FN-117/AK-1/ PK-6

Service Manual

CONTENTS

TROUBLESHOOTING

GENERAL

1. Specifications

<FN-117>

Name	:	Finisher FN-117
Type	:	Multi staple finisher built into the copier
Installation	:	Installed in the copier
Modes	:	Non sort, sort, group, sort stable, and punch (when PK-6 is installed)
Number of Bins	:	2 bins
Paper		See the table below.

<table>
<tr><th rowspan="2">Mode</th><th rowspan="2">Paper Size</th><th colspan="2" rowspan="2">Paper Type</th><th colspan="2">Capacity</th></tr>
<tr><th>1st Tray</th><th>2nd Tray</th></tr>
<tr><td rowspan="9">Non sort</td><td rowspan="9">A6L to A3L
5-1/2 to 11 x 17L
Maximum:
297 mm x 431.8 mm
11-3/4 x 17
Minimum:
100 mm x 139.7 mm
4 x 5-1/2</td><td colspan="2">Plain paper
15lb. to 24lb. (56 to 90 g/m^2)
Recycled paper
(60 to 90 g/m^2)</td><td>200 sheets (up to a height of 32 mm (1-1/4))</td><td>A4L (8-1/2 x 11L) or less 1000 sheets (up to a height of 132 mm (5-1/4))
B4L (8-1/2 x 14L) or greater 500 sheets (up to a height of 64.5 mm (2-1/4))</td></tr>
<tr><td rowspan="8">Special</td><td>OHP transparencies</td><td rowspan="8">20 sheets (up to a height of 32 mm (1-1/4))</td><td rowspan="8">A4L (8-1/2 x 11L) or less 20 sheets (up to a height of 132 mm (5-1/4))
B4L (8-1/2 x 14L) or greater 20 sheets (up to a height of 64.5 mm (2-1/4))</td></tr>
<tr><td>Thin Paper
13.3lb. to 15.7lb. (50 to 59 g/m^2)</td></tr>
<tr><td>Thick paper
24.3lb. to 56lb. (91 to 210 g/m^2)</td></tr>
<tr><td>Envelope</td></tr>
<tr><td>Label</td></tr>
<tr><td>Letterhead</td></tr>
<tr><td>Translucent paper</td></tr>
<tr><td>Government-standard post-cards</td></tr>
</table>

Mode	Paper Size	Paper Type	Capacity	
			1st Tray	2nd Tray
Sort/ Group	A5C to A3L 5-1/2 x 8-1/2L Maximum: 297 mm x 431.8 mm 11-3/4 x 17 Minimum: 182 mm x 139.7 mm 7-1/4 x 5-1/2	Plain paper 15lb. to 24lb. (56 to 90 g/m^2) Recycled paper 16lb. to 24lb. (60 to 90 g/m^2)	200 sheets (up to a height of 32 mm (1-1/4))	A4L (8-1/2 x 11L) or less 1000 sheets (up to a height of 132 mm (5-1/4)) B4L (8-1/2 x 14L) or greater 500 sheets (up to a height of 64.5 mm (2-1/4))
Sort Staple			200 sheets or 20 copies (up to a height of 32 mm (1-1/4))	A4L (8-1/2 x 11L) or less 1000 sheets or 10 copies (up to a height of 132 mm (5-1/4)) B4L (8-1/2 x 14L) or greater 500 sheets or 50 copies (up to a height of 64.5 mm (2-1/4))

Document Alignment	:	Center baseline
Staple Function	:	Number of Bound Sheets: 2 to 50 sheets
Shift Length	:	30 mm (1-1/4)
Power Requirements	:	DC 24 V ± 10 %, DC 5 V ± 5 % (supplied from the copier)
Max. Power Consumption	:	66 W or less
Dimensions	:	435 (W) x 573 (H) x 558 (D) mm 17-1/4 x 22-1/2 x 22
Weight	:	21.4 kg (including the Horizontal Transport Section) 47-1/2 lbs
Operating Environment	:	Conforms to the operating environment of the copier.
Consumables	:	Staples 5000 (MS-5D)

<AK-1>

Name : Additional Bin Kit AK-1

Installation : Fixed to the Finisher

Modes : Non sort, sort, group, and sort stable

Number of Bins : 1 bin

Paper See the table below.

Mode	Paper size	Paper Type		Capacity
Non sort	A6L to A3L 5-1/2 to 11 x 17L Maximum: 297 mm x 431.8 mm 11-3/4 x 17 Minimum: 100 mm x 139.7 mm 4 x 5-1/2	Plain paper 15lb. to 24lb. (56-90 g/m^2) Recycled paper 16lb. to 24lb. (60-90 g/m^2)		200 sheets (up to a height of 24 mm (1))
		Special	OHP transparencies	20 sheets (up to a height of 24 mm (1))
			Thin Paper 13.3lb. to15.7lb. (50 to 59 g/m^2)	
			Thick paper 24.3lb. to 56lb. (91 to 210 g/m^2)	
			Envelope	
			Label	
			Letterhead	
			Translucent paper	
			Government-standard postcards	
Sort/ Group	A5C to A3L 5-1/2 x 8-1/2L Maximum: 297 mm x 431.8 mm 11-3/4 x 17 Minimum: 182 mm x 139.7 mm 7-1/4 x 5-1/2	Plain paper 15lb. to 24lb. (56 to 90 g/m^2) Recycled paper 16lb. to 24lb. (60 to 90 g/m^2)		200 sheets (up to a height of 24 mm (1))
Sort Staple				200 sheets or 20 copies (up to a height of 24 mm (1))

Document Alignment : Center baseline

Dimensions : 282(W) x 57(H) x 368(D) mm
11 x 2-1/4 x 14-1/2

Weight : 0.7 kg (1-1/2 lbs)

Operating Environment : Conforms to the operating environment of the copier.

<PK-6>

Name	:	Punch Kit PK-6
Installation	:	Built into the Finisher
Paper size	:	B5L to A3L (8-1/2 to 11 x 17L)
Paper Type	:	Plain paper 15lb. to 43.5lb. (56 to 163 g/m^2), recycled paper 16lb. to 43.5lb. (60 to 163 g/m^2)
Punch Hole	:	4 holes (for Europe and 3rd Area) 2, 3 holes (for USA and CANADA)
Number of Stored Punch Wastes	:	2 holes For 2,500 sheets of paper 17lb. (64 g/m^2) 2,3 holes For 1,000 sheets of paper 17 lb. (64 g/m^2)
Document Alignment	:	Center baseline
Power Requirements	:	Supplied by the Finisher
Dimensions	:	114(W) x 136(H) x 461(D) mm 4-1/2 x 5-1/4 x 18-1/4
Weight	:	Approx. 1.9 kg (4-1/4 lbs) or less
Operating Environment	:	Conforms to the operating environment of the copier.

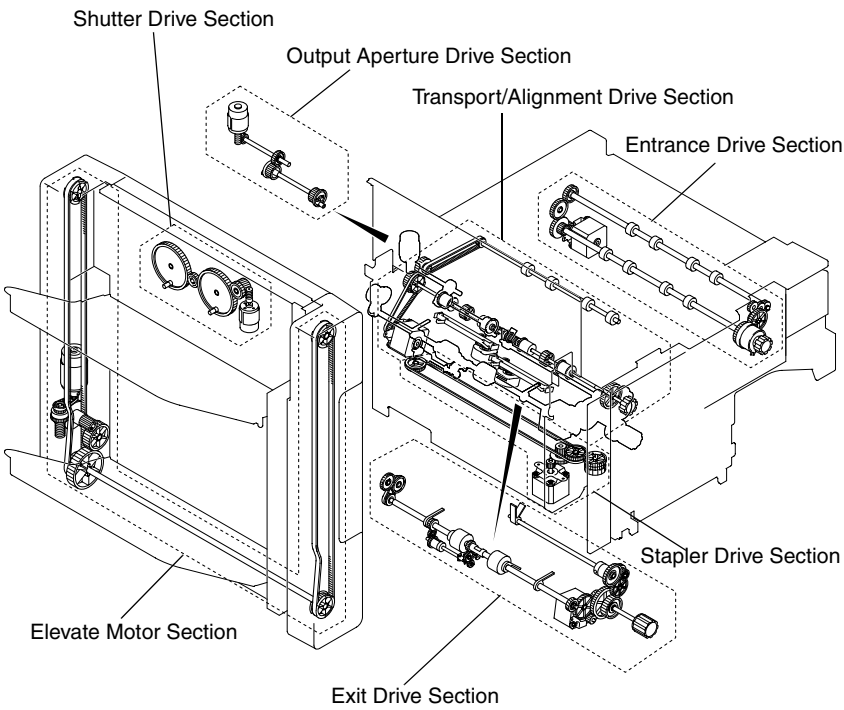
NOTE

How product names appear in the document

- *FN-117: Finisher*
- *AK-1: Additional Bin Kit*
- *PK-6: Punch Kit*

2. Revolving Parts Layout Drawing

<FN-117>



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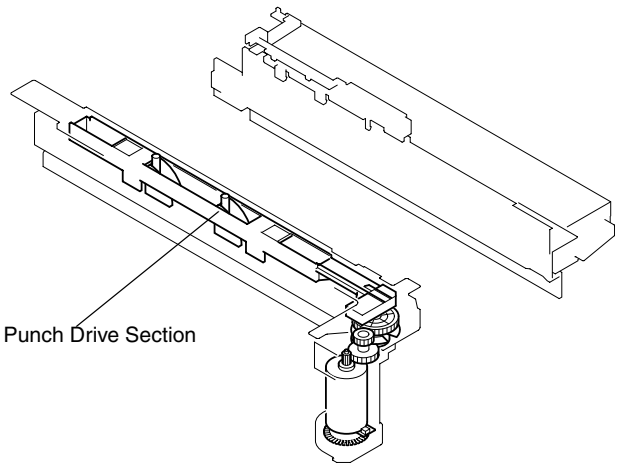
<PK-6>



