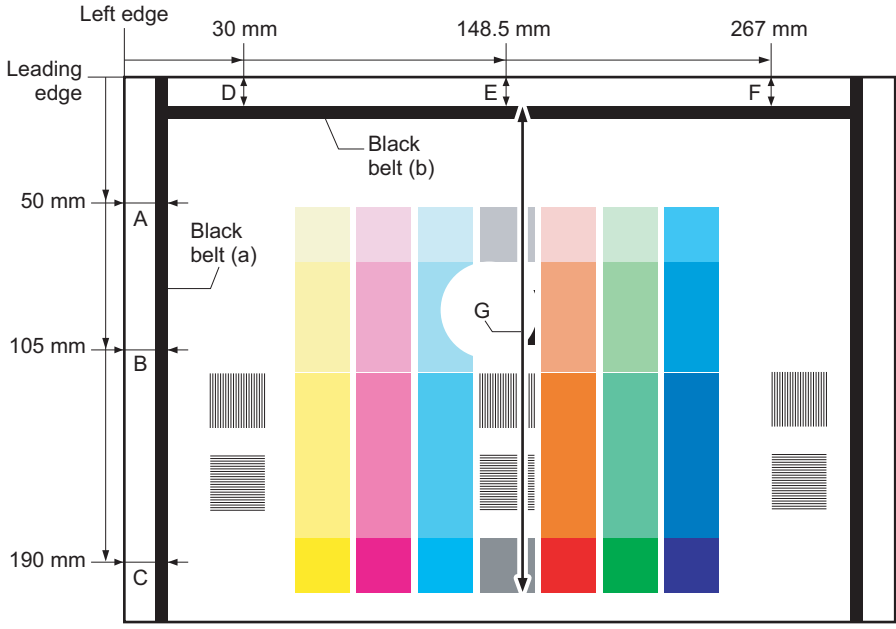
Maintenance item No.	Description
U425	<p><b>Setting: [ADJUST ORIGINAL]</b></p> <ol style="list-style-type: none"> <li>Measure the distance from the left edge to the black belt (a) of the original at A, B and C. Measurement procedure               <ol style="list-style-type: none"> <li>Measure the distance from the edge to the black belt (a) of the original at A (50 mm from the leading edge), B (105 mm from the leading edge) and C (190 mm from the leading edge), respectively.</li> <li>Apply the following formula for the values obtained: <math>((A + C) / 2 + B) / 2</math></li> </ol> </li> <li>Enter the values solved using the +/- keys in [MAIN ADJ].</li> <li>Press the start key. The value is set.</li> <li>Measure the distance from the leading edge to the black belt (b) of the original at D, E and F. Measurement procedure               <ol style="list-style-type: none"> <li>Measure the length from the edge to the black belt (b) of the original at D (30 mm from the left edge), E (148.5 mm from the left edge) and F (267 mm from the left edge), respectively.</li> <li>Apply the following formula for the values obtained: <math>((D + F) / 2 + E) / 2</math></li> </ol> </li> <li>Enter the values solved using the +/- keys in [SUB LEAD ADJ].</li> <li>Press the start key. The value is set.</li> <li>Measure the length (G) from the leading edge of the black belt (b) to the bottom of the N475 patch of the original.</li> <li>Enter the measured value using the +/- keys in [SUB TAIL ADJ].</li> <li>Press the start key. The value is set.</li> <li>To return to the screen for selecting an item, press the stop key.</li> </ol> <div style="text-align: center;">  <p>Original for adjustment (P/N: 302FZ56990)</p> </div> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>[MAIN ADJ] = <math>((A + C) / 2 + B) / 2</math></p> <p>[SUB LEAD ADJ] = <math>((D + F) / 2 + E) / 2</math></p> <p>[SUB TAIL ADJ] = G</p> </div>

Figure 1-3-7

Maintenance item No.	Description
U425	<p><b>Setting: [DP]</b></p> <ol style="list-style-type: none"> <li>1. Measure the distance from the leading edge to the black belt (inside) of the original at A.</li> <li>2. Enter the measured value using the +/- keys in [LEAD].</li> <li>3. Measure the distance from the left edge to the black belt (inside) of the original at B.</li> <li>4. Enter the measured value using the +/- keys in [MAIN SCAN].</li> <li>5. Measure the distance from the black belt of leading edge (inside) to the black belt of trailing edge (inside) of the original at C.</li> <li>6. Enter the measured value using the +/- keys in [SUB SCAN].</li> <li>7. Press the start key. The value is set.</li> </ol> <div data-bbox="638 560 1085 1142"> </div> <p data-bbox="638 1164 1053 1198">Original for adjustment (P/N: 302AC68243)</p> <p data-bbox="782 1220 925 1254"><b>Figure 1-3-8</b></p> <p><b>Completion</b> Press the stop key. The screen for selecting a maintenance item No. is displayed.</p>



Maintenance item No.	Description																																
U905	<p><b>Checking counts by optional devices</b></p> <p><b>Description</b> Displays the counts of DP or finisher.</p> <p><b>Purpose</b> To check the use of DP and finisher.</p> <p><b>Method</b></p> <ol style="list-style-type: none"> <li>1. Press the start key.</li> <li>2. Select the device, the count of which is to be checked.</li> <li>3. Press the start key. The count of the selected device is displayed.</li> </ol> <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>DP</td><td>Counts of DP</td></tr> <tr> <td>FINISHER</td><td>Counts of document finisher or 3000-sheet document finisher</td></tr> </tbody> </table> <p>DP</p> <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <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> <tr> <td>CONCURRENT</td><td>No. of dual scan originals that has passed through the DP</td></tr> </tbody> </table> <p>Document finisher</p> <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <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> </tbody> </table> <p>3000-sheet document finisher</p> <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <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>PUNCH</td><td>Frequency the punch has been activated</td></tr> <tr> <td>STACK</td><td>Frequency the stacker has been activated</td></tr> <tr> <td>SADDLE</td><td>Frequency the center holding has been activated</td></tr> </tbody> </table> <p><b>Completion</b> Press the stop key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	DP	Counts of DP	FINISHER	Counts of document finisher or 3000-sheet document 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	CONCURRENT	No. of dual scan originals that has passed through the DP	Display	Description	CP CNT	No. of copies that has passed	STAPLE	Frequency the stapler has been activated	Display	Description	CP CNT	No. of copies that has passed	STAPLE	Frequency the stapler has been activated	PUNCH	Frequency the punch has been activated	STACK	Frequency the stacker has been activated	SADDLE	Frequency the center holding has been activated
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Maintenance item No.	Description																				
U942	<p><b>Setting of deflection for feeding from DP</b></p> <p><b>Description</b> Adjusts the deflection generated when the DP is used.</p> <p><b>Purpose</b> Use this mode if an original non-feed jam, oblique feed or wrinkling of original occurs when the DP is used.</p> <p><b>Setting</b></p> <ol style="list-style-type: none"><li>1. Press the start key.</li><li>2. Select the item to be adjusted.</li></ol> <table><tr><th>Display</th><th>Description</th><th>Setting</th><th>Initial</th><th>Change in</th></tr><tr><td>REGIST TOP</td><td>Deflection of single-sided original</td><td>-31 to 31</td><td>0</td><td>0.176 mm</td></tr><tr><td>REGIST BACK</td><td>Deflection of double-sided original</td><td>-31 to 31</td><td>0</td><td>0.176 mm</td></tr><tr><td>REGIST MIX</td><td>Deflection of dual scanning</td><td>-31 to 31</td><td>0</td><td>0.176 mm</td></tr></table> <ol style="list-style-type: none"><li>3. Press the system menu key.</li><li>4. Place an original on the DP and press the start key to make a test copy.</li><li>5. Press the system menu key.</li><li>6. Change the setting value using the +/- or numeric 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.</li><li>7. Press the start key. The setting is set.</li></ol> <p><b>Completion</b> Press the stop key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	Setting	Initial	Change in	REGIST TOP	Deflection of single-sided original	-31 to 31	0	0.176 mm	REGIST BACK	Deflection of double-sided original	-31 to 31	0	0.176 mm	REGIST MIX	Deflection of dual scanning	-31 to 31	0	0.176 mm
Display	Description	Setting	Initial	Change in																	
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REGIST BACK	Deflection of double-sided original	-31 to 31	0	0.176 mm																	
REGIST MIX	Deflection of dual scanning	-31 to 31	0	0.176 mm																	
U990	<p><b>Checking/clearing the time for the exposure lamp to light</b></p> <p><b>Description</b> Displays, clears or changes the accumulated time for the CIS to light.</p> <p><b>Purpose</b> To check duration of use of the CIS. Also to clear the accumulated time for the CIS after replacement.</p> <p><b>Method</b></p> <ol style="list-style-type: none"><li>1. Press the start key. The accumulated time of illumination for the CIS is displayed in minutes.</li><li>2. Clear the accumulated time using the +/- or numeric keys.</li><li>3. Press the start key. The time is set.</li></ol> <p><b>Completion</b> Press the stop key. The screen for selecting a maintenance item No. is displayed.</p>																				

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## 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 DP top cover or switchback unit.

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

### (2) Original misfeed detection conditions

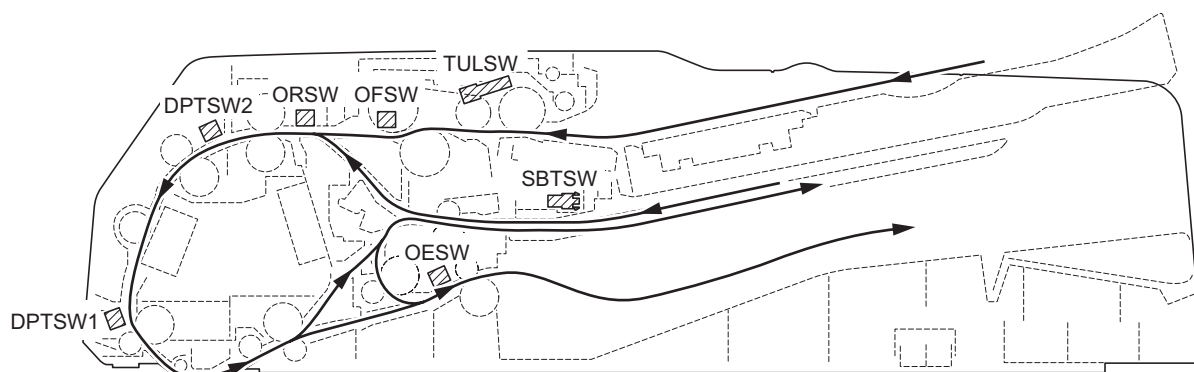


Figure 1-4-1

Section	Jam code	Conditions	Specified time	
			25/25 ppm 30/30 ppm	40/40 ppm 50/40 ppm
DP	70 No original feed	The original feed switch (OFSW) does not turn on within specified time during the first sheet feeding (Retry 5 times).	1159 ms	705 ms
		The original feed switch (OFSW) does not turn on within specified time during the second sheet feeding (Retry 5 times).	1159 ms	705 ms
		During original tray ascent, the tray upper limit switch (TULSW) does not turn on within specified time.	2 s	2 s
	71 An original jam in the original feed section	The original registration switch (ORSW) does not turn on within specified time of the original feed switch (OFSW) turning on.	914 ms	557 ms
	72 An original jam in the original conveying section	DP timing switch 1 (DPTSW1) turns off within the specified time since the switch turns on.	914 ms	557 ms
	73 An original jam in the original registration section	During single scanning, the DP timing switch 1 (DPTSW1) does not turn on within specified time of the original registration switch (ORSW) turning on (Retry 5 times).	1774 ms	1080 ms
		During duplex switchback scanning, the DP timing switch 1 (DPTSW1) does not turn on within specified time of the original registration switch (ORSW) turning on (Retry 5 times).	1774 ms	1080 ms
		During dual scanning, the DP timing switch 2 (DPTSW2) does not turn on within specified time of the original registration switch (ORSW) turning on (Retry 5 times).	1014 ms	617 ms
	74 An original jam in the original feed section	The original feed switch (OFSW) or original registration switch (ORSW) does not turn off within specified time of the DP timing switch 1 (DPTSW1) turning on.	2084 ms	1268 ms
		Scanning of previous original is not complete when DP timing switch 1 (DPTSW1) turns on.	-	-
	75 An original jam in the original conveying section	During single scanning, the DP timing switch 1 (DPTSW1) does not turn off within specified time of the original registration switch (ORSW) turning off.	1416 ms	862 ms
		During duplex switchback scanning, the DP timing switch 1 (DPTSW1) does not turn off within specified time of the original registration switch (ORSW) turning off.	1416 ms	862 ms
		During dual scanning, the DP timing switch 2 (DPTSW2) does not turn off within specified time of the original registration switch (ORSW) turning off.	656 ms	400 ms
	76 An original jam in the original switchback section 1	During duplex switchback scanning, the switchback tray switch (SBTSW) does not turn on within specified time of the DP timing switch 1 (DPTSW1) turning on.	2318 ms	1411 ms
	77 An original jam in the original switchback section 2	During duplex switchback scanning, the original registration switch (ORSW) does not turn on within specified time since original switchback operation starts.	935 ms	569 ms

Section	Jam code	Conditions	Specified time	
			25/25 ppm 30/30 ppm	40/40 ppm 50/40 ppm
DP	78 DP cover open JAM	The DP or DP top cover is opened during original feeding.	-	-
		When the power is turned on or original feeding starts, the original feed switch (OFSW), the original registration switch (ORSW) or DP timing switch 1/2 (DPTSW1/2) turning on.	-	-
	79 An original jam in the original eject section	During single scanning or dual scanning, the original eject switch (OESW) does not turn on within specified time of the DP timing switch 1 (DPTSW1) turning on.	1705 ms	1038 ms
		During duplex switchback scanning, the original eject switch (OESW) does not turn on within specified time since switchback ejection starts.	841 ms	512 ms
		During single scanning or dual scanning, the original eject switch (OESW) does not turn off within specified time of the DP timing switch 1 (DPTSW1) turning off.	1705 ms	1038 ms

**(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 feed switch.	Run maintenance item U244 and turn the original feed switch on and off manually. Replace the switch if indication of the corresponding switch on the touch panel is not displayed in reverse.
	Defective original feed motor.	Run maintenance item U243 and select original feed motor on the touch panel to be turned on and off. Check the status and remedy if necessary.
	Defective tray upper limit switch.	Run maintenance item U244 and turn the tray upper limit switch on and off manually. Replace the switch if indication of the corresponding switch on the touch panel is not displayed in reverse.
	Defective original lift motor.	Run maintenance item U243 and select original lift motor on the touch panel to be turned on and off. Check the status and remedy if necessary.
(2) An original jams in DP is indicated during copying (jam in the original feed section). Jam code 71	Defective switch.	Run maintenance item U244 and turn the following switch on and off manually. Replace the switch if indication of the corresponding switch on the touch panel is not displayed in reverse. Original feed switch, original registration switch
	Defective motor.	Run maintenance item U243 and select the following motor on the touch panel to be turned on and off. Check the status and remedy if necessary. Original feed motor, original conveying motor
(3) An original jams in DP is indicated during copying (jam in the original conveying section). Jam code 72	Defective DP timing switch 1.	Run maintenance item U244 and turn the DP timing switch 1 on and off manually. Replace the switch if indication of the corresponding switch on the touch panel is not displayed in reverse.
	Defective motor.	Run maintenance item U243 and select the following motor on the touch panel to be turned on and off. Check the status and remedy if necessary. Original feed motor, original conveying motor
(4) An original jams in DP is indicated during copying (jam in the original registration section). Jam code 73	Defective switch.	Run maintenance item U244 and turn the following switch on and off manually. Replace the switch if indication of the corresponding switch on the touch panel is not displayed in reverse. Original registration switch, DP timing switch 1/2
	Defective motor.	Run maintenance item U243 and select the following motor on the touch panel to be turned on and off. Check the status and remedy if necessary. Original feed motor, original conveying motor
(5) An original jams in DP is indicated during copying (jam in the original feed section). Jam code 74	Defective switch.	Run maintenance item U244 and turn the following switch on and off manually. Replace the switch if indication of the corresponding switch on the touch panel is not displayed in reverse. DP timing switch1, original feed switch, original registration switch
	Defective motor.	Run maintenance item U243 and select the following motor on the touch panel to be turned on and off. Check the status and remedy if necessary. Original feed motor, original conveying motor
(6) An original jams in DP is indicated during copying (jam in the original conveying section). Jam code 75	Defective switch.	Run maintenance item U244 and turn the following switch on and off manually. Replace the switch if indication of the corresponding switch on the touch panel is not displayed in reverse. Original registration switch, DP timing switch 1/2
	Defective motor.	Run maintenance item U243 and select the following motor on the touch panel to be turned on and off. Check the status and remedy if necessary. Original feed motor, original conveying motor

Problem	Causes/check procedures	Corrective measures
(7) An original jams in DP is indicated during copying (jam in the original switchback section 1). Jam code 76	Defective switch.	Run maintenance item U244 and turn the following switch on and off manually. Replace the switch if indication of the corresponding switch on the touch panel is not displayed in reverse. DP timing switch 1, switchback tray switch
	Defective motor.	Run maintenance item U243 and select the following motor on the touch panel to be turned on and off. Check the status and remedy if necessary. Original conveying motor, original switchback motor
(8) An original jams in DP is indicated during copying (jam in the original switchback section 2). Jam code 77	Defective original registration switch.	Run maintenance item U244 and turn the original registration switch on and off manually. Replace the switch if indication of the corresponding switch on the touch panel is not displayed in reverse.
	Defective motor.	Run maintenance item U243 and select the following motor on the touch panel to be turned on and off. Check the status and remedy if necessary. Original switchback motor, original feed motor
(9) A original jam in the DP is indicated as soon as the main power switch is turned on. (DP cover open JAM). Jam code 78	A piece of paper torn from original is caught around original feed switch, original registration switch or DP timing switch 1/2.	Check visually and remove it, if any.
	Defective switch.	Run maintenance item U244 and turn the following switch on and off manually. Replace the switch if indication of the corresponding switch on the touch panel is not displayed in reverse. Original feed switch, original registration switch, DP timing switch 1/2
(10) An original jams in DP is indicated during copying (jam in the original eject section). Jam code 79	Defective switch.	Run maintenance item U244 and turn the following switch on and off manually. Replace the switch if indication of the corresponding switch on the touch panel is not displayed in reverse. DP timing switch 1, original eject switch
	Defective motor.	Run maintenance item U243 and select the following motor on the touch panel to be turned on and off. Check the status and remedy if necessary. Original feed motor, original switchback motor

## 1-4-2 Self-diagnosis

### (1) Self-diagnostic function

This unit is equipped with a self-diagnostic function. When a problem is detected, copying is disabled and the problem displayed as a code consisting of C followed by a number, indicating the nature of the problem.

