AFR-19/
TX Marker STAMP UNIT 2

Service Manual

CONTENTS

GENERAL

1. Specifications

Name	:	Duplexing Document Feeder
Type	:	Paper Take-Up - U-turn upper exit system Switch Back - Switch back system Exit - Straight exit system
Installation	:	Screwed to the copier
Type of Document	:	Standard mode Plain paper: 1-sided mode - 35 g/m^2 to 128 g/m^2 (9.3lb. to 34lb.) 2-sided mode - 50 g/m^2 to 128 g/m^2 (13.3lb. to 34lb.) Mixed Original Detection mode Plain paper: 1-sided/2-sided mode - 50 g/m^2 to 128 g/m^2 (13.3lb. to 34lb.) FAX mode Plain paper: 1-sided mode - 35 g/m^2 to 128 g/m^2 (9.3lb. to 34lb.) 2-sided mode - 50 g/m^2 to 128 g/m^2 (13.3lb. to 34lb.)
Detectable Document Sizes	:	Standard mode B6L, A5L, A5C, B5L, B5C, A4L, A4C, B4L, A3L, Ledger L, 11x15L, Letter L, Letter C, FLS (210 mm x 330 mm) FAX mode A5L, A5C, B5L, B5C, A4L, A4C, B4L, A3L, Ledger L, 11 x 15L, Letter L, Letter C, FLS (210 mm x 330 mm) Width: 128 mm to 297 mm (5 x 3) Length: 1-sided mode - 100 mm to 1000 mm (4 to 39-1/4) 2-sided mode - 139.7 mm to 431.8 mm (5-1/2 to 17) ✻ Original that exceeds 431.8 mm (17) and less than or equal to 1000 mm (39-1/4) is set one sheet at a time, and image and feeding are outside the guarantee. ✻ See the table of allowed combination of sizes in Mixed Original Detection mode
Capacity	:	80 sheets (80 g/m^2) or load height of 11 mm or less.
Document Alignment	:	Center baseline
Document Loading	:	Left image side up
Modes	:	1-sided mode/2-sided mode
Power Requirements	:	DC 24 V ± 10 % (supplied from the copier) DC 5 V ± 5 %(generated inside the AFR)
Max. Power Consumption	:	48 W or less
Dimensions	:	582(W) x 145(H) x 558(D) mm 23 x 5-3/4 x 22
Weight	:	10 kg (22 lb) or less
Operating Environment	:	Conforms to the operating environment of the copier.

2. Table of allowed combination of sizes in Mixed Original Detection mode

For Metric

Mixed Original Size		Maximum Original Width								
		297 mm		257 mm		210 mm		182 mm	148 mm	123 mm
		A3L	A4C	B4L	B5C	A4L	A5C	B5L	A5L	B6L
297 mm	A3L	❍	❍	-	-	-	-	-	-	-
	A4C	❍	❍	-	-	-	-	-	-	-
257 mm	B4L	●	●	❍	❍	-	-	-	-	-
	B5C	●	●	❍	❍	-	-	-	-	-
210 mm	A4L	▲	▲	●	●	❍	❍	-	-	-
	A5C	×	×	●	●	❍	❍	-	-	-
182 mm	B5L	×	×	▲	▲	●	●	❍	-	-
148 mm	A5L	×	×	×	×	×	×	●	❍	-
123 mm	B6L	×	×	×	×	×	×	×	●	❍

For Inch

Mixed Original Size		Maximum Original Width					
		11		8-1/2			5-1/2
		11 X 17L	8-1/2 x 11C	8-1/2 x 14L	8-1/2 x 11L	8-1/2 x 5-1/2C	8-1/2 x 5-1/2L
11	11 X 17L	❍	❍	-	-	-	-
	8-1/2 x 11C	❍	❍	-	-	-	-
8-1/2	8-1/2 x 14L	▲	▲	❍	❍	❍	-
	8-1/2 x 11L	▲	▲	❍	❍	❍	-
5-1/2	8-1/2 x 5-1/2C	×	×	❍	❍	❍	-
	8-1/2 x 5-1/2L	×	×	×	×	×	❍

❍	Same width	Leading edge tilt 1.5 % or less
●	Combination allowed	
▲	Leading edge tilt 2 % or less is 80 % or more	
×	Combination not allowed	
-	Cannot be set	

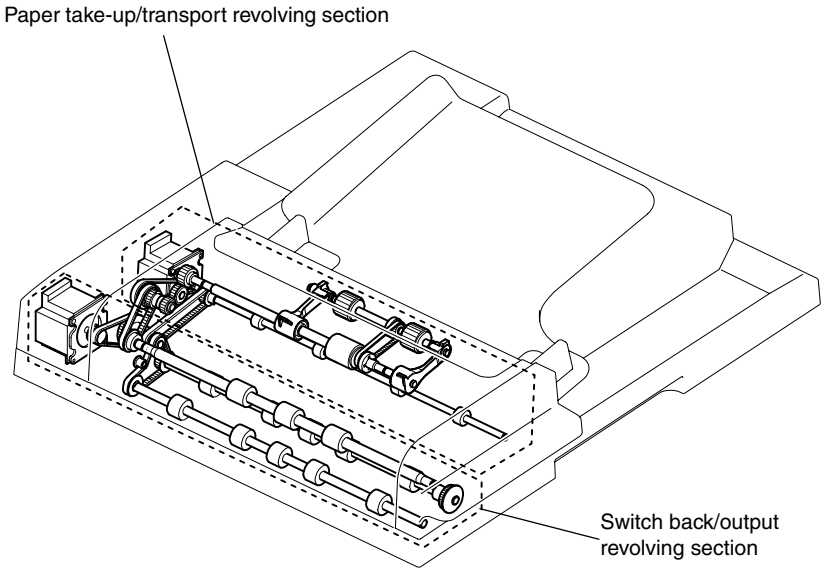
Prohibited original : Original that has a high possibility of causing problems if used.

Type of Document	Expected Problem
Original that is stapled or clipped.	Paper take-up failure, damage to the original, or drive failure due to clip clogging
Glued original	Paper take-up failure or damage to the original
Book original	Paper take-up failure, damage to the original, or drive failure
Original weighing less than 35g/m^2 (9.3lb.) or 129g/m^2 (34.4lb.) or more	Paper take-up failure
Original with many dog-ears, tears, or wrinkles.	Paper take-up failure or damage to the original
Highly curled original (15 mm or more)	Original misfeed due to dog-ear or skew
OHP transparencies	Paper take-up failure
Label Sheet	Paper take-up failure
Offset master	Paper take-up failure
Original with cutouts	Damage to the original
Cut-and-pasted original	Dog-ear or tear at the cut-and-paste section

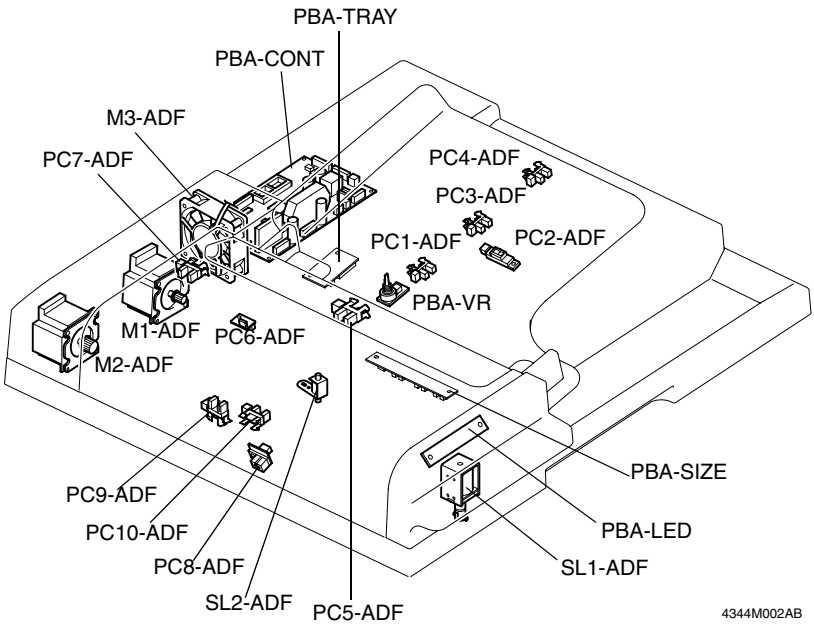
Originals not guaranteed for reliable feeding: Original that can be fed to some extent but is highly prone to cause problems if used.

Type of Document	Expected Problem
Original with small curls (amount of curl 10 or 15 mm)	Dog-ear or output failure
Thermosensitive paper	Leading edge crease, output failure, or paper transport failure
Inkjet paper	Paper take-up failure or paper transport failure
Paper with smooth surface (coated paper)	Paper take-up failure or paper transport failure
Translucent original	Paper take-up failure or paper transport failure
Paper immediately after it is output from the copier	Paper take-up failure or paper transport failure
Paper with many holes (restricted to vertical feeding of loose leaf, etc.)	Multi-page feed due to flashes from holes
Original with 2 to 4 holes	Paper Transport Failure
Folded or Z-fold Original (amount of float 15 mm or less)	Paper take-up failure, paper transport failure, or distorted image
Original with bumpy surface (letterhead, etc.)	Paper take-up failure
Original written in pencil	Smudged original
Folded original	Distorted image, multi-page feeding, or paper take-up failure

3. Revolving Parts Layout Drawing



4. Electric Parts Layout Drawing



Symbol	Name	Symbol	Name
PBA-CONT	Control Board	PC1-ADF	FD Paper Size Detection Sensor 1
PBA-LED	Print Lamp Board	PC2-ADF	FD Paper Size Detection Sensor 2
PBA-SIZE	Mix Document Size Detection Board	PC3-ADF	FD Paper Size Detection Sensor 3
PBA-TRAY	Interface Board	PC4-ADF	FD Paper Size Detection Sensor 4
PBA-VR	Variable Resistor	PC5-ADF	Empty Sensor
M1-ADF	Paper Take-Up Motor	PC6-ADF	Separator Sensor
M2-ADF	Transport Motor	PC7-ADF	Upper Door Open/Close Sensor
M3-ADF	Cooling Fan Motor	PC8-ADF	Original Detection Sensor
SL1-ADF	Exit Roller Retraction Solenoid	PC9-ADF	Regist Sensor
SL2-ADF*1	Stamp Solenoid	PC10-ADF	Exit/Turnover Sensor

*1: When Complete Stamp Unit 2 is installed.

