
AD-63

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1-1-2 Part names

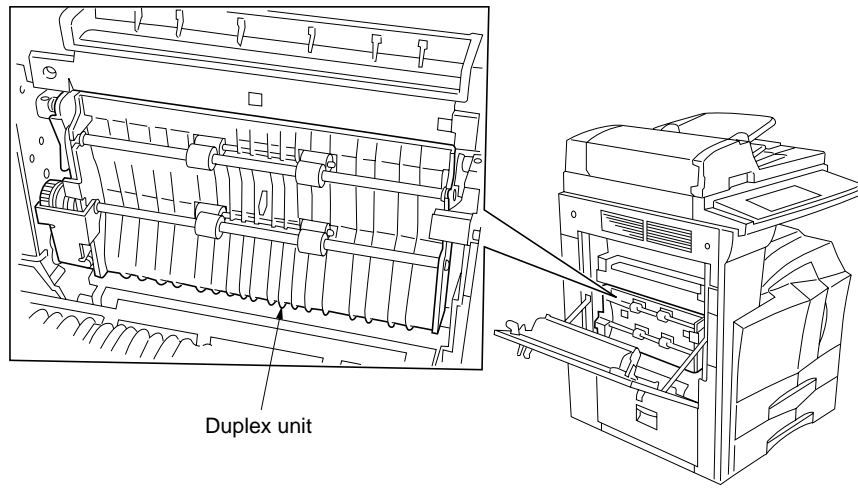


Figure 1-1-1

1-1-3 Machine cross section

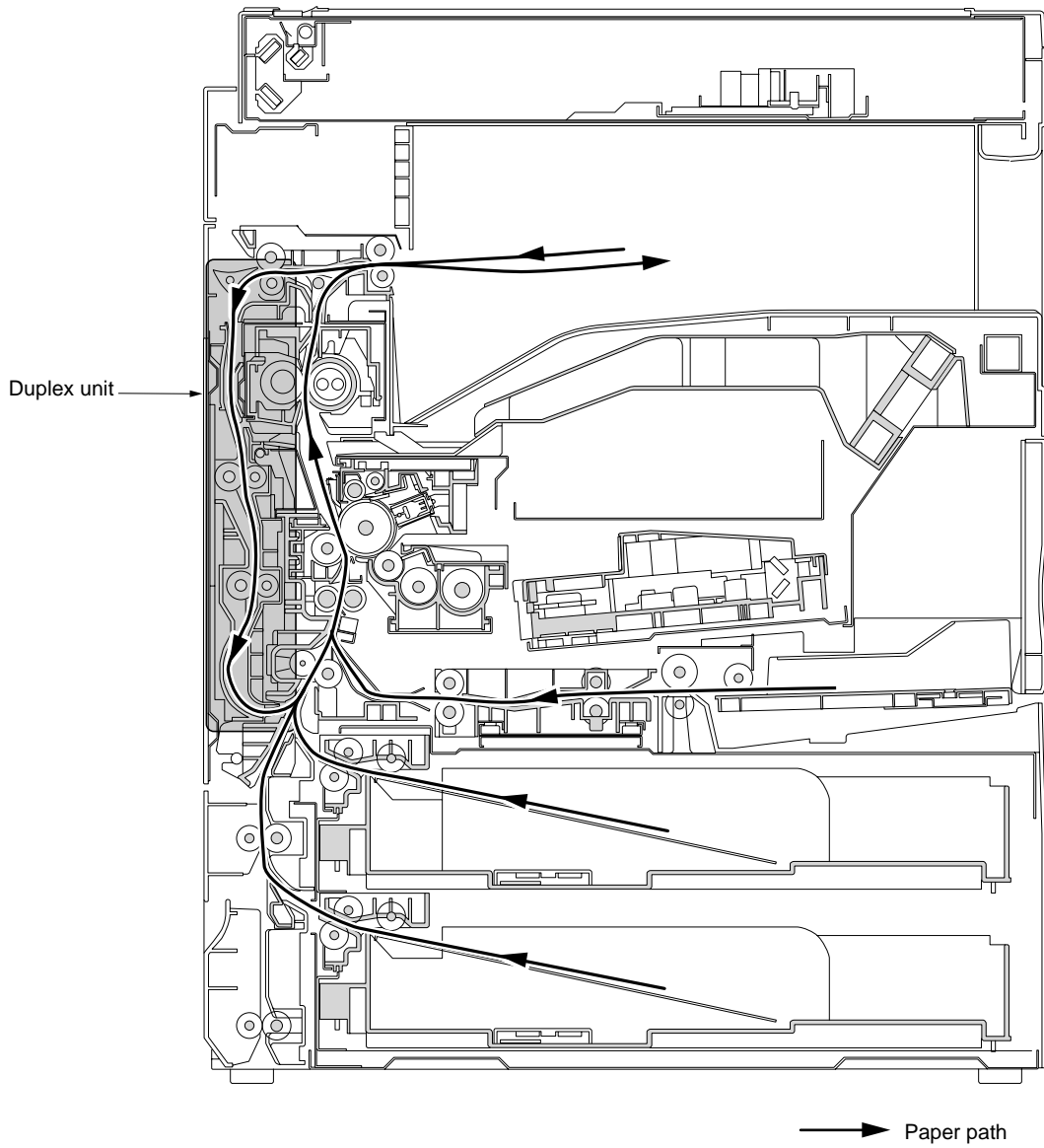


Figure 1-1-2

1-1-4 Drive system

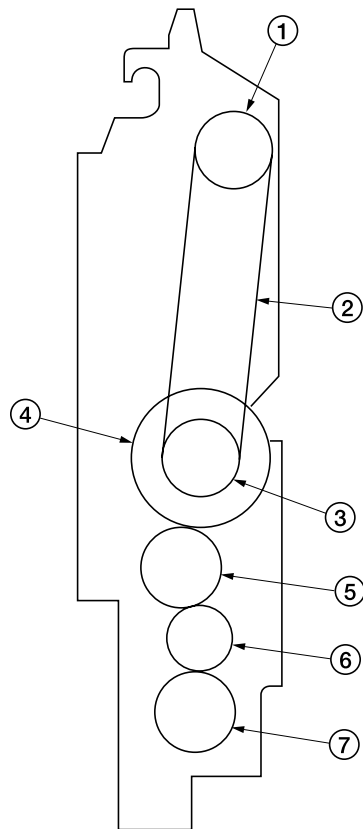


Figure 1-1-3

- ① Pulley T30
- ② Duplex belt
- ③ Pulley T30
- ④ Duplex feed clutch gear
- ⑤ Gear 25
- ⑥ Idle gear 20
- ⑦ Gear 25