A message is also displayed requesting the user to call for service.

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

### (2) Self diagnostic codes

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
<b>C3210</b>	<b>CIS lamp problem</b> After the reading starting, when input value at the time of CIS illumination does not exceed the threshold value between 5 s.	Poor contact in the connector terminals.	Check the connection of connector on the ISM PWB and the connector on the DP driver PWB, and the continuity across the connector terminals. Repair or replace if necessary.
		Defective DP driver PWB.	Replace the DP driver PWB and check for correct operation.
		Defective DP inverter PWB.	Replace the DP inverter PWB and check for correct operation.
		Defective CIS.	Replace the CIS and check for correct operation.
<b>C3310</b>	<b>CIS AGC problem</b> After AGC, correct input is not obtained at CIS.	Defective DP driver PWB.	Replace the DP driver PWB and check for correct operation.
		CIS output problem.	Replace the CIS and check for correct operation.
		Defective DP inverter PWB.	Replace the DP inverter PWB and check for correct operation.
<b>C9000</b>	<b>DP communication problem</b> A communication error is detected.	Poor contact in the connector terminals.	Check the connection of connector YC6 on the ISM PWB and the connector of the DP, and the continuity across the connector terminals. Repair or replace if necessary.
		Defective PWB.	Replace the DP driver PWB or ISM PWB and check for correct operation.
<b>C9040</b>	<b>DP lift motor going up error</b> The tray upper limit switch does not turn on within 2 s of DP lift motor turning on.	Loose connection of the DP lift motor connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Malfunction of the DP lift motor.	Replace the DP lift motor and check for correct operation.
		Loose connection of the tray upper limit switch connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Malfunction of the tray upper limit switch.	Replace the tray upper limit switch and check for correct operation.
		Defective DP driver PWB.	Replace the DP driver PWB and check for correct operation.



Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
<b>C9050</b>	<b>DP lift motor going down error</b> The tray lower limit switch does not turn on within 2 s of DP lift motor turning on.	Loose connection of the DP lift motor connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Malfunction of the DP lift motor.	Replace the DP lift motor and check for correct operation.
		Loose connection of the tray lower limit switch connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Malfunction of the tray lower limit switch.	Replace the tray lower limit switch and check for correct operation.
		Defective DP driver PWB.	Replace the DP driver PWB and check for correct operation.
<b>C9060</b>	<b>DP EEPROM error</b> Read and write data does not match. Data in the specified area of the backup memory does not match the specified values.	Defective DP main PWB.	Replace the DP main PWB and check for correct operation.
		Device damage of EEPROM.	Contact the Service Administrative Division.
<b>C9070</b>	<b>Communication problem between DP and SHD</b> A communication error is detected.	Loose connection of the SHD PWB.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Defective SHD PWB.	Replace the SHD PWB and check for correct operation.
<b>C9080</b>	<b>Communication problem between DP and CIS</b> Reading cannot be performed correctly.	Loose connection of CIS.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Defective CIS.	Replace CIS 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, original switchback motor or DP lift 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 driver PWB.	Run maintenance item U243 and check if the motor operates. If not, replace the DP driver PWB.
(2) The switchback feed-shift solenoid or switchback pressure solenoid 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 solenoid.	Run maintenance item U243 and check if the solenoid operates. If not, replace the solenoid.
	3. Defective DP driver PWB.	Run maintenance item U243 and check if the solenoid operates. If not, replace the DP driver PWB.
(3) A message indicating cover open is displayed when the DP is closed correctly.	1. Poor contact in the connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	2. Defective DP interlock switch.	Check for continuity across the contacts of the switch. If none when the switch is on, replace DP interlock switch.
(4) An original jams when the main power switch is turned on.	1. A piece of paper torn from original is caught around original feed switch, original registration switch or DP timing switch 1/2.	Remove any found.
	2. Defective switch.	Run maintenance item U244 and turn the switch on and off manually. Replace the switch if indication of the corresponding switch on the touch panel is not displayed in reverse. Original feed switch, original registration switch or DP timing switch 1/2

#### 1-4-4 Mechanical problems

Problem	Causes/check procedures	Corrective measures
(1) No primary original feed.	The surfaces of the DP original feed belt, DP forwarding pulley or DP separation pulley are dirty with paper powder.	Check and clean them with isopropyl alcohol if they are dirty.
	Check if the DP original feed belt, DP forwarding pulley or DP separation pulley is deformed.	If so, replace (see page 1-5-2, 5).
(2) No secondary original feed.	The registration pulley and the registration roller do not contact each other correctly.	Check and clean them with isopropyl alcohol if they are dirty.
(3) Originals jam.	Originals outside the specifications are used.	Use only originals conforming to the specifications.
	The surfaces of the DP original feed belt, DP forwarding pulley or DP separation pulley are dirty with paper powder.	Check and clean them with isopropyl alcohol if they are dirty.
	The eject pulley and the eject roller do not contact each other correctly.	Check visually and remedy if necessary.

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## 1-5-1 Precautions for assembly and disassembly

### (1) Precautions

Before starting disassembly, press the Power key on the operation panel to off. Make sure that the Power indicator and the Memory indicator are 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: 587 VA max.

Please use the item below Interconnecting Cable/

P/N: 303LK46010, 303LL46010

## 1-5-2 Assembly and disassembly

### (1) Detaching and refitting the DP original feed belt and DP forwarding pulley

Follow the procedure below to replace the DP original feed belt and DP forwarding pulley.

#### Procedure

1. Open the DP top cover.
2. Remove the screw and then remove the original feed shaft guide.

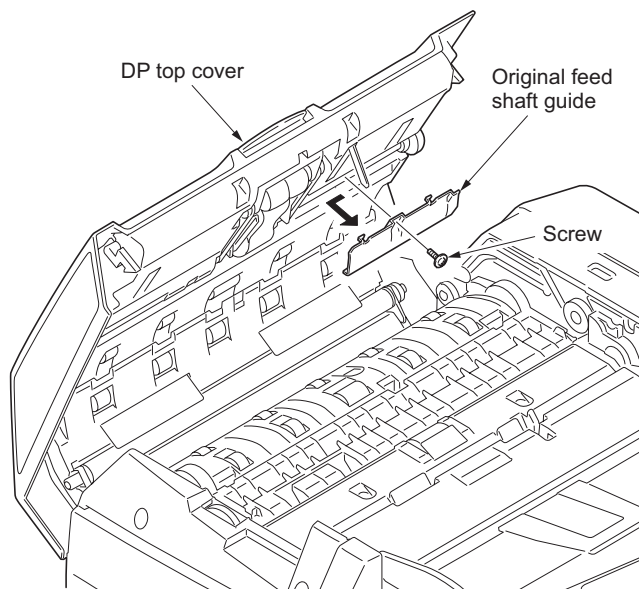


Figure 1-5-1

3. Remove the stop ring and then remove the original feed unit from the DP.

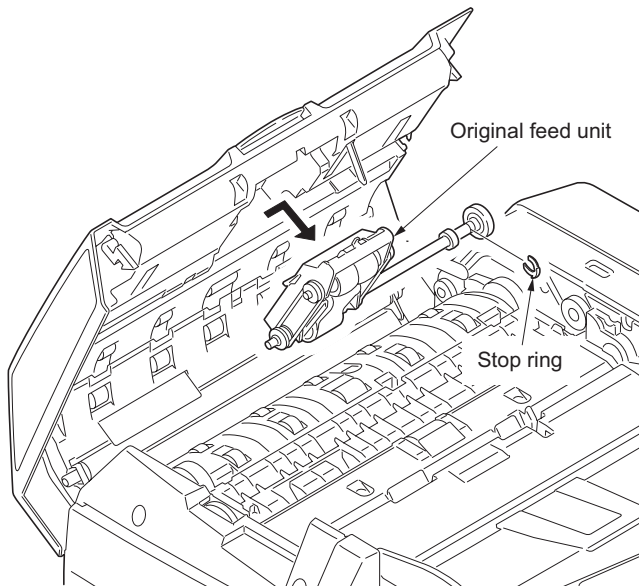
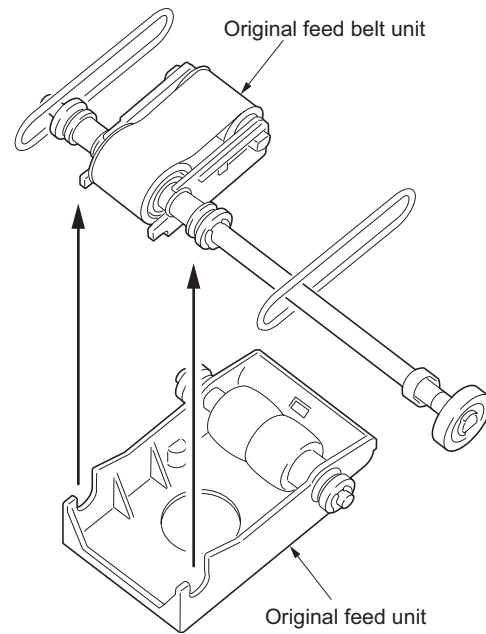


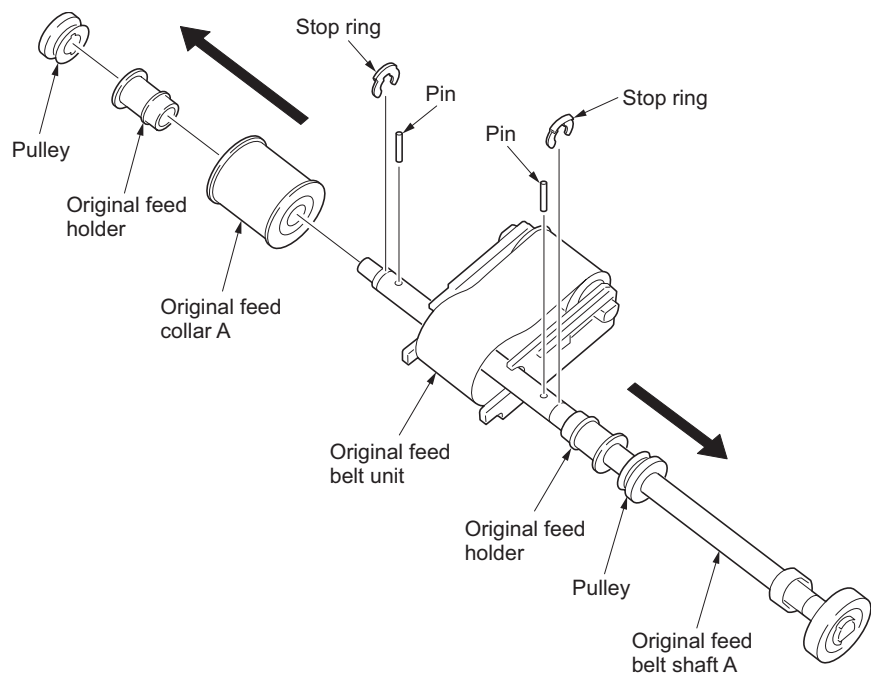
Figure 1-5-2

4. Remove the original feed belt unit from the inserted parts of the original feed unit.



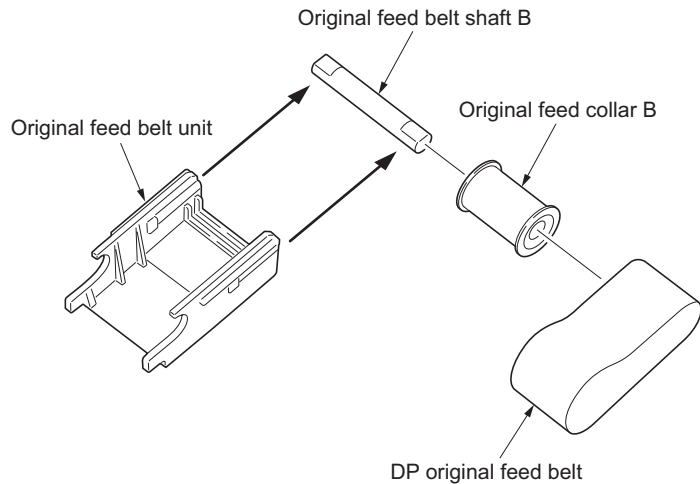
**Figure 1-5-3**

5. Remove two stop rings from the original feed belt shaft A.
6. Remove the pulley, pin and original feed holder from the shorter shaft side.  
Slide the pulley and the original feed holder at the longer shaft side.
7. Pull out the original feed belt shaft A from the original feed belt unit and then remove the original feed collar A.



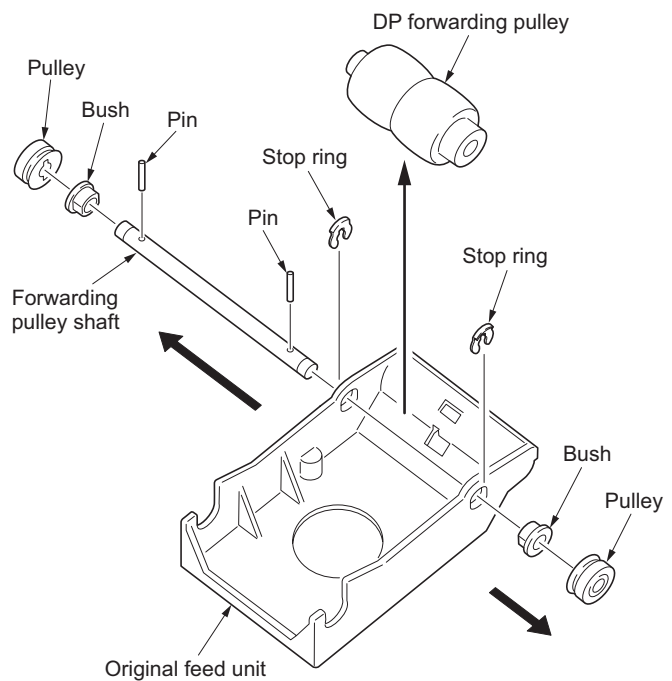
**Figure 1-5-4**

8. Remove the original feed belt shaft B from the original feed belt unit.
9. Remove the original feed collar B and DP original feed belt from original feed belt shaft B.



**Figure 1-5-5**

10. Remove two stop rings from the forwarding pulley shaft.
11. Remove each two pulleys and pins.
12. Pull out the forwarding pulley shaft from the original feed unit and then remove the DP forwarding pulley.
13. Check or replace the DP original feed belt and DP forwarding pulley and refit all the removed parts.



**Figure 1-5-6**



## (2) Detaching and refitting the DP separation pulley

Follow the procedure below to replace the DP separation pulley.

### Procedure

1. Open the DP top cover.
2. Open the upper shift guide.
3. Remove two screws and then remove the lower original feed guide.

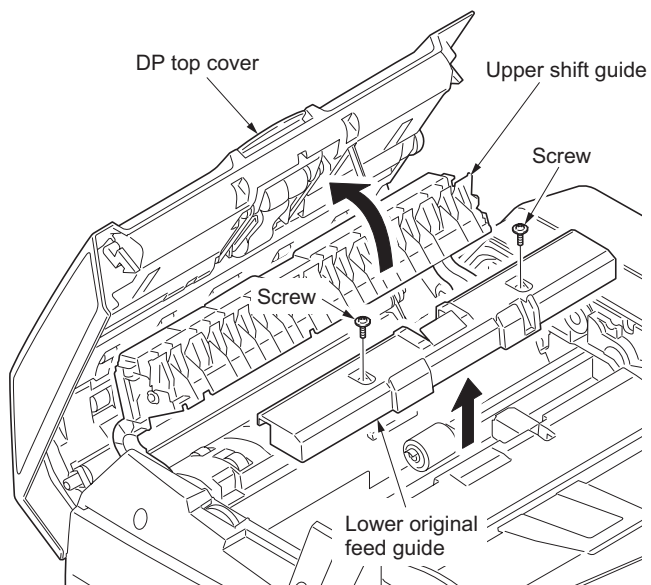


Figure 1-5-7

4. Remove the stop ring and then DP separation pulley and torque limiter.
5. Check or replace the DP separation pulley and refit all the removed parts.

