MINOLTA

Option Service Manual

The essentials of imaging

AFR-19/TX Marker STAMP UNIT 2
PF-210
AD-16/SB-1/JS-203
PF-122
FN-117/AK-1/PK-6
MK-1
PF-124
SK-1

AD-16/SB-1: Standard equipment for Di2510/Di2510f/Di3010/Di3010f/Di3510/Di3510f.

1. SAFETY PRECAUTIONS FOR INSPECTION AND SERVICE

- When performing inspection and service procedures, observe the following precautions to prevent accidents and ensure utmost safety.

✻ Depending on the model, some of the precautions given in the following do not apply.

- Different markings are used to denote specific meanings as detailed below.

⚠ WARNING

- Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

⚠ CAUTION

- Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

- The following graphic symbols are used to give instructions that need to be observed.



Used to call the service technician attention to what is graphically represented inside the marking (including a warning).



Used to prohibit the service technician from doing what is graphically represented inside the marking.



Used to instruct the service technician to do what is graphically represented inside the marking.

1-1. Warning

⚠ WARNING

1. Always observe precautions.



- Parts requiring special attention in this product will include a label containing the mark shown on the left plus precautionary notes. Be sure to observe the precautions.
- Be sure to observe the “Safety Information” given in the Operator’s Manual.

⚠ WARNING

2. Before starting the procedures, be sure to unplug the power cord.



- This product contains a high-voltage unit and a circuit with a large current capacity that may cause an electric shock or burn.
- The product also contains parts that can jerk suddenly and cause injury.
- If this product uses a laser, laser beam leakage may cause eye damage or blindness.

3. Do not throw toner or the toner bottle into a fire.



- Do not throw toner or the Toner Bottle (Imaging Cartridge, Toner Cartridge) into a fire. Toner expelled from the fire may cause burns.

4. Use the specified parts.



- For replacement parts, always use the genuine parts specified in the manufacturer's parts manual. Installing a wrong or unauthorized part could cause dielectric breakdown, overload, or undermine safety devices resulting in possible electric shock or fire.
- Replace a blown electrical fuse or thermal fuse with its corresponding genuine part specified in the manufacturer's parts manual. Installing a fuse of a different make or rating could lead to a possible fire. If a thermal fuse blows frequently, the temperature control system may have a problem and action must be taken to eliminate the cause of the problem.

5. Handle the power cord with care and never use a multiple outlet.



- Do not break, crush or otherwise damage the power cord. Placing a heavy object on the power cord, or pulling or bending it may damage it, resulting in a possible fire or electric shock.
- Do not use a multiple outlet to which any other appliance or machine is connected.
- Be sure the power outlet meets or exceeds the specified capacity.
- Use only the power cord supplied in the package. If a power cord is not supplied, only use the power cord and plug that is specified in POWER CORD INSTRUCTION. Failure to use this cord could result in a fire or electrical shock.
- Use the power cord supplied in the package only for this machine and NEVER use it for any other product. Failure to observe this precaution could result in a fire or electrical shock.

6. Be careful with the high-voltage parts.



- A part marked with the symbol shown on the left carries a high voltage. Touching it could result in an electric shock or burn. Be sure to unplug the power cord before servicing this part or the parts near it.

7. Do not work with wet hands.



- Do not unplug or plug in the power cord, or perform any kind of service or inspection with wet hands. Doing so could result in an electric shock.

⚠ WARNING

8. Do not touch a high-temperature part.



- A part marked with the symbol shown on the left and other parts such as the exposure lamp and fusing roller can be very hot while the machine is energized. Touching them may result in a burn.
- Wait until these parts have cooled down before replacing them or any surrounding parts.

9. Maintain a grounded connection at all times.



- Connect the power cord to an electrical outlet that is equipped with a grounding terminal.

10. Do not remodel the product.



- Modifying this product in a manner not authorized by the manufacturer may result in a fire or electric shock. If this product uses a laser, laser beam leakage may cause eye damage or blindness.

11. Restore all parts and harnesses to their original positions.



- To promote safety and prevent product damage, make sure the harnesses are returned to their original positions and properly secured in their clamps and saddles in order to avoid hot parts, high-voltage parts, sharp edges, or being crushed.
- To promote safety, make sure that all tubing and other insulating materials are returned to their original positions. Make sure that floating components mounted on the circuit boards are at their correct distance and position off the boards.

1-2. Caution

⚠ CAUTION

1. Precautions for Service Jobs.



- A star washer and spring washer, if used originally, must be reinstalled. Omitting them may result in contact failure which could cause an electric shock or fire.
- When reassembling parts, make sure that the correct screws (size, type) are used in the correct places. Using the wrong screw could lead to stripped threads, poorly secured parts, poor insulating or grounding, and result in a malfunction, electric shock or injury.
- Take great care to avoid personal injury from possible burrs and sharp edges on the parts, frames and chassis of the product.
- When moving the product or removing an option, use care not to injure your back or allow your hands to be caught in mechanisms.

⚠ CAUTION

2. Precautions for Servicing with Covers and Parts Removed.

- Wherever feasible, keep all parts and covers mounted when energizing the product.
- If energizing the product with a cover removed is absolutely unavoidable, do not touch any exposed live parts and use care not to allow your clothing to be caught in the moving parts. Never leave a product in this condition unattended.
- Never place disassembled parts or a container of liquid on the product. Parts falling into, or the liquid spilling inside, the mechanism could result in an electric shock or fire.
- Never use a flammable spray near the product. This could result in a fire.
- Make sure the power cord is unplugged before removing or installing circuit boards or plugging in or unplugging connectors.
- Always use the interlock switch actuating jig to actuate an interlock switch when a cover is opened or removed. The use of folded paper or some other object may damage the interlock switch mechanism, possibly resulting in an electric shock, injury or blindness.

3. Precautions for the Working Environment.

- The product must be placed on a flat, level surface that is stable and secure.
- Never place this product or its parts on an unsteady or tilting workbench when servicing.
- Provide good ventilation at regular intervals if a service job must be done in a confined space for a long period of time.
- Avoid dusty locations and places exposed to oil or steam.
- Avoid working positions that may block the ventilation ports of the product.

4. Precautions for Handling Batteries. (Lithium, Nickel-Cadmium, etc.)

- Replace a rundown battery with the same type as specified in the manufacturer's parts manual.
- Before installing a new battery, make sure of the correct polarity of the installation or the battery could burst.
- Dispose of used batteries according to the local regulations. Never dispose of them at the user's premises or attempt to try to discharge one.

5. Precautions for the Laser Beam. (Only for Products Employing a Laser)

- Removing the cover marked with the caution label could lead to possible exposure to the laser beam, resulting in eye damage or blindness. Be sure to unplug the power cord before removing this cover.
- If removing this cover while the power is ON is unavoidable, be sure to wear protective laser goggles that meet specifications.
- Make sure that no one enters the room when the machine is in this condition.
- When handling the laser unit, observe the "Precautions for Handling Laser Equipment."

6. Precautions for storing the toner or imaging cartridge.

- Be sure to keep the toner or imaging cartridge out of the reach of children. Licking the imaging cartridge or ingesting its contents is harmful to your health.

1-3. Used Batteries Precautions

ALL Areas

CAUTION

Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type recommended by the manufacturer.
Dispose of used batteries according to the manufacturer's instructions.

Germany

VORSICHT!

Explosionsgefahr bei unsachgemäßem Austausch der Batterie.
Ersatz nur durch denselben oder einen vom Hersteller empfohlenen gleichwertigen Typ.
Entsorgung gebrauchter Batterien nach Angaben des Herstellers.

France

ATTENTION

Il y a danger d'explosion s'il y a remplacement incorrect de la batterie.
Remplacer uniquement avec une batterie du même type ou d'un type équivalent recommandé par le constructeur.
Mettre au rebut les batteries usagées conformément aux instructions du fabricant.

Denmark

ADVARSEL!

Lithiumbatteri - Eksplosionsfare ved fejlagtig håndtering.
Udskiftning må kun ske med batteri af samme fabrikat og type.
Levér det brugte batteri tilbage til leverandøren.

Finland, Sweden

VAROITUS

Paristo voi räjähtää, jos se on virheellisesti asennettu.
Vaihda paristo ainoastaan laitevalmistajan suosittelemaan tyyppiin.
Hävitä käytetty paristo valmistajan ohjeiden mukaisesti.

VARNING

Explosionsfara vid felaktigt batteribyte.
Använd samma batterityp eller en ekvivalent typ som rekommenderas av apparattillverkaren.
Kassera använt batteri enligt fabrikantens instruktion.

Norway

ADVARSEL

Eksplosjonsfare ved feilaktig skifte av batteri.
Benytt samme batteritype eller en tilsvarende type anbefalt av apparatfabrikanten.
Brukte batterier kasseres i henhold til fabrikantens instruksjoner.

1-4. Other Precautions

- When handling circuit boards, observe the “HANDLING of PWBs”.
- The PC Drum is a very delicate component. Observe the precautions given in “HANDLING OF THE PC DRUM” because mishandling may result in serious image problems.
- Note that replacement of a circuit board may call for readjustments or resetting of particular items, or software installation.

1-5. Precautions for Service

- When performing inspection and service procedures, observe the following precautions to prevent mishandling of the machine and its parts.

✻ Depending on the model, some of the precautions given in the following do not apply.

1. Precautions Before Service

- When the user is using a word processor or personal computer from a wall outlet of the same line, take necessary steps to prevent the circuit breaker from opening due to overloads.
- Never disturb the LAN by breaking or making a network connection, altering termination, installing or removing networking hardware or software, or shutting down networked devices without the knowledge and express permission of the network administrator or the shop supervisor.

2. How to Use this Book

DIS/REASSEMBLY, ADJUSTMENT

- To reassemble the product, reverse the order of disassembly unless otherwise specified.

TROUBLESHOOTING

- If a component on a PWB or any other functional unit including a motor is defective, the text only instructs you to replace the whole PWB or functional unit and does not give troubleshooting procedures applicable within the defective unit.
- All troubleshooting procedures contained herein assume that there are no breaks in the harnesses and cords and all connectors are plugged into the right positions.
- The procedures preclude possible malfunctions due to noise and other external causes.

3. Precautions for Service

- Keep all disassembled parts in good order and keep tools under control so that none will be lost or damaged.
- After completing a service job, perform a safety check. Make sure that all parts, wiring and screws are returned to their original positions.
- Do not pull out the toner hopper while the toner bottle is turning. This could result in a damaged motor or locking mechanism.
- If the product is to be run with the front door open, make sure that the toner hopper is in the locked position.
- Do not use an air gun or vacuum cleaner for cleaning the ATDC Sensor and other sensors, as they can cause electrostatic destruction. Use a blower brush and cloth. If a unit containing these sensors is to be cleaned, first remove the sensors from the unit.

4. Precautions for Dis/Reassembly

- Be sure to unplug the copier from the outlet before attempting to service the copier.
- The basic rule is not to operate the copier anytime during disassembly. If it is absolutely necessary to run the copier with its covers removed, use care not to allow your clothing to be caught in revolving parts such as the timing belt and gears.
- Before attempting to replace parts and unplug connectors, make sure that the power cord of the copier has been unplugged from the wall outlet.
- Be sure to use the Interlock Switch Actuating Jig whenever it is necessary to actuate the Interlock Switch with the covers left open or removed.
- While the product is energized, do not unplug or plug connectors into the circuit boards or harnesses.
- Never use flammable sprays near the copier.
- A used battery should be disposed of according to the local regulations and never be discarded casually or left unattended at the user's premises.
- When reassembling parts, make sure that the correct screws (size, type) and toothed washer are used in the correct places.

5. Precautions for Circuit Inspection

- Never create a closed circuit across connector pins except those specified in the text and on the printed circuit.
- When creating a closed circuit and measuring a voltage across connector pins specified in the text, be sure to use the GND wire.

6. Handling of PWBs

During Transportation/Storage

- During transportation or when in storage, new P.W. Boards must not be indiscriminately removed from their protective conductive bags.
- Do not store or place P.W. Boards in a location exposed to direct sunlight and high temperature.
- When it becomes absolutely necessary to remove a Board from its conductive bag or case, always place it on its conductive mat in an area as free as possible from static electricity.
- Do not touch the pins of the ICs with your bare hands.
- Protect the PWBs from any external force so that they are not bent or damaged.

During Inspection/Replacement

- Avoid checking the IC directly with a multimeter; use connectors on the Board.
- Never create a closed circuit across IC pins with a metal tool.
- Before unplugging connectors from the P.W. Boards, make sure that the power cord has been unplugged from the outlet.
- When removing a Board from its conductive bag or conductive case, do not touch the pins of the ICs or the printed pattern. Place it in position by holding only the edges of the Board.
- When touching the PWB, wear a wrist strap and connect its cord to a securely grounded place whenever possible. If you cannot wear a wrist strap, touch a metal part to discharge static electricity before touching the PWB.
- Note that replacement of a PWB may call for readjustments or resetting of particular items.

7. Handling of Other Parts

- The magnet roller generates a strong magnetic field. Do not bring it near a watch, floppy disk, magnetic card, or CRT tube.

8. Handling of the PC Drum

✻ Only for Products Not Employing an Imaging Cartridge.

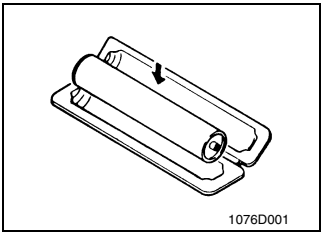
During Transportation/Storage

- Use the specified carton whenever moving or storing the PC Drum.
- The storage temperature is in the range between –20°C and +40°C.
- In summer, avoid leaving the PC Drum in a car for a long time.

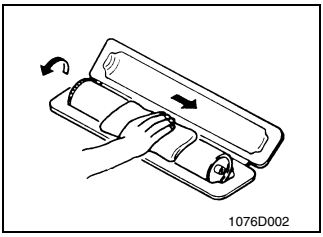
Handling

- Ensure that the correct PC Drum is used.
- Whenever the PC Drum has been removed from the copier, store it in its carton or protect it with a Drum Cloth.
- The PC Drum exhibits greatest light fatigue after being exposed to strong light over an extended period of time. Never, therefore, expose it to direct sunlight.
- Use care not to contaminate the surface of the PC Drum with oil-base solvent, fingerprints, and other foreign matter.
- Do not scratch the surface of the PC Drum.
- Do not apply chemicals to the surface of the PC Drum.
- Do not attempt to wipe clean the surface of the PC Drum.

If, however, the surface is contaminated with fingerprints, clean it using the following procedure.



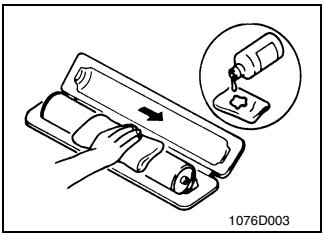
A. Place the PC Drum into one half of its carton.



B. Gently wipe the residual toner off the surface of the PC Drum with a dry, Dust-Free Cotton Pad.

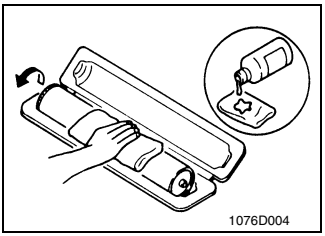
- Turn the PC Drum so that the area of its surface on which the line of toner left by the Cleaning Blade is present is facing straight up. Wipe the surface in one continuous movement from the rear edge of the PC Drum to the front edge and off the surface of the PC Drum.
- Turn the PC Drum slightly and wipe the newly exposed surface area with a CLEAN face of the Dust-Free Cotton Pad. Repeat this procedure until the entire surface of the PC Drum has been thoroughly cleaned.

✻ At this time, always use a CLEAN face of the dry Dust-Free Cotton Pad until no toner is evident on the face of the Pad after wiping.



C. Soak a small amount of either ethyl alcohol or isopropyl alcohol into a clean, unused Dust-Free Cotton Pad which has been folded over into quarters. Now, wipe the surface of the PC Drum in one continuous movement from its rear edge to its front edge and off its surface one to two times.

✻ Never move the Pad back and forth.



D. Using the SAME face of the Pad, repeat the procedure explained in the latter half of step 3 until the entire surface of the PC Drum has been wiped. Always OVERLAP the areas when wiping. Two complete turns of the PC Drum would be appropriate for cleaning.

NOTES

- *Even when the PC Drum is only locally dirtied, wipe the entire surface.*
- *Do not expose the PC Drum to direct sunlight. Clean it as quickly as possible even under interior illumination.*
- *If dirt remains after cleaning, repeat the entire procedure from the beginning one more time.*

9. Handling of the Imaging Cartridge and Print Unit

✻ Only for Products Employing an Imaging Cartridge and Print Unit.

During Transportation/Storage

- The storage temperature is in the range between –20 °C and +40 °C.
- In summer, avoid leaving the Imaging Cartridge and Print Unit in a car for a long time.

Handling

- Store the Imaging Cartridge and Print Unit in a place that is not exposed to direct sunlight.

Precautionary Information on the PC Drum Inside the Imaging Cartridge and Print Unit.

- Use care not to contaminate the surface of the PC Drum with oil-base solvent, fingerprints, and other foreign matter.
- Do not scratch the surface of the PC Drum.
- Do not attempt to wipe clean the surface of the PC Drum.

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AFR-19/
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Service Manual

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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 2-sided mode - 50 g/m^2 to 128 g/m^2 Mixed Original Detection mode Plain paper: 1-sided/2-sided mode - 50 g/m^2 to 128 g/m^2 FAX mode Plain paper: 1-sided mode - 35 g/m^2 to 128 g/m^2 2-sided mode - 50 g/m^2 to 128 g/m^2
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	

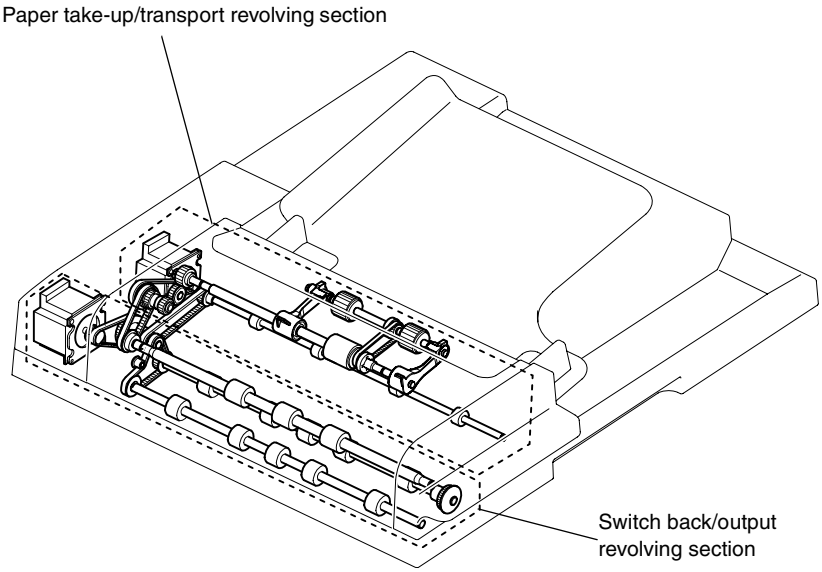
Prohibited original : Original that has a high possibility of causing problems if used.

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 or 129g/m^2 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

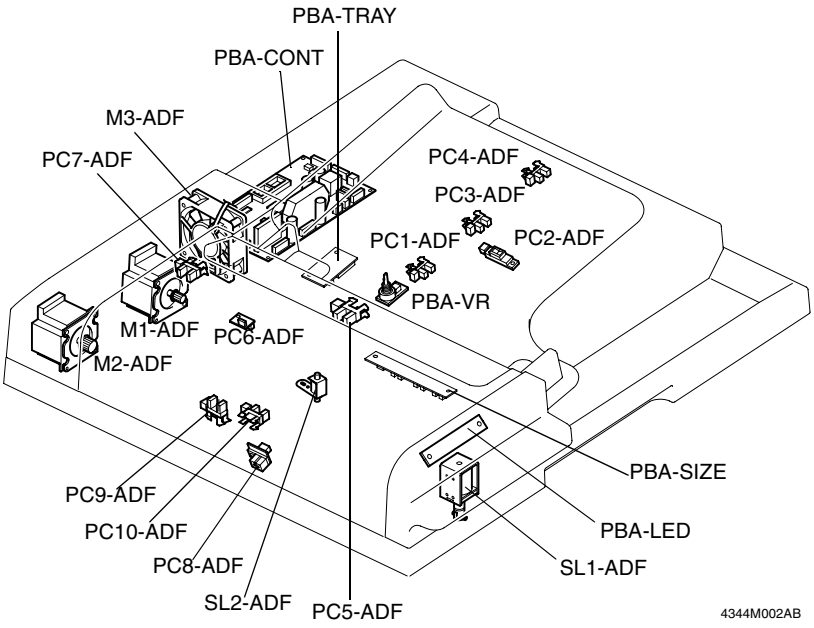
Originals not guaranteed for reliable feeding: Original that can be fed to some extent but is highly prone to cause problems if used.

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

*1: When Complete Stamp Unit 2 is installed.

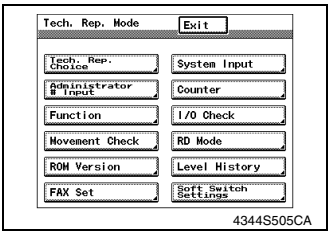
TEST MODES

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.

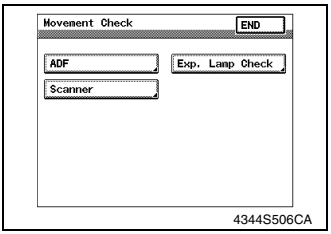
- Paper Passage
- Sensor Adjust (Auto)
- Backup Data Initialization

✻ 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".

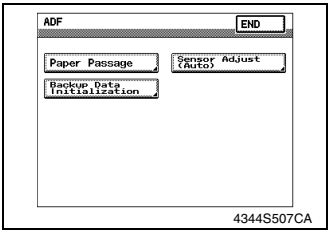
(1) Paper Passage

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

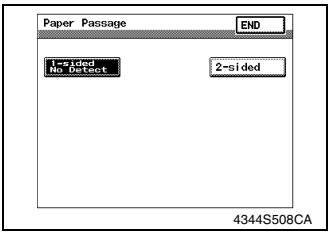
1. Display the Tech. Rep. Mode screen.



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.*

(2) Initialize Backup Data

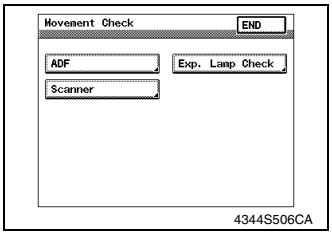
- To initialize the values adjusted with Sensor Adjust (Auto) and the values adjusted with Org. Width Detect.

NOTE

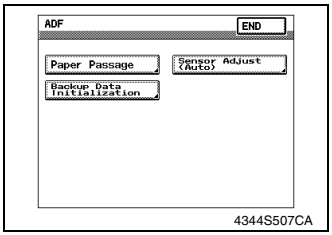
This adjustment must be made in any of the following cases:

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

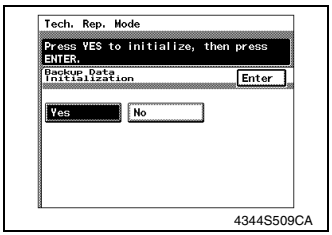
1. Display the Tech. Rep. Mode screen.



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.

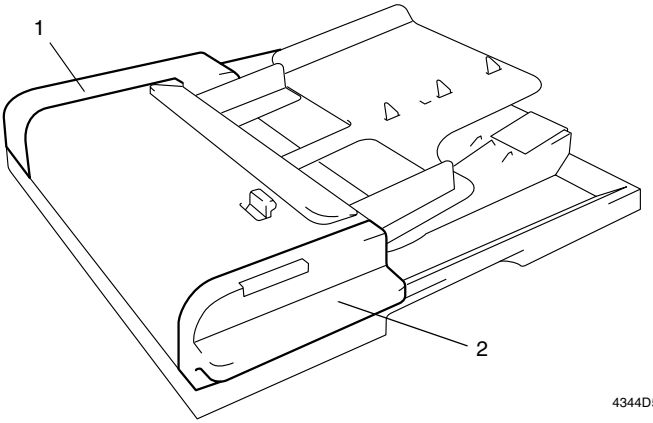
PM Parts	Job		Item Used for Cleaning	Qty	Ref. Page
	Clean	Replace			
Pickup Roller	50K	200K	Alcohol and soft cloth	2	☞ D-6
Paper Take-Up Roll	50K	200K		1	☞ D-6
Separator Roll	50K	200K		1	☞ D-7
Rollers and rolls	50K	—		—	☞ D-8,9
Scanning Guide	50K	—		1	☞ D-10
Reflective Sensor Section	200K	—	Blower Brush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

NOTES

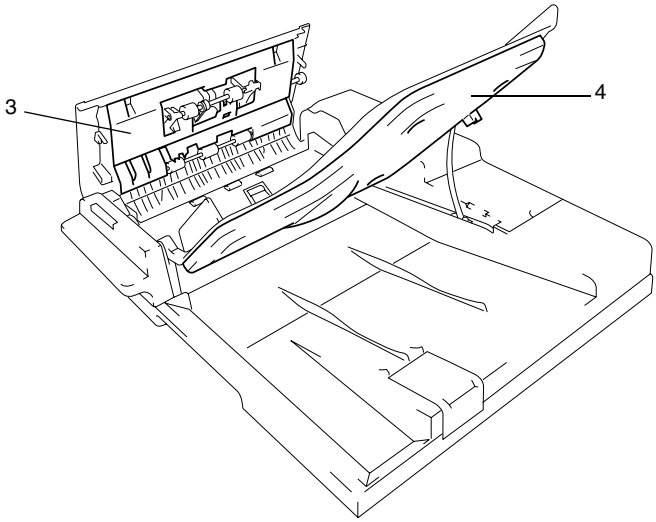
- *K = 1,000 copies*
- *Replace the Pickup Roller, Paper Take-Up Roller, and Separator Roller at the same time.*
- *The contents of this maintenance schedule are subject to change without notice.*
- *For part numbers, see Parts Manual and Parts Modification Notice.*

2. Disassembly and Cleaning

2-1. Removal of the Outer Cover



4344D526AA



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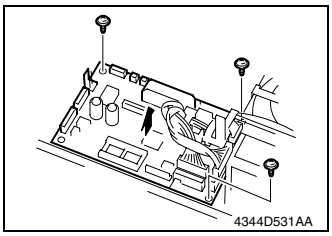
No.	Name	Removal Procedure
1	Rear Cover	Open the Upper Door. → Remove two screws. → Open ADF and unhook two tabs.
2	Front Cover	Open ADF. → Remove two screws.
3	Upper Door Rear Cover	Open the Upper Door. → Remove two screws.
4	Original Feed Tray Rear Cover	Lift up the Original Feed Tray. → Remove one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

---

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).

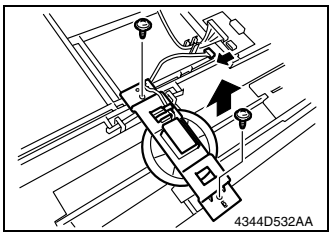
5. Power cycle and check whether size detection operates normally.
6. Upgrade the firmware.

☞ See “Firmware Upgrade” (D-21).

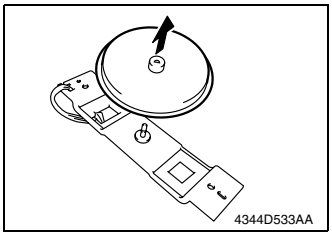
2-3. Removal of the Variable Resistor

<Removal Procedure>

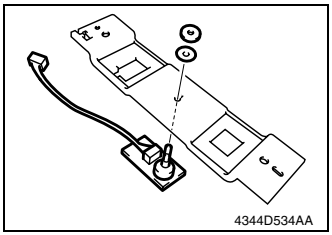
1. Turn OFF the power.
2. Remove the Original Feed Tray Rear Cover.



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

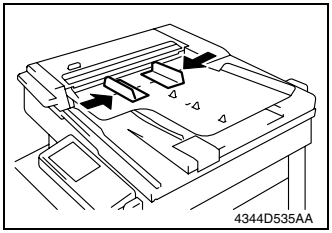


5. Remove the gear.



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

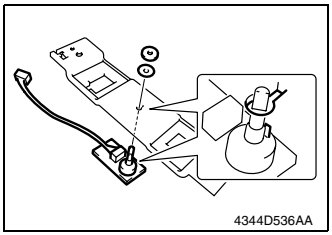
<Reinstallation Procedure>



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

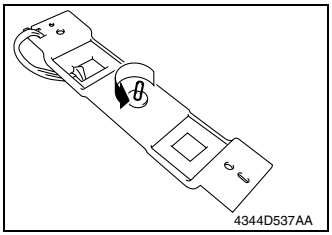
NOTE

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

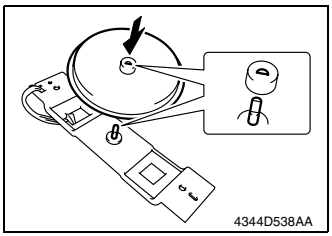


2. Use one nut to install the Variable Resistor.

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

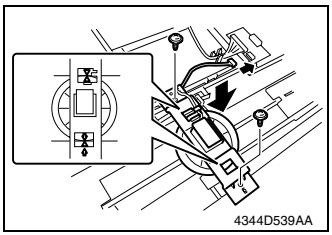


3. Turn the Variable Resistor counterclockwise until it stops.



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.

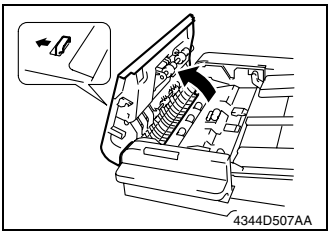
☞ See “Initialization of Backup Data” in Test Mode Operations (S-3).

8. Perform document width detection adjustment.

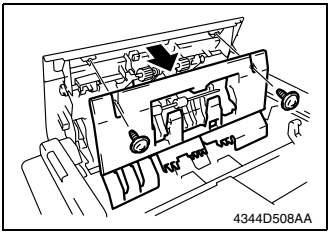
☞ See “Document Width Detection Adjustment” (D-19).

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

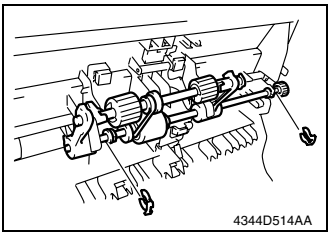
2-4. Removal of the Pickup Roller/Take-Up Roller



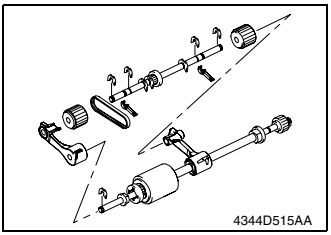
1. Open the Upper Door.



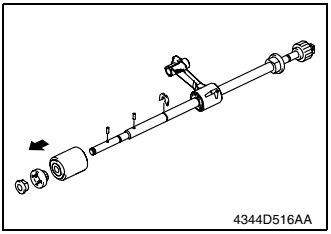
2. Remove two screws and the cover.



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.

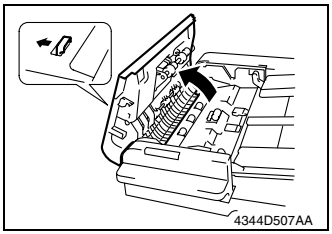


8. Remove one C-ring and remove the gear and bushing.
9. Remove two pins.
10. Remove the Paper Take-Up Roll.

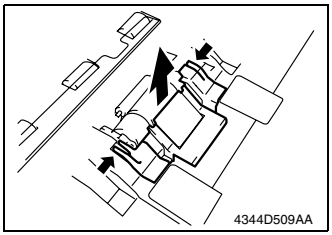
NOTE

- *Use care not to lose the pin.*

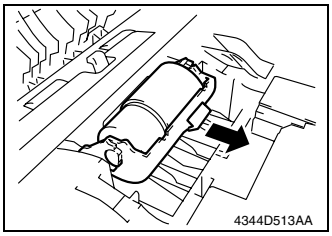
2-5. Removal of the Separator Roll



1. Open the Upper Door.

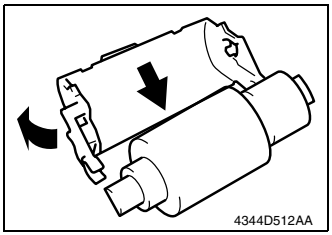


2. Hold the arrow sections in the figure and remove the cover.



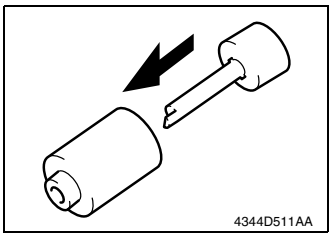
3. Remove the Paper Separator Roll Assy.

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



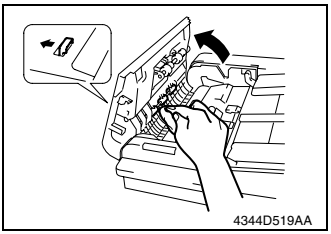
4. While opening up the holder, remove the shaft.

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

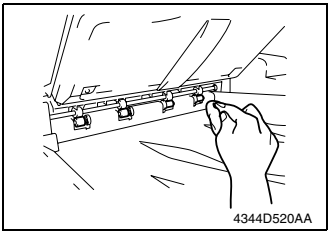


5. Remove the Separator Roller from the shaft.

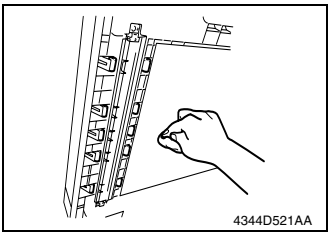
2-6. Cleaning of the Roll



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

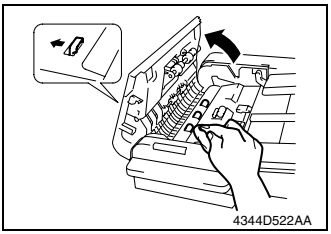


3. Lift up the Drawer.
4. Using a soft cloth dampened with alcohol, wipe the roll.

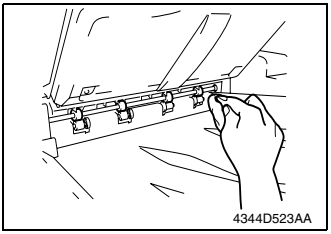


5. Open the Duplexing Document Feeder.
6. Using a soft cloth dampened with alcohol, wipe the roll.

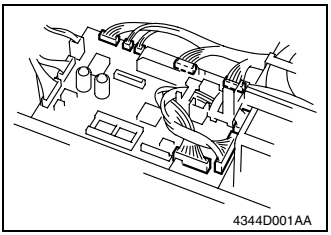
2-7. Cleaning of the Roller



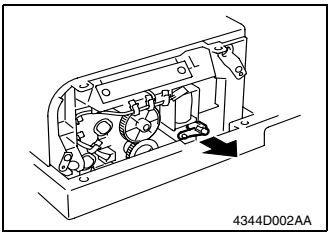
1. Open the Upper Door.
2. Using a soft cloth dampened with alcohol, wipe the roller.



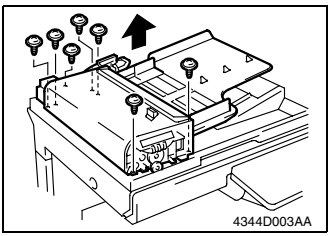
3. Lift up the Drawer.
4. Using a soft cloth dampened with alcohol, wipe the roller.



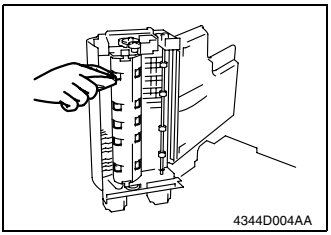
5. Remove the Front and Rear Cover.
6. Unplug eight connectors on the board.



7. Remove the lever.

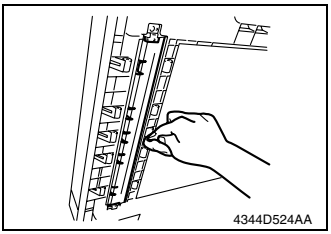


8. Remove seven screws and the Paper Take-Up Unit.



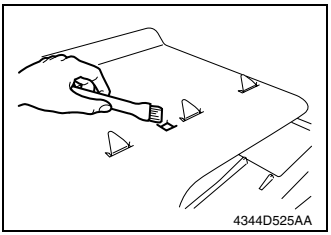
9. Using a soft cloth dampened with alcohol, wipe the roller.

2-8. Cleaning of the Scanning Guide



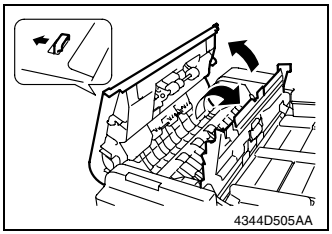
1. Open the Duplexing Document Feeder.
2. Using a soft cloth dampened with alcohol, wipe the Scanning Guide clean of dirt.

2-9. Cleaning of the Sensor Section

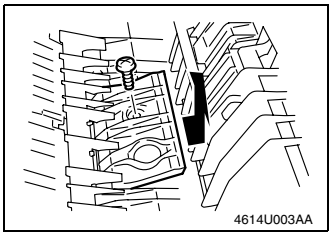


1. Clean the sensor using a brush or other similar tools.

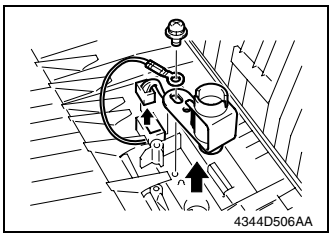
2-10. Removal of Complete Stamp Unit 2



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

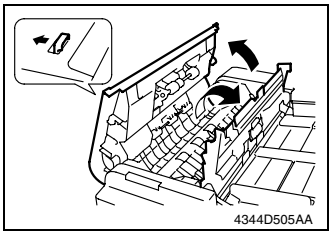


3. Remove one screw and the cover.

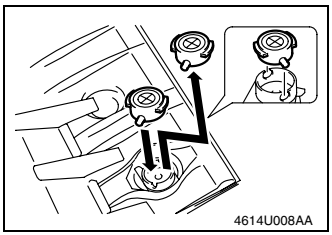


4. Remove one screw and unplug one connector.
5. Removal Complete Stamp Unit 2.

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.*

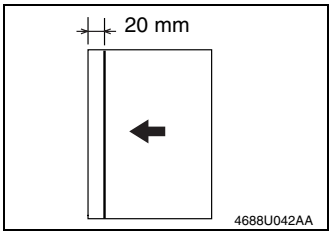
5. Close the Upper Door.

3. Adjustment

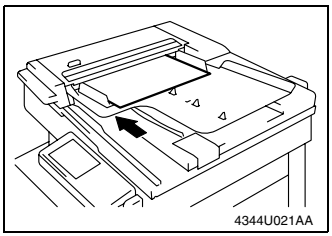
✻ Registration Loop adjustment in the Tech. Rep. Choice is only performed at the factory.

3-1. Leading Edge Skew Adjustment

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

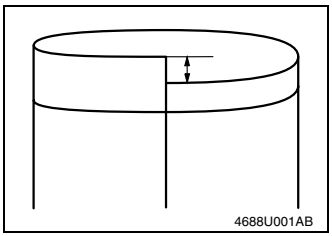


1. Prepare a test chart (A4) as shown in the left figure.

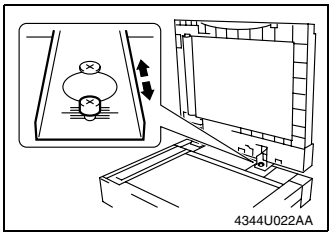


2. Set the test chart in the Duplexing Document Feeder, and make five 1-sided copies.

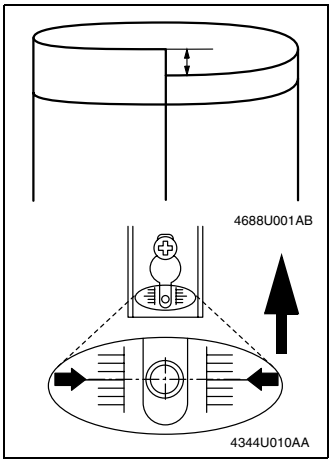
NOTE
- *Set the test chart sideways.*



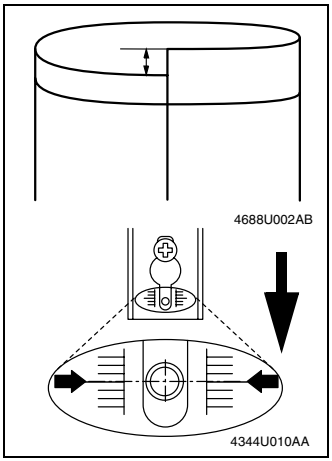
3. Align each copy sample as shown and check the deviation.
4. If the deviation is outside the specified range, perform the adjustment below.
   Specification: 0 ± 3.0 mm



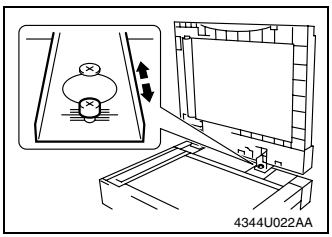
5. Loosen the one screw in the back to the right.



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



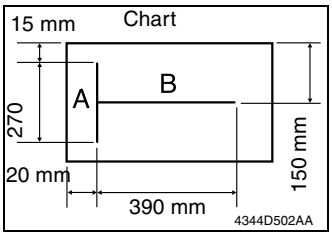
7. If the deviation is as shown to the left
   Move the graduations of the Duplexing Document Feeder to the back.



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

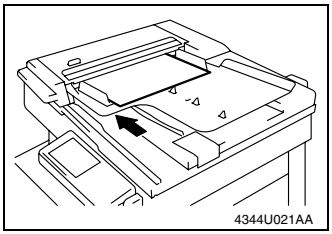
(Requirement: The error with respect to the reference line is ±1.0 % in the main scanning direction and ±1.5 % in the sub-scanning direction.)



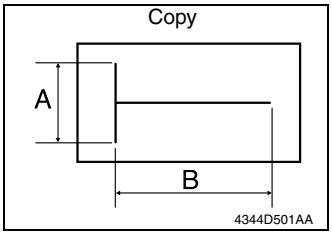
1. Prepare a test chart (A3) as shown in the left figure.

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

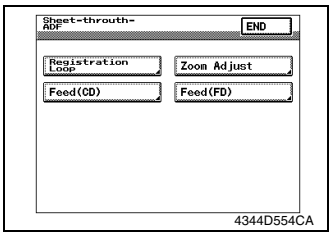
✻ FD: Draw a 390-mm line (B) 20 mm from the left edge and 150 mm from the top edge.



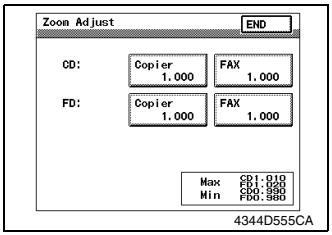
2. Copy the test chart at full size.



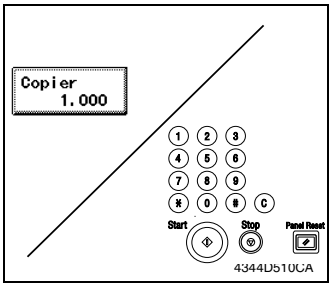
3. Measure the length of reference line A (CD) and B (FD) that have been copied and check against the specified range.
   Specification: A (CD) 270 mm ± 1.2 mm
   B (FD) 390 mm ± 2.0 mm



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.

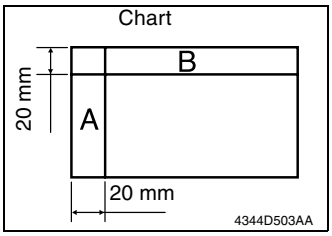
✻ If shorter than the specified range, adjust toward enlargement zoom ratio.

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

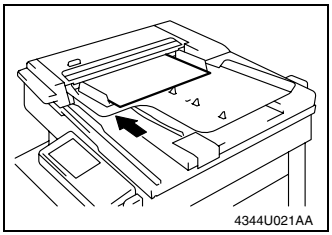
8. Touch the END key.
9. Make another copy and check the error.