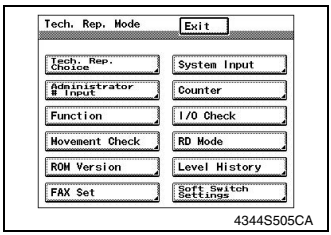
TEST MODES

1. Test Mode Operations

- The Test Mode is performed by the copier's Tech. Rep. Mode.

1-1. Entering the Tech. Rep. Mode

1. Press the Utility key.
2. Touch [Total Check].



3. Press the following keys in order: Stop → 0 →0 → Stop → 0 → 1.

NOTE

- *Be sure to keep the display procedure for the Tech. Rep. Mode from any unauthorized persons not involved with service operations.*

1-2. ADF Modes

The following three items are available under "ADF" in the Tech. Rep. Mode.

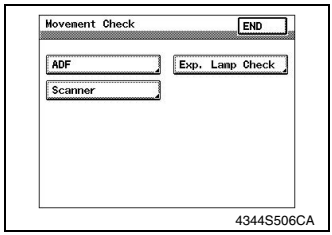
- Paper Passage
- Sensor Adjust (Auto)
- Backup Data Initialization

✻ The procedures for Paper Passage and Initialize Backup Data are described as Test Mode items. The description for Sensor Adjust (Auto) is contained in "Disassembly/ Assembly/Adjustment".

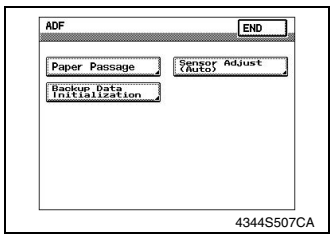
(1) Paper Passage

- To check the paper passage in the Duplexing Document Feeder.

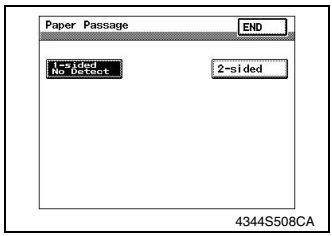
1. Display the Tech. Rep. Mode screen.



2. Touch [Movement Check].
3. Touch [ADF].



4. Touch [Paper Passage].



5. Touch [1-Side (No Detect)] or [2-Side] to select the paper passage to be tested.
6. Place the document into the feed tray.
7. The Start key indicator changes from orange to green.
8. Press the Start key to start the operation.

NOTES

- *While testing the paper passage, press the Start key to pause the operation, and press the Start key to restart the operation. In addition, to quit the paper passage test, press the Stop key while the test is paused.*
- *If the Stop key is pressed while the paper passage test is being performed, the paper passage test is ended.*
- *If no document is loaded in the feed tray, the operation will not begin when the Start key is pressed.*
- *Feed all loaded documents. After all pages of the document are fed, the paper passage test is finished.*

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(2) Initialize Backup Data

- To initialize the values adjusted with Sensor Adjust (Auto) and the values adjusted with Org. Width Detect.

NOTE

This adjustment must be made in any of the following cases:

- *The PBA-CONT Board has been replaced.*
- *The PBA-VR Board has been replaced.*

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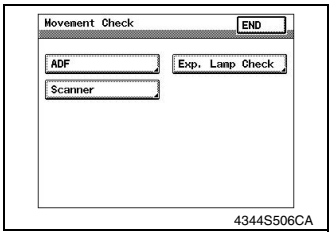
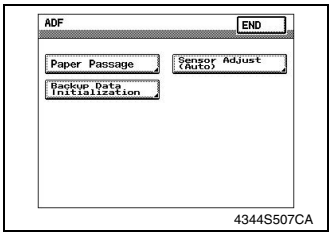
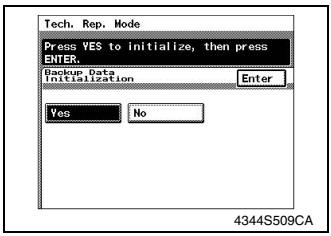
1. Display the Tech. Rep. Mode screen.



2. Touch [Movement Check].
3. Touch [ADF].



4. Touch [Backup Data Initialization].



5. Touch [Yes].
   The initialization begins.
6. Touch [Enter].

DIS/REASSEMBLY, ADJUSTMENT

1. Maintenance Schedule

- To ensure that the copier produces good copies and to extend its service life, it is recommended that the maintenance jobs described in this schedule be carried out as instructed.

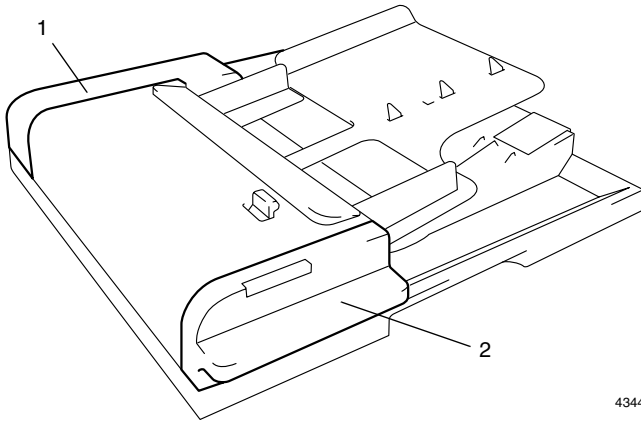
PM Parts	Job		Item Used for Cleaning	Qty	Ref. Page
	Clean	Replace			
Pickup Roller	50K	200K	Alcohol and soft cloth	2	☞ D-6
Paper Take-Up Roll	50K	200K		1	☞ D-6
Separator Roll	50K	200K		1	☞ D-7
Rollers and rolls	50K	—		—	☞ D-8,9
Scanning Guide	50K	—		1	☞ D-10
Reflective Sensor Section	200K	—	Blower Brush	1	☞ D-10
Replace Stamp 2	—	As appropriate	—	1	☞ D-11

NOTES

- *K = 1,000 copies*
- *Replace the Pickup Roller, Paper Take-Up Roller, and Separator Roller at the same time.*
- *The contents of this maintenance schedule are subject to change without notice.*
- *For part numbers, see Parts Manual and Parts Modification Notice.*

2. Disassembly and Cleaning

2-1. Removal of the Outer Cover



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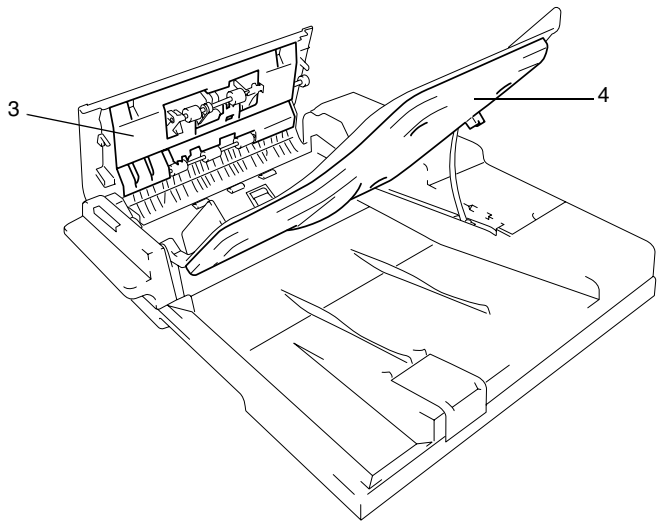

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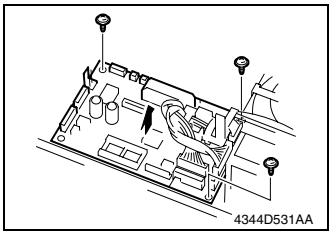
No.	Name	Removal Procedure
1	Rear Cover	Open the Upper Door. → Remove two screws. → Open ADF and unhook two tabs.
2	Front Cover	Open ADF. → Remove two screws.
3	Upper Door Rear Cover	Open the Upper Door. → Remove two screws.
4	Original Feed Tray Rear Cover	Lift up the Original Feed Tray. → Remove one screw and one washer and the stopper. → Remove four screws.

2-2. Removal of the Control Board

<Removal Procedure>

1. Turn OFF the power.
2. Remove the Rear Cover.



3. Unplug all the connectors on the board.
4. Remove three screws, and then remove the Control Board.

<Reinstallation Procedure>

1. Reversing the order of removal, reinstall all parts that have been removed.
2. Turn ON the power.

NOTE

- *Be sure to perform the following operation when the Control Board is replaced.*

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3. Initialize the backup data.

☞ See “Initialization of Backup Data” in Test Mode Operations (S-3).

4. Perform document width detection adjustment.

☞ See “Document Width Detection Adjustment” (D-19).

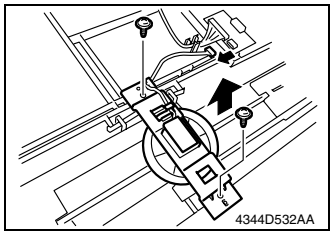
5. Power cycle and check whether size detection operates normally.
6. Upgrade the firmware.

☞ See “Firmware Upgrade” (D-21).

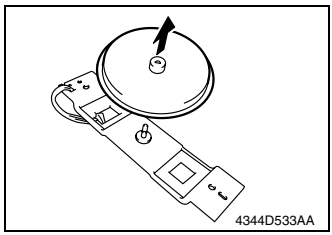
2-3. Removal of the Variable Resistor

<Removal Procedure>

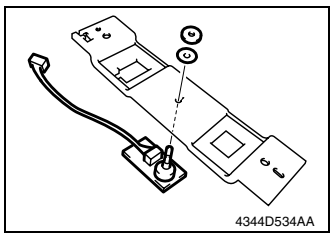
1. Turn OFF the power.
2. Remove the Original Feed Tray Rear Cover.



