FrameMaker Ver.5.5E(PC) COVER [FIELD SERVICE] FOR Di350
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MINOLTA Co., Ltd.

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Di350 SERVICE MANUAL [FIELD SERVICE]

Di350

SERVICE MANUAL

[FIELD SERVICE]

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's attention to what is graphically represented inside the marking (including a warning).


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


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

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.

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. 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.

4. 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.

5. 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.

6. 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.

7. 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.

8. Maintain a grounded connection at all times. (This item may not apply in the USA.)



- Be sure to connect the ground wire to the ground terminal even when performing an inspection or repair. Without proper grounding, electrical leakage could result in an electric shock or fire.
- Never connect the ground wire to a gas pipe, water pipe, telephone ground wire, or a lightning conductor.

9. 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.

10. 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.

CAUTION

1. Precautions for Service Jobs

- A toothed 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.

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

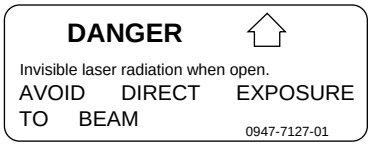
- Replace a rundown battery with the same type as specified in the manufacturer's parts manual.
- Before installing a new battery, make sure of the correct polarity of the installation or the battery could burst.
- Dispose of used batteries according to the local regulations. Never dispose of them at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



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Other Precautions

- To reassemble the product, reverse the order of disassembly unless otherwise specified.
- While the product is energized, do not unplug or plug connectors into the circuit boards or harnesses.
- The magnet roller generates a strong magnetic field. Do not bring it near a watch, floppy disk, magnetic card, or CRT tube.
- An air gun and vacuum cleaner generates a strong electrostatic charge that can destroy the ATDC sensor and other sensors. Before cleaning a component with one of these devices, be sure to remove all the sensors. Otherwise, use a blower brush and cloth when cleaning parts.
- When handling circuit boards with MOS ICs, observe the “INSTRUCTIONS FOR HANDLING THE PWBs WITH MOS ICs” (applicable only to the products using MOS ICs).
- 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.
- After completing a service job, perform a safety check. Make sure that all parts, wiring and screws are returned to their original positions.
- Check the area surrounding the service site for any signs of damage, wear or need of repair.
- Do not pull out the toner hopper while the toner bottle is turning. This could result in a damaged hopper 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.

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 ähnlichen Typ.
Entsorgung gebrauchter Batterien nach Angaben des Herstellers.

France

ATTENTION

Ily a danger d'explosion s'ily a remplacement incorrec de la batterie.
Remplacer uniquement avec une batterie du meme type ou d'un type équivalent recommande par le constructueur.
Mettre au rebut les batteries usageés 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.

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.

Sweden

VARNING

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

Finland

VAROITUS

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

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TROUBLESHOOTING

Di350

DIS/REASSEMBLY, ADJUSTMENT

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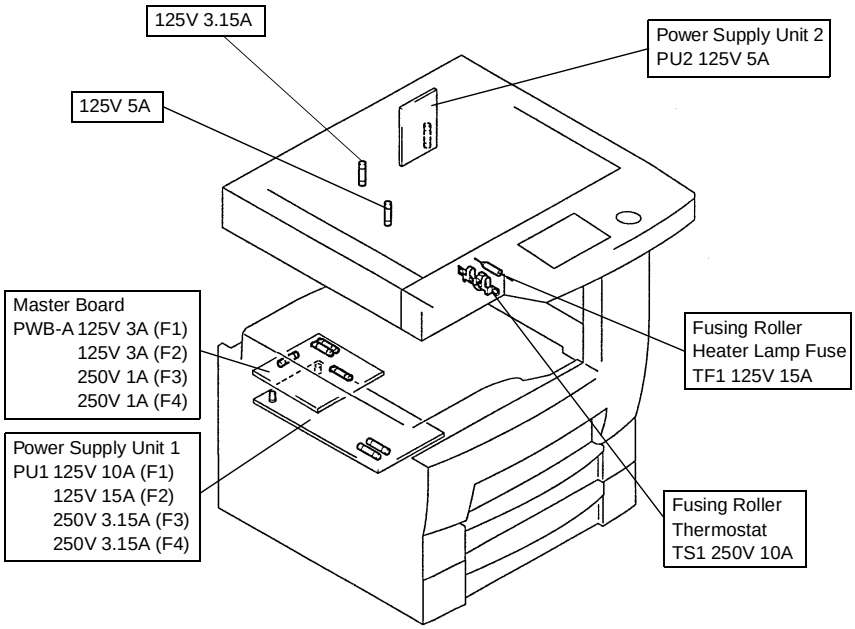
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1 SERVICE INSTRUCTIONS

1-1. IDENTIFICATION OF FUSES AND CIRCUIT BREAKERS



1-2. PRECAUTIONS FOR HANDLING THE LASER EQUIPMENT

- The laser used in this copier is a semiconductor laser having the following specifications.

Max. power:	5mW
Output wavelength:	770~810nm

- When laser protective goggles are to be used, select ones with a lens conforming to the above specifications.
- When a disassembly job needs to be performed in the laser beam path, such as when working around the printerhead and PC Drum, be sure first to turn the copier OFF.
- If the job requires that the copier be left ON, take off your watch and ring and wear laser protective goggles.
- A highly reflective tool can be dangerous if it is brought into the laser beam path. Use utmost care when handling tools on the user's premises.
- The printerhead is not maintainable in the field. It is to be replaced as an assembly including the control board. Never, therefore, attempt to remove the laser diode or adjust trimmers on the control board.

1-3. INSTRUCTIONS FOR HANDLING THE PWBs WITH MOS ICs

The following precautions must be observed when handling P.W. Boards with MOS (Metal Oxide Semiconductor) ICs.

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.
- 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.

During Replacement:
- 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.
- Before plugging connectors into the Board, make sure that the power cord has been unplugged from the power outlet.

During Inspection:
- 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.
- When it is absolutely necessary to touch the ICs and other electrical components on the PW Board, be sure to ground your body.

1-4. HANDLING OF THE IMAGING CARTRIDGE

During Transportation/Storage:
- Use the specified carton whenever moving or storing the Imaging Cartridge.
- The storage temperature is in the range between –20°C and +40°C.
- In summer, avoid leaving the Imaging Cartridge in a car for a long time.

Handling:
- Ensure that the correct Imaging Cartridge is used.
- Store the Imaging Cartridge in a site that is not exposed to direct sunlight.

Precautionary Information on the PC Drum Inside the Imaging Cartridge:
- 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.

1-5. PARTS WHICH MUST NOT BE TOUCHED

(1) Red painted Screws

Purpose of Application of Red Paint
Red painted screws show that the assembly or unit secured can only be adjusted or set at the factory and should not be readjusted, set, or removed in the field.

Note that when two or more screws are used on the part in questions, only one representative screw may be marked with red paint.

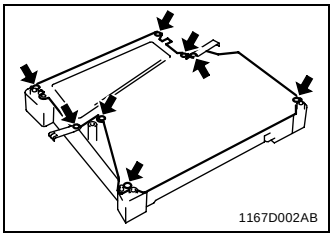
(2) Variable Resistors on Board

Do not turn the variable resistors on boards for which no adjusting instructions are given in "ADJUSTMENT."

(3) Other Screws

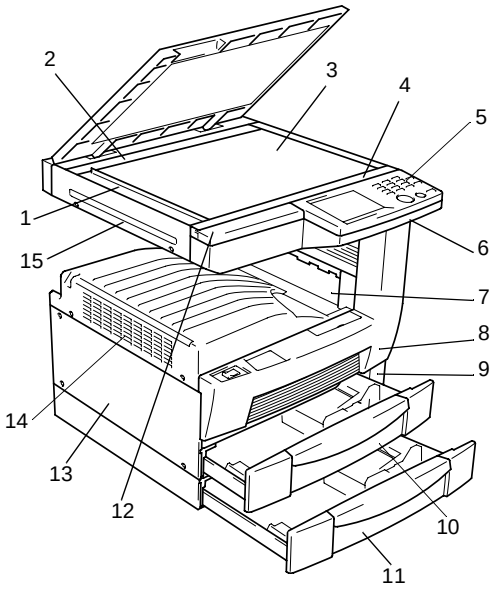
Although not marked with red paint, the following screws must not be loosened or readjusted.

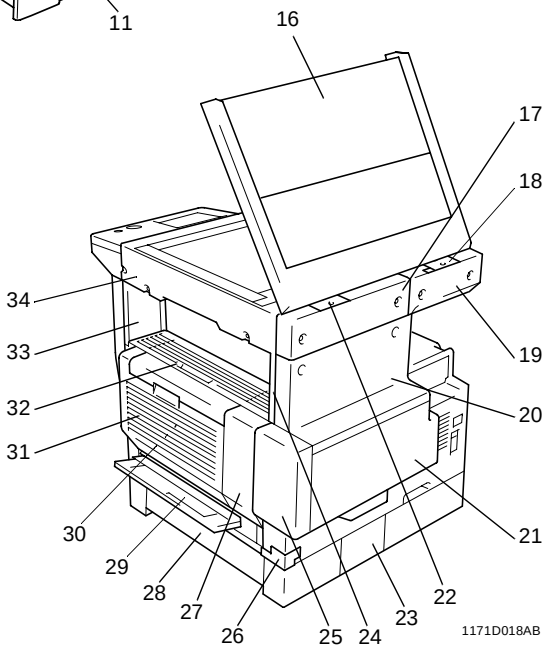
8 screws on the PH Unit Cover



2 DISASSEMBLY/REASSEMBLY

2-1. DOORS, COVERS, AND EXTERIOR PARTS: IDENTIFICATION AND REMOVAL PROCEDURES



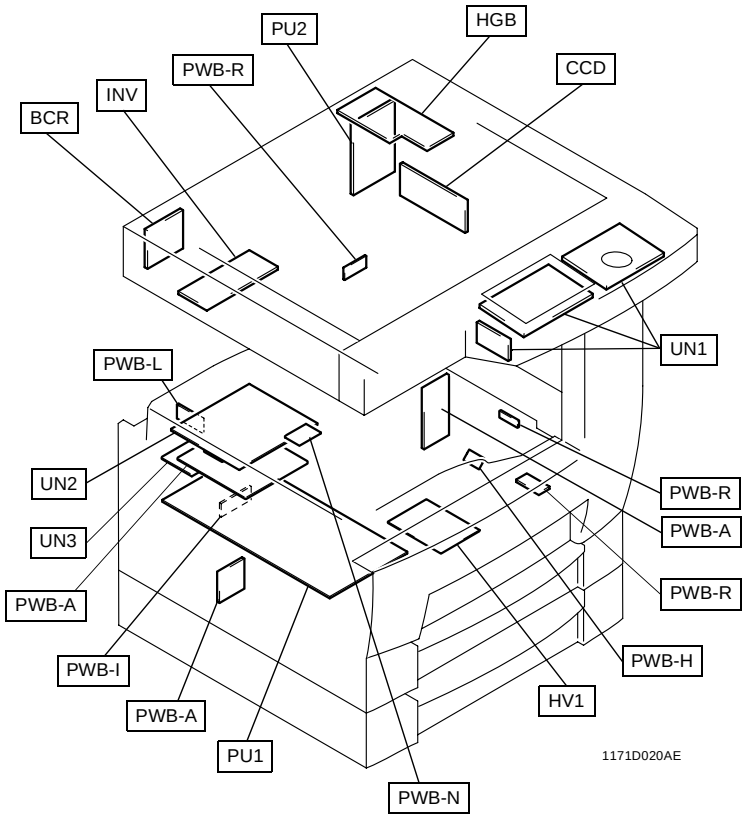


No.	Part Name	Removal Procedure
1	ADF Glass Assy.	Remove No. 2, 4. → Remove two holding brackets. → Remove two screw caps. → Remove two screws that secure the ADF Glass Assy.
2	Rear Holding Bracket	Remove No. 17, 18. → Remove two screw caps. → Remove two screws that secure the Rear Holding Bracket.
3	Original Glass	Remove No. 4. → Remove two holding brackets.
4	Front Holding Bracket	Remove two screw caps. → Remove two screws that secure the Front Holding Bracket.
5	Control Panel	Remove No. 8. → Remove No. 6. → Remove No. 4. → Remove No. 12. → Remove five screws that secure the control panel and unplug one connector.
6	Front Upper Cover	Remove No. 8. → Remove No. 12. → Remove six screws that secure the Front Upper Cover.
7	Exit Lower Cover	Remove No. 32. → Remove No. 24. → Unhook the two tabs of the Exit Lower Cover and remove the Exit Lower Cover.
8	Front Cover	Slide out No. 10. → Open No. 25. → Remove three screws that secure the Front Cover.
9	LED Cover	Slide out No. 10. → Remove one screw that secure the LED Cover.
10	MP Cassette	Slide out the MP Cassette. → Pushing the tab on the right rail, pull out the cassette.
11	500-Sheet Cassette	Slide out the 500-Sheet Cassette. → Pushing the tabs on both the right and left rails, pull out the cassette.
12	Upper Front Left Cover	Remove No. 4. → Remove two screws that secure the Upper Front Left Cover.
13	Left Cover	Remove six screws that secure the Left Cover.
14	Upper Cover	Remove two screws that secure the Upper Cover.
15	Left IR Cover	Remove two screws that secure the Left IR Cover.
16	Original Cover	———
17	Rear Right IR Cover	Remove No. 22. → Remove No. 19. → Remove two screws that secure the Rear Right IR Cover.
18	Left Hinge Cover	Remove one screw that secure the Left Hinge Cover.
19	Rear Left IR Cover	Remove No. 17. → Remove two screws that secure the Rear Left IR Cover.
20	Rear Upper Cover	Remove No. 21. → Remove No. 17. → Remove No. 19. → Remove four screws that secure Rear Upper Cover.
21	Rear Lower Cover	Remove No. 26. → Remove No. 25. → Open No. 30. → Open No. 32. → Remove five screws that secure the Rear Lower Cover.
22	Right Hinge Cover	Remove one screw that secure the Right Hinge Cover.
23	Connector Cover	Remove one screw that secure the Connector Cover.
24	Rear Inside Cover	Remove No. 22. → Remove three screws that secure the Rear Inside Cover.

No.	Part Name	Removal Procedure
25	Toner Bottle Cover	Open the Toner Bottle Cover. → Unhook the dowels at four places of the Toner Bottle Cover.
26	Harness Cover	Remove one screw that secure the Harness Cover.
27	Duplex Unit Rear Cover	Remove No. 31. → Remove two screws that secure the Duplex Unit Rear Cover.
28	500-Sheet Cassette Side Cover	Open the Side Cover. → Slide the Side Cover to the front and, at the same time, pull the rear side out of the frame.
29	Manual Bypass Tray	Remove No. 26. → Unplug one connector. → Remove three screws that secure the Manual Bypass Tray.
30	Side Cover	———
31	Duplex Unit	Remove two screws that secure the Duplex Unit.
32	Fusing Unit	See D-26.
33	Front Inside Cover	Remove No. 8. → Remove No. 32. → Remove two screws that secure the Front Inside Cover.
34	Right IR Cover	Remove three screws that secure the Right IR Cover.

2-2. REMOVAL OF CIRCUIT BOARDS AND OTHER ELECTRICAL COMPOMENTS

- When removing a circuit board or other electrical component, refer to “PRECAUTIONS FOR HANDLING THE PWBs” contained in SWITCHES ON PWBs and follow the corresponding removal procedures.
- The removal procedures given in the following omit the removal of connectors and screws securing the circuit board support or circuit board.
- Where it is absolutely necessary to touch the ICs and other electrical components on the board, be sure to ground your body.

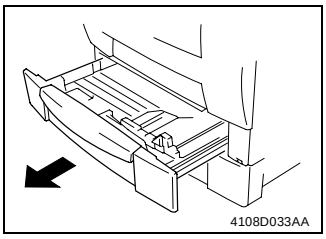


Symbol	Part Name	Removal Procedure
PWB-A	Master Board	Remove the Upper Cover. → Remove nine screws and the MFB Box Cover. → Remove two screws and the MFB Box Assy. → PWB-A
PWB-A	Cassette Main Board	Remove the Connector Cover. → PWB-A
PWB-A	Duplex Main Board	Remove the Duplex Unit. → Remove the Duplex Unit Rear Cover. → PWB-A
PWB-H	Double Feed Detecting Board	Slide out the MP Cassette. → Remove one screw and the PWB-H Mounting Bracket Assy. → PWB-H
PWB-I	Paper Size Detecting Board	Remove the Harness Cover. → Remove the Rear Cover. → Remove two screws and the PW Board Cover. → PWB-I
PWB-L	PPM Switching Board	Remove the Harness Cover. → Remove the Rear Cover. → Remove one screw and the PWB-L Mounting Bracket Assy. → PWB-L
PWB-N	RAM Board	Remove the Upper Cover. → Remove nine screws and the MFB Box Cover. → PWB-N
PWB-R	Fuser Frame Register Board	Remove the Fusing Unit. → Remove the rear lamp cover. → PWB-R
PWB-R	Pre-Transfer Guide Plate Register Board 1	Remove the Vertical Transport Unit. → Remove two screws and two ground plates. → PWB-R
PWB-R	Pre-Transfer Guide Plate Register Board 2	Open the Side Cover. → Remove the Imaging Cartridge. → Remove one screw and the PW Board Cover. → PWB-R
PU1	Power Supply Board 1	Remove the Harness Cover. → Remove the Rear Cover. → Remove the Left Cover. → Remove five screws and the Reinforcement Bracket. → Remove three screws and the PU1 Mounting Bracket Assy. → PU1
PU2	Power Supply Board 2	Remove the Harness Cover. → Remove the Rear Cover. → PU2
HV1	High Voltage Unit	Open the Side Cover. → Remove the Imaging Cartridge. → Remove two screws and the HV1 Cover. → HV1
INV	Inverter Board	Remove the Original Glass. → INV
BCR	BCR Board	Remove the Rear Left IR Cover. → Remove three screws and the Harness Cover. → BCR
HGB	HGB Board	Remove the Original Glass. → Remove the Right IR Cover. → Remove the Optical Cover. → Remove the Rear Lower Cover. → Remove the Rear Upper Cover. → Remove the Shielding Plate. (U.S.A. and Canada only) → Remove one screw and the Harness Cover. → Unplug nine connectors. → Remove five screws and the HGB Mounting Bracket Assy. → HGB
CCD	CCD Board	See D-15.

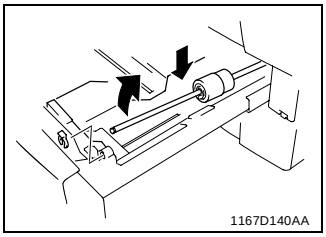
Symbol	Part Name	Removal Procedure
UN2	MFB Board	Remove the Upper Cover. → Remove nine screws and the MFB Box Cover. → UN2
UN3	Polygon Motor Drive Board	Remove the PH Unit. → UN3

2-3. PAPER TAKE-UP/TRANSPORT SECTION

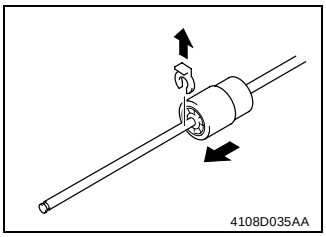
(1) Replacement of the Paper Take-Up Roll



1. Slide out the MP Cassette.

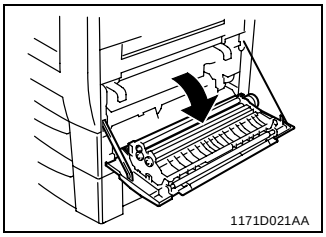


2. Lock the Paper Lifting Plate.
3. Snap off one C-clip of the Paper Take-Up Roll Assy.
4. Slide the Paper Take-Up Roll Assy to the rear so that it can be pulled off the bushing at the front.