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

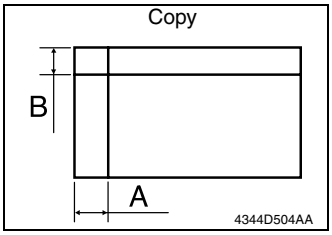
✻ Make this adjustment after adjusting the scanning zoom ratio.
(Requirement: The error with respect to the reference line is ± 10 % in the main scanning direction and ± 15 % in the sub-scanning direction.)



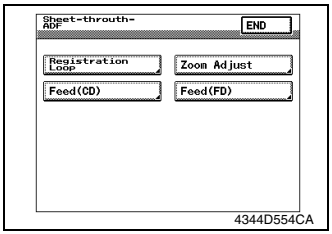
1. Prepare a test chart (A3) as shown in the left figure.
✻ A (CD): Draw a line 20 mm from the left edge.
✻ B (FD): Draw a line 20 mm from the top edge.



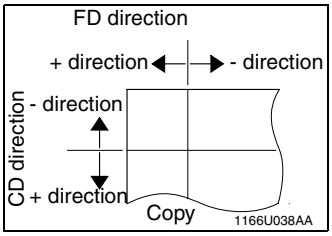
2. Copy the test chart at full size.



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



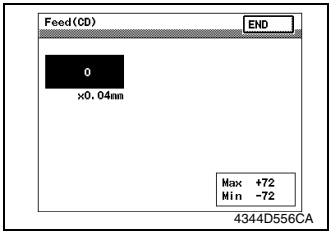
4. If the reference line is outside the specified range, select Tech. Rep. Mode → Tech. Rep. Choice → Sheet-through-ADF → Feed (CD) or Feed (FD).



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.

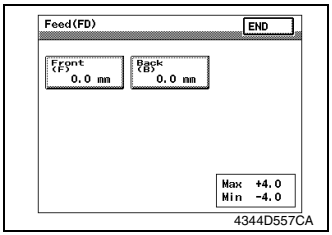


In the case of Feed (CD)

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

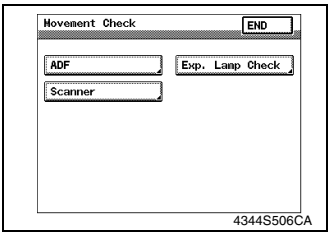
- Adjust the detection level of the Paper Passage Path Sensor automatically.

NOTE

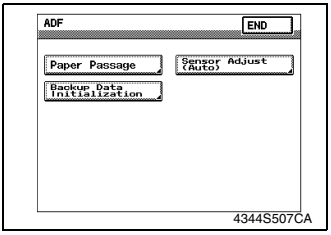
Make this adjustment after any of the following procedures has been performed.

- *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.



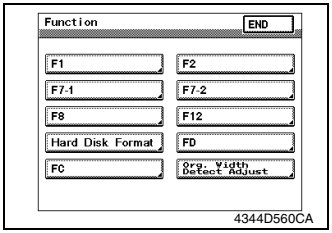
4. Select the Sensor Adjust (Auto) key.
5. Touch the END key.

3-5. Document Size Detection Adjustment

NOTE

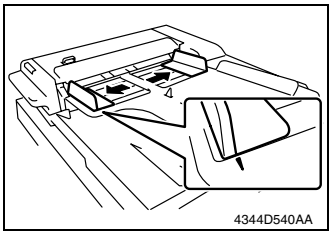
Make this adjustment after any of the following procedures has been performed.

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

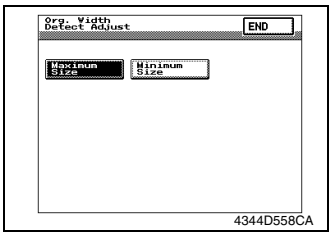


4344D560CA

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

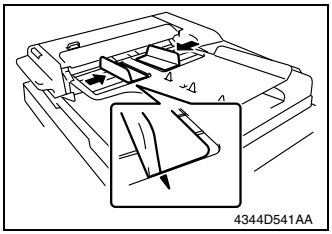

4344D540AA

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

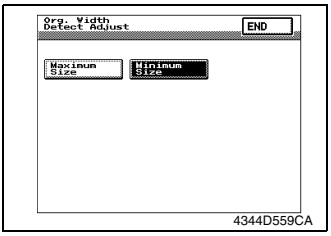


4344D558CA

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.

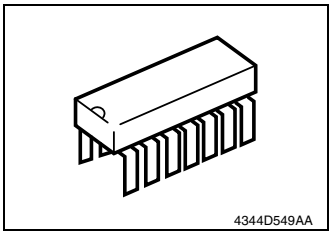


8. Touch the Minimum Size key.
9. Press the Start key.

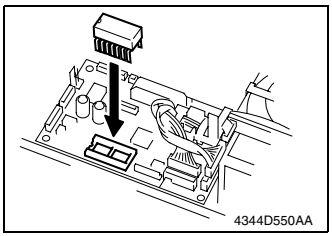
10. Power cycle and check whether size detection operates normally.

4. Miscellaneous

4-1. Firmware Upgrade



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

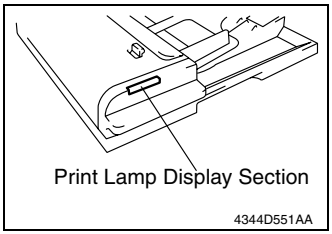


3. Insert the EEPROM you prepared at step 1 to the IC socket section of the Control Board.

NOTE

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

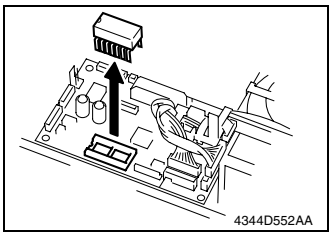
4. Turn ON the power.



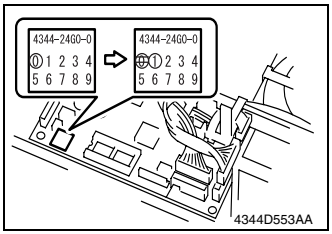
5. Check the firmware update status at the Print Lamp Display Section of the Duplexing Document Feeder.

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

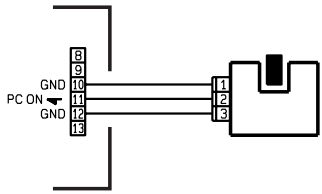
- Information required for troubleshooting and steps that must be performed are described in this chapter.

1-1. Electrical Components Check Procedure

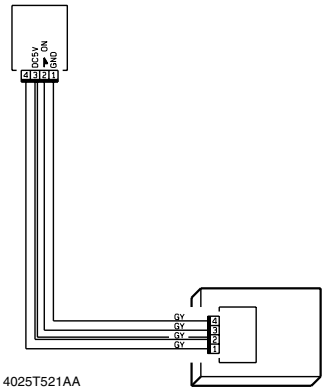
- If a paper misfeed or malfunction occurs, perform the following operation to check the condition of the electrical components.

(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.



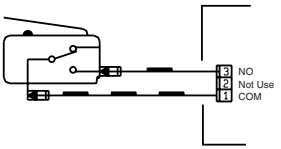
4025T520AA



4025T521AA

(2) Switch

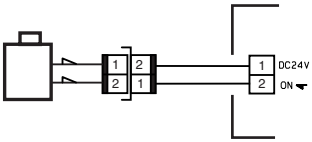
Step	Check	Result	Action
1	Does the input signal (NO) of the control board change from L to H when the switch is turned on?	NO	Replace the switch.
		YES	Replace the control board.



4025T523AB

(3) Solenoid

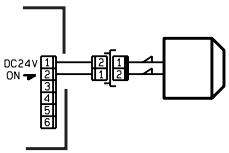
Step	Check	Result	Action
1	Does the output signal of the control board change from H to L when the solenoid is activated?	NO	Replace the control board.
		YES	Replace the solenoid.



4025T522AA

(4) Clutch

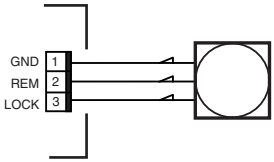
Step	Check	Result	Action
1	Does the output signal of the control board change from H to L when the clutch is activated?	NO	Replace the control board.
		YES	Replace the clutch.



4025T528AA

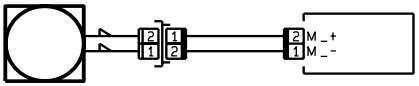
(5) Motor

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.



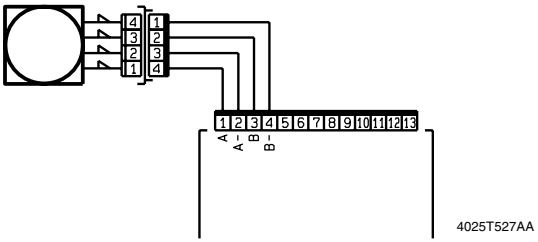
4025T526AA

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.



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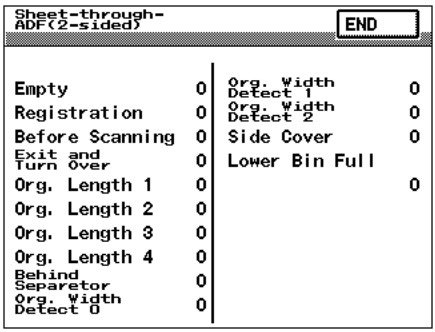
2. I/O CHECK

- 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	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	Before Scanning	Original Detection Sensor	Paper present	Paper not present		CN6 CONT-6
PC10-ADF	Exit and Turn Over	Exit/Turnover Sensor	Paper present	Paper not present		CN6 CONT-9
PC1-ADF	Org. Length 1	FD Paper Size Detection Sensor 1	Paper present	Paper not present		CN4 CONT-1
PC2-ADF	Org. Length 2	FD Paper Size Detection Sensor 2	Blocked	Unblocked		CN4 CONT-4
PC3-ADF	Org. Length 3	FD Paper Size Detection Sensor 3	Paper present	Paper not present		CN4 CONT-2
PC4-ADF	Org. Length 4	FD Paper Size Detection Sensor 4	Paper present	Paper not present		CN4 CONT-3
PC6-ADF	Behind 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.

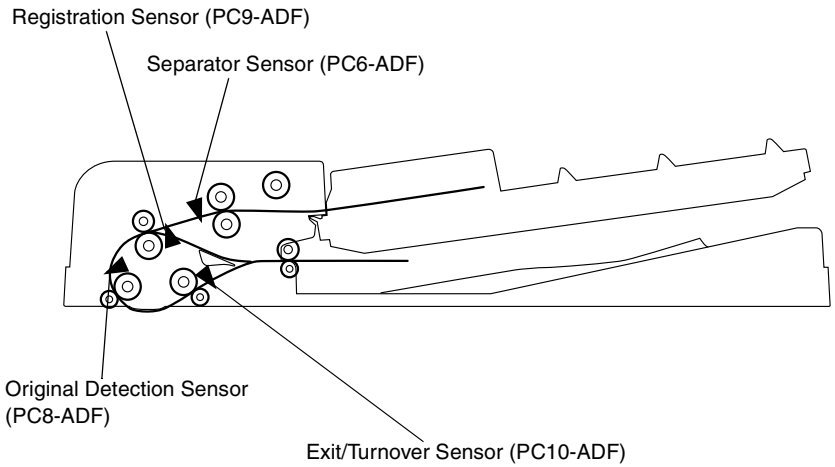
3. Misfeed Detection/Troubleshooting Procedures

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?	Clean the paper path and replace if necessary.
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 change the defective actuator.

3-2. Misfeed-Detecting Sensor Layout



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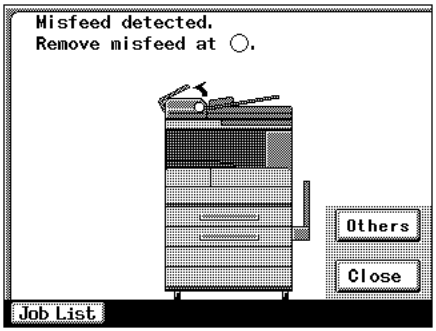
3-3. Misfeed Detected

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



4344T511CA

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.

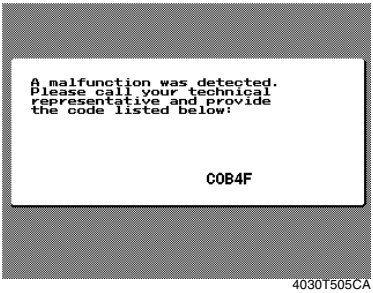
<Action>

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.



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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.

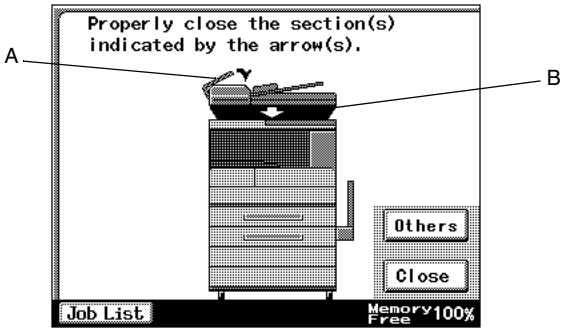
Action

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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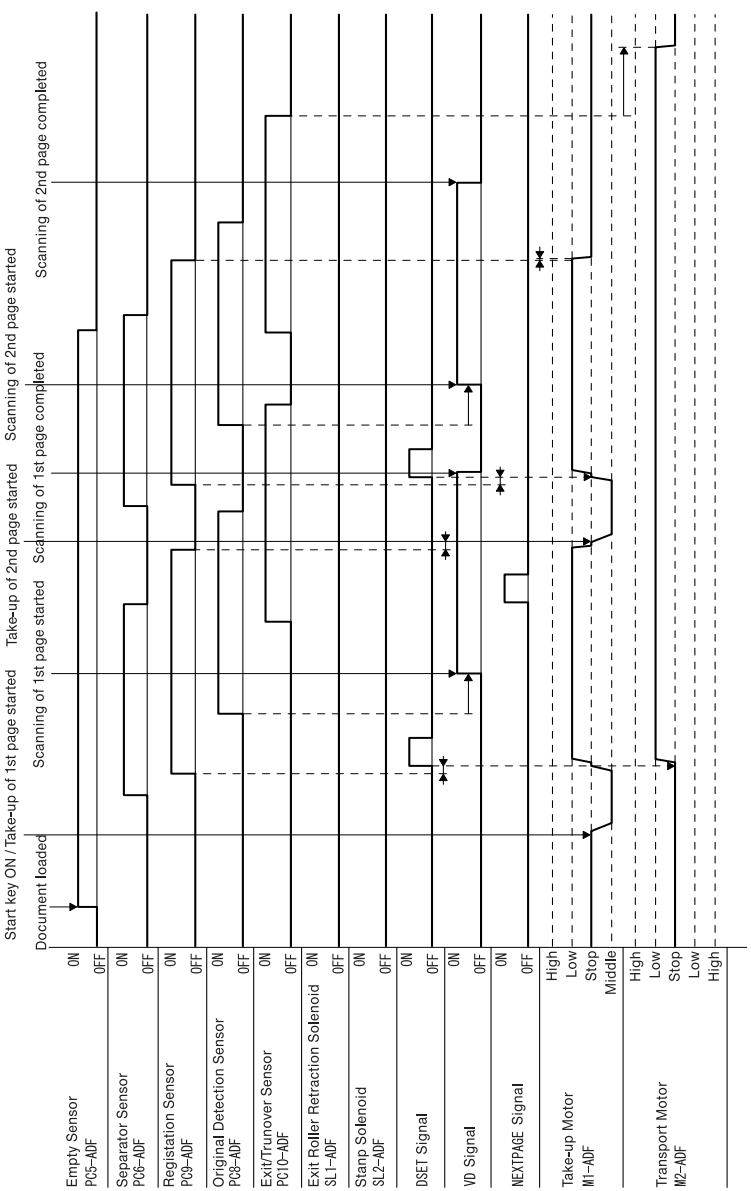
✻ Panel display and detection timing for each incorrect closure

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. Time Chart

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



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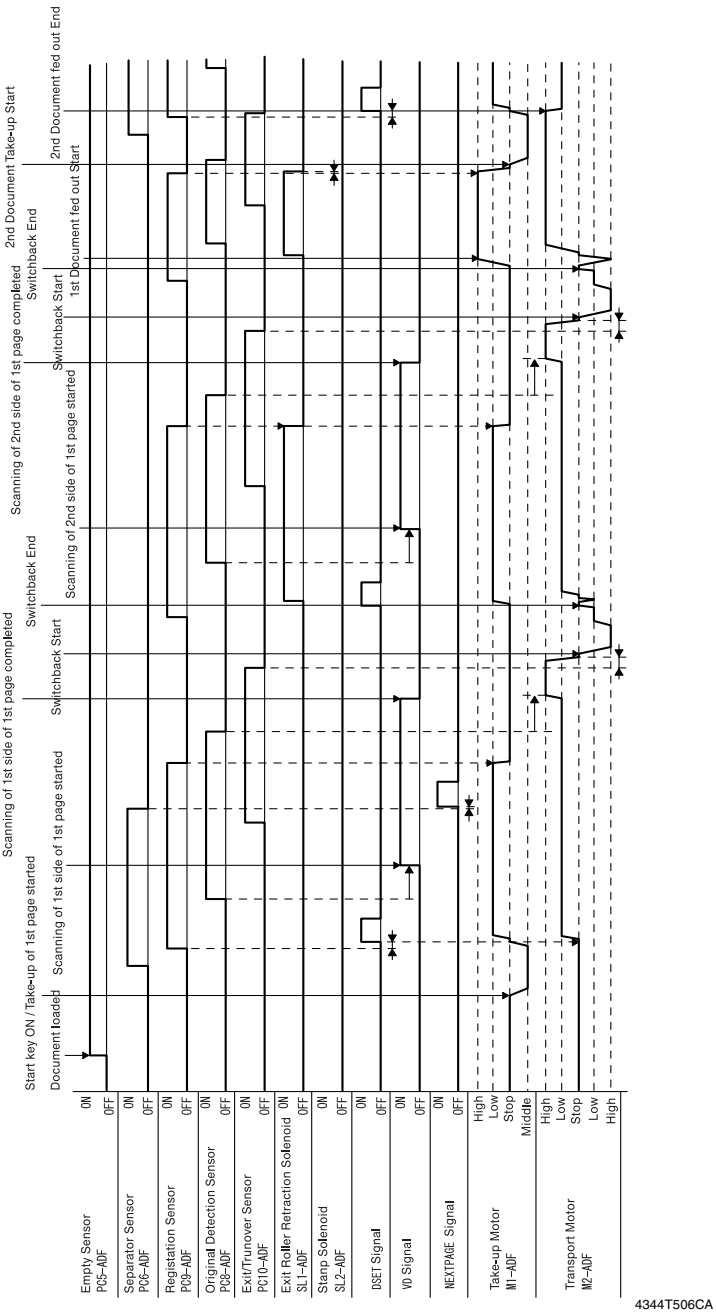
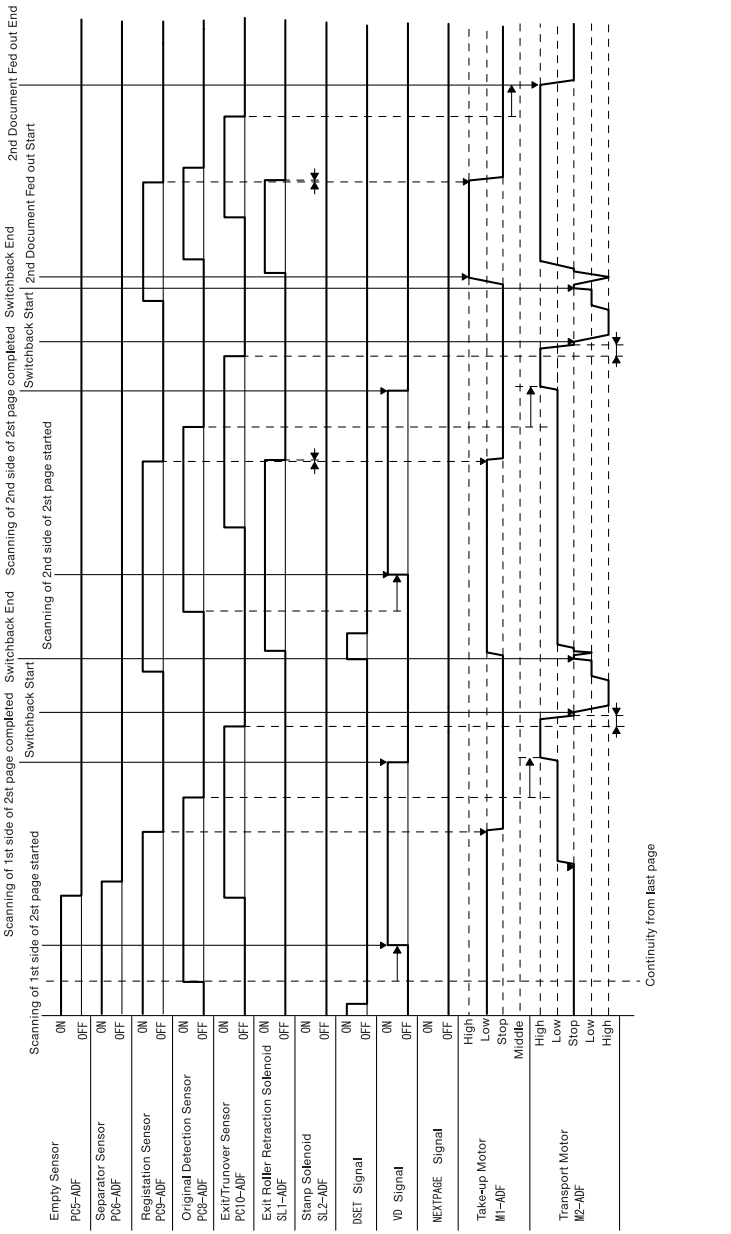
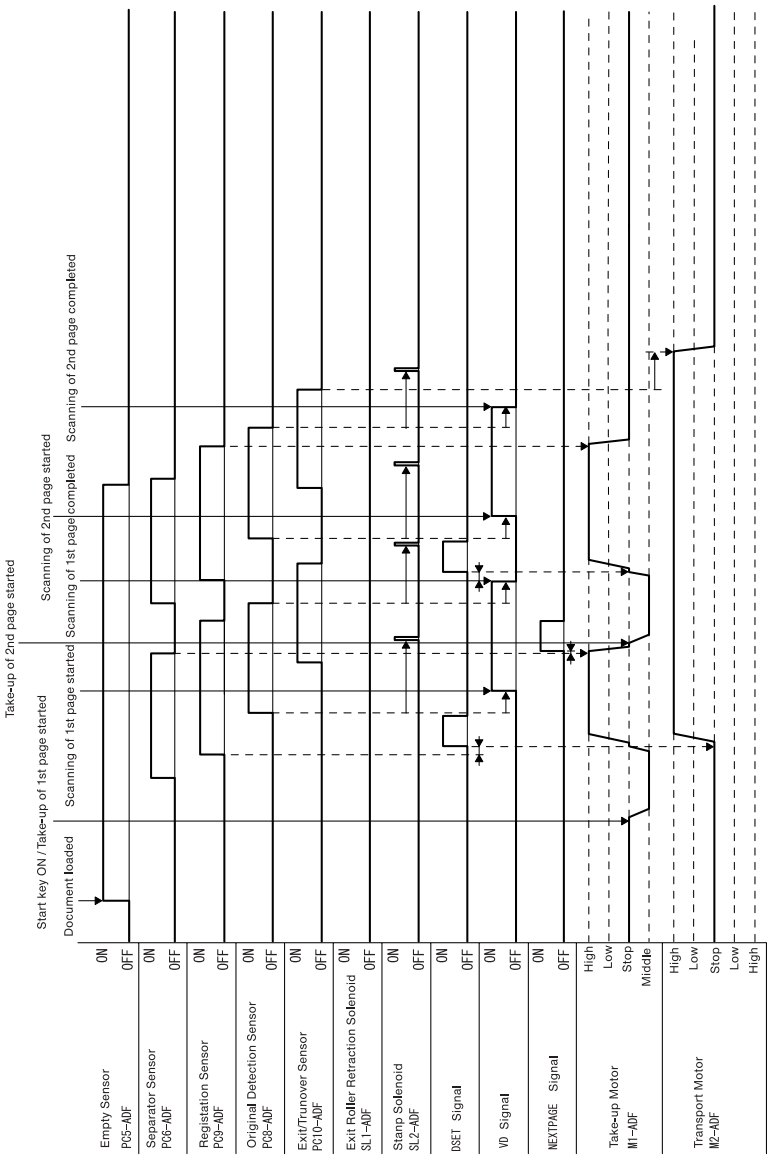
6-2. Double-sided document mode (A4C; 2-sheet feeding)




Scanning of 1st side of 2st page started
Scanning of 1st side of 2st page completed
Switchback Start
Switchback End
Scanning of 2nd side of 2st page started
Scanning of 2nd side of 2st page completed
Switchback Start
Switchback End
2nd Document Fed out Start
2nd Document Fed out End
Empty Sensor PS5-ADF
ON
OFF
Separator Sensor PS6-ADF
ON
OFF
Registation Sensor PS9-ADF
ON
OFF
Original Detection Sensor PS8-ADF
ON
OFF
Exit/Trunover Sensor PS10-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

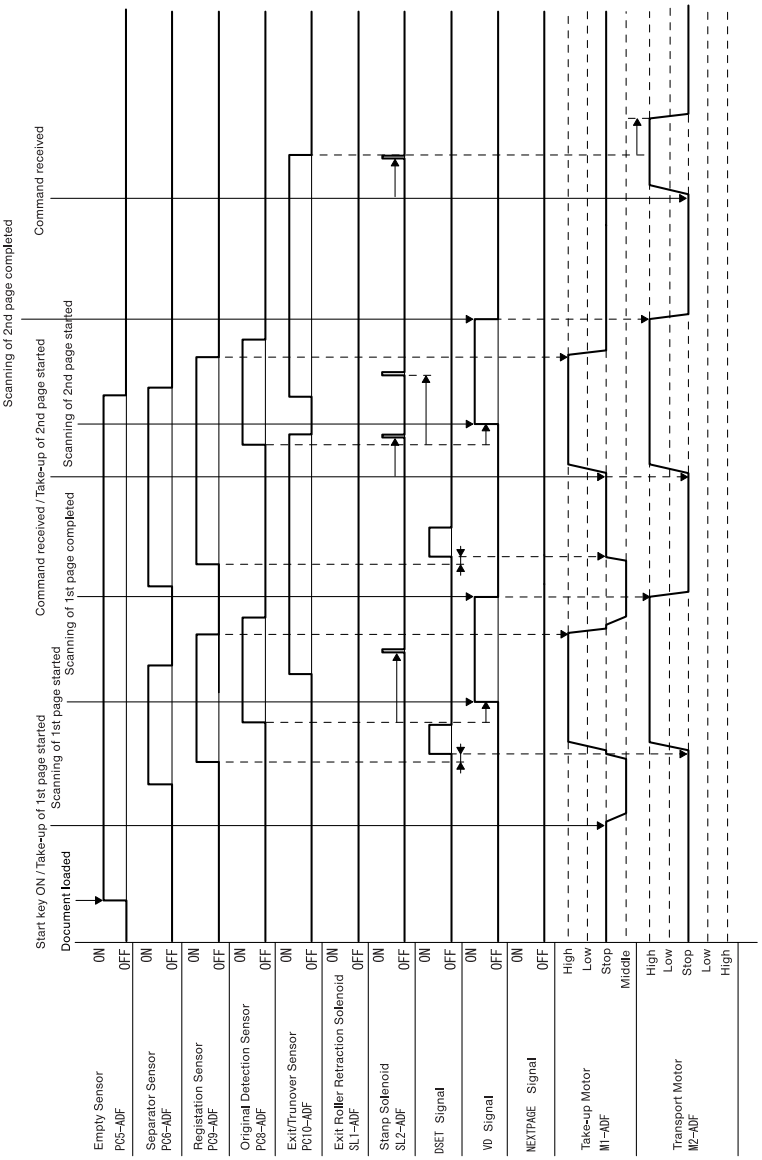
6-3. Fax (Fine) mode (A4C; 2-sheet feeding)



Stamping is performed only when Top/Bottom or Bottom is selected for TX Marker.

4344T508CA

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



4344T509CA

PF-210

Service Manual

19971

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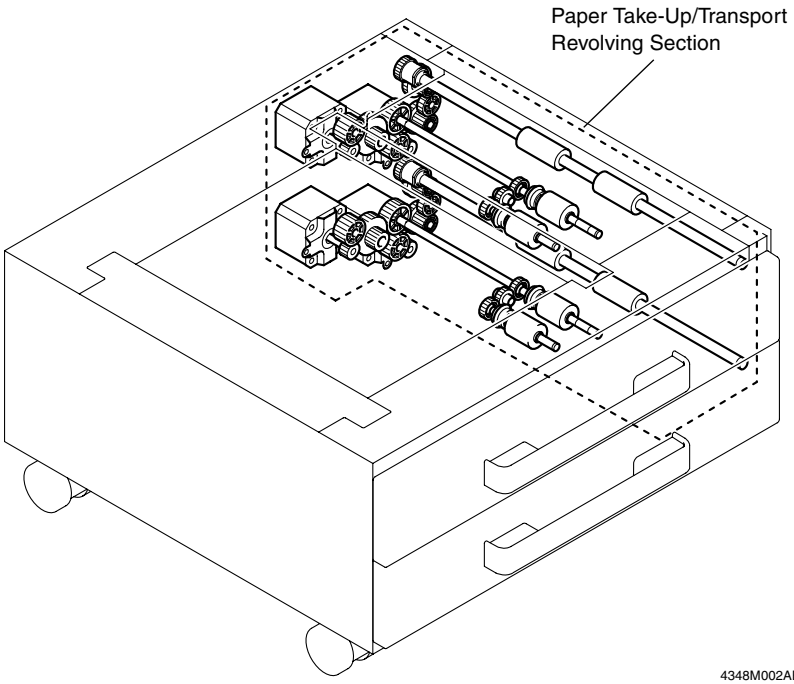
GENERAL

1. Specifications

Name	:	2 way Paper Take-Up Cabinet
Type	:	Front loading type 2 way paper take-up device
Installation	:	Desk type
Paper Type	:	Plain paper (56 g/m^2 to 110 g/m^2), recycled paper (60 g/m^2 to 90 g/m^2)
Paper Size	:	A5L to A3L, Ledger to G.Letter
Capacity	:	3rd Drawer: 550 sheets (64 g/m^2) 4th Drawer: 550 sheets (64 g/m^2)
Document Alignment	:	Center baseline
Power Requirements	:	DC 24 V ± 10 % (supplied from the copier) DC 5 V ± 5 %
Max. Power Consumption	:	15 W or less
Dimensions	:	570 (W) x 263 (H) x 548 (D) mm 22-1/2 x 10-1/4 x 21-1/2
Weight	:	Approx. 27 kg (57-1/4 lb)
Operating Environment	:	Conforms to the operating environment of the copier.

2. Revolving Parts Layout Drawing



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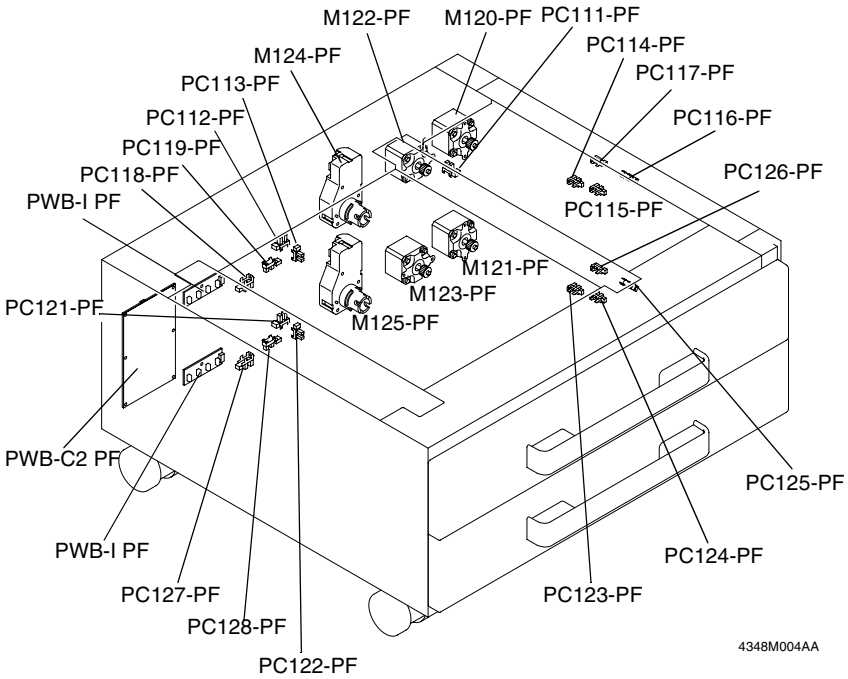
3. Electric Parts Layout Drawing



Symbol	Name	Symbol	Name
PWB-C2 PF	Control Board	PC117-PF	3rd Drawer Vertical Transport Sensor
PWB-I PF	3rd/4th Drawer FD Paper Size Detection Board	PC118-PF	3rd Drawer CD Paper Size Detecting Sensor 1
M120-PF	3rd Drawer Transport Roller Motor	PC119-PF	3rd Drawer CD Paper Size Detecting Sensor 2
M121-PF	4th Drawer Transport Roller Motor	PC121-PF	4th Drawer Set Sensor
M122-PF	3rd Drawer Paper Feed Motor	PC122-PF	4th Drawer Paper Near-Empty Sensor
M123-PF	4th Drawer Paper Feed Motor		
M124-PF	3rd Drawer Lift-Up Motor	PC123-PF	4th Drawer Lift-Up Upper Limit Sensor
M125-PF	4th Drawer Lift-Up Motor		
PC111-PF	Door Set Sensor	PC124-PF	4th Drawer Paper Empty Sensor
PC112-PF	3rd Drawer Set Sensor		
PC113-PF	3rd Drawer Paper Near-Empty Sensor	PC125-PF	4th Drawer Paper Take-Up Sensor
PC114-PF	3rd Drawer Lift-Up Upper Limit Sensor	PC126-PF	4th Drawer Vertical Transport Sensor
PC115-PF	3rd Drawer Paper Empty Sensor	PC127-PF	4th Drawer CD Paper Size Detecting Sensor 1
PC116-PF	3rd Drawer Paper Take-Up Sensor	PC128-PF	4th Drawer CD Paper Size Detecting Sensor 2

DIS/REASSEMBLY, ADJUSTMENT

1. Maintenance Schedule

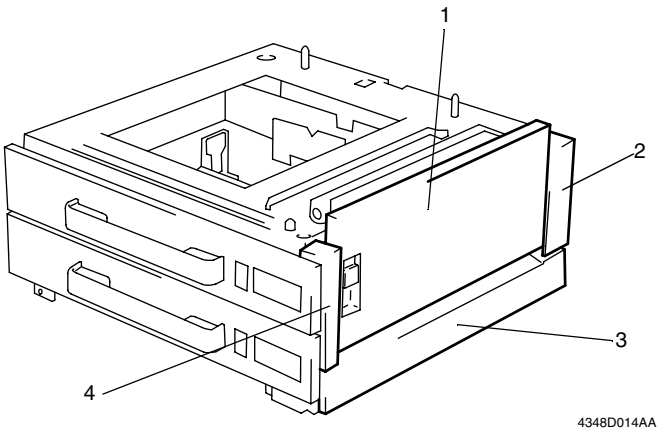
- To ensure that the copier produces good copies and to extend its service life, it is recommended that the maintenance jobs described in this schedule be carried out as instructed.

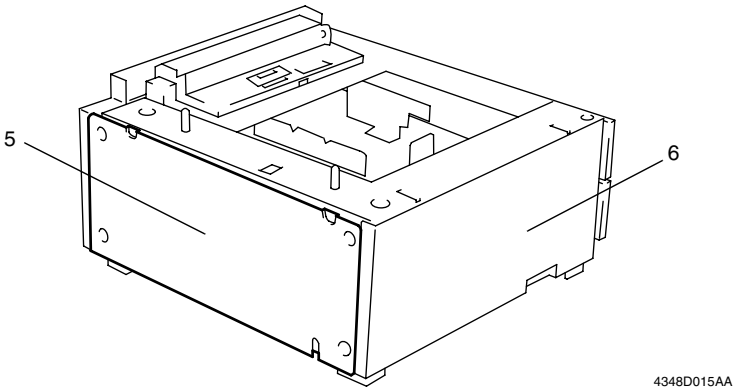
PM Parts	Job		Item Used for Cleaning	Qty	Ref. Page
	Clean	Replace			
Pickup Roller	❍	300K	Alcohol and soft cloth	1	☞ D-3,5
Paper Take-Up Roll	❍	300K		1	☞ D-3,5
Separator Roll Assy	❍	300K		1	☞ D-3,5
Vertical Transport Roller	❍	—		1	☞ D-6

NOTES
- *K = 1,000 copies*
- *Replace the Paper Take-Up Roller and Separator Roll at the same time.*
- *❍ indicates cleaning when transport failure occurs.*
- *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

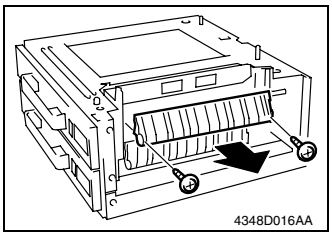




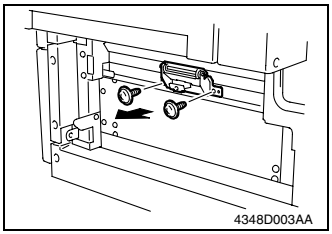
No.	Name	Removal Procedure
1	Right Door	Open the Right Door. → Remove the Right Door.
2	Rear Right Cover	Remove two screws and the drawer.
3	Lower Right Cover	Remove two screws and the drawer.
4	Front Right Cover	Remove two screws and the drawer.
5	Rear Cover	Remove four screws and the cover.
6	Left Cover	Remove four screws and the cover.

2-2. Removal of the Pickup Roller/Take-Up Roller/Separator Roll Assy

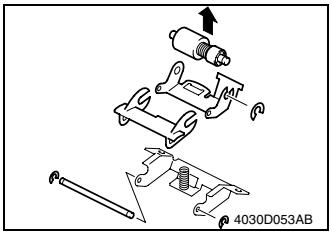
1. Remove the Rear Right Cover.
2. Remove the Right Door.



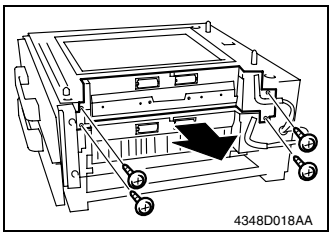
3. Remove two screws, and the guide plate.



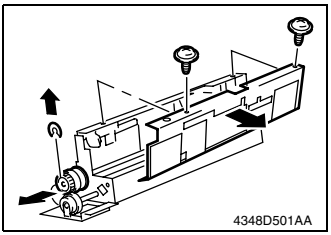
4. Remove two screws and the Paper Separator Roll Mounting Bracket Assy.



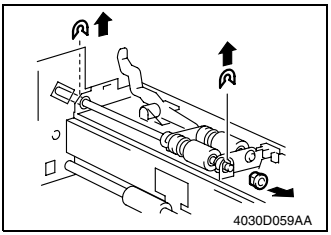
5. Remove three C rings and the Paper Separator Roll Assy.



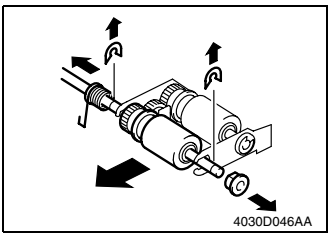
6. Remove four screws and the Paper Take-Up Unit.



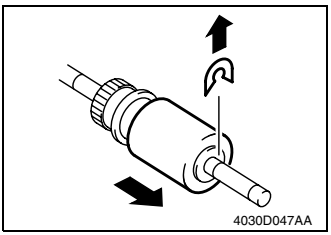
7. Remove two screws and the cover.
8. Remove one C-ring and remove the gear.



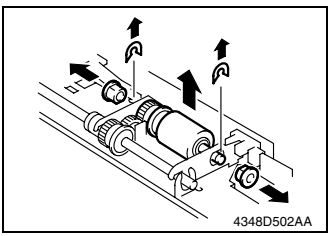
9. Remove two C-rings and remove the bushing.
10. Remove the Roll Assy.



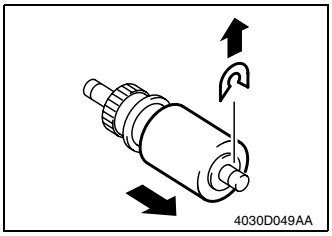
11. Remove two C-rings and remove the bushing.
12. Remove the Roll Assy.



13. Remove one C-clip and remove the Paper Take-Up Roll.



14. Remove two C-rings and remove the bushing.

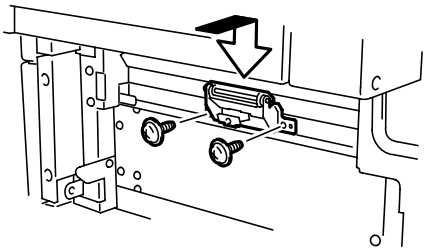


15. Remove one C-clip and remove the Pickup Roller.

16. Repeat steps 3 to 15 similarly for the 4th Drawer.

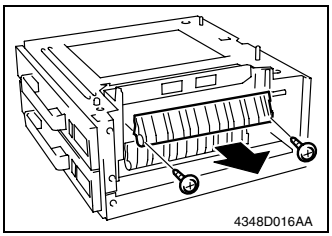
Precaution for Reinstallation of the Separator Roll Assy

- *Install the Separator Roll Assy while pressing the holder down so that it aligns to the metal bracket of the copier.*

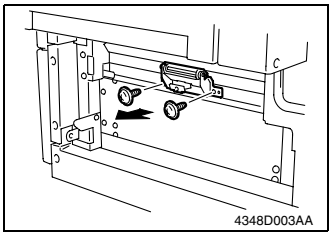


2-3. Cleaning of the Pickup Roller/Paper Take-Up Roller/Separator Roll

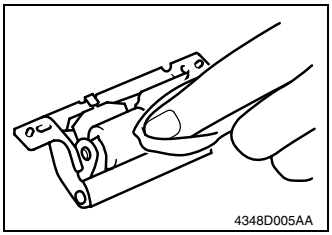
1. Remove the Rear Right Cover.
2. Remove the Right Door.



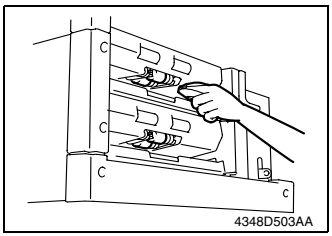
3. Remove two screws, and the guide plate.



4. Remove two screws and the Paper Separator Roll Mounting Bracket Assy.



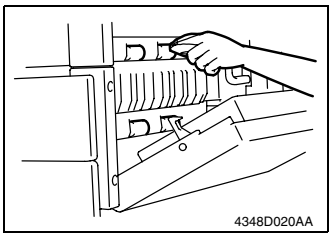
5. Using a soft cloth dampened with alcohol, wipe the Separator Roll clean of dirt.



6. Using a soft cloth dampened with alcohol, wipe the Pickup Roller and Paper Take-Up Roller clean of dirt.

7. Repeat steps 3 to 7 similarly for the 4th Drawer.

2-4. Cleaning of the Vertical Transport Roller



1. Open the Right Door.
2. Using a soft cloth dampened with alcohol, wipe the Vertical Transport Roller clean of dirt.

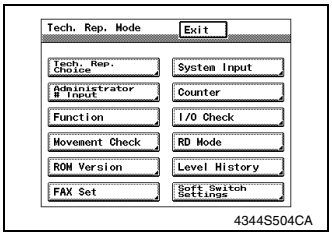
3. Adjustment

3-1. Registration CD

NOTE

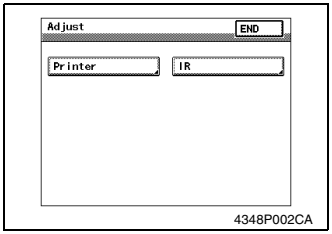
Make this adjustment after any of the following procedures has been performed.