1-2-1 Unpacking

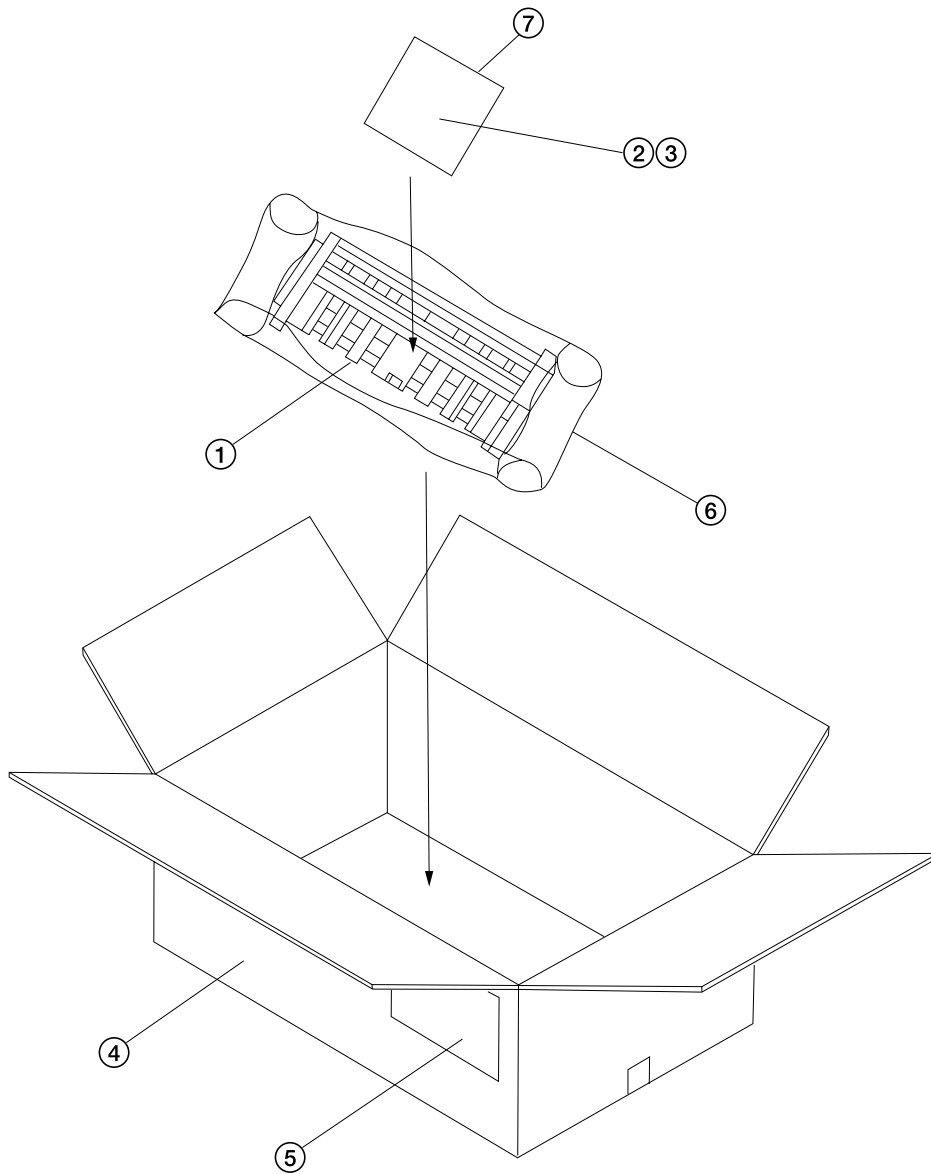


Figure 1-2-1 Unpacking

- ① Duplex unit
- ② Nut plate
- ③ M3 × 10 bronze binding screws
- ④ Outer case
- ⑤ Bar-code label
- ⑥ Air-padded bag
- ⑦ Plastic bag

1-3-1 Paper misfeed detection

(1) Paper misfeed indication

When paper jams, the machine immediately stops operation and the occurrence of a paper jam is indicated on the copier operation panel.