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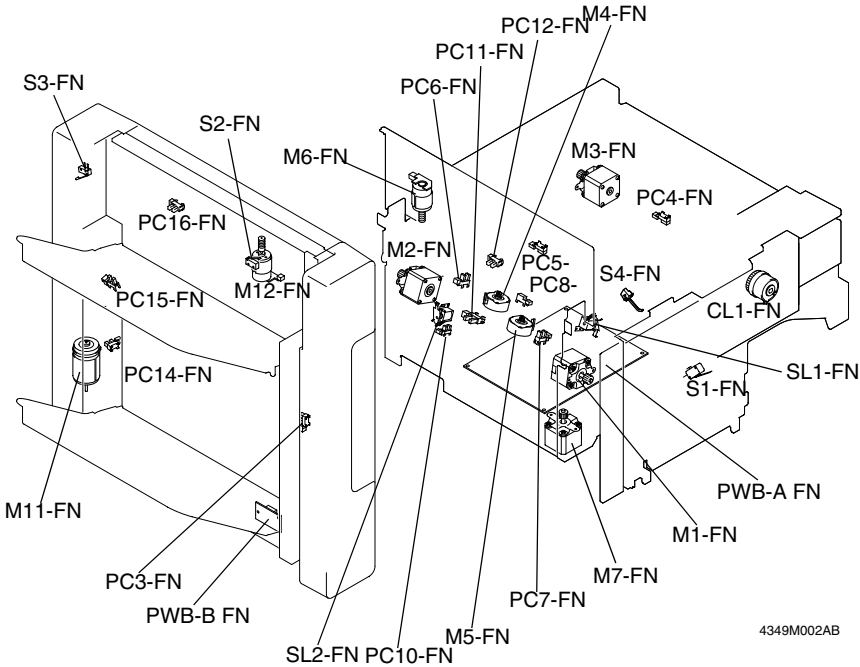
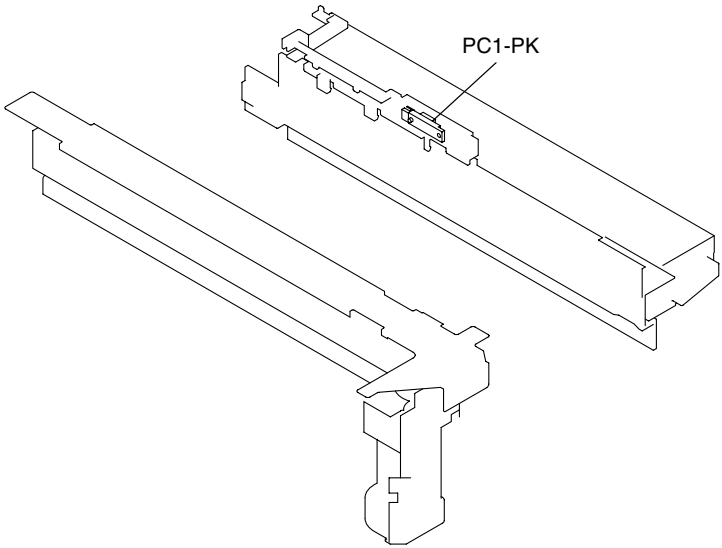
3. Electric Parts Layout Drawing

<FN-117>



Symbol	Name	Symbol	Name
PWB-A FN	Control Board	PC3-FN	Elevator Tray Home Position Sensor
PWB-B FN	Elevator Board		
M1-FN	Exit Motor	PC4-FN	Entrance Sensor
M2-FN	Transport Motor	PC5-FN	Transport Sensor
M3-FN	Entrance Motor	PC6-FN	Alignment Home Position Sensor 1
M4-FN	Alignment Motor 1		
M5-FN	Alignment Motor 2	PC7-FN	Alignment Home Position Sensor 2
M6-FN	Exit Open/Close Motor		
M7-FN	Stapling Unit Moving Motor	PC8-FN	Storage Tray Detecting Sensor
M11-FN	Elevator Motor	PC10-FN	Staple Home Position Sensor
M12-FN	Shutter Opening Motor	PC11-FN	Exit Paddle Home Position Sensor
S1-FN	Front Cover Open/Close Detection SW	PC12-FN	Exit Roller Home Position Sensor
S2-FN	Shutter Detection SW	PC14-FN	Elevator Tray Lower Limit Sensor
S3-FN	Elevate Tray Upper/Lower Limit SW	PC15-FN	Top Face Detection Sensor
		PC16-FN	Shutter Home Position Sensor
S4-FN	Transport Jam Detection SW	SL1-FN	Storage Paddle Solenoid
		SL2-FN	Exit Paddle Solenoid
		CL1-FN	Registration Clutch

<PK-6>



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Symbol	Name	Symbol	Name
PC1-PK	Punch Trash Full		

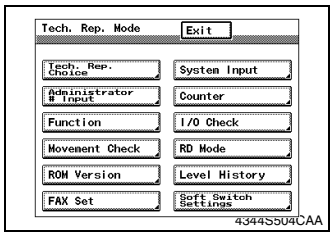
TEST MODES

1. Test Mode Operations

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

1-1. Entering the Tech. Rep. Mode

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



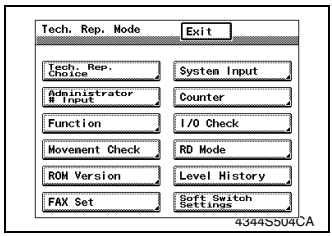
3. Press the following keys in order: Stop → 0 → 0 → Stop → 0 → 1.

NOTE

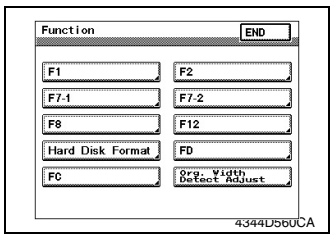
- *Be sure to keep the display procedure for the Tech. Rep. Mode from any unauthorized persons not involved with service operations.*

1-2. Entering Function Mode

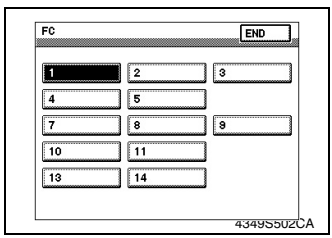
1. Display the Tech. Rep. Mode screen.



2. Touch [Function].



3. Touch [FC].



4. Touch the button for the desired function.

1-3. Function Modes

The following 13 items are available under “FC” in the Function Mode.

- 1: Staple unit CD movement mode
- 2: Aligning movement mode
- 3: Elevator Tray ascent operation mode
- 4: Elevator Tray descent operation mode
- 5: Punch Unit movement mode (appears only when the Punch Kit PK-6 is installed)
- 7: Exit open/close mode
- 8: Creasing Unit movement mode (appears only when the Saddle Kit SK-1 is installed)
- 9: Saddle Unit exit open/close mode (appears only when the Saddle Kit SK-1 is installed)
- 10: Transport drive mode
- 11: Shutter drive mode
- 12: Mailbin Solenoid movement mode (appears only when the Mail Bin Kit MK-1 is installed)
- 13: Storage Paddle operation mode
- 14: Exit Paddle movement mode

✻ For 8, 9 and 12, refer to the Service Manual for the corresponding option.

(1) Staple Unit CD Movement Mode

- Returns the Staple Unit to the predetermined position after it moves to the 2-point stapling position for A4C.
  → Moves from the predetermined position to the inner 2-point stapling position for A4C.
  → Moves from the starting position and stops after the predetermined time.
  → Moves to the front of A4C.
  → Moves from the starting position and stops after the predetermined time.
  → Moves to the predetermined position.
  → The operation is finished.

(2) Aligning Movement Mode

- Aligning Plates 1 and 2 return to the predetermined position after moving to the aligning position for A4L.
  → Moves from the predetermined position to the second predetermined position for A4L.
  → Stops after the predetermined time.
  → Moves to the aligning position for A4L.
  → Stops after the predetermined time.
  → Moves to the predetermined position.
  → The operation is finished.

(3) Elevator Tray Ascent Operation Mode

- The Elevator Tray is raised to mailbin 1. (Mailbin 1 → Additional Mailbin → Mailbin 2)
  → The Exit opens.
  → The Shutter closes.
  → The Paper Output Tray is raised to mailbin 1.
  → The Shutter opens.
  → The Exit closes.
  → The operation is finished.

(4) Elevator Tray Descent Operation Mode

- The Elevator Tray is lowered from mailbin 1. (Mailbin 2 → Additional Mailbin → Mailbin 1)
  → The Exit opens.
  → The Shutter closes.
  → The Paper Output Tray is lowered from mailbin 1.
  → The Shutter opens.
  → The Exit closes.
  → The operation is finished.

(5) Punch Unit Movement Mode

- The punch is driven once at a standard hole.
  → The operation is finished.

(6) Exit Open/Close Mode

- Opens and closes the Exit.
  → The Exit opens.
  → Stops after the predetermined time.
  → The Exit closes.
  → The operation is finished.

(7) Transport Drive Mode

- Transport drive is performed for the predetermined time. (Performs the same transport drive as the pre-drive with the high speed of the connected copier.)
  → Drives the Entrance Motor (M3-FN).
  → Drives the Transport Motor (M2-FN).
  → Drives the Exit Motor (M1-FN).
  → The operation is finished.

✻ If the Mail Bin Kit MK-1 is installed, the Mailbins are also driven.

✻ If the Saddle Kit SK-1 is also installed, the Saddle Transport Motor (M8-SK) is also driven.

(8) Shutter Drive Mode

- Opens and closes the Shutter.
  → The Exit opens.
  → The Shutter closes.
  → Stops after the predetermined time.
  → The Shutter opens.
  → The Exit closes.
  → The operation is finished.

(9) Storage Paddle Operation Mode

- Performs the single rotate operation for the Storage Paddle.
  → The operation is finished.

(10) Exit Paddle Movement Mode

- Performs the single rotate operation for the Storage Paddle.
  → The operation is finished.

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.

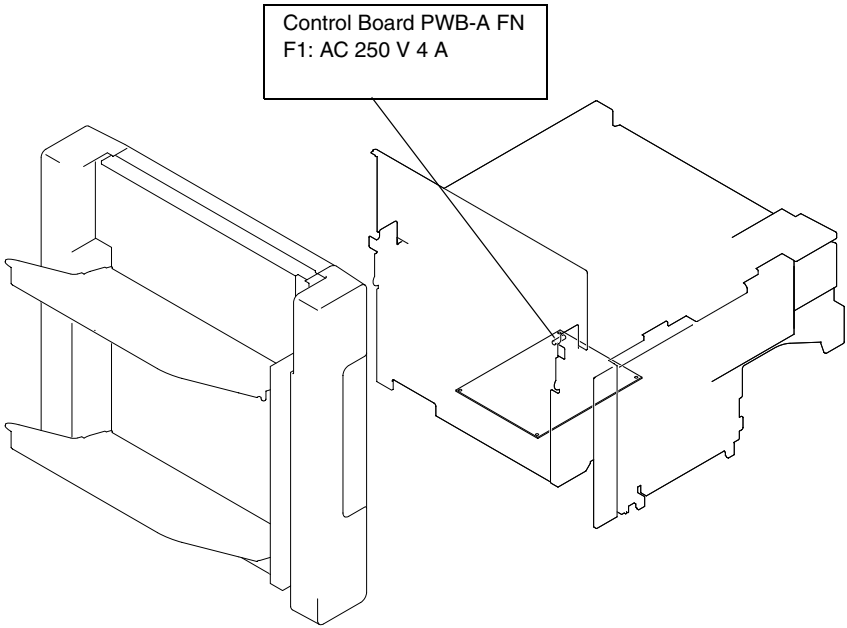
PM Parts	Job		Item Used for Cleaning	Qty	Ref. Page
	Clean	Replace			
Rollers and rolls	30K	—	Alcohol, water, and soft cloth	—	☞ D-10