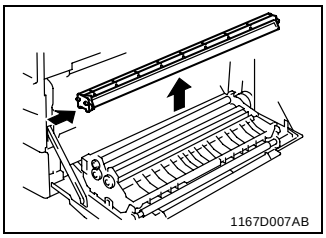


5. Snap off one C-clip and remove and replace the Paper Take-Up Roll.

(2) Replacement of the Paper Dust Remover

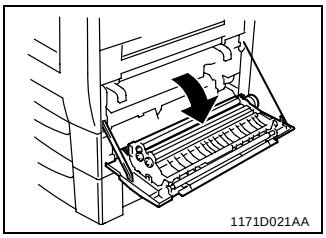


1. Open the Side Cover.

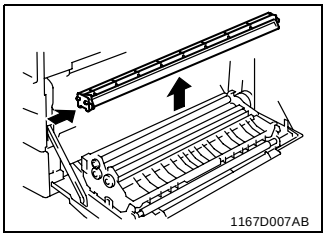


2. Remove the Paper Dust Remover and replace it.

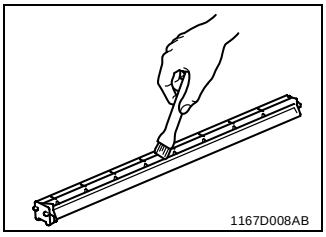
(3) Cleaning of the Paper Dust Remover



1. Open the Side Cover.

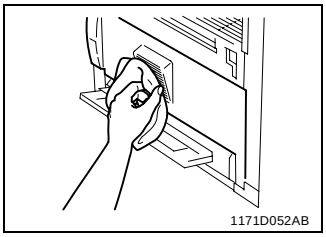


2. Remove the Paper Dust Remover.



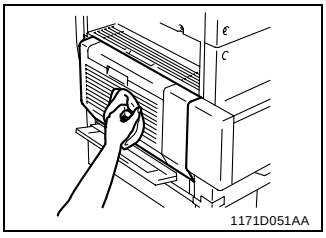
3. Using a brush, whisk dust and dirt off the Paper Dust Remover.

(4) Cleaning of the Side Cover



Using a soft cloth dampened with alcohol, wipe the Side Cover.

(5) Cleaning of the Duplex Unit Cover

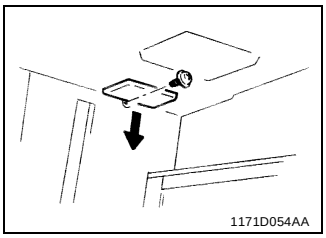


Using a soft cloth dampened with alcohol, wipe the Duplex Unit Cover.

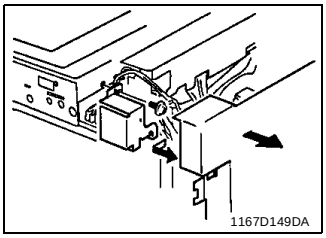
2-4. OPTICAL SECTION

(1) Removal of the IR Unit

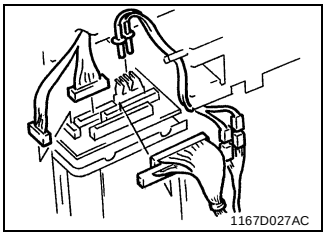
1. Remove the Original Cover, Front Holding Bracket, Upper Front Left Cover, Front Cover, Front Upper Cover, Rear Right IR Cover, Rear Left IR Cover, Rear Lower Cover, Rear Upper Cover, and Front Inside Cover.



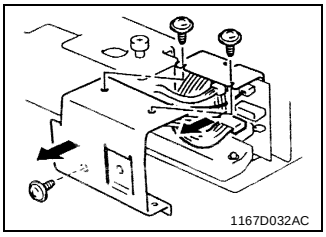
2. Remove one screw and the Motor Cover.



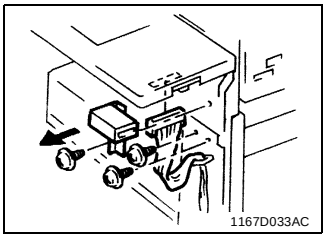
3. Remove the Shielding Plate. (U.S.A. and Canada only)
4. Remove one screw and the Harness Cover.



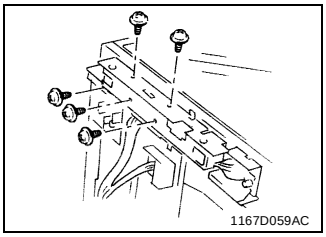
5. Unplug eight connectors of the HGB Board.



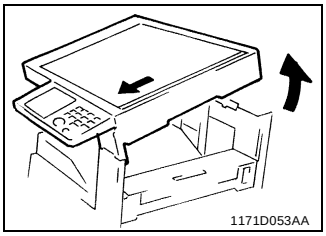
6. Remove three screws and the Harness Cover.
7. Unplug one connector of the BCR Board.



8. Remove one screw and the Total Counter Mounting Bracket Assy.
9. Unplug one connector of the Control Panel.
10. Remove two screws that secure the front end of the frame.



11. Remove five screws that secure the rear end of the frame.

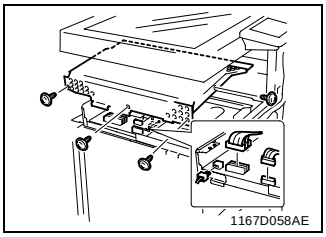


12. Raise the rear end of the IR Unit and pull the unit out toward front.

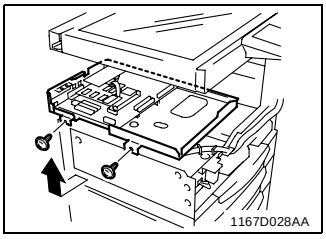
(2) Removal of the PH Unit

NOTES

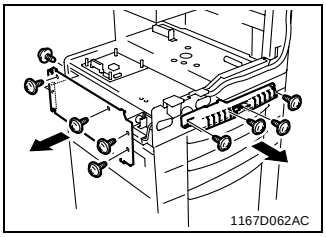
- *Do not place the PH Unit upside down or subject it to excessive shock.*
- *Replace the PH Unit as one unit.*
- *NEVER attempt to disassemble or adjust the PH Unit.*
- *Whenever the PH Unit has been removed, make the following adjustments: Edge Erase, Registration (CD, FD) (Printer), Registration (IR).*



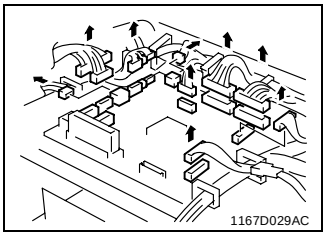
1. Remove the Upper Cover, Front Cover, Left Cover, and Rear Cover.
2. Remove four screws and the MFB Box Cover.
3. Unplug five connectors of the MFB Board.



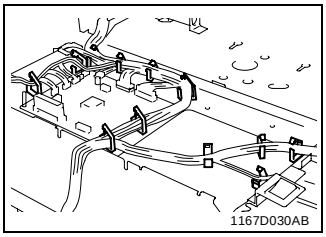
4. Remove two screws and the MFB Box Assy.



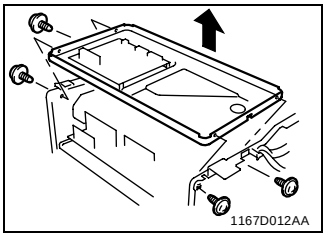
5. Remove five screws and the Reinforcement Bracket.
6. Remove four screws and the handle.



7. Unplug all connectors (13) from Master Board PWB-A.

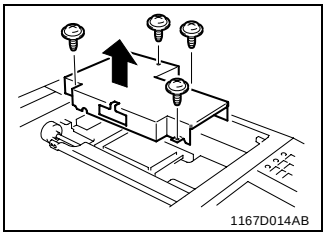


8. Remove the harness from all cord clamps (12) on the PH Base Plate.



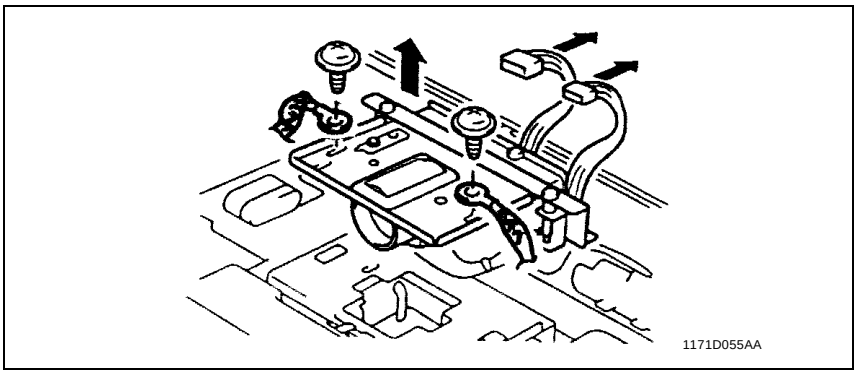
9. Remove four screws and the PH Unit.

(3) Removal of the CCD Unit



1. Remove the Original Glass.
2. Remove four screws and the Cover.

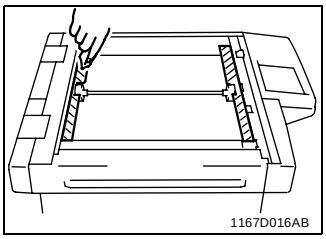
3. Unplug two connectors of the CCD Unit.
4. Remove two screws and the CCD Unit.



NOTES

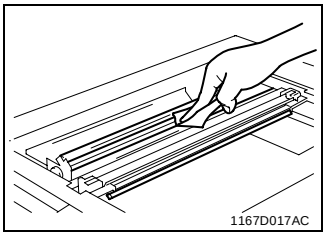
1. When removing the CCD Unit, remove only those screws and parts that are specified. (Remove the CCD Unit as one unit.)
2. Whenever the CCD Unit has been replaced, make the following adjustment: FD of Zoom Adjust (IR).

(4) Cleaning of the Scanner Rails/Bushings



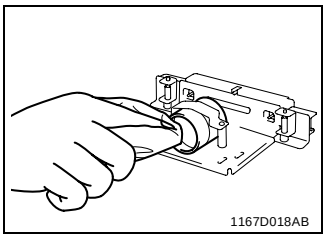
1. Remove the Original Glass.
2. Using a soft cloth, wipe clean the Scanner Rails and Bushings.

(5) Cleaning of the Mirrors



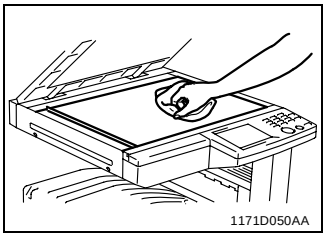
1. Remove the Original Glass.
2. Wipe clean the Mirrors with a soft cloth.

(6) Cleaning of the Lens



1. Remove the CCD Unit.
2. Wipe clean the Lens with a soft cloth.

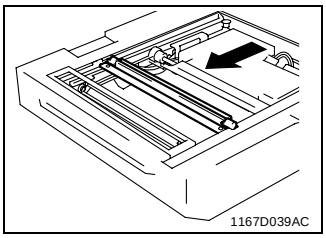
(7) Cleaning of the Original Glass



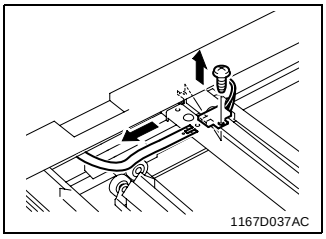
Wipe clean the Original Glass with a soft cloth.

(8) Removal of the Scanner

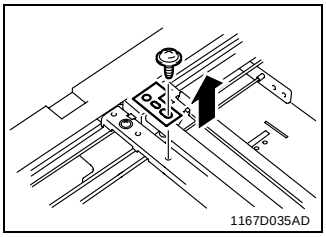
1. Remove the Original Glass.
2. Remove the Rear Holding Bracket.



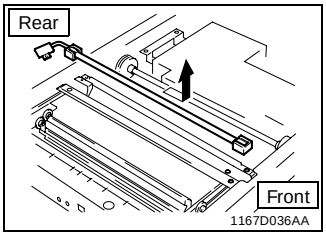
3. Slide the Scanner to the position shown.



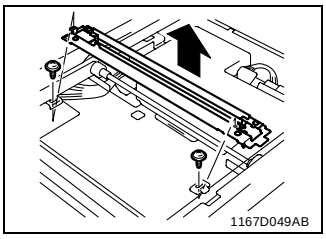
4. Remove one screw and unplug the connector of the Exposure Lamp.
5. Remove the flat cable of the Exposure Lamp.



6. Remove one screw and the Lamp Fixing Bracket.



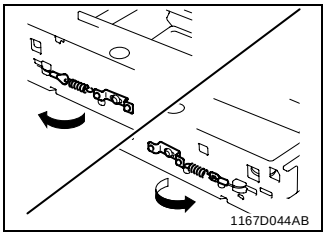
7. Slide the Exposure Lamp to the front and remove it.



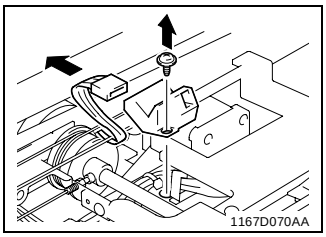
8. Remove two screws and the Scanner.

(9) Removal of the Scanner Drive Cables

1. Remove the Original Glass and ADF Glass Assy.
2. Remove the Left IR Cover.
3. Remove the Scanner.

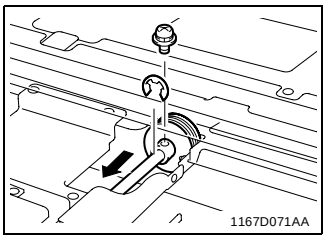


4. Unhook the spring of the cable on the hook side, one each at the front and in the rear.

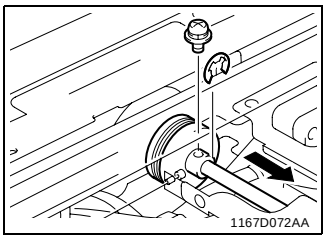


5. Remove one screw and the Original Size Detection Sensor.

✻ Inch Areas Option.



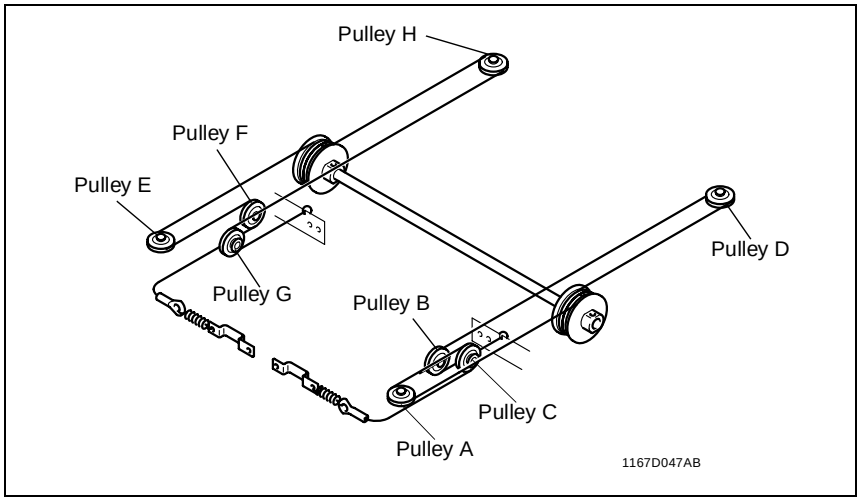
6. Snap off one E-ring and remove one mounting screw from the front pulley and slide the pulley to the rear.

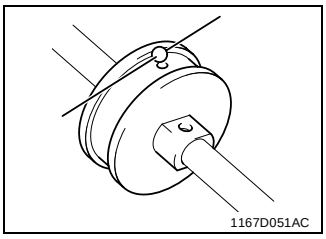


7. Snap off one E-ring and remove one mounting screw from the rear pulley and slide the pulley to the front.

8. Remove the Scanner Drive Cable, hook end first.

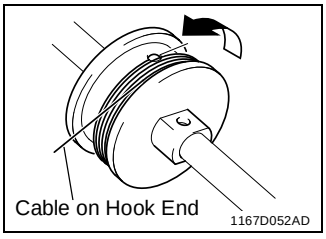
(10) Winding of the Scanner Drive Cables



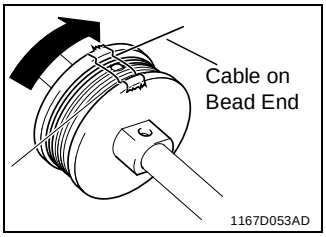


Front

1. Position the round bead of the Scanner Drive Cable in the pulley as shown.

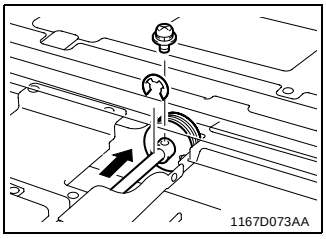


2. Wind the hook end of the Scanner Drive Cable two turns counterclockwise from the rear side to the front.

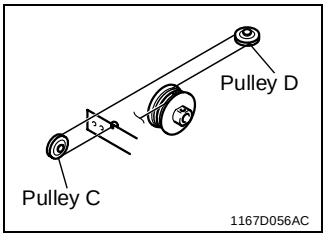


3. Wind the bead end of the cable four turns clockwise from the front to the rear. Then, secure the cable with tape.

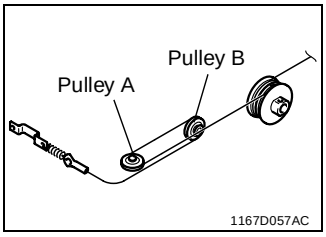
NOTE
Make sure that no part of the cable rides on the other.



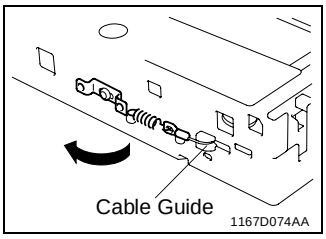
4. Slide the pulley to the front and install one mounting screw and one E-ring.



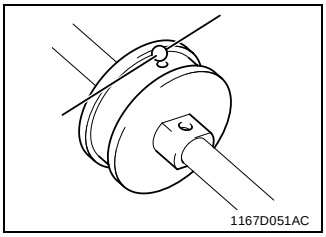
5. Wind the bead end of the cable around pulley D and pulley C, then hook the bead onto the Adjustable Anchor.



6. Wind the hook end of the cable around pulley A and pulley B.

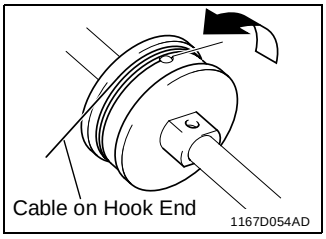


7. Fit the hook end of the cable into the groove in the Cable Guide and hook the spring.

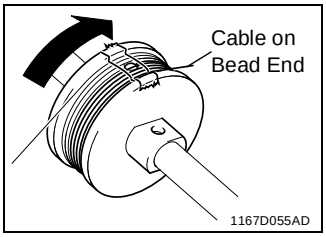


Rear

8. Position the round bead of the Scanner Drive Cable in the pulley as shown.

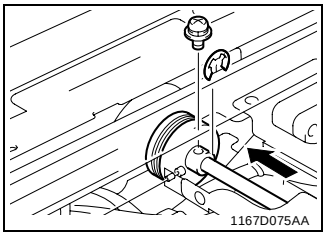


9. Wind the hook end of the cable two turns counter-clockwise from the front to the rear.

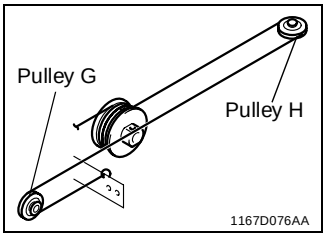


10. Wind the bead end of the cable four turns clockwise from the rear to the front. Then, secure the cable with tape.

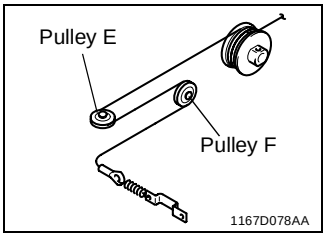
NOTE
Make sure that no part of the cable rides on the other.



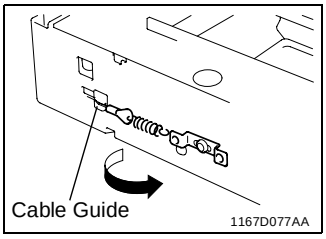
11. Slide the pulley toward the rear and install one mounting screw and one E-ring.