To remove the jammed paper, open the conveying cover.

To reset the paper misfeed detection, open and close the conveying cover to turn safety switch 2 off and on.

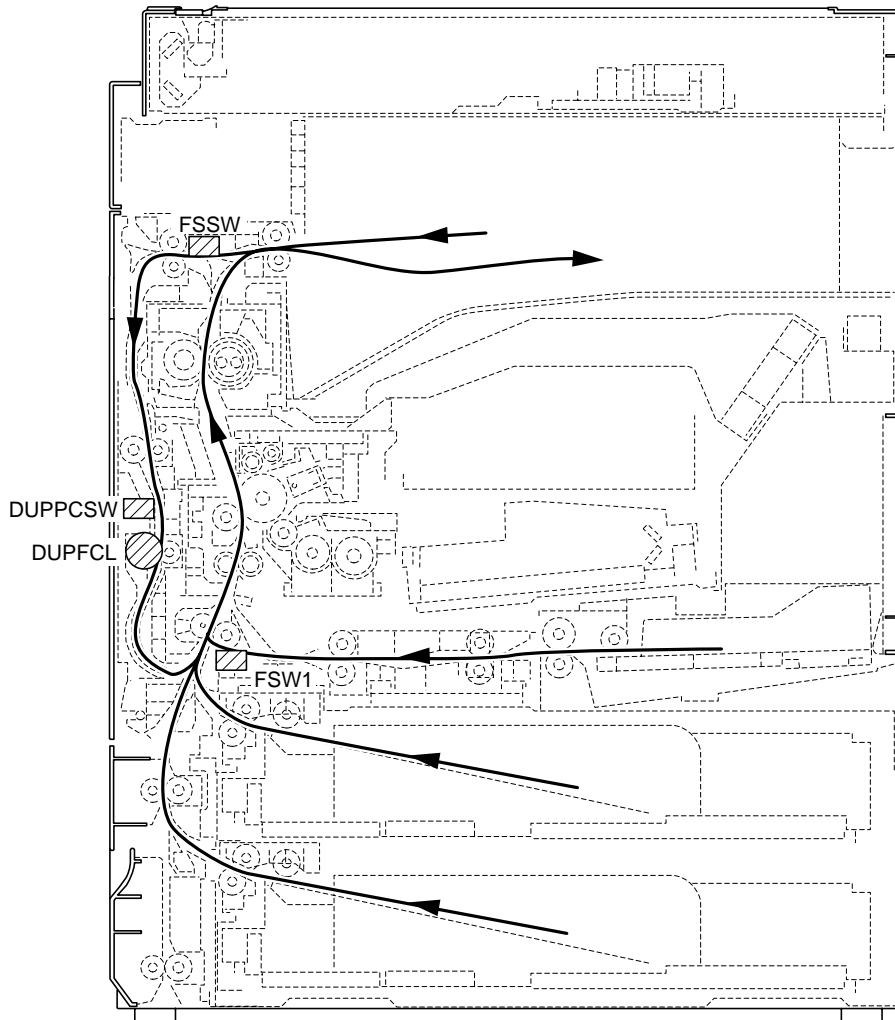
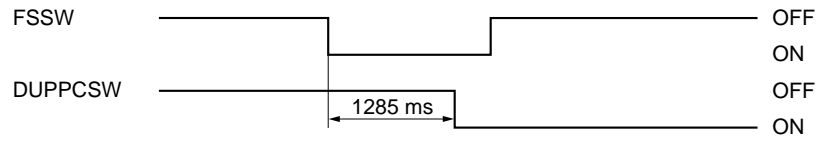


Figure 1-3-1 Paper misfeed detection

(2) Paper misfeed detection condition

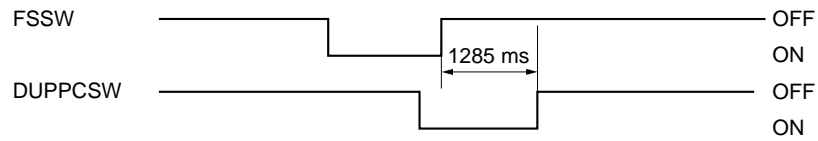
- Duplex paper conveying section 1 (jam code 60)

The duplex paper conveying switch (DUPPCSW) does not turn on within 1285 ms of the feedshift switch (FSSW) turning on.



Timing chart 1-3-1

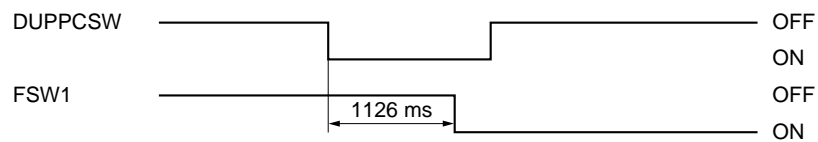
The duplex paper conveying switch (DUPPCSW) does not turn off within 1285 ms of the feedshift switch (FSSW) turning off.