NOTES

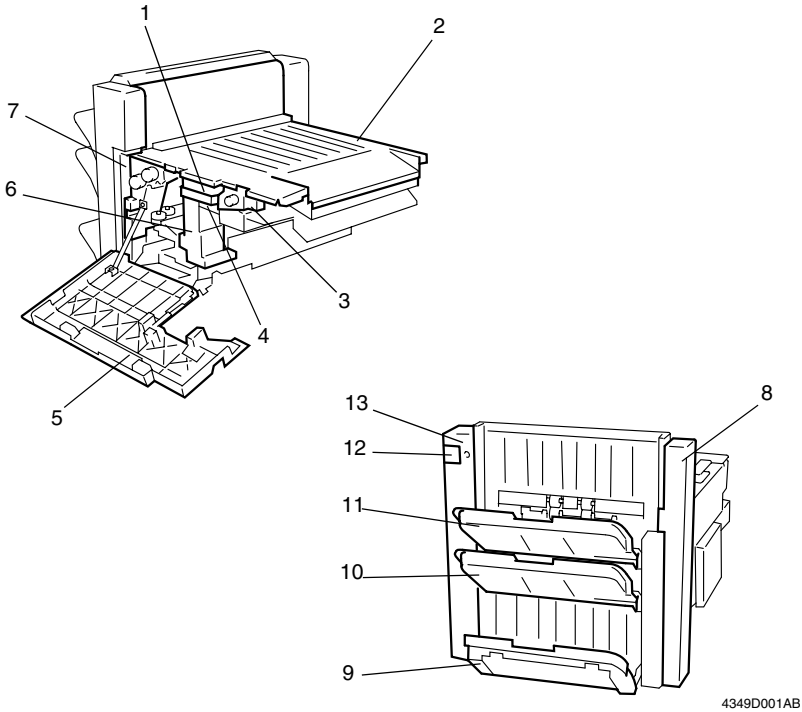
- *K = 1,000 copies*
- *The contents of this maintenance schedule are subject to change without notice.*
- *For part numbers, see Parts Manual and Parts Modification Notice.*
- *During PM, check the Punch Waste Box and dispose as necessary.*

2. Disassembly and Cleaning

2-1. Identification of Fuses



2-2. Removal of the Outer Cover



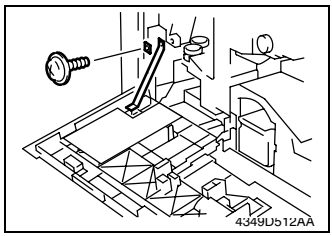
No.	Name	Removal Procedure
1	Horizontal Transport Upper Front Cover	Unhook the tab and remove.
2	Horizontal Transport Upper Cover	Remove four screws and the cover.
3	Horizontal Transport Front Right Cover	Remove two screws and the cover.
4	Horizontal Transport Front Middle Cover	Remove two screws and the cover.
5	Front Door	Remote two screws and the dummy cover. → Remove one screw and the stopper. → Close the Front Door. → Remove one C ring and remove the cover.
6	Horizontal Transport Lower Front Cover	Remove two screws and the cover.
7	Horizontal Transport Left Front Cover	Remove three screws and the cover.
8	Paper Exit Front Cover	Remove two screws and the cover.
9	2nd Drawer	Remove two screws and the drawer.
10	Additional Bin	Remove two screws and the bin.
11	1st Drawer	Remove two screws and the drawer.
12	Connector Cover	Remove one screw and the cover.
13	Paper Exit Rear Cover	Remove two screws, loosen one screw, and remove the cover.

2-3. Removal of the Sorted Copy Tray

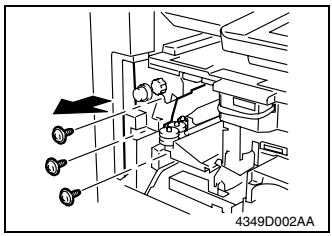
NOTES

- *When removing the Sorted Copy Tray, set the Sorted Copy Tray to its home position.*
- *If the Additional Bin Kit (AK-1) is installed, remove it in advance.*

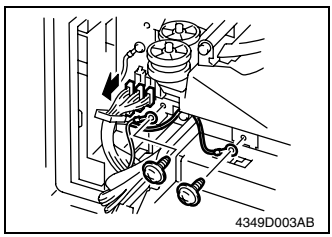
1. Open the Front Door.



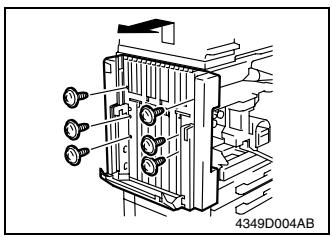
2. Remove one screw and the Front Door Stopper.



3. Remove three screws and the Left Front Cover.



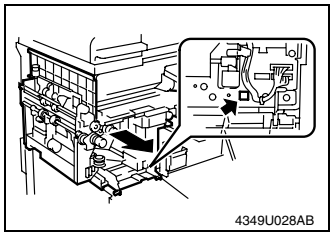
4. Unplug three connectors.
5. Remove two screws, and the ground wire.



6. Remove six screws and lift the Sorted Copy Tray upward and off the copier.

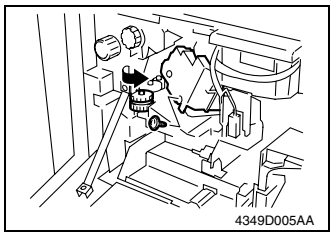
2-4. Removal of the Horizontal Transport Unit

1. Remove the Sorted Copy Tray.

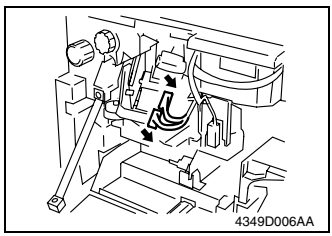


2. Remove the Front Right Door.
3. While holding down the lock release button, remove the Horizontal Transport Unit.

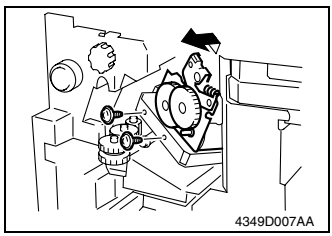
2-5. Removal of the Stapler Unit



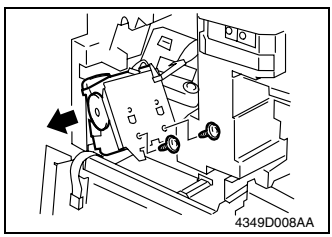
1. Open the Front Door.
2. Turn the dial and move the stapler forward.
3. Remove the Staple Cartridge.
4. Remove one screw and the cover.



5. Unplug two connectors.



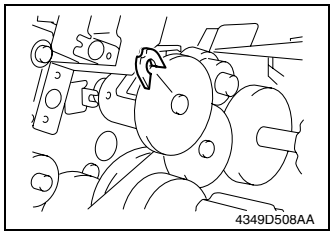
6. Remove two screws and the Stapler Unit Assy.



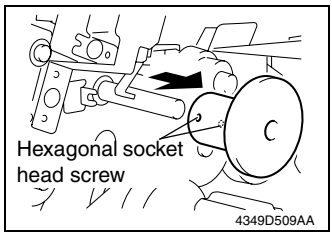
7. Remove two screws and the Stapler Unit.

2-6. Removal of the Storage Paddle Drive Clutch

1. Remove the Sorted Copy Tray.
2. Remove the Horizontal Transport Unit.
3. Remove the Horizontal Transport Top Cover.



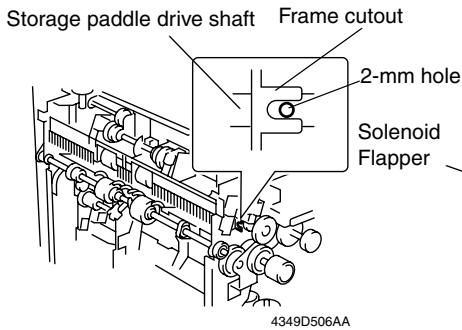
4. Remove one C ring.

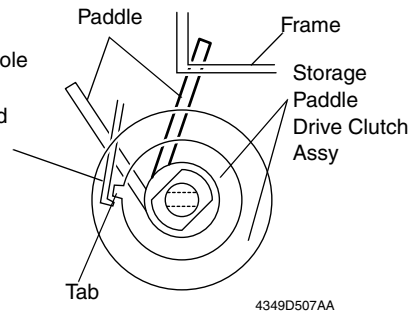


5. Loosen two hexagonal socket head screws and remove the Storage Paddle Drive Clutch Assy.

Precaution for Storage Paddle Drive Clutch Reinstallation

1. Check that the 2-mm hole of the storage paddle drive shaft and the cutout of the frame are aligned and install the Storage Paddle Drive Clutch Assy.
2. Refer to the figure below and check the paddle position.

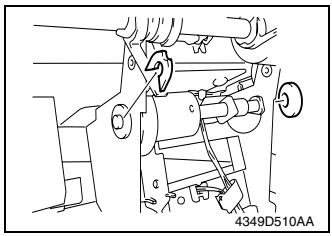




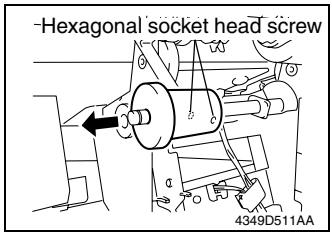
3. Hook the Solenoid Flapper to the tab of the Storage Paddle Drive Clutch Assy.
4. Attach one C ring and reinstall the Storage Paddle Drive Clutch Assy.
5. Adjust the spacing between the C ring and the Storage Paddle Drive Clutch Assy to 0.2 mm and tighten two hexagonal socket head screws.

2-7. Removal of the Exit Paddle Drive Clutch

1. Remove the Sorted Copy Tray.
2. Remove the Horizontal Transport Unit.
3. Remove the Horizontal Transport Top Cover.

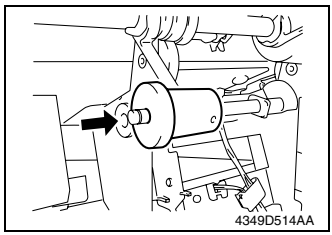


4. Remove one C ring.
5. Remove one gear.



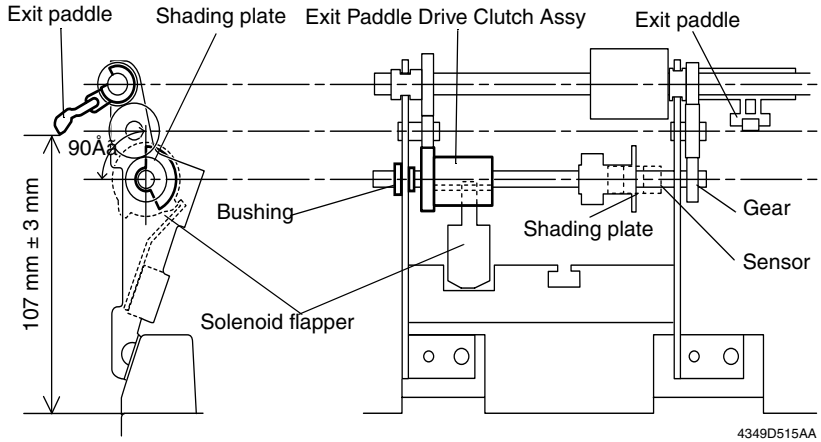
6. Loosen two hexagonal socket head screws and remove the Exit Paddle Drive Clutch Assy.