12. Wind the bead end of the cable around pulley H and pulley G and hook the bead onto the Adjustable Anchor.



13. Wind the hook end of the cable around pulley E and pulley F.



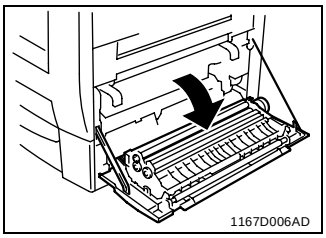
14. Fit the hook end of the cable into the groove in the Cable Guide and hook the spring.

15. Peel off the tape from the pulleys at the front and rear.
16. Mount the Scanner.
17. Mount the Original Size Detection Sensor.
18. Reinstall the Left IR Cover.
19. Reinstall the Original Glass and ADF Glass Assy.
20. Perform the Focus-Positioning of the Scanner and 2nd/3rd Mirrors Carriage. (For details, see ADJUSTMENT.)

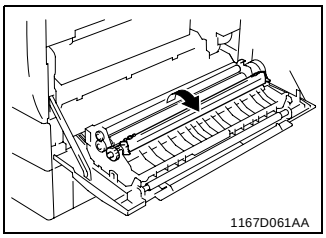
NOTE
Whenever the Scanner Drive Cables have been removed, be sure to make the following adjustment: CD of Zoom Adjust (IR).

2-5. IMAGE TRANSFER SECTION

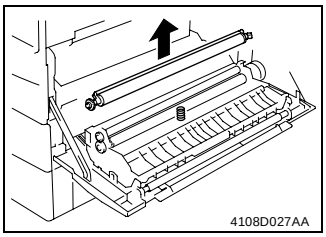
(1) Removal of the Image Transfer Roller



1. Open the Side Cover.



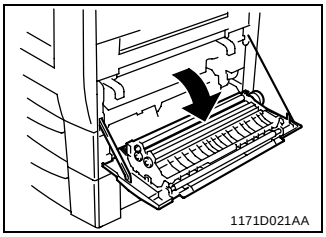
2. Raise the Image Transfer Guide Plate.



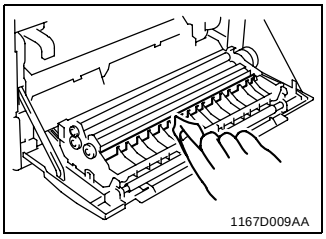
3. Remove the Image Transfer Roller and replace it.

NOTE
Do not touch the surface of the Image Transfer Roller directly with bare hands.

(2) Cleaning of the Comb Electrode



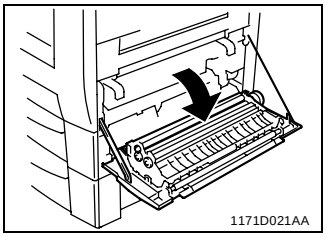
1. Open the Side Cover.



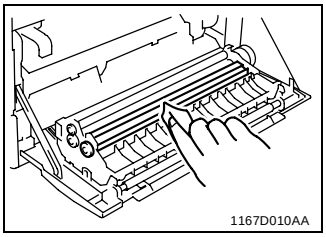
2. Using a soft cloth dampened with alcohol, wipe the Comb Electrode.

NOTES
- *Make sure the alcohol does not touch the surface of the Image Transfer Roller.*
- *When wiping the Comb Electrode, make sure the cloth is not caught by the ends of the combs.*

(3) Cleaning of the Pre-Image Transfer Guide Plate



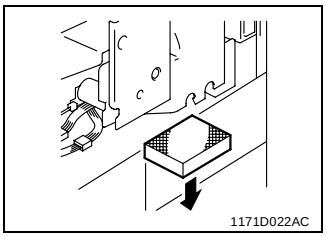
1. Open the Side Cover.



2. Using a soft cloth dampened with alcohol, wipe the Pre-Image Transfer Guide Plate.

NOTE
Make sure the alcohol does not touch the surface of the Image Transfer Roller.

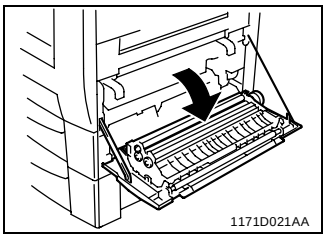
(4) Replacement of the Ozone Filter



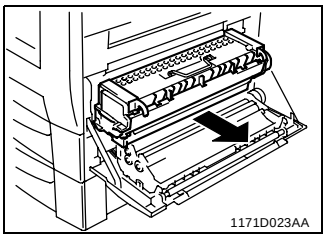
1. Remove the Rear Lower Cover.
2. Pull out the Ozone Filter and replace it.

2-6. DEVELOPING SECTION

(1) Removal of the Imaging Cartridge



1. Open the Side Cover.

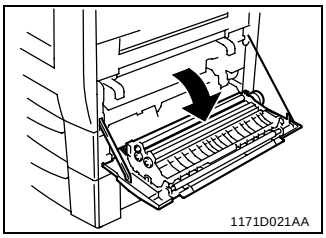


2. Holding onto the green handles, slide the Imaging Cartridge part of the way out.
3. Then grasp the handle on top of the cartridge and pull the cartridge out.

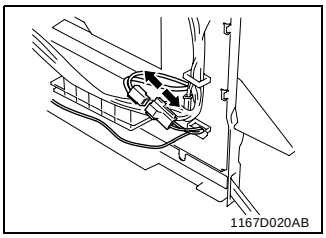
NOTE
When installing the Imaging Cartridge, push it all the way into the machine.
If the cartridge is not properly installed, the PC Drum protective shutter of the cartridge may not be opened or may even be damaged.

2-7. FUSING SECTION

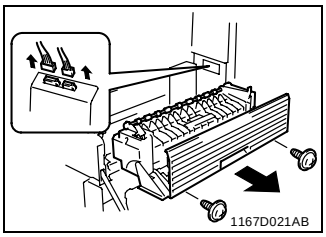
(1) Removal of the Fusing Unit



1. Open the Side Cover.

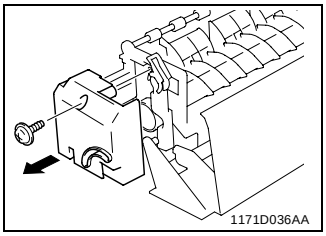


2. Remove the Front Cover.
3. Unplug one connector at the front.

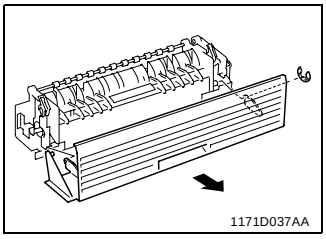


4. Open the Exit Cover and unplug two connectors in the rear.
5. Close the Exit Cover and remove two screws and the Fusing Unit.

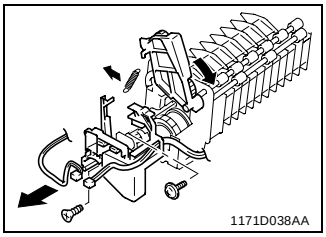
(2) Removal of the Fusing Roller Heater Lamp, Fusing Right Roller, Fusing Left Roller, Fusing Roller Thermistor, Fusing Roller Thermostat, and Fusing Roller Heater Lamp Fuse



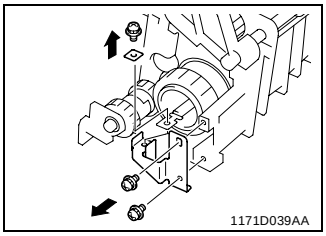
1. Open the Exit Cover.
2. Remove one screw and the Fusing Front Cover.



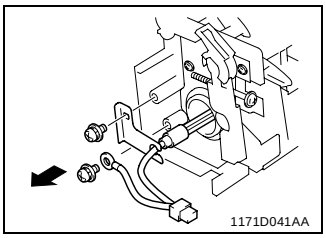
3. Snap off one E-ring and remove the Exit Cover.



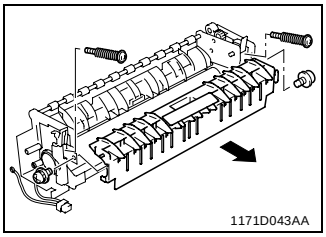
4. Unhook one spring to free the Idle Lever.
5. Remove two harnesses.
6. Remove two screws and the Rear Cover.



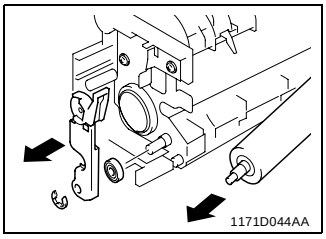
7. Remove three screws and the rear Lamp Holder.



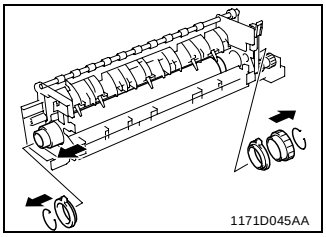
8. Remove one screw and the front Lamp Holder.
9. Remove one screw and the Fusing Roller Heater Lamp.



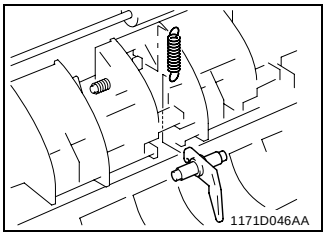
10. Remove two screws and the Fusing Rear Guide Assy.
11. Remove two pressure springs.



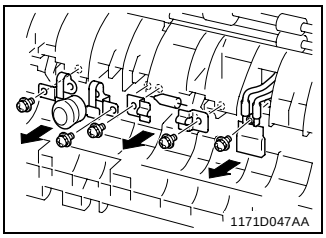
12. Snap off one E-ring and remove the front Misfeed Clearing Lever Assy and bearing.
13. Remove the Fusing Right Roller.



14. Snap off two retaining rings.
15. Remove one gear and two bushings.
16. Remove the Fusing Left Roller.



NOTE
When the Fusing Left Roller is removed, it can cause the spring to come off the Separator Finger. After the Fusing Left Roller has later been reinstalled, be sure to hook the spring onto the Separator Finger.

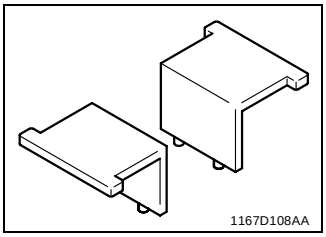


17. Remove one screw and the Fusing Roller Thermistor.
18. Remove two screws and the Fusing Roller Heater Lamp Fuse.
19. Remove two screws and the Fusing Roller Thermostat.

3 ADJUSTMENT

3-1. ADJUSTMENT JIGS AND TOOLS USED

1. Scanner/Mirrors Carriage Positioning Jigs

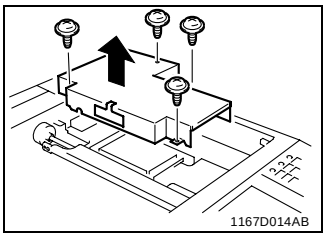


3-2. ADJUSTMENT REQUIREMENT LIST

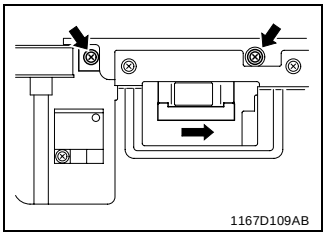
Adjustment Item	Requirements	Adjustment Point	Ref. Page
Touch Panel Adj.	Automatically adjusted	Control Panel	D-32
Original Size Detecting Sensor Adjustment	↑	↑	D-33
Loop Adjustment	—	↑	D-34
Edge Erase			
Leading	—	↑	D-35
Trailing	—	↑	D-36
Right/Left	—	↑	D-37
Registration (CD) (Printer)	10 ± 2.0 mm	↑	D-38
Registration (FD) (Printer)	↑	↑	D-40
Registration (IR)			
CD	↑	↑	D-42
FD	↑	↑	D-44
Zoom Adjust (IR)			
CD	200 ±1.0 mm	↑	D-46
FD	300 ±1.5 mm	↑	D-48
IR-Erasure Width	—	↑	D-50

3-3. ADJUSTMENT OF BELT TENSION

- Adjustment of the Scanner Motor Timing Belt



1. Remove the Original Glass.
2. Remove four screws and the Cover.



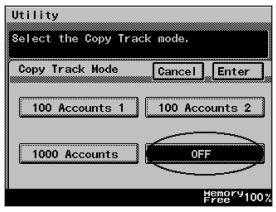
3. Loosen the two screws that secure the Scanner Motor. Using a bar tension gage, pull the motor to the right with a tension of 1000 g ±50 g and, at the same time, tighten the mounting screws.

NOTE
After the adjustment, turn the timing belt to check that the belt teeth are in mesh with the pulley grooves.

3-4. TEST PRINT

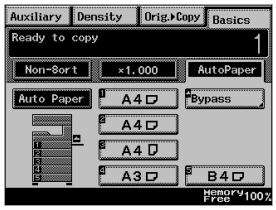
NOTES
This function is used to make the following electrical and image adjustments:
- *Registration (CD) (Printer)*
- *Registration (FD) (Printer)*
- *Registration (IR)*
- *Zoom Adjust (IR)*

◎ Adjustment Procedure



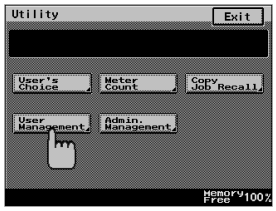
1171D026CA

1. Check that “Copy Track Mode” of “Copy Track” under “Admin. Management” available from “Utility” is “OFF.”



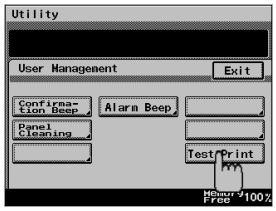
1171D027CA

2. Select the paper source for the test print.



1171D028CA

3. Press the Utility key on the control panel and touch [User Management].



1171D029CA

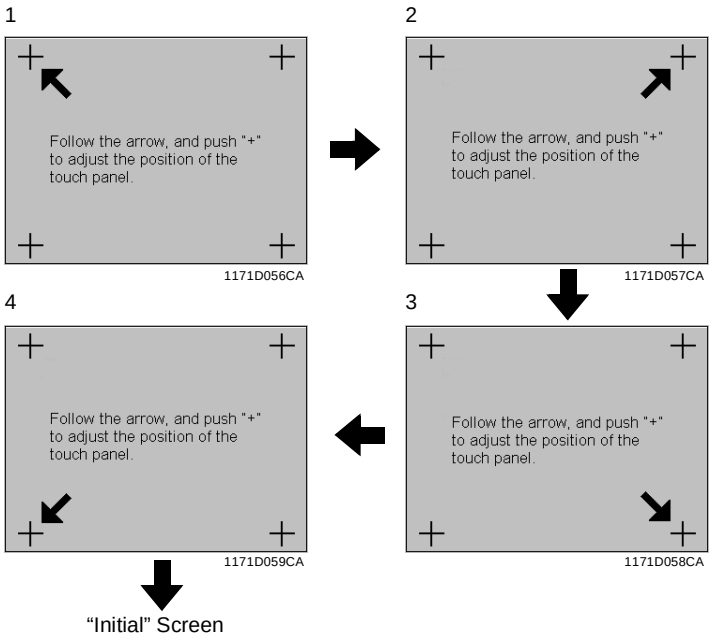
4. Touch [Test Print] to produce a test pattern.

3-5. ELECTRICAL/IMAGE ADJUSTMENT

(1) Touch Panel Adj.

NOTE
Make this adjustment after either of the following procedures have been performed:
- *Memory Clear*
- *Control Panel replacement*

◎ Adjustment Procedure
1. Call the Initial mode to the screen. (For details, see SWITCHES ON PWBs, TECH. REP. SETTINGS.)
2. Touch [Touch Panel Adj.].



3. Touch + on screen 1.

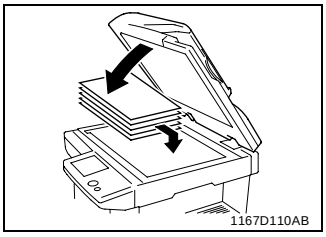
NOTE
At this time, ensure that the very center of "+" is touched using the tip of a ballpoint pen or similar device.

4. Touch + on screen 2.
5. Touch + on screen 3.
6. Touch + on screen 4.

(2) Original Size Detecting Sensor Adjustment (F7-1)

NOTE
Make this adjustment after any of the following procedures have been performed:
- *Memory Clear*
- *A faulty original size detection occurs*
- *Replacement of the CCD Unit and Scanner parts (including the Exposure Lamp)*
- *RAM Board replacement*

◎ Adjustment Procedure



1. Stack five sheets of blank A3 or 11" × 17" paper on the Original Glass and lower the Original Cover.
2. Call the Tech. Rep. mode to the screen.
3. Touch [Function] to call the Function menu.
4. Touch F7-1 Original Size Detecting Sensor Adjustment.
5. Press the Start key to run the Original Size Detecting Sensor Adjustment function.

NOTE
The Start key remains lit up orange while this function is being run and lights up green as soon as the sequence is completed.

(3) Loop Adjustment

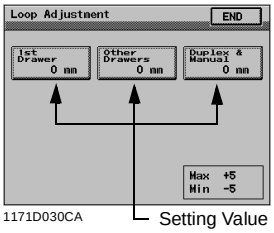
Requirement
Adjust so that a correct loop is formed before the Synchronizing Rollers when paper is fed through.

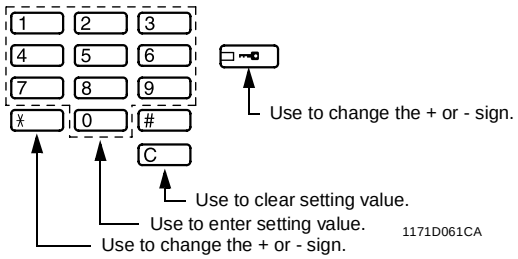
Adjust Mode	Setting Value
Loop Adjustment	-5 to +5

NOTE
This adjustment is to be made when any of the following symptoms occurs: variations in the amount of print leading edge void, paper skew, and misfeed.

◎ Adjustment Procedure
1. Call the Tech. Rep. mode to the screen.
2. Touch [Tech. Rep. Choice], then [Printer].
3. Touch [Loop Adjustment] to enter the Loop Adjustment mode.
4. Select the paper source for which the adjustment is to be made.
5. Press the Clear key to clear the current setting.
6. Enter the new setting value from the 10-Key Pad.

Setting Instructions
Change the setting value as necessary until there are no variations in the amount of void image along the leading edge, skewed feeding, dog-ear, or misfeed.





7. Touch the [END] key to validate the setting value.

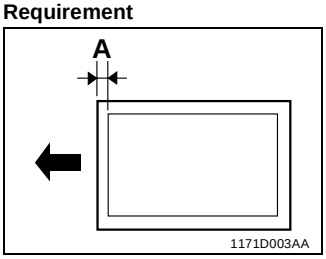
Caution
Be sure to touch the END key before returning to normal operation mode. If the Panel Reset Key is used, the previous setting remains valid.

8. Perform the same steps to adjust for the other paper sources.

(4) Edge Erase

1. Leading

Requirement



Adjust so that the erase width on the leading edge falls within the range of 0 to 5 mm.

Adjust Mode	Setting Range
Edge Erase/Leading	0 to 5

NOTE

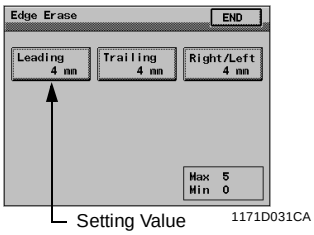
This adjustment must be made when the PH Unit has been replaced and after Registration (CD/FD) (Printer) has been made.

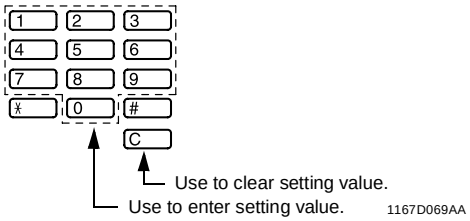
◎ Adjustment Procedure

1. Call the Tech. Rep. mode to the screen.
2. Touch [Tech. Rep. Choice], then [Printer].
3. Touch [Edge Erase] and then [Leading] to enter the Leading Edge Erase adjustment mode.
4. Press the Clear key to clear the current setting.
5. Enter the new setting value from the 10-Key Pad.

Setting Instructions

To make the edge erase width smaller, decrease the setting value.
To make the edge erase width greater, increase the setting value.