Timing chart 1-3-2

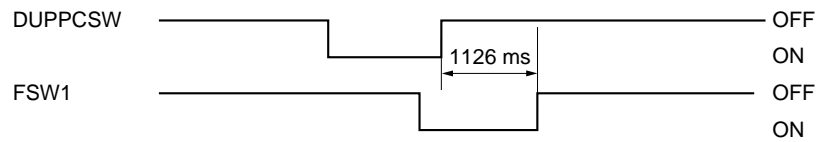
- Duplex paper conveying section 2 (jam code 61)

Feed switch 1 (FSW1) does not turn on within 1126 ms of the duplex paper conveying switch (DUPPCSW) turning on.



Timing chart 1-3-3

Feed switch 1 (FSW1) does not turn off within 1126 ms of the duplex paper conveying switch (DUPPCSW) turning off.



Timing chart 1-3-4

(3) Paper misfeeds

Problem	Causes	Check procedures/corrective measures
(1) Paper jams in the duplex unit when the main switch is turned on.	A piece of paper torn from copy paper is caught around duplex paper conveying switch.	Remove any found.
	Defective duplex paper conveying switch.	Run maintenance item U031 and turn the duplex paper conveying switch on and off manually. Replace the switch if indication of the corresponding switch on the operation panel is not displayed in reverse.
(2) Paper jams in the duplex unit during copying (jam in duplex paper conveying section 1).	Broken feedshift switch actuator.	Check visually and replace the feedshift switch if its actuator is broken.
	Defective feedshift switch.	Run maintenance item U031 and turn the feedshift switch on and off manually. Replace the switch if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Broken duplex paper conveying switch actuator.	Check visually and replace the duplex paper conveying switch if its actuator is broken.
	Defective duplex paper conveying switch.	Run maintenance item U031 and turn the duplex paper conveying switch on and off manually. Replace the switch if indication of the corresponding switch on the operation panel is not displayed in reverse.
(3) Paper jams in the duplex unit during copying (jam in duplex paper conveying section 2).	Broken duplex paper conveying switch actuator.	Check visually and replace the duplex paper conveying switch if its actuator is broken.
	Defective duplex conveying switch.	Run maintenance item U031 and turn the duplex paper conveying switch on and off manually. Replace the duplex paper conveying switch if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Broken feed switch 1 actuator.	Check visually and replace feed switch 1 if its actuator is broken.
	Defective feed switch 1.	Run maintenance item U031 and turn feed switch 1 on and off manually. Replace the switch if indication of the corresponding switch on the operation panel is not displayed in reverse.

1-3-2 Electrical problems

Problem	Causes	Check procedures/corrective measures
(1) The duplex feed clutch does not operate.	Broken duplex feed clutch coil.	Check for continuity across the coil. If none, replace the duplex feed clutch.
	Poor contact of the duplex feed clutch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective main PCB.	Run maintenance item U032 and check if CN10-B2 on the copier main PCB goes low. If not, replace the main PCB.

1-3-3 Mechanical problems

Problem	Causes/check procedures	Corrective measures
(1) Paper jams.	Check if the duplex feed pulley, upper duplex feed roller or lower duplex feed roller is deformed.	Check visually and replace the pulley or roller if deformed.
(2) Abnormal noise is heard.	Check if the rollers and gears operate smoothly.	Grease the bushings and gears.

1-4-1 Precautions for assembly and disassembly

(1) Precautions

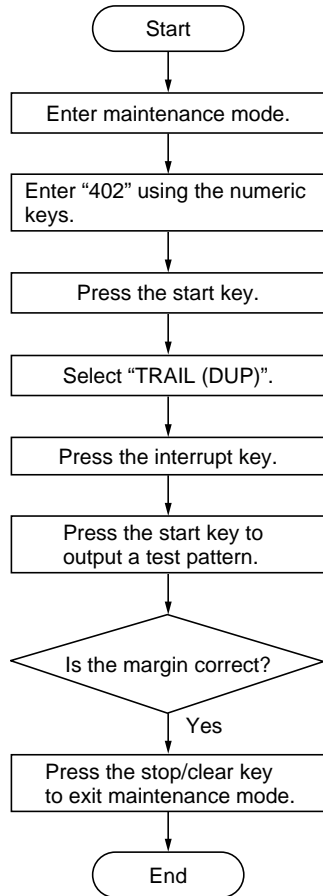
- Be sure to turn the main switch off and disconnect the power plug before starting disassembly.
 - When handling PCBs, do not touch connectors with bare hands or damage the board.
 - Do not touch any PCB containing ICs with bare hands or any object prone to static charge.
 - Use the following testers when measuring voltages:
 - Hioki 3200
 - Sanwa MD-180C
 - Sanwa YX-360TR
 - Beckman TECH300
 - Beckman DM45
 - Beckman 330*
 - Beckman 3030*
 - Beckman DM850*
 - Fluke 8060A*
 - Arlec DMM1050
 - Arlec YF1030C
- * Capable of measuring RMS values.
- Prepare the following as test originals:
 1. NTC (new test chart)
 2. NPTC (newspaper test chart)

1-4-2 Procedure for assembly and disassembly

(1) Adjusting the margin for printing

Perform the following adjustment if the printer leading edge margin for duplex copying (second face) is not correct.