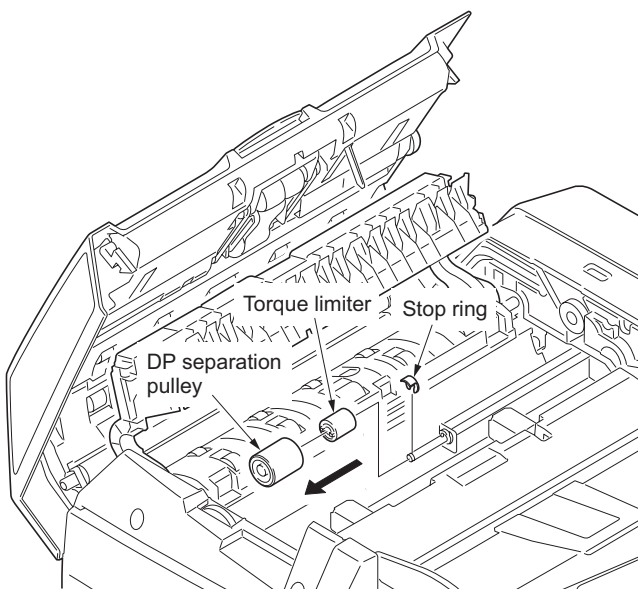


Figure 1-5-8

### (3) Detaching and refitting the CIS (dual scan DP only)

Follow the procedure below to replace the CIS.

#### Procedure

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

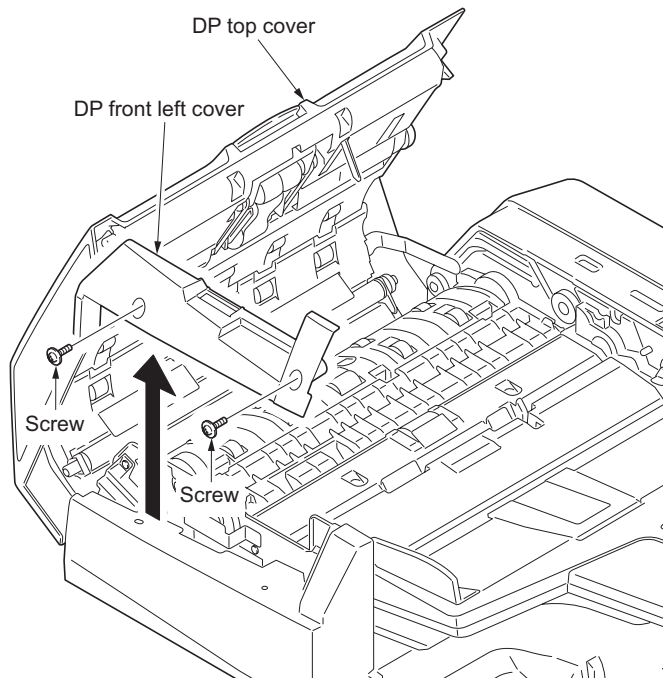


Figure 1-5-9

3. Remove the two screws from the back side of document processor.
4. Release two inserted parts and then remove the DP front cover.

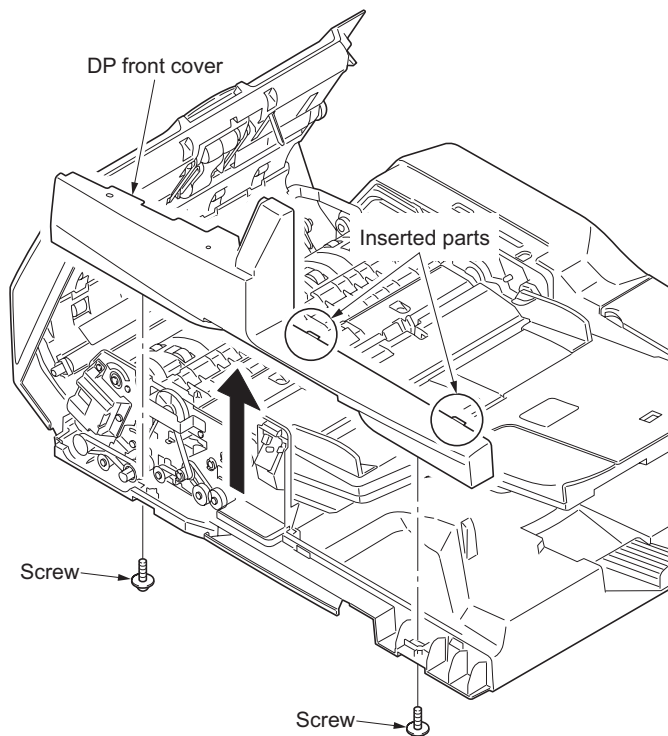


Figure 1-5-10

5. Remove the screw and pin and then remove the upper conveying guide.

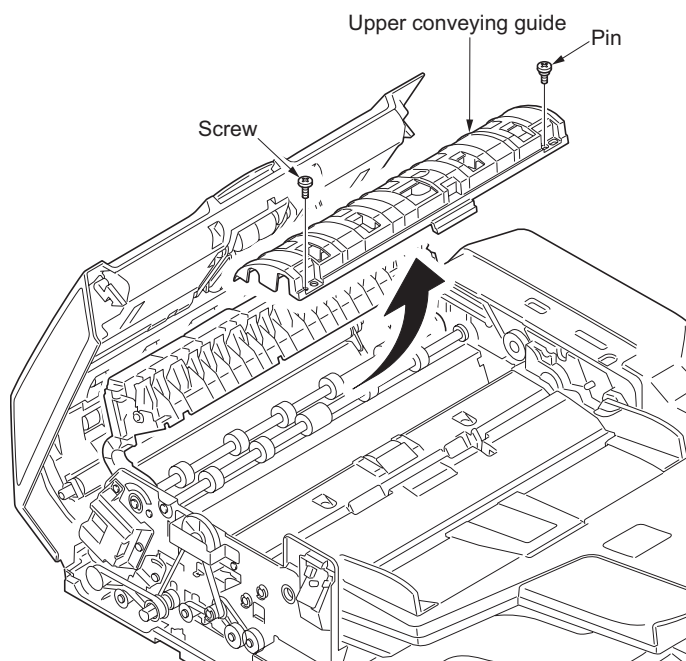


Figure 1-5-11

6. Pull out the projection and remove the upper shift guide.

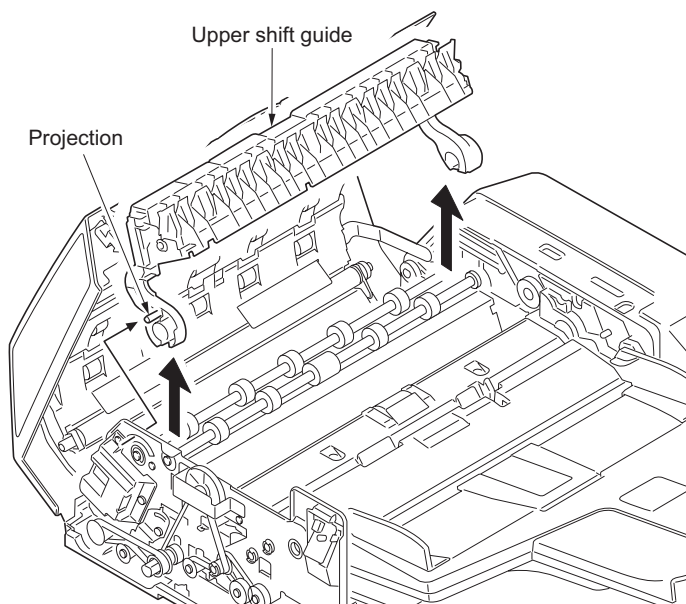


Figure 1-5-12

7. Remove the conveying cover.

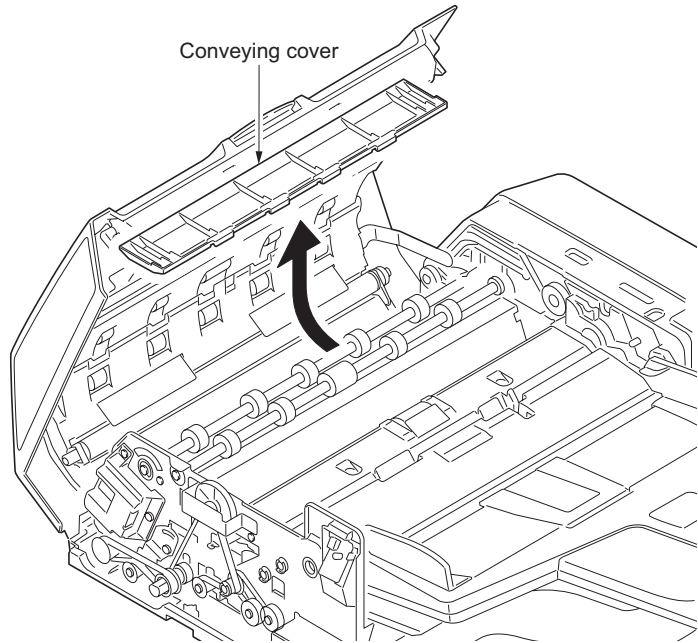


Figure 1-5-13

8. Remove the stop ring and bush.
9. Slide the registration roller toward the rear side of machine and let escape the front side of roller as shown in the figure.

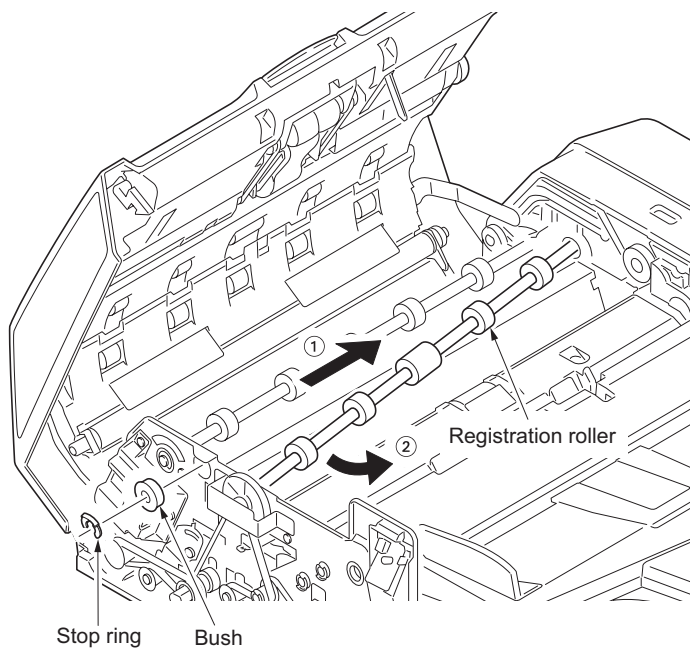


Figure 1-5-14

10. Remove the FFC (flexible flat cable) from the connector of CIS.
11. Remove the connector from the DP inverter PWB.
12. Remove the ground screw and then remove the ground wire.
13. Remove three screws and then remove the CIS.

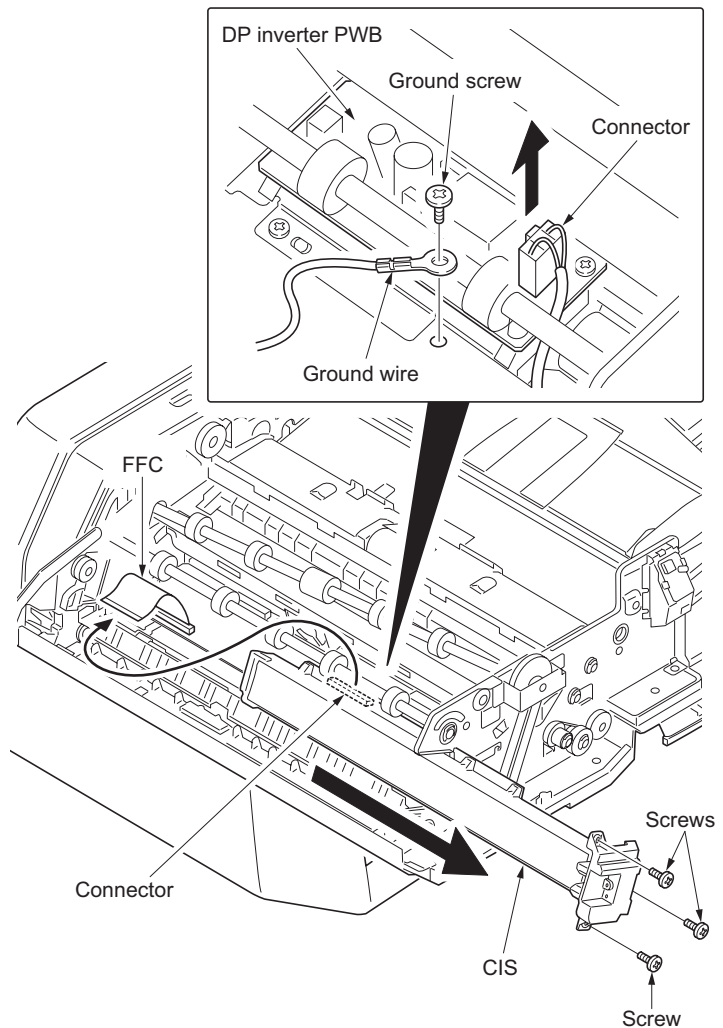


Figure 1-5-15

14. Remove the screw and then remove the CIS guide from CIS.
15. Replace the CIS and Install the CIS to the DP.

**Caution**

Be sure to refit the ground wire that has been removed in step 12.

16. Refit all the removed parts.

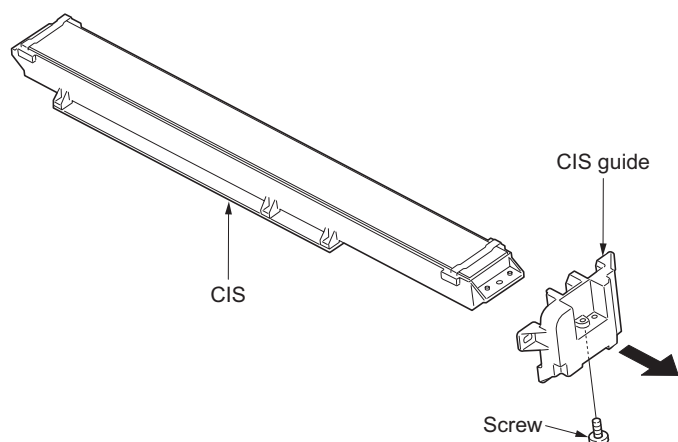


Figure 1-5-16

17. When the CIS is replaced with a new one, carry out the following procedure.
18. Clean the CIS roller and contact glass (CIS).
19. Perform maintenance mode U091 (setting the white line correction) (see page 1-3-10).
20. Make a test copy of a gray document.  
If problems such as white lines appear on the test copy, repeat the procedure from steps 18 and 19 onwards until the white lines no longer appear.
21. Perform maintenance mode U411 (Adjusting the scanner automatically) (see page 1-3-15).

### 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  $\pm 3.0$  mm

For duplex copying: Within  $\pm 4.0$  mm

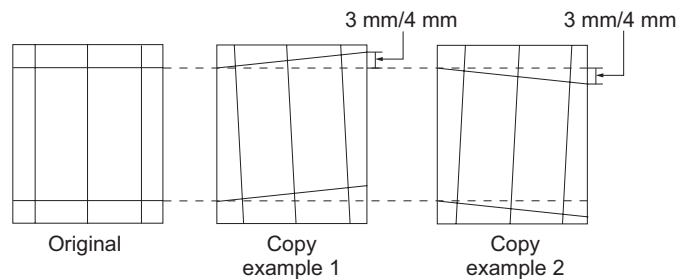


Figure 1-5-17

3. Loosen two screws of right and left fixing fittings.

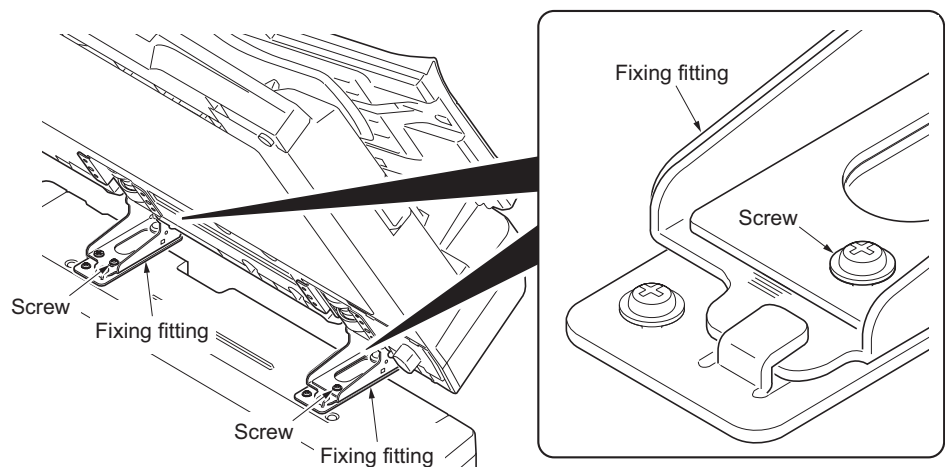


Figure 1-5-18

4. Turn adjusting screw at the rear side of the right hinge to adjust the DP position.  
For copy example 1: Turn the adjusting screw counterclockwise and move the DP to the inner side.  
For copy example 2: Turn the adjusting screw clockwise and move the DP to the front side.  
Amount of change per scale: Approx. 1 mm
5. Make a test copy.
6. Repeat the steps above until the gap of the leading edge falls within the reference values.
7. After adjustment is completed, retighten two screws that have been loosened in step 3.