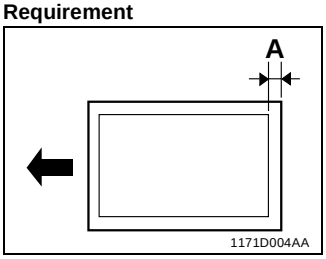
6. Touch the [END] key to validate the setting value.

Caution

Be sure to touch the END key before returning to normal operation mode. If the Panel Reset Key is used, the previous setting remains valid.

2. Trailing

Requirement



Adjust so that the erase width on the trailing edge falls within the range of 0 to 5 mm.

Adjust Mode	Setting Range
Edge Erase/Trailing	0 to 5

NOTE

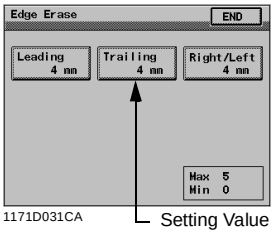
This adjustment must be made when the PH Unit has been replaced and after Registration (CD/FD) (Printer) has been made.

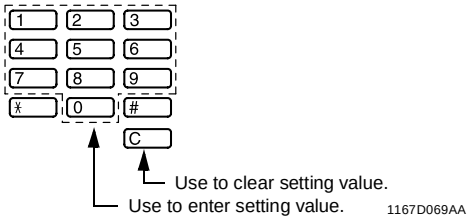
◎ Adjustment Procedure

1. Call the Tech. Rep. mode to the screen.
2. Touch [Tech. Rep. Choice], then [Printer].
3. Touch [Edge Erase] and then [Trailing] to enter the Trailing Edge Erase adjustment mode.
4. Press the Clear key to clear the current setting.
5. Enter the new setting value from the 10-Key Pad.

Setting Instructions

To make the edge erase width smaller, decrease the setting value.
To make the edge erase width greater, increase the setting value.





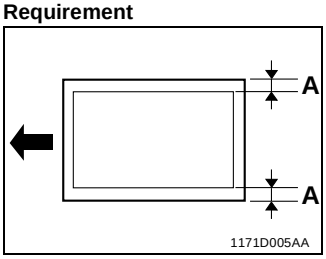
6. Touch the [END] key to validate the setting value.

Caution

Be sure to touch the END key before returning to normal operation mode. If the Panel Reset Key is used, the previous setting remains valid.

3. Right/Left

Requirement



Adjust so that the erase width on the right/left edge falls within the range of 0 to 5 mm.

Adjust Mode	Setting Range
Edge Erase/Right/Left	0 to 5

NOTE

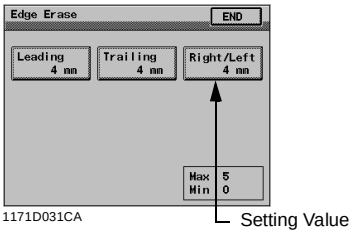
This adjustment must be made when the PH Unit has been replaced and after Registration (CD) (Printer) have been made.

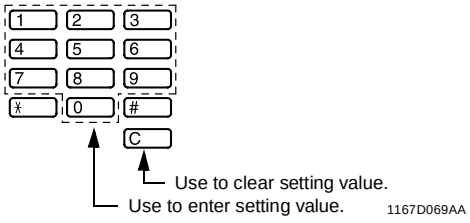
◎ Adjustment Procedure

1. Call the Tech. Rep. mode to the screen.
2. Touch [Tech. Rep. Choice], then [Printer].
3. Touch [Edge Erase] and then [Right/Left] to enter the Right/Left Edge Erase adjustment mode.
4. Press the Clear key to clear the current setting.
5. Enter the new setting value from the 10-Key Pad.

Setting Instructions

To make the edge erase width smaller, decrease the setting value.
To make the edge erase width greater, increase the setting value.





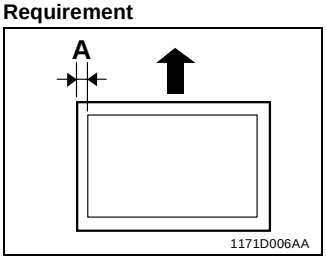
6. Touch the [END] key to validate the setting value.

Caution

Be sure to touch the END key before returning to normal operation mode. If the Panel Reset Key is used, the previous setting remains valid.

(5) Registration (CD) (Printer)

Requirement



Adjust so that width A on the test pattern output falls within the following range.

Specification	Adjust Mode	Setting Range
1-Sided: 10 ±2.0 mm 2-Sided: 10 ±3.0 mm	Registration (CD)	-4.0 to +4.0

NOTE

This adjustment must be made when the PH Unit has been replaced and, for 2-sided, after Registration (CD) (Printer) for each paper source for 1-sided and Registration (FD) (Printer) have been made.

◎ Adjustment Procedure

1. Produce a test pattern. (For details, see 3-4. TEST PRINT.)
2. 1-Sided: Check to see if width A on the test pattern meets the specifications.
   2-Sided: Using the test pattern output as the original, make an ordinary 2-sided copy. Check to see if width A on the second side of the 2-sided copy meets the specifications.

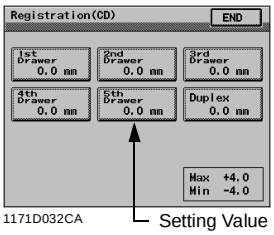
   If width A falls outside the specified range, perform these steps to make the adjustment.

3. Call the Adjust mode to the screen.
4. Touch [Printer] and [Registration (CD)], in that order.
5. Select the paper source for which the adjustment is to be made.
6. Press the Clear key to clear the current setting.
7. Enter the new setting value from the 10-Key Pad.

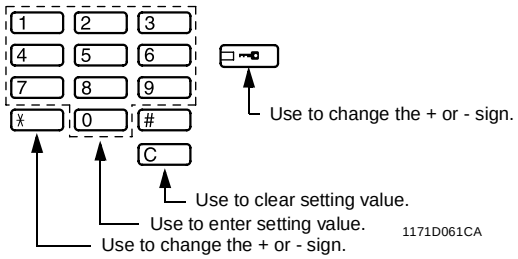
Setting Instructions

If width A is wider than specifications, make the setting value smaller than the current one.
If width A is narrower than specifications, make the setting value greater than the current one.

✻ If a single adjustment procedure does not successfully bring width A into the specified range, try another setting value.



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8. Touch the [END] key to validate the setting value.

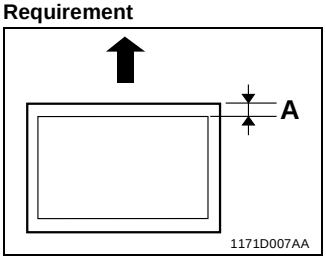
Caution

Be sure to touch the END key before returning to normal operation mode. If the Panel Reset Key is used, the previous setting remains valid.

9. Perform the same steps to adjust for the other paper sources.

(6) Registration (FD) (Printer)

Requirement



Adjust so that width A on the test pattern output falls within the following range.

Specification	Adjust Mode	Setting Range
10 ±2.0 mm	Registration (FD)	-19 to +19

NOTE

This adjustment must be made when the PH Unit has been replaced and after Registration (CD) (Printer) has been made.

◎ Adjustment Procedure

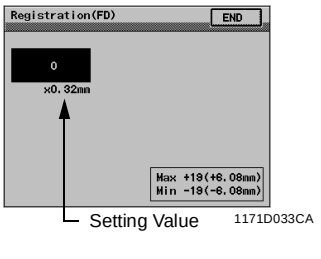
1. Produce a test pattern. (For details, see 3-4. TEST PRINT.)
2. Check to see if width A on the test pattern meets the specifications.
   If width A falls outside the specified range, perform these steps to make the adjustment.

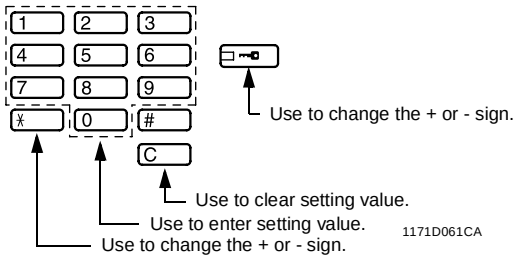
3. Call the Adjust mode to the screen.
4. Touch [Printer] and [Registration (FD)], in that order.
5. Select the paper source for which the adjustment is to be made.
6. Press the Clear key to clear the current setting.
7. Enter the new setting value from the 10-Key Pad.

Setting Instructions

If width A is wider than specifications, make the setting value smaller than the current one. If width A is narrower than specifications, make the setting value greater than the current one.

✻ If a single adjustment procedure does not successfully bring width A into the specified range, try another setting value.





8. Touch the [END] key to validate the setting value.

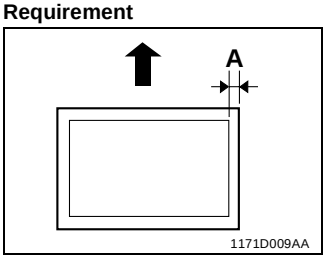
Caution

Be sure to touch the END key before returning to normal operation mode. If the Panel Reset Key is used, the previous setting remains valid.

(7) Registration (IR)

1. CD

Requirement



Place the test pattern output after the adjustments of Registration (CD and FD) (Printer) have been completed on the Original Glass and make a copy of it. Adjust so that width A on the test pattern copy falls within the following range.

Specification	Adjust Mode	Setting Range
10 ±2.0 mm	Registration (CD)	-127 to +127

NOTE

This adjustment must be made when the PH Unit has been replaced and after the adjustments of Registration (CD and FD) (Printer) and CD of Zoom Adjust (IR) have been made.

◎ Adjustment Procedure

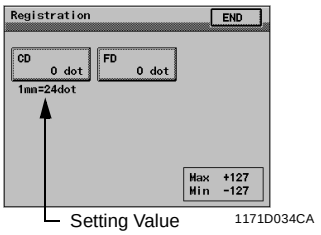
1. After the adjustments of Registration (CD and FD) (Printer) and CD of Zoom Adjust (IR) have been completed, produce a test pattern. (For details, see 3-4. TEST PRINT.)
2. Place the test pattern output on the Original Glass and make a copy of it.
3. Check to see if width A on the test pattern copy meets the specifications.
   If width A falls outside the specified range, perform these steps to make the adjustment.

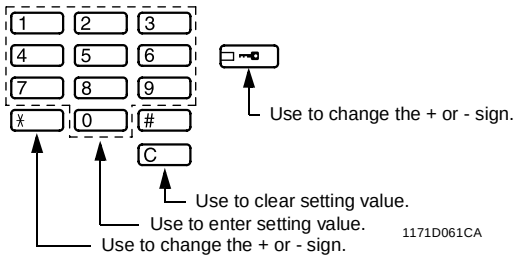
4. Call the Adjust mode to the screen.
5. Touch [IR], [Registration], and [CD], in that order.
6. Press the Clear key to clear the current setting.
7. Enter the new setting value from the 10-Key Pad.

Setting Instructions

If width A is wider than specifications, make the setting value smaller than the current one.
If width A is narrower than specifications, make the setting value greater than the current one.

✻ If a single adjustment procedure does not successfully bring width A into the specified range, try another setting value.





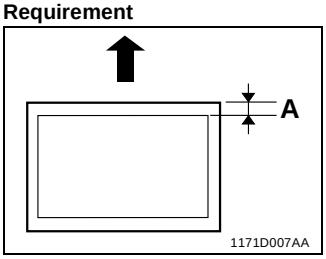
8. Touch the [END] key to validate the setting value.

Caution

Be sure to touch the END key before returning to normal operation mode. If the Panel Reset Key is used, the previous setting remains valid.

2. FD

Requirement



Place the test pattern output after the adjustments of Registration (CD and FD) (Printer) have been completed on the Original Glass and make a copy of it. Adjust so that width A on the test pattern copy falls within the following range.

Specification	Adjust Mode	Setting Range
10 ±2.0 mm	Registration (FD)	-127 to +127

NOTE
This adjustment must be made when the PH Unit has been replaced and after the adjustments of Registration (CD and FD) (Printer) and FD of Zoom Adjust (IR) have been made.

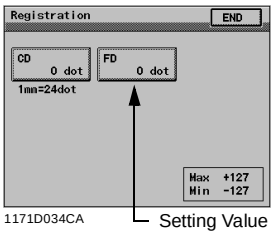
◎ Adjustment Procedure
1. After the adjustments of Registration (CD and FD) (Printer) and FD of Zoom Adjust (IR) have been completed, produce a test pattern. (For details, see 3-4. TEST PRINT.)
2. Place the test pattern output on the Original Glass and make a copy of it.
3. Check to see if width A on the test pattern copy meets the specifications.
   If width A falls outside the specified range, perform these steps to make the adjustment.

4. Call the Adjust mode to the screen.
5. Touch [IR], [Registration], and [FD], in that order.
6. Press the Clear key to clear the current setting.
7. Enter the new setting value from the 10-Key Pad.

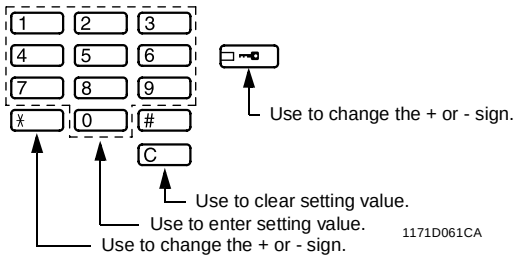
Setting Instructions

If width A is wider than specifications, make the setting value smaller than the current one.
If width A is narrower than specifications, make the setting value greater than the current one.

✻ If a single adjustment procedure does not successfully bring width A into the specified range, try another setting value.



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8. Touch the [END] key to validate the setting value.

Caution

Be sure to touch the END key before returning to normal operation mode. If the Panel Reset Key is used, the previous setting remains valid.

(8) Zoom Adjust (IR)

1. CD

Requirement

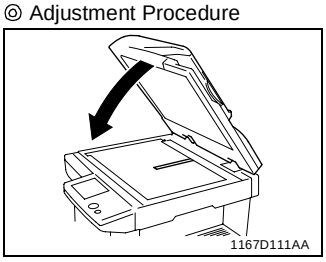
1. The difference should be within ±1.0% of the actual length.
2. Adjust so that the following specifications are satisfied with a scale length of 300 mm.

Zoom Ratio	Specification	Adjust Mode	Setting Range
Full size (×1.000)	300 ±3.0 mm	Zoom Adjust (CD)	0.990 to 1.010

NOTE

This adjustment must be made when the Scanner Drive Cables have been replaced and after the adjustments of Registration (CD and FD) (Printer) have been made.

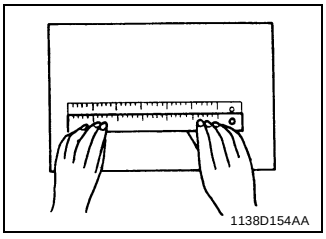
◎ Adjustment Procedure



1. Place a scale in parallel with the Original Width Scale and make a copy. (Note that the scale is perpendicular to the Original Length Scale.)

✻ Use the full size (×1.000) mode and A3 or 11" × 17" paper.

✻ If the scale is of plastic and transparent, place a blank sheet of paper over it.



2. Measure the length of the scale on the copy to find the difference.

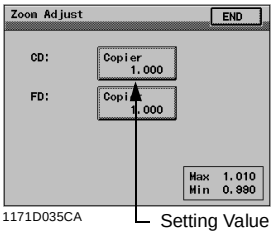
✻ If the difference is outside the specification, adjust by following the procedure shown below.

3. Call the Adjust mode to the screen.
4. Touch [IR], [Zoom Adjust], and [CD], in that order.
5. Press the Clear key to clear the current setting.
6. Enter the new setting value from the 10-Key Pad.

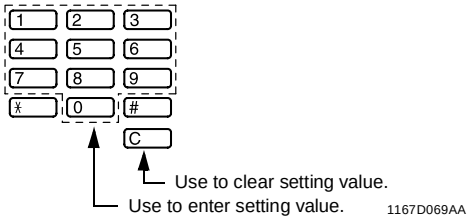
Setting Instructions

If the scale on the copy is longer than the actual scale, decrease the setting value.
If the scale on the copy is shorter than the actual scale, increase the setting value.

✻ If the measurement does not fall within the specifications through one setting, try another setting.



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7. Touch the [END] key to validate the setting value.

Caution

Be sure to touch the END key before returning to normal operation mode. If the Panel Reset Key is used, the previous setting remains valid.

2. FD

Requirement

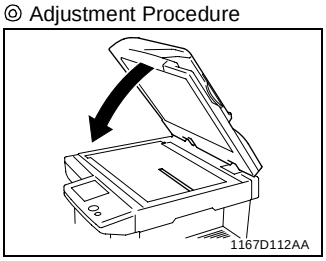
1. The difference should be within ±1.0% of the actual length.
2. Adjust so that the following specifications are satisfied with a scale length of 200 mm.

Zoom Ratio	Specification	Adjust Mode	Setting Range
Full size (×1.000)	200 ±2.0 mm	Zoom Adjust (FD)	0.990 to 1.010

NOTE

This adjustment must be made when the CCD Unit has been replaced and after the adjustments of Registration (CD and FD) (Printer) have been made.

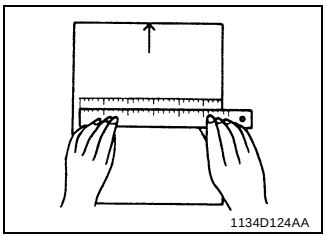
◎ Adjustment Procedure



1. Place a scale in parallel with the Original Length Scale and make a copy.

✻ Use the full size (X1.000) mode and paper with a width of 200 mm or more.

✻ If the scale is of plastic and transparent, place a blank sheet of paper over it.



2. Measure the length of the scale on the copy to find the difference.

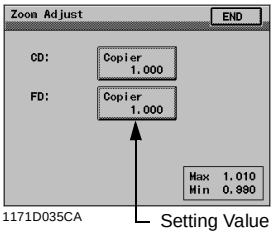
✻ If the difference is outside the specification, adjust by following the procedure shown below.

3. Call the Adjust mode to the screen.
4. Touch [IR], [Zoom Adjust], and [FD], in that order.
5. Press the Clear key to clear the current setting.
6. Enter the new setting value from the 10-Key Pad.

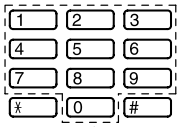
Setting Instructions

If the scale on the copy is longer than the actual scale, decrease the setting value.
If the scale on the copy is shorter than the actual scale, increase the setting value.

✻ If the measurement does not fall within the specifications through one setting, try another setting.



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Use to clear setting value.
Use to enter setting value.

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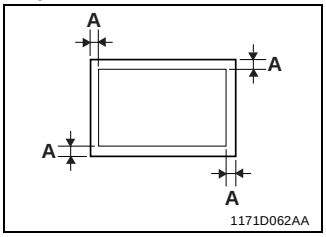
7. Touch the [END] key to validate the setting value.

Caution

Be sure to touch the END key before returning to normal operating mode. If the Panel Reset Key is used, the previous setting remains valid.

(9) IR-Erasure Width

Requirement



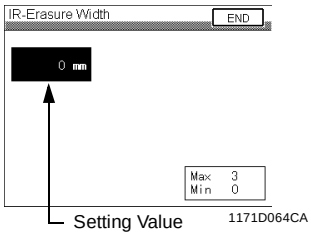
Set so that the erase width along four edges of the paper falls within the range of 0 to 3 mm.

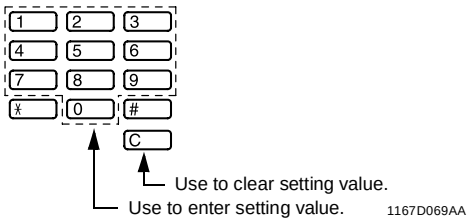
Adjust Mode	Setting Range
IR-Erasure Width	0 to 3

NOTE
This adjustment must be made when a shadow is produced from the Original Scale.

◎ Adjustment Procedure
1. Call the Tech. Rep. mode to the screen.
2. Touch [Tech. Rep. Choice].
3. Touch [IR-Erasure Width] to enter the IR-Erasure Width mode.
4. Press the Clear key to clear the current setting.
5. Enter the new setting value from the 10-Key Pad.

Setting Instructions
To make the erase width along four edges of the paper smaller, decrease the setting value.
To make the erase width along four edges of the paper greater, increase the setting value.





6. Touch the [END] key to validate the setting value.

Caution
Be sure to touch the END key before returning to normal operation mode. If the Panel Reset Key is used, the previous setting remains valid.