Procedure



Printer leading edge margin for duplex copying (second face, 3 ± 2.5 mm)

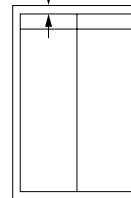


Figure 1-4-1

Setting range: -5.0 to +10.0
 Reference: 4.5
 Changing the value by 1 moves the margin by 0.5 mm.
 Increasing the value makes the margin wider and decreasing it makes the margin narrower.

(2) Adjusting the amount of slack at the registration roller

Perform the following adjustment if the leading edge of the copy image is missing or varies randomly, or if the copy paper is Z-folded during duplex copying.

Procedure

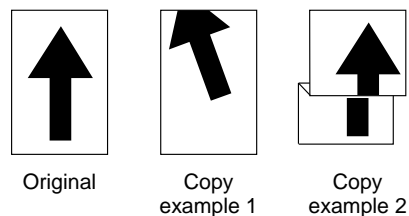
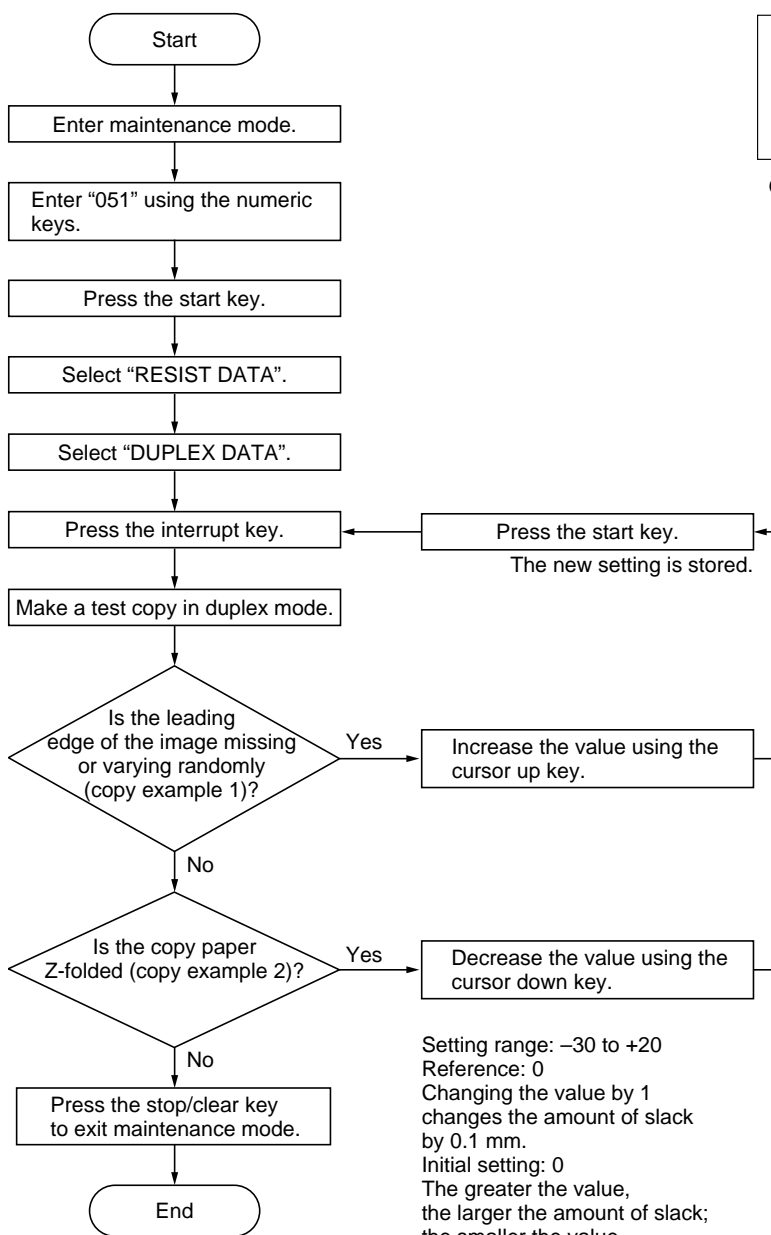


Figure 1-4-2

Setting range: -30 to +20
 Reference: 0
 Changing the value by 1 changes the amount of slack by 0.1 mm.
 Initial setting: 0
 The greater the value, the larger the amount of slack;
 the smaller the value, the smaller the amount of slack

(3) Adjusting the center line of image printing

Make the following adjustment if there is a regular error between the center lines of the copy image and original when copying using the duplex unit.