3. Unplug one connector.
4. Remove two screws and the mounting bracket.

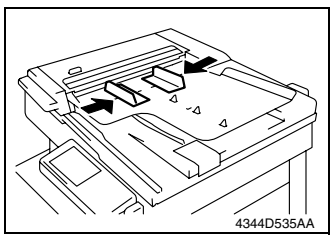


5. Remove the gear.



6. Remove one nut and one washer and the Variable Resistor.

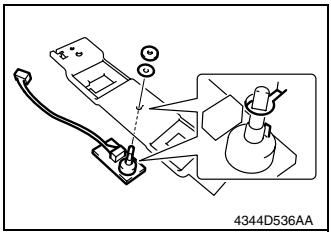
<Reinstallation Procedure>



1. Close the Side Edge Stop of the Original Feed Tray.

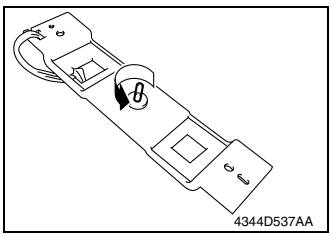
NOTE

- *Be sure to perform document width detection adjustment after replacing the Variable Resistor (PBA-VR).*

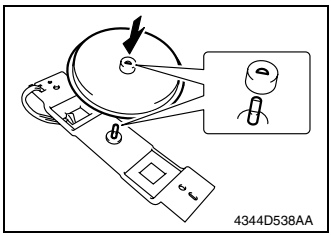


2. Use one nut to install the Variable Resistor.

NOTE
- *Align the protrusion of the Variable Resistor and the cutout of the mounting bracket.*

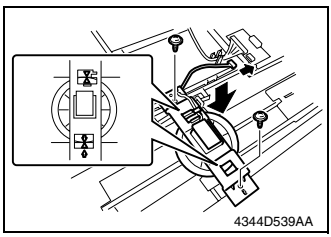


3. Turn the Variable Resistor counterclockwise until it stops.



4. Reinstall the gear that was removed at Removal Procedure 5.

NOTE
- *Note the mounting position of the gear and the Variable Resistor.*



5. Use two screws to install the Variable Resistor.

NOTE
- *Install the gear and rack gear by aligning the arrows.*

6. Install the Original Feed Tray Rear Cover and turn ON the power.

NOTE
- *Be sure to perform the following operation when the Variable Resistor is replaced.*

7. Initialize the backup data.

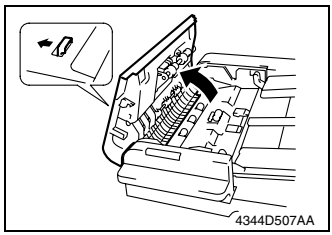
☞ See “Initialization of Backup Data” in Test Mode Operations (S-3).

8. Perform document width detection adjustment.

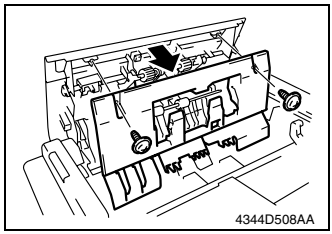
☞ See “Document Width Detection Adjustment” (D-19).

9. Power cycle and check whether size detection operates normally.

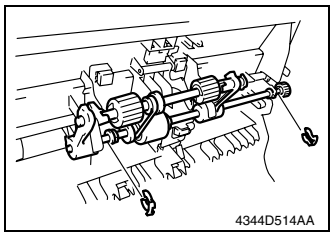
2-4. Removal of the Pickup Roller/Take-Up Roller



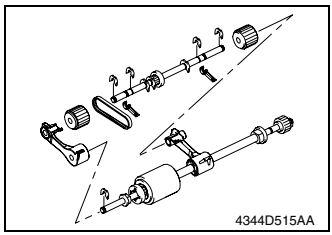
1. Open the Upper Door.



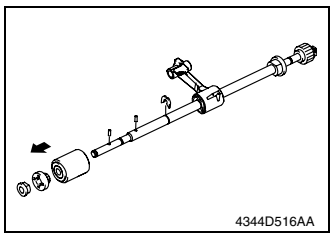
2. Remove two screws and the cover.



3. Remove two C-clips and remove the Pickup Roller Assy.



4. Remove two levers.
5. Remove five C rings.
6. Remove one arm.
7. Remove two Pickup Rollers.

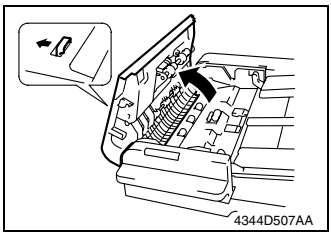


8. Remove one C-ring and remove the gear and bushing.
9. Remove two pins.
10. Remove the Paper Take-Up Roll.

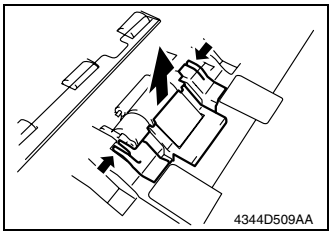
NOTE

- *Use care not to lose the pin.*

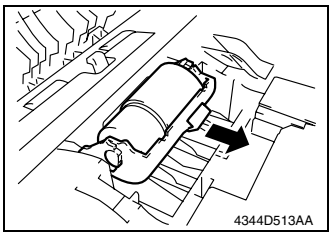
2-5. Removal of the Separator Roll



1. Open the Upper Door.



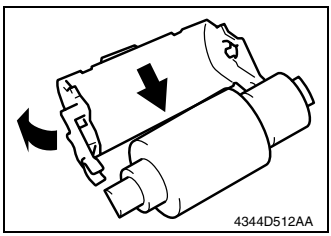
2. Hold the arrow sections in the figure and remove the cover.



3. Remove the Paper Separator Roll Assy.

NOTE

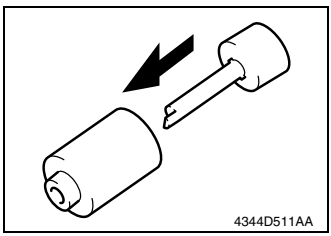
- *use care not to lose the spring at the bottom side of the Separator Assy.*



4. While opening up the holder, remove the shaft.

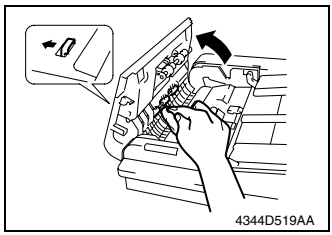
NOTE

- *Opening the holder too much can break the holder.*

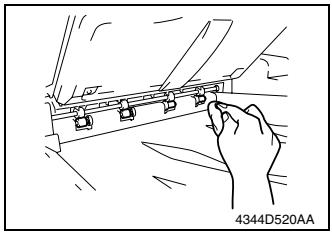


5. Remove the Separator Roller from the shaft.

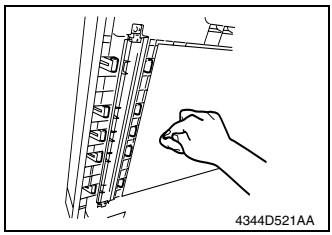
2-6. Cleaning of the Roll



1. Open the Upper Door.
2. Using a soft cloth dampened with alcohol, wipe the roll.

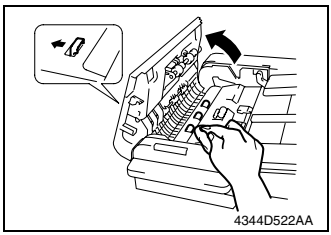


3. Lift up the Drawer.
4. Using a soft cloth dampened with alcohol, wipe the roll.

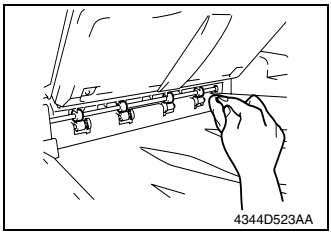


5. Open the Duplexing Document Feeder.
6. Using a soft cloth dampened with alcohol, wipe the roll.

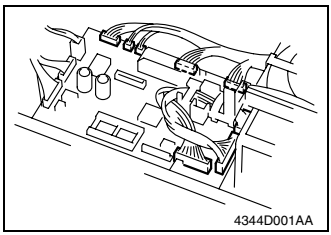
2-7. Cleaning of the Roller



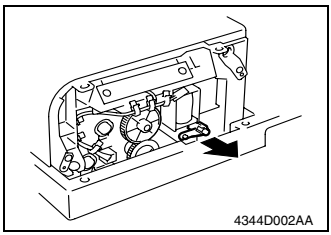
1. Open the Upper Door.
2. Using a soft cloth dampened with alcohol, wipe the roller.



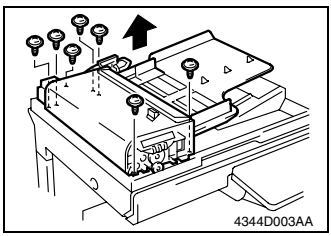
3. Lift up the Drawer.
4. Using a soft cloth dampened with alcohol, wipe the roller.



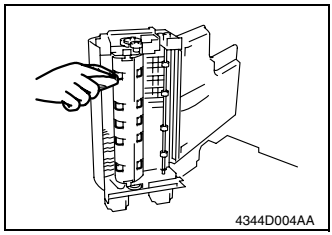
5. Remove the Front and Rear Cover.
6. Unplug eight connectors on the board.



7. Remove the lever.

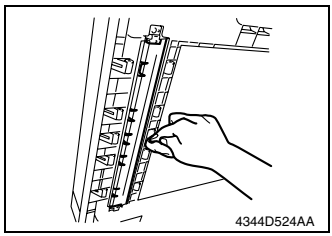


8. Remove seven screws and the Paper Take-Up Unit.



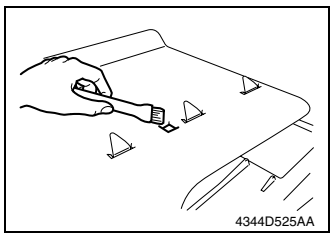
9. Using a soft cloth dampened with alcohol, wipe the roller.