3-6. OTHER ADJUSTMENTS

- Focus-Positioning of the Scanner and 2nd/3rd Mirrors Carriage

NOTE

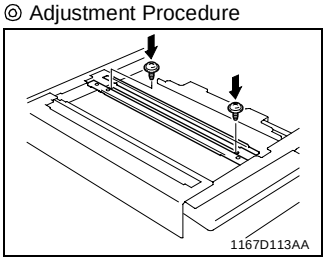
Make this adjustment after any of the following procedures has been performed:

- *After the Scanner Drive Cable has been replaced.*
- *When the Scanner Fixing Bracket has been removed from the Scanner Drive Cable.*
- *When the Scanner Drive Cable comes unwound.*

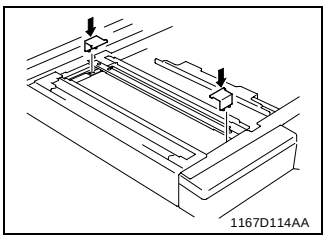
Requirement

With the Scanner fixed to the Scanner Drive Cables, there should be no gap between the Scanner/Mirrors Carriage Positioning Jig and the Scanner and also between the Scanner/ Mirrors Carriage Positioning Jig and the 2nd/3rd Mirrors Carriage.

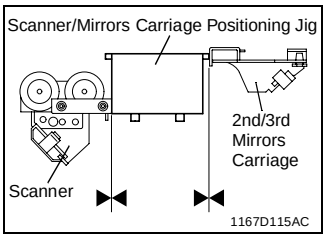
◎ Adjustment Procedure



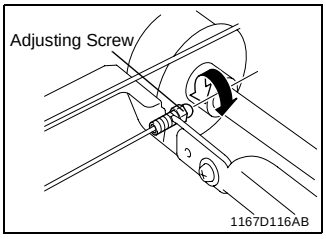
1. Remove the Exposure Lamp. (For details, see steps 1 through 7, (8) Removal of the Scanner, 2-4 OPTICAL SECTION.)
2. Temporarily loosen the set screws of the cable holding plate of the Scanner Drive Cable.



3. Fit the Scanner/Mirrors Carriage Positioning Jigs in the space between the Scanner and 2nd/3rd Mirrors Carriage.

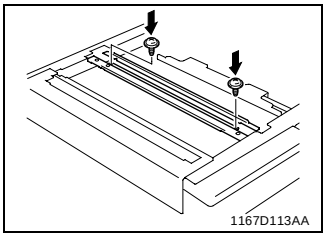


4. Press the Scanner up against the jig and 2nd/3rd Mirrors Carriage and, at the same time, tighten the set screws of the cable holding plate.

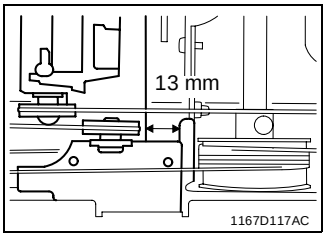


NOTE
If the Scanner does not run parallel with the 2nd/3rd Mirrors Carriage when the Scanner/Mirrors Carriage Positioning Jigs are in position, turn the adjusting screw for the rear Scanner Drive Cable as necessary.

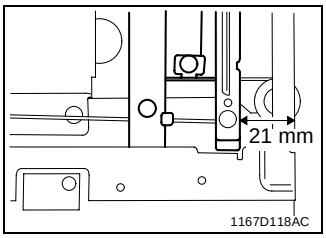
✻ If the Scanner/Mirrors Carriage Positioning Jigs are not available, follow these steps to make the adjustment.



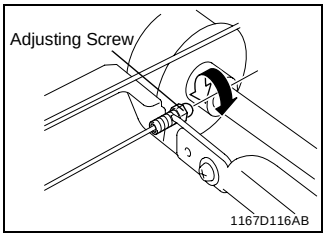
1. Temporarily loosen the set screws of the cable holding plate of the Scanner Drive Cable.



2. Obtain a distance of 13 mm between the 2nd/3rd Mirrors Carriage and rail.



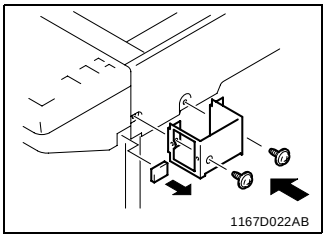
3. Secure the Scanner where it is located at a position 21 mm from the right side face.
4. Tighten the set screws of the cable holding plate.



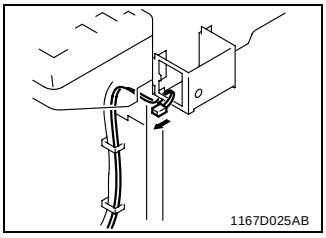
NOTE
If the Scanner does not run parallel with the 2nd/3rd Mirrors Carriage, turn the adjusting screw for the rear Scanner Drive Cable as necessary.

4 MISCELLANEOUS

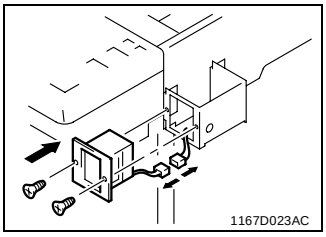
4-1. INSTALLATION OF THE KEY COUNTER SOCKET (OPTION)



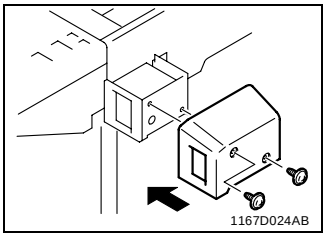
1. Remove the Front Cover.
2. Remove the knockout from the Front Upper Cover.
3. Using two screws, secure the Counter Mounting Bracket.



4. Route the harness of the Key Counter as shown.



5. Connect the Key Counter Socket connector.
6. Using two screws, secure the counter socket.



7. Using two screws, secure the Key Counter Cover.

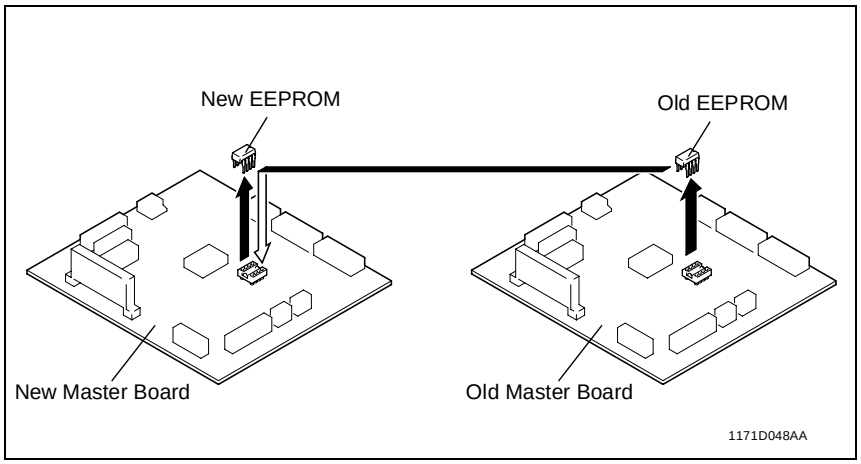
NOTE
When the Key Counter Socket is mounted, set to "ON" the "Key Counter" available from the Security mode.

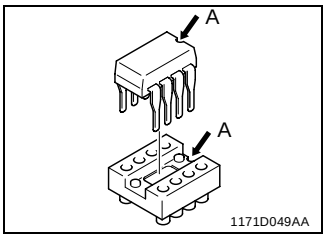
4-2. REMOUNTING THE EEPROM (IC3A)

NOTES

- *If the Imaging Cartridge is not to be replaced after the Master Board has been replaced with a new one, be sure to remount the EEPROM (IC3A) from the old to new Master Board.*
- *If the Master Board has been replaced with a new one and the EEPROM (IC3A) has not been remounted, be sure to replace the Imaging Cartridge with a new one. Because the EEPROM contains no data in this case, make settings and readjustments as necessary.*

1. Remove the Master Board. (For details, see 2-2. REMOVAL OF CIRCUIT BOARDS AND OTHER ELECTRICAL COMPONENTS.)
2. Demount the EEPROM (IC3A) from the new Master Board.
3. Demount the EEPROM (IC3A) from the old Master Board and remount it onto the new Master Board.





NOTE

Note the alignment notch on the EEPROM (IC3A) when mounting the IC.

Di350

SWITCHES ON PWBs, TECH. REP. SETTINGS



MINOLTA

17196

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1 PRECAUTIONS FOR HANDLING THE PWBs

1-1. Precautions for Transportation and Storage

- Before transporting or storing the PWBs, put them in protective conductive cases or bags so that they are not subjected to high temperature and are not exposed to direct sunlight.
- Protect the PWBs from any external force so that they are not bent or damaged.
- Once the PWB has been removed from its conductive case or bag, never place it directly on an object that is easily charged with static electricity (such as a carpet or plastic bag).
- Do not touch the parts and printed patterns on the PWBs with bare hands.

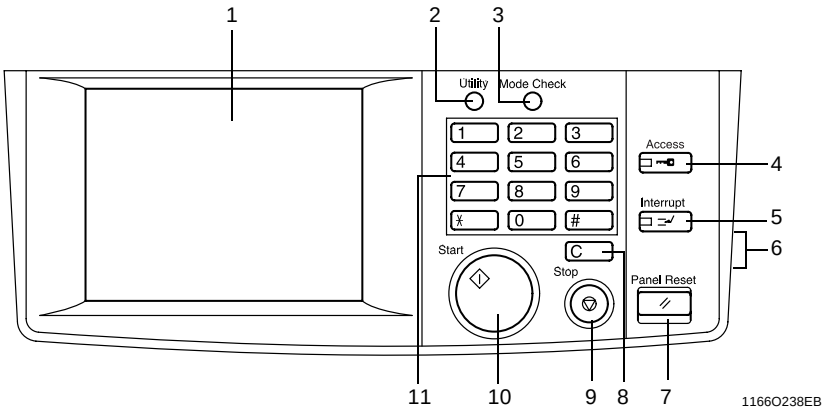
1-2. Precautions for Replacement and Inspection

- Whenever replacing the PWB, make sure that the power cord of the copier has been unplugged.
- When the power is on, the connectors should never be plugged in or unplugged.
- Use care not to strap the pins of an IC with a metal tool.
- 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 the metal part to discharge static electricity before touching the PWB.

2 CONTROL PANEL KEYS AND TOUCH PANEL

✻ For more details, see the Operator's Manual shipped with the copier.

2-1. Control Panel Keys



1. Touch Panel
- Shows various screens and messages.

2. Utility Key
- Press to show the User Mode menu.

3. Mode Check Key
- Shows the Mode Check screen on which the user can check the current copying settings.

4. Access Mode Key
- Used to enter the access number. After the access number has been entered, pressing this key will allow the user to make copies.

5. Interrupt Key
- Sets the copier into, or lets it leave, the Interrupt mode.

6. Display Contrast Knob
- Turn to vary the brightness of the Touch Panel.

7. Panel Reset Key
- Clears all settings made on the control panel, setting the copier back into the initial mode.
- Cancels currently reserved jobs.

✻ It does not clear the zoom ratios and job settings stored in memory and Interrupt mode.

8. Clear Key
- Clears the number-of-copies setting, zoom ratio, and counter count.
- Cancels the image data read.

9. Stop Key
- Press to stop a scanning cycle.
- Press to stop a print cycle.

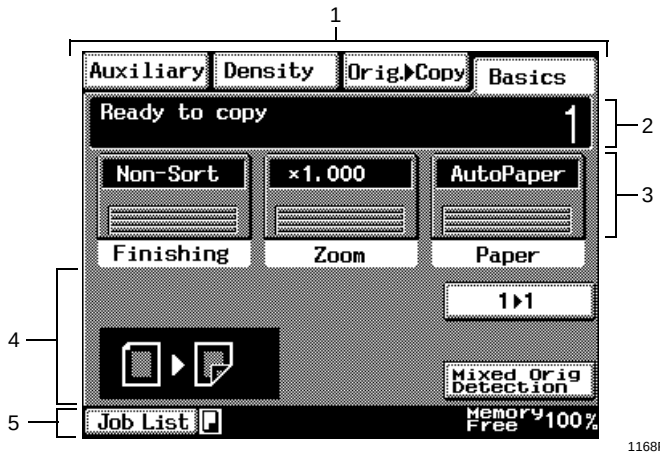
10. Start Key
- Press to start the document scanning sequence.
- Press to start a print cycle.

11. 10-key Pad
- Numeric key pad used for entering the number of copies to be made, zoom ratio, access number, and the Tech. Rep. mode settings.

2-2. Explanation of the Touch Panel

(1) Basic Screen

- The Basic screen is the initial screen that appears when the copier panel is reset or auto reset is activated.



1. Supplementary Function Key
- Selects the corresponding menu screen, either Auxiliary, Density, Orig. ▶ Copy, or Basics.

2. Message Display
- Shows the current copier status, operating instructions, caution/warning messages, and other data including the number of copies selected.

3. Basic Function Keys
- Allows the user to select the finishing, zoom ratio, and copy paper.

4. Function Display
- Shows graphic representations of the settings currently made for Orig. ▶ Copy and Finishing.

5. Status Display
- Shows what is being done with the current job and other data.

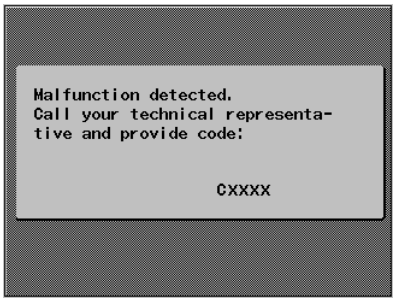
(2) Warning Screens

- The warning screen may be a malfunction display, error display, warning display, or a caution display.

<Malfunction Display>

- A malfunction display is given when trouble occurs which cannot be corrected by the user.

Example: Malfunctions that can be identified with a specific code.

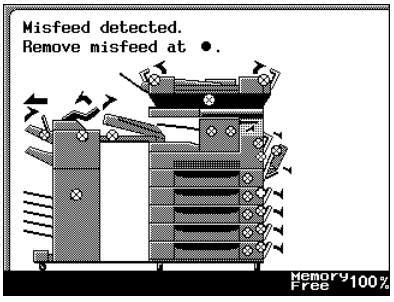


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<Error Display>

- An error display is given when trouble occurs which can be corrected by the user.

Example: Paper misfeed, toner empty, door open.

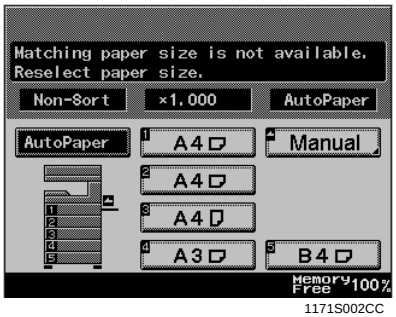


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<Warning Display>

- A warning display is given when any further copier operation will not be possible, or only a defective copy will be produced, because of erroneous or illegal panel settings or other cause.

Example: Unmatched paper size in Auto Paper.

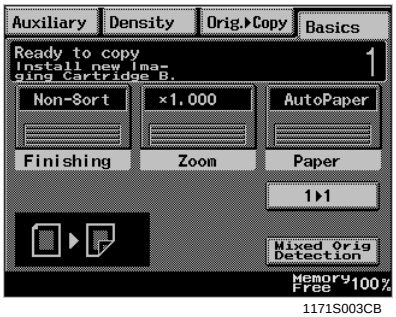


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<Caution Display>

- A caution display is given when, though further copier operation will be possible, it could result in a malfunction.

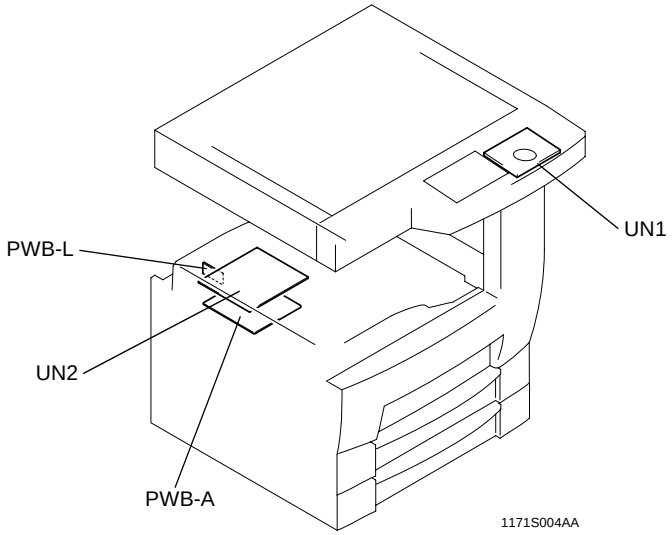
Example: Install new Imaging Cartridge.



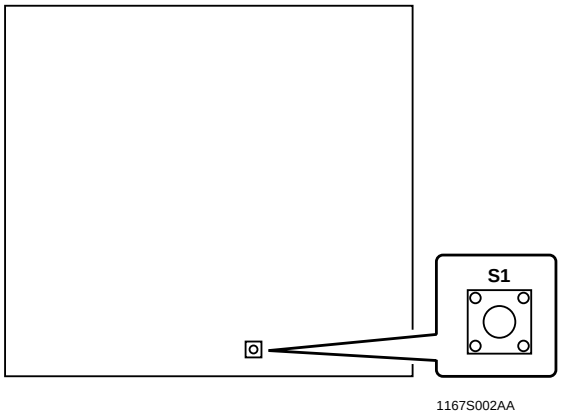
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3 FUNCTION OF SWITCHES AND OTHER PARTS ON PWBs

3-1. PWB Location

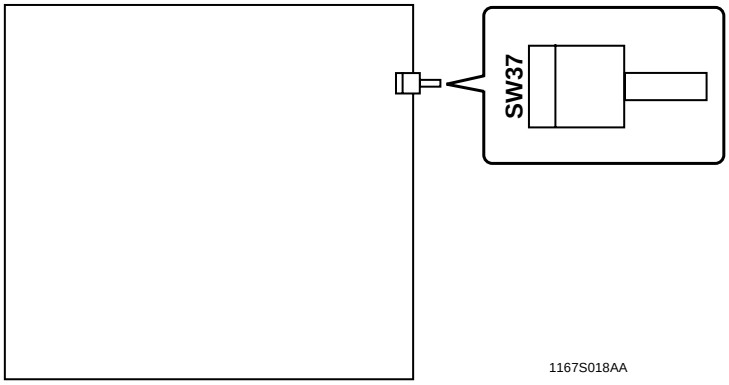


3-2. PWB-A (Master Board)



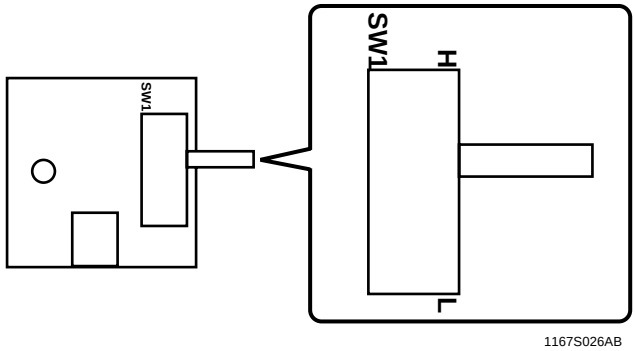
Symbol	Name	Description
S1	Test Print Switch	Used to run a test print cycle.