Procedure

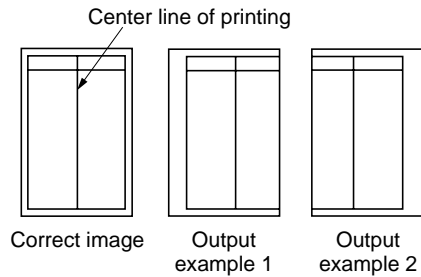
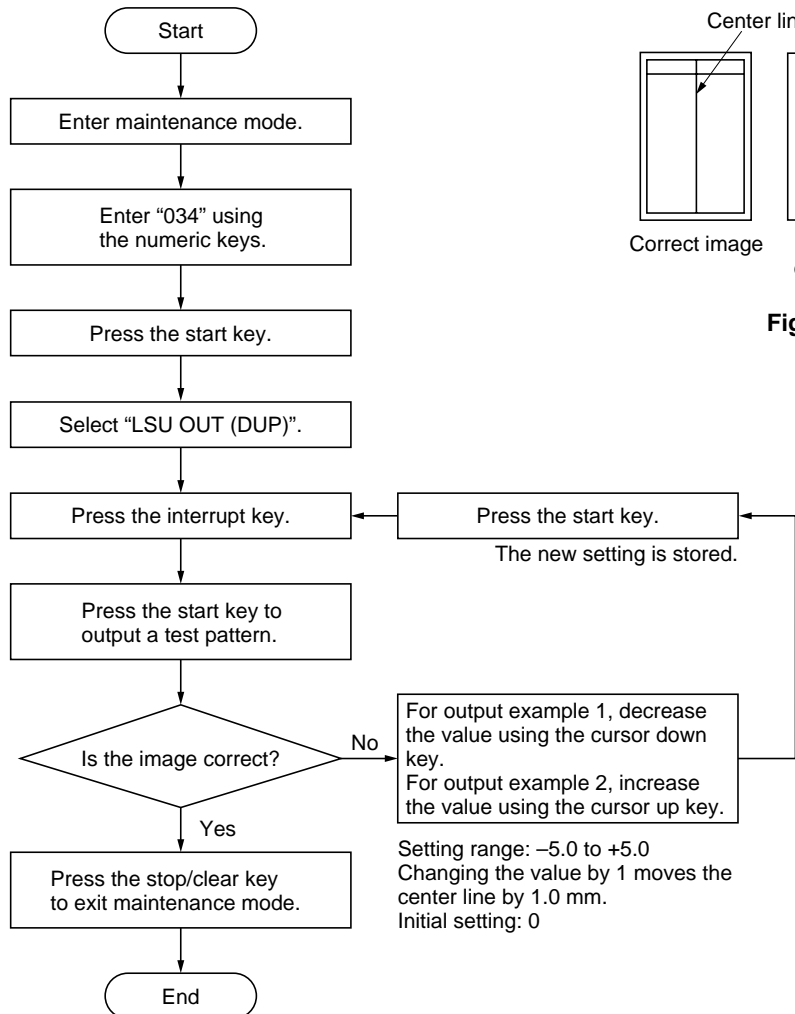


Figure 1-4-3

For output example 1, decrease the value using the cursor down key.
For output example 2, increase the value using the cursor up key.

Setting range: -5.0 to +5.0
Changing the value by 1 moves the center line by 1.0 mm.
Initial setting: 0

2-1-1 Construction of each section

The duplex unit consists of the components shown in Figure 2-1-1. In duplex mode, after copying on to the reverse face of the paper, the paper is reversed in the switchback section and conveyed to the duplex unit. The paper is then conveyed to the copier paper feed section by the upper and lower duplex feed rollers.