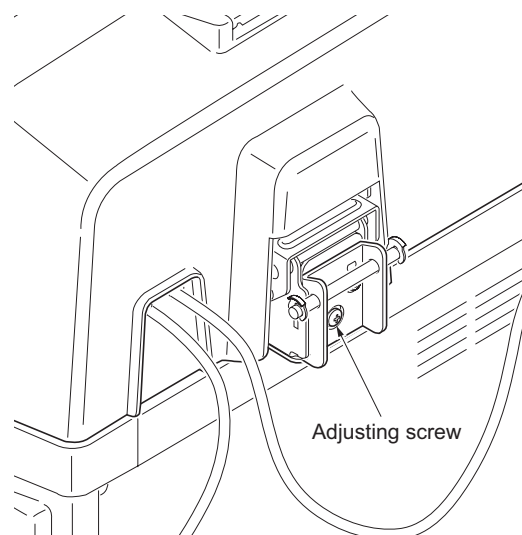


Figure 1-5-19

8. Remove the original mat.
9. Place original mat with its Velcro upward over the contact glass.  
Align original mat corner that has 90 degrees of angle with the inner left corner of the original instruction panel.
10. Close DP and attach original mat onto it with Velcro.

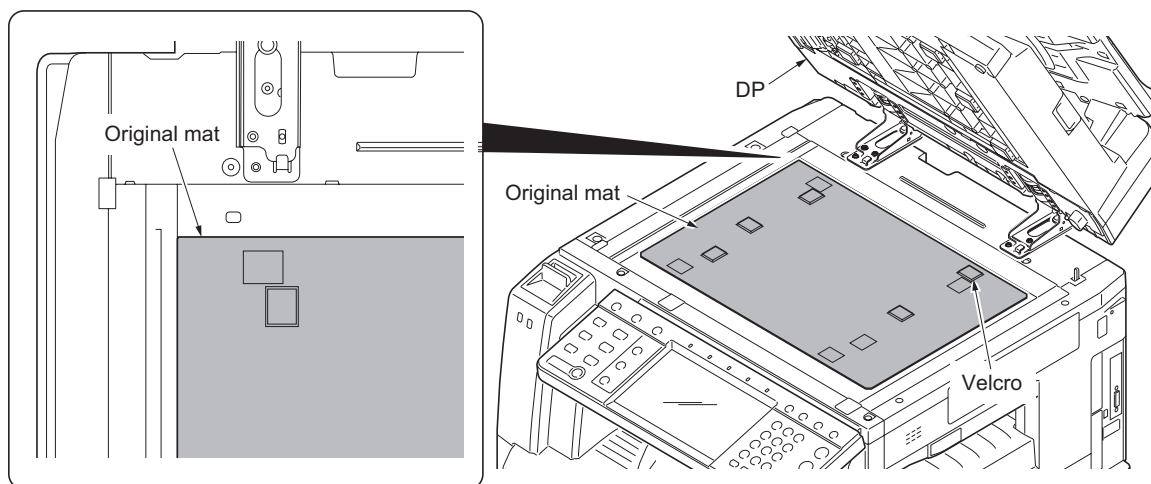


Figure 1-5-20



## (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  $\pm 3.0$  mm

For duplex copying: Within  $\pm 4.0$  mm

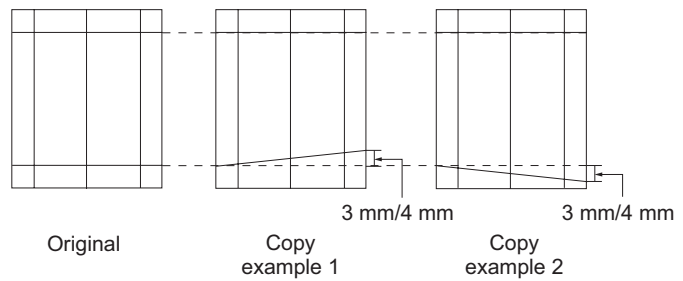


Figure 1-5-21

3. Open the DP top cover.
4. Remove four screws and then remove the DP rear cover.

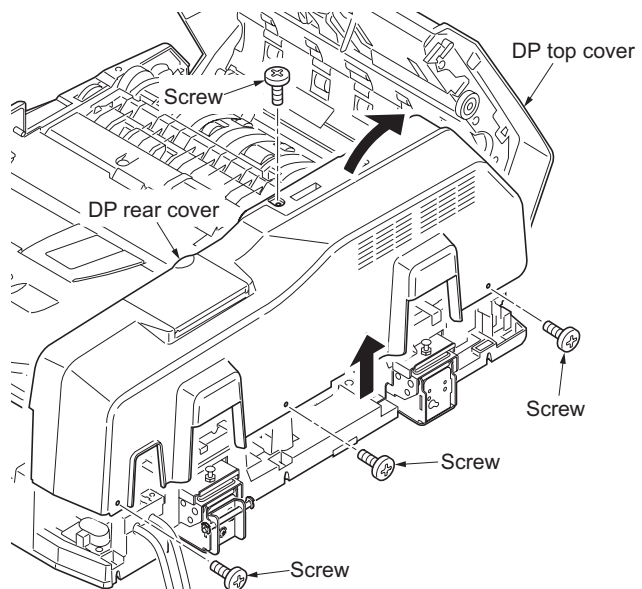


Figure 1-5-22

5. Adjust the height of DP.  
Loosen the nut.  
For copy example 1: Loosen the adjusting screw.  
For copy example 2: Tighten the adjusting screw.  
Amount of change per scale: Approx. 0.5 mm  
Retighten the nut.
6. Refit the DP rear cover.

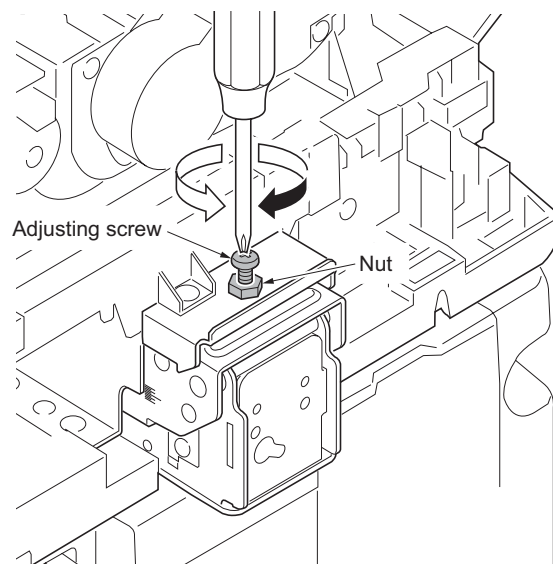
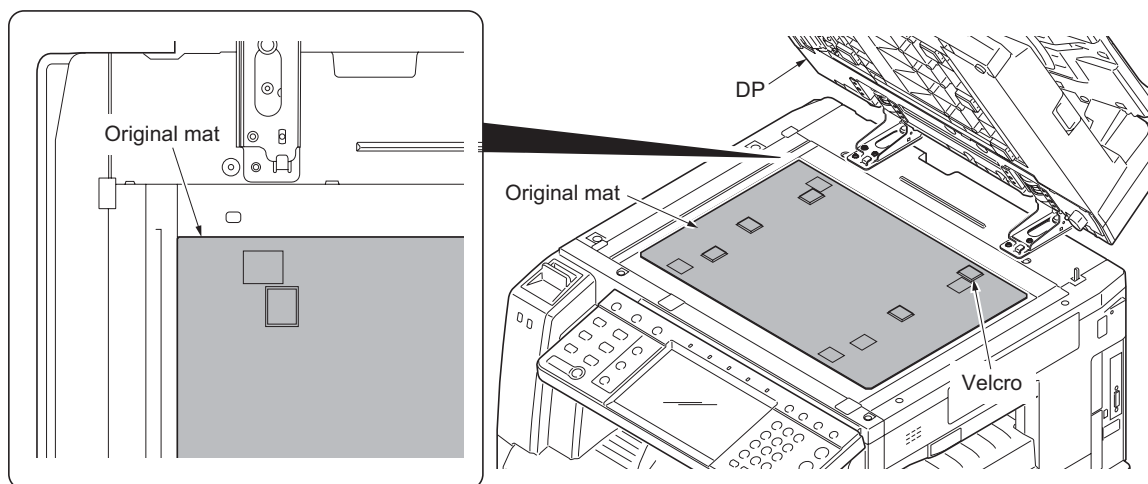


Figure 1-5-23

7. Remove the original mat.
8. Place original mat with its Velcro upward over the contact glass.  
Align original mat corner that has 90 degrees of angle with the inner left corner of the original instruction panel.
9. Close DP and attach original mat onto it with Velcro.



**Figure 1-5-24**

10. Make a test copy again.
11. Repeat steps 1 to 9 above until the gap of the trailing edge falls within the reference values.

### 1-6-1 Remarks on DP driver PWB replacement

When replacing the DP driver PWB, remove the EEPROM (U2) from the DP driver PWB that has been removed and then reattach it to the new DP driver PWB.

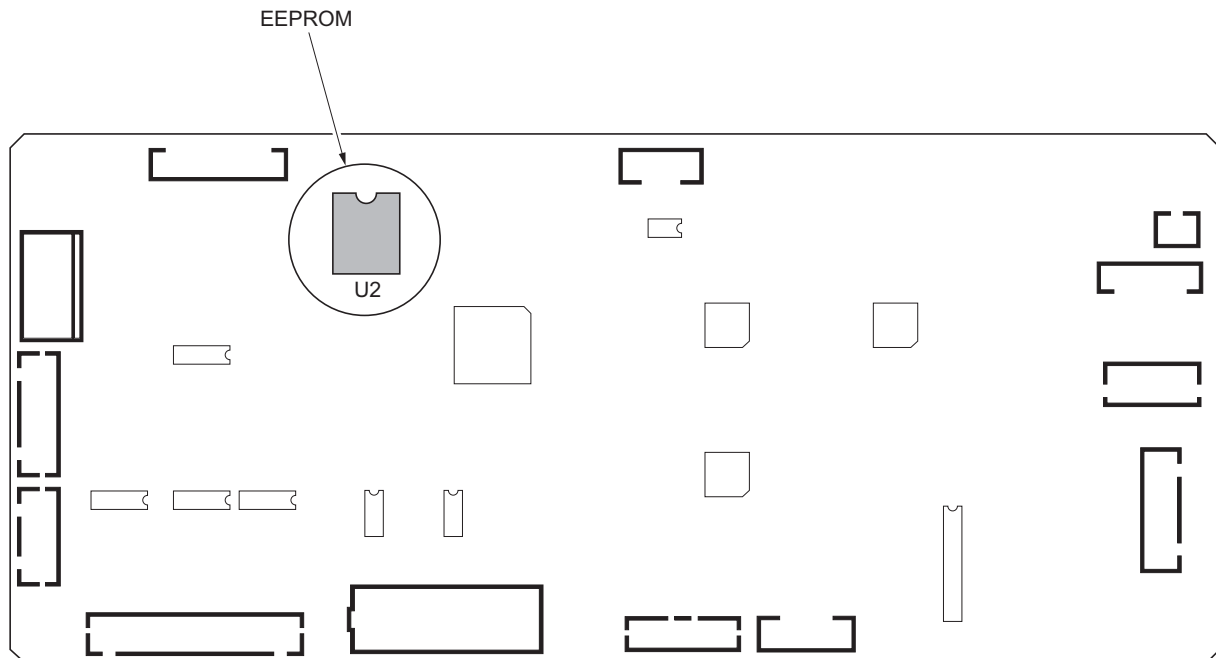


Figure 1-6-1 DP driver PWB

**When the DP driver PWB is replaced with a new one, carry out the following procedure.**

1. Clean the CIS roller and contact glass (CIS).
2. Perform maintenance mode U091 (setting the white line correction) (see page 1-3-10).
3. Make a test copy of a gray document.  
If problems such as white lines appear on the test copy, repeat the procedure from steps 1 and 2 onwards until the white lines no longer appear.
4. Perform maintenance mode U411 (Adjusting the scanner automatically) (see page 1-3-15).

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## 2-1-1 Original feed section

The original feed section consists of the parts shown in figure. An original placed on the original table is conveyed to the original conveying section. Original is fed by the rotation of the DP forwarding pulley and DP original feed belt. The DP separation pulley prevents multiple sheets from being fed at one time, via the torque limiter.

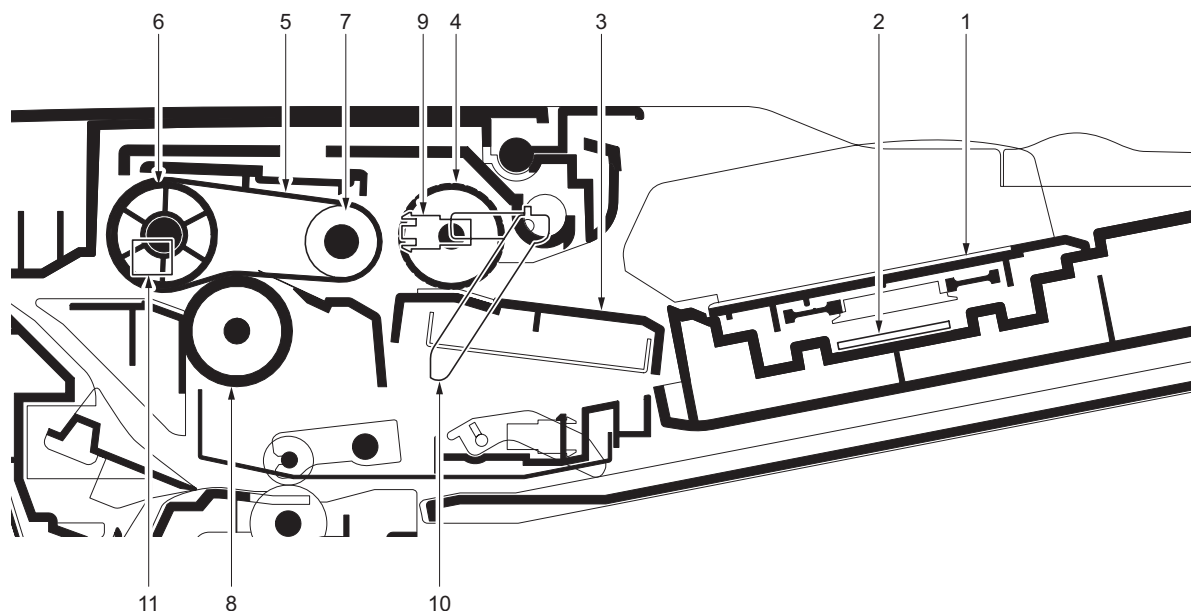


Figure 2-1-1 Original feed section

- |                                       |                                     |
|---------------------------------------|-------------------------------------|
| (1) Original tray                     | (7) Original feed collar B          |
| (2) Original size width switch (OWSW) | (8) DP separation pulley            |
| (3) Original lift guide               | (9) Original set switch (OSSW)      |
| (4) DP forwarding pulley              | (10) Actuator (original set switch) |
| (5) DP original feed belt             | (11) Original feed switch (OFSW)    |
| (6) Original feed collar A            |                                     |

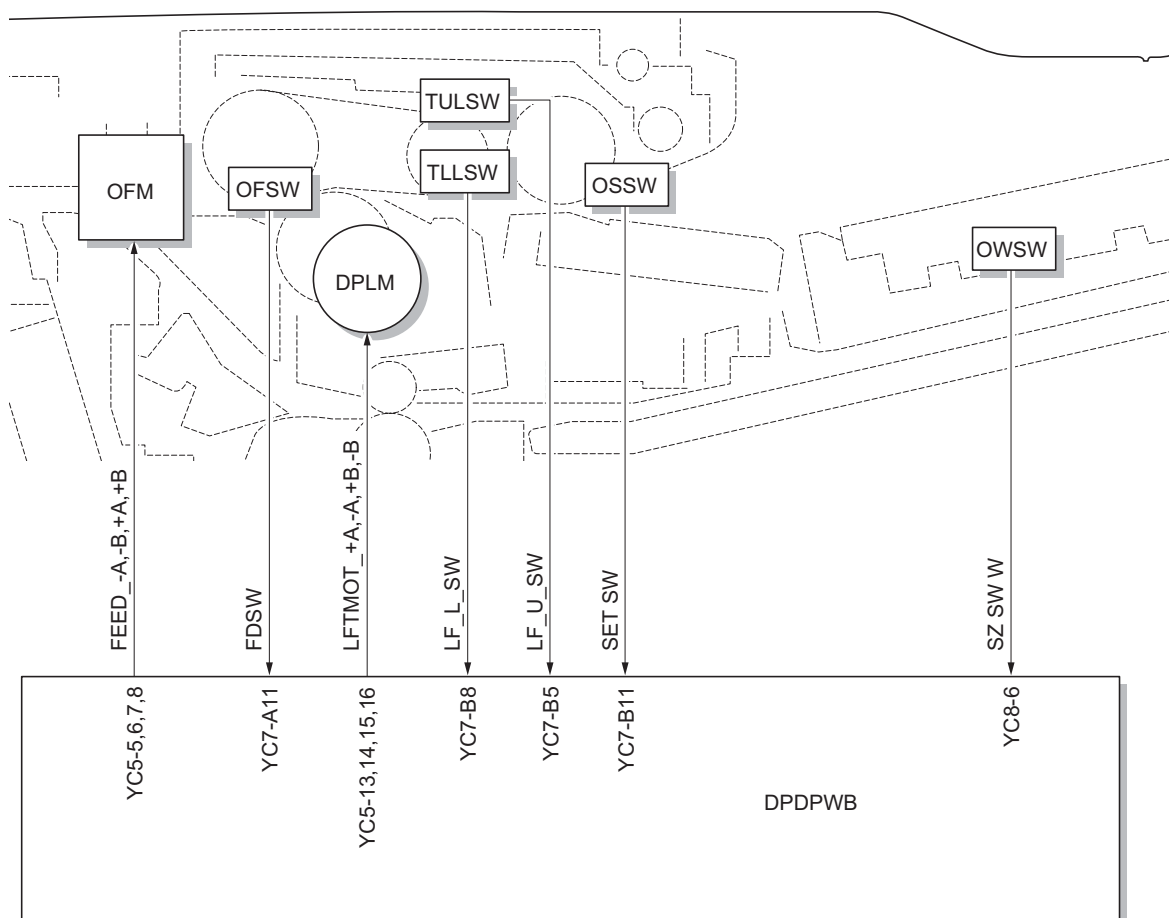


Figure 2-1-2 Original feed section block diagram

## 2-1-2 Original conveying section

The original conveying section consists of the parts shown in figure. A conveyed original is scanned by the optical section (CCD) of machine when it passes through the slit glass of machine.