3-3. UN1 (Control Panel)



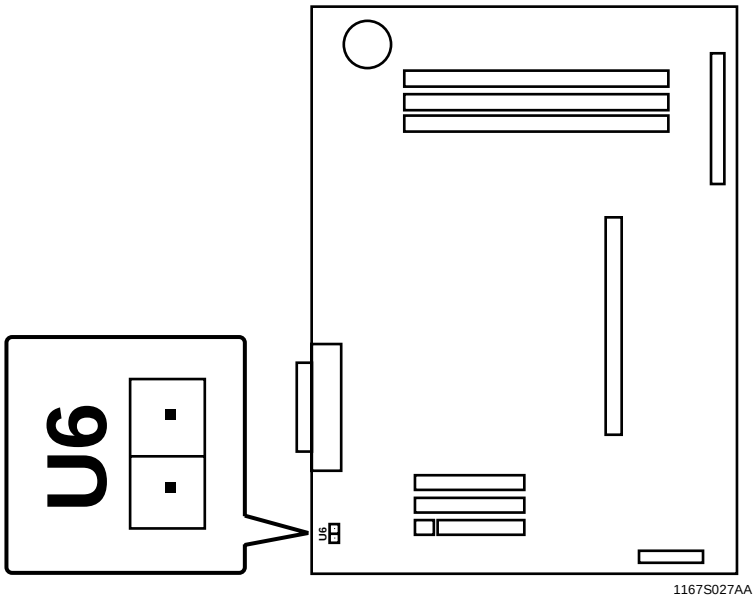
Symbol	Name	Description
SW37	Warm Restart Switch	• Used to enter the initial mode. • Used to restart the copier after a breakdown.

3-4. PWB-L (PPM Switching Board)



Symbol	Name	Description
S1	Low-Speed Mode Selecting Switch	Used to make longer the paper-to-paper intervals as a means of preventing the problem in which sheets of paper are fed out untidily when large size paper left to stand under high humidity condition is being used. ✻ Keep this switch in the H position, as it is only for special users.

3-5. UN2 (MFB Board)



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Symbol	Name	Description
U6	Forced Memory Clear	Used when it is not possible to clear RAM by warm restart.

✻ Be careful about using these pins, as closing these pins clears all data including counter data.

<Clearing Procedure>

1. Turn OFF the Power Switch.
2. Remove the Upper Cover and MFB Box Cover.
3. Close U6 and, in that condition, turn ON the Power Switch.

NOTE

Use care not to close any other circuit.

4. When the initial screen appears, turn the Power Switch OFF.
5. Open U6.

NOTE

When Forced RAM Clear has been performed, make these adjustments and settings once again in this order:

1. "Marketing Area" of "Initial mode"
2. "Memory Clear" of "Initial mode"
3. Other adjustments and settings as necessary

<Data/Conditions Cleared by Reset Switches/Pins>

Switches/Pins / Data/Conditions Cleared	Power Switch OFF/ON	Side Cover open/ close	Initial Mode			Forced RAM Clear
			Memory Clear	Total Clear	Trouble Reset	
Misfeed display	❍	❍	❍	—	❍	❍
Malfunction display (other than Fusing)	❍	❍	❍	—	—	❍
Malfunction display (all including Fusing)	—	—	❍	—	❍	❍
Erratic operation/ display	—	—	❍	—	❍	❍
User's Choice	—	—	❍	—	—	❍
Tech. Rep. Mode	—	—	❍	—	—	❍
Counter	—	—	—	❍	—	❍
RD Mode	—	—	—	❍	—	❍
Security Mode	—	—	❍	—	—	❍
Adjust Mode	—	—	—	—	—	❍

❍: Cleared (initialized) —: Not cleared

4 USER'S CHOICE MODE

- The User's Choice mode is used to make various settings according to the user's needs.

4-1. User's Choice Selection Screen



1167S009CB

4-2. User's Choice Function Setting Procedure

<Setting Procedure>

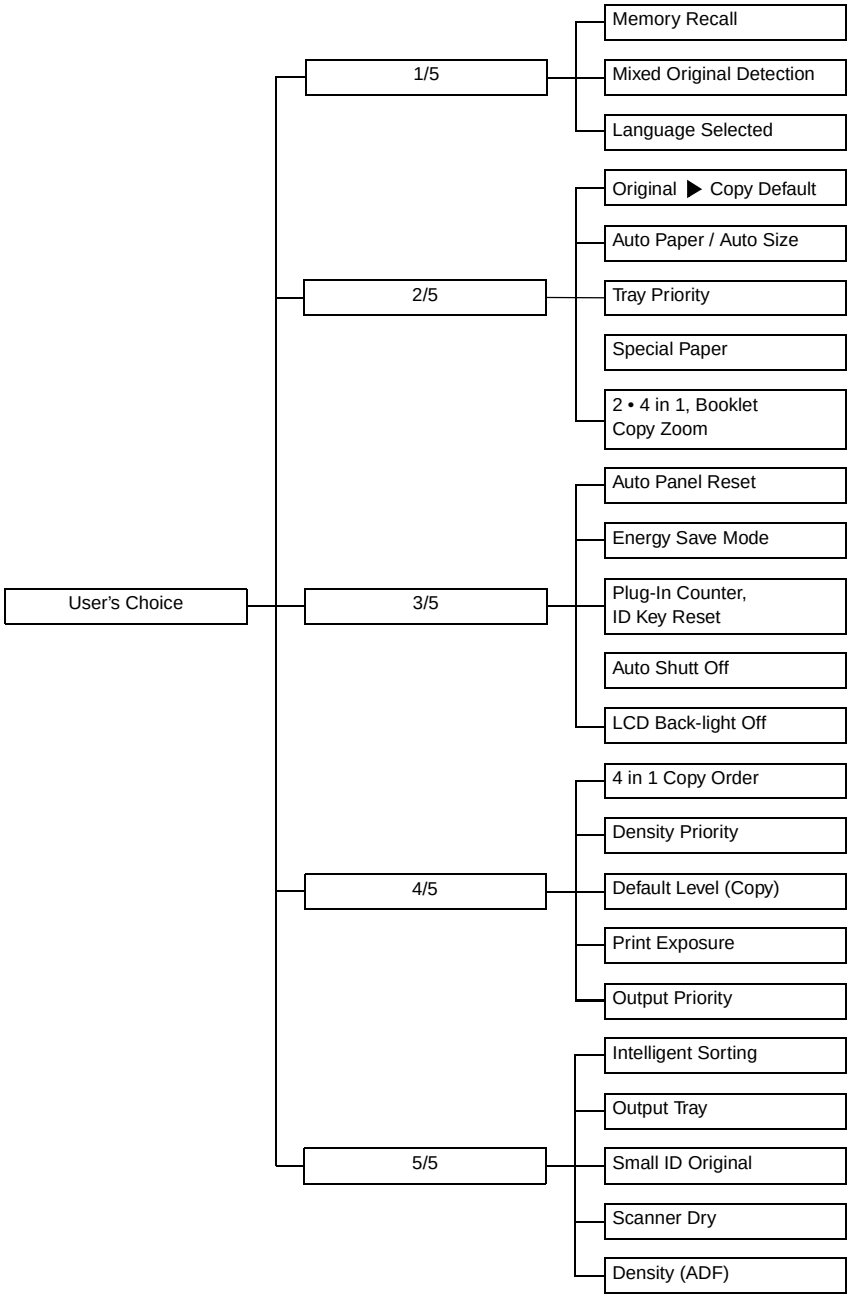
1. Press the Utility key on the control panel and then touch the "User's Choice" key.
2. Select the page number key that contains the desired function from among 1/5 through 5/5 shown at the bottom of the Touch Panel.
3. Select the function to be set and make settings as required.
4. After the settings are complete, touch the "Enter" key to validate the settings.

✻ The function selected is highlighted.

<Exiting the Mode>

- Touch [Exit] on the screen to go back to the Basic screen.

4-3. User's Choice Function Tree

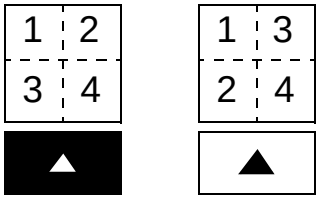


4-4. Settings in the User's Choice Mode

<table>
<tr><th>Touch Panel Display</th><th>Setting (The default is Highlighted).</th></tr>
<tr><td>Memory Recall</td><td>Select whether to enable (“ON”) or disable (“OFF”) the function that retains the image data even after the last copy paper has been fed out, allowing the user to recall the same image data.
<table><tr><td>ON</td><td>OFF</td></tr></table></td></tr>
<tr><td>Mixed Original Detection</td><td>Select whether to let the system select by default (“ON”) the Mixed Original Detection mode or not (“OFF”) when power is turned ON or the Panel Reset key pressed.
<table><tr><td>ON</td><td>OFF</td></tr></table></td></tr>
<tr><td>Language Selected</td><td>Select the language of the Touch Panel messages.
<Metric Areas>
<table><tr><td>ENGLISH</td><td>GERMAN</td><td>FRENCH</td></tr><tr><td>DUTCH</td><td>ITALIAN</td><td>SPANISH</td></tr><tr><td>PORTUGUESE</td><td>DANISH</td><td>NORWEGIAN</td></tr><tr><td>SWEDISH</td><td>FINISH</td><td>JAPANESE</td></tr></table><Inch Areas>
<table><tr><td>ENGLISH</td><td>FRENCH</td><td>SPANISH</td></tr><tr><td>JAPANESE</td></tr></table></td></tr>
</table>

<table>
<tr><th>Touch Panel Display</th><th>Setting (The default is Highlighted).</th></tr>
<tr><td>Original ▶ Copy Default</td><td>Select the type of Original ▶ Copy setting selected automatically when the copier is turned ON or Panel Reset key pressed. If “Duplex only” is selected for “Simplex/Duplex” of the “Tech. Rep. Choice” function, 1 ▶ 1 is not displayed.
<1-Sided ▶ 2-Sided>
<table><tr><td>1-Sided ▶
2-Sided</td><td>2-Sided ▶
2-Sided</td><td>1-Sided ▶
1-Sided</td></tr></table>
<1-Sided ▶ 2-Sided>
<table><tr><td>1-Sided ▶
2-Sided</td><td>2-Sided ▶
2-Sided</td></tr></table></td></tr>
<tr><td>Auto Paper/ Auto Size</td><td>Specify the default mode selected automatically when power is turned ON or the Panel Reset key pressed.
<table><tr><td>Auto Paper</td><td>Auto Size</td><td>Manual</td></tr></table></td></tr>
<tr><td>Tray Priority</td><td>Specify the paper source selected automatically.
<table><tr><td>1st Drawer</td></tr><tr><td>2nd Drawer</td></tr><tr><td>3rd Drawer</td></tr><tr><td>4th Drawer</td></tr><tr><td>5th Drawer</td></tr><tr><td>LCT</td></tr></table>✻ Manual Bypass Tray is not selectable.</td></tr>
<tr><td>Special Paper</td><td>Set up a drawer for special paper loading.
<table><tr><td>Normal</td><td>Not for 2-Sided</td></tr><tr><td>Recycled</td><td>Special</td></tr></table></td></tr>
<tr><td>2 • 4 in 1, Booklet Copy Zoom</td><td>Select whether to enable (“ON”) or disable (“OFF”) recalling a default zoom ratio for 2in1, 4in1, or Booklet Creation.
<table><tr><td>ON</td><td>OFF</td></tr></table>The default zoom ratios are as follows when “ON” has been selected.
< Metric Areas >
<table><tr><td>× 0.500 4in1</td></tr><tr><td>× 0.707 2in1/Booklet</td></tr><tr><td>× 1.414 Separation</td></tr></table>< Inch Areas >
<table><tr><td>× 0.500 4in1</td></tr><tr><td>× 0.647 2in1/Booklet</td></tr><tr><td>× 1.545 Separation</td></tr></table></td></tr>
</table>

Touch Panel Display	Setting (The default is **Highlighted**).
Auto Panel Reset	Specify the default exposure mode selected automatically when power is turned ON or the Panel Reset key pressed. 30 seconds | **1 min** | 2 min 3 min | 5 min | No Reset
Energy Save Mode	Set the time it takes the copier to enter the Energy Saver mode after a copy cycle has been completed or the last key operated. Use the 10-key Pad to set the time (15 to 240 min.). (15 to 240) **(15 min)**
Plug-In Counter, ID key Reset	Select whether to reset (“ON”) the panel or not (“OFF”) automatically when the Access Mode key is pressed or the Key Counter is unplugged. **ON** | OFF
Auto Shut Off	Select whether to turn ON or OFF the Auto Shut Off function that shuts down the copier a given period of time after a copy cycle has been completed or the last key operated. Selecting “ON” means setting the time it takes the Auto Shut Off function to be activated, that can range from 15 min. to 240 min. No Reset | (15 to 240) **(60 min)** ✻ The option of “No Reset” becomes available on the screen if “Yes” is selected for “Disable Sleep” of Utility - Admin. Management - Administrator Set.
LCD Back-light Off	Set the time it takes the LCD backlight to turn OFF after a copy cycle has been completed or the last key has been operated. (1 to 240) **(1 min)**

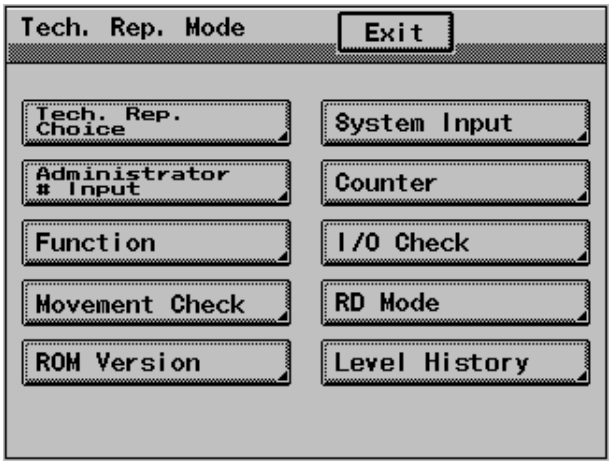
Touch Panel Display	Setting (The default is **Highlighted**).
4 in 1 Copy Order	Specify the default copying order in the 4in1 mode. 
Density Priority	Specify the default exposure mode selected automatically when power is turned ON or the panel Reset key pressed. <Density> **Auto** | Manual ✻ "Photo" of "Original Image Type" cannot be selected when "Auto" is selected. <Original Image Type> **Text** | Photo | Text/Photo
Default Level (Copy)	Auto: Select the default exposure level in the Auto Exposure mode. Manual: Set the default exposure level in the Manual Exposure mode. <Auto> Lighter | **Normal** | Darker <Manual>  Lighter ... Darker ✻ EXP. 1 (Lighter) to EXP. 9 (Darker)
Print Exposure	Set the image density level for printing. -2 | -1 | **0** | 1 | 2
Output Priority	Select the default finishing type when the copier is equipped with a Sorter or Staple Sorter. **Non-Sort** / Sort / Group Staple ✻ Staple can be combined with either Sort or Group. Hole Punch ✻ Hole Punch can be combined with any one of the functions.

<table>
<tr><th>Touch Panel Display</th><th>Setting (The default is Highlighted).</th></tr>
<tr><td>Intelligent Sorting</td><td>When the system is equipped with a finishing option and the ADF is being used, select whether to turn “ON” or “OFF” the function that automatically switches between Sort and Non-Sort according to the number of originals loaded in the ADF.
<table>
<tr><td>ON</td><td>OFF</td></tr>
</table></td></tr>
<tr><td>Output Tray</td><td>Select the output tray for each application when the system is equipped with a Job Tray or Finisher.
<Printer>
• Job Tray
<table>
<tr><td>1</td><td>2</td></tr>
</table>
• Finisher
<table>
<tr><td>1</td><td>2</td></tr>
</table>
<Copier>
<table>
<tr><td>1</td><td>2</td></tr>
</table>
✻ 1: 1st tray; 2: 2nd tray
✻ When the system is equipped with a Finisher, the option of “Copier” and the tray designation keys “1” and “2” are not displayed.</td></tr>
<tr><td>Small ID Original</td><td>Select whether to enable (“ON”) a copy cycle or not (“OFF”) when it is initiated with no original placed on the Original Glass or with an original of a small size that is not detectable by the system (smaller than A5) placed on the Original Glass.
<table>
<tr><td>ON</td><td>OFF</td></tr>
<tr><td>The copy cycle is run using the paper loaded in the default paper source.</td><td>A warning message is given and the copier inhibits the start of this copy cycle.</td></tr>
</table></td></tr>
<tr><td>Scanner Dry</td><td>Set the time-of-day to run a Scanner drying cycle.
<table>
<tr><td>Hours</td><td>Minutes</td></tr>
<tr><td>00 ~ 23</td><td>00 ~ 59</td></tr>
</table>
✻ When entering a value for Hours and Minutes and if it is a one-digit number, first enter a “0.”</td></tr>
<tr><td>Density (ADF)</td><td>Adjust the copy image density level when the Automatic Document Feeder is being used.
<table>
<tr><td>✻</td><td></td><td>When the standard original (text, etc.) is used.</td></tr>
<tr><td></td><td></td><td>To give better reproduction of a faint original.</td></tr>
</table>
✻ : Initial setting</td></tr>
</table>

5 TECH. REP. MODE

- This mode is used by the Tech. Rep. to set, check, adjust, and/or program various service functions.

5-1. Tech. Rep. Mode Menu Screen



1171S005CA

5-2. Tech. Rep. Mode Function Setting Procedure

<Setting Procedure>

1. Set the copier into the Tech. Rep. mode by the following method:

- With the “Meter Count” screen opened from the Utility menu screen, press the following keys in this order:

Stop Key ➡ 0 ➡ 0 ➡ Stop Key ➡ 0 ➡ 1

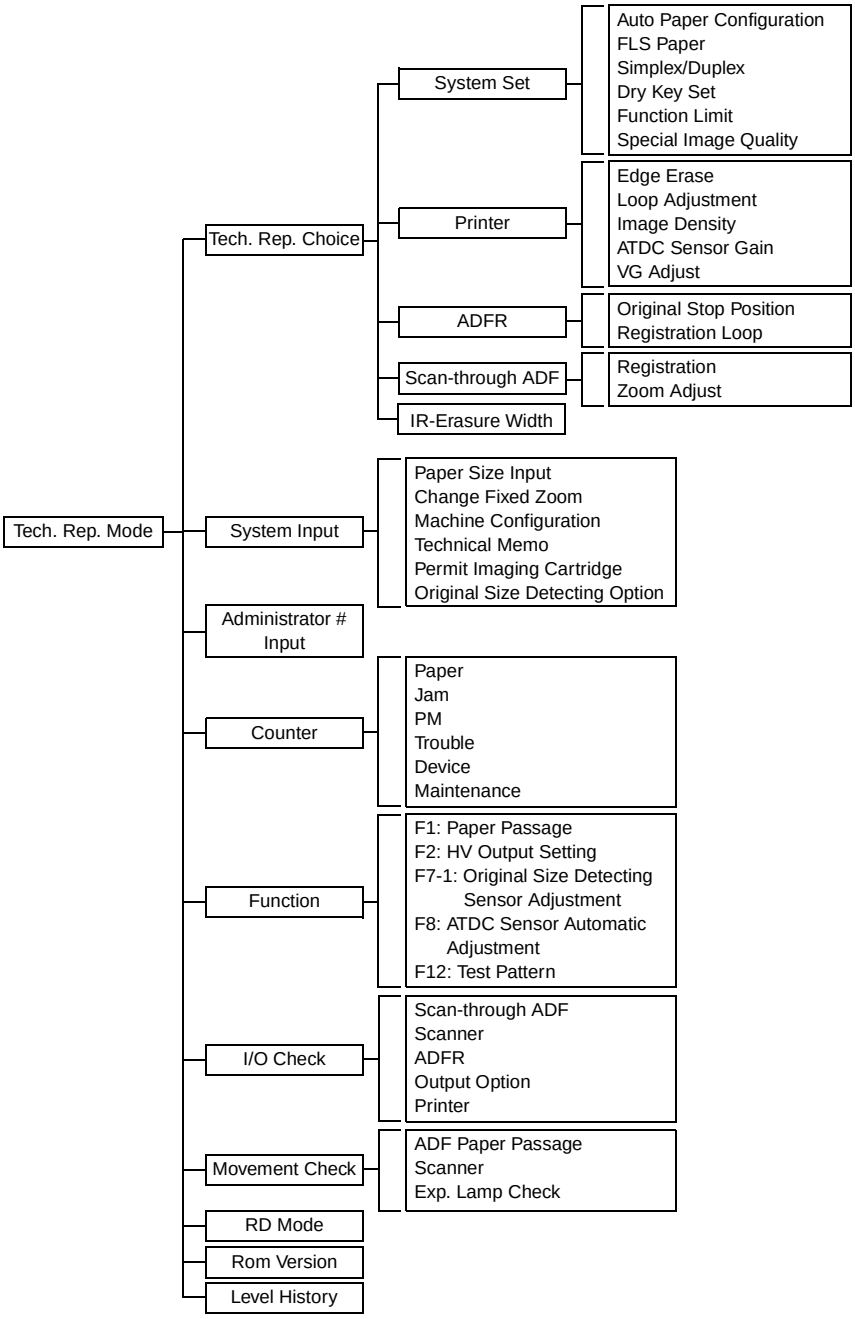
2. Select the particular Tech. Rep. mode function to be set.
3. Make the necessary settings according to the function selected.