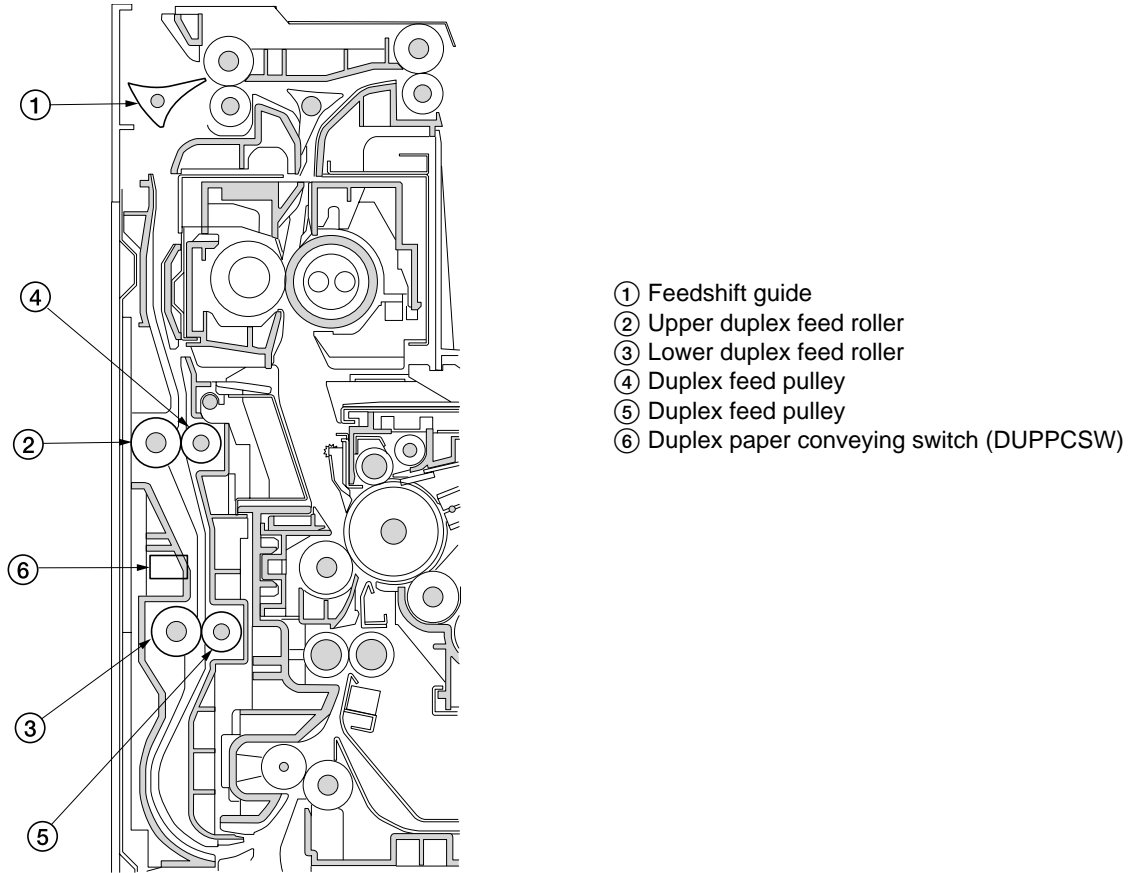


Figure 2-1-1 Duplex unit

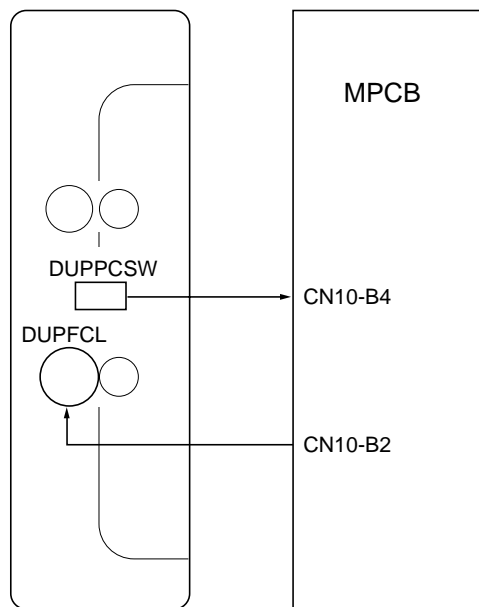


Figure 2-1-2 Duplex unit block diagram

(1) Paper conveying operation in duplex copying

Paper of which copying onto the reverse side is complete is conveyed to the switchback section, the eject motor switches from normal rotation to reverse rotation to switch the eject roller to reverse rotation, and the paper conveying direction is reversed. Paper that has been switched back is conveyed to the duplex unit via the eject roller and the switchback roller. Paper that has been conveyed to the duplex unit is conveyed to the paper feed section again by rotation of the upper duplex feed roller and the lower duplex feed roller and copying onto the front side is performed.