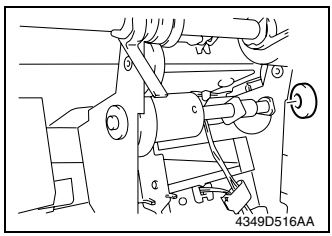
<Reinstallation Procedure>



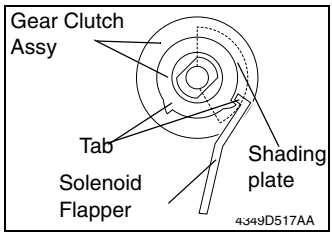
1. Reinstall the Exit Paddle Drive Clutch Assy.

Precaution for Exit Paddle Drive Clutch Reinstallation





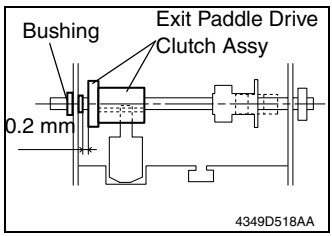
2. Install one gear.



3. Hook the Solenoid Flapper to the tab of the Exit Paddle Drive Clutch Assy.

NOTE

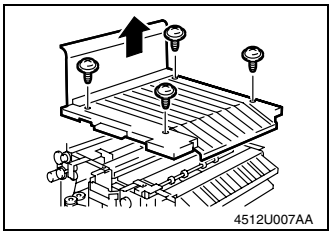
- *Install the Exit Paddle Drive Clutch Assy with the side having a wider spacing between the tabs facing upward.*



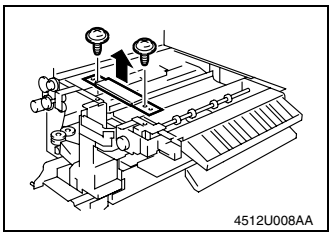
4. Attach one C ring and press the Exit Paddle Drive Clutch Assy to the bushing.
5. Adjust the spacing between the bushing and the Exit Paddle Drive Clutch Assy to 0.2 mm and tighten two hexagonal socket head screws.

2-8. Removal of the Punch Unit (PK-6)

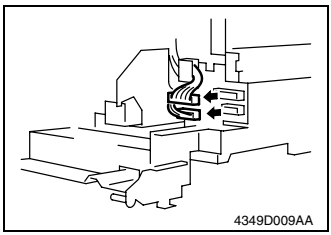
1. Remove the Sorted Copy Tray.
2. Remove the Horizontal Transport Unit.



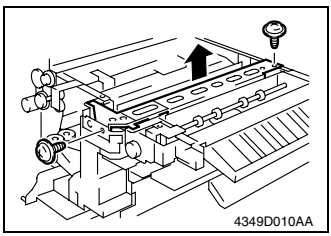
3. Remove four screws and the Upper Cover.



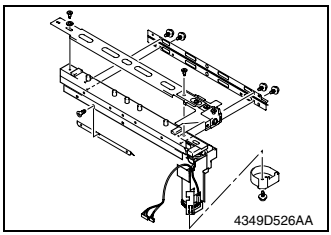
4. Remove two screws and the Reinforcement Bracket.



5. Unplug two connectors.



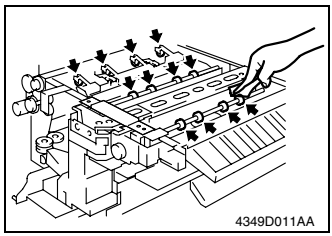
6. Remove two screws, and the Punch Kit.



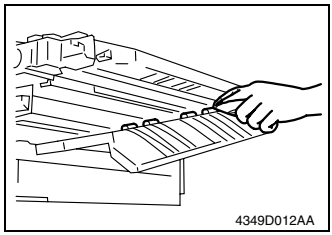
7. Remove eight screws, and the Punch Unit.

2-9. Cleaning of the Roller and Roll

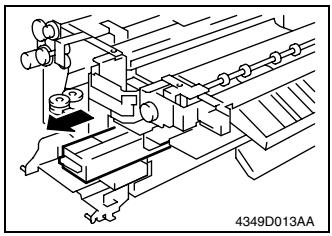
1. Remove the Sorted Copy Tray.
2. Remove the Horizontal Transport Unit.
3. Remove the Horizontal Transport Top Cover.



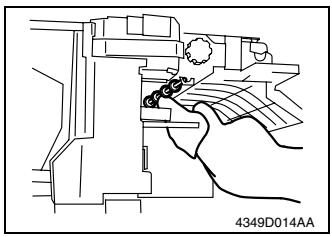
4. Using a soft cloth dampened with alcohol, wipe the roller and roll.



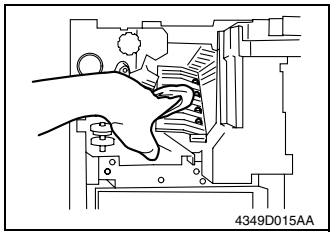
5. Lower Processing Guide FN1.
6. Using a soft cloth dampened with alcohol, wipe the roll.



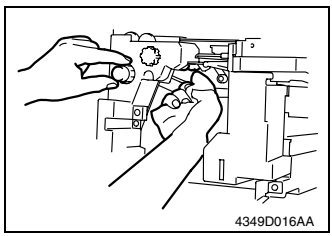
7. Remove Punch Waste Storage Box FN3.1. (only when PK-6 is installed)



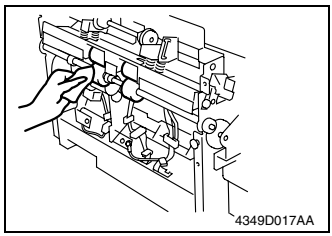
8. Lower Processing Guide FN-3.
9. Using a soft cloth dampened with alcohol, wipe the roll.



10. Lower Processing Guide FN-4.
11. Using a soft cloth dampened with alcohol, wipe the roll.



12. While turning Processing Knob FN-5, wipe the roll using a soft cloth dampened with alcohol.



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

3. Adjustment

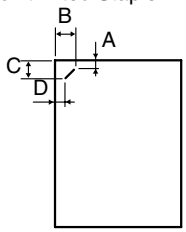
3-1. Staple Position Adjustment

NOTE

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

- *When the Stapler has been replaced.*
- *When staple position is misaligned.*

1-Point Tilted Staple



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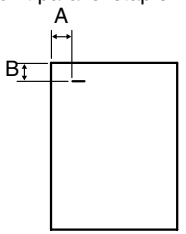
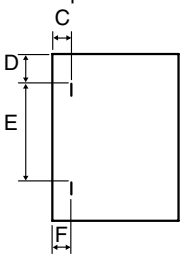
1-point parallel staple



4349D504AA

2-Point Staple



4349D505AA

1. Set the staple mode and make a copy.
2. Check the staple position of the paper.

- 1-Point Tilted Staple (Paper Width: 216 to 297 mm)

  279 to 297 mm: 45°C tilt, B5C, B4L: 30°C tilt

Measurement position	Specification	Adjustment range
A, C	4.4 mm	—
B, D	12.1 mm	+1 mm to -2mm

- 1-Point Parallel Staple

  (Paper Width: 182 to 216 mm)

Measurement position	Specification	Adjustment range
A	4.5 mm	—
B	6 mm	+1 mm to -2 mm

- 2-Point Staple

Measurement position	Specification	Adjustment range
C, F	6 mm	+1 mm to-2 mm
D	Y	—
E	X	—

Y = (paper width-x-11) / 2

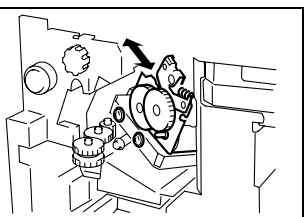
X = A3L, A4C: 137

B4L, B5C: 114

A4L: 190

B5L: 162

Substitute above into the equation.

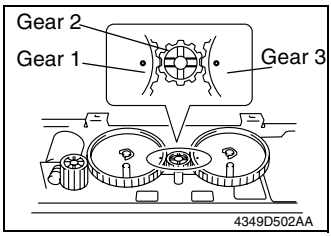


4349D513AA

3. If the staple position is misaligned, remove one screw and the cover.
4. Loosen two adjustment screws and move the Stapler Unit in the direction of the arrow to make the adjustment.
5. Make another copy and check the staple position.

3-2. Adjustment of the Installation Position of the Shutter Drive Gear

NOTE
Make this adjustment after any of the following procedures has been performed.
- *When any of gear 1, 2, or 3 has been replaced.*
- *When gears 1, 2, and 3 has been disassembled.*

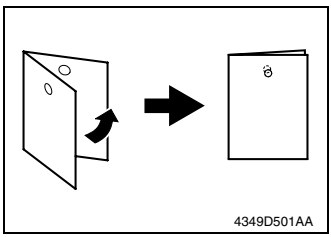


1. Set three gears.

NOTE
- *Set the gears so that the marks on Gears 1 and 3 are aligned with the rib of Gear 2 as shown on the right.*

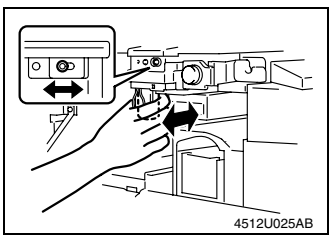
3-3. Punch Hole Deviance Adjustment (PK-6)

NOTE
Make this adjustment after any of the following procedures has been performed.
- *When the Punch Kit has been replaced.*
- *When the Punch Kit has been removed.*



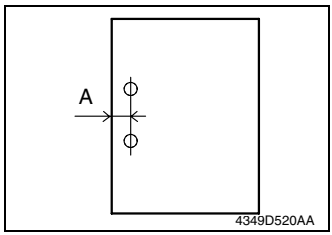
1. Set the copier into the Hole Punch mode and make a 1-sided copy from a 1-sided original.
2. Fold the output paper in half and check whether the punch hole positions are aligned.

Specification: Within 2 mm

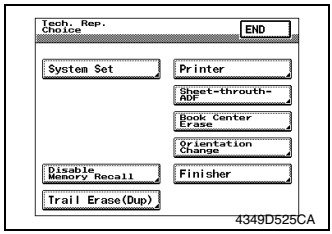


3. If the punch hole position is misaligned, remove one screw and the cover.
4. Loosen one adjustment screw and move the Punch Unit forward or backward to make the adjustment.
5. Make another copy and check the punch hole position.

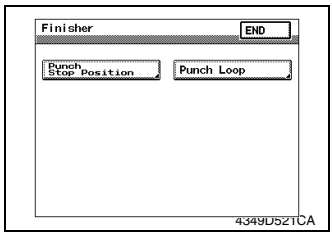
3-4. Punch Fold Position Adjustment (PK-6)



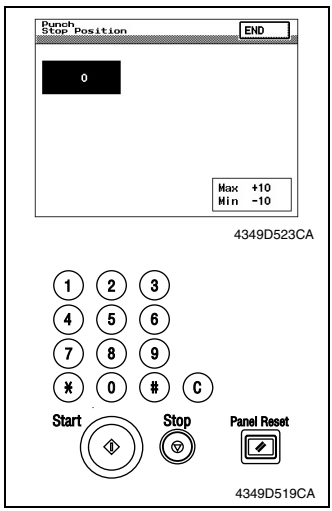
1. Set the copier into the Hole Punch mode and make a 1-sided copy from a 1-sided original.
2. Check width A on the output paper.