✻ The function selected is highlighted.

<Exiting the Mode>

- Touch [Exit] on the screen to go back to the Basic screen.

5-3. Tech. Rep. Mode Setting Tree



5-4. Settings in the Tech. Rep. Mode

(1) Tech. Rep. Choice

- This function allows the Tech. Rep. to make the various settings and adjustments.

<Function>
1. System Set
2. Printer
3. ADFR
4. Scan-through ADF

<Setting Procedure>
1. Touch [Tech. Rep. Choice] to open a screen to Tech. Rep. Choice.
2. Touch the desired major category key.
3. Touch the desired sub-category key.

Tech. Rep. Mode ▶ Tech. Rep. Choice

<System Set>

<table>
<tr><th>Touch Panel Display</th><th>Setting (The default is Highlighted).</th></tr>
<tr><td>Auto Paper Configuration</td><td><Metric Areas>
Select either “Inch/Metric” or “Metric” for rounding off the original size detected.
<table>
<tr><td>Inch / Metric</td><td>The measurement is rounded to the nearest standard inch or metric size.</td></tr>
<tr><td>Metric</td><td>The measurement is rounded to the nearest standard metric size.</td></tr>
</table>
<Inch Areas>
Select either “Inch/Metric” or “Inch” for rounding off the original size detected.
<table>
<tr><td>Inch / Metric</td><td>The measurement is rounded to the nearest standard inch or metric size.</td></tr>
<tr><td>Inch</td><td>The measurement is rounded to the nearest standard inch size.</td></tr>
</table></td></tr>
<tr><td>FLS Paper</td><td>Set the size for FLS.
<table>
<tr><td>F: 330 mm
C: 203 mm</td><td>F: 330mm
C: 210mm</td><td>F: 330 mm
C: 216 mm</td><td>F: 330 mm
C: 220 mm</td></tr>
</table></td></tr>
<tr><td>Simplex/Duplex</td><td>Select whether or not to enable the setting of 1-Sided ▶ 1-Sided under Original ▶ Copy Default available from User’s Choice.
✻ If “Simplex & Duplex” is selected, 1-Sided ▶ 1-Sided becomes available as an option.
<table>
<tr><td>Display</td><td>Simplex & Duplex</td><td>Duplex Only</td></tr>
<tr><td>Description</td><td>Does not limit the options for Original ▶ Copy Default to 2-sided copying only.</td><td>Limits the options for Original ▶ Copy Default to 2-sided copying only.</td></tr>
</table></td></tr>
</table>

Tech. Rep. Mode ▶ Tech. Rep. Choice

Touch Panel Display	Setting (The default is **Highlighted**).
Dry Key Set	Select whether to display the Dry key for "User Management" of Utility. If the key is to be displayed, select whether to dry only the Scanner or both Scanner and Drum. Scanner | Scanner & Drum | **Disable**
Function Limit	Select whether to limit ("ON") the functions to be set on the control panel or not ("OFF"). ON: Enables the functions other than Orig. ▶ Copy and Auxiliary. **OFF**: Enables all functions (no Limit).
Special Image Quality	Select whether to enable the selection of Special Image Quality for "Density Priority" of User's Choice (applicable on a case-by-case basis). ✻ Touching the "✻" key on the System Set menu selects or cancels this function. ✻ Key high-lighted: The Special Image Quality key is displayed. ✻ Key not high-lighted: The Special Image Quality key is not displayed.

<Printer>

Touch Panel Display	Setting (The default is **Highlighted**).
Edge Erase	Set the erase width on the leading, trailing, right, and left edge of the image. Leading / Trailing / Right/Left: 0mm..... **4** ..... 5mm Smaller ◄——► Greater
Loop Adjustment	Set the loop length to be formed before the Synchronizing Rollers. 1st Drawer / Other Drawers / Duplex & Manual: -5mm..... **0** ..... +5mm Smaller ◄——► Greater

Tech. Rep. Mode ▶ Tech. Rep. Choice

Touch Panel Display	Setting (The default is **Highlighted**).
Image Density	Set the image density for the printer. ✻ The value set for this function becomes the central value of “Print Exposure” of User’s Choice. -2 ..... **0** ..... +4 Lighter ◄——► Darker
ATDC Sensor Gain	Current: Shows the current ATDC control voltage. Set: Set the ATDC control voltage. ✻ If the “Set” value is to be changed, be sure to record the “Current” value. ✻ The ATDC Sensor Gain value can be converted to a voltage value using the following equation. ATDC Sensor Gain = 5.1 × 2.2 × [setting value] ÷ 256 (V) 123 ..... **155** ..... 186 T/C Greater ◄——► T/C Smaller
VG Adjust	Set VG when a fog or void occurs in the image. -2 ..... **0** ..... +2 Lighter ◄——► Darker

<ADFR>

Touch Panel Display	Setting (The default is **Highlighted**).
Original Stop Position	Set the document stop position in each of the ADFR modes. 1-Sided Set / 2-Sided Set / Single Feed Set: -7 ..... **0** ..... +7 Original Width Scale end ◄——► Original Glass end ✻ The minimum setting value is -6 only for 2-Sided Set.
Registration Loop	Set the loop length to be formed in the original before the Registration Roller of ADFR. -5mm ..... **0** ..... +5mm Smaller ◄——► Greater

Tech. Rep. Mode ▶ Tech. Rep. Choice

<Scan-through ADF>

Touch Panel Display	Setting (The default is **Highlighted**).
Registration	Adjust registration in the main and sub scanning directions of the ADF. Main scaning (CD) -72 dot.....**0**..... +72 dot Smaller ◄——► Greater Sub scaning (FD) -127 dot.....**0**..... +127 dot Smaller ◄——► Greater
Zoom Adjust	Adjust the scanning zoom ratio in the main and sub scanning directions of the ADF. 0.990.....**1.000**..... 1.010 Smaller ◄——► Greater

<IR-Erasure Width>

Touch Panel Display	Setting (The default is **Highlighted**).
IR-Erasure Width	Set the forced erasure width along the four edges of the paper to erase shadows which are otherwise produced by the Original Scales. **0mm**.....3mm Smaller ◄——► Greater

(2) System Input

- This function allows the Tech. Rep. to change the fixed zoom ratios, set the paper size, define the marketing area, configure for the Key Counter, and input the telephone number.

<Setting Procedure>
1. Touch [System Input] to open the System Input menu screen.
2. Touch the desired subfunction key.

Tech. Rep. Mode ▶ System Input

Touch Panel Display	Operation
Paper Size Input	Set the size of the paper used in each paper source. ✻ This function cannot be used for the LCC as its paper is set with its internal DIP switch. <Procedure> 1. Touch the key of the paper source for which the paper size setting is to be changed to show the Paper Size Input screen. 2. Touch the desired paper size key. ✻ If the 10-key Pad has been selected, enter the FD and CD size of the paper from the 10-Key Pad. 3. Touch [END] to validate the paper size setting.
Change Fixed Zoom	Change a fixed zoom ratio to a desired value in the range between ×0.250 and ×4.000. <Procedure> 1. Touch the key of the fixed zoom ratio to be changed. 2. Press the Clear key to clear the setting and enter the new ratio from the 10-Key Pad. 3. Touch [Input] to validate the new setting.
Machine Configuration	Displays the machine configuration status.
Technical Memo	Enter the serial number and other data.
Permit Imaging Cartridge	Select whether to permit the use of an illegal Imaging Cartridge installed. The use is enabled when [Enter] is touched after “Yes” has been selected. ✻ It is not possible to disable the use of an Imaging Cartridge once permitted. Yes / **No**
Original Size Detecting Option	Set whether the optional Original Size Detecting Sensor is available or not. ON / **OFF**

(3) Administrator # Input

- This function allows the Tech. Rep. to set the administrator number that is used to open the “Admin. Management” screen of Utility.

<Setting Procedure>
1. Touch [Administrator # Input] to open the Administrator # Input menu screen.
2. Blank out the numeric data with the Clear key and enter the desired number from the 10-Key Pad.
3. Touch [Enter] to validate the entry of the number.

Tech. Rep. Mode ▶ Administrator # Input

Touch Panel Display	Operation
Administrator # Input	Set the administrator number used to open the “Admin. Management” screen of Utility from the 10-Key Pad. (1 to 8 digits: 0 to 99999999)

(4) Counter

- This function maintains the counts of the various counters, thus aiding the Tech. Rep. in performing service jobs.

<Setting Procedure>
1. Touch [Counter] to open the Counter menu screen.
2. Touch [Check] and then the desired counter to open the detailed counter screen.
3. To clear a count, touch [Counter Reset], the key of the counter to be cleared, and [END].

✻ Two or more counters can be selected.

Tech. Rep. Mode ▶ Counter

<table>
<tr><th>Touch Panel Display</th><th>Operation</th></tr>
<tr><td>Paper</td><td>Shows the number of sheets of paper used by the size and type. Each counter may be reset to 0 independently of the others:
<Paper Counter 1/2>
<table><tr><th>Display</th><th>Description</th></tr><tr><td>A3</td><td>A3L</td></tr><tr><td>B4</td><td>B4L</td></tr><tr><td>A4</td><td>A4L/C</td></tr><tr><td>B5</td><td>B5L/C</td></tr><tr><td>A5</td><td>A5L/C</td></tr><tr><td>B6</td><td>B6L</td></tr><tr><td>A6</td><td>A6L</td></tr><tr><td>11 × 17</td><td>11” × 17”L</td></tr><tr><td>11 × 14</td><td>11” × 14”</td></tr><tr><td>Letter</td><td>Letter L/C</td></tr><tr><td>Legal</td><td>Legal L/C</td></tr><tr><td>5-1/2 × 8-1/2</td><td>5-1/2” × 8-1/2” L/C</td></tr></table>
<Paper Counter 2/2>
<table><tr><th>Display</th><th>Description</th></tr><tr><td>FLS.</td><td>FLS.</td></tr><tr><td>Normal</td><td>Normal</td></tr><tr><td>Recycled</td><td>Recycled</td></tr><tr><td>Special</td><td>Special</td></tr><tr><td>Not for 2-Sided</td><td>Not for 2-Sided</td></tr></table>
<Clearing a Count>
Touch the item key whose count is to be cleared and press the Clear key. If a count is accidentally cleared, pressing the Interrupt key will undo the clear operation.</td></tr>
</table>

Tech. Rep. Mode ▶ Counter

<table>
<tr><th>Touch Panel Display</th><th>Operation</th></tr>
<tr><td>Jam</td><td>Shows the number of misfeeds that have occurred in different parts of the system, together with rates of occurrence (MCBJ, MDBJ). Each counter may be reset to zero independently of the others:
<Jam Counter 1/5>
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>MCBJ System</td><td>Average no. of copies made for each paper misfeed:
MCBJ Total Counter ÷ Jam Counter (including misfeeds in Finisher)</td></tr>
<tr><td>MCBJ Machine Only</td><td>Average no. of copies made for each paper misfeed:
MCBJ Total Counter ÷ Jam Counter (excluding misfeeds in Finisher)</td></tr>
<tr><td>1st Drawer</td><td>No. of misfeeds that occurred at the 1st Drawer of the copier</td></tr>
<tr><td>2nd Drawer</td><td>No. of misfeeds that occurred at the 2nd Drawer of the copier</td></tr>
<tr><td>3rd Drawer</td><td>No. of misfeeds that occurred at the 3rd Drawer of the copier</td></tr>
<tr><td>4th Drawer</td><td>No. of misfeeds that occurred at the 4th Drawer of the copier</td></tr>
<tr><td>5th Drawer</td><td>No. of misfeeds that occurred at the 5th Drawer of the copier</td></tr>
</table>
<Jam Counter 2/5>
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>Manual Feed</td><td>No. of misfeeds that occurred at the Manual Bypass Tray</td></tr>
<tr><td>Vertical Transport</td><td>No. of misfeeds that occurred at the paper take-up/transport section of the copier</td></tr>
<tr><td>Separator</td><td>No. of misfeeds that occurred at the paper separator section of the copier</td></tr>
<tr><td>Fusing</td><td>No. of misfeeds that occurred at the Fusing Unit of the copier</td></tr>
<tr><td>Duplex Entrance</td><td>No. of misfeeds that occurred at the turnover/storage section of the copier</td></tr>
<tr><td>Duplex Feed</td><td>No. of misfeeds that occurred at the paper take-up section of the Duplex</td></tr>
<tr><td>LCC Feed</td><td>No. of misfeeds that occurred at the paper take-up section of the LCC</td></tr>
</table>
<Jam Counter 3/5>
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>LCC Transport</td><td>No. of misfeeds that occurred in the LCC transport section</td></tr>
<tr><td>Shift/2Bin Tray Transport</td><td>No. of misfeeds that occurred in the Shift/Job Tray transport section</td></tr>
<tr><td>Shift/2Bin Tray Exit</td><td>No. of misfeeds that occurred in the Shift/Job Tray exit section</td></tr>
<tr><td>Finisher Horizontal Transport</td><td>No. of misfeeds that occurred in the Finisher horizontal transport section</td></tr>
<tr><td>Finisher Transport</td><td>No. of misfeeds that occurred in the Finisher transport section</td></tr>
<tr><td>Finisher Exit</td><td>No. of misfeeds that occurred in the Finisher exit section</td></tr>
<tr><td>Finisher Staple</td><td>No. of Finisher staple misfeeds that occurred</td></tr>
</table>
✻ 2Bin Tray = Job Tray</td></tr>
</table>

Tech. Rep. Mode ▶ Counter

<table>
<tr><th>Touch Panel Display</th><th>Operation</th></tr>
<tr><td>Jam</td><td>
<Jam Counter 4/5>
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>Finisher Set Transport</td><td>No. of misfeeds that occurred in the Finisher Tray</td></tr>
<tr><td>MDBJ</td><td>Average no. of document transport sequences for each document misfeed:
ADFR Document Passage Counter ÷ ADFR Jam Counter</td></tr>
<tr><td>ADF (Scan-through ADF) Feed</td><td>No. of misfeeds that occurred at the paper take-up section of the ADF (Scan-through ADF)</td></tr>
<tr><td>ADF (Scan-through ADF) Transport</td><td>No. of misfeeds that occurred at the document transport section of the ADF (Scan-through ADF)</td></tr>
<tr><td>ADFR Reverse</td><td>No. of misfeeds that occurred at the document turnover and exit sections of the ADFR</td></tr>
<tr><td>SADF</td><td>No. of misfeeds that occurred at the SADF</td></tr>
</table>
<Jam Counter 5/5>
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>Printer</td><td>No. of misfeeds that occurred due to illegal designation of FCU2</td></tr>
<tr><td>Engine</td><td>No. of misfeeds that occurred due to communication error with engine (VD fault)</td></tr>
</table>
<Clearing a Count>
Touch the item key whose count is to be cleared and press the Clear key. If a count is accidentally cleared, pressing the Interrupt key will undo the clear operation.
</td></tr>
<tr><td>PM</td><td>
Shows the frequency of use of each of the PM parts. Each counter may be reset to 0 independently of the others:
<PM Counter 1/3>
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>I/C Life</td><td>No. of revolutions of I/C</td></tr>
<tr><td>Fusing Unit</td><td>No. of times a sheet of paper is fed out</td></tr>
<tr><td>1st Drawer</td><td>No. of sheets of paper fed from the 1st Drawer</td></tr>
<tr><td>2nd Drawer</td><td>No. of sheets of paper fed from the 2nd Drawer</td></tr>
<tr><td>3rd Drawer</td><td>No. of sheets of paper fed from the 3rd Drawer</td></tr>
<tr><td>4th Drawer</td><td>No. of sheets of paper fed from the 4th Drawer</td></tr>
<tr><td>5th Drawer</td><td>No. of sheets of paper fed from the 5th Drawer</td></tr>
</table>
<PM Counter 2/3>
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>LCC Parts 1</td><td>No. of sheets of paper fed from the LCC (for 200k)</td></tr>
<tr><td>LCC Parts 2</td><td>No. of sheets of paper fed from the LCC (for 300k)</td></tr>
<tr><td>Other PM Parts 1</td><td>No. of print cycles run (for 100k)</td></tr>
<tr><td>Other PM Parts 2</td><td>No. of print cycles run (for 150k)</td></tr>
<tr><td>Other PM Parts 3</td><td>No. of print cycles run (for 60k/120k)</td></tr>
<tr><td>1-Sided</td><td>No. of times a 1-sided original is fed through</td></tr>
<tr><td>2-Sided</td><td>No. of times a 2-sided original is fed through</td></tr>
</table>
</td></tr>
</table>

Tech. Rep. Mode ▶ Counter

<table>
<tr><th>Touch Panel Display</th><th>Operation</th></tr>
<tr><td>PM</td><td>
<PM Counter 3/3>
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>SADF
IR 1
IR 2
2 Bin Tray
Toner Pages</td><td>No. of single feeds
No. of scan motions (for 60k)
No. of scan motions (120k)
No. of cycles of feeding paper out into Job Tray
No. of pages equivalent to the no. of black dots on A4 original with B/W 5%</td></tr>
</table>
✻ 2Bin Tray = Job Tray
<Clearing a Count>
Touch the item key whose count is to be cleared and press the Clear key. If a count is accidentally cleared, pressing the Interrupt key will undo the clear operation.
✻ I/C Life cannot be cleared.
</td></tr>
<tr><td>Trouble</td><td>
Shows the number of malfunctions that have occurred in different parts of the system. Each counter may be reset to 0 independently of the others:
<Trouble Counter 1/5>
<table>
<tr><th>Malfunction Code</th><th>Location</th><th>Malfunction Code</th><th>Location</th></tr>
<tr><td>C0000
C0010
C0045
C004C</td><td>Main Motor
I/C Motor
Cooling Fan
Ventilation Fan</td><td>C004E
C0070
C0500
C0510</td><td>Cooling Fan (Power Supply)
Toner Bottle Motor
Fusing Warming-up
Fuser Low Temperature</td></tr>
</table>
<Trouble Counter 2/5>
<table>
<tr><th>Malfunction Code</th><th>Location</th><th>Malfunction Code</th><th>Location</th></tr>
<tr><td>C0520
C0650
C0651
C0990</td><td>Fuser High Temperature
Home Sensor
Left Sensor
LCC Transport Motor</td><td>C0991
C0995
C0999
C099D</td><td>LCC Lift 1 Limit
LCC Lift Motor
LCC Lift 2 Limit
LCC Communication</td></tr>
</table>
<Trouble Counter 3/5>
<table>
<tr><th>Malfunction Code</th><th>Location</th><th>Malfunction Code</th><th>Location</th></tr>
<tr><td>C0B00
C0B0F
C0B30
C0B38</td><td>Transport Drive Motor
Horiz. Trans. Route Switch
Paper Aligning Bar Unit
Paper Standard Board Unit</td><td>C0B4D
C0B4E
C0B50
C0B80</td><td>Assist Tray Unit
Transaction Tray Unit
Staple Unit
Shift Tray Shift</td></tr>
</table>
<Trouble Counter 4/5>
<table>
<tr><th>Malfunction Code</th><th>Location</th><th>Malfunction Code</th><th>Location</th></tr>
<tr><td>C0BA0
C0F32
C0F33
C1038</td><td>Elevate Motor
ATDC Sensor
ATDC Adjust
Engine Connection</td><td>C1300
C1330
C133A</td><td>Polygon Motor
Communication Error (VSYNC)
Communication Error (G/A)</td></tr>
</table>
</td></tr>
</table>

Tech. Rep. Mode ▶ Counter

<table>
<tr><th>Touch Panel Display</th><th>Operation</th></tr>
<tr><td>Trouble</td><td>
<Trouble Counter 5/5>
<table>
<tr><th>Malfunction Code</th><th>Location</th><th>Malfunction Code</th><th>Location</th></tr>
<tr><td>C133B
C13C0
C13D0</td><td>Communication Error (Option)
I/C Initial Error
EEPROM</td><td>C13F0
C18XX</td><td>HSYNC (SOS)
Printer Controller Error</td></tr>
</table>
<Clearing a Count>
Touch the item key whose count is to be cleared and press the Clear key. If a count is accidentally cleared, pressing the Interrupt key will undo the clear operation.
</td></tr>
<tr><td>Device</td><td>
Shows the numbers of prints for different applications. It also allows the Tech. Rep. to clear each counter.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>Copier</td><td>No. of prints made by copier</td></tr>
<tr><td>Printer</td><td>No. of prints made by printer</td></tr>
<tr><td>Report Print</td><td>No. of report prints made</td></tr>
<tr><td>Fax Print</td><td>No. of fax prints made</td></tr>
<tr><td>Fax Transmission</td><td>No. of prints made for fax transmission</td></tr>
</table>
<Clearing a Count>
Select the counter to be cleared with the item key and press the Clear key. If the count is accidentally cleared, pressing the Interrupt key will undo the clear operation.
</td></tr>
<tr><td>Maintenance</td><td>
• This function allows the Tech. Rep. to set the number of copies to be made before the Maintenance Call reminder is given. (1k ~ 9999k)
• It shows the current count value and the above setting. Each counter may be reset to 0 independently of the others:
• When the count reaches the preset value, the icon “△” appears in the Status Display.
✻ When “Call Indicated” is selected for “Maintenance Call” available from Tech. Rep. Choice.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>Maintenance (Set)</td><td>The Maintenance Call reminder is given when the count reaches the preset value.</td></tr>
<tr><td>Maintenance (Count)</td><td>Counts one for each copy made.</td></tr>
</table>
<Setting a Count>
1. Touch [Maintenance (Set)] and then press the Clear key to clear the count. If the count is accidentally cleared, pressing the interrupt key will undo the clear operation.
2. Enter the desired value from the 10-Key Pad.