- *When the PH Unit has been replaced.*
- *When the paper type has been changed.*
- *When the image on the copy is offset in the CD direction.*
- *When a faint image occurs on the leading edge of the image.*



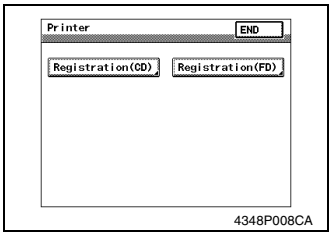
4344S504CA

1. Display Tech. Rep. Mode.



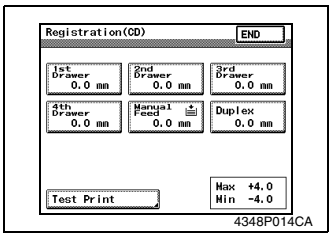
4348P002CA

2. Press the Stop key followed by the Start key to display the Adjust Mode.
3. Touch the Printer key.



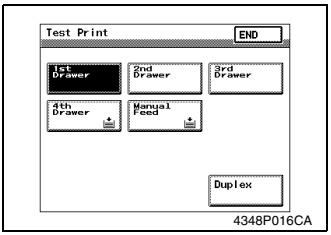
4348P008CA

4. Touch the Registration (CD) key.

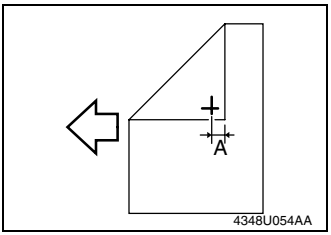


4348P014CA

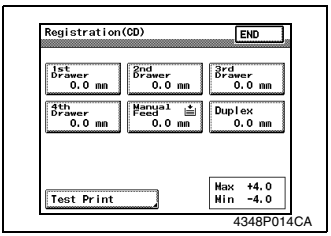
5. Touch the Test Print key.



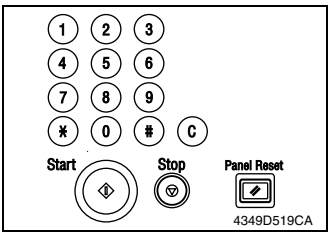
6. Touch the 3rd Drawer or 4th Drawer key.
7. Press the Start key.



8. Measure the width of printed reference line A.
   Specification: 10 mm ± 2.0 mm
9. If width A falls within the specified range, finish the adjustment procedure.
   If outside the specified range, perform the adjustment below.



10. Touch END to display the Registration (CD) screen.
11. Touch the 3rd Drawer or 4th Drawer key.



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

✻ If width A is wider than the specified range, enter a negative value.

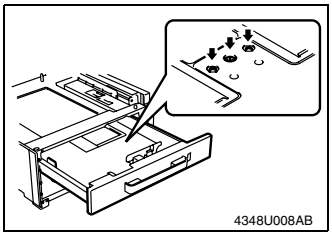
✻ If width A is narrower than the specified range, enter a positive value.

Adjustment range: + 4.0 max. and -4.0 min.

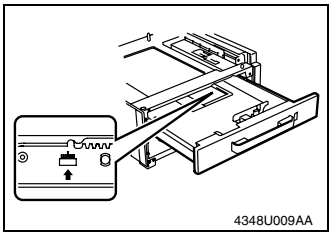
Use the ✻ key to switch between + and -.

NOTE

- *If width A falls outside the specified range, redo the adjustment from step 13.*



13. Slide out the Drawer and remove the paper.
14. Loosen three screws.



- If width A is wider than the specified range:
  Move the Trail Edge Stop toward the front.
- If width A is narrower than the specified range:
  Move the Trail Edge Stop toward the rear.

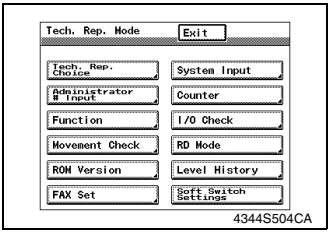
15. Perform another test print and check the reference deviation.
16. Repeat the adjustment until the reference line falls within the specified range.
17. After making the adjustment, tighten the three screws that were loosened at step 15.

3-2. Registration FD

NOTE

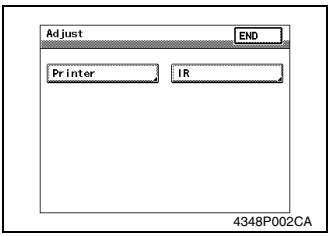
Make this adjustment after any of the following procedures has been performed.

- *When the PH Unit has been replaced.*
- *When the paper type has been changed.*
- *When the image on the copy is offset in the FD direction.*



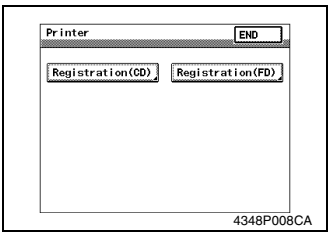
4344S504CA

1. Display Tech. Rep. Mode.



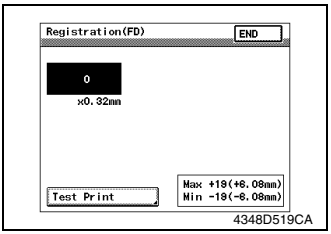
4348P002CA

2. Press the Stop key followed by the Start key to display the Adjust Mode.
3. Touch the Printer key.



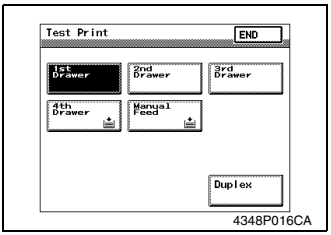
4348P008CA

4. Touch the Registration (FD) key.



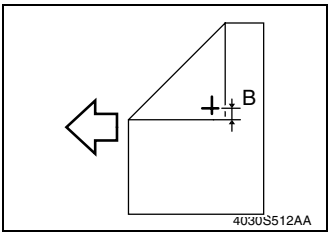
4348D519CA

5. Touch the Test Print key.



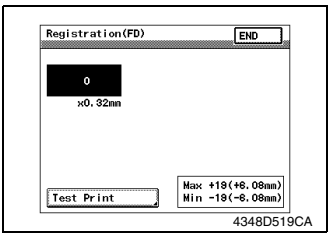
4348P016CA

6. Touch the 3rd Drawer or 4th Drawer key.
7. Press the Start key.



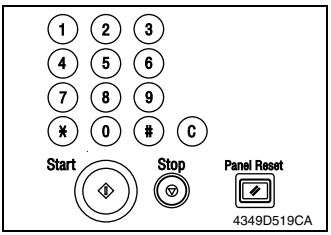
4030S512AA

8. Measure the width of printed reference line B.
   Specification: 11.3 mm±1.5 mm
9. If width B falls within the specified range, finish the adjustment procedure.
   If outside the specified range, perform the adjustment below.



4348D519CA

10. Touch END to display the Registration (FD) screen.
11. Touch the 3rd Drawer or 4th Drawer key.



4349D519CA

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

✻ If width B is wider than the specified range, enter a negative value.

✻ If width B is narrower than the specified range, enter a positive value.

Adjustment range: + 4.0 max. and -4.0 min.

13. Perform another test print and check the reference deviation.
14. Repeat the adjustment until the reference line falls within the specified range.

TROUBLESHOOTING

1. Introduction

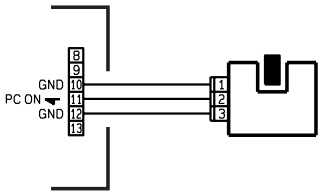
- Information required for troubleshooting and steps that must be performed are described in this chapter.

1-1. Electrical Components Check Procedure

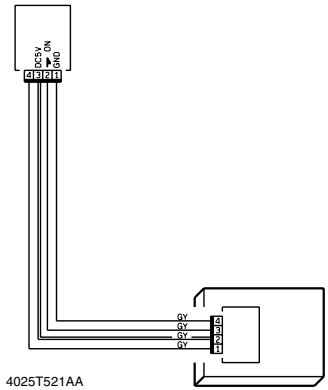
- If a paper misfeed or malfunction occurs, perform the following operation to check the condition of the electrical components.

(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.



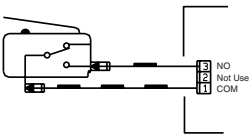
4025T520AA



4025T521AA

(2) Switch

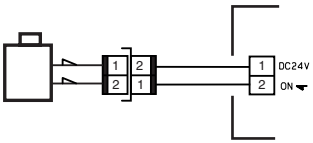
Step	Check	Result	Action
1	Does the input signal (NO) of the control board change from L to H when the switch is turned on?	NO	Replace the switch.
		YES	Replace the control board.



4025T523AB

(3) Solenoid

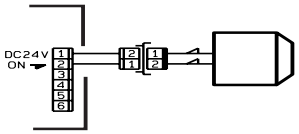
Step	Check	Result	Action
1	Does the output signal of the control board change from H to L when the solenoid is activated?	NO	Replace the control board.
		YES	Replace the solenoid.



25T522AA

(4) Clutch

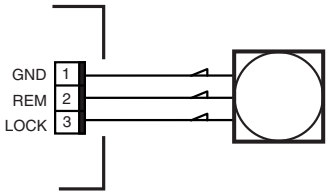
Step	Check	Result	Action
1	Does the output signal of the control board change from H to L when the clutch is activated?	NO	Replace the control board.
		YES	Replace the clutch.



4025T528AA

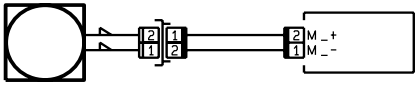
(5) Motor

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.



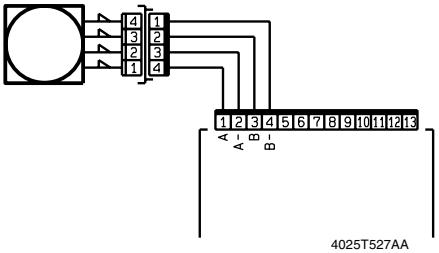
4025T526AA

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.



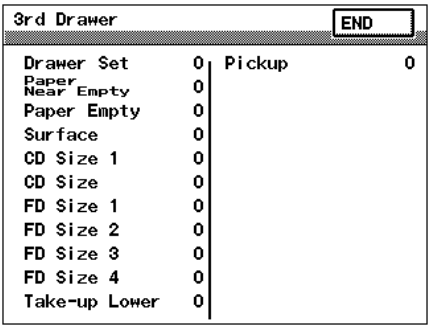
4025T527AA

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.

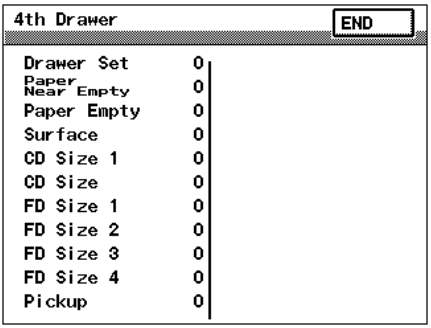
1. Display the Tech. Rep. Mode screen.
2. Touch [I/O CHECK].
3. Touch [Printer].
4. Touch the button for the 3rd or 4th paper drawer.
5. Using a sheet of paper, activate the sensor and check the display in the Touch Panel. (Paper present: 1; Paper not present: 0)

<3rd Drawer>



4348T504CA

<4th Drawer>



4348T505CA

2-1. I/O Check List

<3rd Drawer>

Symbol	Panel Display	Parts/Signal Name	Operation Characteristics/ Panel Display		Input Board	CN/PJ No.
			1	0		
PC112-PF	Drawer Set	3rd Drawer Set Sensor	Set	Out of position	Control Board (PWB-C2 PF)	PJ3C2 PF-9
PC113-PF	Paper Near Empty	3rd Drawer Paper Near-Empty Sensor	Unblocked	Blocked		PJ4C2 PF-3
PC115-PF	Paper Empty	3rd Drawer Paper Empty Sensor	Paper not present	Paper present		PJ6C2 PF-6
PC114-PF	Surface	3rd Drawer Lift-Up Upper Limit Sensor	Raised Position	Not raised		PJ6C2 PF-3
PC118-PF	CD Size 1	3rd Drawer CD Paper Size Detecting Sensor 1	Maximum value	Not at maximum value		PJ3C2 PF-3
PC119-PF	CD Size 2	3rd Drawer CD Paper Size Detecting Sensor 2	Maximum value	Not at maximum value		PJ3C2 PF-6
PWB-I PF	FD Size 1	3rd Drawer FD Paper Size Detecting Board	Maximum value	Not at maximum value		PJ3C2 PF-10
	FD Size 2		Maximum value	Not at maximum value		PJ3C2 PF-11
	FD Size 3		Maximum value	Not at maximum value		PJ3C2 PF-12
	FD Size 4		Maximum value	Not at maximum value		PJ3C2 PF-13
PC111-PF	Take-up Lower	Door Set Sensor	Open	Closed		PJ6C2 PF-15
PC116-PF	Pick-Up	3rd Drawer Paper Take-Up Sensor	Paper present	Paper not present		PJ6C2 PF-8

<4th Drawer>

Symbol	Panel Display	Parts/Signal Name	Operation Characteristics/ Panel Display		Input Board	CN/PJ No.
			1	0		
PC121-PF	Drawer Set	4th Drawer Set Sensor	Set	Out of position	Control Board (PWB-C2 PF)	PJ8C2 PF-3
PC122-PF	Paper Near Empty	4th Drawer Paper Near-Empty Sensor	Unblocked	Blocked		PJ8C2 PF-11
PC124-PF	Paper Empty	4th Drawer Paper Empty Sensor	Paper not present	Paper present		PJ10C2 PF-6
PC123-PF	Surface	4th Drawer Lift-Up Upper Limit Sensor	Raised Position	Not raised		PJ10C2 PF-3
PC127-PF	CD Size 1	4th Drawer CD Paper Size Detecting Sensor 1	Maximum value	Not at maximum value		PJ7C2 PF-3
PC128-PF	CD Size 2	4th Drawer CD Paper Size Detecting Sensor 2	Maximum value	Not at maximum value		PJ7C2 PF-6
PWB-I PF	FD Size 1	4th Drawer FD Paper Size Detecting Board	Maximum value	Not at maximum value		PJ8C2 PF-4
	FD Size 2		Maximum value	Not at maximum value		PJ8C2 PF-5
	FD Size 3		Maximum value	Not at maximum value		PJ8C2 PF-6
	FD Size 4		Maximum value	Not at maximum value		PJ8C2 PF-7
PC125-PF	Pick-Up	4th Drawer Paper Take-Up Sensor	Paper present	Paper not present		PJ10C2 PF-8

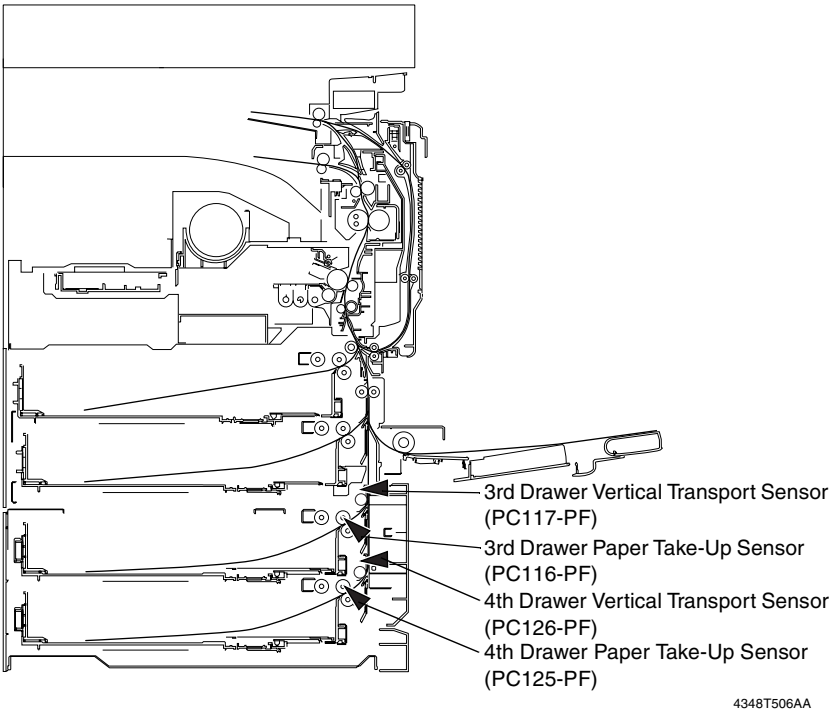
3. Misfeed Detection/Troubleshooting Procedures

3-1. Initial Checks

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

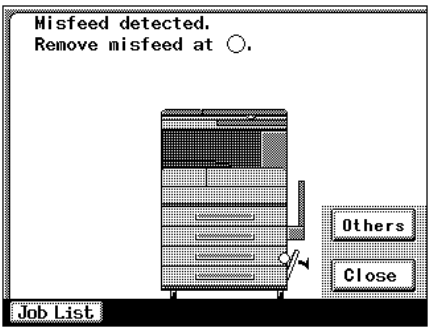
Check Item	Action
Does paper meet product specifications?	Replace paper.
Is the paper curled, wavy, or damp?	Replace paper. Instruct the user on the correct paper storage procedures.
Is a foreign object present along the paper path, or is the paper path deformed or worn?	Clean the paper path and replace if necessary.
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



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

<3rd Drawer>

<Detection Timing>

Type	Description
Paper Take-Up Section misfeed detection	The leading edge of the paper does not block the 3rd Drawer Vertical Transport Sensor (PC117-PF) even after the set period of time has elapsed after the 3rd Drawer Paper Feed Motor is energized.
Detection of paper remaining in the Paper Take-Up section	The 3rd Drawer Vertical Transport Sensor (PC117-PF) 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 3rd Drawer Paper Take-Up Sensor (PC116-PF) 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	
3rd Drawer Vertical Transport Sensor (PC117-PF) 3rd Drawer Paper Take-Up Sensor (PC116-PF) 3rd Drawer Paper Feed Motor (M122-PF)	Control Board (PWB-C2 PF)

Step	Operations	Ref. Page	WIRING DIAGRAM	
			Control signal	Location (Electrical Components)
1	Initial checks	☞ T-7	—	—
2	PC117-PF sensor check	☞ T-1	PWB-C2 PF PJ6C2 PF-11	F-2
3	PC116-PF sensor check	☞ T-1	PWB-C2 PF PJ6C2 PF-8	F-3
4	M122-PF operation check	☞ T-3	—	E-2
5	PWB-C2 PF replacement	—	—	D-5

<4th Drawer>

<Detection Timing>

Type	Description
Paper Take-Up Section misfeed detection	The leading edge of the paper does not block the 4th Drawer Vertical Transport Sensor (PC126-PF) even after the set period of time has elapsed after the 4th Drawer Paper Feed Motor (M123-PF) is energized.
Detection of paper remaining in the Paper Take-Up section	The 4th Drawer Vertical Transport Sensor (PC126-PF) 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 4th Drawer Paper Take-Up Sensor (PC125-PF) 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	
4th Drawer Vertical Transport Sensor (PC126-PF) 4th Drawer Paper Take-Up Sensor (PC125-PF) 4th Drawer Paper Feed Motor (M123-PF)	Control Board (PWB-C2 PF)

Step	Operations	Ref. Page	WIRING DIAGRAM	
			Control signal	Location (Electrical Components)
1	Initial checks	☞ T-7	—	—
2	PC126-PF sensor check	☞ T-1	PWB-C2 PF PJ11C2 PF-2	E-8
3	PC125-PF sensor check	☞ T-1	PWB-C2 PF PJ10C2 PF-8	E-8
4	M123-PF operation check	☞ T-3	—	F-8
5	PWB-C2 PF replacement	—	—	E-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
C0900	3rd Drawer Lift-Up Motor Failure	The Lift-Up Sensor is not blocked even after the set period of time has elapsed after the paper lift-up operation for the drawer began.
C0950	4th Drawer Lift-Up Motor Failure	

(1) C0900: 3rd Drawer Lift-Up Motor Failure

(2) C0950: 4th Drawer Lift-Up Motor Failure

<Detection Timing>

Malfunction Code	Description
C0900	The Lift-Up Sensor is not blocked even after the set period of time has elapsed after the paper lift-up operation for the drawer began.
C0950	

Action

Relevant Electrical Components	
Lift-Up Motor 1 (M124-PF) Lift-Up Motor 2 (M125-PF) Lift-Up Sensor 1 (PC114-PF) Lift-Up Sensor 2 (PC123-PF)	Control Board (PWB-C2 PF) Copier Master Board (PWB-A) Copier Power Supply Unit (PU1)

Step	Operations	Ref. Page	WIRING DIAGRAM	
			Control signal	Location (Electrical Components)
1	Check the connectors of each motor and sensor for proper connection, and correct as necessary.	—	—	—
2	Check the connector of each motor for proper drive coupling, and correct as necessary.	—	—	—
3	Check the PU1 connector for proper connection, and correct as necessary.	—	—	—
4	PC114-PF sensor check	☞ T-1	PWB-C2 PF PJ6C2 PF-3	G-3
5	PC123-PF sensor check	☞ T-1	PWB-C2 PF PJ10C2 PF-3	D-8
6	M124-PF operation check	☞ T-3	PWB-C2 PF PJ4C2 PF-5,4	D-3
7	M125-PF operation check	☞ T-3	PWB-C2 PF PJ8C2 PF-12,13	G-3
8	PWB-C2 PF replacement	—	—	E-5
9	PWB-A replacement	—	—	—
10	PU1 replacement	—	—	—

AD-16/SB-1/ JS-203

Service Manual

19971

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GENERAL

1. Specifications

<AD-16>

Name	:	Duplex Unit
Type	:	Sheet duplex paper take-up section
Installation	:	Installed to the right side door
Paper Size	:	A5L (5-1/2 x 8-1/2L) to A3L (11 x 17L)
Paper Type	:	Plain paper (56 g/m^2 to 90 g/m^2), recycled paper (60 g/m^2 to 90 g/m^2)
Document Alignment	:	Center baseline
Power Requirements	:	DC 24 V (supplied from the copier) DC 5 V
Max. Power Consumption	:	10 W or less
Dimensions	:	89(W) x 358 (H) x 419(D) mm 3-1/4 x 14 x 16-1/2
Weight	:	2.2 kg (4-3/4 lbs)
Operating Environment	:	Conforms to the operating environment of the copier.

<SB-1>

Name	:	Switchback Unit
Type	:	Switch back circulation section
Installation	:	Installed to the right side
Paper size	:	A5L (5-1/2 x 8-1/2L) to A3L (11 x 17L)
Paper Type	:	56 g/m ^{2} to 210 g/m^2
Document Alignment	:	Center baseline
Power Requirements	:	DC 24 V (supplied from the copier) DC 5 V
Max. Power Consumption	:	15 W or less
Dimensions	:	338(W) x 148(H) x 481(D) mm 13-1/4 x 5-3/4 x 19
Weight	:	Approx. 1.7 kg (3-3/4 lbs)
Operating Environment	:	Conforms to the operating environment of the copier.

<JS-203>

Name : Job Separator

Type : Expansion drawer

Installation : Installed in the copier

Number of drawers : 2 bins
- 1st Drawer (shared with the copier drawer)
- 2nd Drawer

Paper : See the table below.

Paper Output Tray	Paper size	Paper Type		Capacity
1st Drawer	B6L to A3L 8-1/2 C to 11 x 17 Width: 90 mm to 297 mm 3-1/2 to 11-3/4 Length: 139.7 mm to 432 mm 5-1/2 to 17	Plain paper (56 g/m^2 to 90 g/m^2)		250 sheets
		Recycled paper (60 g/m^2 to 90 g/m^2)		
		Special	OHP transparencies	20 sheets
			Thick paper (91 g/m^2 to 210 g/m^2)	
			Envelope	
			Label	
			Translucent paper	
			Letterhead	
			Government-standard postcards	
2nd Drawer	A5 to A3L 5-1/2 to 8-1/2 Maximum 297 mm x 432 mm 11-3/4 x 17 Minimum 139.7 mm x 140 mm 5-1/2 x 5-1/2	Plain paper (56 g/m^2 to 90 g/m^2)		100 sheets
		Recycled paper (60 g/m^2 to 90 g/m^2)		

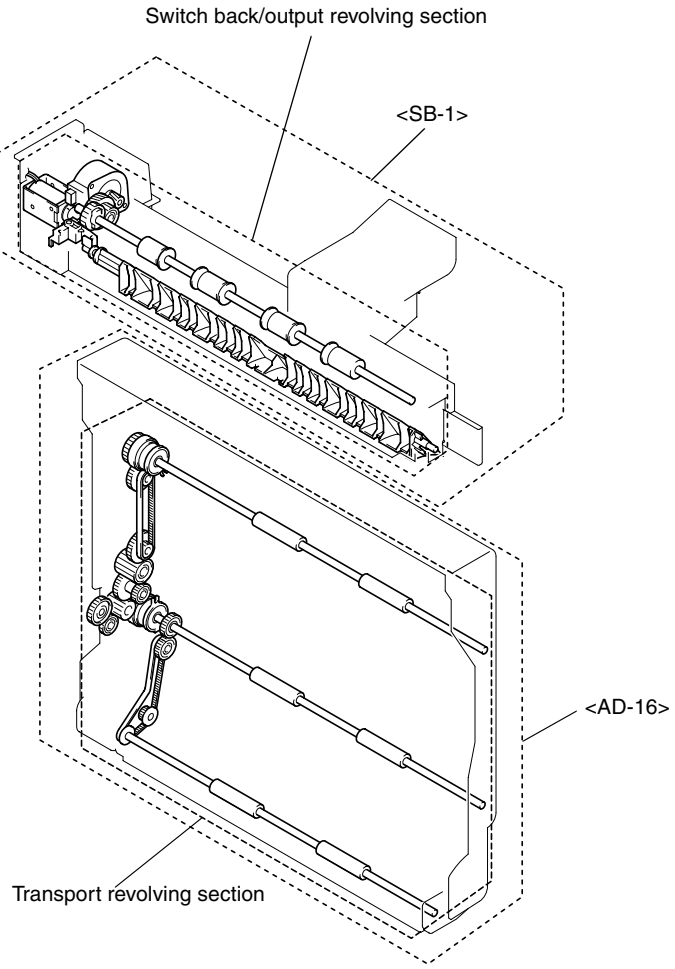
Document Alignment	:	Center baseline
Power Requirements	:	DC 5.1 V ± 5 % (supplied from the copier)
Max. Power Consumption	:	0.2 W or less
Dimensions	:	450(W) x 75(H) x 443(D) mm 17-3/4(W) x 3(H) x 17-1/2(D)
Weight	:	1.7 kg (3-3/4)
Operating Environment	:	Conforms to the operating environment of the copier.

CAUTION

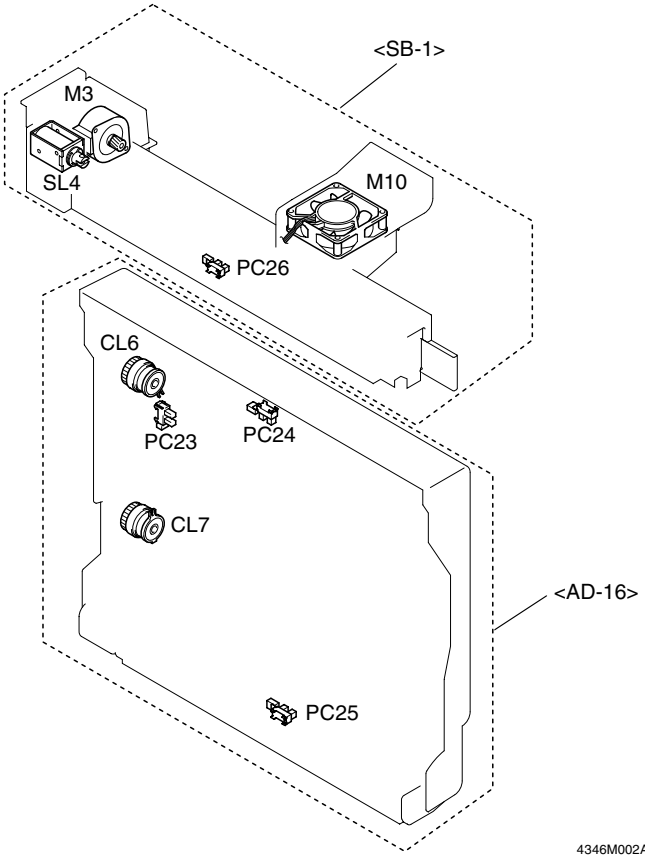
How product names appear in the document

- *AD-16: Duplex Unit*
- *SB-1: Switch Back Unit*
- *JS-203: Job Separator*

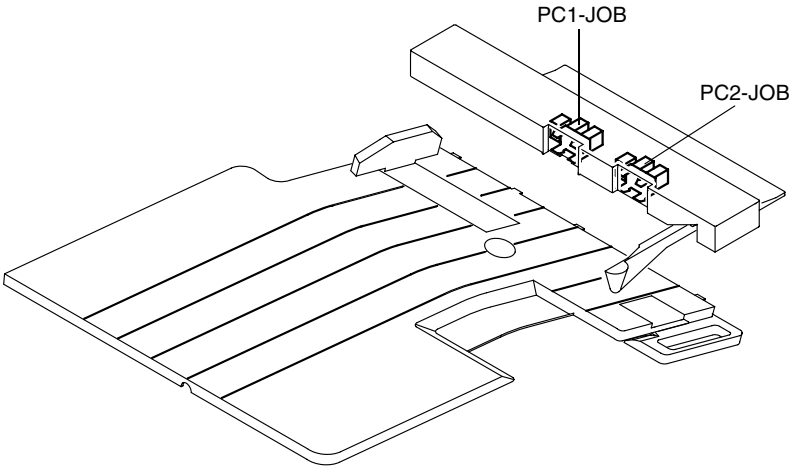
2. Revolving Parts Layout Drawing



3. Electric Parts Layout Drawing



Symbol	Name	Symbol	Name
M3	Switch Back Motor	PC25	Duplex Unit Lower Transport Sensor
M10	Fusing Ventilation Fan Motor	PC26	Switch Back Unit Sensor
SL4	Switch Back Solenoid	CL6	Duplex Unit Vertical Transport Roller Clutch 1
PC23	Duplex Unit Door Set Sensor		
PC24	Duplex Unit Upper Transport Sensor	CL7	Duplex Unit Vertical Transport Roller Clutch 2



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Symbol	Name	Symbol	Name
PC1-JOB	Paper Full Detecting Sensor	PC2-JOB	Paper Empty Detecting Sensor

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			
Duplex Unit Transport Roller 1 and 2	❍	—	Alcohol and soft cloth	2	☞ T-3
Duplex Unit Transport Roller 3	❍	—		1	☞ T-3
Duplex Unit Transport Roll 1 and 2	❍	—		4	☞ T-3
Duplex Unit Transport Roll 3	❍	—		2	☞ T-3
Duplex Unit Ventilation Section	❍	—		1	☞ T-4
Switch Back Unit Transport Roller	❍	—		1	☞ T-4
Switch Back Unit Transport Roll	❍	—		4	☞ T-4

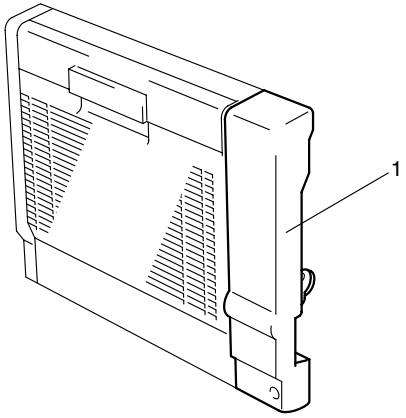
NOTES

- *K = 1,000 copies*
- *❍ indicates cleaning when transport failure occurs.*
- *The contents of this maintenance schedule are subject to change without notice.*
- *For part numbers, see Parts Manual and Parts Modification Notice.*

2. Disassembly/Cleaning

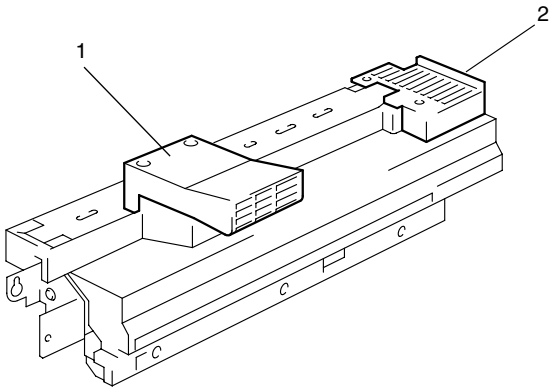
2-1. Removal of the Outer Cover

(1) <AD-16>



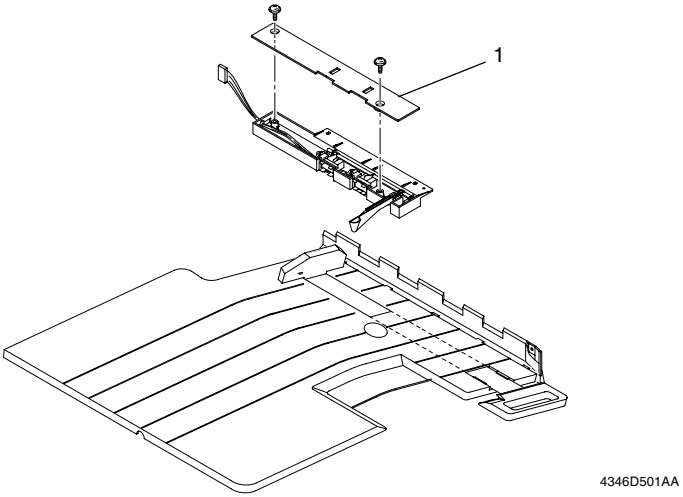
No.	Name	Removal Procedure
1	Right Cover	Remove two screws.

(2) <SB-1>



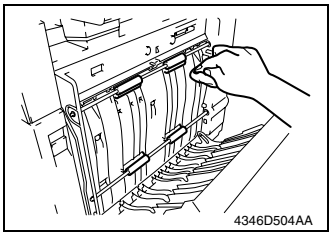
No.	Name	Removal Procedure
1	Fan Motor Cover	Remove two screws.
2	Right Cover	Remove two screws.

(3) <JS-203>



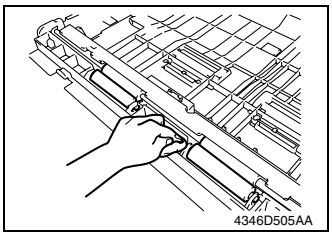
No.	Name	Removal Procedure
1	Upper Cover	Remove two screws.

2-2. Cleaning of the Duplex Unit Transport Roller/Roll 1 and 2



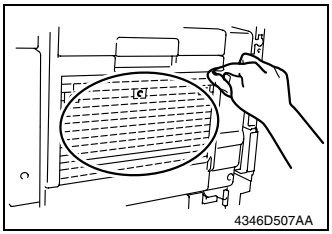
1. Open the Duplex Unit Door.
2. Using a soft cloth dampened with alcohol, wipe the Duplex Unit Transport Roller/Roll 1 and 2 clean of dirt.

2-3. Cleaning of the Duplex Unit Transport Roller/Roll 3

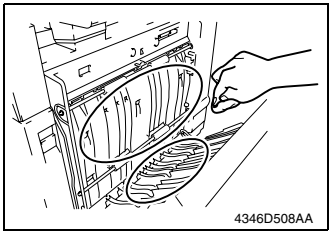


1. Remove the Duplex Unit.
2. Using a soft cloth dampened with alcohol, wipe the Duplex Unit Transport Roller/Roll 3 clean of dirt.

2-4. Cleaning of the Duplex Unit Ventilation Section

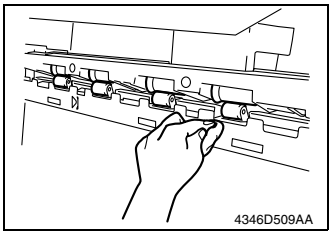


1. Using a soft cloth dampened with alcohol, wipe the outside of the Duplex Unit Ventilation Section clean of dirt.



2. Using a soft cloth dampened with alcohol, wipe the inside of the Duplex Unit Ventilation Section clean of dirt.

2-5. Cleaning of the Switch Back Unit Transport Roller/Roll



1. Using a soft cloth dampened with alcohol, wipe the Switch Back Unit Transport Roller/Roll clean of dirt.

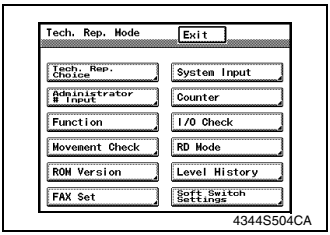
3. Adjustment

3-1. Registration (CD) (AD-16)

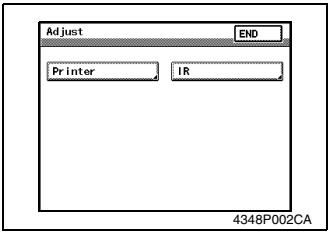
NOTE

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

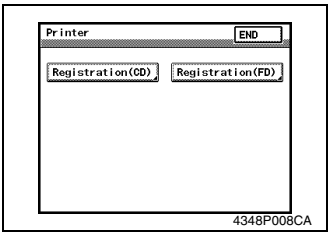
- *When the PH Unit has been replaced.*
- *When the image on the copy is offset in the CD direction.*
- *When a faint image occurs on the leading edge of the image.*



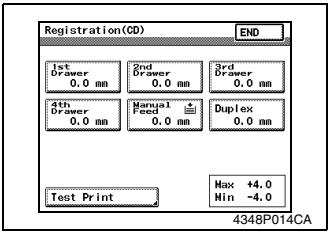
1. Display Tech. Rep. Mode.



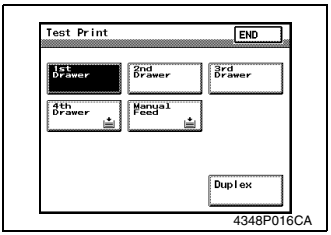
2. Press the Stop key followed by the Start key to display the Adjust Mode.
3. Touch the Printer key.



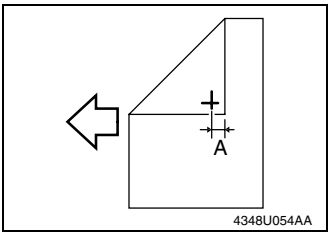
4. Touch the Registration (CD) key.



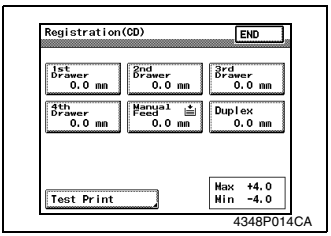
5. Touch the Test Print key.



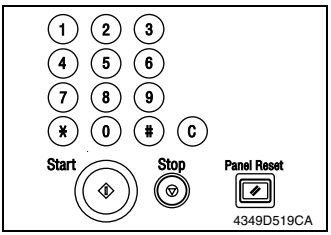
6. Touch the Duplex key.
7. Press the Start key.



8. Measure the width of printed reference line A
   Specification: 10 mm ±3.0 mm
9. If width A falls within the specified range, finish the adjustment procedure.
   If outside the specified range, perform the adjustment below.



10. Touch END to display the Registration (CD) screen.
11. Touch the Duplex key.



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

✻ If width A is wider than the specified range: Enter a negative value.

✻ If width A is narrower than the specified range: Enter a positive value.

Adjustment range: + 4.0 max. and -4.0 min.

Use the ✻ key to switch between + and -.

TROUBLESHOOTING

1. Introduction

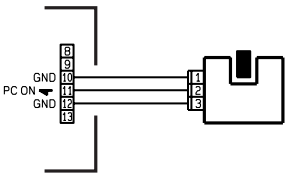
- Information required for troubleshooting and steps that must be performed are described in this chapter.

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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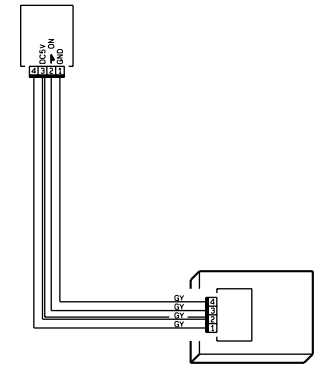

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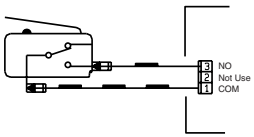
(2) Switch

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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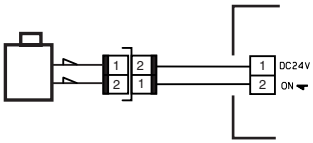
(3) Solenoid

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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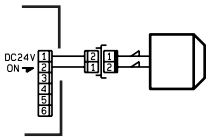
(4) Clutch

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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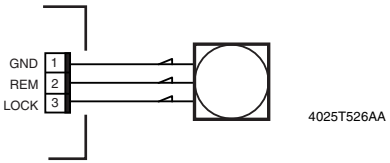
(5) Motor

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.



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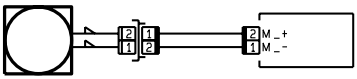
Step	Check	Result	Action
1	Does the input signal of the control board change from H to L when the motor is turned on? (Input signals differ according to the direction of rotation)	YES	Replace the motor.
		NO	Replace the control board.



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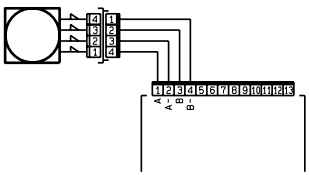
Step	Check	Result	Action
1	Are the relay connector of the motor and the print jack of the control board correctly connected?	YES	Replace the motor or the control board.
		NO	Connect the connector or the print jack.



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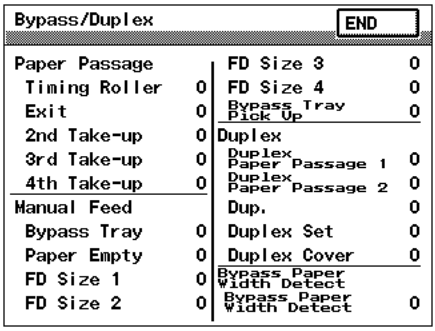
2. I/O CHECK

- 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.