In the case of dual scan DP, the second side is scanned at CIS and the first side is scanned at the slit glass, resulting in simultaneous scanning.

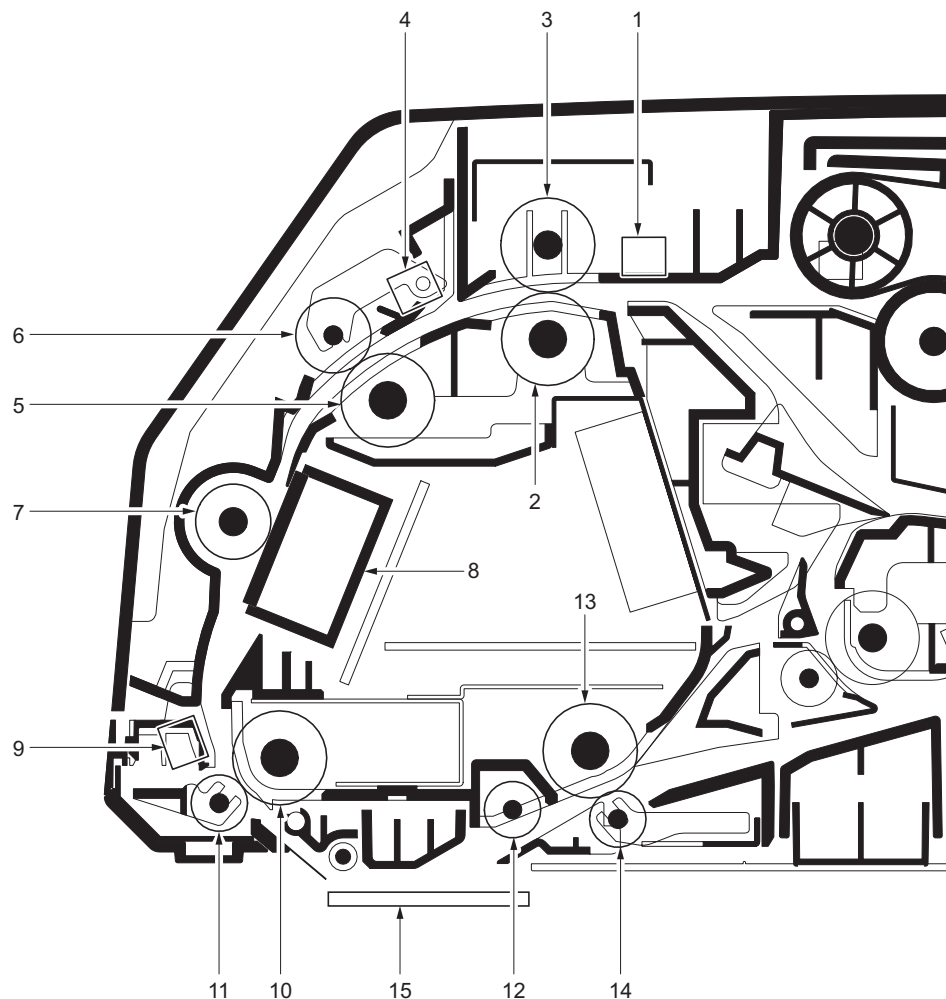


Figure 2-1-3 Original conveying section

- |   |                                     |
|---|-------------------------------------|
| (1) Original registration switch (ORSW) | (9) DP timing switch 1 (DPTSW1)     |
| (2) Registration roller                 | (10) Left conveying roller          |
| (3) Registration pulley                 | (11) Conveying pulley               |
| (4) DP timing switch 2 (DPTSW2)*        | (12) Conveying pulley               |
| (5) Upper conveying roller              | (13) Right conveying roller         |
| (6) Conveying pulley                    | (14) Conveying pulley               |
| (7) CIS roller*                         | (15) Slit glass (machine main body) |
| (8) CIS*                                |                                     |

\*: Dual scan DP only.

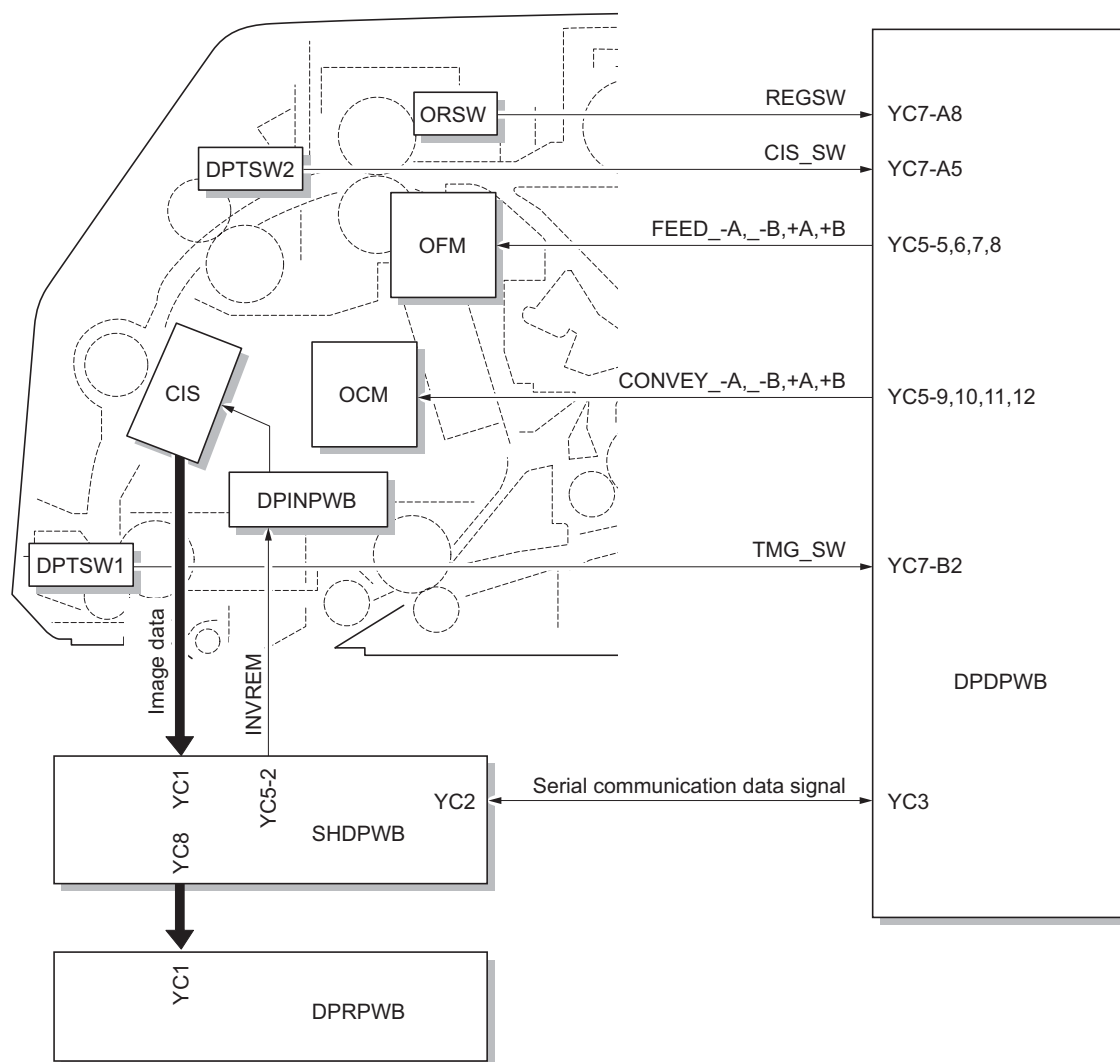
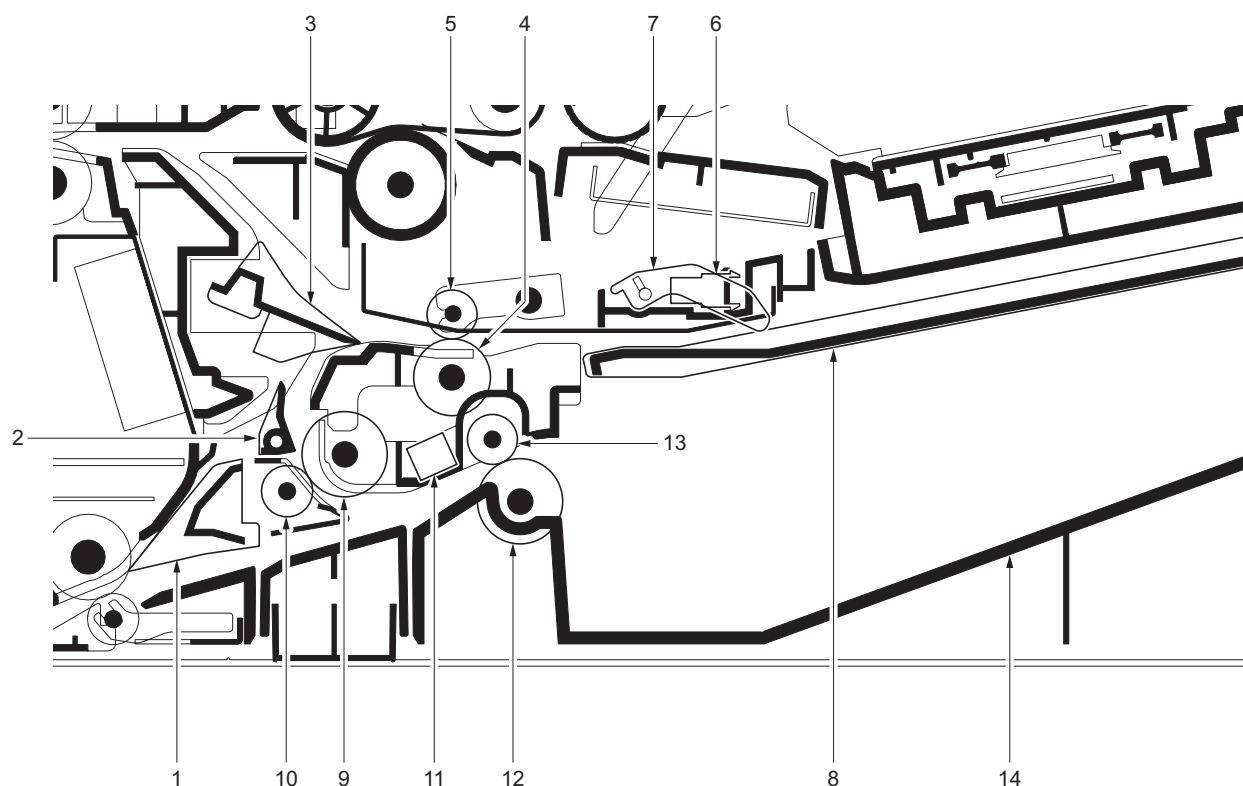


Figure 2-1-4 Original conveying section block diagram



### 2-1-3 Original switchback/eject sections

The original switchback/eject sections consists of the parts shown in figure. An original of which scanning is complete is ejected to the original eject table by the eject roller. In the case of duplex switchback scanning, an original is conveyed temporarily to the switchback tray and conveyed again to the original conveying section by the switchback roller.



**Figure 2-1-5 Original switchback/eject sections**

- |                                       |                                   |
|---------------------------------------|-----------------------------------|
| (1) Switchback feedshift guide        | (8) Switchback tray               |
| (2) Eject feedshift guide             | (9) Feedshift roller              |
| (3) Upper feedshift guide             | (10) Feedshift pulley             |
| (4) Switchback roller                 | (11) Original eject switch (OESW) |
| (5) Switchback pulley                 | (12) Eject roller                 |
| (6) Switchback tray switch (SBTSW)    | (13) Eject pulley                 |
| (7) Actuator (switchback tray switch) | (14) Original eject table         |

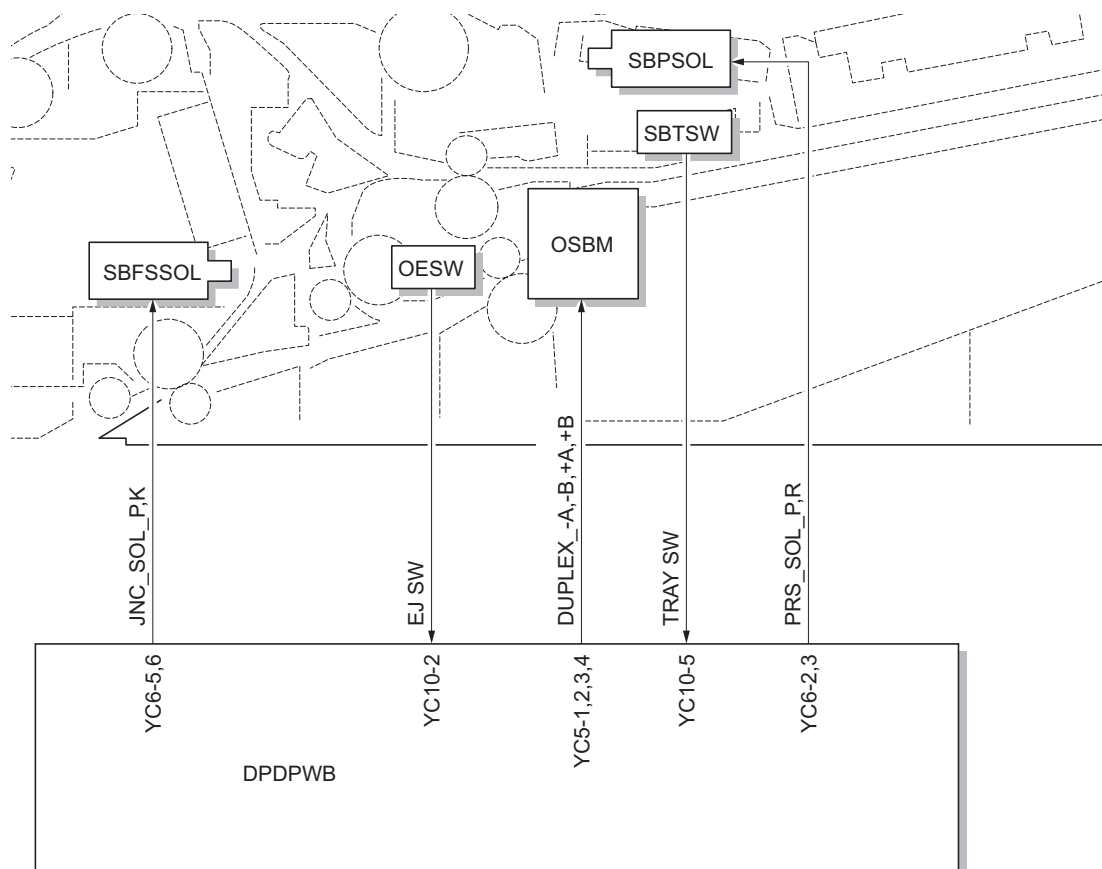
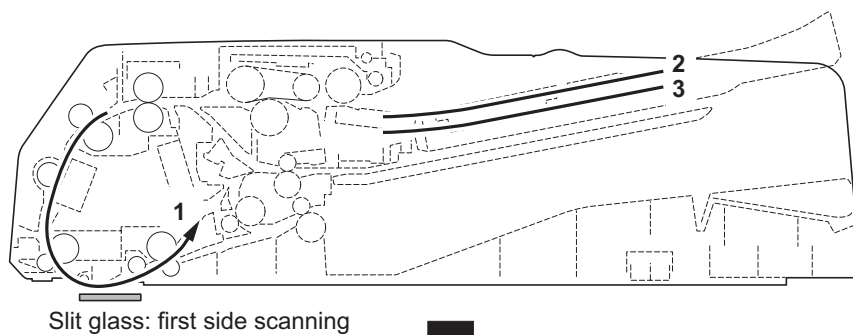


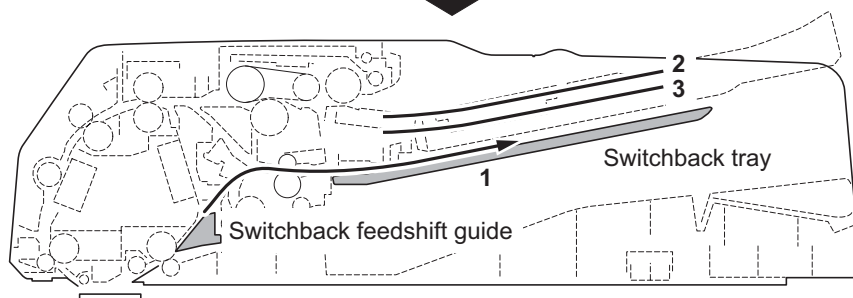
Figure 2-1-6 Original switchback/eject sections block diagram

**(1) Reverse duplex scanning operation**

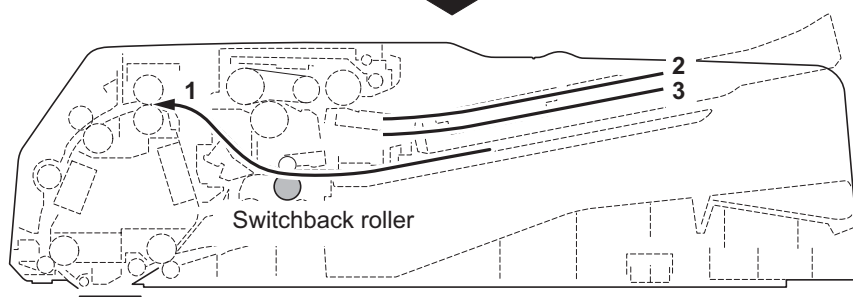
The first side of original is scanned at the slit glass (machine main body).