2-8. Cleaning of the Scanning Guide



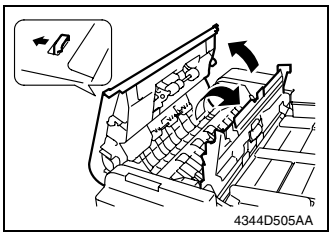
1. Open the Duplexing Document Feeder.
2. Using a soft cloth dampened with alcohol, wipe the Scanning Guide clean of dirt.

2-9. Cleaning of the Sensor Section

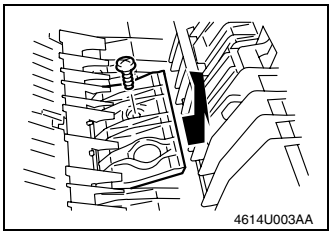


1. Clean the sensor using a brush or other similar tools.

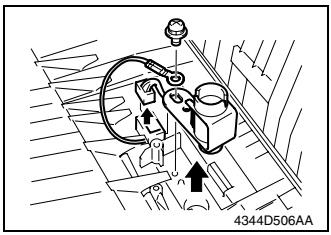
2-10. Removal of Complete Stamp Unit 2



1. Open the Upper Door.
2. Open the Processing Guide.

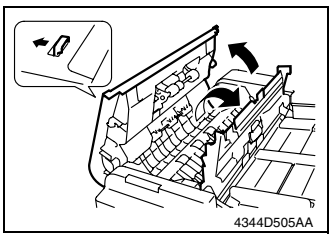


3. Remove one screw and the cover.

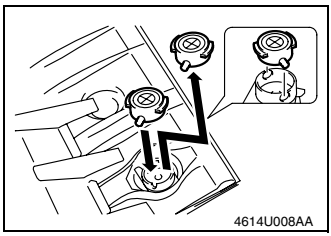


4. Remove one screw and unplug one connector.
5. Removal Complete Stamp Unit 2.

2-11. Replacement of Replace Stamp 2



1. Open the Upper Door.
2. Open the Processing Guide.



3. Remove the stamp.
4. Reinstall the new Replace Stamp 2.

NOTE

- *Align the protrusion of the stamp to the crevice of the holder.*

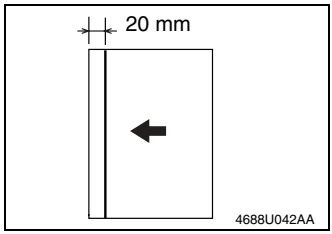
5. Close the Upper Door.

3. Adjustment

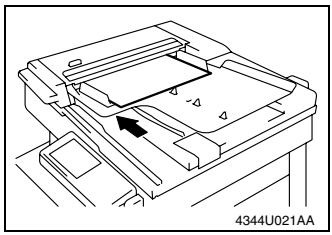
✻ Registration Loop adjustment in the Tech. Rep. Choice is only performed at the factory.

3-1. Leading Edge Skew Adjustment

(Requirement: The skew with respect to the original length is less than or equal to 0.35%---1.0 mm in the case of A4C / LetterC)

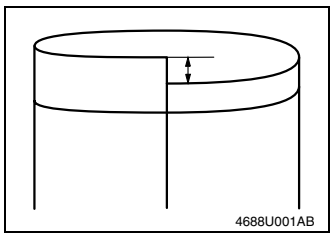


1. Prepare a test chart (A4) (Letter) as shown in the left figure.

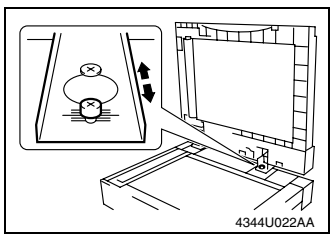


2. Set the test chart in the Duplexing Document Feeder, and make five 1-sided copies.

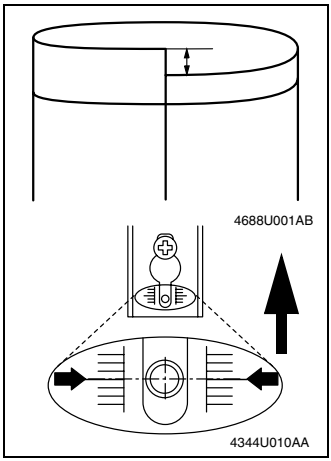
NOTE
- *Set the test chart sideways.*



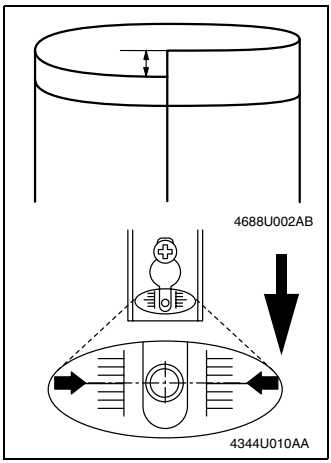
3. Align each copy sample as shown and check the deviation.
4. If the deviation is outside the specified range, perform the adjustment below.
   Specification: 0 ± 3.0 mm



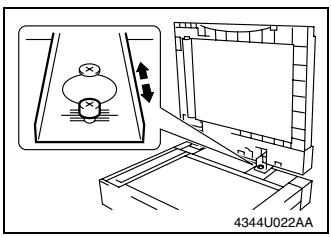
5. Loosen the one screw in the back to the right.



6. If the deviation is as shown to the left
   Move the graduations of the Duplexing Document Feeder to the front.



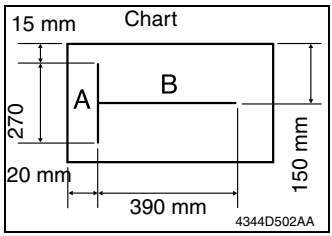
7. If the deviation is as shown to the left
   Move the graduations of the Duplexing Document Feeder to the back.



8. After making the adjustment, tighten one screw that was loosened at step 5.

3-2. Adjustment of the Scanning Zoom Ratio in the Main and Sub-Scanning Directions

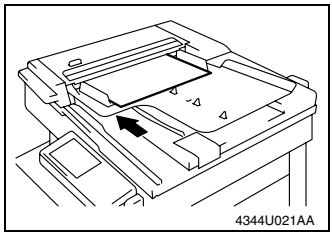
(Requirement: The error with respect to the reference line is ±1.0 % in the main scanning direction and ±1.5 % in the sub-scanning direction.)



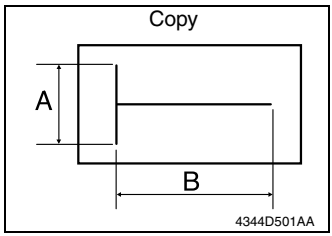
1. Prepare a test chart (A3) (11" X 17") as shown in the left figure.

✻ CD: Draw a 270-mm line (A) 20 mm from the left edge and 15 mm from the top edge.

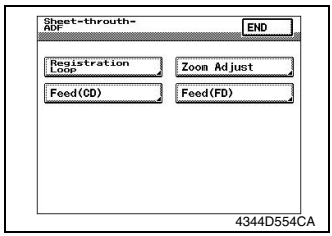
✻ FD: Draw a 390-mm line (B) 20 mm from the left edge and 150 mm from the top edge.



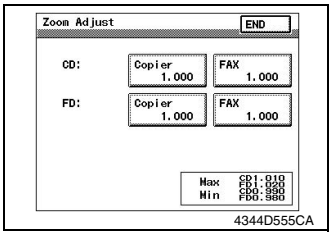
2. Copy the test chart at full size.



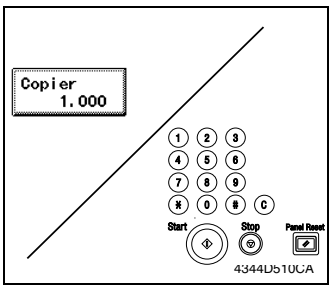
3. Measure the length of reference line A (CD) and B (FD) that have been copied and check against the specified range.
   Specification: A (CD) 270 mm ± 1.2 mm
   B (FD) 390 mm ± 2.0 mm



4. If the reference line is outside the specified range, select Tech. Rep. Mode → Tech. Rep. Choice → Sheet-through-ADF → Zoom Adjust.



5. Select CD or FD and touch the Copy key.
6. Press the Clear key.



7. Enter the value from the 10-Key Pad.

✻ If longer than the specified range, adjust toward reduction zoom ratio.

✻ If shorter than the specified range, adjust toward enlargement zoom ratio.

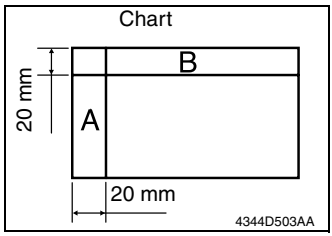
Adjustment range: CD x1.010 to x 0.990
FD x1.020 to x 0.980

8. Touch the END key.

9. Make another copy and check the error.

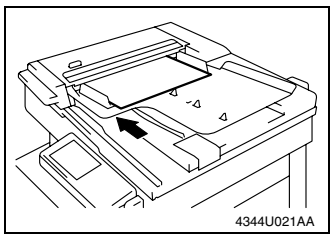
3-3. Adjustment of the Scanning Start Position in the Main and Sub-Scanning Directions

✻ Make this adjustment after adjusting the scanning zoom ratio.
(Requirement: The error with respect to the reference line is ± 10 % in the main scanning direction and ± 15 % in the sub-scanning direction.)

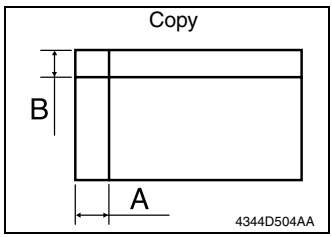


1. Prepare a test chart (A3) as shown in the left figure.

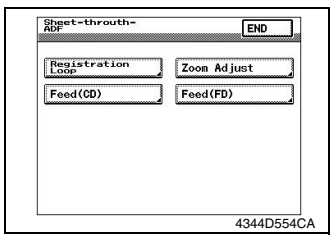
✻ A (CD): Draw a line 20 mm from the left edge.
✻ B (FD): Draw a line 20 mm from the top edge.