< AD-16/SB-1>

1. Display the Tech. Rep. Mode screen.
2. Touch [I/O CHECK].
3. Touch [Printer].
4. Touch [Bypass/Duplex] or [Option Tray].
5. 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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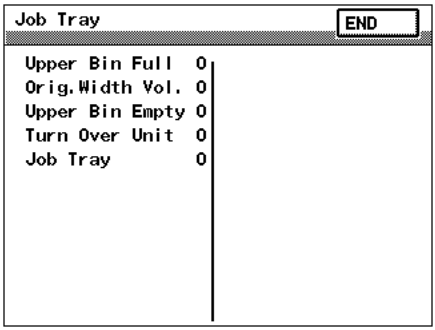
< JS-203 >

1. Display the Tech. Rep. Mode screen.
2. Touch [I/O CHECK].
3. Touch [Option Tray].
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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2-1. I/O Check List

< AD-16/SB-1 >

Symbol	Panel Display	Parts/Signal Name	Operation Characteristics/ Panel Display		Input Board	CN/PJ No.
			1	0		
PC24	Duplex Paper Passage 1	Duplex Unit Upper Transport Sensor	Paper present	Paper not present	Control Board PWB-A	PJ20A -5
PC25	Duplex Paper Passage 2	Duplex Unit Lower Transport Sensor	Paper present	Paper not present		PJ20A -8
PC26	Dup.	Switch Back Unit Sensor	Paper present	Paper not present		PJ27A -9
—	Duplex Set	Duplex Unit Set signal	Set	Not set		PJ20A -1
PC23	Duplex Cover	Duplex Unit Door Set Sensor	Open	Closed		PJ20A -11

< JS-203 >

Symbol	Panel Display	Parts/Signal Name	Operation Characteristics/ Panel Display		Input Board	CN/PJ No.
			1	0		
PC1-JOB	Upper Bin Full	Paper Full Detection Sensor	Blocked	Unblocked	Control Board PWB-A	PJ27A-8
PC2-JOB	Upper Bin Empty	Paper Empty Detection Sensor	Blocked	Unblocked		PJ27A-5
—	Switch Back Unit Set	Switch Back Unit Set signal	Set	Not set		PJ19A-10
—	Job Tray Set	Job Tray Set signal	Set	Not set		PJ27A-1
—	Orig. Width Vol.	—	Not Use			

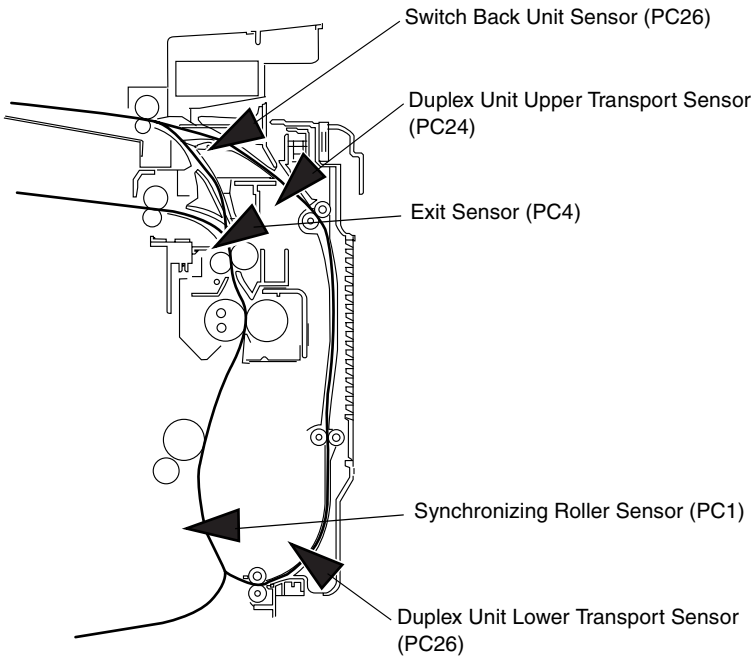
3. Misfeed Detection/Troubleshooting Procedures

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?	Clean the paper path and replace if necessary.
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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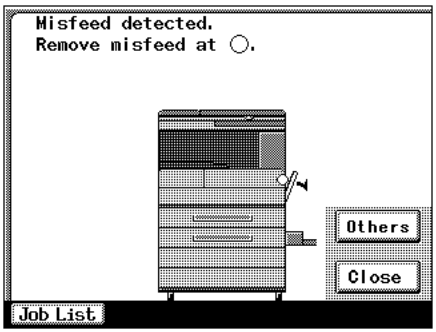
3-3. Misfeed Detected

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



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3-4. Misfeed Detection Timing/Troubleshooting Procedures

(1) Duplex Unit Take-Up Section

< Detection Timing>

Type	Description
Duplex Unit Take-Up Section misfeed detection	The Synchronizing Roller Sensor (PC1) is not blocked even after the set period of time has elapsed after the Duplex Unit Lower Transport Sensor (PC25) is blocked by the paper.
Detection of paper remaining in the Duplex Unit Take-Up Section	The Duplex Unit Lower Transport Sensor (PC25) 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	
Synchronizing Roller Sensor (PC1) Duplex Unit Lower Transport Sensor (PC26)	Copier Master Board (PWB-A)

Step	Operations	Ref. Page	WIRING DIAGRAM	
			Control signal	Location (Electrical Components)
1	Initial checks	☞ T-6	—	—
2	PC1 sensor check	☞ T-1	PWB-A PJ11A-5	G-1
3	PC25 sensor check	☞ T-1	PWB-A PJ20A-8	C-4
4	Replace PWB-A.	—	—	F-6

(2) Turnover Unit/Duplex Unit Transport Section Misfeed

< Detection Timing>

Type	Description
Turnover Unit/Duplex Unit Transport Section misfeed detection	The Switch Back Unit Sensor (PC26) is not blocked even after the set period of time has elapsed after the Exit Sensor (PC4) is unblocked by the paper.
	The Duplex Unit Upper Transport Sensor (PC24) is not blocked even after the set period of time has elapsed after the Switch Back Unit Sensor (PC26) is blocked by the paper.
	The Switch Back Unit Sensor (PC26) is not blocked even after the set period of time has elapsed after the Duplex Unit Upper Transport Sensor (PC24) is blocked by the paper.
Detection of paper remaining in the Turnover Unit/Duplex Unit Transport Section	The Switch Back Unit Sensor (PC26) 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 Duplex Unit Upper Transport Sensor (PC24) 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	
Exit Sensor (PC4) Switch Back Unit Sensor (PC26) Duplex Unit Upper Transport Sensor (PC24)	Copier Master Board (PWB-A)

Step	Operations	Ref. Page	WIRING DIAGRAM	
			Control signal	Location (Electrical Components)
1	Initial checks	☞ T-6	—	—
2	PC4 sensor check	☞ T-1	PWB-A PJ18A-11	I-1
3	PC26 sensor check	☞ T-1	PWB-A PJ27A-9	D-8
4	PC24 sensor check	☞ T-1	PWB-A PJ20A-5	B-4
5	Replace PWB-A.	—	—	F-6

(3) Paper Exit Section Misfeed

< Detection Timing>

Type	Description
Paper Exit Section misfeed detection	The Exit Sensor (PC4) is not unblocked even after the set period of time has elapsed after the Synchronizing Roller Sensor (PC1) is blocked by the paper.
	The Switch Back Unit Sensor (PC26) is not unblocked even after the set period of time has elapsed after the Exit Sensor (PC4) is unblocked by the paper.
Detection of paper remaining at Paper Exit Section	The Exit Sensor (PC4) 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	
Synchronizing Roller Sensor (PC1) Exit Sensor (PC4) Switch Back Unit Sensor (PC26)	Copier Master Board (PWB-A)

Step	Operations	Ref. Page	WIRING DIAGRAM	
			Control signal	Location (Electrical Components)
1	Initial checks	☞ T-6	—	—
2	PC1 sensor check	☞ T-1	PWB-A PJ11A-5	G-1
3	PC4 sensor check	☞ T-1	PWB-A PJ18A-11	F-1
4	PC26 sensor check	☞ T-1	PWB-A PJ27A-9	D-8
5	Replace PWB-A.	—	—	F-6

PF-122

Service Manual

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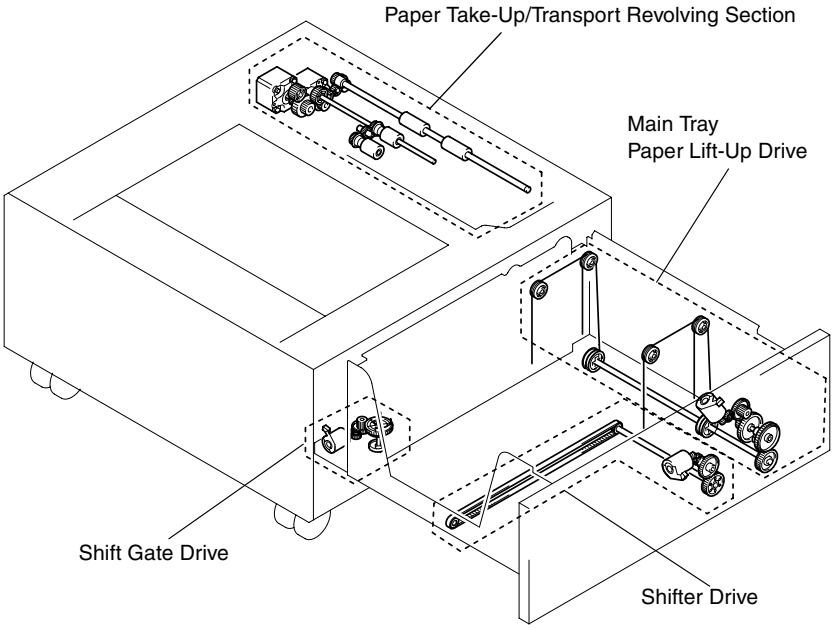
GENERAL

1. Specifications

Name	:	Large Capacity Cabinet
Type	:	Front loading type LCC
Installation	:	Desk type
Paper Type	:	Plain paper (56 g/m^2 to 90 g/m^2), recycled paper (60 g/m^2 to 90 g/m^2)
Paper Size	:	A4C, Letter C
Capacity	:	2500 sheets (80 g/m^2)
Document Alignment	:	Center baseline
Power Requirements	:	DC 24 V ± 10 % (supplied from the copier) DC 5 V ± 5 %
Max. Power Consumption	:	45 W or less
Dimensions	:	570(W) x 263(H) x 564(D) mm 22-1/2 x 10-1/4 x 22-1/4
Weight	:	Approx. 26 kg (53-1/4 lbs)
Operating Environment	:	Conforms to the operating environment of the copier.

2. Revolving Parts Layout Drawing



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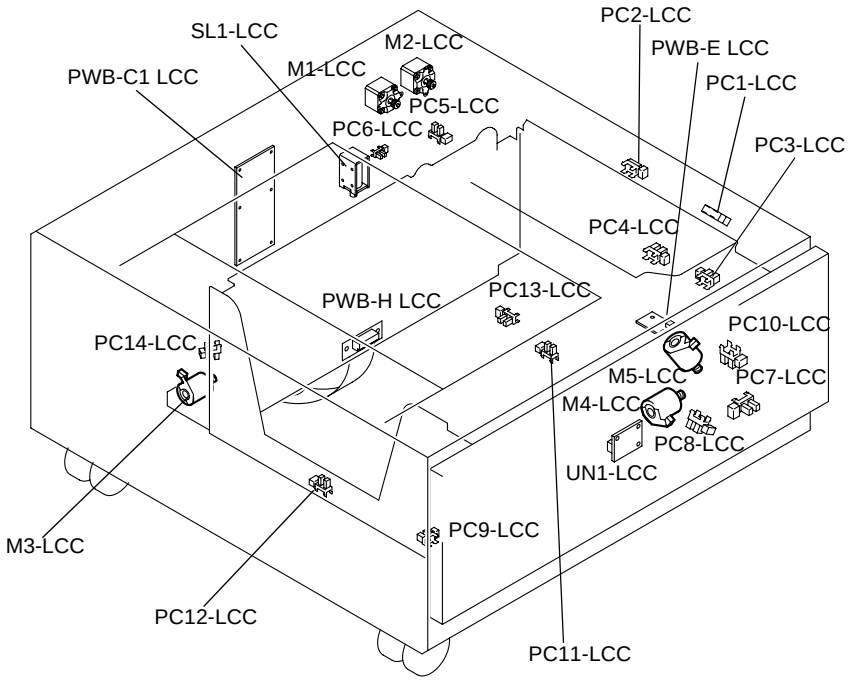
3. Electric Parts Layout Drawing



Symbol	Name	Symbol	Name
PWB-C1	Control Board	PC4-LCC	Tray Upper Limit Sensor
LCC	Paper Empty Board	PC5-LCC	Right Lower Door Sensor
PWB-E LCC	Connector Interface Board	PC6-LCC	Tray Set Sensor
PWB-H LCC	Paper Descent Key	PC7-LCC	Lower Limit Sensor
UN1-LCC	LCC Take-Up Motor	PC8-LCC	Shift Motor Pulse Sensor
M1-LCC	Vertical Transport Drive Motor	PC9-LCC	Shift Tray Paper Empty Sensor
M2-LCC	Shift Gate Motor	PC10-LCC	Elevator Motor Pulse Sensor
M3-LCC	Shift Motor	PC11-LCC	Shifter Stop Position Sensor
M4-LCC	Elevator Motor	PC12-LCC	Shifter Home Position Sensor
M5-LCC	Tray Lock Solenoid	PC13-LCC	Elevator Lower Position Sensor
SL1-LCC	LCC Paper Take-Up Sensor	PC14-LCC	Shift Gate Home Position Sensor
PC1-LCC	LCC Vertical Transport Sensor		
PC2-LCC	Upper Paper		
PC3-LCC	Empty Sensor		

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.

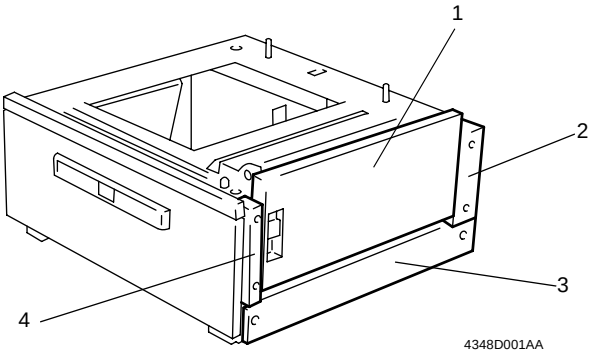
PM Parts	Job		Item Used for Cleaning	Qty	Ref. Page
	Clean	Replace			
Pickup Roller	❍	300K	Alcohol and soft cloth	1	☞ D-6,9
Paper Take-Up Roll	❍	300K		1	☞ D-6,9
Separator Roll Assy	❍	300K		1	☞ D-6,9
Vertical Transport Roller	❍	—		1	☞ D-9

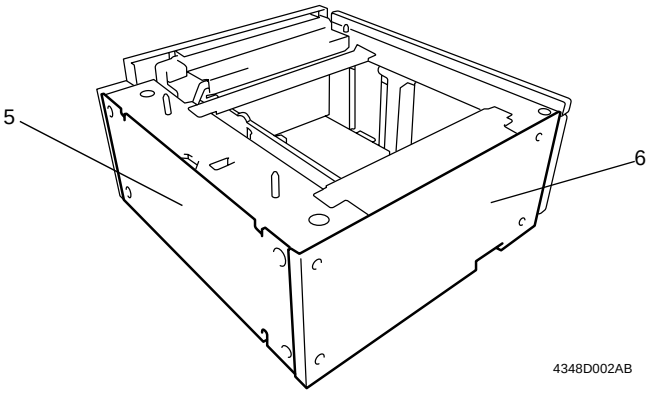
NOTES

- *K = 1,000 copies*
- *Replace the Paper Take-Up Roller and Separator Roll at the same time.*
- *❍ indicates cleaning when transport failure occurs.*
- *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

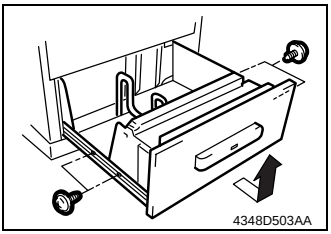
2-1. Removal of the Outer Cover



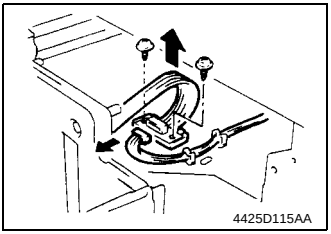


No.	Name	Removal Procedure
1	Front Right Cover	Remove two screws and the drawer.
2	Rear Right Cover	Remove two screws and the drawer.
3	Right Door	Open the Right Door. → Remove the Right Door.
4	Lower Right Cover	Remove two screws and the drawer.
5	Left Cover	Remove four screws and the cover.
6	Rear Cover	Remove four screws and the cover.

2-2. Removal of the Drawer



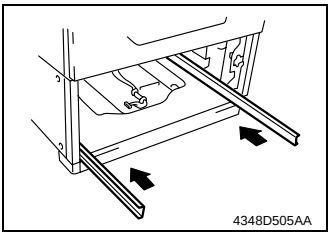
1. Press the Drawer Eject Button and slide out the drawer.
2. Remove the paper.
3. Remove four screws and slide out the drawer.



4. Remove the connector.
5. Remove two screws and the Connector Board.
6. Remove the Drawer.

NOTE

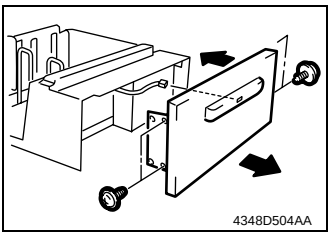
- *When removing the Connector Board, use care not to drop the drawer from the guide rail.*



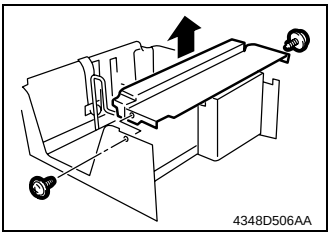
NOTE

- *To prevent injuries, press the guide rail inside the machine.*

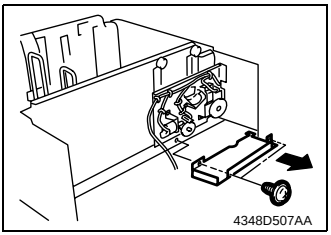
2-3. Removal of the Wire



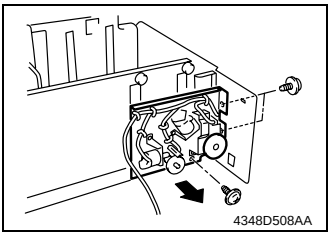
1. Remove the Drawer.
2. Remove four screws and the Front Cover Assy.
3. Unplug one connector.



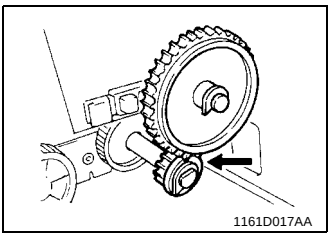
4. Remove two screws and the Inner Cover Assy.



5. Remove two screws and the Driver Cover.

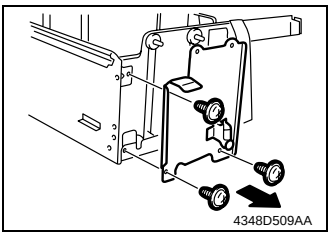


6. Remove three screws and the Driver Mounting Plate Assy.

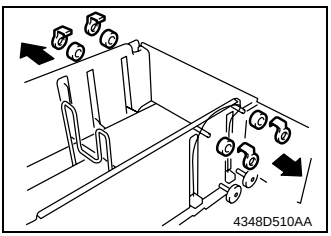


NOTE

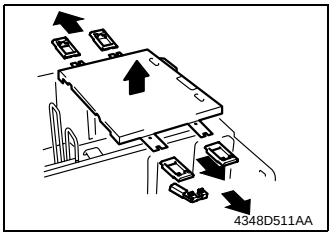
- *When reinstalling, use caution in the engagement of the gears.*



7. Remove three screws and the Reinforcement Bracket Assy.

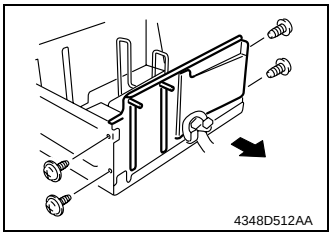


8. Remove four Pulley Covers.
9. Unhook four pulleys.

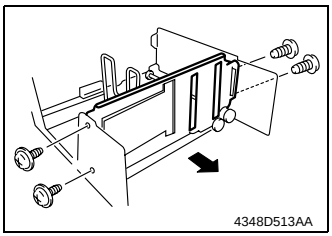


10. Remove one Ground Plate.
11. Remove four Cable Holding Jigs and the Main Drawer.

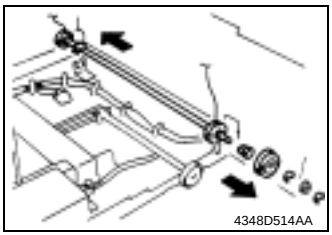
NOTE
- *Use care not to bend the wires.*



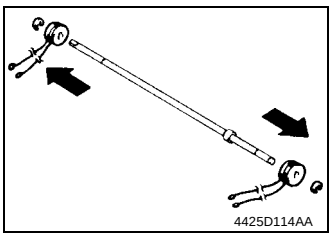
12. Remove four screws and the Rear Trailing Edge Assy.



13. Remove four screws and the Front Trailing Edge Assy.



14. Remove three C-rings, two bushings, and two gears.
15. Remove the Take-Up Drum Assy.

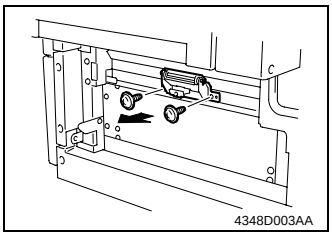


16. Remove two C-rings, two fixing pins, and the Take-Up Drum Assy.

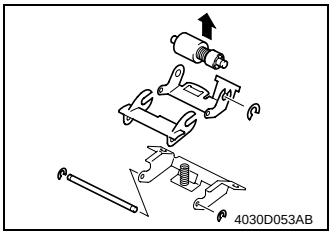
NOTE
- *When reinstalling the Take-Up Drum, check that the direction of the wire coming from both Take-Up Drums are the same.*

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

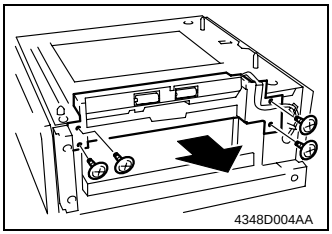
1. Remove the Rear Right Cover.
2. Remove the Right Door.



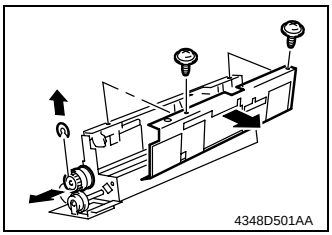
3. Remove two screws and the Paper Separator Roll Mounting Bracket Assy.



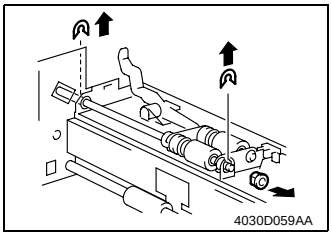
4. Remove three C rings and the Paper Separator Roll Assy.



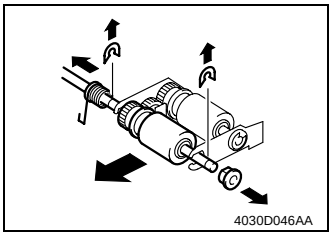
5. Remove four screws and the Paper Take-Up Unit.



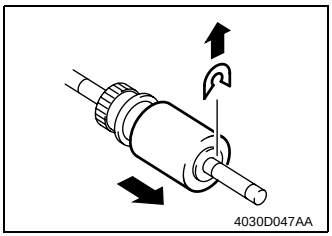
6. Remove two screws and the cover.
7. Remove one C-ring and remove the gear.



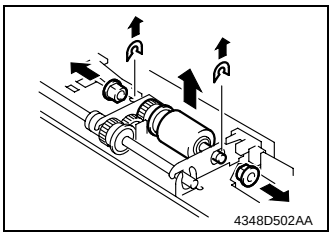
8. Remove two C-rings and remove the bushing.
9. Remove the Roll Assy.



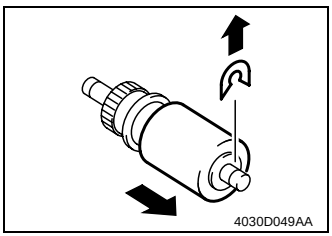
10. Remove two C-rings and remove the bushing.
11. Remove the Roll Assy.



12. Remove one C-clip and remove the Paper Take-Up Roll.



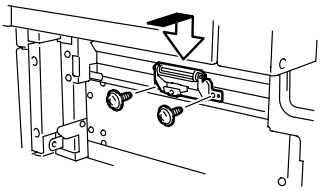
13. Remove two C-rings and remove the bushing.



14. Remove one C-clip and remove the Pickup Roller.

Precaution for Reinstallation of the Separator Roll Assy

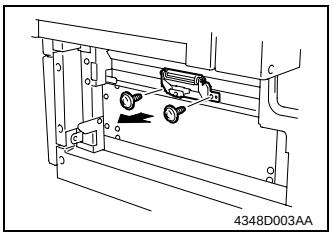
- *Install the Separator Roll Assy while pressing the holder down so that it aligns to the metal bracket of the copier.*



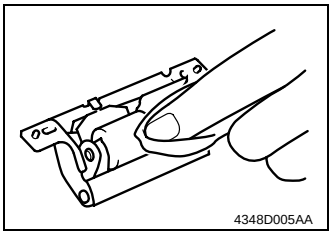
4348D517AA

2-5. Cleaning of the Pickup Roller/Paper Take-Up Roller/Separator Roll

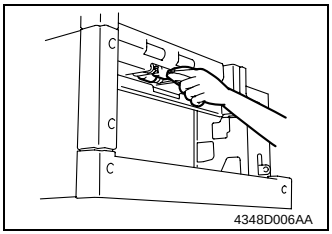
1. Remove the Rear Right Cover.
2. Remove the Right Door.



3. Remove two screws and the Paper Separator Roll Mounting Bracket Assy.

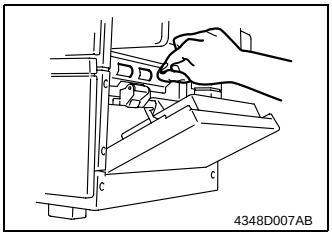


4. Using a soft cloth dampened with alcohol, wipe the Separator Roll clean of dirt.



5. Using a soft cloth dampened with alcohol, wipe the Pickup Roller and Paper Take-Up Roller clean of dirt.

2-6. Cleaning of the Vertical Transport Roller



1. Open the Right Door.
2. Using a soft cloth dampened with alcohol, wipe the Vertical Transport Roller clean of dirt.

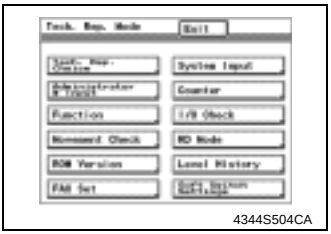
3. Adjustment

3-1. Registration CD

NOTE

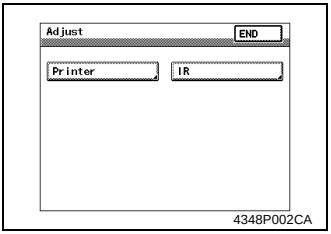
Make this adjustment after any of the following procedures has been performed.

- *When the PH Unit has been replaced.*
- *When the image on the copy is offset in the FD direction.*
- *When a faint image occurs on the leading edge of the image.*



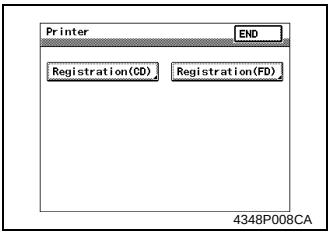
4344S504CA

1. Display Tech. Rep. Mode.



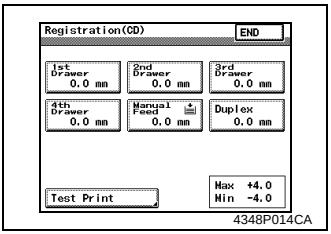
4348P002CA

2. Press the Stop key followed by the Start key to display the Adjust Mode.
3. Touch the Printer key.



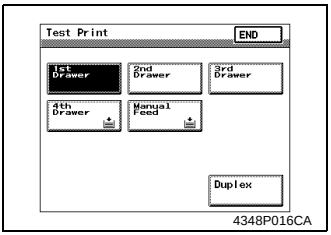
4348P008CA

4. Touch the Registration (CD) key.

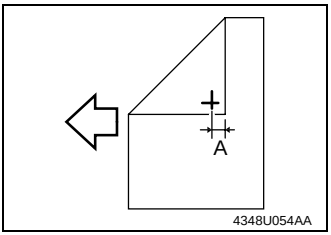


4348P014CA

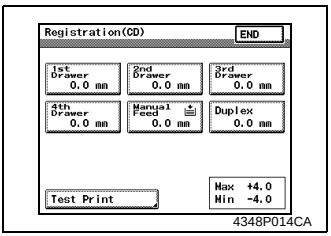
5. Touch the Test Print key.



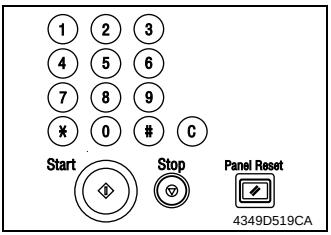
6. Touch the 3rd Drawer key.
7. Press the Start key.



8. Measure the width of printed reference line A.
   Specification: 10 mm ± 2.0 mm
9. If width A falls within the specified range, finish the adjustment procedure.
   If outside the specified range, perform the adjustment below.



10. Touch END to display the Registration (CD) screen.
11. Touch the 3rd Drawer key.



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

✻ If width A is wider than the specified range, enter a negative value.

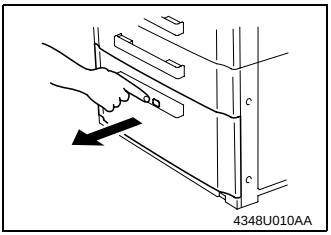
✻ If width A is narrower than the specified range, enter a positive value.

Adjustment range:+ 4.0 max. and -4.0 min.

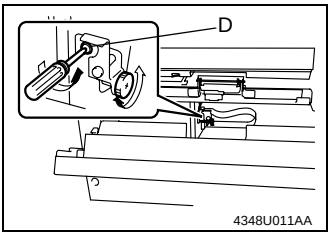
Use the ✻ key to switch between + and -.

NOTE

- *If width A falls outside the specified range, redo the adjustment from step 13.*


4348U010AA

13. Press the Drawer Eject Button and slide out the drawer.

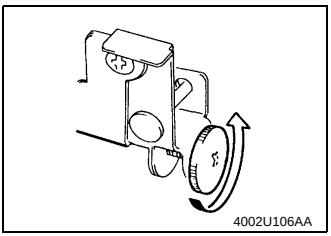


4348U011AA

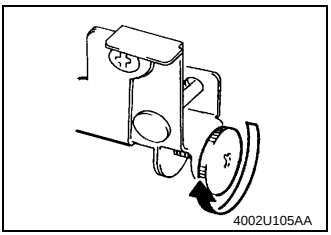
14. Open the Right Door.
15. Loosen the adjustment screw and turn screw D to make the adjustment.

NOTE

- *Do not damage the passage surface of the Right Door.*


4002U106AA

- If width A is wider than the specified range: Turn screw D counterclockwise.


4002U105AA

- If width A is narrower than the specified range: Turn screw D clockwise.

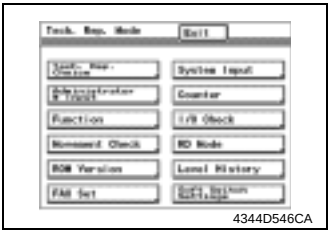
16. Perform another test print and check the reference deviation.
17. Repeat the adjustment until the reference line falls within the specified range.
18. Tighten the adjustment screw.

3-2. Registration FD

NOTE

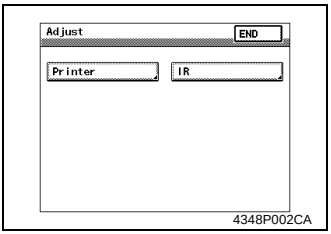
Make this adjustment after any of the following procedures has been performed.

- *When the PH Unit has been replaced.*
- *When the image on the copy is offset in the FD direction.*



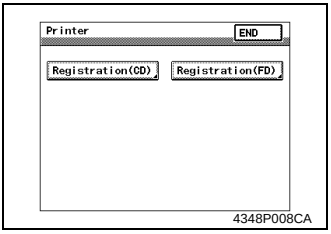
4344D546CA

1. Display Tech. Rep. Mode.



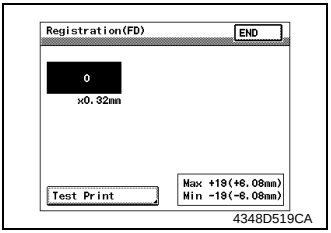
4348P002CA

2. Press the Stop key followed by the Start key to display the Adjust Mode.
3. Touch the Printer key.



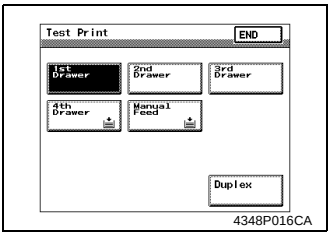
4348P008CA

4. Touch the Registration (FD) key.



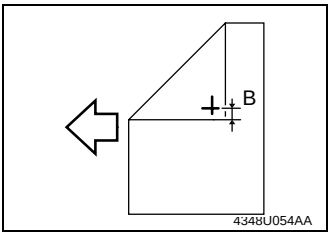
4348D519CA

5. Touch the Test Print key.



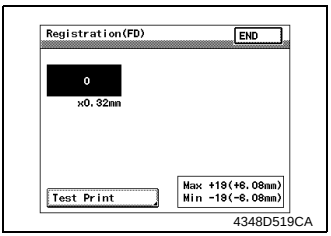
4348P016CA

6. Touch the 3rd Drawer key.
7. Press the Start key.



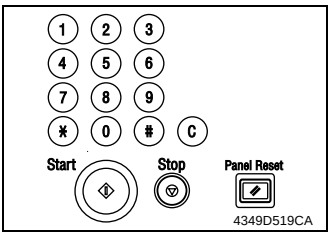
4348U054AA

8. Measure the width of printed reference line B.
   Specification: 11.3 mm±1.5 mm
9. If width B falls within the specified range, finish the adjustment procedure.
   If outside the specified range, perform the adjustment below.



4348D519CA

10. Touch END to display the Registration (FD) screen.



4349D519CA

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

✻ If width B is wider than the specified range, enter a negative value.

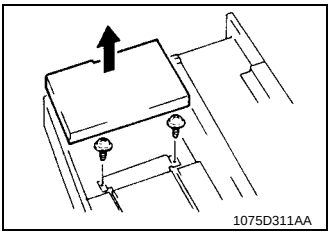
✻ If width B is narrower than the specified range, enter a positive value.

Adjustment range: + 4.0 max. and -4.0 min.

Use the ✻ key to switch between + and -.

12. Perform another test print and check the reference deviation.
13. Repeat the adjustment until the reference line falls within the specified range.

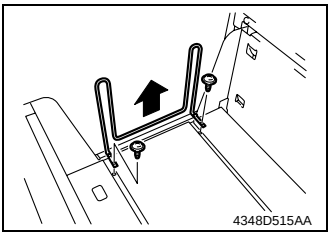
3-3. Shifter Movement Timing Belt Adjustment



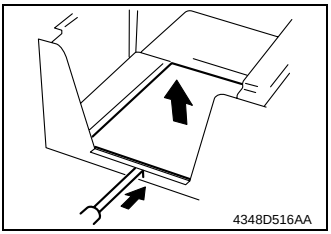
1. Slide out the Drawer and remove it.
2. Lift the Main Drawer, and remove two screws fixing the Shift Tray.

NOTE

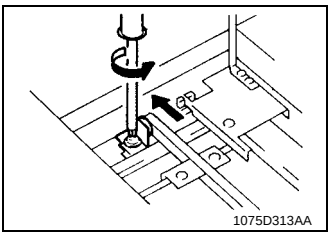
- *When reinstalling, use caution because the wire of the Main Drawer comes off easily.*



3. Remove two screws and the Shifter.



4. Push the tab of the Shift Tray as shown to the left and release the lock.
5. Remove the Shift Tray.



6. Loosen one screw fixing the Tension Pulley Assy as shown to the left and move it in the direction of the arrow.
7. After moving the Shifter, tighten one fixing screw.

TROUBLESHOOTING

1. Introduction

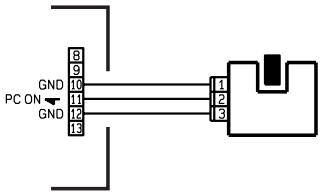
- Information required for troubleshooting and steps that must be performed are described in this chapter.

1-1. Electrical Components Check Procedure

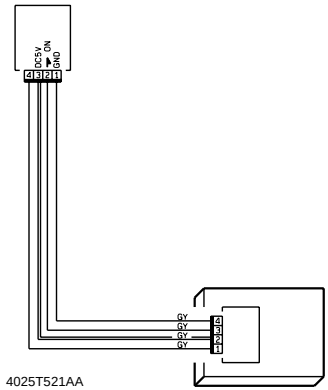
- If a paper misfeed or malfunction occurs, perform the following operation to check the condition of the electrical components.

(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.



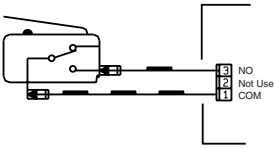
4025T520AA



4025T521AA

(2) Switch

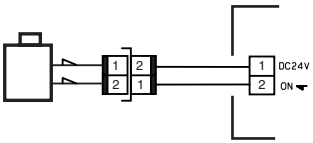
Step	Check	Result	Action
1	Does the input signal (NO) of the control board change from L to H when the switch is turned on?	NO	Replace the switch.
		YES	Replace the control board.



4025T523AB

(3) Solenoid

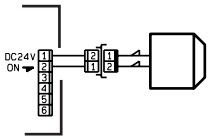
Step	Check	Result	Action
1	Does the output signal of the control board change from H to L when the solenoid is activated?	NO	Replace the control board.
		YES	Replace the solenoid.



25T522AA

(4) Clutch

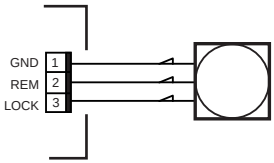
Step	Check	Result	Action
1	Does the output signal of the control board change from H to L when the clutch is activated?	NO	Replace the control board.
		YES	Replace the clutch.



4025T528AA

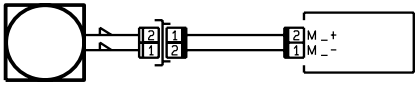
(5) Motor

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.



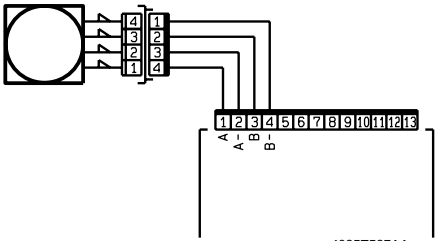
4025T526AA

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.

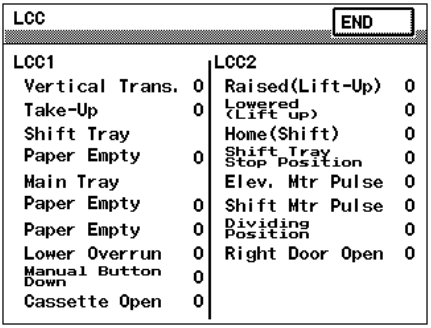


4025T527AA

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



4348T501CA

2-1. I/O Check List

Symbol	Panel Display	Parts/Signal Name	Operation Characteristics/ Panel Display		Input Board	CN/PJ No.
			1	0		
PC2-LCC	Vertical Trans.	LCC Vertical Transport Sensor	Paper present	Paper not present	Control Board (PWB-C1 LCC)	PJ5C1 LCC-5
PC1-LCC	Take-Up	Paper Take-Up Sensor	Paper present	Paper not present		PJ5C1 LCC-2
PC9-LCC	Shift Tray Paper Empty	Shift Tray Paper Empty Sensor	Paper present	Paper not present		PJ3C1 LCC-4
PC3-LCC	Main Tray Paper Empty	Upper Paper Empty Sensor	Paper present	Paper not present		PJ5C1 LCC-9
PWB-E LCC	Paper Empty	Paper Empty Board	Paper present	Paper not present	Paper Empty Board (PWB-E LCC)	PJ3C1 LCC-6
PC7-LCC	Lower Overrun	Lower Limit Sensor	Incorrect operation	Correct operation	Control Board (PWB-C1 LCC)	PJ3C1 LCC-2
PC4-LCC	Raised (Lift-Up)	Tray Upper Limit Sensor	Raised Position	Not raised		PJ5C1 LCC-12
PC13-LCC	Lowered (Lift-Up)	Tray Lower Position Sensor	Lowered Position	Not lowered		PJ3C1 LCC-9
PC12-LCC	Home (Shift)	Shifter Home Position Sensor	At home	Not at home		PJ3C1 LCC-8
PC11-LCC	Shift Tray Stop Position	Shifter Return Position Sensor	Return position	Not at return position		PJ3C1 LCC-7
PC10-LCC	Elev. Mtr Pulse	Elevator Motor Pulse Sensor	Blocked	Unblocked		PJ3C1 LCC-5
PC8-LCC	Shift Mtr Pulse	Shift Motor Pulse Sensor	Blocked	Unblocked		PJ3C1 LCC-3
PC14-LCC	Dividing Position	Shift Gate Home Position Sensor	At home	Not at home		PJ4C1 LCC-1
PC6-LCC	Cassette Open	Tray Set Sensor	Open	Closed		PJ7C1 LCC-2
PC5-LCC	Right Door Open	Right Lower Door Sensor	Open	Closed		PJ5C1 LCC-15
UN1-LCC	Manual Button Down	Paper Descent Key	On	Off		PJ2H LCC-10

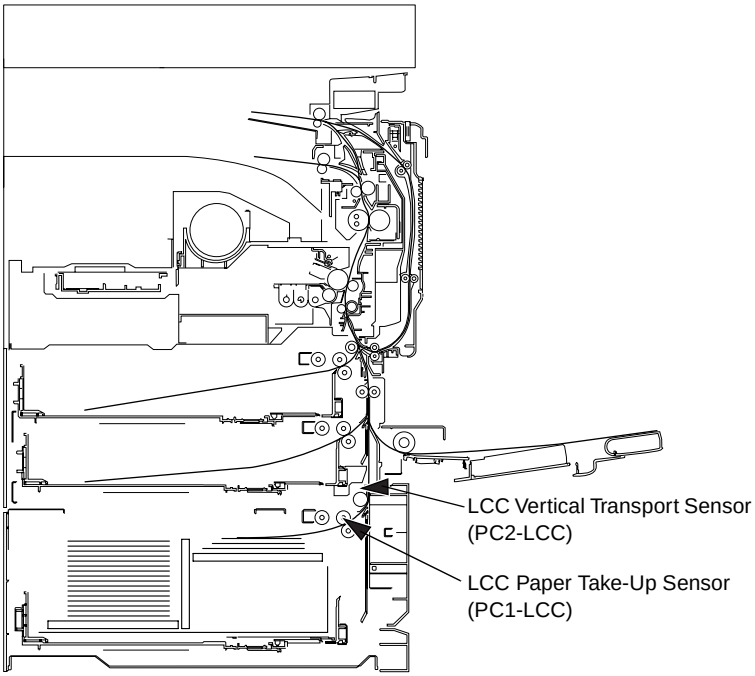
3. Misfeed Detection/Troubleshooting Procedures

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?	Clean the paper path and replace if necessary.
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.

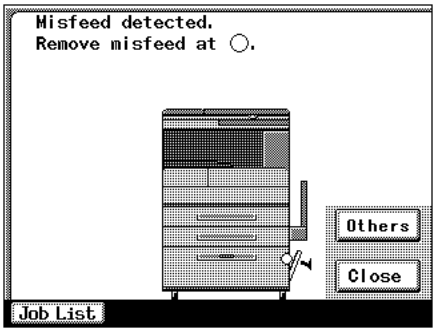
3-2. Misfeed-Detecting Sensor Layout



4348T502AA

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.



4348T503CA

3-4. Misfeed Detection Timing/Troubleshooting Procedures

(1) LCC Paper Take-Up Misfeed

<Detection Timing>

Type	Description
Paper Take-Up Section misfeed detection	The leading edge of the paper does not block the LCC Vertical Transport Sensor (PC2-LCC) even after the set period of time has elapsed after the LCC Paper Feed Motor is energized.
Detection of paper remaining in the Paper Take-Up section	The LCC Vertical Transport Sensor (PC2-LCC) 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 LCC Paper Take-Up Sensor (PC1-LCC) 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	
LCC Vertical Transport Sensor (PC2-LCC) LCC Paper Take-Up Sensor (PC1-LCC) LCC Paper Feed Motor (M1-LCC)	Control Board (PWB-C1 LCC)

Step	Operations	Ref. Page	WIRING DIAGRAM	
			Control signal	Location (Electrical Components)
1	Initial checks	☞ T-7	—	—
2	PC2-LCC sensor check	☞ T-1	PWB-C1 LCC PJ5C1 LCC-5	C-6
3	PC1-LCC sensor check	☞ T-1	PWB-C1 LCC PJ5C1 LCC-2	C-6
4	M1-LCC operation check	☞ T-3	—	P-6
5	PWB-C1 LCC replacement	—	—	E-8

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
C0990	LCC Elevator Motor Failure	The Elevator Motor Pulse Sensor (PC10-LCC) cannot detect both edges of H/L even after the set period of time has elapsed while the Elevator Motor (M5-LCC) is turning backward/forward (raise/lower).
C0991	LCC Lift Failure	• The Tray Upper Limit Sensor (PC4-LCC) is not unblocked even after the set period of time has elapsed after the paper lift-up operation began. • The Tray Upper Limit Sensor (PC4-LCC) is not blocked even after the set pulse is detected by the Elevator Motor Pulse Sensor (PC10-LCC) after the paper lift-up operation began. • The Tray Upper Limit Sensor (PC4-LCC) is not blocked even after the set pulse is detected by the Elevator Motor Pulse Sensor (PC10-LCC) after the paper lift-up operation began. • The Tray Lower Position Sensor (PC13-LCC) is not blocked even after the set pulse is detected by the Elevator Motor Pulse Sensor (PC10-LCC) after the paper lift-up operation began. • The Tray Upper Limit Sensor (PC4-LCC) is not unblocked even after the set period of time has elapsed after the paper lift-up operation began. • The Tray Lower Position Sensor (PC13-LCC) is not blocked even after the set period of time has elapsed after the paper lift-down operation began. • The Tray Lower Position Sensor (PC13-LCC) is not blocked even after the set pulse is detected by the Elevator Motor Pulse Sensor (PC10-LCC) after the paper lift-down operation began. • The Lower Limit Sensor (PC7-LCC) is not unblocked even after the set period of time has elapsed after the paper lift-down operation began.