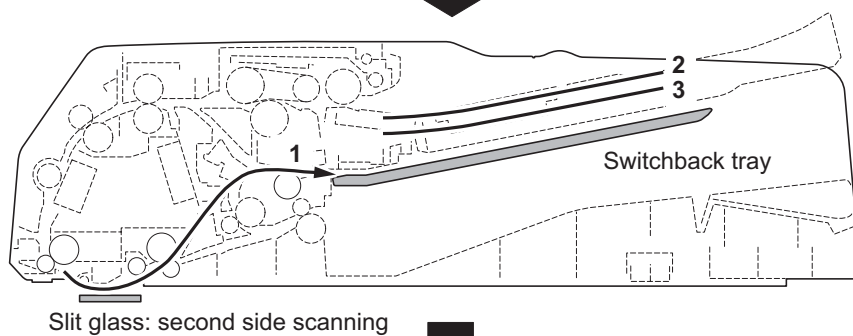
Conveyed to the switchback tray by the switchback feedshift guide.



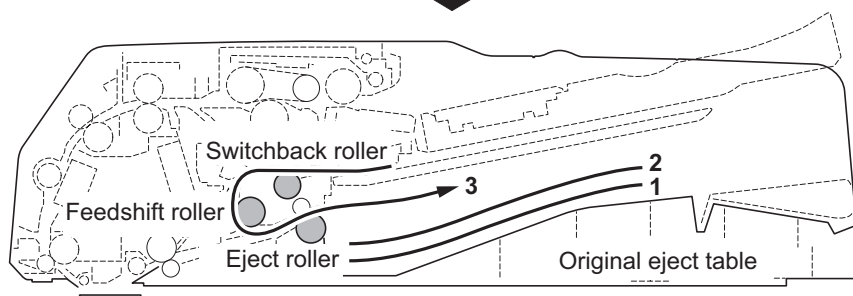
The original is reversed by the switchback roller.



The second side of original is scanned at the slit glass (machine main body) and the original is conveyed to the switchback tray.



Ejected to the original eject table by the switchback, feedshift and eject rollers.

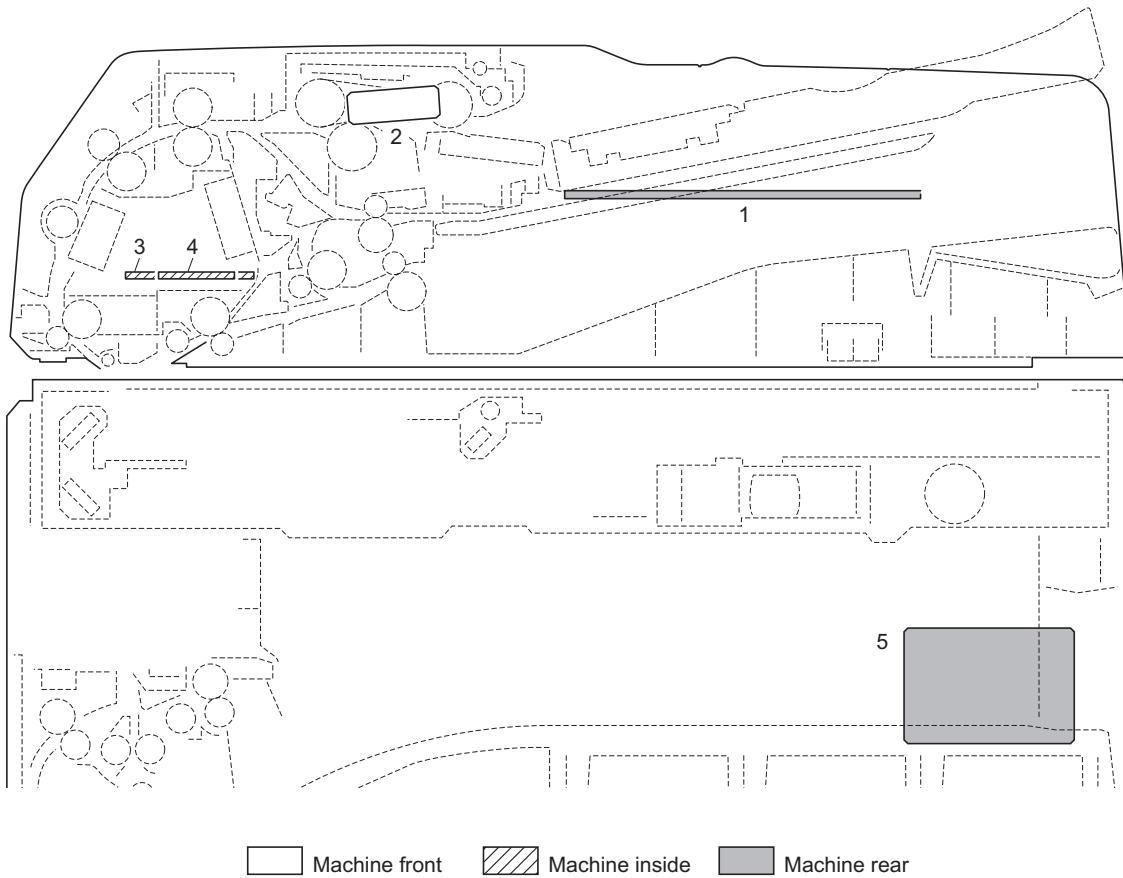


**Figure 2-1-7**

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## 2-2-1 Electrical parts layout

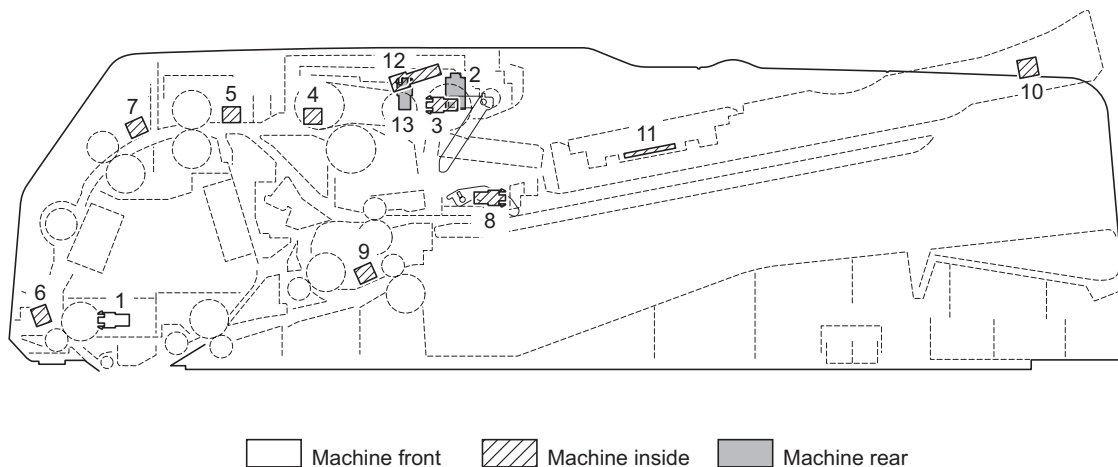
### (1) PWBs



**Figure 2-2-1 PWBs**

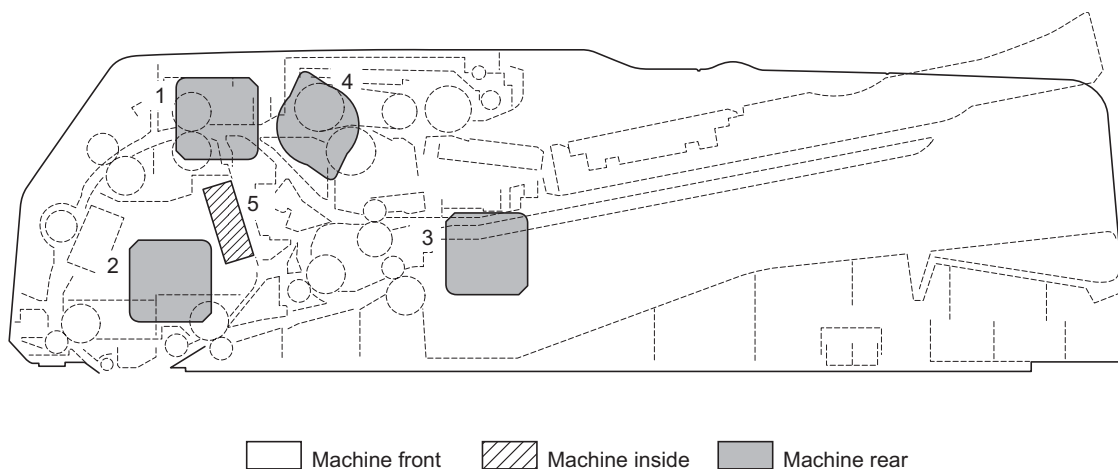
- |    |                                  |   |
|----|----------------------------------|---|
| 1. | DP driver PWB (DPDPWB).....      | Controls electrical components.                     |
| 2. | LED PWB (LEDPWB) .....           | Indicates presence of originals or an original jam. |
| 3. | SHD PWB (SHDPWB)* .....          | Controls the image processing.                      |
| 4. | DP inverter PWB (DPINPWB)* ..... | Controls the light source of built-in CIS.          |
| 5. | DP relay PWB (DPRPWB)* .....     | Relay of image data.                                |

\*: Dual scan DP only.

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

- |  |   |
|--|---|
| 1. DP open/close switch (DPOCSW) .....       | Detects the opening/closing of the DP.  |
| 2. DP interlock switch (DPILSW) .....        | Breaks the safety circuit when the document processor is opened; resets original misfeed detection. |
| 3. Original set switch (OSSW) .....          | Detects the presence of an original.  |
| 4. Original feed switch (OFSW) .....         | Detects primary original feed end timing.   |
| 5. Original registration switch (ORSW) ..... | Detects the original conveying timing.  |
| 6. DP timing switch 1 (DPTSW1) .....         | Detects the original scanning timing.   |
| 7. DP timing switch 2 (DPTSW2)* .....        | Detects the original scanning timing.   |
| 8. Switchback tray switch (SBTSW) .....      | Detects the original in switchback tray section.  |
| 9. Original eject switch (OESW) .....        | Detects an original misfeed in the original eject section.  |
| 10. Original size length switch (OLSW) ..... | Detects the length of the original.   |
| 11. Original size width switch (OWSW) .....  | Detects the width of the original.  |
| 12. Tray upper limit switch (DPLULSW) .....  | Detects the original tray reaching the upper limit.   |
| 13. Tray lower limit switch (DPLLSW) .....   | Detects the original tray reaching the lower limit.   |

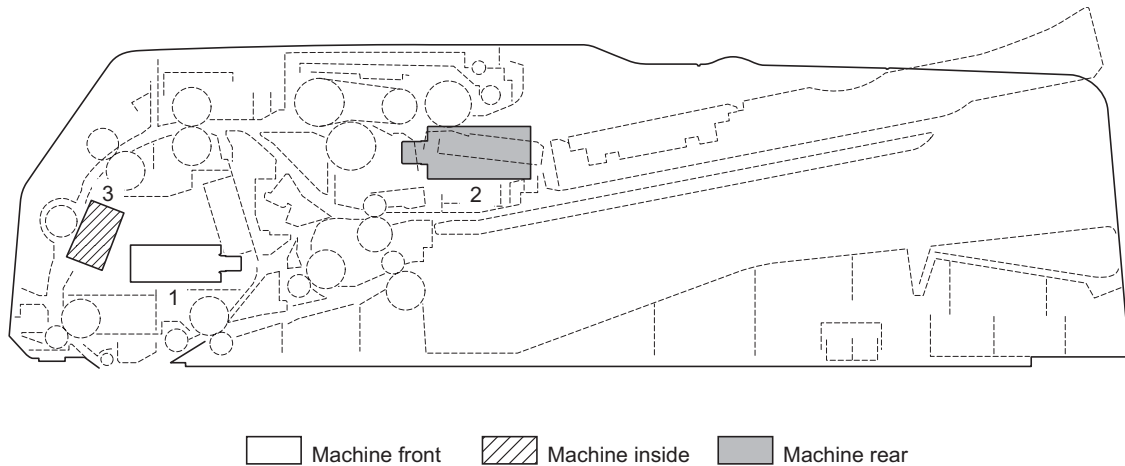
\*: Dual scan DP only.

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

- |    |  |  |
|----|--|--|
| 1. | Original feed motor (OFM) .....        | Drives the original feeding section.   |
| 2. | Original conveying motor (OCM) .....   | Drives the original conveying section. |
| 3. | Original switchback motor (OSBM) ..... | Drives the switchback roller.          |
| 4. | DP lift motor (DPLM) .....             | Operates the original lift guide.      |
| 5. | DP fan motor (DPFM)* .....             | Cools the CIS.                         |

\*: Dual scan DP only.

**(4) Others**



**Figure 2-2-4 Others**

1. Switchback feedshift solenoid (SBFSSOL).. Operates the switchback feedshift guide.
2. Switchback pressure solenoid (SBPSOL).... Operates the switchback pulley.
3. CIS (CIS)\* ..... Reads the image of originals.

\*: Dual scan DP only.