3. Display Tech. Rep. Mode.
4. Touch Tech. Rep. Choice.



5. Touch the Finisher key.
6. Touch the Punch Stop Position key.



7. Press the Clear key and use the 10-Key Pad to set the value.

✻ To make width A wider, enter a positive value.

✻ To make width A narrower, enter a negative value.

Adjustment range: +10 max. and -10 min.

1 increment: 0.5 mm

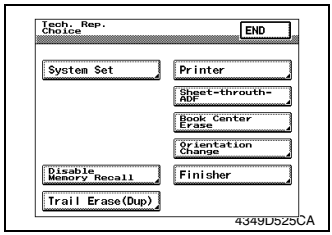
Use the ✻ key to switch between + and -.

3-5. Punch Loop Length Adjustment (PK-6)

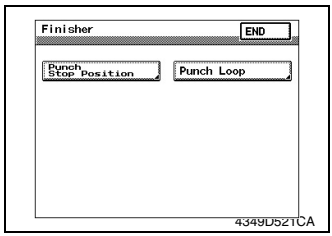
NOTE

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

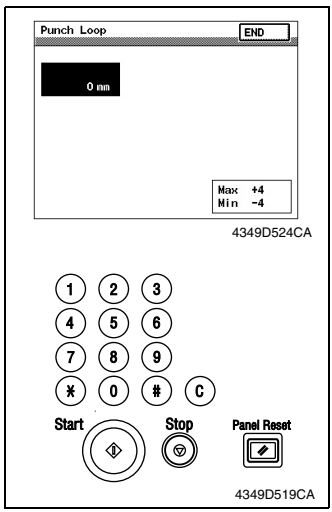
- *When a slant occurs in the punch hole position.*
- *When misfeed frequently occurs in punch hole mode.*



1. Display Tech. Rep. Mode.
2. Touch Tech. Rep. Choice.



3. Touch the Finisher key.
4. Touch the Punch Loop key.



5. Press the Clear key and use the 10-Key Pad to set the value.

✻ To make loop length larger, enter a positive value.

✻ To make loop length smaller, enter a positive value.

Adjustment range: +4 max. and -4 min.

1 increment: 1 mm

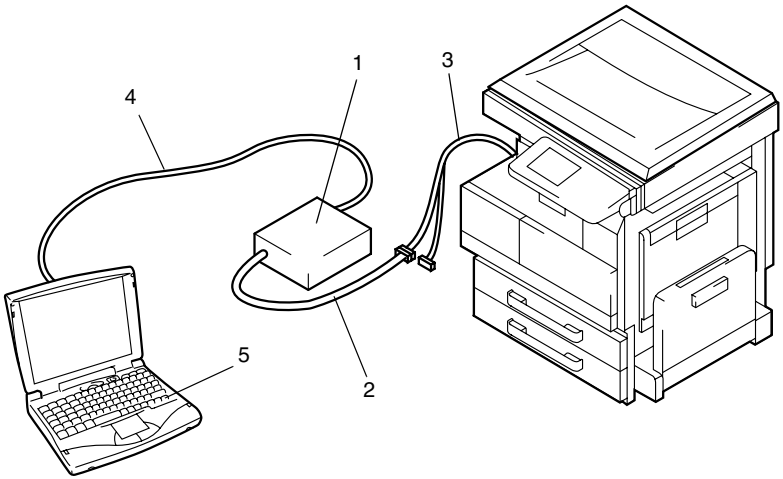
Use the ✻ key to switch between + and -.

3-6. Firmware Upgrade (Printer/Finisher)

NOTE

- *When replacing the main control board, be sure to confirm the ROM version, and rewrite to the latest Firmware.*

(1) Composition of the Service Jigs

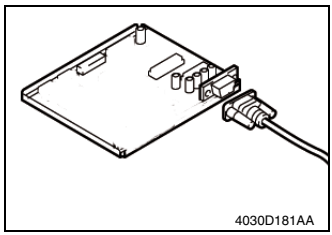


4030D159AB

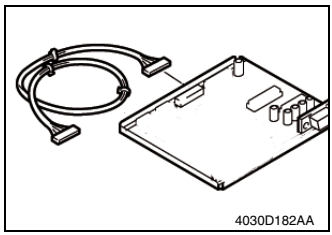
No.	Name	Description	Reference
1	Converter	Interface Board	Service Jig Setting
2	Interface Cable	Connects the converter and the connection cable.	Service Jig Setting
3	Connection Cable	Connects the Interface Cable and the printer.	Service Jig Setting
4	RS-232C cable (cross) (null modem)	Connects the PC and the Converter.	Commercially sold product
5	FW upgrade software*1	Upgrades the FW on the PC.	Supplied by Minolta.
	Notebook PC	Install the FW upgrade software for use.	Commercially sold product

✻ 1: It is recommended that a PC running Windows 98, Windows 2000, or Windows XP be used to run the FW upgrade software.

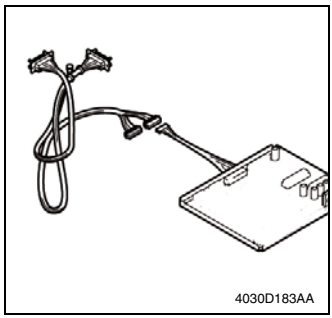
(2) Service Jigs Setup


4030D181AA

1. Connect the COM1 port of the PC to the connector of the Converter using an RS-232C cross cable.


4030D182AA

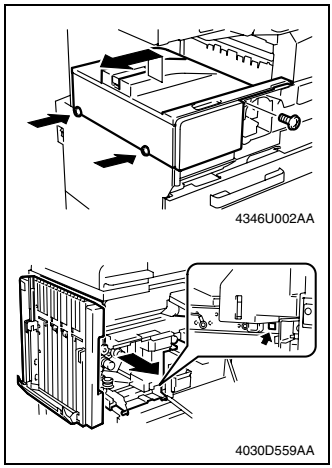
2. Connect the Converter connector and the Interface Cable.


4030D183AA

3. Connect the Interface Cable and the Connection Cable.

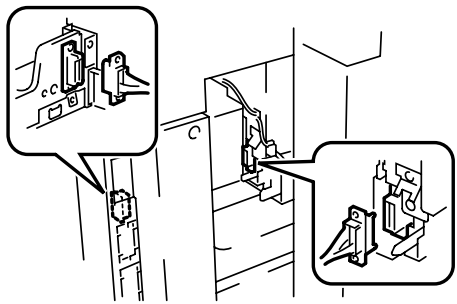
NOTES

- *To upgrade the firmware on the Printer (PWB-A), connect the white connector and the white connection cable.*
- *To upgrade the firmware on the Finisher (PWB-A FN), connect the white connector and the white connection cable with the blue strip.*



4. Remove the Exit Cover. (If Option FN-117 is connected, slide the Horizontal Transport Section to the front.)

5. Connect the Connection Cable to the connector on the Printer and Finisher.

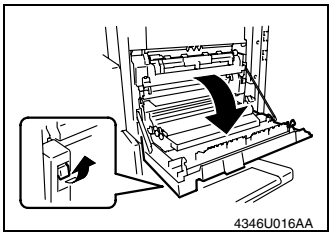


4030D184AA

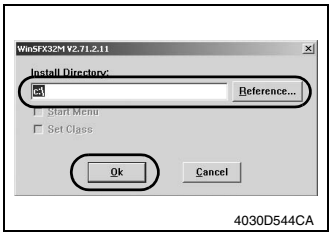
(3) Firmware Upgrade Procedure

NOTES

- *Be sure to open the Right Door before starting the upgrading procedure.*
- *An error message appears on the Control Panel during the upgrade process. However, this is not an error. Do not power cycle.*
- *If Sleep Mode is enabled, disable or change the time (10 minutes or longer).*



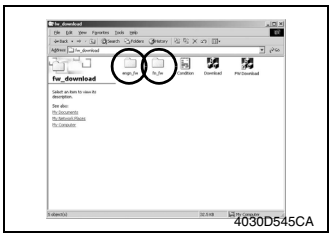
1. Turn ON the printer power.
2. Open the Right Door.



3. Copy the FW upgrade software to the PC.
4. Double-click the file and click OK.

NOTE

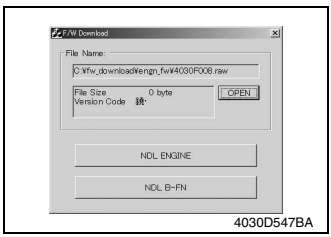
- *When you click the OK button, a folder named fw_download is created automatically on the C drive.*



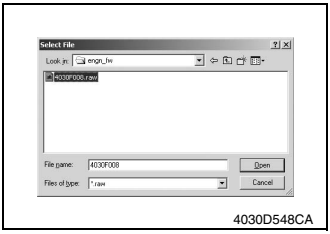
5. Copy the new firmware in the folder shown below.

Printer (PWB-A):
c:\fw_download\engn_fw

Finisher (PWB-A FN):
c:\fw_download\fn_fw

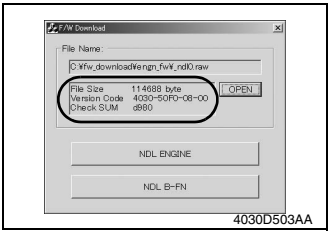


6. Click the FW Download icon and start the FW upgrade software.



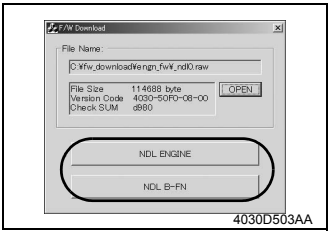
4030D548CA

7. Click Open and select the folder containing the firmware to be upgraded.



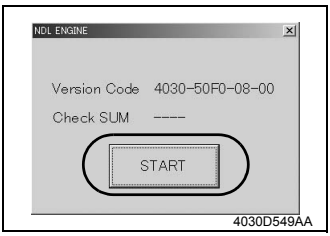
4030D503AA

8. When the folder is selected, a file is selected in File Name.
   If a wrong file is selected, select the correct file.



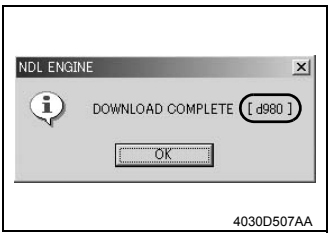
4030D503AA

9. To upgrade the firmware on the Printer, click NDL ENGINE.
   To upgrade the firmware on the Finisher, click NDL B-FN.



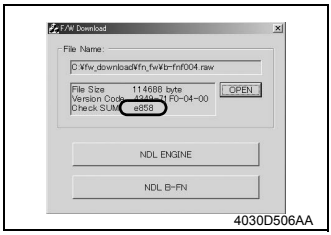
4030D549AA

10. Click the Start button to upgrade.



4030D507AA

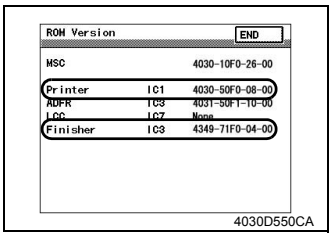
11. When the upgrade is complete, a completion screen appears.