Code	Description	Detection Timing
C0996	LCC Lock Release Failure	The drawer cannot be determined to be out of position even after the set period of time has elapsed after the Tray Lock Solenoid (SL1-LCC) is energized after the lowering operation is finished.
C0997	LCC Shift Gate Operation Failure	The Shift Gate Home Position Sensor (PC14-LCC) cannot be set to L even after the set period of time has elapsed after the operation of the Shift Gate Motor (M3-LCC) began with the Shift Gate Home Position Sensor (PC14-LCC) set to L.
C0998	LCC Shift Failure	• The Shifter Return Position Sensor (PC11-LCC) is not unblocked even after the set period of time has elapsed after the shift operation began (shift to the right). • The Shifter Return Position Sensor (PC11-LCC) is not unblocked even after the set pulse is detected by the Shift Motor Pulse Sensor (PC8-LCC) after the shift operation began (shift to the right). • The Shifter Home Position Sensor (PC12-LCC) is not unblocked even after the set pulse is detected by the Shift Motor Pulse Sensor (PC8-LCC) after the shift operation began (shift to the right). • The Shifter Home Position Sensor (PC12-LCC) is not unblocked even after the set period of time has elapsed after the return operation began (shift to the left). • The Shifter Home Position Sensor (PC12-LCC) is not unblocked even after the set pulse is detected by the Shift Motor Pulse Sensor (PC8-LCC) after the return operation began (shift to the left). • The Shifter Return Position Sensor (PC11-LCC) is not unblocked even after the set pulse is detected by the Shift Motor Pulse Sensor (PC8-LCC) after the return operation began (shift to the left).
C099C	LCC Shift Motor Failure	The Shift Motor Pulse Sensor (PC8-LCC) cannot detect both edges of H/L even after the set period of time has elapsed while the Shift Motor (M4-LCC) is turning backward/forward (raise/lower).
C099D	LCC communication error	Due to a software malfunction, etc., the time on the watchdog timer has run out and a reset is performed.

5. Malfunction Detection Timing and Troubleshooting Procedure

(1) C0B56: LCC Elevator Motor Failure

<Detection Timing>

Malfunction Code	Description
C0990	The Elevator Motor Pulse Sensor (PC10-LCC) cannot detect both edges of H/L even after the set period of time has elapsed while the Elevator Motor (M5-LCC) is turning backward/forward (raise/lower).

Action

Relevant Electrical Components	
Elevator Motor (M5-LCC) Elevator Motor Pulse Sensor (PC10-LCC)	Interface Board (PWB-H LCC) Control Board (PWB-C1 LCC)

Step	Operations	Ref. Page	WIRING DIAGRAM	
			Control signal	Location (Electrical Components)
1	Check the motor connectors for proper connection, and correct as necessary.	—	—	—
2	PC10-LCC sensor check	☞ T-1	PWB-C1 LCC PJ3C1 LCC-5	F-2
3	M5-LCC operation check	☞ T-3	PWB-C1 LCC PJ4C1 LCC-7,6	H-2
4	PWB-H LCC replacement	—	—	F-6
5	PWB-C1 LCC replacement	—	—	E-8

(2) C0991: LCC Lift Failure

<Detection Timing>

Malfunction Code	Description
C0991	• The Tray Upper Limit Sensor (PC4-LCC) is not unblocked even after the set period of time has elapsed after the paper lift-up operation began. • The Tray Upper Limit Sensor (PC4-LCC) is not blocked even after the set pulse is detected by the Elevator Motor Pulse Sensor (PC10-LCC) after the paper lift-up operation began. • The Tray Upper Limit Sensor (PC4-LCC) is not blocked even after the set pulse is detected by the Elevator Motor Pulse Sensor (PC10-LCC) after the paper lift-up operation began. • The Tray Lower Position Sensor (PC13-LCC) is not blocked even after the set pulse is detected by the Elevator Motor Pulse Sensor (PC10-LCC) after the paper lift-up operation began. • The Tray Upper Limit Sensor (PC4-LCC) is not unblocked even after the set period of time has elapsed after the paper lift-up operation began. • The Tray Lower Position Sensor (PC13-LCC) is not blocked even after the set period of time has elapsed after the paper lift-down operation began. • The Tray Lower Position Sensor (PC13-LCC) is not blocked even after the set pulse is detected by the Elevator Motor Pulse Sensor (PC10-LCC) after the paper lift-down operation began. • The Lower Limit Sensor (PC7-LCC) is not unblocked even after the set period of time has elapsed after the paper lift-down operation began.

Action

Relevant Electrical Components	
Tray Upper Limit Sensor (PC4-LCC) Tray Lower Position Sensor (PC13-LCC) Elevator Motor Pulse Sensor (PC10-LCC) Lower Limit Sensor (PC7-LCC)	Control Board (PWB-C1 LCC)

Step	Operations	Ref. Page	WIRING DIAGRAM	
			Control signal	Location (Electrical Components)
1	Check the sensor connector for proper connection, and correct as necessary.	—	—	—
2	PC4-LCC sensor check	☞ T-1	PWB-C1 LCC PJ5C1 LCC-12	B-6
3	PC13-LCC sensor check	☞ T-1	PWB-C1 LCC PJ3C1 LCC-9	D-2
4	PC10-LCC sensor check	☞ T-1	PWB-C1 LCC PJ3C1 LCC-5	F-2
5	PC7-LCC sensor check	☞ T-1	PWB-C1 LCC PJ3C1 LCC-2	H-2
6	PWB-C1 LCC replacement	—	—	E-8

(3) C0996: LCC Lock Release Failure

<Detection Timing>

Malfunction Code	Description
C0996	The drawer cannot be determined to be out of position even after the set period of time has elapsed after the Tray Lock Solenoid (SL1-LCC) is energized after the lowering operation is finished.

Action

Relevant Electrical Components	
Tray Lock Solenoid (SL1-LCC)	Control Board (PWB-C1 LCC)

Step	Operations	Ref. Page	WIRING DIAGRAM	
			Control signal	Location (Electrical Components)
1	Check the SL1-LCC connector for proper connection, and correct as necessary.	—	—	—
2	SL1-LCC operation check	☞ T-2	PWB-C1 LCC PJ7C1 LCC-4	E-6
3	PWB-C1 LCC replacement	—	—	E-8

(4) C0997: LCC Shift Gate Operation Failure

<Detection Timing>

Malfunction Code	Description
C0997	The Shift Gate Home Position Sensor (PC14-LCC) cannot be set to L even after the set period of time has elapsed after the operation of the Shift Gate Motor (M3-LCC) began with the Shift Gate Home Position Sensor (PC14-LCC) set to L.

Action

Relevant Electrical Components	
Shift Gate Home Position Sensor (PC14-LCC) Shift Gate Motor (M3-LCC)	Control Board (PWB-C1 LCC)

Step	Operations	Ref. Page	WIRING DIAGRAM	
			Control signal	Location (Electrical Components)
1	Check the motor and sensor connectors for proper connection, and correct as necessary.	—	—	—
2	PC14-LCC sensor check	☞ T-1	PWB-C1 LCC PJ4C1 LCC-1	I-2
3	M3-LCC operation check	☞ T-3	PWB-C1 LCC PJ4C1 LCC-3,4	I-2
4	PWB-C1 LCC replacement	—	—	E-8

(5) C0998: LCC Shift Failure

<Detection Timing>

Malfunction Code	Description
C0998	• The Shifter Return Position Sensor (PC11-LCC) is not unblocked even after the set period of time has elapsed after the shift operation began (shift to the right). • The Shifter Return Position Sensor (PC11-LCC) is not unblocked even after the set pulse is detected by the Shift Motor Pulse Sensor (PC8-LCC) after the shift operation began (shift to the right). • The Shifter Home Position Sensor (PC12-LCC) is not unblocked even after the set pulse is detected by the Shift Motor Pulse Sensor (PC8-LCC) after the shift operation began (shift to the right). • The Shifter Home Position Sensor (PC12-LCC) is not unblocked even after the set period of time has elapsed after the return operation began (shift to the left). • The Shifter Home Position Sensor (PC12-LCC) is not unblocked even after the set pulse is detected by the Shift Motor Pulse Sensor (PC8-LCC) after the return operation began (shift to the left). • The Shifter Return Position Sensor (PC11-LCC) is not unblocked even after the set pulse is detected by the Shift Motor Pulse Sensor (PC8-LCC) after the return operation began (shift to the left).

Action

Relevant Electrical Components	
Shift Motor Pulse Sensor (PC8-LCC) Shifter Return Position Sensor (PC11-LCC) Shifter Home Position Sensor (PC12-LCC)	Control Board (PWB-C1 LCC)

Step	Operations	Ref. Page	WIRING DIAGRAM	
			Control signal	Location (Electrical Components)
1	Check each sensor connector for proper connection, and correct as necessary.	—	—	—
2	PC8-LCC sensor check	☞ T-1	PWB-C1 LCC PJ3C1 LCC-3	G-2
3	PC11-LCC sensor check	☞ T-1	PWB-C1 LCC PJ3C1 LCC-7	E-2
4	PC12-LCC sensor check	☞ T-1	PWB-C1 LCC PJ3C1 LCC-8	D-2
5	PWB-C1 LCC replacement	—	—	E-8

(6) C0998: LCC Shift Motor Failure

<Detection Timing>

Malfunction Code	Description
C099C	The Shift Motor Pulse Sensor (PC8-LCC) cannot detect both edges of H/L even after the set period of time has elapsed while the Shift Motor (M4-LCC) is turning backward/forward (raise/lower).

Action

Relevant Electrical Components	
Shift Motor (M4-LCC) Shift Motor Pulse Sensor (PC8-LCC)	Control Board (PWB-C1 LCC)

Step	Operations	Ref. Page	WIRING DIAGRAM	
			Control signal	Location (Electrical Components)
1	Check the motor connectors for proper connection, and correct as necessary.	—	—	—
2	PC8-LCC sensor check	☞ T-1	PWB-C1 LCC PJ3C1 LCC-3	G-2
3	M4-LCC operation check	☞ T-3	PWB-C1 LCC PJ4C1 LCC-5,4	H-2
4	PWB-C1 LCC replacement	—	—	E-8

(7) C099D: LCC Communication Failure

<Detection Timing>

Malfunction Code	Description
C099D	Due to a software malfunction, etc., the time on the watchdog timer has run out and a reset is performed.

Action

Relevant Electrical Components	
Control Board (PWB-C1 LCC)	

Step	Operations	Ref. Page	WIRING DIAGRAM	
			Control signal	Location (Electrical Components)
1	Turn the copier off, then on again.	—	—	—
2	PWB-C1 LCC replacement	—	—	E-8

FN-117/AK-1/ PK-6

Service Manual

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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
(56 to 90 g/m²)
Recycled paper
(60 to 90 g/m²)</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
(50 to 59 g/m²)</td></tr>
<tr><td>Thick paper
(91 to 210 g/m²)</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 (56 to 90 g/m^2) Recycled paper (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 (56-90 g/m^2) Recycled paper (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 (50 to 59 g/m^2)	
			Thick paper (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 (56 to 90 g/m^2) Recycled paper (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 (56 to 163 g/m^2), recycled paper (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 (64 g/m^2) 2,3 holes For 1,000 sheets of paper (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.

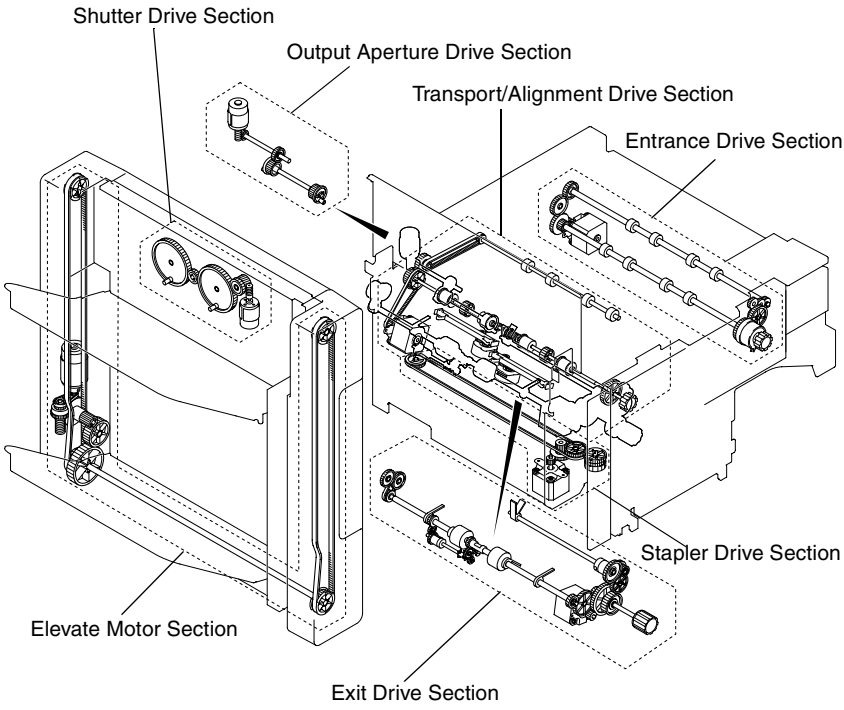
NOTE

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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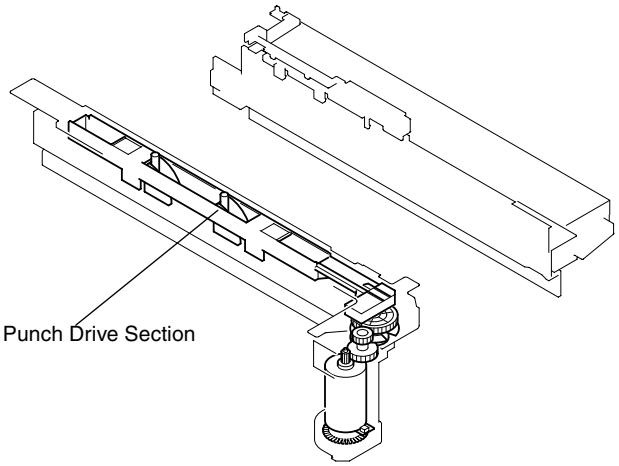
<PK-6>



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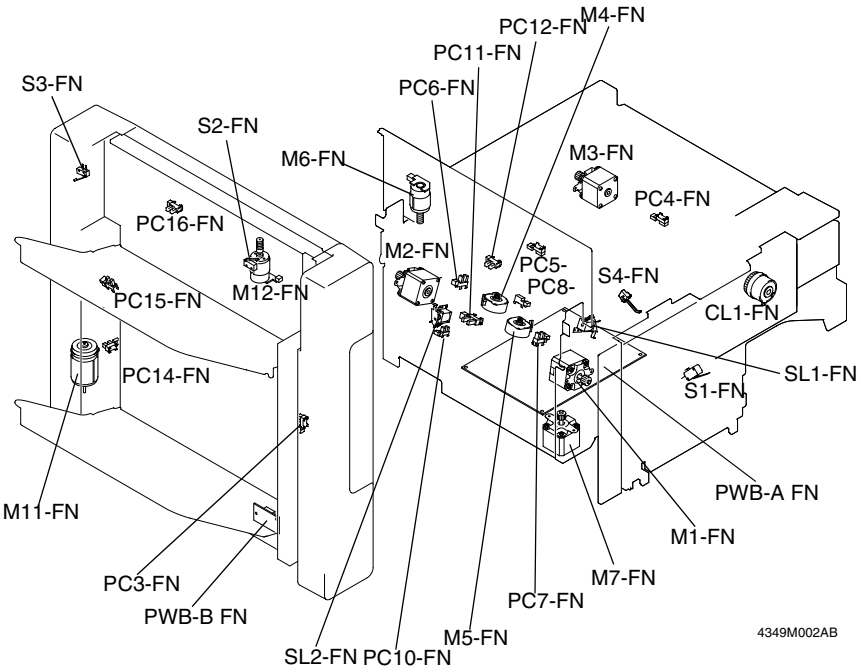
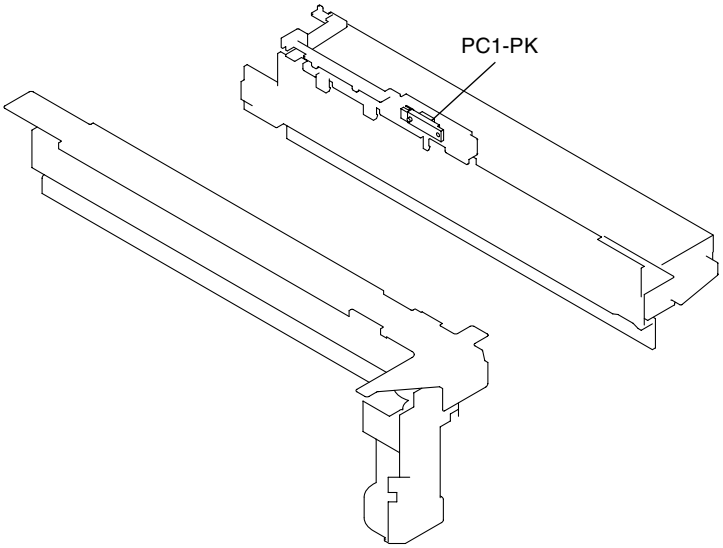
3. Electric Parts Layout Drawing

<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>



4349G502AA

Symbol	Name	Symbol	Name
PC1-PK	Punch Trash Full		

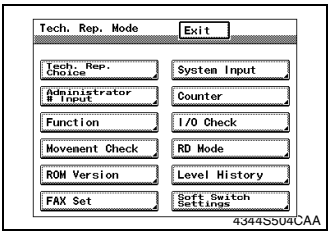
TEST MODES

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].



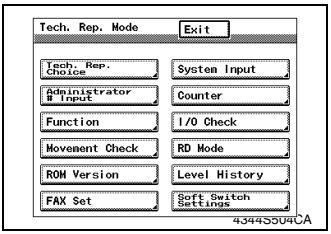
3. Press the following keys in order: Stop → 0 → 0 → Stop → 0 → 1.

NOTE

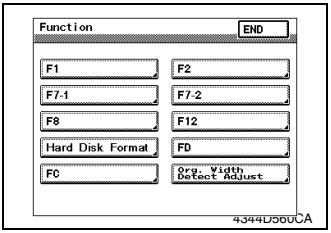
- *Be sure to keep the display procedure for the Tech. Rep. Mode from any unauthorized persons not involved with service operations.*

1-2. Entering Function Mode

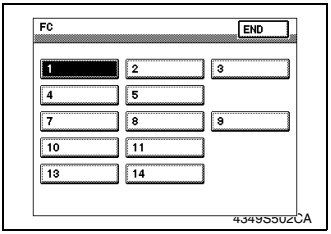
1. Display the Tech. Rep. Mode screen.



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.

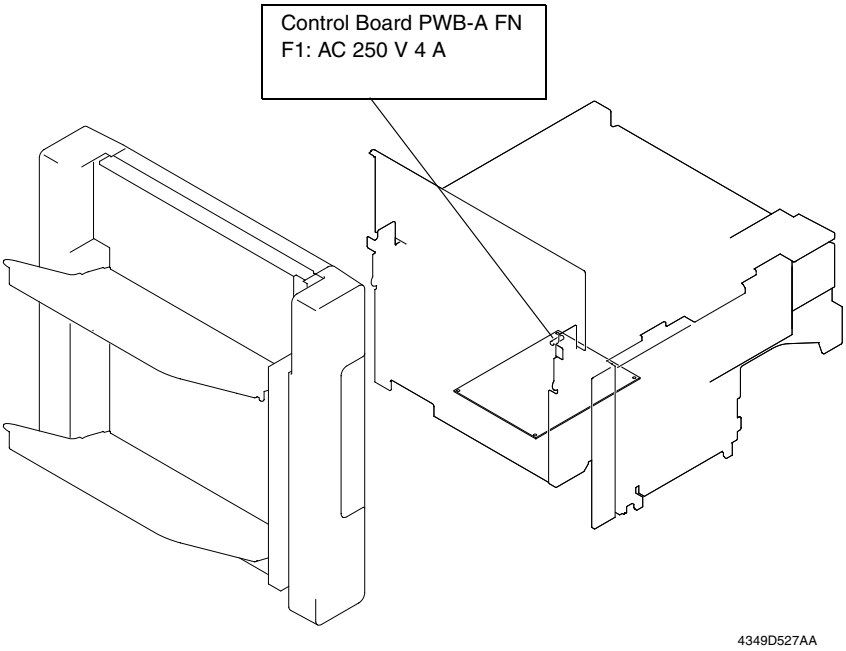
PM Parts	Job		Item Used for Cleaning	Qty	Ref. Page
	Clean	Replace			
Rollers and rolls	30K	—	Alcohol, water, and soft cloth	—	☞ D-10

NOTES

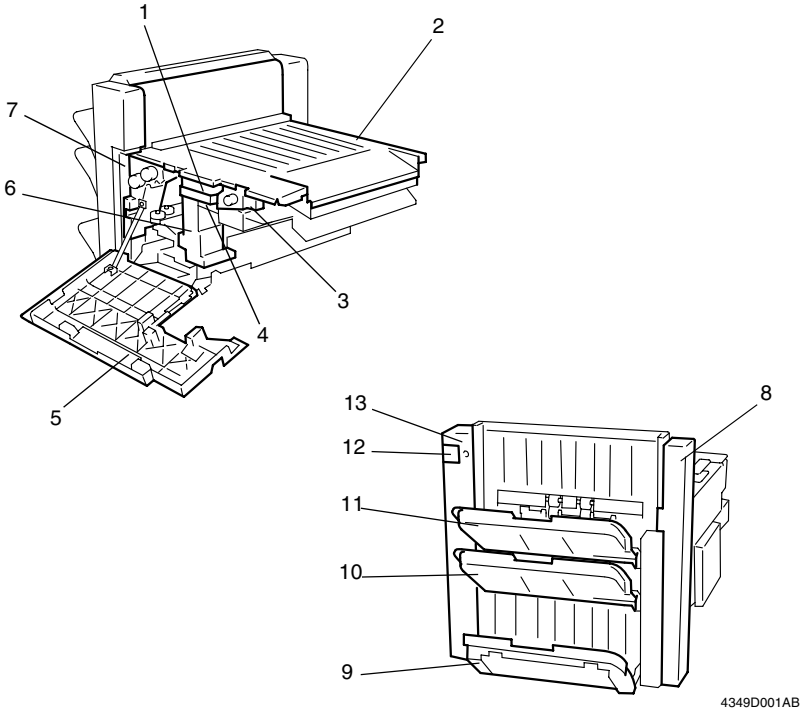
- *K = 1,000 copies*
- *The contents of this maintenance schedule are subject to change without notice.*
- *For part numbers, see Parts Manual and Parts Modification Notice.*
- *During PM, check the Punch Waste Box and dispose as necessary.*

2. Disassembly and Cleaning

2-1. Identification of Fuses



2-2. Removal of the Outer Cover



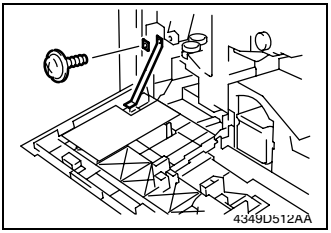
No.	Name	Removal Procedure
1	Horizontal Transport Upper Front Cover	Unhook the tab and remove.
2	Horizontal Transport Upper Cover	Remove four screws and the cover.
3	Horizontal Transport Front Right Cover	Remove two screws and the cover.
4	Horizontal Transport Front Middle Cover	Remove two screws and 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

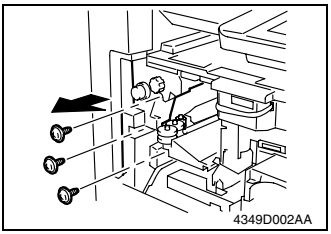
NOTES

- *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.*

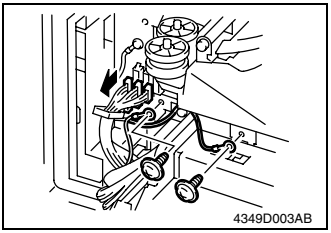
1. Open the Front Door.



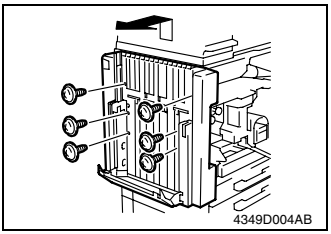
2. Remove one screw and the Front Door Stopper.



3. Remove three screws and the Left Front Cover.



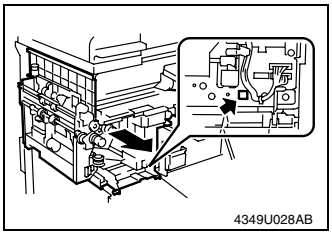
4. Unplug three connectors.
5. Remove two screws, and the ground wire.



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

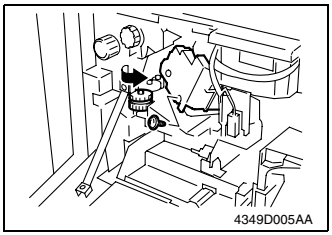
2-4. Removal of the Horizontal Transport Unit

1. Remove the Sorted Copy Tray.

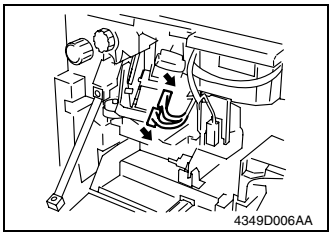


2. Remove the Front Right Door.
3. While holding down the lock release button, remove the Horizontal Transport Unit.

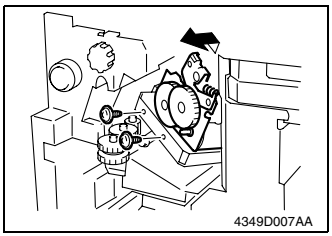
2-5. Removal of the Stapler Unit



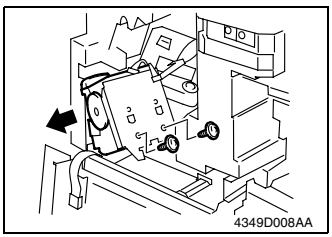
1. Open the Front Door.
2. Turn the dial and move the stapler forward.
3. Remove the Staple Cartridge.
4. Remove one screw and the cover.



5. Unplug two connectors.



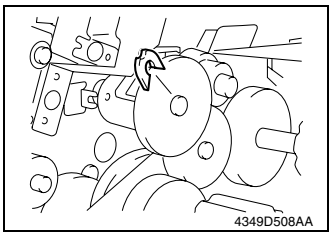
6. Remove two screws and the Stapler Unit Assy.



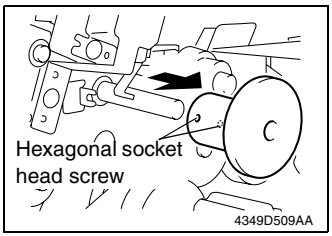
7. Remove two screws and the Stapler Unit.

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.



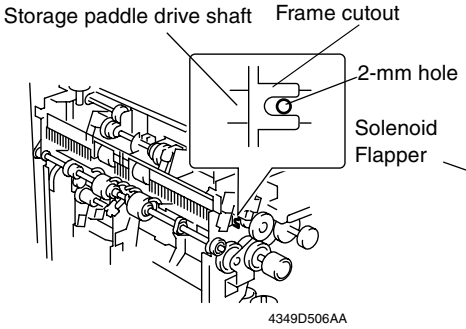
4. Remove one C ring.

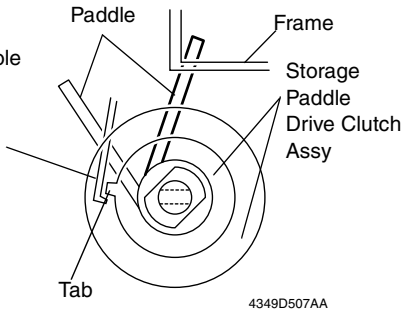


5. Loosen two hexagonal socket head screws and remove the Storage Paddle Drive Clutch Assy.

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.

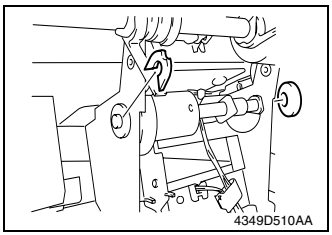




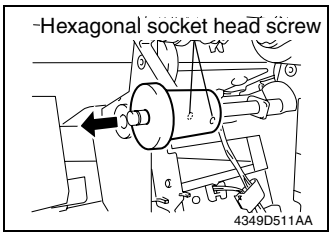
3. Hook the Solenoid Flapper to the tab of the Storage Paddle Drive Clutch Assy.
4. Attach one C ring and reinstall the Storage Paddle Drive Clutch Assy.
5. Adjust the spacing between the C ring and the Storage Paddle Drive Clutch Assy to 0.2 mm and tighten two hexagonal socket head screws.

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.

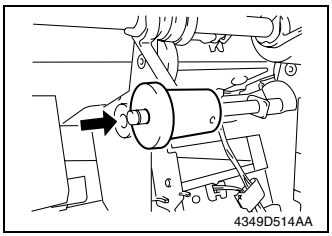


4. Remove one C ring.
5. Remove one gear.



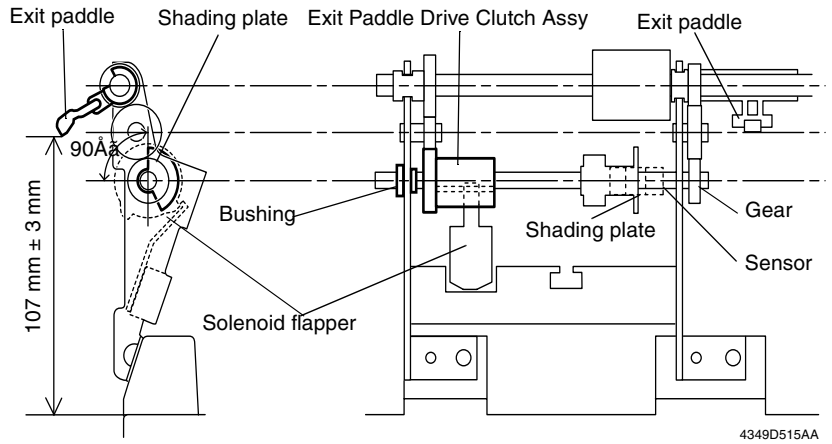
6. Loosen two hexagonal socket head screws and remove the Exit Paddle Drive Clutch Assy.

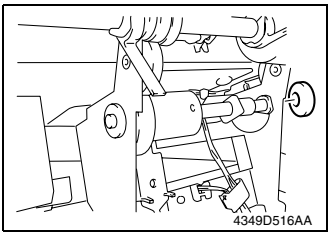
<Reinstallation Procedure>



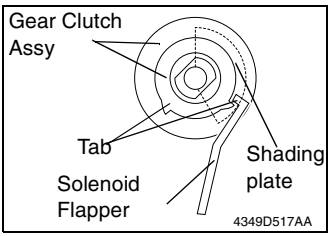
1. Reinstall the Exit Paddle Drive Clutch Assy.

Precaution for Exit Paddle Drive Clutch Reinstallation





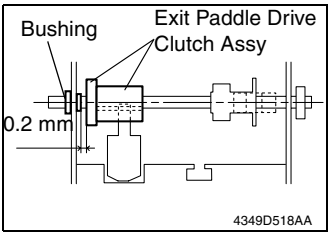
2. Install one gear.



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

NOTE

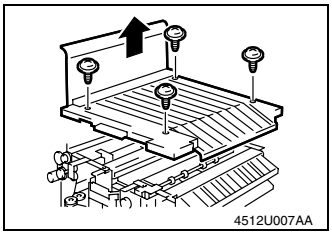
- *Install the Exit Paddle Drive Clutch Assy with the side having a wider spacing between the tabs facing upward.*



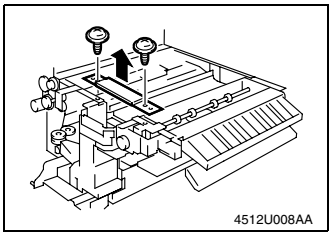
4. Attach one C ring and press the Exit Paddle Drive Clutch Assy to the bushing.
5. Adjust the spacing between the bushing and the Exit Paddle Drive Clutch Assy to 0.2 mm and tighten two hexagonal socket head screws.

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

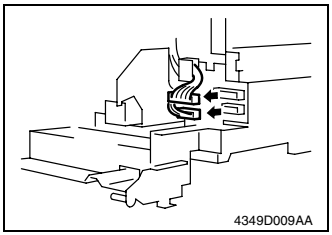
1. Remove the Sorted Copy Tray.
2. Remove the Horizontal Transport Unit.



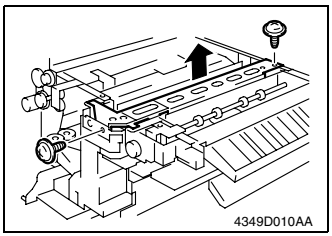
3. Remove four screws and the Upper Cover.



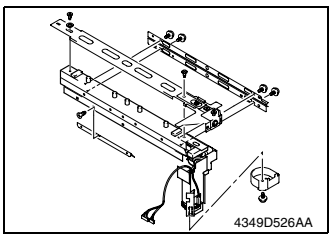
4. Remove two screws and the Reinforcement Bracket.



5. Unplug two connectors.



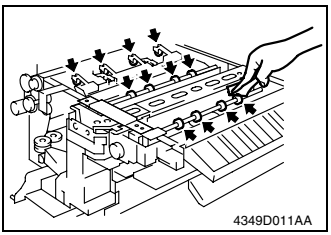
6. Remove two screws, and the Punch Kit.



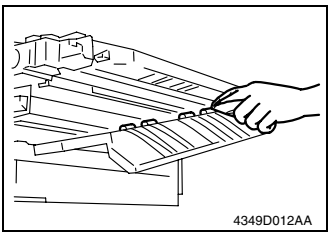
7. Remove eight screws, and the Punch Unit.

2-9. Cleaning of the Roller and Roll

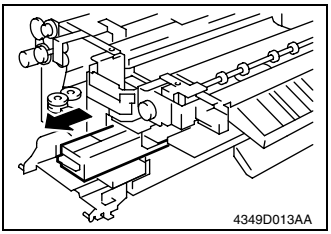
1. Remove the Sorted Copy Tray.
2. Remove the Horizontal Transport Unit.
3. Remove the Horizontal Transport Top Cover.



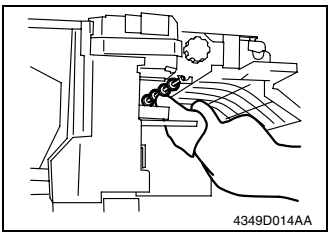
4. Using a soft cloth dampened with alcohol, wipe the roller and roll.



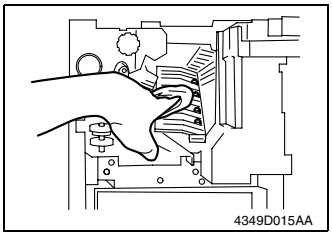
5. Lower Processing Guide FN1.
6. Using a soft cloth dampened with alcohol, wipe the roll.



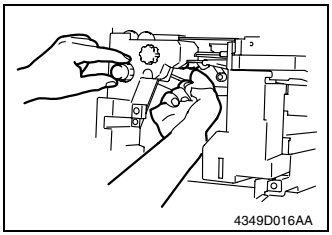
7. Remove Punch Waste Storage Box FN3.1. (only when PK-6 is installed)



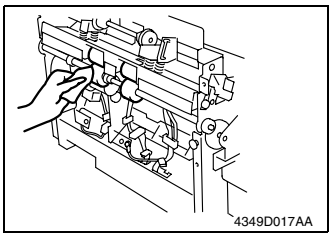
8. Lower Processing Guide FN-3.
9. Using a soft cloth dampened with alcohol, wipe the roll.



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.

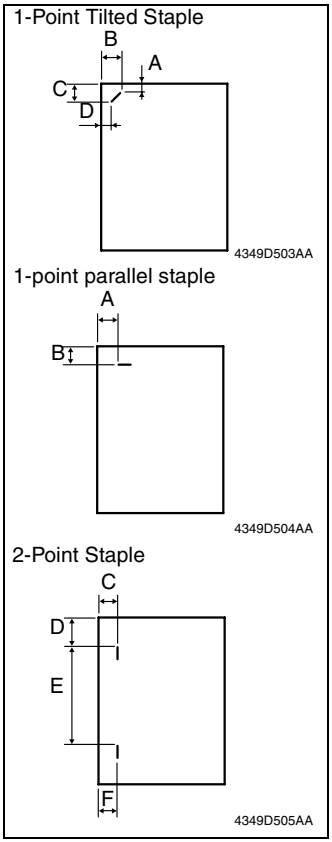
3. Adjustment

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. 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

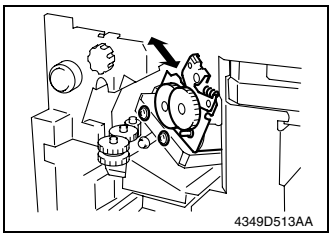
X = A3L, A4C: 137

B4L, B5C: 114

A4L: 190

B5L: 162

Substitute above into the equation.



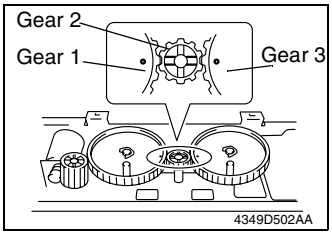
3. If the staple position is misaligned, remove one screw and the cover.
4. Loosen two adjustment screws and move the Stapler Unit in the direction of the arrow to make the adjustment.
5. Make another copy and check the staple position.

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

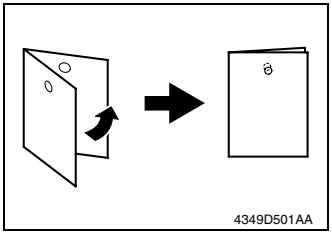
- *Set the gears so that the marks on Gears 1 and 3 are aligned with the rib of Gear 2 as shown on the right.*

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

NOTE

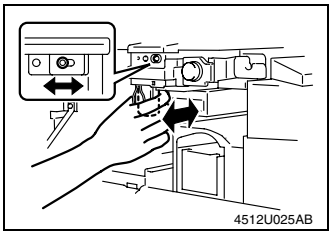
Make this adjustment after any of the following procedures has been performed.

- *When the Punch Kit has been replaced.*
- *When the Punch Kit has been removed.*



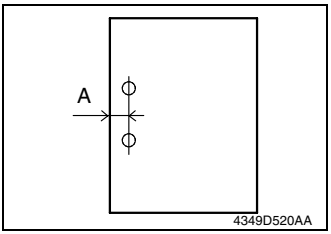
1. Set the copier into the Hole Punch mode and make a 1-sided copy from a 1-sided original.
2. Fold the output paper in half and check whether the punch hole positions are aligned.

Specification: Within 2 mm

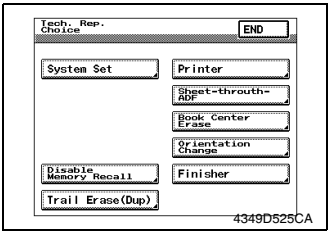


3. If the punch hole position is misaligned, remove one screw and the cover.
4. Loosen one adjustment screw and move the Punch Unit forward or backward to make the adjustment.
5. Make another copy and check the punch hole position.

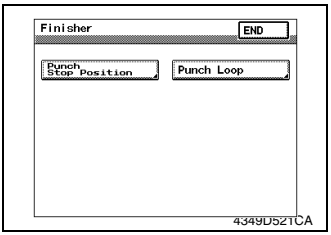
3-4. Punch Hold Position Adjustment (PK-6)



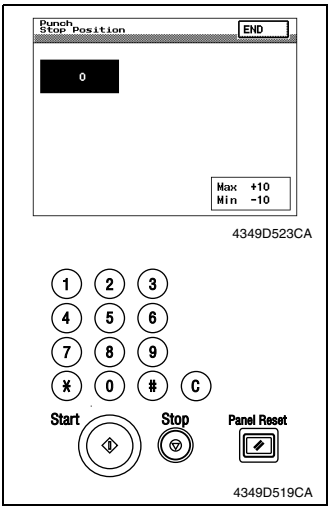
1. Set the copier into the Hole Punch mode and make a 1-sided copy from a 1-sided original.
2. Check width A on the output paper.



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

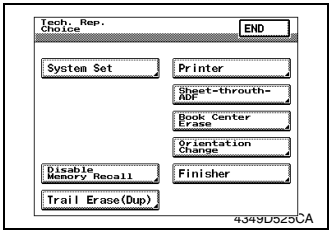
Use the ✻ key to switch between + and -.

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

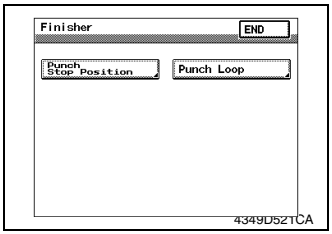
NOTE

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

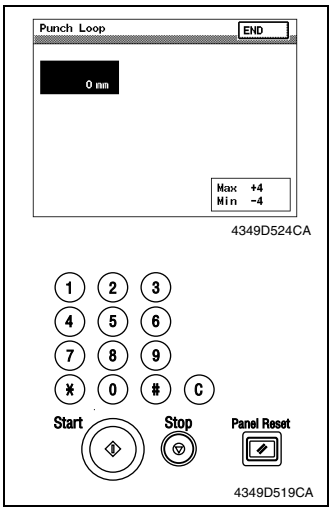
- *When a slant occurs in the punch hole position.*
- *When misfeed frequently occurs in punch hole mode.*



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

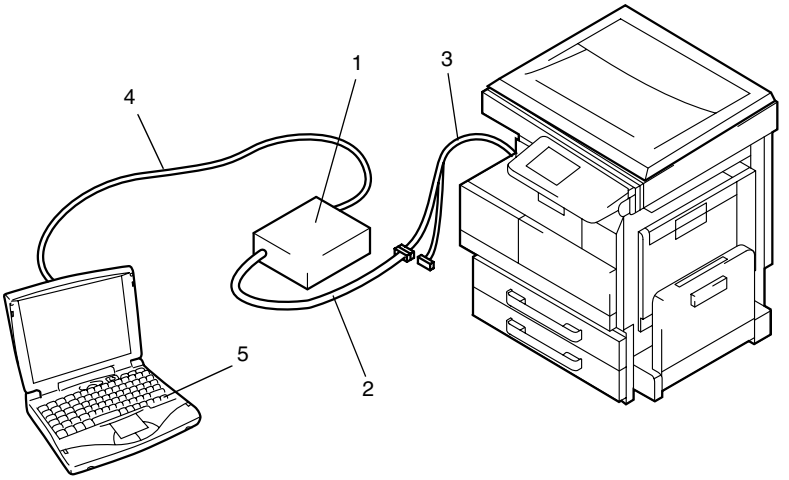
Use the ✻ key to switch between + and -.

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

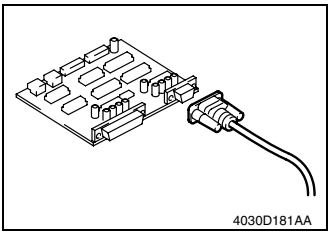


4030D159AB

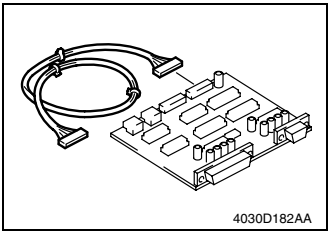
No.	Name	Description	Reference
1	Converter	Interface Board	Service Jig Setting
2	Interface Cable	Connects the converter and the connection cable.	Service Jig Setting
3	Connection Cable	Connects the Interface Cable and the printer.	Service Jig Setting
4	RS-232C cable (cross)	Connects the PC and the Converter.	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.