## 2-3-1 DP driver PWB

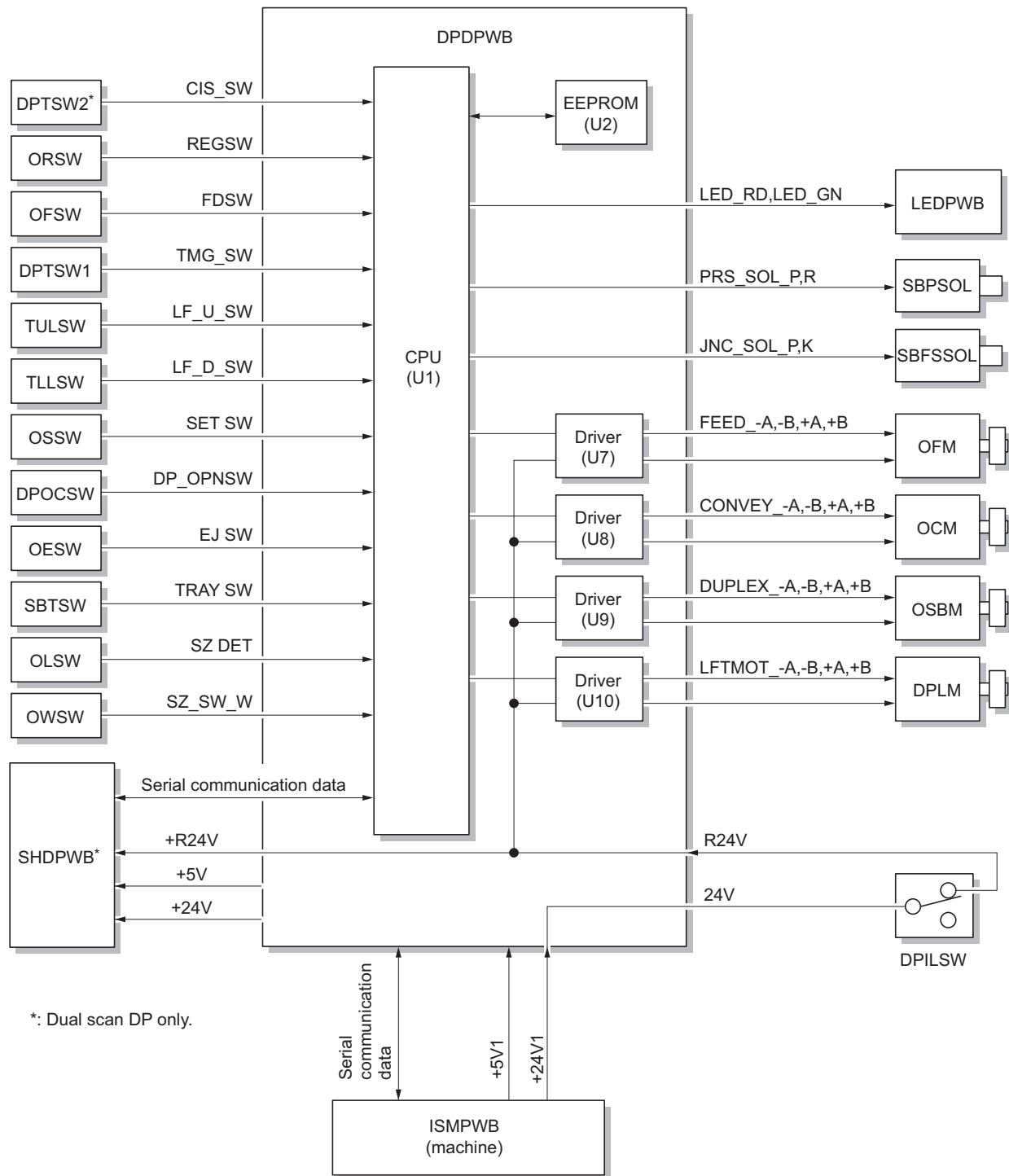


Figure 2-3-1 DP driver PWB block diagram

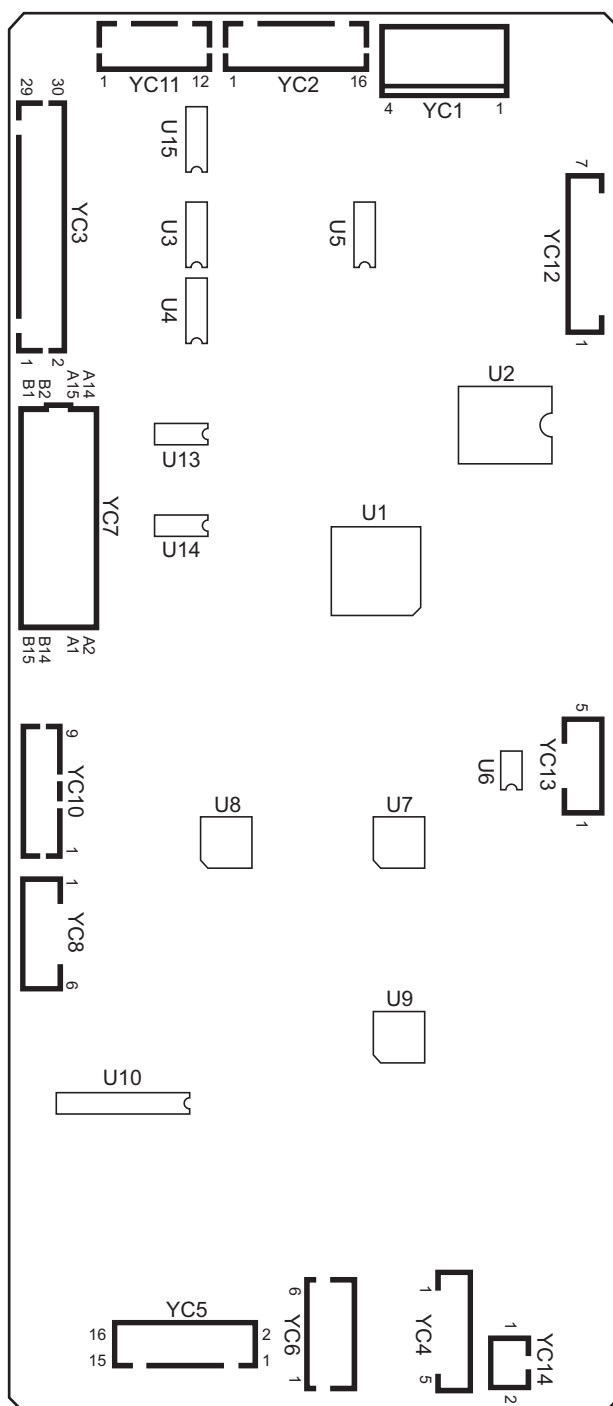


Figure 2-3-2 DP driver PWB silk-screen diagram

Connector	Pin No.	Signal	I/O	Voltage	Description
<b>YC1</b> Connected to the machine	1	GND	-	-	Ground
	2	5V	I	5 V DC	5 V DC power input from machine
	3	GND	-	-	Ground
	4	24V	I	24 V DC	24 V DC power input from machine
<b>YC2</b> Connected to the machine	1	DPSDI	I	0/5 V DC (pulse)	Serial communication data signal from machine
	2	DPSDO	O	0/5 V DC (pulse)	Serial communication data signal to machine
	3	DPCLK	I	0/5 V DC (pulse)	Clock signal from machine
	4	DPSEL	I	0/5 V DC	Select signal from machine
	5	DPRDY	O	0/5 V DC	Ready signal to machine
	6	DPEND	O	0/5 V DC	End signal to machine
	7	GND1	-	-	Ground
	8	GND2	-	-	Ground
	9	GND3	-	-	Ground
	10	GND4	-	-	Ground
	11	DPTMG	O	0/5 V DC	Timing signal to machine
	12	NC1	-	-	Not used
<b>YC3</b> Connected to the SHD PWB (dual scan DP only.)	1	+R24V	O	24 V DC	24 V DC power output to SHDPWB
	2	GND1	-	-	Ground
	3	GND2	-	-	Ground
	4	GND3	-	-	Ground
	5	+24V1	O	24 V DC	24 V DC power output to SHDPWB
	6	+24V2	O	24 V DC	24 V DC power output to SHDPWB
	7	RGCLK	O	0/5 V DC (pulse)	RGCLK signal
	8	RGLD	O	0/5 V DC	RGLD signal
	9	RGRDWR	O	0/5 V DC	RGRDWR signal
	10	RGDATA	I	0/5 V DC	RGDATA signal
	11	RESETN	I	0/5 V DC	RESET signal
	12	PAGEST	O	0/5 V DC	PAGEST signal
	13	CIS_EN	O	0/5 V DC	CIS_EN signal
	14	RGOUT	O	0/5 V DC	RGOUT signal
	15	OVMONOUT	O	0/5 V DC	OVMONOUT signal
	16	CPURDY	I	0/5 V DC	CPURDY signal
	17	CPUSEL	O	0/5 V DC	CPUSEL signal
	18	CPU_SI	I	0/5 V DC (pulse)	CPU_SI signal
	19	CPU_SO	O	0/5 V DC (pulse)	CPU_SO signal
	20	CPU_CLK	O	0/5 V DC (pulse)	CPU_CLK signal
	21	CIS_12VON	O	0/5 V DC	CIS_12VON signal
	22	CIS_5VON	O	0/5 V DC	CIS_5VON signal
	23	EESCLK	I	0/5 V DC (pulse)	EESCLK signal
	24	EESDA	O	0/5 V DC (pulse)	EESDA signal
	25	SHD_DET	I	0/5 V DC	SHD_DET signal
	26	INVERTER	O	0/5 V DC	INVERTER signal
	27	+5V1	O	5 V DC	5 V DC power output to SHDPWB
	28	+5V2	O	5 V DC	5 V DC power output to SHDPWB

Connector	Pin No.	Signal	I/O	Voltage	Description
<b>YC3</b>	29	GND4	-	-	Ground
Connected to the SHD PWB	30	GND5	-	-	Ground
<b>YC4</b>	1	R24V	O	24 V DC	24 V DC power output
Connected to the DP interlock switch	2	N.C.	-	-	Not used
	3	R24V	I	24 V DC	24 V DC power input
	4	N.C.	-	-	Not used
	5	COV_OPN	I	0/24 V DC	DPILSW: On/Off
<b>YC5</b>	1	DUPLEX_-A	O	0/24 V DC (pulse)	OSBM drive control signal
Connected to the original switch-back motor, original feed motor, original conveying motor and DP lift motor	2	DUPLEX_-B	O	0/24 V DC (pulse)	OSBM drive control signal
	3	DUPLEX_+A	O	0/24 V DC (pulse)	OSBM drive control signal
	4	DUPLEX_+B	O	0/24 V DC (pulse)	OSBM drive control signal
	5	FEED_-A	O	0/24 V DC (pulse)	OFM drive control signal
	6	FEED_-B	O	0/24 V DC (pulse)	OFM drive control signal
	7	FEED_+A	O	0/24 V DC (pulse)	OFM drive control signal
	8	FEED_+B	O	0/24 V DC (pulse)	OFM drive control signal
	9	CONVEY_-A	O	0/24 V DC (pulse)	OCM drive control signal
	10	CONVEY_-B	O	0/24 V DC (pulse)	OCM drive control signal
	11	CONVEY_+A	O	0/24 V DC (pulse)	OCM drive control signal
	12	CONVEY_+B	O	0/24 V DC (pulse)	OCM drive control signal
	13	LFTMOT_+A	O	0/24 V DC (pulse)	DPLM drive control signal
	14	LFTMOT_-A	O	0/24 V DC (pulse)	DPLM drive control signal
	15	LFTMOT_+B	O	0/24 V DC (pulse)	DPLM drive control signal
	16	LFTMOT_-B	O	0/24 V DC (pulse)	DPLM drive control signal
<b>YC6</b>	1	+24V1	O	24 V DC	24 V DC power output to SBPSOL
Connected to the switchback pressure solenoid and switch-back feed-shift solenoid	2	PRS_SOL_P	O	0/24 V DC	SBPSOL: On/Off (actuate)
	3	PRS_SOL_R	O	0/24 V DC	SBPSOL: On/Off (return)
	4	+24V2	O	24 V DC	24 V DC power output to SBFSSOL
	5	PRS_SOL_P	O	0/24 V DC	SBFSSOL: On/Off (actuate)
	6	PRS_SOL_R	O	0/24 V DC	SBFSSOL: On/Off (return)

Connector	Pin No.	Signal	I/O	Voltage	Description
<b>YC7</b>  Connected to the LED-PWB, DP timing switch 1/2, original registration switch, original feed switch, tray upper limit switch, tray lower limit switch, original set switch and DP open/close switch	A1	LED_RD	O	0/5 V DC	LED RED control signal
	A2	GND	-	-	Ground
	A3	LED_GN	O	0/5 V DC	LED GREEN control signal
	A4	GND	-	-	Ground
	A5	CIS_SW	I	0/5 V DC	DPTSW2: On/Off
	A6	5V	O	5 V DC	5 V DC power output to DPTSW2
	A7	GND	-	-	Ground
	A8	REGSW	I	0/5 V DC	ORSW: On/Off
	A9	5V	O	5 V DC	5 V DC power output to ORSW
	A10	GND	-	-	Ground
	A11	FDSW	I	0/5 V DC	OFSW: On/Off
	A12	5V	O	5 V DC	5 V DC power output to OFSW
	A13	N.C.	-	-	Not used
	A14	N.C.	-	-	Not used
	A15	N.C.	-	-	Not used
	B1	GND	-	-	Ground
	B2	TMG_SW	I	0/5 V DC	DPTSW1: On/Off
	B3	5V	O	5 V DC	5 V DC power output to DPTSW1
	B4	GND	-	-	Ground
	B5	LF_U_SW	I	0/5 V DC	TULSW: On/Off
	B6	5V	O	5 V DC	5 V DC power output to TULSW
	B7	GND	-	-	Ground
	B8	LF_D_SW	I	0/5 V DC	TLLSW: On/Off
	B9	5V	O	5 V DC	5 V DC power output to TLLSW
	B10	GND	-	-	Ground
	B11	SET SW	I	0/5 V DC	OSSW: On/Off
	B12	5V	O	5 V DC	5 V DC power output to OSSW
	B13	GND	-	-	Ground
	B14	DP_OPNSW	I	0/5 V DC	DPOCSW: On/Off
	B15	5V	O	5 V DC	5 V DC power output to DPOCSW
<b>YC8</b>  Connected to the original size length switch and original size width switch	1	5V	O	5 V DC	5 V DC power output to OLSW
	2	GND	-	-	Ground
	3	SZ DET	I	0/5 V DC	OLSW: On/Off
	4	EXGND	-	-	Ground
	5	5V	O	5 V DC	5 V DC power output to OWSW
	6	SZ_SW_W	I	0/5 V DC	OWSW: On/Off

Connector	Pin No.	Signal	I/O	Voltage	Description
<b>YC10</b>  Connected to the original eject switch and switchback tray switch	1	GND	-	-	Ground
	2	EJ SW	I	0/5 V DC	OESW: On/Off
	3	5V	O	5 V DC	5 V DC power output to OESW
	4	GND	-	-	Ground
	5	TRAY SW	I	0/5 V DC	SBTSW: On/Off
	6	5V	O	5 V DC	5 V DC power output to SBTSW
	7	N.C.	-	-	Not used
	8	N.C.	-	-	Not used
	9	N.C.	-	-	Not used

## 2-3-2 SHD PWB (dual scan DP only)

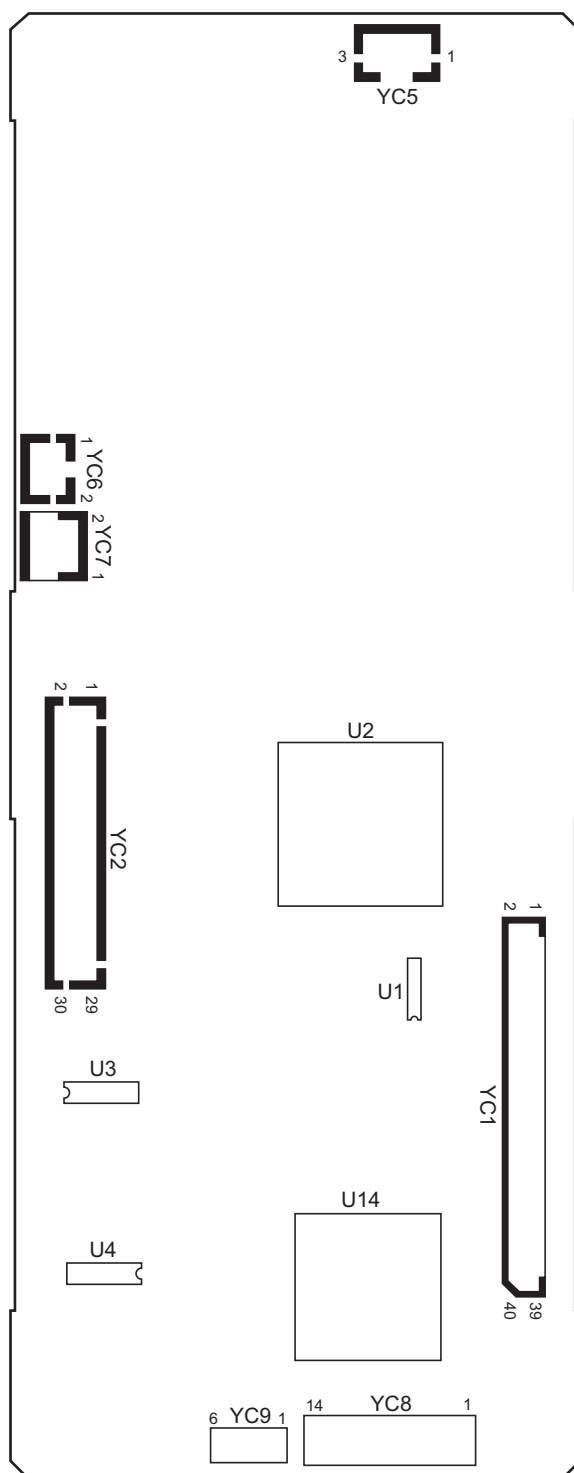


Figure 2-3-3 SHD PWB silk-screen diagram

Connector	Pin No.	Signal	I/O	Voltage	Description
YC1 Connected to the CIS	1	DVSS	-	-	Ground
	2	ICLK	I	0/5 V DC (pulse)	ICLK signal
	3	AVSS	-	-	Ground
	4	AVSS	-	-	Ground
	5	IDATA	I	0/5 V DC	IDATA signal
	6	RGDATA	O	0/5 V DC	RGDATA signal
	7	AVDD	O	DC12V	12 V DC power output
	8	AVDD	O	DC12V	12 V DC power output
	9	RGRDWR	O	0/5 V DC	RGRDWR signal
	10	RGLD	O	0/5 V DC	RGLD signal
	11	DVSS	-	-	Ground
	12	RGCLK	O	0/5 V DC (pulse)	RGCLK signal
	13	DVSS	-	-	Ground
	14	RGOUT	I	0/5 V DC	RGOUT signal
	15	DVDD	O	5 V DC	5 V DC power output
	16	DVDD	O	5 V DC	5 V DC power output
	17	DVDD	O	5 V DC	5 V DC power output
	18	DVDD	O	5 V DC	5 V DC power output
	19	DVDD	O	5 V DC	5 V DC power output
	20	TINT	O	0/5 V DC	TINT signal
	21	LST	O	0/5 V DC	LST signal
	22	DVSS	-	-	Ground
	23	SDEP	I	0/5 V DC (pulse)	Serial communication data signal
	24	SDEN	I	0/5 V DC (pulse)	Serial communication data signal
	25	DVSS	-	-	Ground
	26	SDDP	I	0/5 V DC (pulse)	Serial communication data signal
	27	SDDN	I	0/5 V DC (pulse)	Serial communication data signal
	28	DVSS	-	-	Ground
	29	SCLK1P	I	0/5 V DC (pulse)	Serial data clock signal
	30	SCLK1N	I	0/5 V DC (pulse)	Serial data clock signal
	31	DVSS	-	-	Ground
	32	SDCP	I	0/5 V DC (pulse)	Serial communication data signal
	33	SDCN	I	0/5 V DC (pulse)	Serial communication data signal
	34	DVSS	-	-	Ground
	35	SDBP	I	0/5 V DC (pulse)	Serial communication data signal
	36	SDBN	I	0/5 V DC (pulse)	Serial communication data signal
	37	DVSS	-	-	Ground
	38	SDAP	I	0/5 V DC (pulse)	Serial communication data signal
	39	SDAN	I	0/5 V DC (pulse)	Serial communication data signal
	40	DVSS	-	-	Ground