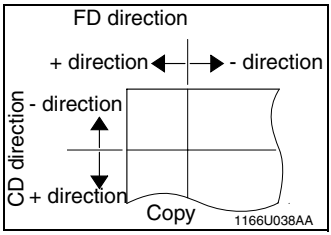
2. Copy the test chart at full size.



3. Measure the length of reference line A (CD) and B (FD) that have been copied and check against the specified range.
   Specification: A (CD) 20 mm ± 3.0 mm
   B (FD) 20 mm ± 4.0 mm



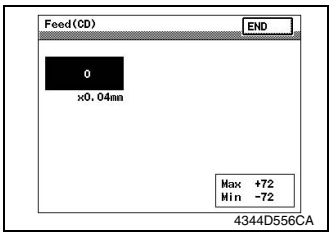
4. If the reference line is outside the specified range, select Tech. Rep. Mode → Tech. Rep. Choice → Sheet-through-ADF → Feed (CD) or Feed (FD).



5. By referring to the left figure, select Feed (CD) or Feed (FD) to adjust the deviation.

✻ If the deviation is in the - direction with respect to the reference line:
Adjust in the + direction.

✻ If the deviation is in the + direction with respect to the reference line:
Adjust in the - direction.

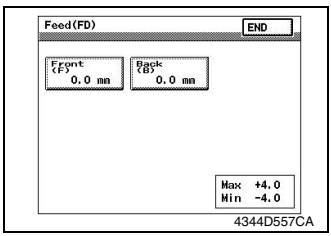


In the case of Feed (CD)

6. Press the Clear key.
7. Enter the value from the 10-Key Pad.
(1 mm = 24 dots)

Adjustment range: Max +72
Min -72

Use the ✻ key to switch between + and -.



In the case of Feed (FD)

8. Select Front (F) or Back (B).
9. Press the Clear key.
10. Enter the value from the 10-Key Pad.(0.1 mm increments)

Adjustment range: Max +4.0 mm (F), +5.0 mm (B)
Min -4.0 mm (F), -5.0 mm (B)

11. Touch the END key.
12. Make another copy and check the error.

3-4. Sensor Auto Adjust

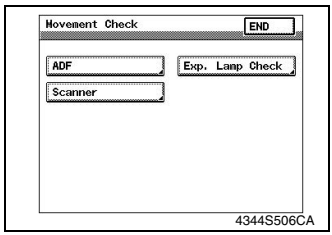
- Adjust the detection level of the Paper Passage Path Sensor automatically.

NOTE

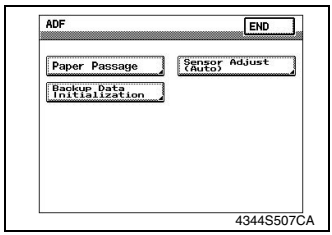
Make this adjustment after any of the following procedures has been performed.

- *When any sensor has been replaced.*
- *When an Original Size Detection Failure occurs.*

1. Display Tech. Rep. Mode.



2. Touch the Movement Check key.
3. Touch the ADF key.



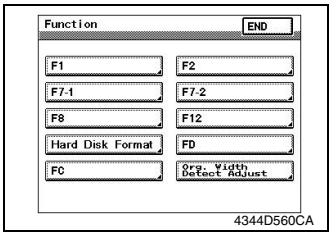
4. Select the Sensor Adjust (Auto) key.
5. Touch the END key.

3-5. Document Size Detection Adjustment

NOTE

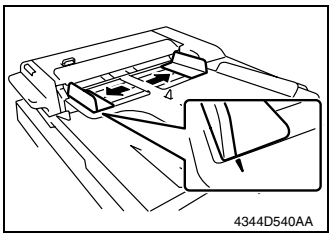
Make this adjustment after any of the following procedures has been performed.

- *When the PBA-VR Board has been replaced.*
- *When the backup data has been initialized.*

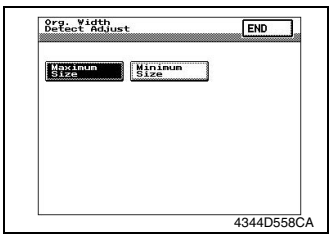


4344D560CA

1. Display Tech. Rep. Mode.
2. Touch the Function key.
3. Touch the Org. Width Detect Adjust key.

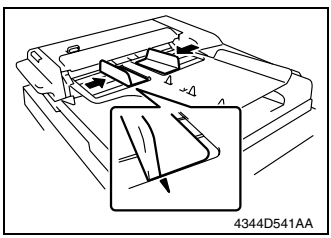

4344D540AA

4. Align the original edge plane of the Side Edge Stop of the Original Feed Tray to the outside !!! mark.

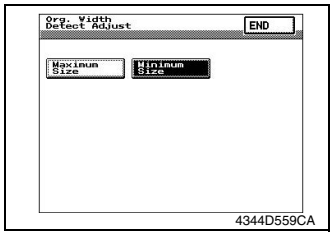


4344D558CA

5. Touch the Maximum Size key.
6. Press the Start key.


4344D541AA

7. Align the original edge plane of the Side Edge Stop of the Original Feed Tray to the inside ▼ mark.

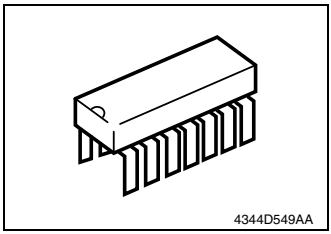


8. Touch the Minimum Size key.
9. Press the Start key.

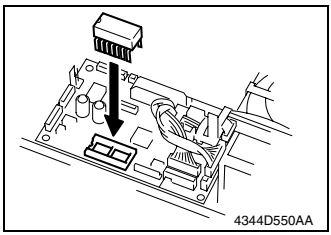
10. Power cycle and check whether size detection operates normally.

4. Miscellaneous

4-1. Firmware Upgrade



1. Prepare the firmware upgrade EEPROM.
2. Turn OFF the power and remove the Rear Cover.

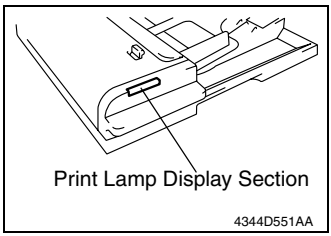


3. Insert the EEPROM you prepared at step 1 to the IC socket section of the Control Board.

NOTE

- *Ensure that the EEPROM is installed in the correct direction.*

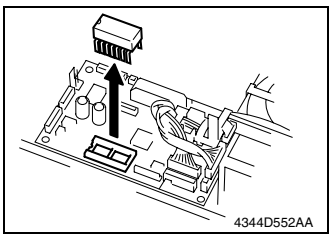
4. Turn ON the power.



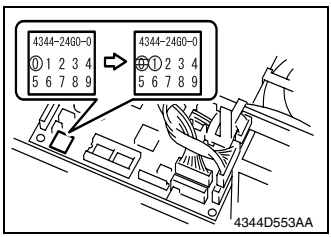
5. Check the firmware update status at the Print Lamp Display Section of the Duplexing Document Feeder.

Updating : Green and red light up alternately.
Successful completion: Blinks in green.
Failure : Blinks in red.

✻ If failure occurs, redo the procedure from step 3.



6. After the firmware has been upgraded successfully, turn OFF the power and remove the EEPROM that was attached at step 3.



7. Turn ON the power.
8. Display Tech. Rep. Mode.
9. Touch the ROM Version key and check the ADFR ROM version.
10. Correct the version indication on the ROM label on the Control Board using a pen or other similar means.
11. Reinstall the Rear Cover.

TROUBLESHOOTING

1. Introduction

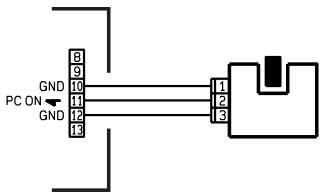
- Information required for troubleshooting and steps that must be performed are described in this chapter.

1-1. Electrical Components Check Procedure

- If a paper misfeed or malfunction occurs, perform the following operation to check the condition of the electrical components.

(1) Sensor

Step	Check	Result	Action
1	Does the input signal of the control board change when the sensor light is interrupted? (H → L, L → H)	NO	Replace the sensor.
		YES	Replace the control board.



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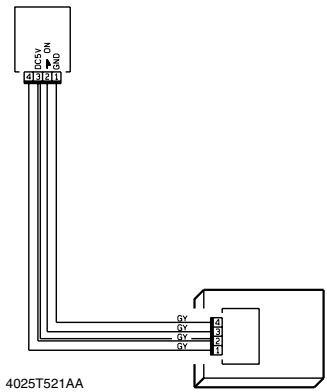
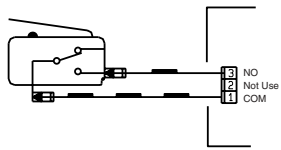


4025T521AA

(2) Switch

Step	Check	Result	Action
1	Does the input signal (NO) of the control board change from L to H when the switch is turned on?	NO	Replace the switch.
		YES	Replace the control board.



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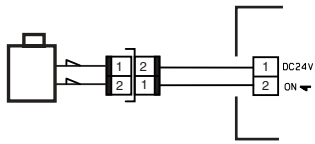
(3) Solenoid

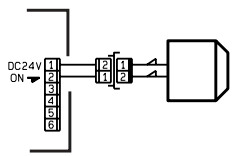
Step	Check	Result	Action
1	Does the output signal of the control board change from H to L when the solenoid is activated?	NO	Replace the control board.
		YES	Replace the solenoid.



4025T522AA

(4) Clutch

Step	Check	Result	Action
1	Does the output signal of the control board change from H to L when the clutch is activated?	NO	Replace the control board.
		YES	Replace the clutch.



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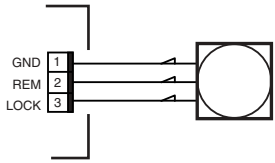
(5) Motor

Step	Check	Result	Action
1	Does the LOCK signal of the control board switch to H when the machine goes into standby?	NO	Replace the control board. Replace the motor.
2	Does the REM signal of the control board change from H to L when the motor is turned on?	YES	Replace the motor.
		NO	Replace the control board.