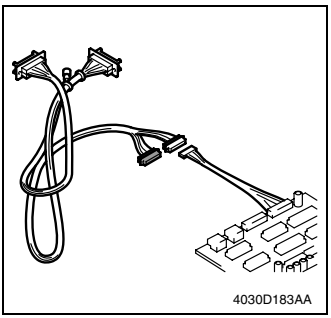
(2) Service Jigs Setup



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



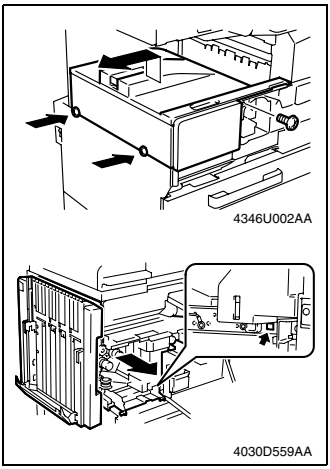
2. Connect the Converter connector and the Interface Cable.



3. Connect the Interface Cable and the Connection Cable.

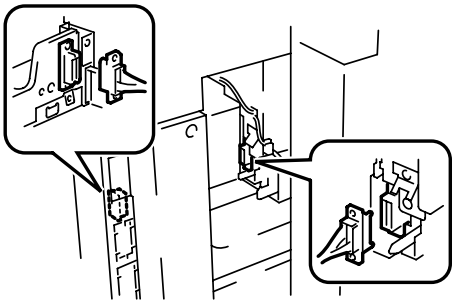
NOTES

- *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 blue connector and the blue connection cable.*



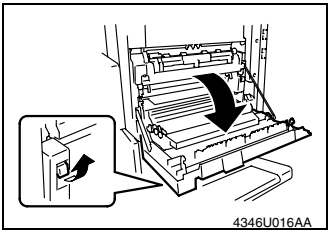
4. Remove the Exit Cover. (If Option FN-117 is connected, slide the Horizontal Transport Section to the front.)

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

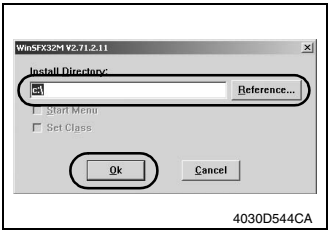


(3) Firmware Upgrade Procedure

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).*


4346U016AA

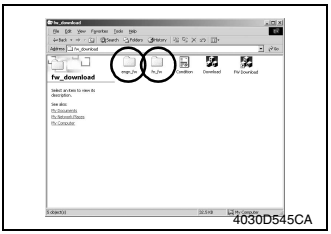
1. Turn ON the printer power.
2. Open the Right Door.



4030D544CA

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.*

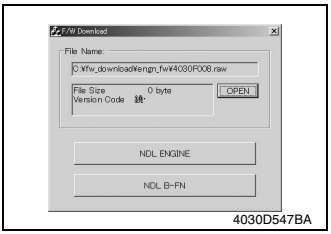


4030D545CA

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

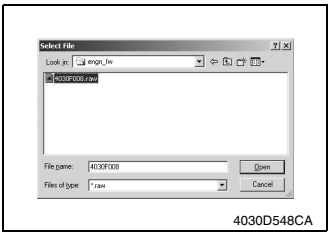
Printer (PWB-A):
c:\fw_download\engn_fw

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



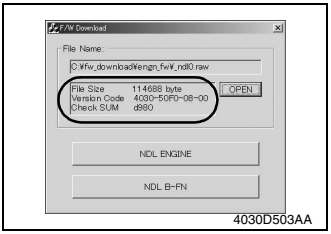
4030D547BA

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



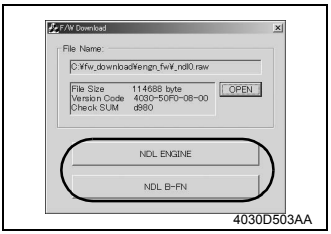
4030D548CA

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



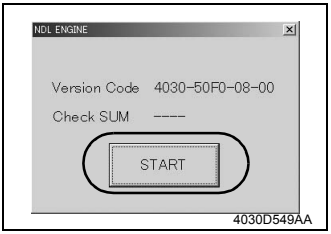
4030D503AA

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



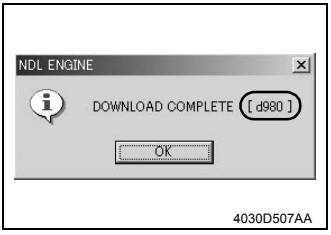
4030D503AA

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



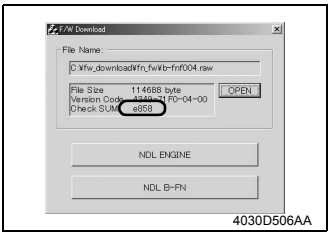
4030D549AA

10. Click the Start button to upgrade.



4030D507AA

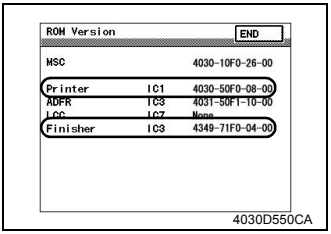
11. When the upgrade is complete, a completion screen appears.



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



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

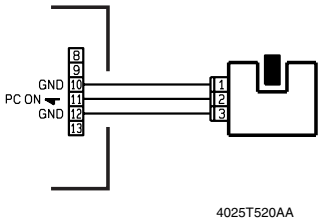
- Information required for troubleshooting and steps that must be performed are described in this chapter.

1-1. Electrical Components Check Procedure

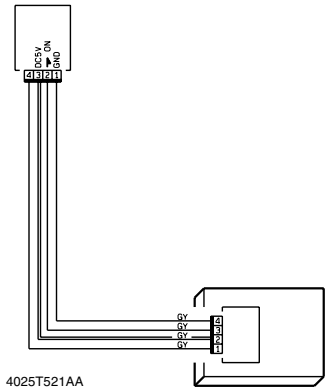
- If a paper misfeed or malfunction occurs, perform the following operation to check the condition of the electrical components.

(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.



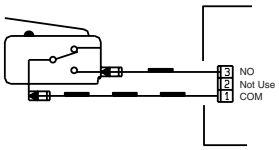
4025T520AA



4025T521AA

(2) Switch

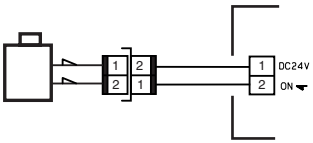
Step	Check	Result	Action
1	Does the input signal (NO) of the control board change from L to H when the switch is turned on?	NO	Replace the switch.
		YES	Replace the control board.



4025T523AB

(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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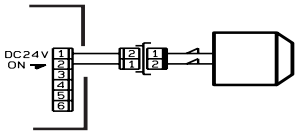
(4) Clutch

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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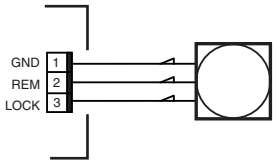
(5) Motor

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.



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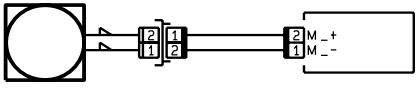
Step	Check	Result	Action
1	Does the input signal of the control board change from H to L when the motor is turned on? (Input signals differ according to the direction of rotation)	YES	Replace the motor.
		NO	Replace the control board.



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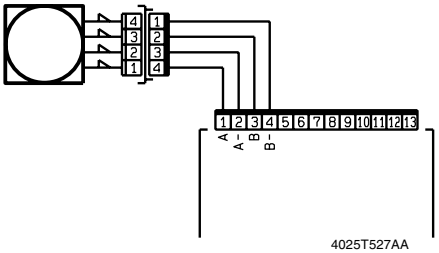
Step	Check	Result	Action
1	Are the relay connector of the motor and the print jack of the control board correctly connected?	YES	Replace the motor or the control board.
		NO	Connect the connector or the print jack.



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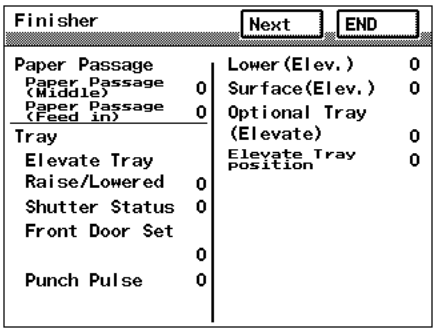
2. I/O CHECK

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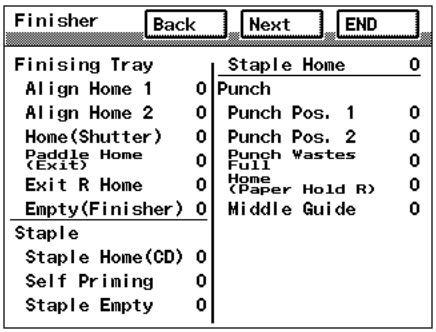
If the Punch Kit PK-6 is installed, touch [Next].



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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	Paper Passage (Middle)	Transport Sensor	Paper present	Paper not present	Control Board (PWB-A FN)	PJ20A FN-9
PC4-FN	Paper Passage (Feed in)	Entrance Sensor	Paper present	Paper not present		PJ25A FN-4
S3-FN	Elevate Tray Raise/ Lowered	Elevator Tray Upper/ Lower Limit Switch	Raised Position	Not raised		PJ6A FN-7
S2-FN	Shutter Status	Shutter Detection Switch	Closed	Open		PJ6A FN-3
S1-FN	Front Door Set	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	Lower (Elev.)	Elevator Tray Upper Limit Sensor	Blocked	Unblocked		PJ9A FN-3
PC15-FN	Surface (Elev.)	Elevator Tray Lower Limit Sensor	Blocked	Unblocked		PJ9A FN-4
—	Optional Tray (Elevate)	—	Set	Not set		PJ10A FN-2
PC3-FN	Elevator Tray Position	Elevator Tray Home Position Sensor	Blocked	Unblocked		PJ9A FN-7
PC6-FN	Align Home 1	Alignment Home Position Sensor 1	At home	Not at home		PJ13A FN-3
PC7-FN	Align Home 2	Alignment Home Position Sensor 2	At home	Not at home		PJ13A FN-6
PC16-FN	Home (Shutter)	Shutter Home Position Sensor	At home	Not at home		PJ9A FN-5
PC11-FN	Paddle Home (Exit)	Exit Paddle Home Position Sensor	At home	Not at home		PJ17A FN-7
PC12-FN	Exit R Home	Exit Roller Home Position Sensor	At home	Not at home		PJ20A FN-7
PC8-FN	Empty (Finisher)	Storage Tray Detecting Sensor	Paper present	Paper not present		PJ13A FN-8
PC10-FN	Staple Home (CD)	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 Pos. 1	Punch Positioning Sensor 1	Unblocked	Blocked		PJ12A FN-2
PC4-PK	Punch Pos. 2	Punch Positioning Sensor 2	Unblocked	Blocked		PJ12A FN-5
PC1-PK	Punch Wastes Full	Punch Trash Full	Blocked	Unblocked		PJ10A FN-2
S4-FN	Middle Guide	Transport Jam Detection Switch	Closed	Open		PJ22A FN-1
PC22-SK	Home (Paper Hold R)	Crease Roller Home Position Sensor	At home	Not at home		PJ2C SK+3

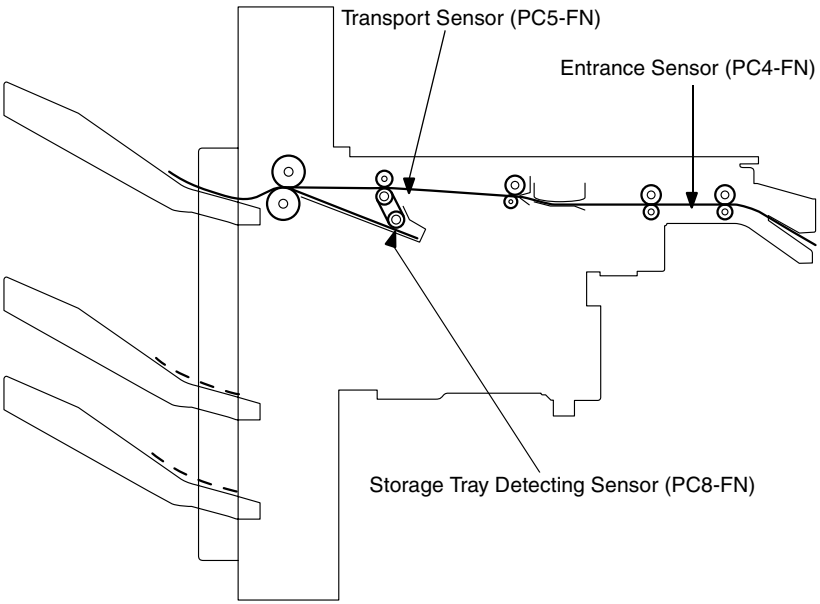
3. Misfeed Detection/Troubleshooting Procedures

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?	Clean the paper path and replace if necessary.
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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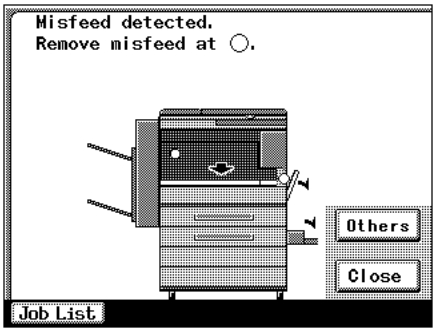
3-3. Misfeed Detected

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 misfeed 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 misfeed 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.

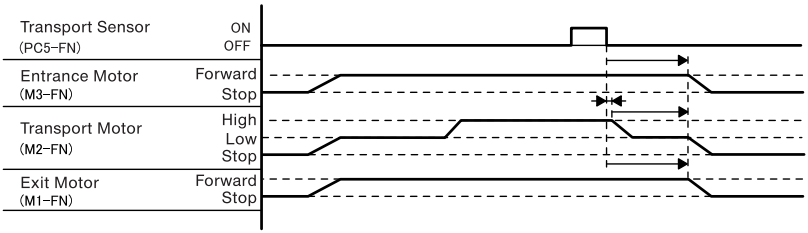
Action

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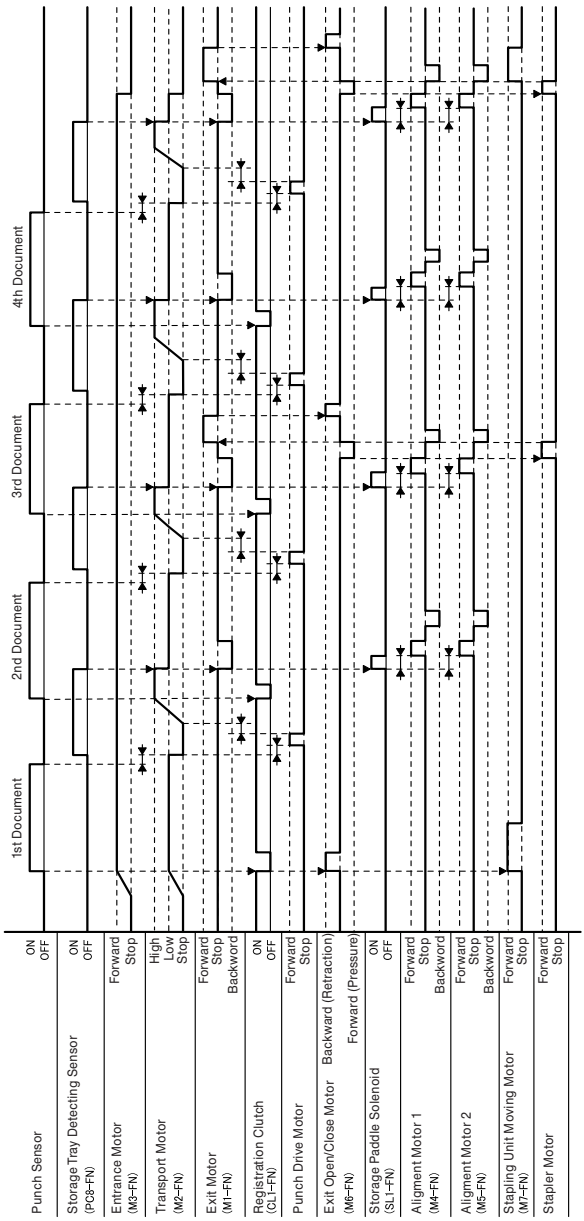
5-2. Sort mode (1 staple, 2 holes, A4C, 2 document pages, feeding out 2 sets)



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MK-1

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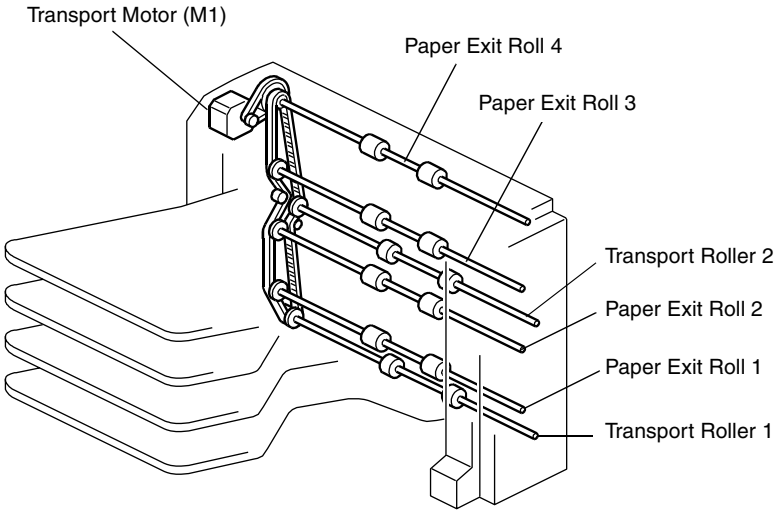
GENERAL

1. Specifications

Name	:	Mail Bin Kit
Installation	:	Install at the top section of the Finisher Elevator Tray.
Number of Bins	:	4 bins
Number of Sheets Stored per Bin	:	125 sheets (80 g/m^2)
Storable Paper	:	Plain paper (56 to 90 g/m^2), recycled paper (60 to 90 g/m^2)
Storable Paper Size	:	A5L, B5C, and A4C (5-1/2L, 8-1/2 x 11C)
Power Requirements	:	DC 24 V (supplied from the Finisher) DC 5 V (generated inside the Mail Bin)
Dimensions	:	624(W) x 390(H) x 503(D) mm 24-1/2 x 15-1/4 x 19-3/4
Weight	:	8 kg (17-3/4 lbs)
Operating Environment	:	Conforms to the operating environment of the copier.

2. Revolving Parts Layout Drawing



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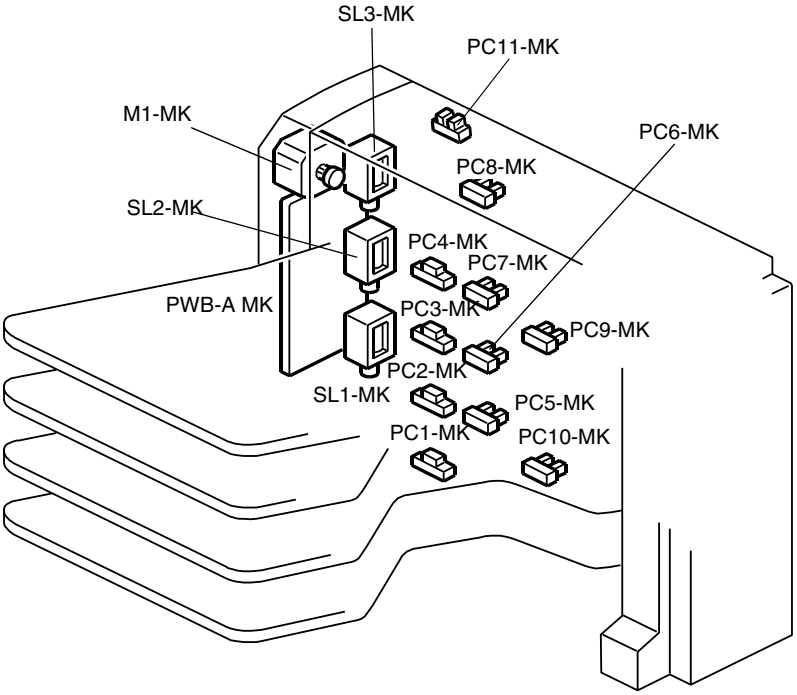
3. Electric Parts Layout Drawing



Symbol	Name	Symbol	Name
PWB-A MK	Control Board	PC4-MK	Paper Detection Sensor 4
M1-MK	Transport Motor	PC5-MK	Bin 1 Paper Full Detecting Sensor
SL1-MK	Bin Switching Solenoid 1	PC6-MK	Bin 2 Paper Full Detecting Sensor
SL2-MK	Bin Switching Solenoid 2	PC7-MK	Bin 3 Paper Full Detecting Sensor
SL3-MK	Bin Switching Solenoid 3	PC8-MK	Bin 4 Paper Full Detecting Sensor
PC1-MK	Paper Detection Sensor 1	PC9-MK	Upper Transport Sensor
PC2-MK	Paper Detection Sensor 2	PC10-MK	Lower Transport Sensor
PC3-MK	Paper Detection Sensor 3	PC11-MK	Cover Open/Close Sensor

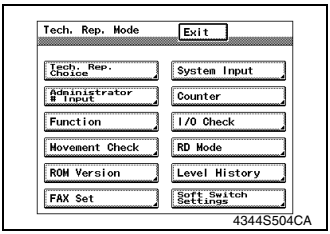
TEST MODES

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].



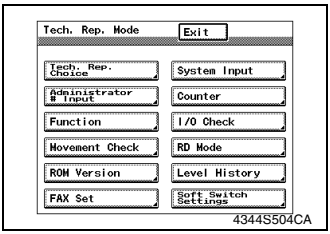
3. Press the following keys in order: Stop → 0 → 0 → Stop → 0 → 1.

NOTE

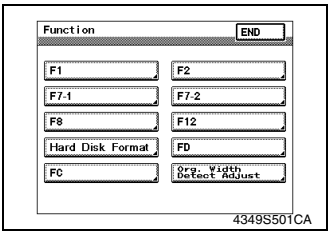
- *Be sure to keep the display procedure for the Tech. Rep. Mode from any unauthorized persons not involved with service operations.*

1-2. Entering Function Mode

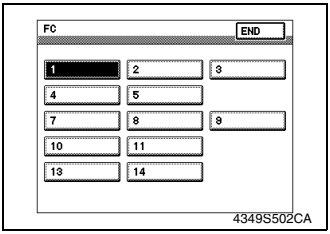
1. Display the Tech. Rep. Mode screen.



2. Touch [Function].



3. Touch [FC].



4. Touch [12].

1-3. Function Modes

The following item is available under “FC” in the Function Mode.

- 12: Mailbin solenoid drive mode

(1) Mailbin Solenoid Drive Mode

- Bin Entrance Switching Solenoids 1, 2 and 3 switch, in order, at the predetermined times.
  →Bin Entrance Switching Solenoid 1 (SL1-MK) activates for the predetermined time.
  →Bin Entrance Switching Solenoid 2 (SL2-MK) activates for the predetermined time.
  →Bin Entrance Switching Solenoid 3 (SL3-MK) activates for the predetermined time.
  →All Bin Entrance Switching Solenoids deactivate.
  →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.

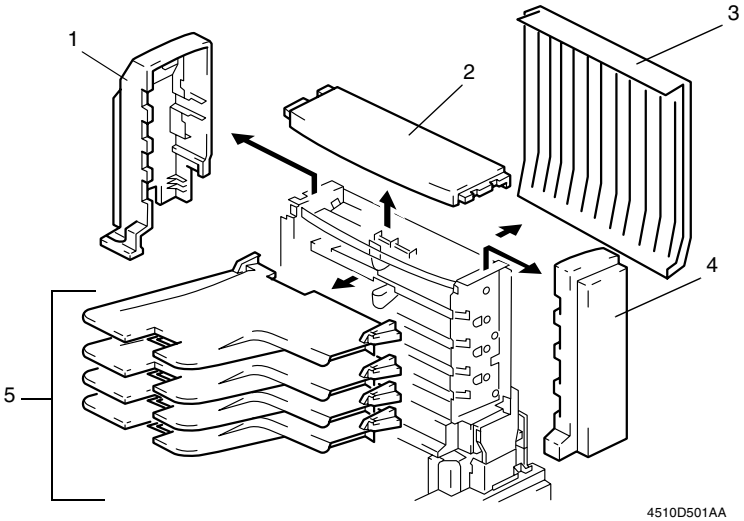
PM Parts	Job		Item Used for Cleaning	Qty	Ref. Page
	Clean	Replace			
Roller	300k	—	Alcohol and soft cloth	2	☞ D-2
Roll	300k	—		6	☞ D-2

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.*

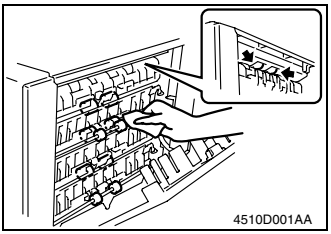
2. Disassembly and Cleaning

2-1. Removal of the Outer Cover



No.	Name	Removal Procedure
1	Rear Cover	Remove one screw.
2	Upper Cover	Remove the Rear Cover. → Remove the Front Cover. → Remove the Upper Cover.
3	Right Cover	Remove one screw and stopper. → Remove the Right Cover.
4	Front Cover	Remove one screw.
5	Paper Output Tray	Remove the Rear Cover. → Remove the Paper Output Trays.

2-2. Cleaning of the Roller and Roll



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

TROUBLESHOOTING

1. Introduction

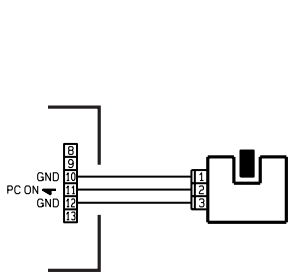
- Information required for troubleshooting and steps that must be performed are described in this chapter.

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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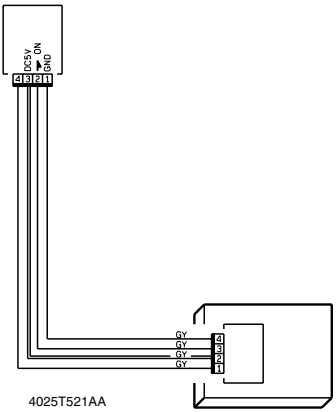

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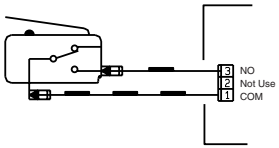
(2) Switch

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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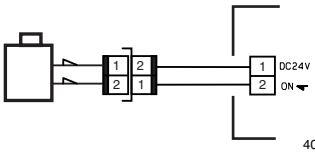
(3) Solenoid

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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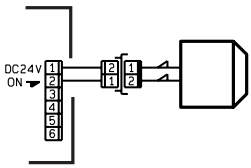
(4) Clutch

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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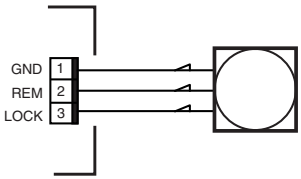
(5) Motor

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.



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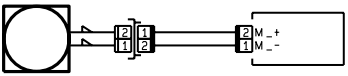
Step	Check	Result	Action
1	Does the input signal of the control board change from H to L when the motor is turned on? (Input signals differ according to the direction of rotation)	YES	Replace the motor.
		NO	Replace the control board.



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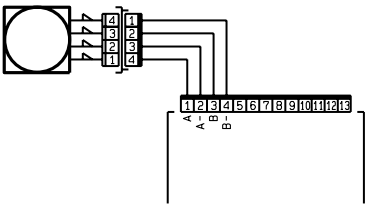
Step	Check	Result	Action
1	Are the relay connector of the motor and the print jack of the control board correctly connected?	YES	Replace the motor or the control board.
		NO	Connect the connector or the print jack.



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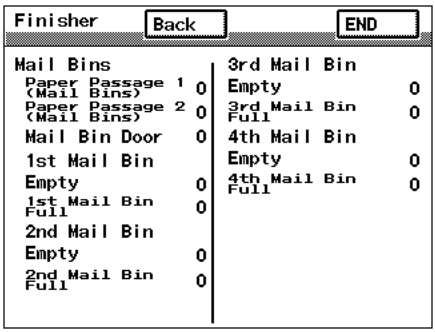
2. I/O CHECK

- 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 [Finisher].
4. Touch [Next] three times.
5. 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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2-1. I/O Check List

Symbol	Panel Display	Parts/Signal Name	Operation Characteristics/ Panel Display		Input Board	CN/PJ No.
			1	0		
PC10-MK	Paper Passage 1 (Mail Bins)	Lower Transport Sensor	Paper present	Paper not present	Control Board (PWB-A MK)	CN102A MK-8
PC9-MK	Paper Passage 2 (Mail Bins)	Upper Transport Sensor	Paper present	Paper not present		CN101A MK-8
PC11-MK	Mailbin Door	Cover Open/Close Sensor	Open	Closed		CN100A MK-2
PC1-MK	1st Mail Bin Empty	Paper Detecting Sensor 1	Paper not present	Paper present		CN102A MK-11
PC5-MK	1st Mail Bin Full	Mailbin 1 Paper Full Detecting Sensor	Blocked	Unblocked		CN102A MK-5
PC2-MK	2nd Mail Bin Empty	Paper Detecting Sensor 2	Paper not present	Paper present		CN102A MK-2
PC6-MK	2nd Mail Bin Full	Mailbin 2 Paper Full Detecting Sensor	Blocked	Unblocked		CN101A MK-5
PC3-MK	3rd Mail Bin Empty	Paper Detecting Sensor 3	Paper not present	Paper present		CN101A MK-2
PC7-MK	3rd Mail Bin Full	Mailbin 3 Paper Full Detecting Sensor	Blocked	Unblocked		CN100A MK-11
PC4-MK	4th Mail Bin Empty	Paper Detecting Sensor 4	Paper not present	Paper present		CN100A MK-8
PC8-MK	4th Mail Bin Full	Mailbin 4 Paper Full Detecting Sensor	Blocked	Unblocked		CN100A MK-5

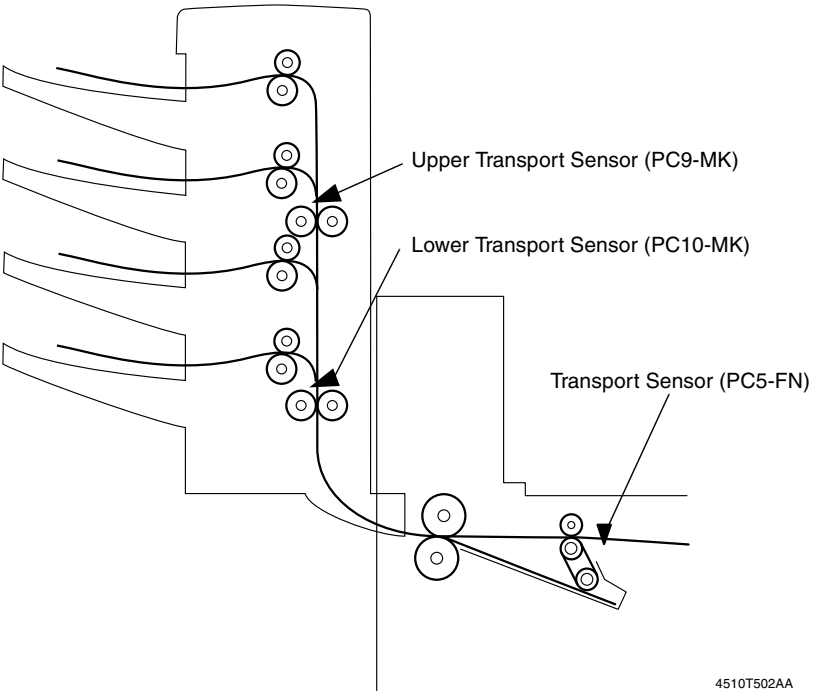
3. Misfeed Detection/Troubleshooting Procedures

3-1. Initial Checks

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

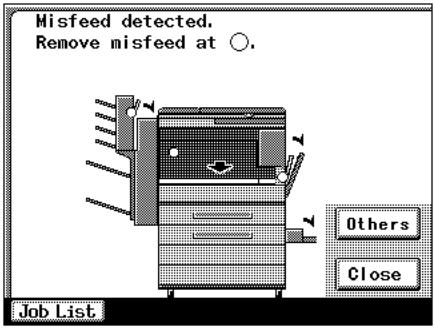
Check Item	Action
Does paper meet product specifications?	Replace paper.
Is the paper curled, wavy, or damp?	Replace paper. Instruct the user on the correct paper storage procedures.
Is a foreign object present along the paper path, or is the paper path deformed or worn?	Clean the paper path and replace if necessary.
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



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
Transport Section misfeed detection	The Lower Transport Sensor (PC10-MK) is not blocked even after the set period of time has elapsed after the Transport Sensor (PC5-FN) is unblocked by the paper.
	The Upper Transport Sensor (PC9-MK) is not blocked even after the set period of time has elapsed after the Lower Transport Sensor (PC10-MK) is blocked by the paper.
Detection of paper remaining in the Transport Section	The Lower Transport Sensor (PC10-MK) 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 Upper Transport Sensor (PC9-MK) 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	
Transport Sensor (PC5-FN) Lower Transport Sensor (PC10-MK) Upper Transport Sensor (PC9-MK)	Control Board (PWB-A)

Step	Operations	Ref. Page	WIRING DIAGRAM	
			Control signal	Location (Electrical Components)
1	Initial checks	☞ T-6	—	—
2	PC5-FN sensor check	☞ T-1	PWB-A FN PJ20A FN-9	E-7
3	PC10-MK sensor check	☞ T-1	PWB-A MK CN102A MK-8	D-7
4	PC9-MK sensor check	☞ T-1	PWB-A MK CN101A MK-8	B-7
5	PWB-A MK replacement	—	—	E-4

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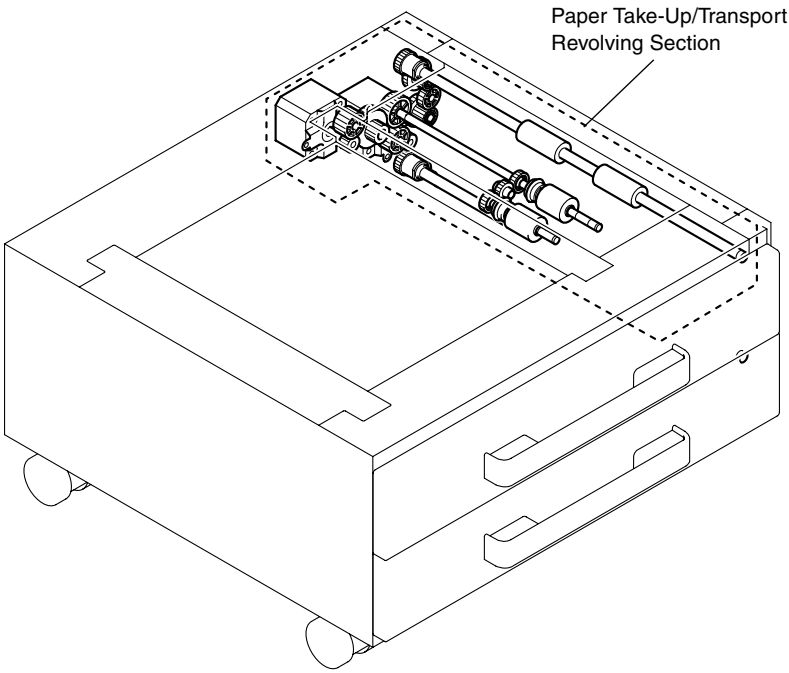
   - 4-1. Malfunction Detection T-11
     - (1) C0900: 3rd Drawer Lift-Up Motor Failure T-12

GENERAL

1. Specifications

Name	:	2 way Paper Take-Up Cabinet
Type	:	Front loading type 2 way paper take-up device
Installation	:	Desk type
Paper Type	:	Plain paper (56 g/m^2 to 110 g/m^2), recycled paper (60 g/m^2 to 90 g/m^2)
Paper Size	:	A5L to A3L, Ledger to G.Letter
Capacity	:	3rd Drawer: 550 sheets (64 g/m^2)
Document Alignment	:	Center baseline
Power Requirements	:	DC 24 V ± 10 % (supplied from the copier) DC 5 V ± 5 %
Max. Power Consumption	:	15 W or less
Dimensions	:	570 (W) x 263 (H) x 548 (D) mm 22-1/2 x 10-1/4 x 21-1/2
Weight	:	Approx. 27 kg (59-1/2 lbs)
Operating Environment	:	Conforms to the operating environment of the copier.

2. Revolving Parts Layout Drawing



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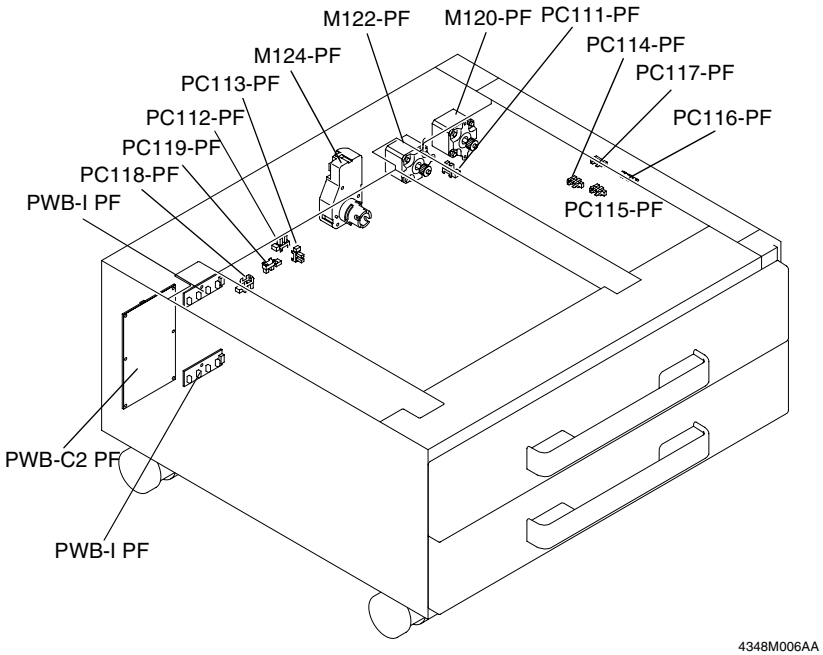
3. Electric Parts Layout Drawing



Symbol	Name	Symbol	Name
PWB-C2 PF	Control Board	PC117-PF	3rd Drawer Vertical Transport Sensor
PWB-I PF	3rd Drawer FD Paper Size Detection Board	PC118-PF	3rd Drawer CD Paper Size Detecting Sensor 1
M120-PF	3rd Drawer Transport Roller Motor	PC119-PF	3rd Drawer CD Paper Size Detecting Sensor 2
M122-PF	3rd Drawer Paper Feed Motor		
M124-PF	3rd Drawer Lift-Up Motor		
PC111-PF	Door Set Sensor		
PC112-PF	3rd Drawer Set Sensor		
PC113-PF	3rd Drawer Paper Near-Empty Sensor		
PC114-PF	3rd Drawer Lift-Up Upper Limit Sensor		
PC115-PF	3rd Drawer Paper Empty Sensor		
PC116-PF	3rd Drawer Paper Take-Up Sensor		

DIS/REASSEMBLY, ADJUSTMENT

1. Maintenance Schedule

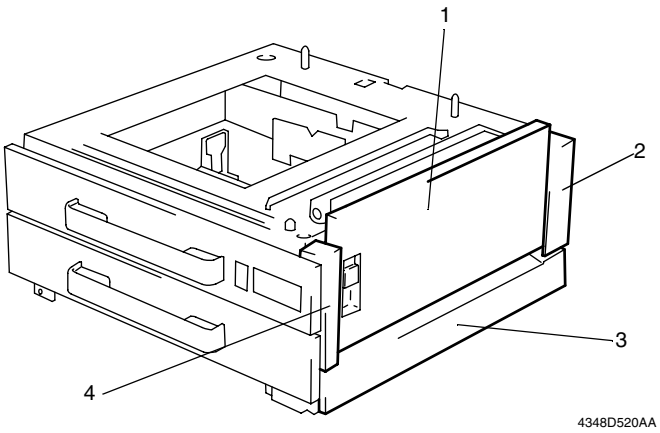
- To ensure that the copier produces good copies and to extend its service life, it is recommended that the maintenance jobs described in this schedule be carried out as instructed.

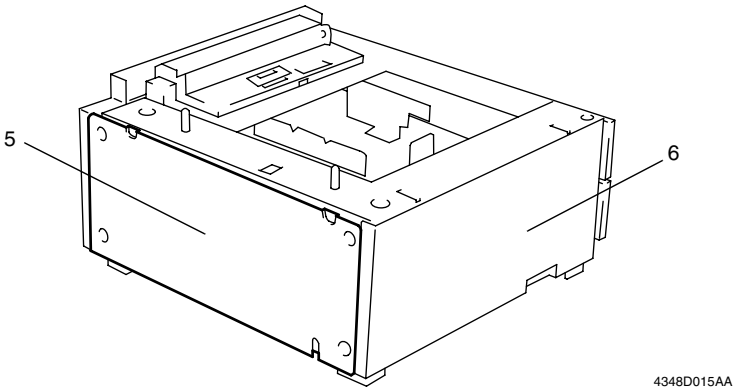
PM Parts	Job		Item Used for Cleaning	Qty	Ref. Page
	Clean	Replace			
Pickup Roller	❍	300K	Alcohol and soft cloth	1	☞ D-3,5
Paper Take-Up Roll	❍	300K		1	☞ D-3,5
Separator Roll Assy	❍	300K		1	☞ D-3,5
Vertical Transport Roller	❍	—		1	☞ D-6

NOTES
- *K = 1,000 copies*
- *Replace the Paper Take-Up Roller and Separator Roll at the same time.*
- *❍ indicates cleaning when transport failure occurs.*
- *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

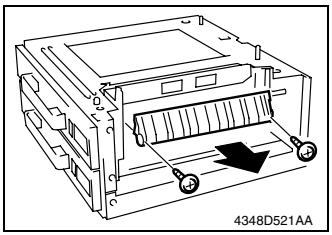




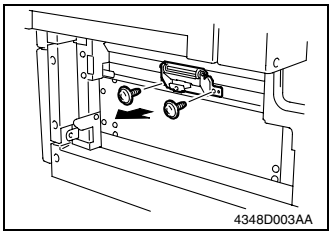
No.	Name	Removal Procedure
1	Right Door	Open the Right Door. → Remove the Right Door.
2	Rear Right Cover	Remove two screws and the drawer.
3	Lower Right Cover	Remove two screws and the drawer.
4	Front Right Cover	Remove two screws and the drawer.
5	Rear Cover	Remove four screws and the cover.
6	Left Cover	Remove four screws and the cover.

2-2. Removal of the Pickup Roller/Take-Up Roller/Separator Roll Assy

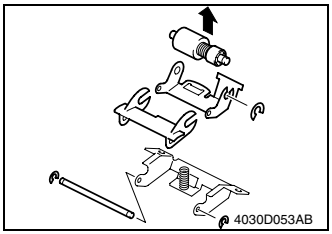
1. Remove the Rear Right Cover.
2. Remove the Right Door.



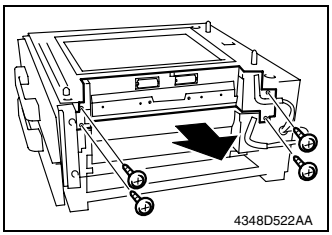
3. Remove two screws, and the guide plate.



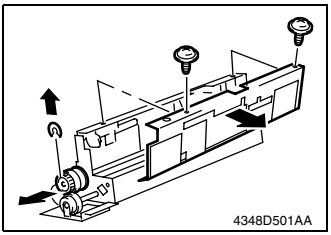
4. Remove two screws and the Paper Separator Roll Mounting Bracket Assy.