4030D506AA

12. Check whether the Check SUM in the brackets on the completion screen and the Check SUM on the download result screen match.

✻ If they do not match, start the FW upgrade software and upgrade again.



4030D550CA

13. If they match, the upgrade is complete.
14. Turn OFF the power, unplug all connectors, and turn ON the power.
15. Select Tech. Rep. Mode → ROM Version and check that the Printer version has been changed.

(4) Firmware Upgrade Troubleshooting

✻ FILE SIZE ERROR

4030D536AA

Section	Cause	Action
PC Section	The download file is corrupt.	• Download the file again. • Select the download file.
	Select a file other than the download file.	

✻ CONNECT ERROR

4030D537AA

Section	Cause	Action
Cable Connection Section	The connection of the connector is unstable.	• Check the cable connection between the PC and the Converter. • Check the cable connection between the Converter and the Interface Cable. • Check the cable connection between the Interface Cable and the Connection Cable. • Check the cable connection between the Connection Cable and the Printer.
	Bad Connection Cable	• Replace the Connection Cable.
	Bad Master Board (PWB-A) Bad Control Board (PWB-A FN)	• Replace the Master Board. • Replace the Control Board.

✻ ROM TYPE ERROR

4030D538AA

Section	Cause	Action
Printer Section Finisher Section	The CPU on the Master Board (PWB-A) is a masked ROM.	• Replace the Master Board. • Replace the Control Board.

✻ MACHINE CODE ERROR

4030D539AA

Section	Cause	Action
PC Section	Selected a firmware of a different product for the download file.	• Select the download file.

✻ ERASE ERROR

4030D540AA

Section	Cause	Action
Printer Section	The connection of the harness is unstable.	• Check the harness for proper connection, and correct as necessary.
	The CPU on the Master Board is broken.	• Power cycle the PC and the power to the copier. • If the error persists, replace the Master Board.

✻ WRITE ERROR

4030D541AA

Section	Cause	Action
Printer Section	The connection of the harness is unstable.	• Check the harness for proper connection, and correct as necessary. • Power cycle the PC and the power to the copier. • If the error persists, replace the Master Board.
	The CPU on the Master Board is broken.	

✻ CHECK SUM ERROR

4030D542AA

Section	Cause	Action
Printer Section	The connection of the harness is unstable.	• Check the harness for proper connection, and correct as necessary.
	The download file is corrupt.	• Download the file again.

NOTE

- *If an error occurs, an Application error screen may appear on the PC. If this happens, power cycle the PC and the copier.*

TROUBLESHOOTING

1. Introduction

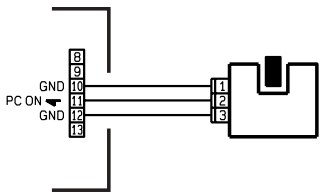
- Information required for troubleshooting and steps that must be performed are described in this chapter.

1-1. Electrical Components Check Procedure

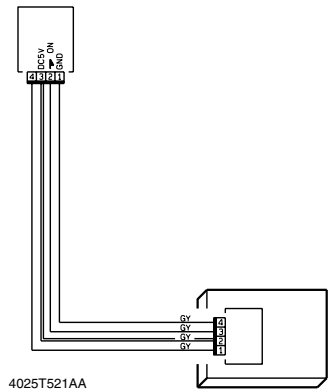
- If a paper misfeed or malfunction occurs, perform the following operation to check the condition of the electrical components.

(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.



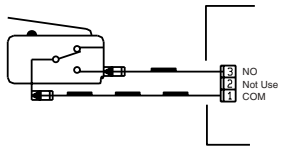
4025T520AA



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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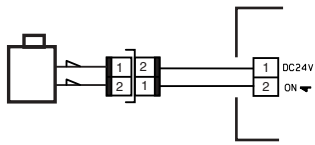
(3) Solenoid

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.



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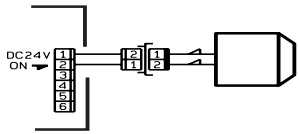
(4) Clutch

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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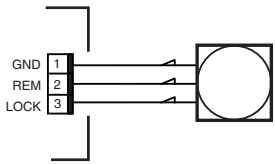
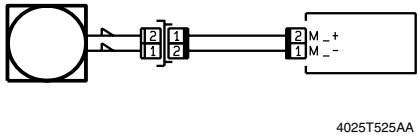
(5) Motor

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.



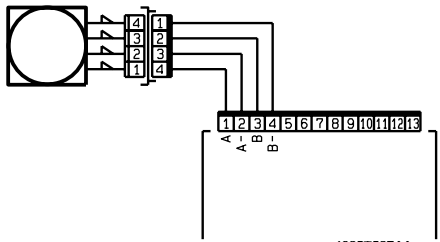
4025T526AA

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.



4025T525AA

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.

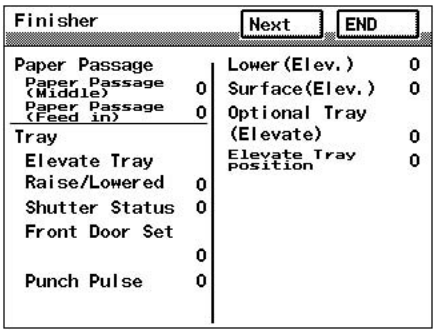


4025T527AA

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 [Finisher].
4. Using a sheet of paper, activate the sensor and check the display in the Touch Panel. (Paper present: 1; Paper not present: 0)



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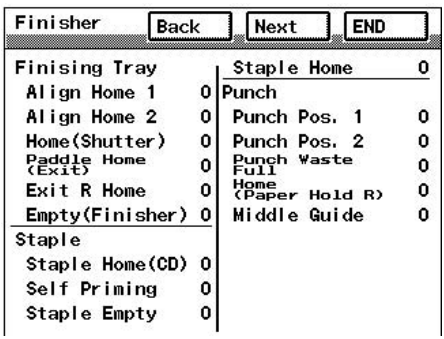
If the Punch Kit PK-6 is installed, touch [Next].



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2-1. I/O Check List

Symbol	Panel Display	Parts/Signal Name	Operation Characteristics/ Panel Display		Input Board	CN/PJ No.
			1	0		
PC5-FN	Transport	Transport Sensor	Paper present	Paper not present	Control Board (PWB-A FN)	PJ20A FN-9
PC4-FN	Entrance	Entrance Sensor	Paper present	Paper not present		PJ25A FN-4
S3-FN	Elevator Tray Upper/ Lower Limit Switch	Elevator Tray Upper/ Lower Limit Switch	Raised Position	Not raised		PJ6A FN-7
S2-FN	Shutter Detect	Shutter Detection Switch	Closed	Open		PJ6A FN-3
S1-FN	Front Cover Open/ Close Detection Switch	Front Cover Open/Close Detection Switch	Closed	Open		PJ5A FN-3
PC2-PK	Punch Pulse	Punch Motor Pulse Sensor	Blocked	Unblocked		PJ12A FN-8
PC14-FN	Elevator Tray Upper Limit	Elevator Tray Upper Limit Sensor	Blocked	Unblocked		PJ9A FN-3
PC15-FN	Elevator Tray Lower Limit	Elevator Tray Lower Limit Sensor	Blocked	Unblocked		PJ9A FN-4
—	Elevator Tray Detecting Sensor	—	Set	Not set		PJ10A FN-2
PC3-FN	Elevator Tray Home Position	Elevator Tray Home Position Sensor	Blocked	Unblocked		PJ9A FN-7
PC6-FN	Alignment Home 1	Alignment Home Position Sensor 1	At home	Not at home		PJ13A FN-3
PC7-FN	Alignment Home 2	Alignment Home Position Sensor 2	At home	Not at home		PJ13A FN-6
PC16-FN	Shutter Home	Shutter Home Position Sensor	At home	Not at home		PJ9A FN-5
PC11-FN	Exit Paddle Home Position	Exit Paddle Home Position Sensor	At home	Not at home		PJ17A FN-7
PC12-FN	Exit Roller Home	Exit Roller Home Position Sensor	At home	Not at home		PJ20A FN-7
PC8-FN	Storage Tray Detection	Storage Tray Detecting Sensor	Paper present	Paper not present		PJ13A FN-8
PC10-FN	Stapler Home	Staple Home Position Sensor	Blocked	Unblocked		PJ17A FN-3
—	Self-Priming	Self-Priming Sensor	Blocked	Unblocked		PJ16A FN-8
—	Staple Empty	Staple Empty Detection Sensor	Blocked	Unblocked		PJ16A FN-9
—	Staple Home	Staple Home Position Sensor	Blocked	Unblocked		PJ16A FN-7
PC3-PK	Punch Positioning 1	Punch Positioning Sensor 1	Unblocked	Blocked		PJ12A FN-2
PC4-PK	Punch Positioning 2	Punch Positioning Sensor 2	Unblocked	Blocked		PJ12A FN-5
PC1-PK	Punch Trash Full	Punch Trash Full	Blocked	Unblocked		PJ10A FN-2
S4-FN	Transport Guide Detection	Transport Jam Detection Switch	Closed	Open		PJ22A FN-1

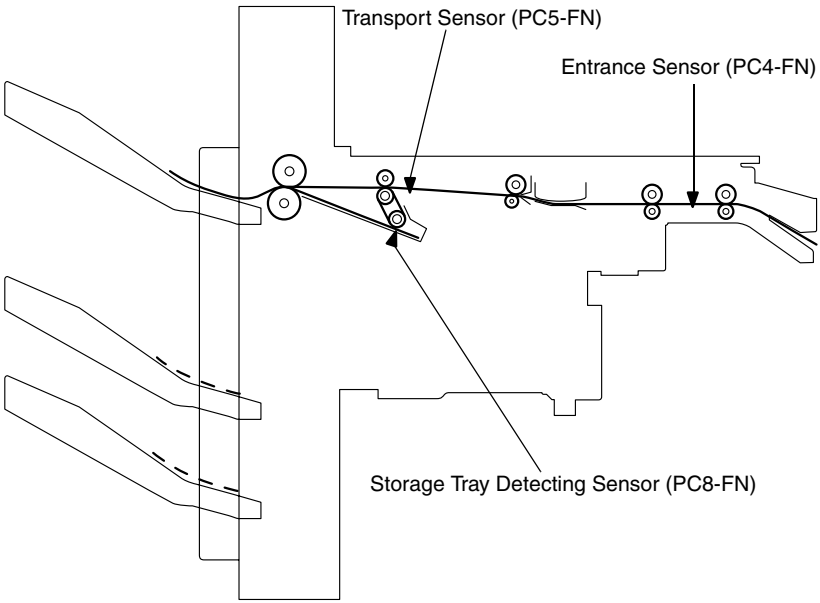
3. Misfeed Detection/Troubleshooting Procedures

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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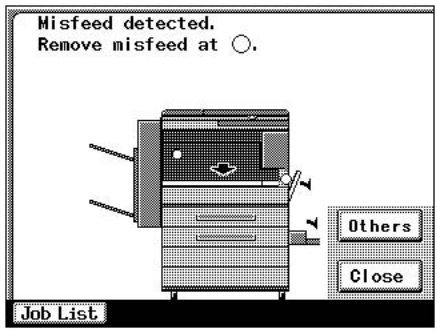
3-3. Misfeed Detected

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) Transport Section Misfeed

<Detection Timing>

Type	Description
Finisher Transport Section misfeed detection	The Entrance Sensor (PC4-FN) is not blocked even after the set period of time has elapsed after the copier's Exit Sensor (PC4) is blocked by the paper.
	The Entrance Sensor (PC4-FN) is not unblocked even after the set period of time has elapsed after the copier's Exit Sensor (PC4) is unblocked by the paper.
Finisher Paper Exit Section misfeed detection	The Transport Sensor (PC5-FN) is not blocked even after the set period of time has elapsed after the Entrance Sensor (PC4-FN) is blocked by the paper.
	The Transport Sensor (PC5-FN) is not unblocked even after the set period of time has elapsed after the Entrance Sensor (PC4-FN) is unblocked by the paper.
Detection of paper remaining in the Transport Section	The Entrance Sensor (PC4-FN) is blocked when the Power Switch is set to ON, a door or cover is opened and closed, or a misfeed or malfunction is reset.
	The Transport Sensor (PC5-FN) is blocked when the Power Switch is set to ON, a door or cover is opened and closed, or a misfeed or malfunction is reset.