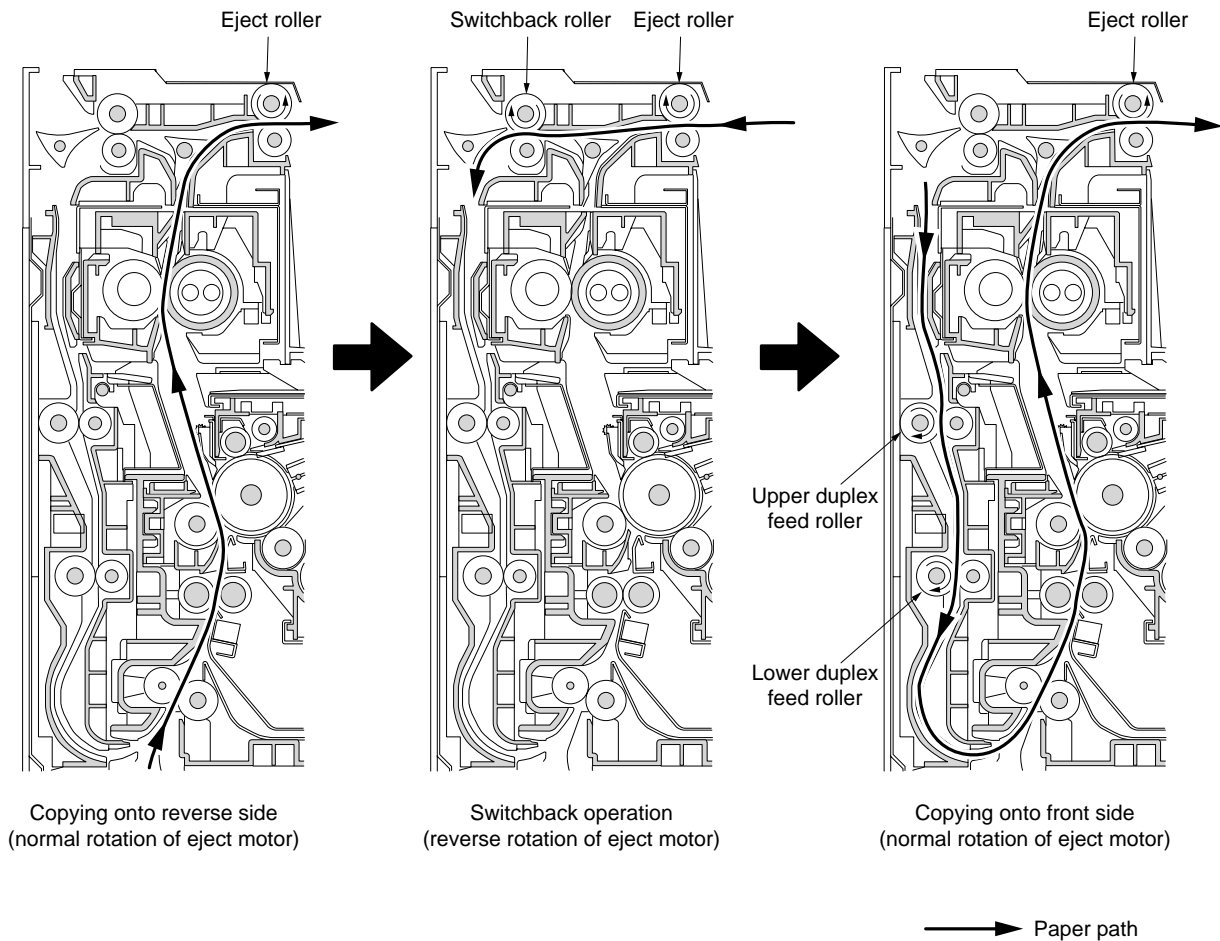


Figure 2-1-3

2-2-1 Electrical parts layout

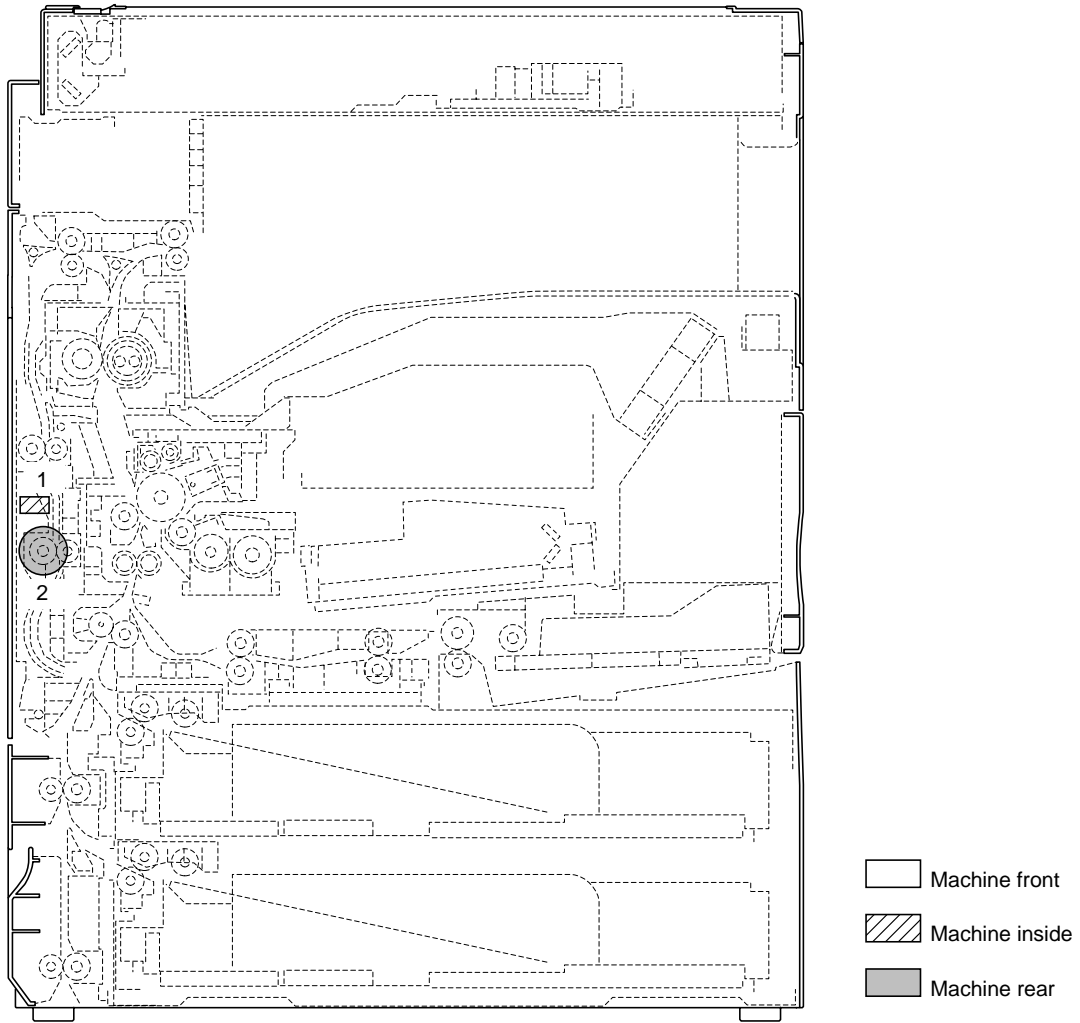


Figure 2-2-1 Duplex unit

- 1. Duplex paper conveying switch (DUPPCSW) Detects a paper jam in the duplex unit.
- 2. Duplex paper feed clutch (DUPFCL) Controls the drive of the duplex feed roller.

Periodic maintenance procedures

Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Paper conveying section	Upper duplex feed roller Lower duplex feed roller	Clean Clean	Every service Every service	Clean with alcohol or a dry cloth. Clean with alcohol or a dry cloth.	