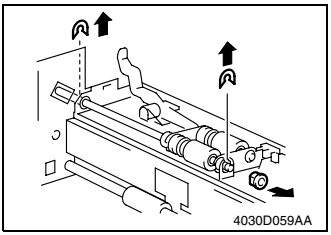
5. Remove three C rings and the Paper Separator Roll Assy.



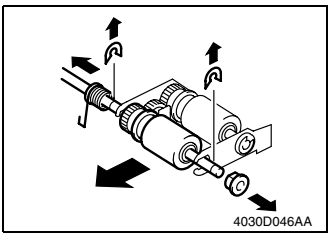
6. Remove four screws and the Paper Take-Up Unit.



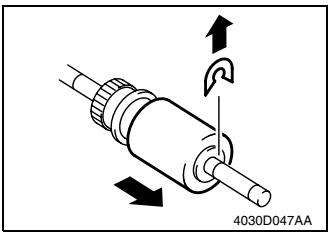
7. Remove two screws and the cover.
8. Remove one C-ring and remove the gear.



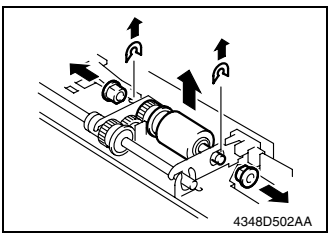
9. Remove two C-rings and remove the bushing.
10. Remove the Roll Assy.



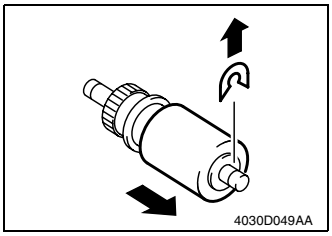
11. Remove two C-rings and remove the bushing.
12. Remove the Roll Assy.



13. Remove one C-clip and remove the Paper Take-Up Roll.



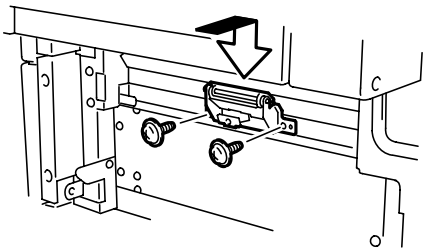
14. Remove two C-rings and remove the bushing.



15. Remove one C-clip and remove the Pickup Roller.

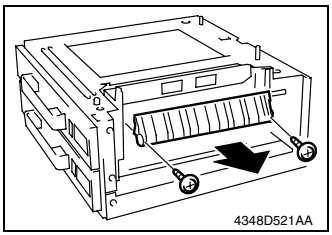
Precaution for Reinstallation of the Separator Roll Assy

- *Install the Separator Roll Assy while pressing the holder down so that it aligns to the metal bracket of the copier.*

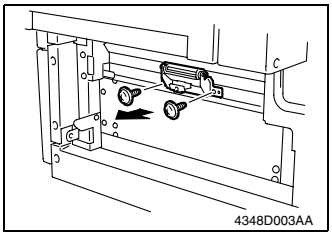


2-3. Cleaning of the Pickup Roller/Paper Take-Up Roller/Separator Roll

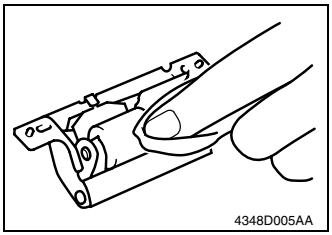
1. Remove the Rear Right Cover.
2. Remove the Right Door.



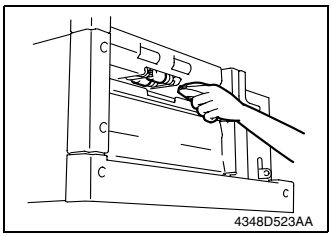
3. Remove two screws, and the guide plate.



4. Remove two screws and the Paper Separator Roll Mounting Bracket Assy.

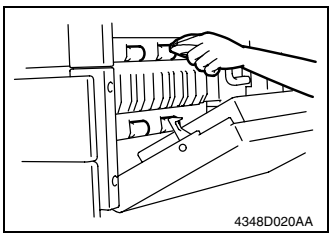


5. Using a soft cloth dampened with alcohol, wipe the Separator Roll clean of dirt.



6. Using a soft cloth dampened with alcohol, wipe the Pickup Roller and Paper Take-Up Roller clean of dirt.

2-4. Cleaning of the Vertical Transport Roller



1. Open the Right Door.
2. Using a soft cloth dampened with alcohol, wipe the Vertical Transport Roller clean of dirt.

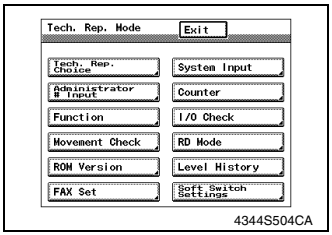
3. Adjustment

3-1. Registration CD

NOTE

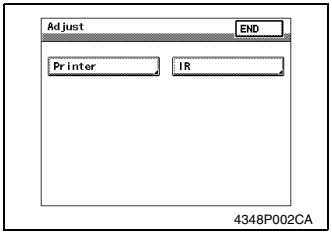
Make this adjustment after any of the following procedures has been performed.

- *When the PH Unit has been replaced.*
- *When the paper type has been changed.*
- *When the image on the copy is offset in the CD direction.*
- *When a faint image occurs on the leading edge of the image.*



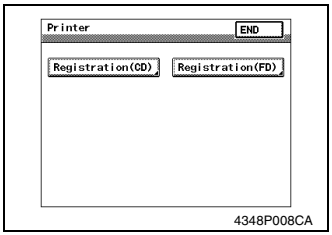
4344S504CA

1. Display Tech. Rep. Mode.



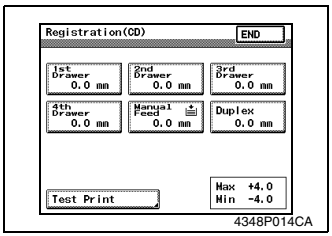
4348P002CA

2. Press the Stop key followed by the Start key to display the Adjust Mode.
3. Touch the Printer key.



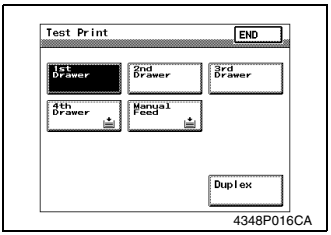
4348P008CA

4. Touch the Registration (CD) key.

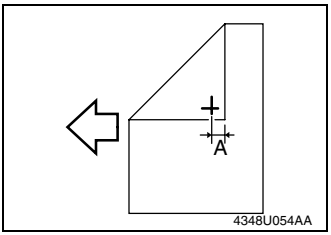


4348P014CA

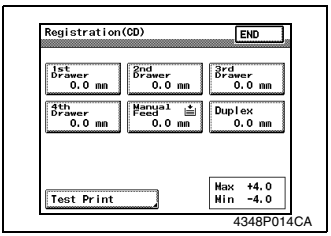
5. Touch the Test Print key.



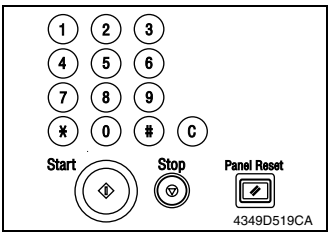
6. Touch the 3rd Drawer key.
7. Press the Start key.



8. Measure the width of printed reference line A.
   Specification: 10 mm ± 2.0 mm
9. If width A falls within the specified range, finish the adjustment procedure.
   If outside the specified range, perform the adjustment below.



10. Touch END to display the Registration (CD) screen.
11. Touch the 3rd Drawer key.



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

✻ If width A is wider than the specified range, enter a negative value.

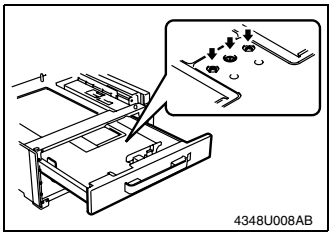
✻ If width A is narrower than the specified range, enter a positive value.

Adjustment range: + 4.0 max. and -4.0 min.

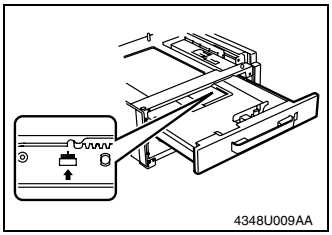
Use the ✻ key to switch between + and -.

NOTE

- *If width A falls outside the specified range, redo the adjustment from step 13.*



13. Slide out the Drawer and remove the paper.
14. Loosen three screws.



- If width A is wider than the specified range:
  Move the Trail Edge Stop toward the front.
- If width A is narrower than the specified range:
  Move the Trail Edge Stop toward the rear.

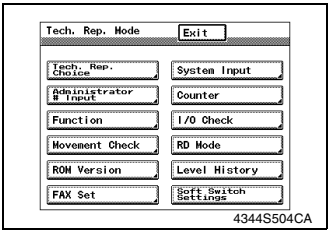
15. Perform another test print and check the reference deviation.
16. Repeat the adjustment until the reference line falls within the specified range.
17. After making the adjustment, tighten the three screws that were loosened at step 15.

3-2. Registration FD

NOTE

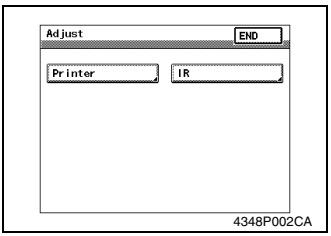
Make this adjustment after any of the following procedures has been performed.

- *When the PH Unit has been replaced.*
- *When the paper type has been changed.*
- *When the image on the copy is offset in the FD direction.*



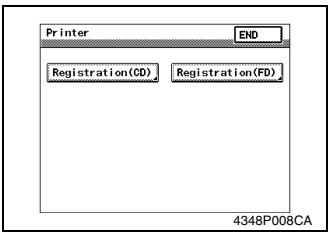
4344S504CA

1. Display Tech. Rep. Mode.



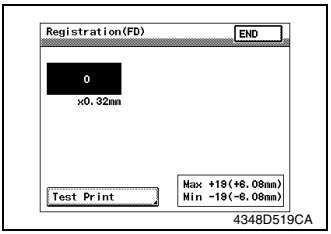
4348P002CA

2. Press the Stop key followed by the Start key to display the Adjust Mode.
3. Touch the Printer key.



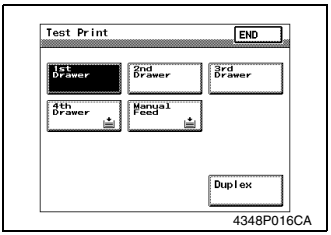
4348P008CA

4. Touch the Registration (FD) key.

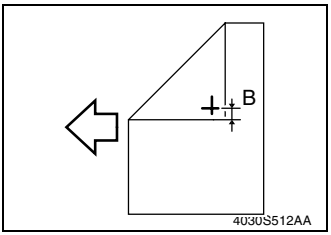


4348D519CA

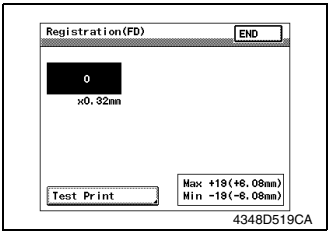
5. Touch the Test Print key.



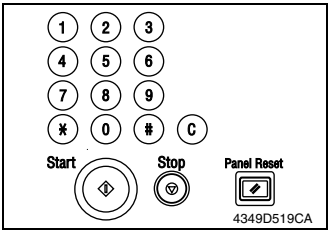
6. Touch the 3rd Drawer key.
7. Press the Start key.



8. Measure the width of printed reference line B.
   Specification: 11.3 mm±1.5 mm
9. If width B falls within the specified range, finish the adjustment procedure.
   If outside the specified range, perform the adjustment below.



10. Touch END to display the Registration (FD) screen.
11. Touch the 3rd Drawer or 4th Drawer key.



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

✻ If width B is wider than the specified range, enter a negative value.

✻ If width B is narrower than the specified range, enter a positive value.

Adjustment range: + 4.0 max. and -4.0 min.

13. Perform another test print and check the reference deviation.
14. Repeat the adjustment until the reference line falls within the specified range.

TROUBLESHOOTING

1. Introduction

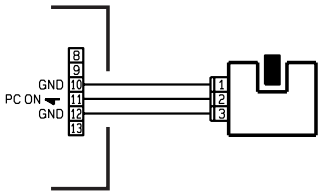
- Information required for troubleshooting and steps that must be performed are described in this chapter.

1-1. Electrical Components Check Procedure

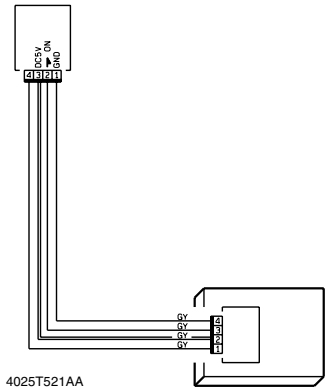
- If a paper misfeed or malfunction occurs, perform the following operation to check the condition of the electrical components.

(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.



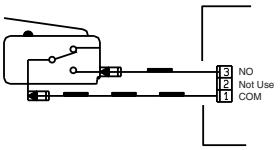
4025T520AA



4025T521AA

(2) Switch

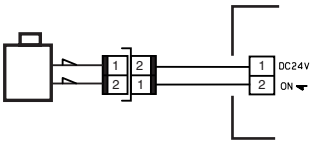
Step	Check	Result	Action
1	Does the input signal (NO) of the control board change from L to H when the switch is turned on?	NO	Replace the switch.
		YES	Replace the control board.



4025T523AB

(3) Solenoid

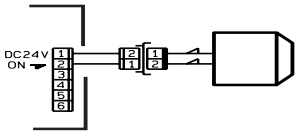
Step	Check	Result	Action
1	Does the output signal of the control board change from H to L when the solenoid is activated?	NO	Replace the control board.
		YES	Replace the solenoid.



4025T522AA

(4) Clutch

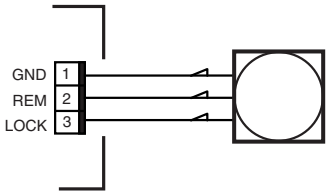
Step	Check	Result	Action
1	Does the output signal of the control board change from H to L when the clutch is activated?	NO	Replace the control board.
		YES	Replace the clutch.



4025T528AA

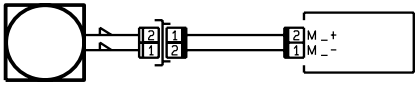
(5) Motor

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.



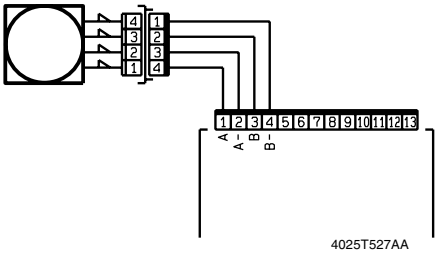
4025T526AA

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.



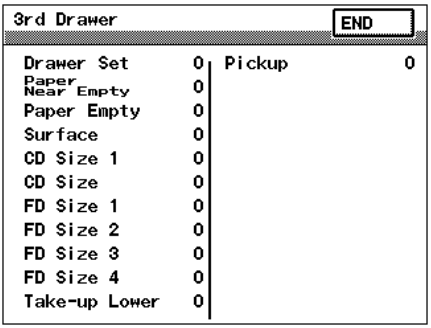
4025T527AA

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 [Printer].
4. Touch the button for the 3rd paper drawer.
5. Using a sheet of paper, activate the sensor and check the display in the Touch Panel. (Paper present: 1; Paper not present: 0)

<3rd Drawer>



4348T504CA

2-1. I/O Check List

<3rd Drawer>

Symbol	Panel Display	Parts/Signal Name	Operation Characteristics/ Panel Display		Input Board	CN/PJ No.
			1	0		
PC112-PF	Drawer Set	3rd Drawer Set Sensor	Set	Out of position	Control Board (PWB-C2 PF)	PJ3C2 PF-9
PC113-PF	Paper Near Empty	3rd Drawer Paper Near-Empty Sensor	Unblocked	Blocked		PJ4C2 PF-3
PC115-PF	Paper Empty	3rd Drawer Paper Empty Sensor	Paper not present	Paper present		PJ6C2 PF-6
PC114-PF	Surface	3rd Drawer Lift-Up Upper Limit Sensor	Raised Position	Not raised		PJ6C2 PF-3
PC118-PF	CD Size 1	3rd Drawer CD Paper Size Detecting Sensor 1	Maximum value	Not at maximum value		PJ3C2 PF-3
PC119-PF	CD Size 2	3rd Drawer CD Paper Size Detecting Sensor 2	Maximum value	Not at maximum value		PJ3C2 PF-6
PWB-I PF	FD Size 1	3rd Drawer FD Paper Size Detecting Board	Maximum value	Not at maximum value		PJ3C2 PF-10
	FD Size 2		Maximum value	Not at maximum value		PJ3C2 PF-11
	FD Size 3		Maximum value	Not at maximum value		PJ3C2 PF-12
	FD Size 4		Maximum value	Not at maximum value		PJ3C2 PF-13
PC111-PF	Take-up Lower	Door Set Sensor	Open	Closed		PJ6C2 PF-15
PC116-PF	Pick-Up	3rd Drawer Paper Take-Up Sensor	Paper present	Paper not present		PJ6C2 PF-8

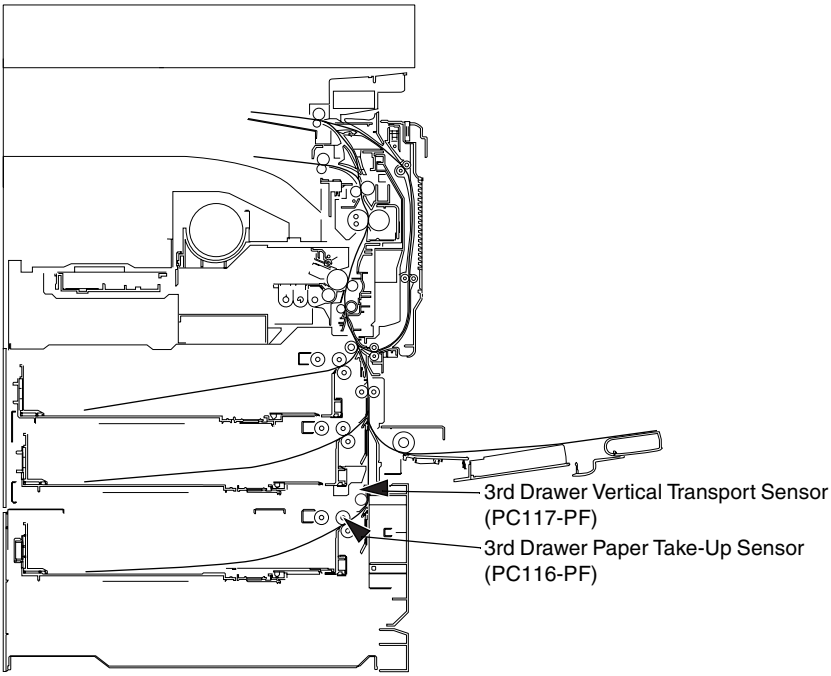
3. Misfeed Detection/Troubleshooting Procedures

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?	Clean the paper path and replace if necessary.
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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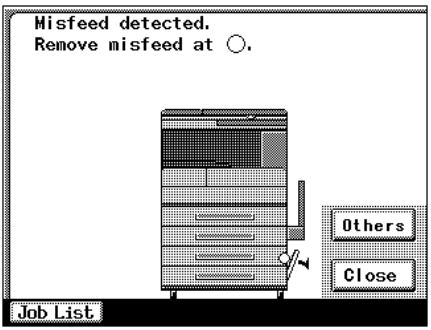
3-3. Misfeed Detected

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

<3rd Drawer>

<Detection Timing>

Type	Description
Paper Take-Up Section misfeed detection	The leading edge of the paper does not block the 3rd Drawer Vertical Transport Sensor (PC117-PF) even after the set period of time has elapsed after the 3rd Drawer Paper Feed Motor is energized.
Detection of paper remaining in the Paper Take-Up section	The 3rd Drawer Vertical Transport Sensor (PC117-PF) 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 3rd Drawer Paper Take-Up Sensor (PC116-PF) 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	
3rd Drawer Vertical Transport Sensor (PC117-PF) 3rd Drawer Paper Take-Up Sensor (PC116-PF) 3rd Drawer Paper Feed Motor (M122-PF)	Control Board (PWB-C2 PF)

Step	Operations	Ref. Page	WIRING DIAGRAM	
			Control signal	Location (Electrical Components)
1	Initial checks	☞ T-7	—	—
2	PC117-PF sensor check	☞ T-1	PWB-C2 PF PJ6C2 PF-11	F-2
3	PC116-PF sensor check	☞ T-1	PWB-C2 PF PJ6C2 PF-8	F-3
4	M122-PF operation check	☞ T-3	—	E-2
5	PWB-C2 PF replacement	—	—	D-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
C0900	3rd Drawer Lift-Up Motor Failure	The Lift-Up Sensor is not blocked even after the set period of time has elapsed after the paper lift-up operation for the drawer began.

(1) C0900: 3rd Drawer Lift-Up Motor Failure

<Detection Timing>

Malfunction Code	Description
C0900	The Lift-Up Sensor is not blocked even after the set period of time has elapsed after the paper lift-up operation for the drawer began.

Action

Relevant Electrical Components	
Lift-Up Motor 1 (M124-PF) Lift-Up Sensor 1 (PC114-PF)	Control Board (PWB-C2 PF) Copier Master Board (PWB-A) Copier Power Supply Unit (PU1)

Step	Operations	Ref. Page	WIRING DIAGRAM	
			Control signal	Location (Electrical Components)
1	Check the connectors of each motor and sensor for proper connection, and correct as necessary.	—	—	—
2	Check the connector of each motor for proper drive coupling, and correct as necessary.	—	—	—
3	Check the PU1 connector for proper connection, and correct as necessary.	—	—	—
4	PC114-PF sensor check	☞ T-1	PWB-C2 PF PJ6C2 PF-3	G-3
6	M124-PF operation check	☞ T-3	PWB-C2 PF PJ4C2 PF-5,4	D-3
8	PWB-C2 PF replacement	—	—	E-5
9	PWB-A replacement	—	—	—
10	PU1 replacement	—	—	—

SK-1

Service Manual

19971

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GENERAL

1. Specifications

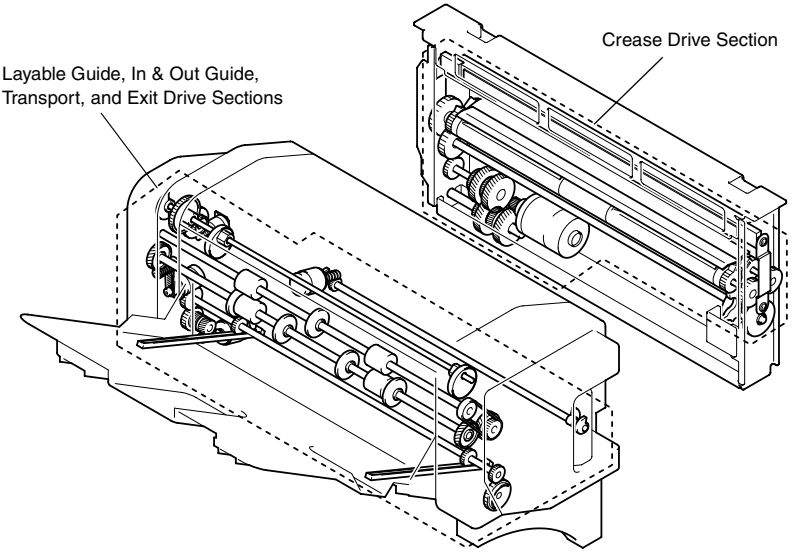
Name	:	Saddle Kit (SK-1)
Type	:	Built into the Finisher
Installation	:	Screwed to the Finisher
Document Alignment	:	Center baseline
Staple Function	:	Center parallel two-point binding Number of Bound Sheets: 2 to 15 sheets

Paper

Paper Size	Paper Type	Capacity
B5L to A3L Maximum: 297 mm x 432 mm Minimum: 182 mm x 257 mm	Plain paper (60 to 90 g/m^2) Recycled paper (60 to 90 g/m^2)	200 sheets or 20 copies

Power Requirements	:	DC 24 V (supplied from the Finisher) DC 5 V
Max. Power Consumption	:	9.5 W or less
Dimensions	:	576(W) x 478(H) x 203(D) mm
Weight	:	9.3 kg (20-1/2 lb)
Operating Environment	:	Conforms to the operating environment of the copier.
Consumables	:	Staples 2000 (MS-2C) x 2

2. Revolving Parts Layout Drawing



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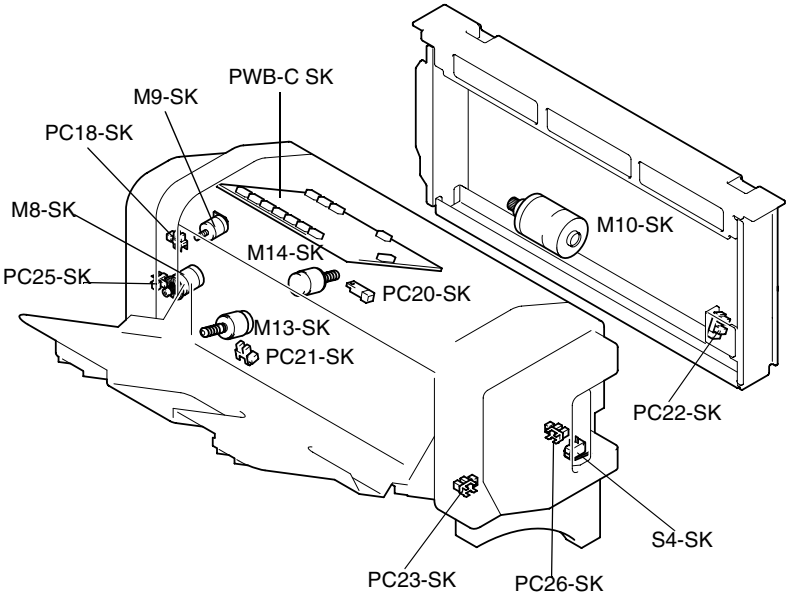
3. Electric Parts Layout Drawing



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Symbol	Name	Symbol	Name
PWB-C SK	Control Board	PC20-SK	Saddle Exit Sensor
M8-SK	Saddle Exit Motor	PC21-SK	Saddle Tray Empty Sensor
M9-SK	Saddle Exit Open/Close Motor	PC22-SK	Crease Roller Home Position Sensor
M10-SK	Crease Motor		
M13-SK	In & Out Guide Motor	PC23-SK	In & Out Guide Home Sensor
M14-SK	Layable Guide Motor	PC25-SK	Transport Pulse Sensor
PC18-SK	Saddle Exit Roller Home Position Sensor	PC26-SK	Layable Guide Home Sensor
		S4-SK	Saddle Interlock Switch

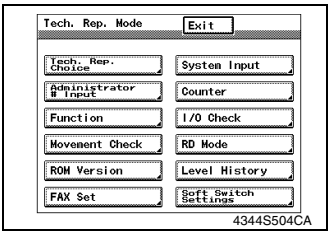
Test Mode Operations

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].



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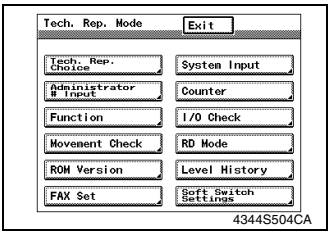
3. Press the following keys in order: Stop → 0 → 0 → Stop → 0 → 1.

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.



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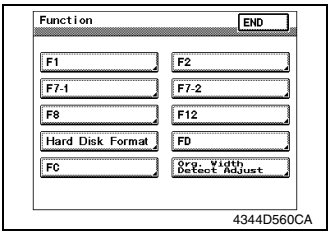
2. Touch [Function].



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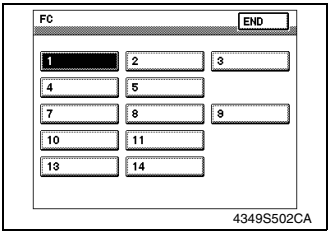
3. Touch [FC].



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4. Touch [8] or [9].

1-3. Function Modes

The following 2 items are available under “FC” in the Function Mode.

- 8: Creasing Unit movement mode
- 9: Saddle Unit exit open/close mode

(1) Creasing Unit Movement Mode

- Performs the creasing drive once.
  →Raises the Layable guide.
  →Stops after the predetermined time.
  →Lowers the Layable guide.
  →The operation is finished.

(2) Saddle Unit Exit Open/Close Mode

- Opens the Saddle Exit after the Saddle Exit is opened and closed.
  →Stops after the predetermined time.
  →The Saddle Exit closes.
  →The Saddle In & Out Guide advances.
  →Stops after the predetermined time.
  →The Saddle In & Out Guide retracts.
  →The operation is finished.

DIS/REASSEMBLY, ADJUSTMENT

1. Maintenance Schedule

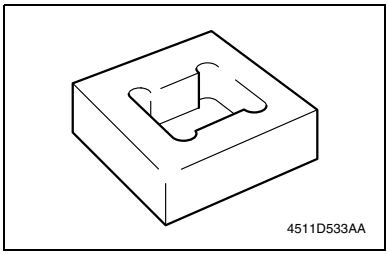
- To ensure that the copier produces good copies and to extend its service life, it is recommended that the maintenance jobs described in this schedule be carried out as instructed.

PM Parts	Job		Item Used for Cleaning	Qty	Ref. Page
	Clean	Replace			
Rollers and rolls	30K	—	Alcohol, water, and soft cloth	—	☞ D-16

CAUTIONS

- *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.*

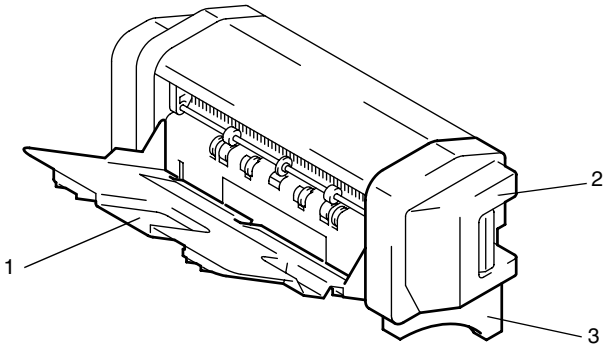
2. Adjustment Jig



Stapler Unit Positioning Jig

3. Disassembly/Cleaning

3-1. Removal of the Outer Cover



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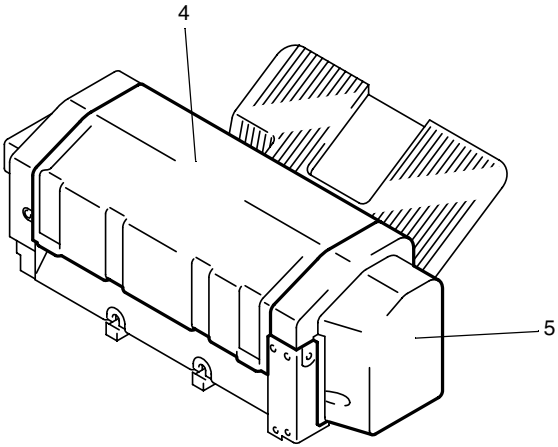

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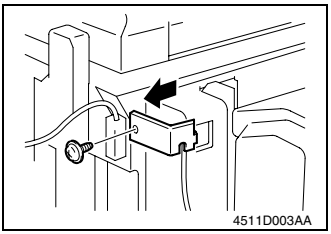
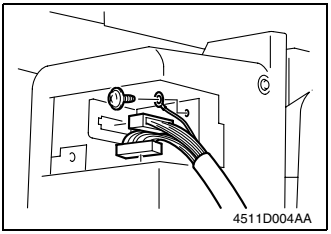
No.	Name	Removal Procedure
1	Paper Output Tray	Align the cutout and remove the drawer.
2	Front Cover	Remove two screws.
3	Lower Front Cover	Remove one screw.
4	Upper Cover	Remove the Front and Rear Covers. → Remove four screws.
5	Rear Cover	Remove two screws.

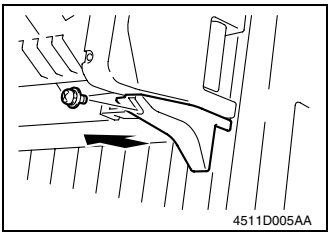
3-2. Removal of the Saddle Unit



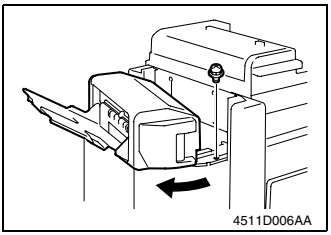
1. Remove one screw and remove the Connector Cover.



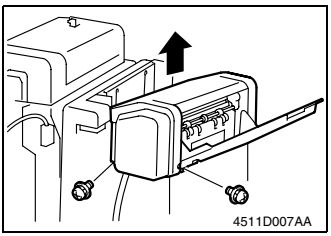
2. Remove one screw and the ground wire.
3. Unplug two connectors.



4. Remove one screw and the Lower Front Cover.



5. Pull the lock release lever and open the Saddle Unit.
6. Remove one screw.



7. Remove two screws and the Saddle Unit.

3-3. Removal of the Crease Unit

1. Remove the Saddle Unit.

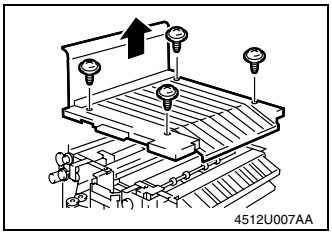
☞ See “Removal of the Saddle Unit” (D-3).

2. Remove the Sorted Copy Tray.

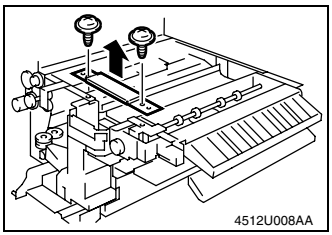
☞ See FN-117 “Disassembly/Assembly” (D-4).

3. Remove the Horizontal Transport Unit.

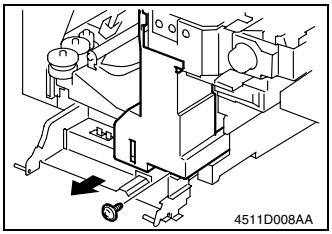
☞ See FN-117 “Disassembly/Assembly” (D-5).



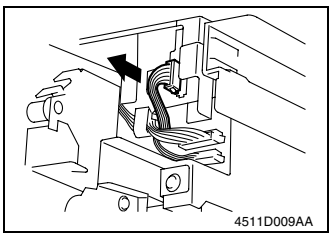
4. Remove four screws and the Upper Cover.



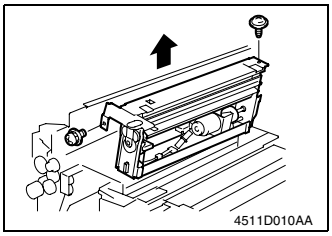
5. Remove two screws and the Reinforcement Bracket.



6. Remove one screw and the Front Cover.



7. Unplug one connector.



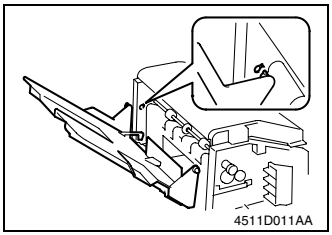
8. Remove two screws and the Crease Unit.

3-4. Removal of the Stapler Unit

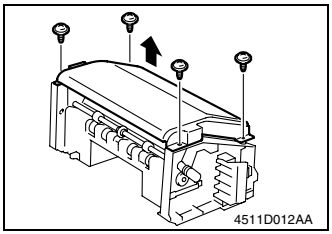
1. Remove the Saddle Unit.

☞ See “Removal of the Saddle Unit” (D-3).

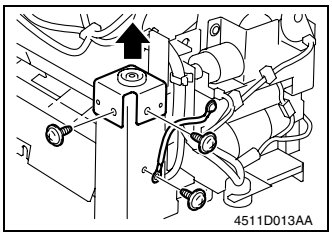
2. Remove the Front and Rear Cover.



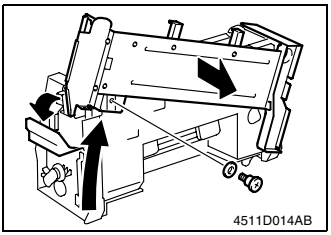
3. Align the tab and the cutout position and remove the Paper Output Tray.



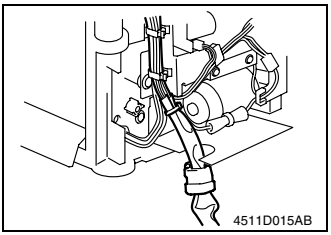
4. Remove four screws and the Upper Cover.



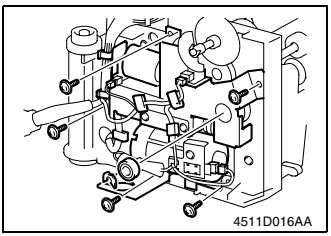
5. Remove one screw and the ground wire.
6. Remove two screws and the holder.



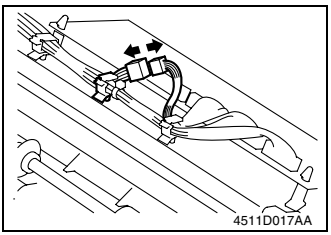
7. Release the lock release lever and slide the Saddle Unit Mounting Plate.
8. Remove one shoulder screw and the Saddle Unit Mounting Plate.



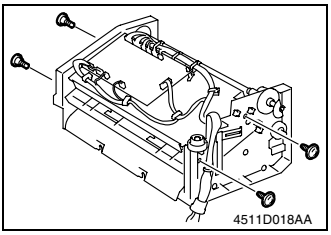
9. Remove the harness clamp from the Metal Bracket.



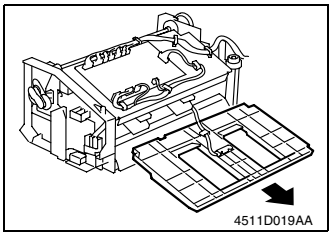
10. Remove the harness from the wire saddle.
11. Unplug four connectors.
12. Remove one C-ring and remove the bearing.
13. Remove five screws and the Drive Unit.ÅA



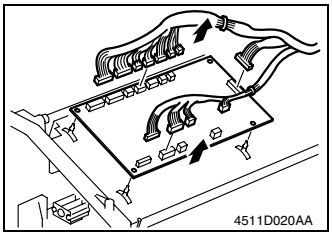
14. Remove the wire saddle and unplug one connector.



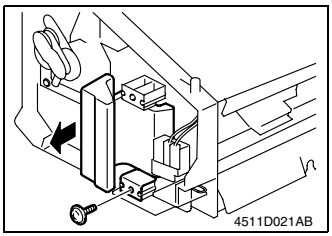
15. Remove two screws and two shoulder screws.



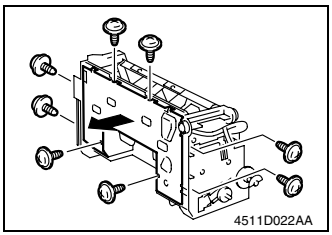
16. Remove the Empty.



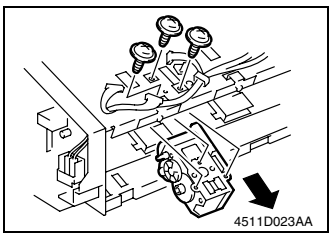
17. Unplug all the connectors on the Control Board.
18. Remove the PWB support, and then remove the Control Board.



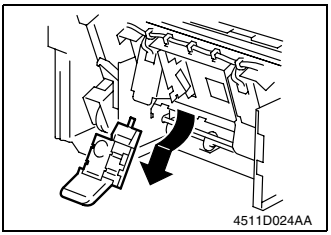
19. Remove one screw and the lock release lever.



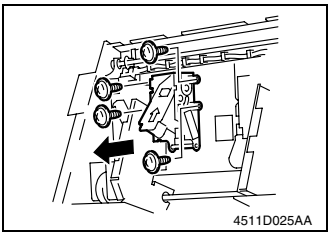
20. Remove eight screws, and the Lower Cover.



21. Remove the wire saddle and unplug one connector.
22. Remove three screws and Clincher 1.



23. Remove the Staple Cartridge 1.



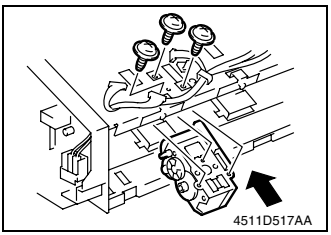
24. Remove four screws and Stapler 1.

CAUTION

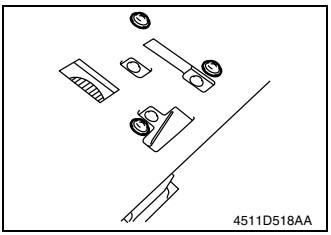
- *To replace Clincher 2 and Stapler 2, repeat steps 21 to 24.*

Precaution for Clincher Reinstallation

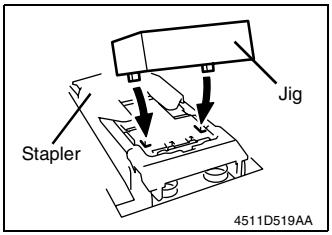
- When the Clincher is installed, the position of the Stapler and the Clincher will be misaligned. Be sure to perform the following adjustment.



1. Use three screws to temporary fix the Clincher.



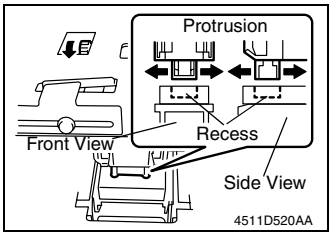
2. Loosen one screw of the stopper.
3. Loosen three screws of the Clincher.



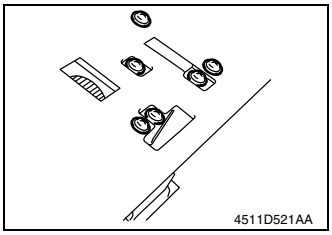
4. Aligning the protrusions of the jig with the recesses in the Stapler, fit the jig to the Stapler.

NOTE

- *Make sure that the protrusions of the jig properly rest in the recesses.*



5. Turn the gear of the Clincher and then slide the Clincher Assy so that the protrusion of the Clincher fits into the recess in the jig.



6. Tighten six screws.

NOTE

- *Turn the gear again and check to see that the protrusion of the Clincher smoothly fits into the recess in the jig.*

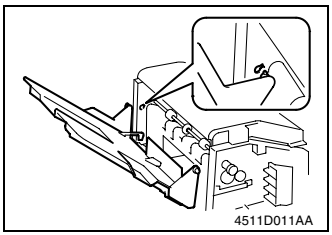
7. Turn the gear and remove the jig.

3-5. Removing the In & Out Guide Drive Motor

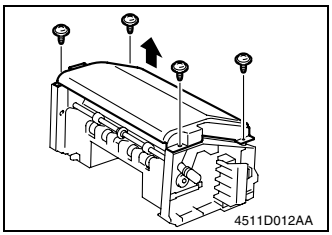
1. Remove the Saddle Unit.

☞ See “Removal of the Saddle Unit” (D-3).

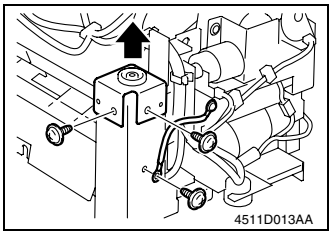
2. Remove the Front and Rear Cover.



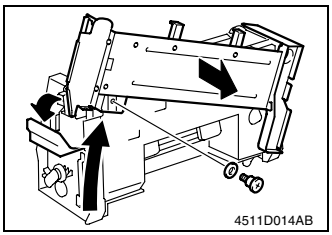
3. Align the tab and the cutout position and remove the Paper Output Tray.



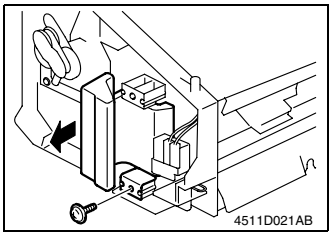
4. Remove four screws and the Upper Cover.