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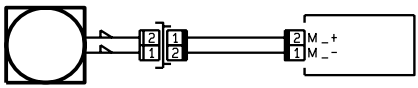
Step	Check	Result	Action
1	Does the input signal of the control board change from H to L when the motor is turned on? (Input signals differ according to the direction of rotation)	YES	Replace the motor.
		NO	Replace the control board.



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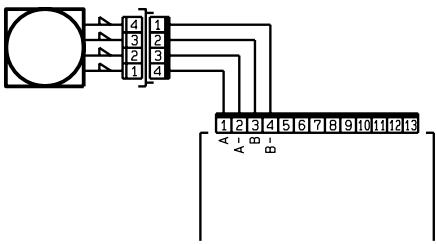
Step	Check	Result	Action
1	Are the relay connector of the motor and the print jack of the control board correctly connected?	YES	Replace the motor or the control board.
		NO	Connect the connector or the print jack.



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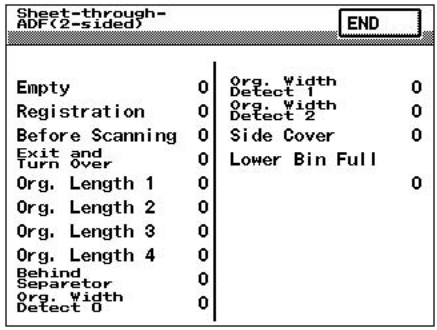
2. I/O CHECK

- For an easy and safe operation check of the sensors, the sensor input data is checked when the copier is in standby (including when a misfeed or a malfunction occurs or when a part is not correctly closed) to determine if signals are properly input.

1. Display the Tech. Rep. Mode screen.
2. Touch [I/O CHECK].
3. Touch [Duplex Unit].
4. Using a sheet of paper, activate the sensor and check the display in the Touch Panel. (Paper present: 1; Paper not present: 0)



4344T510CA

2-1. I/O Check List

Symbol	Panel Display	Parts/Signal Name	Operation Characteristics/ Panel Display		Input Board	CN/PJ No.
			1	0		
PC5-ADF	Paper Empty	Empty Sensor	Paper present	Paper not present	Control Board (PBA-CONT)	CN5 CONT-8
PC9-ADF	Registration	Registration Sensor	Paper present	Paper not present		CN6 CONT-3
PC8-ADF	Orig. Detect	Original Detection Sensor	Paper present	Paper not present		CN6 CONT-6
PC10-ADF	Exit/Turnover	Exit/Turnover Sensor	Paper present	Paper not present		CN6 CONT-9
PC1-ADF	FD Paper Size Detect1	FD Paper Size Detection Sensor 1	Paper present	Paper not present		CN4 CONT-1
PC2-ADF	FD Paper Size Detect2	FD Paper Size Detection Sensor 2	Blocked	Unblocked		CN4 CONT-4
PC3-ADF	FD Paper Size Detect3	FD Paper Size Detection Sensor 3	Paper present	Paper not present		CN4 CONT-2
PC4-ADF	FD Paper Size Detect4	FD Paper Size Detection Sensor 4	Paper present	Paper not present		CN4 CONT-3
PC6-ADF	Separator	Separator Sensor	Blocked	Unblocked		CN5 CONT-11
PBA-SIZE	Org. Width Detect0	Mix Document Size Detection Board	Paper present	Paper not present	Mix Document Size Detection Board (PBA-SIZE)	CN5 CONT-5
	Org. Width Detect1		Paper present	Paper not present		CN5 CONT-4
	Org. Width Detect2		Paper present	Paper not present		CN5 CONT-3
PC7-ADF	Side Cover	Upper Door Open/Close Sensor	Open	Closed	Control Board (PBA-CONT)	CN6 CONT-12
PBA-VR	Lower Bin Full	Variable Resistor	Analog value		Variable Resistor (PBA-VR)	CN4 CONT-6

✻ Control Panel Display for the Org. Size Volume

The operation of the sensors is checked by linking with the Original Feed Tray guide and varying the output value.

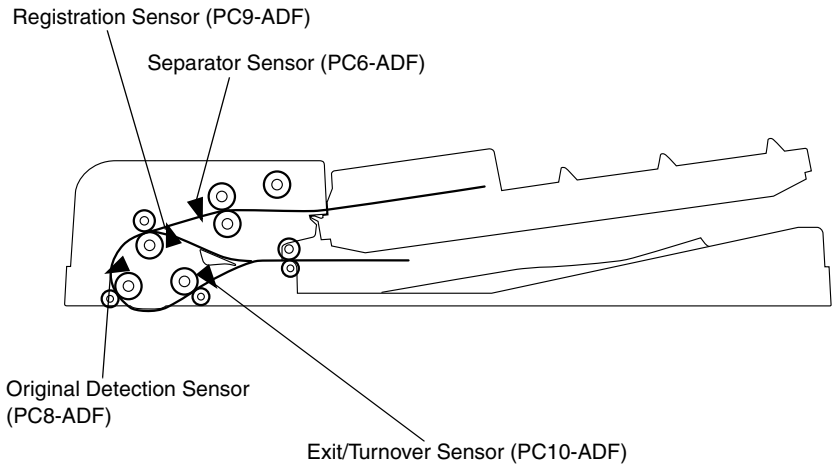
3. Misfeed Detection/Troubleshooting Procedures

3-1. Initial Checks

- When a paper misfeed occurs, first perform the following initial checks.

Check Item	Action
Does paper meet product specifications?	Replace paper.
Is the paper curled, wavy, or damp?	Replace paper. Instruct the user on the correct paper storage procedures.
Is a foreign object present along the paper path, or is the paper path deformed or worn?	Remove object or replace the damaged paper path.
Are the Paper Separator Fingers dirty, deformed, or worn?	Clean or replace the defective Paper Separator Finger.
Are rolls/rollers dirty, deformed, or worn?	Clean or replace the defective roll/roller.
Are the Edge Guide and Trailing Edge Stop at the correct position to accommodate the paper?	Set as necessary.
Are the actuators operating correctly?	Correct or replace the defective actuator.

3-2. Misfeed-Detecting Sensor Layout



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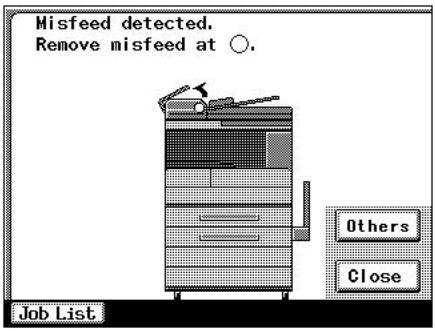
3-3. Misfeed Detected

When a paper misfeed occurs, the misfeed message, misfeed location (⊗), and paper location (❍) are displayed on the Touch Panel of the copier.



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3-4. Misfeed Detection Timing/Troubleshooting Procedures

(1) Paper Take-Up Misfeed

<Detection Timing>;

Type	Description
Paper Take-Up Section misfeed detection	The Separator Sensor (PC6-ADF) is not blocked even after the set period of time has elapsed after the Paper Take-Up Motor (M1-ADF) is energized.
	The Registration Sensor (PC9-ADF) is not blocked even after the set period of time has elapsed after the Paper Take-Up Motor (M1-ADF) is energized.
Detection of paper remaining in the Paper Take-Up section	The Separator Sensor (PC6-ADF) is not blocked even after the set period of time has elapsed after the Original Detection Sensor (PC8-ADF) is blocked by the paper.
	The Registration Sensor (PC9-ADF) is not blocked even after the set period of time has elapsed after the Original Detection Sensor (PC8-ADF) is blocked by the paper.

<Action>

Relevant Electrical Components	
Paper Take-Up Motor (M1-ADF) Separator Sensor (PC6-ADF) Registration Sensor (PC9-ADF) Original Detection Sensor (PC8-ADF)	Control Board (PBA-CONT)

Step	Operations	Ref. Page	WIRING DIAGRAM	
			Control signal	Location (Electrical Components)
1	Initial checks	☞ T-6	—	—
2	PC6-ADF sensor check	☞ T-1	PBA-CONT CN5CONT-11	G-2
3	PC9-ADF sensor check	☞ T-1	PBA-CONT CN6CONT-3	G-2
4	PC8-ADF sensor check	☞ T-1	PBA-CONT CN6CONT-6	G-2
5	M1-ADF operation check	☞ T-3	—	F-7
6	PBA-CONT replacement	—	—	E-5

(2) Transport Section Misfeed

<Detection Timing>;

Type	Description
Transport Section misfeed detection	The Original Detection Sensor (PC8-ADF) is not blocked even after the set period of time has elapsed after the Registration Sensor (PC9-ADF) is blocked by the paper.
Detection of paper remaining in the Transport Section	The Original Detection Sensor (PC8-ADF) is not unblocked even after the set period of time has elapsed after the Registration Sensor (PC9-ADF) is unblocked by the paper.

<Action>

Relevant Electrical Components	
Paper Take-Up Motor (M1-ADF) Transport Motor (M2-ADF) Registration Sensor (PC9-ADF) Original Detection Sensor (PC8-ADF)	Control Board (PBA-CONT)

Step	Operations	Ref. Page	WIRING DIAGRAM	
			Control signal	Location (Electrical Components)
1	Initial checks	☞ T-6	—	—
2	PC9-ADF sensor check	☞ T-1	PBA-CONT CN6CONT-3	G-2
3	PC8-ADF sensor check	☞ T-1	PBA-CONT CN6CONT-6	G-2
4	M1-ADF operation check	☞ T-3	—	F-7
5	M2-ADF operation check	☞ T-3	—	E-7
6	PBA-CONT replacement	—	—	E-5

(3) Turnover Unit Misfeed

<Detection Timing>;

Type	Description
Turnover Unit misfeed detection	The Registration Sensor (PC9-ADF) is not blocked even after the set period of time has elapsed after the Transport Motor (M2-ADF) is energized.