Connector	Pin No.	Signal	I/O	Voltage	Description
<b>YC2</b> Connected to the DP driver PWB	1	GND5	-	-	Ground
	2	GND4	-	-	Ground
	3	+5V2	I	5 V DC	5 V DC power input from DPDPWB
	4	+5V1	I	5 V DC	5 V DC power input from DPDPWB
	5	INVERTER	I	0/5 V DC	INVERTER signal
	6	SHD_DET	O	0/5 V DC	SHD_DET signal
	7	EESDA	I	0/5 V DC (pulse)	EESDA signal
	8	EESCLK	O	0/5 V DC (pulse)	EESCLK signal
	9	CIS_5VON	I	0/5 V DC	CIS_5VON signal
	10	CIS_12VON	I	0/5 V DC	CIS_12VON signal
	11	CPU_CLK	O	0/5 V DC (pulse)	CPU_CLK signal
	12	CPU_SO	I	0/5 V DC (pulse)	CPU_SO signal
	13	CPU_SI	O	0/5 V DC (pulse)	CPU_SI signal
	14	CPUSEL	I	0/5 V DC	CPUSEL signal
	15	CPURDY	O	0/5 V DC	CPURDY signal
	16	OVMONOUT	O	0/5 V DC	OVMONOUT signal
	17	RGOUT	I	0/5 V DC	RGOUT signal
	18	CIS_EN	I	0/5 V DC	CIS_EN signal
	19	PAGEST	I	0/5 V DC	PAGEST signal
	20	RESETN	I	0/5 V DC	RESET signal
	21	RGDATA	I	0/5 V DC	RGDATA signal
	22	RGRDWR	I	0/5 V DC	RGRDWR signal
	23	RGLD	I	0/5 V DC	RGLD signal
	24	RGCLK	I	0/5 V DC (pulse)	RGCLK signal
	25	+24V2	I	24 V DC	24 V DC power input from DPDPWB
	26	+24V1	I	24 V DC	24 V DC power input from DPDPWB
	27	GND3	-	-	Ground
	28	GND2	-	-	Ground
	29	GND1	-	-	Ground
	30	+R24V	I	24 V DC	24 V DC power input from DPDPWB
<b>YC5</b> Connected to the DP inverter PWB	1	+16V_INV	O	16 V DC	16 V DC power output to DPINPWB
	2	INVREM	O	0/16 V DC	CIS control signal
	3	GND	-	-	Ground
<b>YC6</b> Connected to the DP fan motor	1	FAN1REM	O	0/24 V DC	DPFM: On/Off
	2	+24V	O	24 V DC	24 V DC power output to DPFM

Connector	Pin No.	Signal	I/O	Voltage	Description
YC8 Connected to the DP relay PWB	1	OS_SAD1N	O	0/3.3 V DC (pulse)	Serial communication data signal
	2	OS_SAD1P	O	0/3.3 V DC (pulse)	Serial communication data signal
	3	GND	-	-	Ground
	4	OS_SAD2N	O	0/3.3 V DC (pulse)	Serial communication data signal
	5	OS_SAD2P	O	0/3.3 V DC (pulse)	Serial communication data signal
	6	GND	-	-	Ground
	7	OS_SAD3N	O	0/3.3 V DC (pulse)	Serial communication data signal
	8	OS_SAD3P	O	0/3.3 V DC (pulse)	Serial communication data signal
	9	GND	-	-	Ground
	10	OS_SACKN	I	0/3.3 V DC (pulse)	Serial data clock signal
	11	OS_SACKP	I	0/3.3 V DC (pulse)	Serial data clock signal
	12	GND	-	-	Ground
	13	OS_SAD4N	O	0/3.3 V DC (pulse)	Serial communication data signal
	14	OS_SAD4P	O	0/3.3 V DC (pulse)	Serial communication data signal

## List of maintenance parts

Maintenance part name		Part No.	Alternative part No.	Fig. No.	Ref. No.
Name used in service manual	Name used in parts list				
DP original feed belt	BELT PF	303JX07330	3JX07330	6	53
DP forwarding pulley	PULLEY LF	3H607020	-	6	44
DP separation pulley	PULLEY SEPARATION	303LL07190	3LL07190	4	41
Original feed switch	SWITCH REGISTRATION	2FG27110	-	6	19
Original registration switch	SWITCH REGISTRATION	2FG27110	-	6	19
DP timing switch 2*	SWITCH REGISTRATION	2FG27110	-	6	73
Registration roller	PARTS ROLLER REGISTRATION	303LL94090	3LL94090	4	54
Registration pulley	PULLEY REGISTRATION	303JX07080	3JX07080	6	37
Registration pulley	PULLEY REG B	303JX07340	3JX07340	6	36
Upper conveying roller	PARTS ROLLER CONVEYING UPPER	303LL94080	3LL94080	4	3
Conveying pulley	PULLEY CONVEYING	3H608200	-	6	2
Left conveying roller	PARTS ROLLER CONVEYING LEFT	303LL94060	3LL94060	4	16
Conveying pulley	PULLEY CONVEYING	3HL08080	-	2	14
Right conveying roller	PARTS ROLLER CONVEYING RIGHT	303LL94070	3LL94070	4	13
Conveying pulley	PULLEY CONVEYING	3HL08080	-	4	57
Eject roller	PARTS ROLLER EJECT	303LL94100	3LL94100	7	2
Eject pulley	PULLEY EXIT	303JX28030	3JX28030	7	10
Switchback roller	PARTS ROLLER LOOP	303LL94110	3LL94110	7	14
Switchback pulley	PULLEY CONVEYING	3HL08080	-	7	24
Feedshift roller	PARTS ROLLER EJECT SHIFT	303LL94120	3LL94120	7	11
Feedshift pulley	PULLEY LOOP	3HL10140	-	7	41
Reading guide	GUIDE READING	303LL24010	3LL24010	4	51
DP timing switch 1	SWITCH REGISTRATION	2FG27110	-	2	26
Original eject switch	SWITCH REGISTRATION	2FG27110	-	7	7
CIS roller*	PARTS ROLLER CIS	303LK94030	3LK94030	6	8
CIS*	PARTS A3 COLOR CIS	303LK93010	3LK93010	5	14
Original size length switch	PARTS SENSOR ORIGINAL 4P	303LL94160	3LL94160	3	17
Original mat	PARTS MAT ASSY	303LL94030	3LL94030	1	A01

\*: Dual scan DP only.

**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 original feed belt	Replace	240 K	Replace. (Clean with alcohol when user call occurs.)	P.1-5-2
	DP forwarding pulley	Replace	240 K	Replace. (Clean with alcohol when user call occurs.)	P.1-5-2
	DP separation pulley	Replace	240 K	Replace. (Clean with alcohol when user call occurs.)	P.1-5-5
	Original feed switch	Clean	Every service.	Air blow or clean with a dry cloth.	
	Original registration switch	Clean	Every service.	Air blow or clean with a dry cloth.	
	DP timing switch 2	Clean	Every service.	Air blow or clean with a dry cloth.	



Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Original conveying section	Registration roller	Clean	Every service	Clean with a dry cloth or alcohol.	
	Registration pulley	Clean	Every service	Clean with a dry cloth or alcohol.	
	Upper conveying roller	Clean	Every service	Clean with a dry cloth or alcohol.	
	Left conveying roller	Clean	Every service	Clean with a dry cloth or alcohol.	
	Right conveying roller	Clean	Every service	Clean with a dry cloth or alcohol.	
	Conveying pulley	Clean	Every service	Clean with a dry cloth or alcohol.	
	Eject roller	Clean	Every service	Clean with a dry cloth or alcohol.	
	Eject roller	Clean	Every service	Clean with a dry cloth or alcohol.	
	Switchback roller	Clean	Every service	Clean with a dry cloth or alcohol.	
	Switchback pulley	Clean	Every service	Clean with a dry cloth or alcohol.	
	Feedshift roller	Clean	Every service	Clean with a dry cloth or alcohol.	
	Feedshift pulley	Clean	Every service	Clean with a dry cloth or alcohol.	
	Reading guide	Clean	Every service	Clean with a dry cloth or alcohol.	
	DP timing switch 1	Clean	Every service	Air blow or clean with a dry cloth.	
	Original eject switch	Clean	Every service	Air blow or clean with a dry cloth.	



Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
CIS section	CIS roller	Clean	Every service	Clean with a dry cloth or alcohol.	
	CIS	Clean	Every service	Clean with a dry cloth or alcohol. (Do not clean with nor wet cloth)	



Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Original table	Original size length switch	Clean	Every service	Air blow or clean with a dry cloth.	



Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Covers	Covers	Clean	Every service	Clean with alcohol.	
	Slit glass*	Check or clean	Every service	Clean with a dry cloth or alcohol. (Do not clean with nor wet cloth)	
	Original holder mat	Clean	Every service	Clean with a dry cloth or alcohol.	

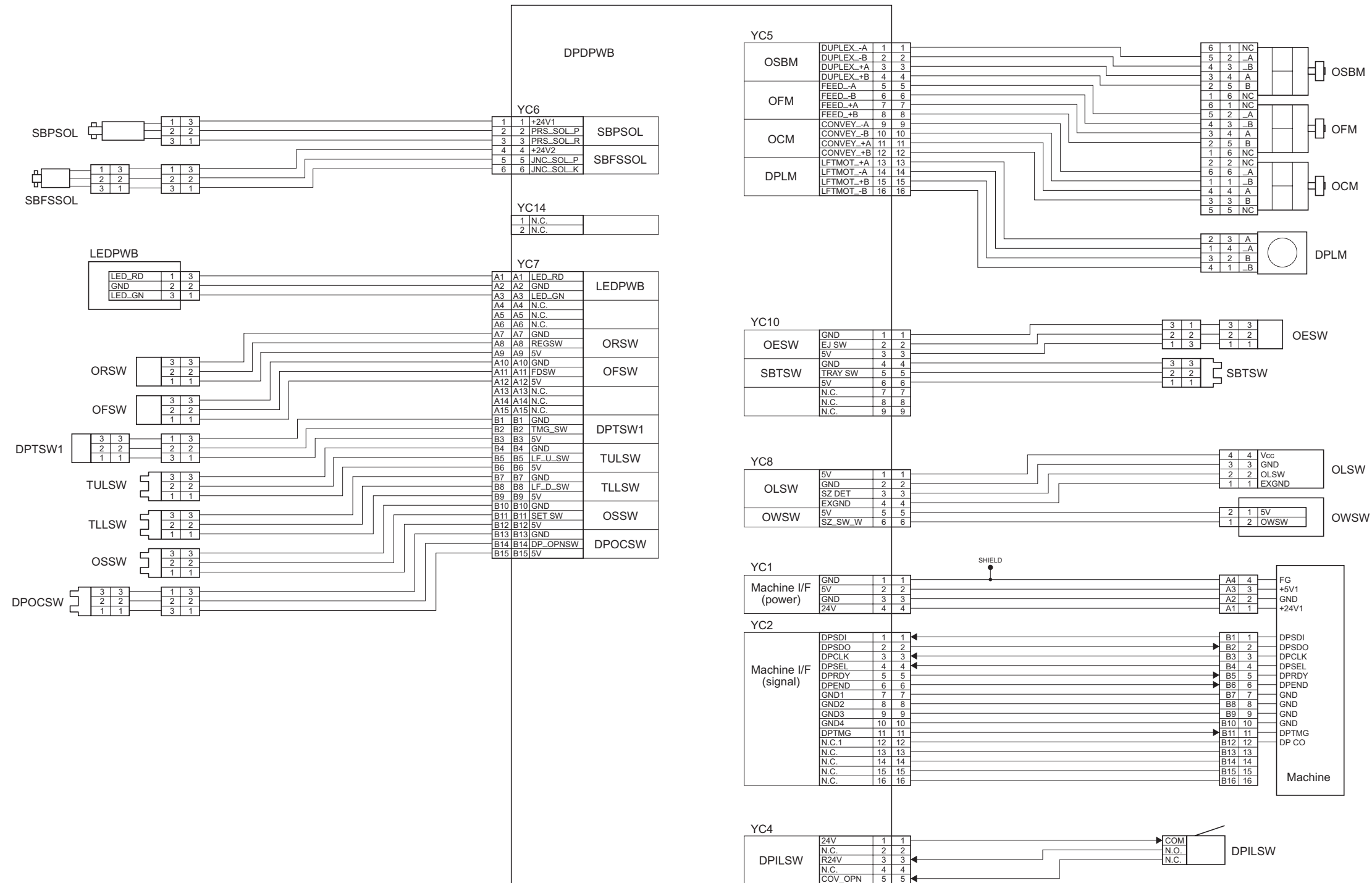
\*Equipped with the machine.



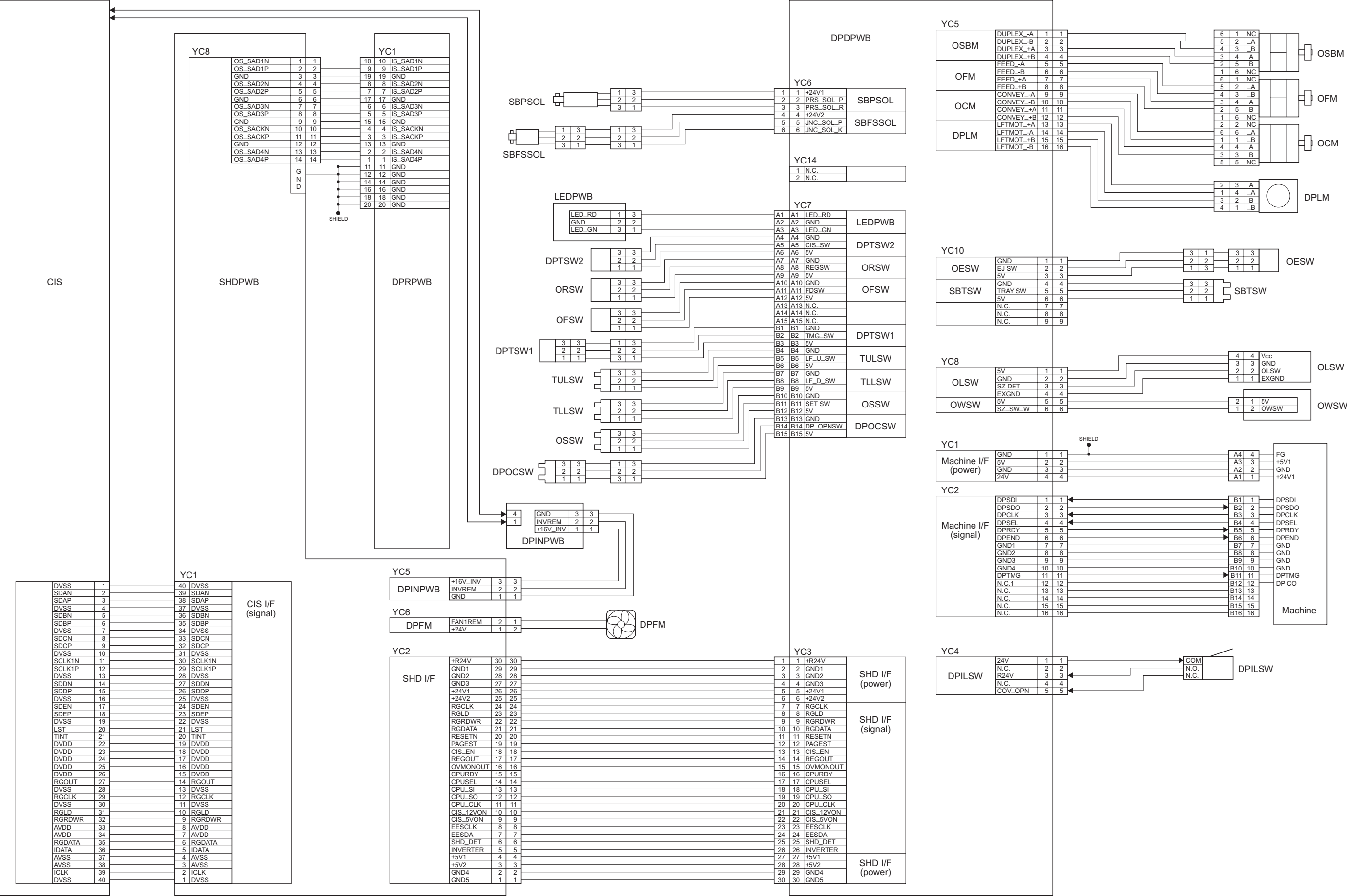
Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Other	Image quality	Check and adjust	Every service		

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## Wiring diagram (reversed DP)



Wiring diagram (dual scan DP)





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