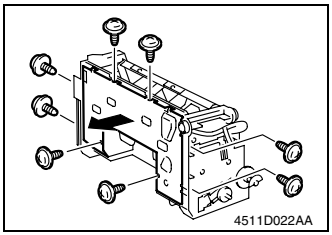
5. Remove one screw and the ground wire.
6. Remove two screws and the holder.



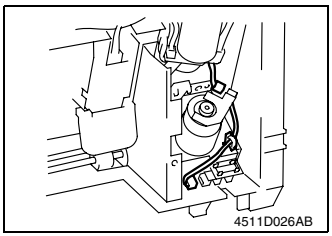
7. Release the lock release lever and slide the Saddle Unit Mounting Plate.
8. Remove one shoulder screw and the Saddle Unit Mounting Plate.



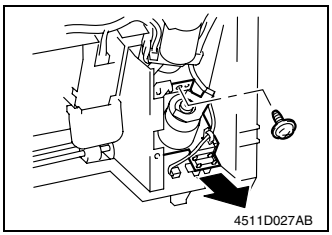
9. Remove one screw and the lock release lever.



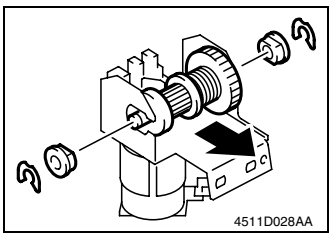
10. Remove eight screws, and the Lower Cover.



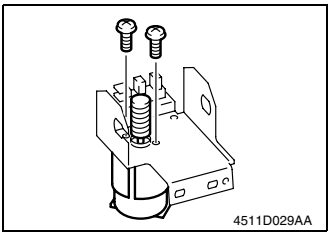
11. Remove the wire saddle and unplug two connectors.



12. Remove one screw, and the In & Out Guide Drive Motor Assy.



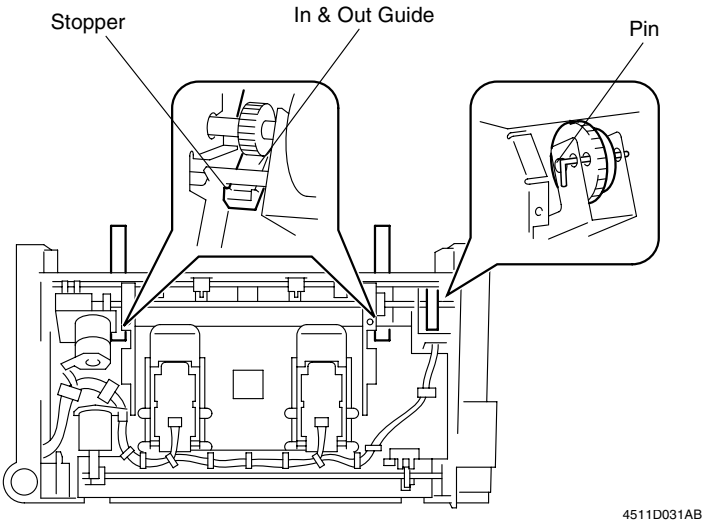
13. Remove two C rings.
14. Remove two bushings and the Clutch Gear Assy.



15. Remove two screws, and the In & Out Guide Drive Motor.

Precaution for In & Out Guide Drive Motor Reinstallation

1. Press the two In & Out Guides in and check that they touch the stopper simultaneously.
2. Check that pins can be inserted through the positioning holes (3 holes) of the In & Out Guide Sensor Assy.

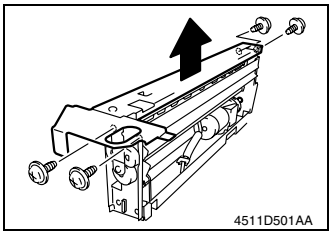


3. Use one screw to secure the In & Out Guide Drive Motor.

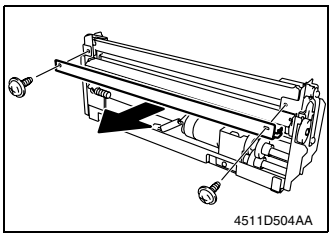
3-6. Removal of the Crease Roller

1. Remove the Crease Unit.

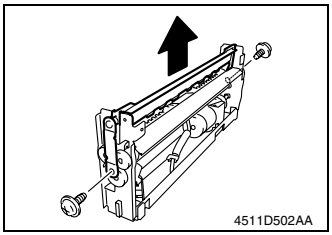
☞ See “Removal of the Crease Unit” (D-4)



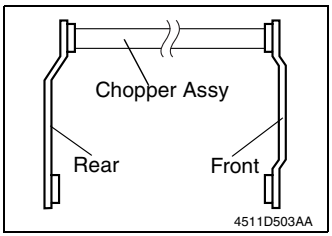
2. Remove four screws and the Upper Plate.



3. Remove two screws, and the guide plate.

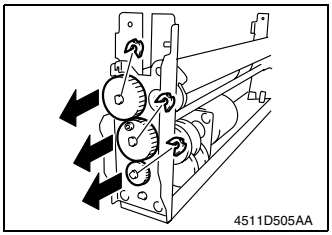


4. Remove two screws and the Chopper Assy.

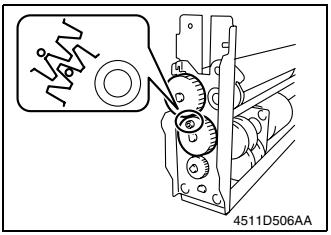


Precaution for Reinstallation of the Chopper Assy

- *Install the Chopper Assy in the direction shown in the left figure.*

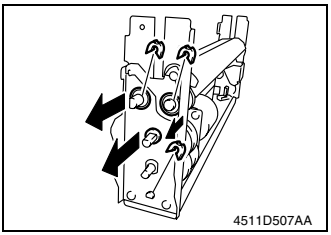


5. Remove three C-rings and three gears.

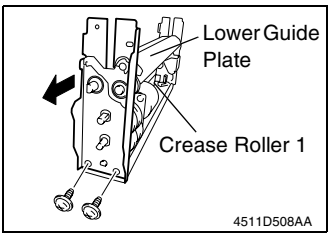


Precaution for Gear Reinstallation

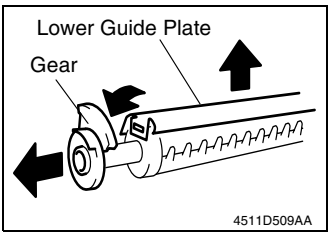
- *Install the gear so that the mark is aligned to the position shown in the left figure.*



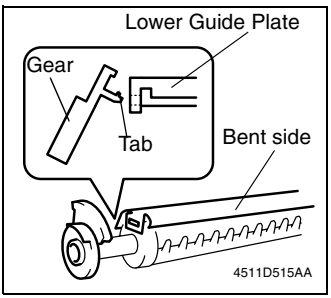
6. Remove three C-rings and two bearings.
7. Remove one bushing.



8. Remove two screws and the Rear Holder.

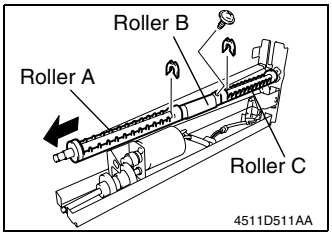


9. Remove the gear of Crease Roller 1 and remove the Lower Guide Plate.

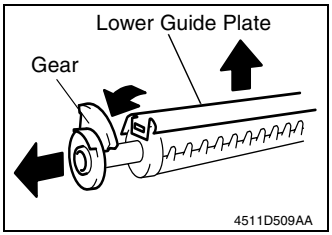


Precaution for Gear Reinstallation

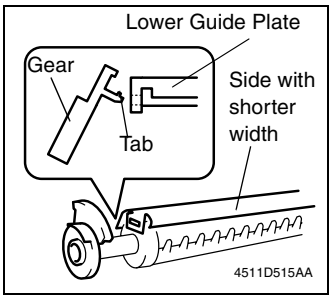
- *When installing the gear to the Lower Guide Plate, insert the gear at an angle and use care not to break the tabs.*
- *Install the Lower Guide Plate as shown on the left.*
- *Install the gear of Crease Roller 1 so that it is above one gear tooth.*



10. Remove one screw.
11. Remove two C-clips and remove the Crease Roller A, B, and C.

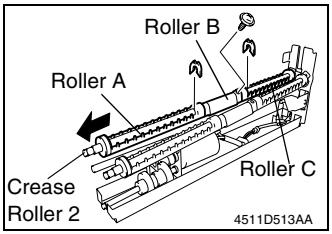


12. Remove the gear of Crease Roller 2 and remove the Lower Guide Plate.

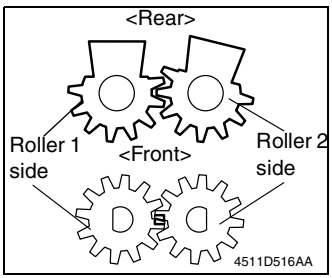


Precaution for Gear Reinstallation

- *When installing the gear to the Lower Guide Plate, insert the gear at an angle and use care not to break the tabs.*
- *Install the Lower Guide Plate as shown on the left.*



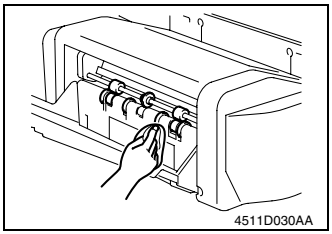
13. Remove one screw.
14. Remove two C-clips and remove the Crease Roller A, B, and C.



Precaution for Roller 1 and 2 Reinstallation

- *Install the rear gear of Crease Roller 2 so that it is above one gear tooth.*
- *Align the mark of the front gear.*

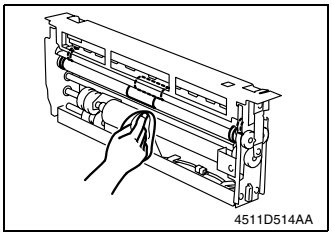
3-7. Cleaning of the Roller and Roll



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

2. Remove the Crease Unit.

☞ See “Removal of the Crease Unit” (D-4)



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

4. Adjustment

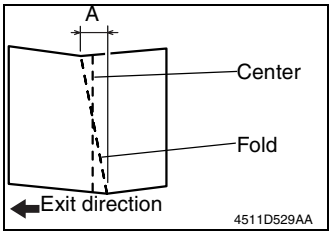
4-1. Fold Angle Adjustment

CAUTION

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

- *When the Crease Unit has been replaced.*
- *When a slant occurs in the crease.*

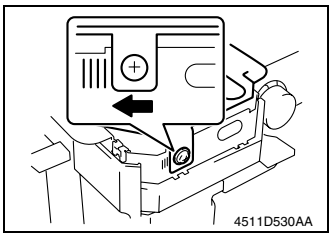
1. Enter the Crease mode and make a copy. (A3 Size)



2. Fold the output paper and half and check whether section A of the paper is aligned.

Specification: 0 ± 1.5 mm

3. If the fold position is slanted as shown on the left, make the following adjustment.



4. Open the Front Door, loosen one adjustment screw, and move the Crease Unit to the left to make the adjustment.

✻ If the fold position is slanted opposite to the figure of step 3, move the Crease Unit to the right to make the adjustment.

5. Make another copy and check the fold position.

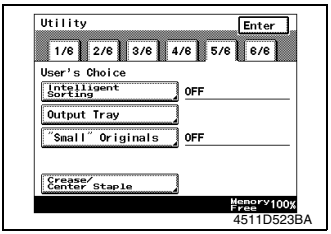
4-2. Fold Position Adjustment

CAUTION

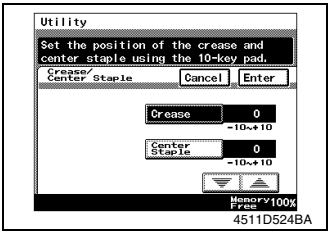
Make this adjustment after any of the following procedures has been performed.

- *When the Crease Unit has been replaced.*
- *When a deviation occurs in the crease.*
- *When fold angle adjustment has been made.*

1. Enter the Crease mode and make a copy. (A3 Size)

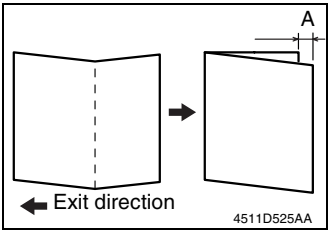


2. Press the Utility key and touch User's choice key.



3. Touch the 5/6 tab.
4. Touch the Crease key.

✻ Check the copy of step 1 and make the following adjustment.

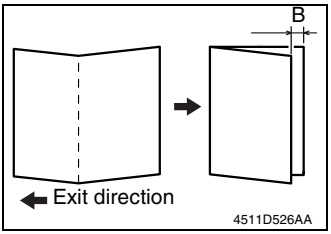


If the fold is offset as shown on the left.

5. Measure the length of A and touch the ▲ key.

Specification: 0 ± 1.5 mm

Adjustment range: 0 to +10 (1increment 0.5 mm)



If the fold is offset as shown on the left.

6. Measure the length of B and touch the ▼ key.

Specification: 0 ± 1.5 mm

Adjustment range: 0 to -10 (1increment 0.5 mm)

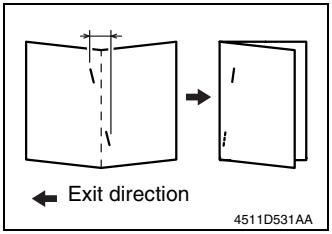
7. Touch END, make another copy, and check the deviation.

4-3. Center Staple Angle Adjustment

CAUTION

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

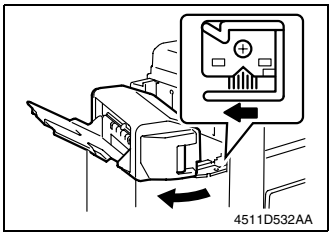
- *When Staple Unit 1 or 2 has been replaced.*
- *When a slant occurs in the position of the center staple.*



1. Set to Booklet Creation + 2-point Staple and Crease mode and make a copy. Check whether the staple position is aligned correctly.

Specification: 0 ± 1.5 mm

2. If the staple position is slanted as shown on the left, make the following adjustment.



3. Release the lock release lever of the Saddle Unit.
4. Loosen one adjustment screw and move the lock lever to the left to make the adjustment.

✻ If the staple position is slanted opposite to the figure of step 2, move the lock lever to the right to make the adjustment.

5. Make another copy and check the staple position.

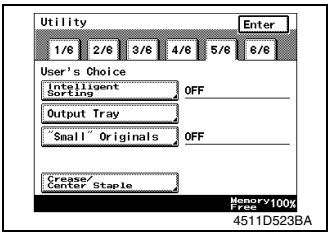
4-4. Center Staple Position Adjustment

CAUTION

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

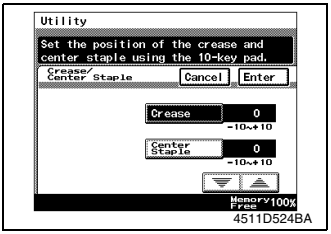
- *When Staple Unit 1 or 2 has been replaced.*
- *When center staple position is misaligned.*
- *When center staple angle adjustment has been made.*

1. Make a copy in the Center Staple mode.
2. Fold the paper in half at the center.



4511D523BA

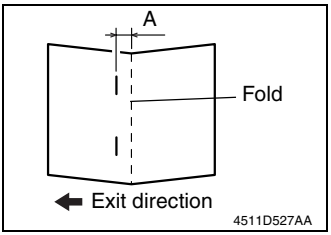
3. Press the Utility key and touch User's choice key.



4511D524BA

4. Touch the 5/6 tab.
5. Touch the Center Staple key.

✻ Check the copy of step 1 and make the following adjustment.



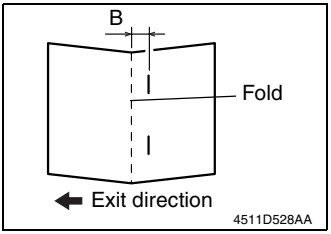
4511D527AA

If the staple position is offset as shown on the left

6. Measure the length of A and touch the ▲ key.

Specification: 0 ± 1.5 mm

Adjustment range: 0 to +10 (1increment 0.5 mm)



4511D528AA

If the staple position is offset as shown on the left

7. Measure the length of A and touch the ▼ key.

Specification: 0 ± 1.5 mm

Adjustment range: 0 to +10 (1increment 0.5 mm)

8. Touch END, make another copy, and check the deviation.

Troubleshooting

1. Introduction

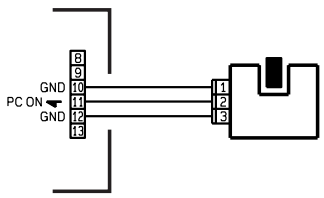
- Information required for troubleshooting and steps that must be performed are described in this chapter.

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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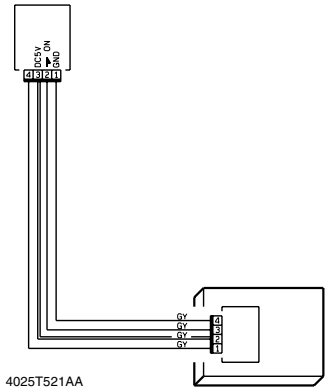
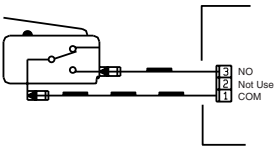


4025T521AA

(2) Switch

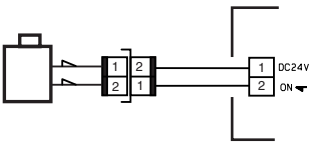
Step	Check	Result	Action
1	Does the input signal (NO) of the control board change from L to H when the switch is turned on?	NO	Replace the switch.
		YES	Replace the control board.



4025T523AB

(3) Solenoid

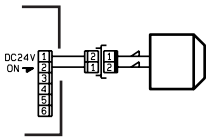
Step	Check	Result	Action
1	Does the output signal of the control board change from H to L when the solenoid is activated?	NO	Replace the control board.
		YES	Replace the solenoid.



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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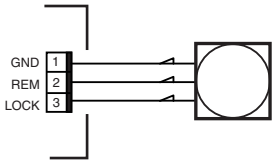
(5) Motor

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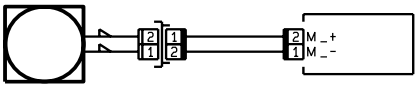
Step	Check	Result	Action
1	Does the input signal of the control board change from H to L when the motor is turned on? (Input signals differ according to the direction of rotation)	YES	Replace the motor.
		NO	Replace the control board.



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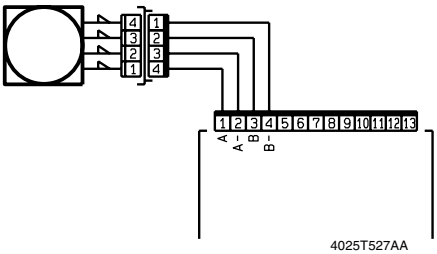
Step	Check	Result	Action
1	Are the relay connector of the motor and the print jack of the control board correctly connected?	YES	Replace the motor or the control board.
		NO	Connect the connector or the print jack.



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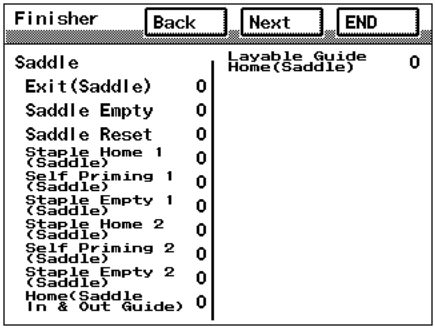
2. I/O CHECK

- 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 [Finisher].
4. Touch [Next] two times.
5. 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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2-1. I/O Check List

Symbol	Panel Display	Parts/Signal Name	Operation Characteristics/ Panel Display		Input Board	CN/PJ No.
			1	0		
PC20-SK	Exit (Saddle)	Saddle Exit Sensor	Paper present	Paper not present	Control Board (PWB-C SK)	PJ9C SK-8
PC21-SK	Saddle Empty	Saddle Tray Empty Sensor	Paper present	Paper not present		PJ9C SK-3
S4-SK	Saddle Reset	Saddle Exit Roller Home Position Sensor	Open	Closed		PJ6C SK-3
—	Staple Home 1 (Saddle)	Staple Home Position Sensor 1	Blocked	Unblocked		PJ7C SK-8
—	Self Priming 1 (Saddle)	Self-Priming Sensor 1	Blocked	Unblocked		PJ11C SK-2
—	Staple Empty 1 (Saddle)	Staple Empty Detection Sensor 1	Blocked	Unblocked		PJ8C SK-7
—	Staple Home 2 (Saddle)	Staple Home Position Sensor 2	Blocked	Unblocked		PJ12C SK-4
—	Self Priming 2 (Saddle)	Self-Priming Sensor 2	Blocked	Unblocked		PJ12C SK-2
—	Staple Empty 2 (Saddle)	Staple Empty Detection Sensor 2	Blocked	Unblocked		PJ9C SK-8
PC23-SK	Home (Saddle In & Out Guide)	In & Out Guide Home Sensor	Blocked	Unblocked		PJ10C SK-3
PC26-SK	Layable Guide Home (Saddle)	Layable Guide Home Sensor	Blocked	Unblocked		PJ10C SK-6

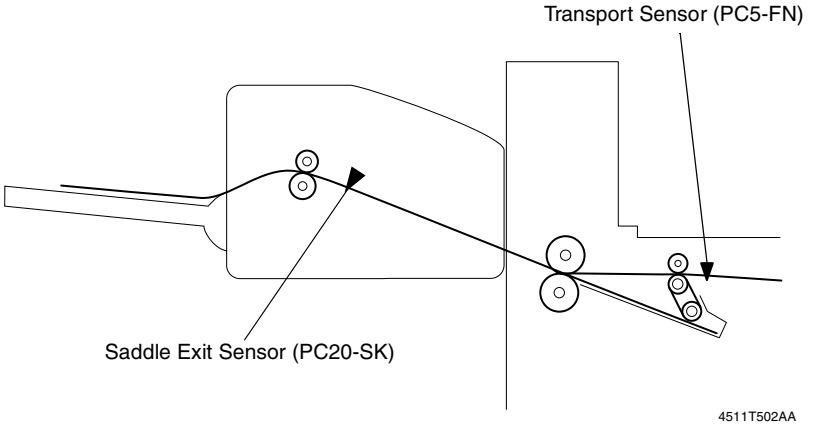
3. Misfeed Detection/Troubleshooting Procedures

3-1. Initial Checks

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

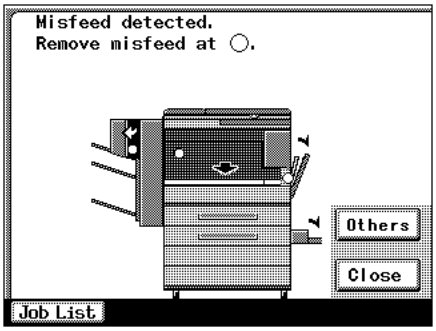
Check Item	Action
Does paper meet product specifications?	Replace paper.
Is the paper curled, wavy, or damp?	Replace paper. Instruct the user on the correct paper storage procedures.
Is a foreign object present along the paper path, or is the paper path deformed or worn?	Clean the paper path and replace if necessary.
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



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) Creasing Section Misfeed

<Detection Timing>

Type	Description
Creasing Section misfeed detection	The Entrance Sensor (PC4-FN) is not blocked even after the set period of time has elapsed after the Entrance Motor (M3-FN) is energized (beginning of backward rotation operation).
	The Entrance Sensor (PC4-FN) is not unblocked even after the set period of time has elapsed after the Entrance Motor (M3-FN) is energized (beginning of forward rotation operation).

Action

Relevant Electrical Components	
Finisher Entrance Motor (M3-FN) Finisher Entrance Sensor (PC4-FN)	Control Board (PWB-C SK)

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

(2) Staple Unit Misfeed

<Detection Timing>

Type	Description
Staple Unit misfeed 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 1 Staple Unit 2	Control Board (PWB-C SK)

Step	Operations	Ref. Page	WIRING DIAGRAM	
			Control signal	Location (Electrical Components)
1	Initial checks	☞ T-6	—	—
2	Drive Coupling Section check	—	—	—
3	I/O CHECK	☞ T-5	—	—
4	Staple Unit 1 replacement	—	—	C-2
5	Staple Unit 2 replacement	—	—	A-2
6	PWB-C SK replacement	—	—	D-5

(3) Paper Bundle Exit Misfeed

<Detection Timing>

Type	Description
Paper Bundle 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.
	The Saddle Exit Sensor (PC20-SK) is not blocked even after the set period of time has elapsed after the Exit Motor (M1-FN) is energized.
	The Saddle Exit Sensor (PC20-SK) is not unblocked even after the set period of time has elapsed after the Saddle Exit Sensor (PC20-SK) is blocked.

Action

Relevant Electrical Components	
Finisher Exit Motor (M1-FN) Saddle Transport Motor (M8-SK) Finisher Storage Tray Detecting Sensor (PC8-FN)	Saddle Exit Sensor (PC20-SK) Control Board (PWB-C SK)

Step	Operations	Ref. Page	WIRING DIAGRAM	
			Control signal	Location (Electrical Components)
1	Initial checks	☞ T-6	—	—
2	PC8-FN sensor check	☞ T-1	PJ13A FN-8	F-7
3	PC20-SK sensor check	☞ T-1	PJ19C SK-8	B-7
4	PWB-C SK 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
C0B56	Side Staple 1 Drive Failure	Home Position Sensor 1 is not blocked even after the set period of time has elapsed after Saddle Staple Motor 1 is energized (beginning of staple operation).
C0B57	Side Staple 2 Drive Failure	Home Position Sensor 2 is not blocked even after the set period of time has elapsed after Saddle Staple Motor 2 is energized (beginning of staple operation).
C0B4A	Saddle Exit Roller Pressure/ Retraction Failure	• The Saddle Exit Roller Home Position Sensor (PC18-SK) is not blocked even after the set period of time has elapsed after the Saddle Exit Open/Close Motor (M9-SK) is energized (beginning of pressure operation). • The Saddle Exit Roller Home Position Sensor (PC18-SK) is not unblocked even after the set period of time has elapsed after the Saddle Exit Open/Close Motor (M9-SK) is energized (beginning of retraction operation).
C0B4C	Saddle Exit Motor Failure	The Lock signal is detected after the set period of time has elapsed after the Saddle Transport Motor (M8-SK) is energized.
C0B4D	Saddle In & Out Guide Motor Failure	• The In & Out Guide Home Sensor (PC23-SK) is not unblocked even after the set period of time has elapsed after the In & Out Guide Motor (M13-SK) is energized (beginning of advancing operation). • The In & Out Guide Home Sensor (PC23-SK) is not unblocked even after the set period of time has elapsed after the In & Out Guide Motor (M13-SK) is energized (beginning of retracting operation).
C0B4F	Saddle Layable Guide Drive Failure	• The Layable Guide Home Sensor (PC26-SK) is not blocked even after the set period of time has elapsed after the Layable Guide Motor (M14-SK) is energized (beginning of return operation to predetermined position). • The Layable Guide Home Sensor (PC26-SK) is not unblocked even after the set period of time has elapsed after the Layable Guide Motor (M14-SK) is energized (beginning of return operation to predetermined position).
C0BC2	Crease Motor Drive Failure	• The Crease Roller Home Position Sensor (PC22-SK) is not unblocked even after the set period of time has elapsed after the Crease Motor (M10-FN) is energized (beginning of backward rotation operation). • The Crease Roller Home Position Sensor (PC22-SK) is not blocked even after the set period of time has elapsed after the Crease Motor (M10-FN) is energized (beginning of forward rotation operation).

4-2. Malfunction Detection Timing and Troubleshooting Procedure

(1) C0B56: Side Staple 1 Drive Failure

(2) C0B57: Side Staple 2 Drive Failure

<Detection Timing>

Malfunction Code	Description
C0B56	Home Position Sensor 1 is not blocked even after the set period of time has elapsed after Staple Motor 1 is energized (beginning of staple operation).
C0B57	Home Position Sensor 2 is not blocked even after the set period of time has elapsed after Staple Motor 2 is energized (beginning of staple operation).

Action

Relevant Electrical Components	
Staple Unit 1 Staple Unit 2	Control Board (PWB-C SK)

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

(3) C0B4A: Saddle Exit Roller Pressure/Retraction Failure

<Detection Timing>

Malfunction Code	Description
C0B4A	• The Saddle Exit Roller Home Position Sensor (PC18-SK) is not blocked even after the set period of time has elapsed after the Saddle Exit Open/Close Motor (M9-SK) is energized (beginning of pressure operation). • The Saddle Exit Roller Home Position Sensor (PC18-SK) is not unblocked even after the set period of time has elapsed after the Saddle Exit Open/Close Motor (M9-SK) is energized (beginning of retraction operation).

Action

Relevant Electrical Components	
Saddle Exit Open/Close Motor (M9-SK) Saddle Exit Roller Home Position Sensor (PC18-SK)	Control Board (PWB-C SK)

Step	Operations	Ref. Page	WIRING DIAGRAM	
			Control signal	Location (Electrical Components)
1	Check the M9-SK connector for proper connection and correct as necessary.	—	—	—
2	Check M9-SK for proper drive coupling and correct as necessary.	—	—	—
3	M9-SK operation check	☞ T-3	PWB-C SK PJ4C SK-4,5	H-3
4	PC18-SK sensor check	☞ T-1	PWB-C SK PJ9C SK-6	B-7
5	PWB-C SK replacement	—	—	D-5

(4) C0B4C: Saddle Exit Motor Failure

<Detection Timing>

Malfunction Code	Description
C0B4C	The Lock signal is detected after the set period of time has elapsed after the Saddle Exit Motor (M8-SK) is energized.

Action

Relevant Electrical Components	
Saddle Exit Motor (M8-SK)	Control Board (PWB-C SK)

Step	Operations	Ref. Page	WIRING DIAGRAM	
			Control signal	Location (Electrical Components)
1	Check the M9-SK connector for proper connection and correct as necessary.	—	—	—
2	Check M9-SK for proper drive coupling and correct as necessary.	—	—	—
3	M9-SK operation check	☞ T-3	PWB-C SK PJ4C SK-4,5	H-3
4	PWB-C SK replacement	—	—	D-5

(5) C0B4D: Saddle In & Out Guide Motor Failure

<Detection Timing>

Malfunction Code	Description
C0B4D	• The In & Out Guide Home Sensor (PC23-SK) is not unblocked even after the set period of time has elapsed after the In & Out Guide Motor (M13-SK) is energized (beginning of advancing operation). • The In & Out Guide Home Sensor (PC23-SK) is not unblocked even after the set period of time has elapsed after the In & Out Guide Motor (M13-SK) is energized (beginning of retracting operation).

Action

Relevant Electrical Components	
In & Out Guide Motor (M13-SK) In & Out Guide Home Sensor (PC23-SK)	Control Board (PWB-C SK)

Step	Operations	Ref. Page	WIRING DIAGRAM	
			Control signal	Location (Electrical Components)
1	Check the M13-SK connector for proper connection and correct as necessary.	—	—	—
2	Check M13-SK for proper drive coupling and correct as necessary.	—	—	—
3	M13-SK operation check	☞ T-3	PWB-C SK PJ4C SK-6,7	H-3
4	PC23-SK sensor check	☞ T-1	PWB-C SK PJ10C SK-3	C-7
5	PWB-C SK replacement	—	—	D-5

(6) C0B4F: Saddle Layable Guide Drive Failure

<Detection Timing>

Malfunction Code	Description
C0B4F	• The Layable Guide Home Sensor (PC26-SK) is not blocked even after the set period of time has elapsed after the Layable Guide Motor (M14-SK) is energized (beginning of return operation to predetermined position). • The Layable Guide Home Sensor (PC26-SK) is not unblocked even after the set period of time has elapsed after the Layable Guide Motor (M14-SK) is energized (beginning of return operation to predetermined position).

Action

Relevant Electrical Components	
Layable Guide Motor (M14-SK) Layable Guide Home Sensor (PC26-SK)	Control Board (PWB-C SK)

Step	Operations	Ref. Page	WIRING DIAGRAM	
			Control signal	Location (Electrical Components)
1	Check the M14-SK connector for proper connection and correct as necessary.	—	—	—
2	Check M14-SK for proper drive coupling and correct as necessary.	—	—	—
3	M14-SK operation check	☞ T-3	PWB-C SK PJ4C SK-8,9	G-3
4	PC26-SK sensor check	☞ T-1	PWB-C SK PC10C SK-6	C-7
5	PWB-C SK replacement	—	—	D-5

(7) C0BC2: Crease Motor Drive Failure

<Detection Timing>

Malfunction Code	Description
C0BC2	• The Crease Roller Home Position Sensor (PC22-SK) is not unblocked even after the set period of time has elapsed after the Crease Motor (M10-FN) is energized (beginning of backward rotation operation). • The Crease Roller Home Position Sensor (PC22-SK) is not blocked even after the set period of time has elapsed after the Crease Motor (M10-FN) is energized (beginning of forward rotation operation).

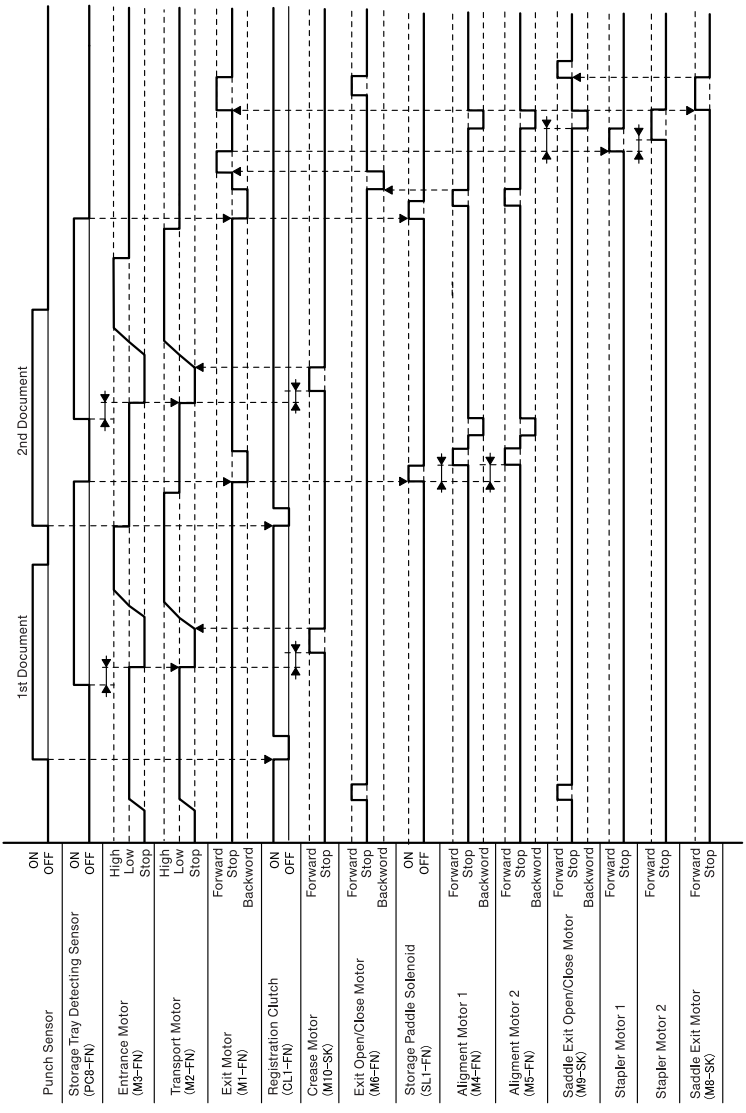
Action

Relevant Electrical Components	
Crease Motor (M10-SK) Crease Roller Home Position Sensor (PC22-SK)	Control Board (PWB-C SK)

Step	Operations	Ref. Page	WIRING DIAGRAM	
			Control signal	Location (Electrical Components)
1	Check the M10-SK connector for proper connection and correct as necessary.	—	—	—
2	Check M10-SK for proper drive coupling and correct as necessary.	—	—	—
3	M10-SK operation check	☞ T-3	PWB-C SK PJ3C SK-1,2	H-7
4	PC22-SK sensor check	☞ T-1	PWB-C SK PJ2C SK-3	H-7
5	PWB-C SK replacement	—	—	D-5

5. Time Chart

5-1. Booklet-binding mode (2-point stapling, A4L, 2 document pages, feeding out 1 set)



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AFR-19/TX Marker STAMP UNIT2/PF-210
AD-16/SB-1/JS-203/PF-122/FN-117/AK-1
PK-6/MK-1/PF-124/SK-1
OPTION SERVICE MANUAL

Service Manual List of errata 2, Additional Information

4344-7995-11 03081000

Option Service Manual List of errata 2

Page	Section			Error	Correct
D-1	AFR-19	Maintenance Schedule (Reflective Sensor Section)		200K	50K
T-5	AFR-19	I/O Check List (Panel Display)			
			PC5-ADF	Paper Empty	Empty
			PC8-ADF	Orig. Detect	Before Scanning
			PC10-ADF	Exit/Turnover	Exit and Turn Over
			PC1-ADF	FD Paper Size Detect1	Org. Length 1
			PC2-ADF	FD Paper Size Detect2	Org. Length 2
			PC3-ADF	FD Paper Size Detect3	Org. Length 3
			PC4-ADF	FD Paper Size Detect4	Org. Length 4
			PC6-ADF	Separator	Behind Separator
T-6	PF-210	I/O Check List (Panel Display)			
		3rd Drawer	PC112-PF	Drawer Set	Drawer Set
			PC113-PF	Paper Near Empty Sensor	Paper Near Empty
			PC115-PF	Paper Empty Sensor	Paper Empty
			PC114-PF	Top Detector	Surface
			PC118-PF	CD Size Detecting 1	CD Size 1
			PC119-PF	CD Size Detecting 2	CD Size 2
			PWB-I PF	FD Size Detecting 1	FD Size 1
				FD Size Detecting 2	FD Size 2
				FD Size Detecting 3	FD Size 3
				FD Size Detecting 4	FD Size 4
			PC111-PF	Cabinet Cover	Take-up Lower

Page	Section			Error	Correct
T-6	PF-210	I/O Check List (Panel Display)			
		4th Drawer	PC112-PF	Drawer Set	Drawer Set
			PC113-PF	Paper Near Empty Sensor	Paper Near Empty
			PC115-PF	Paper Empty Sensor	Paper Empty
			PC114-PF	Top Detector	Surface
			PC118-PF	CD Size Detecting 1	CD Size 1
			PC119-PF	CD Size Detecting 2	CD Size 2
			PWB-I PF	FD Size Detecting 1	FD Size 1
				FD Size Detecting 2	FD Size 2
				FD Size Detecting 3	FD Size 3
				FD Size Detecting 4	FD Size 4
T-5	AD-16/ SB-1	I/O Check List (Panel Display)			
			PC24	DUP Feed (1)	Duplex Paper Passage 1
			PC25	DUP Feed (2)	Duplex Paper Passage 2
			PC26	Turnover	Dup.
	JS-203		PC1-JOB	Top Bin Full	Upper Bin Full
			PC2-JOB	Top Bin Empty	Upper Bin Empty
T-6	PF-122	I/O Check List (Panel Display)			
			PC2-LCC	Vertical Transport	Vertical Trans.
			PC1-LCC	Paper Take-Up	Take-Up
			PC7-LCC	Lower Limit Overrun	Lower Overrun
			PC4-LCC	Raised Upper Limit	Raised (Lift-Up)
			PC13-LCC	Raised Lower Limit	Lowered (Lift-Up)
			PC12-LCC	Shifter Home	Home (Shift)
			PC11-LCC	Shift Tray Return Position	Shift Tray Stop Position

Page	Section		Error	Correct
T-6	PF-122	I/O Check List (Panel Display)		
		PC10-LCC	Elevator Motor Pulse	Elev. Mtr Pulse
		PC8-LCC	Shift Motor Pulse	Shift Mtr Pulse
		PC14-LCC	Shift Gate Home Position	Dividing Position
T-6	FN-117	I/O Check List (Panel Display)		
		PC5-FN	Transport	Paper Passage (Middle)
		PC4-FN	Entrance	Paper Passage (Feed in)
		S3-FN	Elevator Tray Upper/Lower Limit Switch	Elevate Tray Raise/Lowered
		S2-FN	Shutter Detect	Shutter Status
		S1-FN	Front Cover Open/Close Detection Switch	Front Door Set
		PC14-FN	Elevator Tray Upper Limit	Lower (Elev.)
		PC15-FN	Elevator Tray Lower Limit	Surface (Elev.)
		–	Elevator Tray Detecting Sensor	Optional Tray (Elevate)
		PC3-FN	Elevator Tray Home Position	Elevator Tray Position
		PC6-FN	Alignment Home 1	Align Home 1
		PC7-FN	Alignment Home 2	Align Home 2
		PC16-FN	Shutter Home	Home (Shutter)
		PC11-FN	Exit Paddle Home Position	Paddle Home (Exit)
		PC12-FN	Exit Roller Home	Exit R Home
		PC8-FN	Storage Tray Detection	Empty (Finisher)
		PC10-FN	Stapler Home	Stapler Home (CD)
		PC3-PK	Punch Positioning 1	Punch Pos. 1
		PC4-PK	Punch Positioning 2	Punch Pos. 2
		PC1-PK	Punch Trash Full	Punch Wastes Full
		S4-FN	Transport Guide Detection	Middle Guide

Page	Section		Error	Correct
T-5	MK-1	I/O Check List (Panel Display)		
		PC10-MK	Mailbin Transport1	Paper Passage 1 (Mail Bins)
		PC9-MK	Mailbin Transport2	Paper Passage 2 (Mail Bins)
		PC11-MK	Mailbin Door Open/Close Sensor	Mailbin Door
		PC1-MK	Mailbin 1 Empty Detection	1st Mail Bin Empty
		PC5-MK	Mailbin 1 Full Detection	1st Mail Bin Full
T-6	MK-1	I/O Check List (Panel Display)		
		PC2-MK	Mailbin 2 Empty Detection	2nd Mail Bin Empty
		PC6-MK	Mailbin 2 Full Detection	2nd Mail Bin Full
		PC3-MK	Mailbin 3 Empty Detection	3rd Mail Bin Empty
		PC7-MK	Mailbin 3 Full Detection	3rd Mail Bin Full
		PC4-MK	Mailbin 4 Empty Detection	4th Mail Bin Empty
		PC8-MK	Mailbin 4 Full Detection	4th Mail Bin Full
T-5	PF-124	I/O Check List (Panel Display)		
		PC113-PF	Paper Near Empty Sensor	Paper Near Empty
		PC115-PF	Paper Empty Sensor	Paper Empty
		PC114-PF	Top Detector	Surface
		PC118-PF	CD Size Detecting 1	CD Size 1
		PC119-PF	CD Size Detecting 2	CD Size 2
		PWB-I PF	FD Size Detecting 1	FD Size 1
			FD Size Detecting 2	FD Size 2
			FD Size Detecting 3	FD Size 3
			FD Size Detecting 4	FD Size 4
		PC111-PF	Cabinet Cover	Take-up Lower
		PC116-PF	Pick-Up	Pick-Up

Additional Information

Section: AD-16/SB-1/JS-203 Service Manual

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[JS-203]

Symbol	Panel Display	Parts/Signal Name	Operation Characteristics/Panel Display		Input Board	CN/PJ No.
			1	0		
–	Orig. Width Vol.	–	Not Use			

Section: FN-117/AK-1/PK-6

Page. T-6 (I/O Check List)

[FN-117]

Symbol	Panel Display	Parts/Signal Name	Operation Characteristics/Panel Display		Input Board	CN/PJ No.
			1	0		
PC22-SK	Home (Paper Hold R)	Crease Roller Home Position Sensor	At Home	Not at home	Control Board (PWB-A FN)	PJ2C SK-3

Section: PF-122

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[PF-122]

Symbol	Panel Display	Parts/Signal Name	Operation Characteristics/Panel Display		Input Board	CN/PJ No.
			1	0		
PC6-LCC	Cassette Open	Tray Set Sensor	Open	Closed	Control Board (PWB-C1 LCC)	PJ7C1 LCC-2
PC5-LCC	Right Door Open	Right Lower Door Sensor	Open	Closed		PJ5C1 LCC-15
UN1-LCC	Manual Button Down	Paper Descent Key	On	Off		PJ2H LCC-10