<Action>

Relevant Electrical Components	
Transport Motor (M2-ADF) Registration Sensor (PC9-ADF)	Control Board (PBA-CONT)

Step	Operations	Ref. Page	WIRING DIAGRAM	
			Control signal	Location (Electrical Components)
1	Initial checks	☞ T-3	—	—
2	PC9-ADF sensor check	☞ T-1	PBA-CONT CN6CONT-3	G-2
3	M2-ADF operation check	☞ T-3	—	E-7
4	PBA-CONT replacement	—	—	E-5

(4) Paper Exit Section Misfeed

<Detection Timing>;

Type	Description
Paper Exit Section misfeed detection	The Exit/Turnover Sensor (PC10-ADF) is not blocked even after the set period of time has elapsed after the Original Detection Sensor (PC8-ADF) is blocked by the paper.
Detection of paper remaining in the Transport Section	The Exit/Turnover Sensor (PC10-ADF) is not unblocked even after the set period of time has elapsed after the Original Detection Sensor (PC8-ADF) is unblocked by the paper.

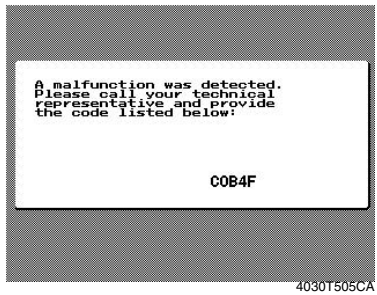
<Action>

Relevant Electrical Components	
Transport Motor (M2-ADF) Original Detection Sensor (PC8-ADF) Exit/Turnover Sensor (PC10-ADF)	Control Board (PBA-CONT)

Step	Operations	Ref. Page	WIRING DIAGRAM	
			Control signal	Location (Electrical Components)
1	Initial checks	☞ T-6	—	—
2	PC8-ADF sensor check	☞ T-1	PBA-CONT CN6CONT-6	G-2
3	PC10-ADF sensor check	☞ T-1	PBA-CONT CN6CONT-9	H-2
4	M2-ADF operation check	☞ T-3	—	E-7
5	PBA-CONT replacement	—	—	E-5

4. MALFUNCTIONS

- The copier's CPU performs a self-diagnostics function that, on detecting a malfunction, gives the corresponding mulfunction code and maintenance call mark on the Touch Panel.



4-1. Warning Detection Timing and Troubleshooting Procedure

(1) C0044: EDH Cooling Fan Failure

<Detection Timing>

Trouble Code	Description
C0044	• The EDH Fan Motor Lock signal remains set to H for a set period of time while the EDH Fan Motor is running.

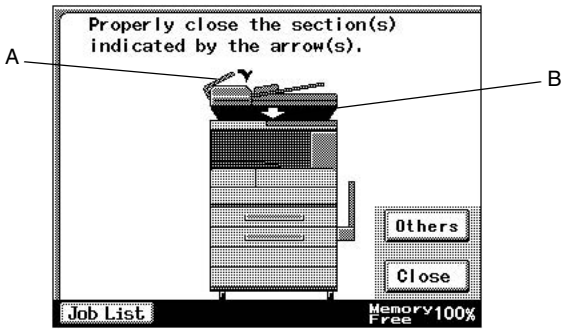
Action

Relevant Electrical Components	
Cooling Fan Motor (M3-ADF)	Main Control Board (PBA-CONT)

Step	Operations	Ref. Page	WIRING DIAGRAM	
			Control signal	Location (Electrical Components)
1	Check the motor connectors for paper connection, and correct as necessary.	—	—	—
2	Check the fan for possible overload, and correct as necessary.	—	—	—
3	M3-ADF operation check.	☞ T-3	PBA-CONT CN9 CONT-2 (REM)	E-5
4	Replace PBA-CONT.	—	—	—

5. Incorrect Closure Detection

- If an incorrectly closed ADF or cover is detected, the following appears on the copier's Touch Panel.



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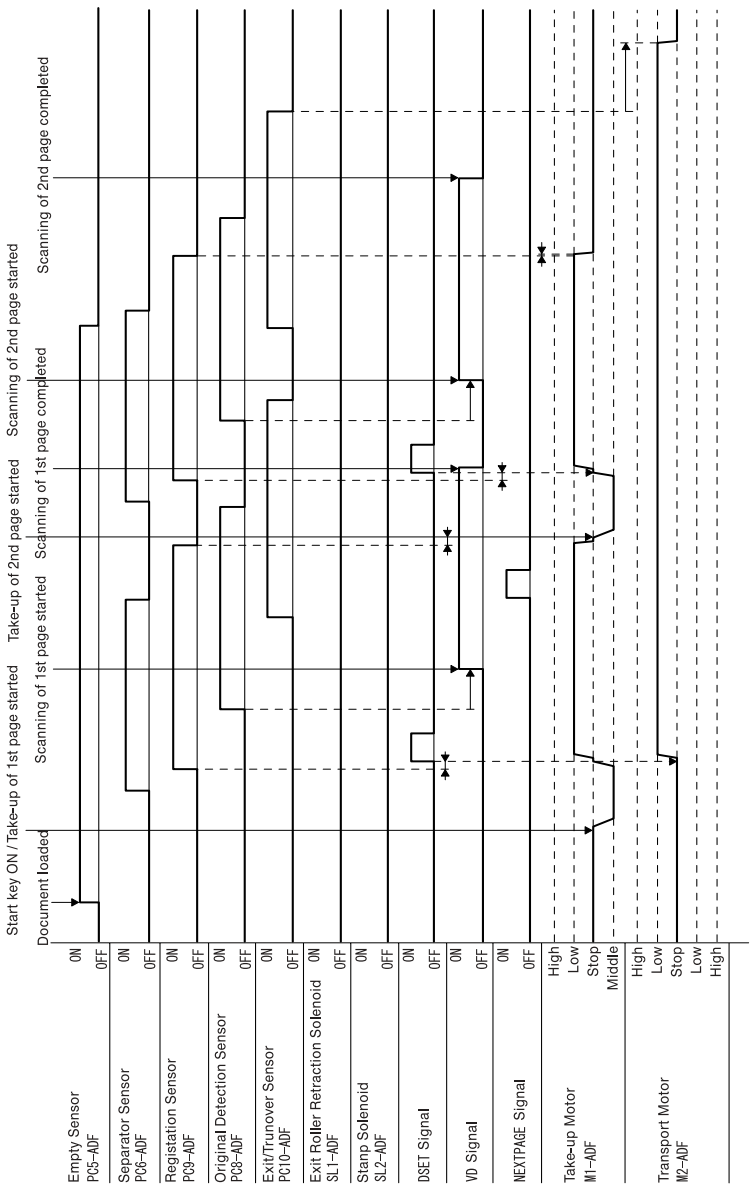
✻ Panel display and detection timing for each incorrect closure

Panel Display	Malfunction	Detection Start	Detection Timing
A	Upper Door closure	When the document is loaded into the ADF	Upper Door Open/Close Sensor (unblocked)
B	ADF closure	When the document is loaded into the ADF	Copier Size Reset Switch (ON)

6. Timing Chart

6-1. Single-sided document mode (A4C; 2-sheet feeding)