Action

Relevant Electrical Components	
Copier Exit Sensor (PC4) Entrance Sensor (PC4-FN) Transport Sensor (PC5-FN)	Control Board (PWB-A FN) Copier Master Board (PWB-A)

Step	Operations	Ref. Page	WIRING DIAGRAM	
			Control signal	Location (Electrical Components)
1	Initial checks	☞ T-7	—	—
2	PC4 sensor check	☞ T-1	PWB-A PJ18A-11	I-1
3	PC4-FN sensor check	☞ T-1	PWB-A FN PJ25A FN-4	B-7
4	PC5-FN sensor check	☞ T-1	PWB-A FN PJ20A FN-9	A-7
5	PWB-A FN replacement	—	—	C-5
6	PWB-A replacement	—	—	F-6

(2) Finisher Staple Misfeed

<Detection Timing>

Type	Description
Finisher Staple mis-feed detection	The Staple Home Position Sensor in the Staple Unit is not blocked even after the set period of time has elapsed after the Staple Motor rotates forward, and then the Staple Motor rotates backward, and the Staple Home Position Sensor in the Staple Unit is blocked within the set period of time.

Action

Relevant Electrical Components	
Staple Unit	Control Board (PWB-A FN)

Step	Operations	Ref. Page	WIRING DIAGRAM	
			Control signal	Location (Electrical Components)
1	Initial checks	☞ T-7	—	—
2	Drive Coupling Section check	—	—	—
3	I/O CHECK	☞ T-1	—	—
4	Staple Unit replacement	☞ D-5	—	D-7
5	PWB-A FN replacement	—	—	C-5

(3) Finisher Punch Misfeed (PK-6)

<Detection Timing>

Type	Description
Finisher Punch mis-feed detection	Punch Positioning Sensors 1 and 2 are not blocked even after the set period of time has elapsed after the Punch Motor is energized.

Action

Relevant Electrical Components	
Punch Unit	Control Board (PWB-A FN)

Step	Operations	Ref. Page	WIRING DIAGRAM	
			Control signal	Location (Electrical Components)
1	Initial checks	☞ T-7	—	—
2	Drive Coupling Section check	—	—	—
3	I/O CHECK	☞ T-1	—	—
4	Punch Unit replacement	☞ D-9	—	F-2
5	PWB-A FN replacement	—	—	C-5

(4) Finisher Bundle Exit Misfeed

<Detection Timing>

Type	Description
Finisher Bundle Exit misfeed detection	The Storage Tray Detecting Sensor (PC8-FN) is not unblocked even after the set period of time has elapsed after the Exit Motor (M1-FN) is energized.

Action

Relevant Electrical Components	
Storage Tray Detecting Sensor (PC8-FN) Exit Motor (M1-FN)	Control Board (PWB-A FN)

Step	Operations	Ref. Page	WIRING DIAGRAM	
			Control signal	Location (Electrical Components)
1	Initial checks	☞ T-7	—	—
2	PC8-FN sensor check	☞ T-1	PWB-A FN PJ13A FN-8	F-7
3	PWB-A FN replacement	—	—	C-5

4. Malfunction Detection/Troubleshooting Procedure

4-1. Malfunction Detection

- If any of the following incorrect operations are detected, the corresponding malfunction code appears on the copier's Touch Panel.
- To cancel the malfunction, open, then close the copier's Front Door.

Code	Description	Detection Timing
C0BA0	Elevator Motor Ascent/ Descent Drive Failure	• The Elevator Tray Upper Limit Sensor (PC14-FN) is not blocked even after the set period of time has elapsed after the Power Switch is set to ON. • The Elevator Tray Home Position Sensor (PC3-FN) and Elevator Tray Lower Limit Sensor (PC15-FN) are not blocked even after the set period of time has elapsed after the Elevator Motor (M11-FN) is energized. • The Elevator Tray does not stop at the position for the specified tray after the Elevator Motor (M11-FN) is energized (beginning of descent operation) and the Elevator Tray Upper Limit Sensor (PC14-FN) is blocked. • The Elevator Tray Lower Limit Sensor (PC15-FN) is not blocked even after the set period of time has elapsed after the Elevator Motor (M11-FN) is energized (beginning of ascent operation) when paper is being fed out. • The Lock signal is detected after the set period of time has elapsed after the Elevator Motor (M11-FN) is energized.
C0B30	Aligning Plate 1 Drive Failure	• The Alignment Home Position Sensor 1 (PC6-FN) is not blocked even after the set period of time has elapsed after the Power Switch is set to ON. • The Alignment Home Position Sensor 1 (PC6-FN) is not unblocked even after the set period of time has elapsed after the Alignment Motor 1 (M4-FN) is energized.
C0B32	Aligning Plate 2 Drive Failure	• The Alignment Home Position Sensor 2 (PC7-FN) is not blocked even after the set period of time has elapsed after the Power Switch is set to ON. • The Alignment Home Position Sensor 2 (PC7-FN) is not unblocked even after the set period of time has elapsed after the Alignment Motor 2 (M5-FN) is energized.
C0B50	Staple Drive Failure	The Home Position Sensor is not blocked even after the set period of time has elapsed after the Staple Motor is energized (beginning of staple operation).

Code	Description	Detection Timing
C0B20	Staple Unit CD Drive Failure	The Staple Home Position Sensor (PC10-FN) is not blocked even after the set period of time has elapsed after the Stapling Unit Moving Motor (M7-FN) is energized (beginning of return operation to predetermined position).
C0B47	Paper Holding Drive Failure	• The Exit Paddle Home Position Sensor (PC11-FN) is not blocked even after the set period of time has elapsed after the Exit Paddle Solenoid (SL2-FN) is activated (beginning of paddle retraction operation). • The Exit Paddle Home Position Sensor (PC11-FN) is not unblocked even after the set period of time has elapsed after the Exit Paddle Solenoid (SL2-FN) is activated (beginning of paddle paper-holding operation).
C0B48	Exit Roller Pressure/ Retraction Failure	• The Exit Roller Home Position Sensor (PC12-FN) is not blocked even after the set period of time has elapsed after the Exit Open/Close Motor (M6-FN) is energized (beginning of pressure operation). • The Exit Roller Home Position Sensor (PC12-FN) is not unblocked even after the set period of time has elapsed after the Exit Open/Close Motor (M6-FN) is energized (beginning of retraction operation).
C0B4B	Shutter Drive Failure	• The Shutter Home Position Sensor (PC16-FN) is not unblocked even after the set period of time has elapsed after the Exit Open/Close Motor (M6-FN) is energized (beginning of shutter-opening operation). • The Shutter Home Position Sensor (PC16-FN) is not blocked even after the set period of time has elapsed after the Exit Open/Close Motor (M6-FN) is energized (beginning of shutter-closing operation).
C0B73	Punch Cam Motor Unit Failure	The Punch Motor Pulse Sensor cannot detect both edges of H/L even after the set period of time has elapsed while the Punch Drive Motor is energized.

4-2. Malfunction Detection Timing and Troubleshooting Procedure

(1) C0BA0: Elevator Motor Ascent/Descent Drive Failure

<Detection Timing>

Malfunction Code	Description
C0BA0	• The Elevator Tray Upper Limit Sensor (PC14-FN) is not blocked even after the set period of time has elapsed after the Power Switch is set to ON. • The Elevator Tray Home Position Sensor (PC3-FN) and Elevator Tray Lower Limit Sensor (PC15-FN) are not blocked even after the set period of time has elapsed after the Elevator Motor (M11-FN) is energized. • The Elevator Tray does not stop at the position for the specified tray after the Elevator Motor (M11-FN) is energized (beginning of descent operation) and the Elevator Tray Upper Limit Sensor (PC14-FN) is blocked. • The Elevator Tray Lower Limit Sensor (PC15-FN) is not blocked even after the set period of time has elapsed after the Elevator Motor (M11-FN) is energized (beginning of ascent operation) when paper is being fed out. • The Lock signal is detected after the set period of time has elapsed after the Elevator Motor (M11-FN) is energized.

Action

Relevant Electrical Components	
Elevator Motor (M11-FN) Elevator Tray Home Position Sensor (PC3-FN) Elevator Tray Upper Limit Sensor (PC14-FN)	Elevator Tray Lower Limit Sensor (PC15-FN) Elevator Board (PWB-B FN) Control Board (PWB-A FN)

Step	Operations	Ref. Page	WIRING DIAGRAM	
			Control signal	Location (Electrical Components)
1	Check the M11-FN connector for proper connection and correct as necessary.	—	—	—
2	Check M11-FN for proper drive coupling and correct as necessary.	—	—	—
3	If AK-1 is connected, check the connector for proper connection, and correct as necessary.	—	—	—
4	Check the installation position of the AD-1 tray, and correct as necessary.	—	—	—
5	M11-FN operation check	☞ T-3	PWB-A FN PJ7A FN-1,2	G-7
6	PC3-FN sensor check	☞ T-1	PWB-B FN PJ9A FN-7	I-7
7	PC14-FN sensor check	☞ T-1	PWB-B FN PJ9A FN-3	H-7
8	PC15-FN sensor check	☞ T-1	PWB-B FN PJ9A FN-4	I-7
9	PWB-B FN replacement	—	—	I-6
10	PWB-A FN replacement	—	—	C-5

(2) C0B30: Aligning Plate 1 Drive Failure

(3) C0B32: Aligning Plate 2 Drive Failure

<Detection Timing>

Malfunction Code	Description
C0B30	• The Alignment Home Position Sensor 1 (PC6-FN) is not blocked even after the set period of time has elapsed after the Power Switch is set to ON. • The Alignment Home Position Sensor 1 (PC6-FN) is not unblocked even after the set period of time has elapsed after the Alignment Motor 1 (M4-FN) is energized.
C0B32	• The Alignment Home Position Sensor 2 (PC7-FN) is not blocked even after the set period of time has elapsed after the Power Switch is set to ON. • The Alignment Home Position Sensor 2 (PC7-FN) is not unblocked even after the set period of time has elapsed after the Alignment Motor 2 (M5-FN) is energized.