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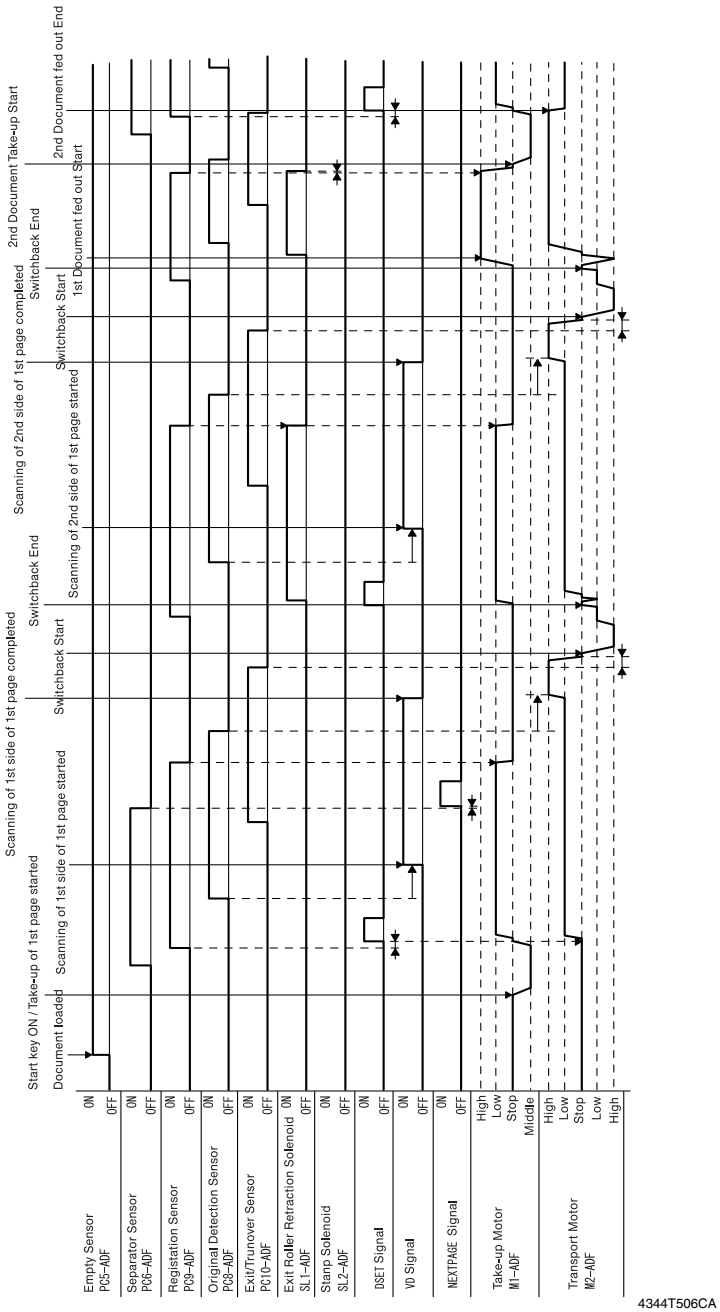
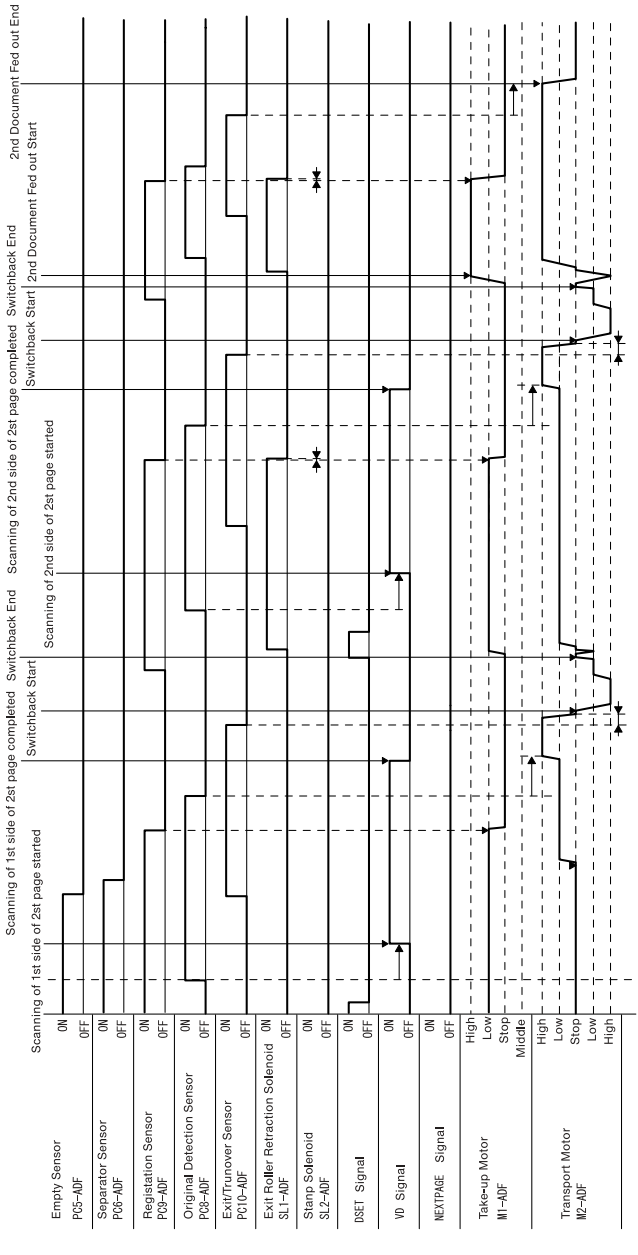
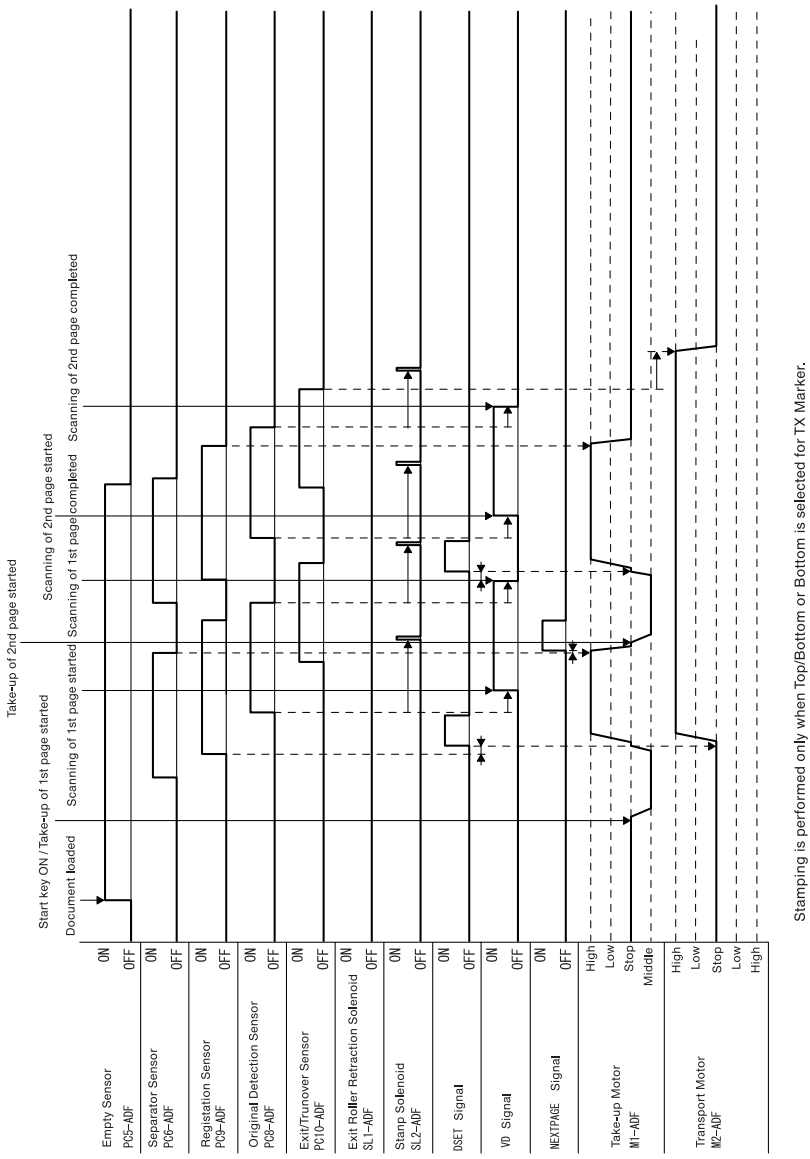
6-2. Double-sided document mode (A4C; 2-sheet feeding)




Scanning of 1st side of 2st page completed
Switchback End
Scanning of 2nd side of 2st page completed
Switchback End
2nd Document Fed out End
Scanning of 1st side of 2st page started
Switchback Start
Scanning of 2nd side of 2st page started
Switchback Start
2nd Document Fed out Start
Empty Sensor
PC5-ADF
ON
OFF
Separator Sensor
PC6-ADF
ON
OFF
Registation Sensor
PC9-ADF
ON
OFF
Original Detection Sensor
PC8-ADF
ON
OFF
Exit/Trunover Sensor
PC10-ADF
ON
OFF
Exit Roller Retraction Solenoid
SL1-ADF
ON
OFF
Stanp Solenoid
SL2-ADF
ON
OFF
DSET Signal
ON
OFF
VD Signal
ON
OFF
NEXTPAGE Signal
ON
OFF
Take-up Motor
M1-ADF
High
Low
Stop
Middle
Transport Motor
M2-ADF
High
Low
Stop
Low
High
Continuity from last page

4344T507CA

6-3. Fax (Fine) mode (A4C; 2-sheet feeding)



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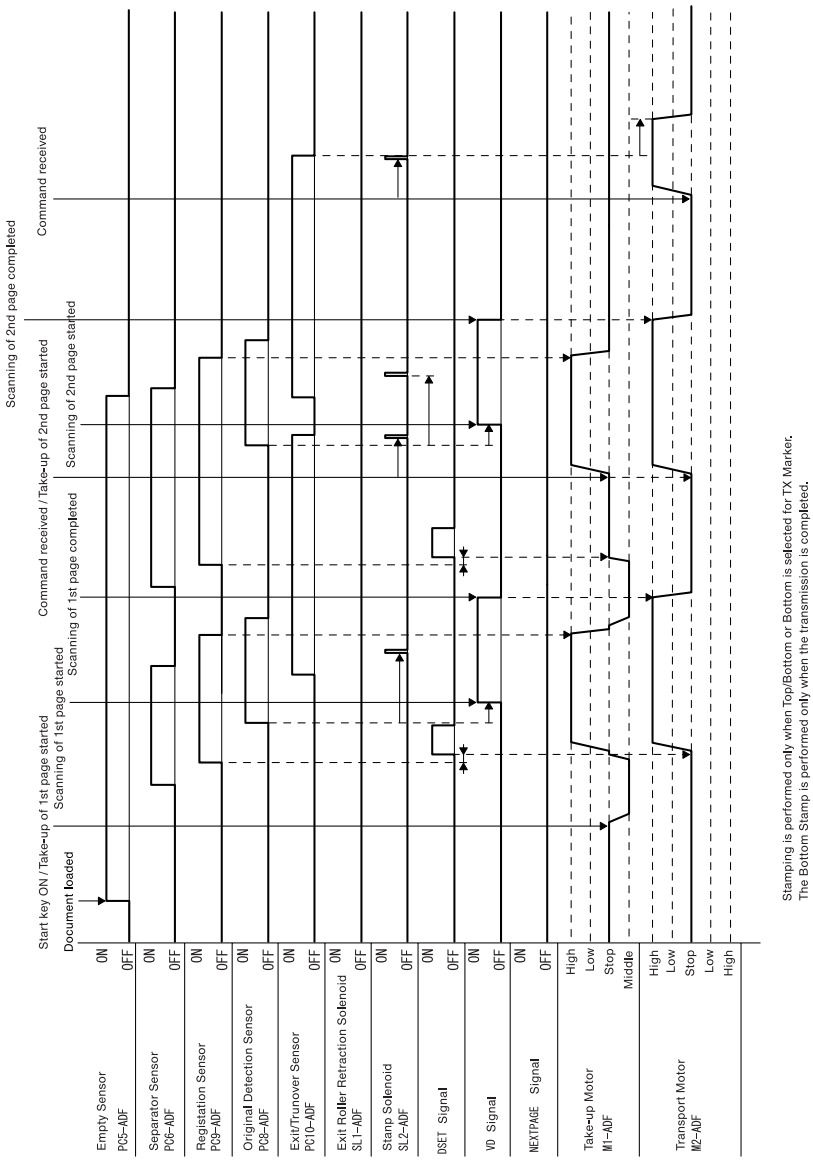
6-4. Immediate fax transmission mode (A4C; 2-sheet feeding)



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