Action

Relevant Electrical Components	
Alignment Motor 1 (M4-FN) Alignment Motor 2 (M5-FN) Alignment Home Position Sensor 1 (PC6-FN) Alignment Home Position Sensor 2 (PC7-FN)	Control Board (PWB-A FN)

✻ C0B30

Step	Operations	Ref. Page	WIRING DIAGRAM	
			Control signal	Location (Electrical Components)
1	Check the M4-FN connector for proper connection and correct as necessary.	—	—	—
2	Check M4-FN for proper drive coupling and correct as necessary.	—	—	—
3	M4-FN operation check	☞ T-3	—	G-7
4	PC6-FN sensor check	☞ T-1	PWB-A FN PJ13A FN-3	F-7
5	PWB-A FN replacement	—	—	C-5

✻ C0B32

Step	Operations	Ref. Page	WIRING DIAGRAM	
			Control signal	Location (Electrical Components)
1	Check the M5-FN connector for proper connection and correct as necessary.	—	—	—
2	Check M5-FN for proper drive coupling and correct as necessary.	—	—	—
3	M5-FN operation check	☞ T-3	—	G-7
4	PC7-FN sensor check	☞ T-1	PWB-A FN PJ13A FN-6	F-7
5	PWB-A FN replacement	—	—	C-5

(4) C0B50: Staple Drive Failure

<Detection Timing>

Malfunction Code	Description
C0B50	The Home Position Sensor is not blocked even after the set period of time has elapsed after the Staple Motor is energized (beginning of staple operation).

Action

Relevant Electrical Components	
Staple Unit	Control Board (PWB-A FN)

Step	Operations	Ref. Page	WIRING DIAGRAM	
			Control signal	Location (Electrical Components)
1	Check the Staple unit connector for proper connection and correct as necessary.	—	—	—
2	Check the Staple Unit for proper drive coupling, and correct as necessary.	—	—	—
3	Staple Unit operation check	—	—	D-7
4	Staple Unit replacement	☞ D-5	—	D-7
5	PWB-A FN replacement	—	—	C-5

(5) C0B20: Staple Drive Failure

<Detection Timing>

Malfunction Code	Description
C0B20	The Staple Home Position Sensor (PC10-FN) is not blocked even after the set period of time has elapsed after the Stapling Unit Moving Motor (M7-FN) is energized (beginning of return operation to predetermined position).

Action

Relevant Electrical Components	
Stapling Unit Moving Motor (M7-FN) Staple Home Position Sensor (PC10-FN)	Control Board (PWB-A FN)

Step	Operations	Ref. Page	WIRING DIAGRAM	
			Control signal	Location (Electrical Components)
1	Check for interference with the Shutter and Exit Roller, and correct as necessary.	—	—	—
2	Check the M7-FN connector for proper connection and correct as necessary.	—	—	—
3	Check M7-FN for proper drive coupling and correct as necessary.	—	—	—
4	M7-FN operation check	☞ T-3	—	E-7
5	PC10-FN sensor check	☞ T-1	PWB-A FN PJ17A FN-3	D-7
6	PWB-A FN replacement	—	—	C-5

(6) C0B47: Paper Holding Drive Failure

<Detection Timing>

Malfunction Code	Description
C0B47	• The Exit Paddle Home Position Sensor (PC11-FN) is not blocked even after the set period of time has elapsed after the Exit Paddle Solenoid (SL2-FN) is activated (beginning of paddle retraction operation). • The Exit Paddle Home Position Sensor (PC11-FN) is not unblocked even after the set period of time has elapsed after the Exit Paddle Solenoid (SL2-FN) is activated (beginning of paddle paper-holding operation).

Action

Relevant Electrical Components	
Exit Paddle Solenoid (SL2-FN) Exit Paddle Home Position Sensor (PC11-FN)	Control Board (PWB-A FN)

Step	Operations	Ref. Page	WIRING DIAGRAM	
			Control signal	Location (Electrical Components)
1	Check the SL2-FN connector for proper connection and correct as necessary.	—	—	—
2	PC11-FN sensor check	☞ T-1	PWB-A FN PJ17A FN-7	D-7
3	SL2-FN operation check	☞ T-2	PWB-A FN PJ18A FN-6	D-7
4	PWB-A FN replacement	—	—	C-5

(7) C0B48: Exit Roller Pressure/Retraction Failure

<Detection Timing>

Malfunction Code	Description
C0B48	• The Exit Roller Home Position Sensor (PC12-FN) is not blocked even after the set period of time has elapsed after the Exit Open/Close Motor (M6-FN) is energized (beginning of pressure operation). • The Exit Roller Home Position Sensor (PC12-FN) is not unblocked even after the set period of time has elapsed after the Exit Open/ Close Motor (M6-FN) is energized (beginning of retraction operation).

Action

Relevant Electrical Components	
Exit Open/Close Motor (M6-FN) Exit Roller Home Position Sensor (PC12-FN)	Control Board (PWB-A FN)

Step	Operations	Ref. Page	WIRING DIAGRAM	
			Control signal	Location (Electrical Components)
1	Check the M6-FN connector for proper connection and correct as necessary.	—	—	—
2	Check M6-FN for proper drive coupling and correct as necessary.	—	—	—
3	M6-FN operation check	☞ T-3	PWB-A FN PJ20A FN-1,2	B-7
4	PC12-FN sensor check	☞ T-1	PWB-A FN PJ20A FN-7	A-7
5	PWB-A FN replacement	—	—	C-5

(8) C0B4B: Shutter Drive Failure

<Detection Timing>

Malfunction Code	Description
C0B4B	• The Shutter Home Position Sensor (PC16-FN) is not unblocked even after the set period of time has elapsed after the Exit Open/Close Motor (M6-FN) is energized (beginning of shutter-opening operation). • The Shutter Home Position Sensor (PC16-FN) is not blocked even after the set period of time has elapsed after the Exit Open/Close Motor (M6-FN) is energized (beginning of shutter-closing operation).

Action

Relevant Electrical Components	
Exit Open/Close Motor (M6-FN) Shutter Home Position Sensor (PC16-FN)	Elevator Board (PWB-B FN) Control Board (PWB-A FN)

Step	Operations	Ref. Page	WIRING DIAGRAM	
			Control signal	Location (Electrical Components)
1	Check the M6-FN connector for proper connection and correct as necessary.	—	—	—
2	Check M6-FN for proper drive coupling and correct as necessary.	—	—	—
3	M6-FN operation check	☞ T-3	PWB-A FN PJ20A FN-1,2	B-7
4	PC16-FN sensor check	☞ T-1	PWB-B FN PJ2B FN-9	H-7
5	PWB-B FN replacement	—	—	I-6
6	PWB-A FN replacement	—	—	C-5

(9) C0B73: Punch Cam Motor Unit Failure

<Detection Timing>

Malfunction Code	Description
C0B73	The Punch Motor Pulse Sensor cannot detect both edges of H/L even after the set period of time has elapsed while the Punch Drive Motor is energized.

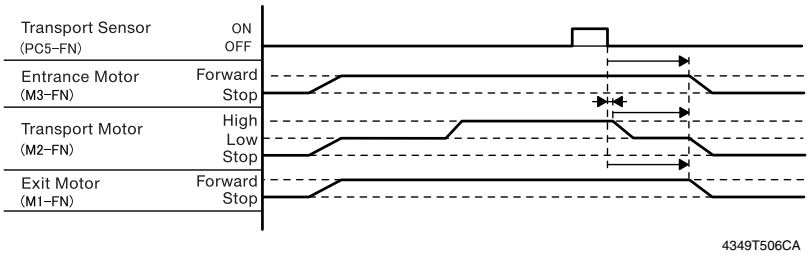
Action

Relevant Electrical Components	
Punch Unit	Control Board (PWB-A FN)

Step	Operations	Ref. Page	WIRING DIAGRAM	
			Control signal	Location (Electrical Components)
1	Check the Punch Unit connectors for proper connection, and correct as necessary.	—	—	—
2	Check the Punch Unit for proper drive coupling, and correct as necessary.	—	—	—
3	Punch Unit sensor check	☞ T-1	—	—
4	Punch Unit replacement	☞ D-9	—	F-2
5	PWB-A FN replacement	—	—	C-5

5. Time Chart

5-1. Non-sort mode (A4C, feeding out 1 sheet)



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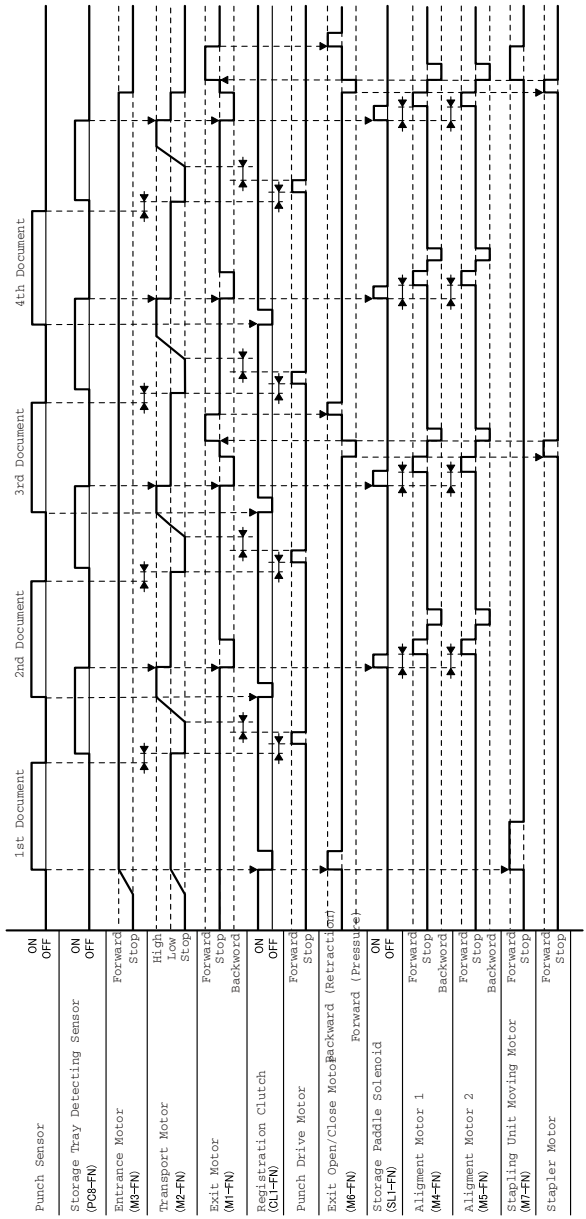
5-2. Sort mode (1 staple, 2 holes, A4C, 2 document pages, feeding out 2 sets)



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