<Clearing a Count>
Touch [Maintenance (Count)] and then press the Clear key to clear the count. If the count is accidentally cleared, pressing the interrupt key will undo the clear operation.
</td></tr>
</table>

(5) Function

- This function allows the Tech. Rep. to run the various function tests and make adjustments.

<Setting Procedure>
1. Touch [Function] to open the Function menu screen.
2. Select the particular function to be run.

Tech. Rep. Mode ▶ Function

Touch Panel Display	Operation
F1	<Paper Passage> A paper passage test is carried out after the copier has completed warming up. <Procedure> 1. Select the paper source key. (Touch [Duplex] to check for paper passage from the Duplex Unit.) ✻ If the paper source is not loaded with paper, an Add Paper mark appears at that source. 2. Press the Start key to start the test cycle. The test runs until the paper source runs out of paper. 3. If the Stop key is pressed, the copier feeds the current sheet of paper out before halting. (Another press of the Start key will resume the test cycle.)
F2	<HV Output Setting> Set the output of each HV. ✻ This function is only for factory setting and should never be used in the field.
F7-1	<Original Size Detecting Sensor Adjustment> Automatically adjusts the Original Size Detecting Sensors. <Procedure> 1. Stack five sheets of A3 or 11" × 17" paper on the Original Glass and lower the Original Cover. 2. Press the Start key to let the system start the adjustment sequence. ✻ The system automatically stops as soon as the adjustment sequence is completed. It can nonetheless be halted in mid-sequence with the Stop key, which, however, results in incorrect size detection as the adjustment sequence is incomplete.
F8	<ATDC Sensor Automatic Adjustment> Automatically makes the ATDC Sensor adjustment. <Procedure> Press the Start key to let the system start the adjustment sequence. ✻ The voltage automatically adjusted by this function is displayed for ATDC Sensor Gain of the Level History data.

Tech. Rep. Mode ▶ Function

Touch Panel Display	Operation
F12	<Test Pattern> Outputs a test pattern. ✻ If 2-sided is specified, the system outputs a test pattern in the 2-sided mode. <Procedure> 1. Touch the desired paper source key. (Touch [Duplex] for test pattern output on paper fed from the Duplex Unit.) ✻ If the paper source is not loaded with paper, an Add Paper mark appears at that source. 2. Press the Start key to start the output sequence. (It continues until the paper source runs out of paper.) 3. Press the Stop key to halt the sequence.

(6) I/O Check

- This function displays the details of inputs to each sensor.

<Setting Procedure>
1. Touch [I/O Check] to open the I/O Check menu screen.
2. Touch the desired subfunction key.

Tech. Rep. Mode ▶ I/O Check

Touch Panel Display	Operation
Scan-through ADF	
IR	***NOTE*** • *For details, see TROUBLESHOOTING.*
ADFR	
Output Option	
Printer	

(7) Movement Check

- This function runs a specified mechanism to check for operation.

<Setting Procedure>
1. Touch [Movement Check] to open the Movement Check menu screen.
2. Touch the desired subfunction.

Tech. Rep. Mode ▶ Movement Check

Touch Panel Display	Operation
ADF Paper Passage	Feeds paper through the ADF in the specified mode to check for correct operation. 1-sided No Detect | 1-sided Mixed Orig | 2-sided SADF <Procedure> 1. Select ADF Paper Passage. 2. Touch the desired mode key. 3. Load originals in the ADF. 4. Press the Start key to let the ADF start feeding originals. ✻ Pressing of the Start key temporarily stops the ADF. (Another press will let the ADF resume the sequence.) ✻ The sequence is completed when there is no more originals in the ADF; however, it is possible to halt the sequence in mid-operation by pressing the Stop key.
Scanner	• Drives the CCD. • Turns ON the Exposure Lamp. • Moves the Scanner according to the set value.
Exp. Lamp Check	Checks for the intensity of the Exposure Lamp light.

(8) RD Mode (SMART)

✻ "SMART" is displayed for the inch areas.

Tech. Rep. Mode ▶ RD Mode

Touch Panel Display	Setting
RD Mode	For making the initial settings of the copier for the Data Terminal.
ID Code	Enter a 7-digit ID code (0000001 to 9999999) from the 10-Key Pad to enable making the following settings. When the ID code is entered and transmitted after the initial settings have been made, it executes the transmission of MAINT. START to the Center. ✻ 0000000 is invalid.
Maintenance	Used to make the initial settings and various transmissions.
DT Setting	Enter the following data.
CT-ID (Password)	Using the 10-Key Pad, enter the 4-digit ID number (0001 to 9999) of the Center which has been programmed in the Center personal computer. ✻ 0000 is invalid.
DT-ID	Using the 10-Key Pad, enter the 6-digit ID number (000001 to 999999) of the Data Terminal. ✻ 000000 is invalid.
TEL No.	Enter the 19-or-less-digit phone number of the modem connected to the Center personal computer from the 10-Key Pad. ✻ In addition to the 10-Key Pad and Clear key, use the following keys to enter the phone number. Interrupt key: For a pause (3 sec. or more), "-" Pause key: For a pause (3 sec. or more), "-" P key: For a "pulse" dialing, "P" T key: For a "tone" dialing, "T" W key: For a wait code (waiting for a signal from the other party), "W" ✻ key: For an ISDN subaddress, "✻" # key: For switching from the extension line to outside line, or vice versa, "#"
Initial Transmission	Used to perform the initial transmission from the copier to the Center to check for correct communication when the Data Terminal has been set up.
Counter Clear	Used to clear the count of the spare counter set by the Center. <Procedure> 1. Touch [Counter Clear] to open the Counter Clear screen. 2. Touch the number assigned to the counter to be cleared.
Call Completion	Used by the Tech. Rep. to notify the Center that his/her service job for the copier has been completed.

Tech. Rep. Mode ▶ RD Mode

Touch Panel Display	Setting (The default is **Highlighted**).
RD Mode	———
RAM Clear	Reinitializes the Data Terminal. YES / **NO**
Common DT	Set the following functions.
Dial Mode	Select the type of telephone line of the user. **Tone** / Pulse
Auto Receive	Choose “Yes” or “No” for the auto reception function. **YES** / NO ✻ Select “Yes” if the line is dedicated to the Data Terminal.
Result Code	Enter the result code for connection to the modem when the line is connected. (0 to 999)

(9) ROM Version

Tech. Rep. Mode ▶ ROM Version

<table>
<tr><th>Touch Panel Display</th><th>Operation</th></tr>
<tr><td>ROM Version</td><td>Displays the current ROM version information.
✻ No version information is displayed for a machine that is not connected to the system.
<Procedure>
1. Touch [ROM Version] to open the ROM Version screen.
2. The screen shows the ROM version information of various machines configured in the system.
<table>
<tr><th colspan="2">Display</th><th>Description</th></tr>
<tr><td>MSC</td><td>—</td><td>MFB Board</td></tr>
<tr><td>Message</td><td>IC4</td><td>MFB Board</td></tr>
<tr><td>Printer</td><td>IC1</td><td>Master Board</td></tr>
<tr><td>ADFR</td><td>IC3</td><td>ADFR Board</td></tr>
<tr><td>LCC</td><td>IC7</td><td>LCC Board</td></tr>
<tr><td>Finisher</td><td>IC3</td><td>Finisher/Job Tray Board</td></tr>
<tr><td>IIF</td><td>—</td><td>IIF2 Board</td></tr>
</table>
</td></tr>
</table>

(10) Level History

- This function is used to show the various level histories which are changed according to the operating conditions of the copier and user requirements.

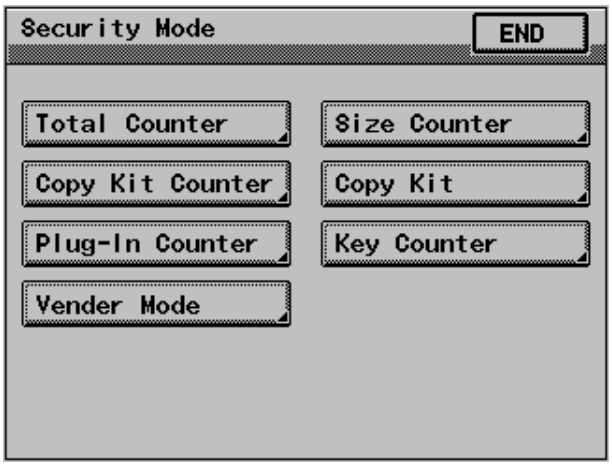
Tech. Rep. Mode ▶ Level History

<table>
<tr><th>Touch Panel Display</th><th>Setting</th></tr>
<tr><td>Level History</td><td>
<ATDC Set>
Shows the voltage set by ATDC Sensor Automatic Adjustment (F8).
✻ The Level History data is updated when the ATDC Sensor Automatic Adjustment (F8) is completed.
<table>
<tr><th>Variable Range</th><th>Increments</th></tr>
<tr><td>123 to 186 (steps)</td><td>1 Step</td></tr>
</table>
<ATDC Current>
Shows the current, approximate ATDC Sensor T/C setting in percentage.
<table>
<tr><th>Variable Range</th><th>Increments</th></tr>
<tr><td>3.0 to 19.0 (%)</td><td>0.5%</td></tr>
</table>
<Vg Current>
Displays the grid voltage as corrected through image stabilization and related functions.
<table>
<tr><th>Variable Range</th><th>Increments</th></tr>
<tr><td>-534 to -748 (V)</td><td>-</td></tr>
</table>
<Vb Current>
Displays the developing bias voltage as corrected through image stabilization and related function.
<table>
<tr><th>Variable Range</th><th>Increments</th></tr>
<tr><td>-409 to -623 (V)</td><td>-</td></tr>
</table>
</td></tr>
</table>

6 SECURITY MODE

- This function allows the Tech. Rep. to make various settings.

6-1. Security Mode Menu Screen



1167S011CA

6-2. Security Mode Function Setting Procedure

<Setting Procedure>

1. Set the copier into the Tech. Rep. mode by one of the following methods:
   A. With the copier turned ON, press the Tech. Rep. Setting Switch.
   B. With the Meter Count screen opened from Utility, press the following keys in this order:

   [Stop Key] ➡ [0] ➡ [0] ➡ [Stop Key] ➡ [0] ➡ [1]

2. Enter the Security mode by pressing the following keys in this order:

   [Stop Key] ➡ [9]

3. Select the particular Security mode to be set.
4. Make the necessary settings by following the instructions given sequentially on the screen.

✻ The Function selected is highlighted.

<Exiting the Mode>

Perform any one of the following steps to go back to the Basic screen.

- Press the Panel Reset key and Touch [Exit] on the Tech. Rep. Mode screen.
- Touch [END] on the Security Mode screen. Then touch [Exit] on the Tech. Rep. Mode screen.

6-3. Settings in the Security Mode

Tech. Rep. Mode ▶ Security Mode

<table>
<tr><th>Touch Panel Display</th><th>Setting (The default is Highlighted).</th></tr>
<tr><td>Total Counter</td><td>Select the conditions by which the Total Counter count is increased.
<table>
<tr><td>Mode 1</td><td>1 count per 1 copy cycle (normal mode)</td></tr>
<tr><td>Mode 2</td><td>Multiple count-up according to paper size and 1/2-sided copying</td></tr>
<tr><td>Mode 3</td><td>Multiple count-up according to paper size and 1/2-sided copying</td></tr>
</table>
✻ See the Count-up Table for details.</td></tr>
<tr><td>Size Counter</td><td>Select the size of the paper to be counted by the Size Counter.
<table>
<tr><td>No Count</td><td>A3
11×17</td><td>A3 / B4
11×17
Legal</td><td>A3 /11×17
B4 /11×14
FLS/Legal</td><td>A6</td></tr>
</table>
✻ See the Count-up Table for details.</td></tr>
<tr><td>Copy Kit</td><td>• Allows for setting the desired threshold before the Maintenance Call reminder is given.
• Displays both the current value and the above setting value. Each counter can also be reset independently of the other.
• When the current value (Current) becomes the setting value (Set), the icon “⚠” appears in the Status Display if “Mode 2” is selected for “Copy Kit Counter” and the Maintenance Call reminder (M4) is displayed if “Mode 3” is selected for “Copy Kit Counter.”
✻ Whether the initiation of a new copy cycle is inhibited or not when the current value exceeds the setting value depends on the setting made with Copy Kit Counter.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>Set</td><td>Gives a Maintenance Call when Current value reaches Set value.</td></tr>
<tr><td>Current</td><td>Counts up for each copy made.</td></tr>
</table>
<Counter Setting Procedure>
1. Touch [Set] and press the Clear key to clear the current setting. If the setting is accidentally cleared, pressing of the Interrupt key will undo the clear operation.
2. Enter the desired value from the 10-Key Pad.
<Clearing the Count>
Touch [Current] and press the Clear key to clear the count. If the count is accidentally cleared, pressing of the Interrupt key will undo the clear operation.</td></tr>
</table>

Tech. Rep. Mode ▶ Security Mode

Touch Panel Display	Setting (The default is **Highlighted**).
Copy Kit Counter	Select whether to set the count or not for the Copy Kit Counter and select whether to inhibit the initiation of a new copy cycle or not when the Current value reaches Set value. **Mode 1** : No counting Mode 2 : Counted and permits copying even when the Set value is reached. Mode 3 : Counted and inhibits copying when the Set value is reached.
Plug-In Counter	Select the condition by which the Key Counter count is increased. **Copies Made** / Copy Cycles ✻ See the Count-up Table for details.
Key Counter	Set whether a Key Counter is plugged in (“ON”) or not (“OFF”). ON / **OFF**
Vender Mode	Select the medium to be used when the Key Counter or Vender is used. ✻ This function is not valid if “OFF” is selected for “Key Counter.” **OFF** / Coin / Card

Tech. Rep. Mode ▶ Security Mode

<Count-up Table>

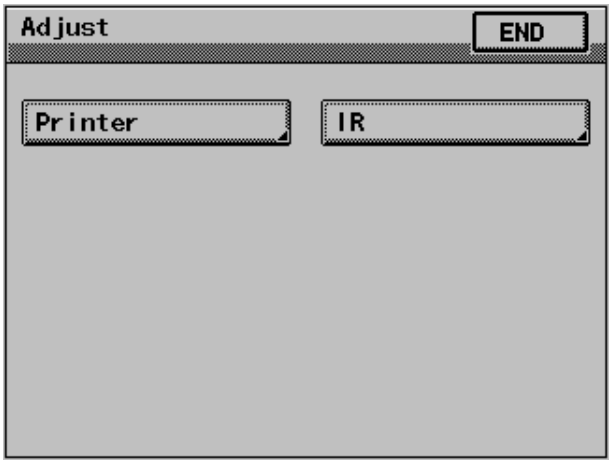
Copying		1-Sided						2-Sided					
Size		Size other than those set			Set size			Size other than those set			Set size		
Total		Mode			Mode			Mode			Mode		
		1	2	3	1	2	3	1	2	3	1	2	3
Total (mechanical, electronic)		1			1	2	2	2			2	4	4
Size (electronic)		0			1	1	2	0			2	2	0
2-Sided Total (electronic)		0			0			1	1	2	1	1	4
2-Sided Size (electronic)		0			0			0			1	1	4
Total by account		1			1	2	2	2			2	4	4
Size by account		0			1	1	2	0			2	2	4
Key (mechanical)	Counting copies	1			1	2	2	1	2	2	1	4	4
	Counting copy cycles	1			1	2	2	2			2	4	4

0: No count 1: 1 count 2: 2 counts 3: 3 counts 4: 4 counts

7 ADJUST MODE

- Adjust mode is for adjustments to be made before shipment at the factory. As a rule, use this mode only when MFB Board UN2, or EEPROM (IC3A) on Master Board PWB-A has been replaced with a new one.

7-1. Adjust Mode Menu Screen



1167S012CA

7-2. Adjust Mode Function Setting Procedure

<Setting Procedure>

1. Set the copier into the Tech. Rep. mode by the following method:

- With the Meter Count screen opened from Utility, press the following keys in this order.

[Stop Key] ➡ [0] ➡ [0] ➡ [Stop Key] ➡ [0] ➡ [1]

2. Enter the Adjust mode by pressing the following keys in this order:

[Stop Key] ➡ [Start Key]

3. Select the particular Adjust mode function to be set.
4. Make the necessary settings by following the instructions given sequentially on the screen.

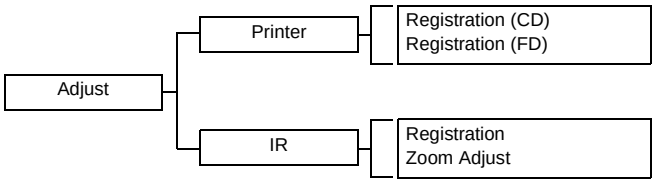
✻ The function selected is highlighted.

<Exiting the Mode>

Perform any one of the following steps to go back to the Basic screen.

- Press the Panel Reset key and Touch [Exit] on the Tech. Rep. Mode screen.
- Touch [END] on the Adjust mode screen. Then touch [Exit] on the Tech. Rep. Mode screen.

7-3. Adjust Mode Function Tree



7-4. Settings in the Adjust Mode

(1) Printer

- This function is used to enter the adjustment values as they relate to the printer.

<Setting Procedure>
1. Touch [Printer] to open the Printer screen.
2. Select the desired subfunction.

Tech. Rep. Mode ▶ Adjust

<table>
<tr><th>Touch Panel Display</th><th>Setting (The default is Highlighted).</th></tr>
<tr><td>Registration (CD)</td><td>Adjust registration of the printer in the main scanning direction.
<table>
<tr><td>1st Drawer</td><td rowspan="3">-4.0mm.....0.....+4.0mm</td></tr>
<tr><td>2nd Drawer</td></tr>
<tr><td>3rd Drawer</td></tr>
<tr><td>4th Drawer</td><td rowspan="3">Advanced timing ◄——► Retarded timing</td></tr>
<tr><td>5th Drawer</td></tr>
<tr><td>Duplex</td></tr>
</table>
✻ Adjust “Duplex” after adjustments have been completed for all drawers.</td></tr>
<tr><td>Registration (FD)</td><td>Adjust registration of the printer in the sub-scanning direction.
<table>
<tr><td>-19.....0.....+19</td></tr>
<tr><td>Advanced timing ◄——► Retarded timing</td></tr>
</table></td></tr>
</table>

(2) IR

- This function is used to enter the adjustment values as they relate to the IR.

<Setting Procedure>
1. Touch [IR] to open the IR screen.
2. Select the desired subfunction.

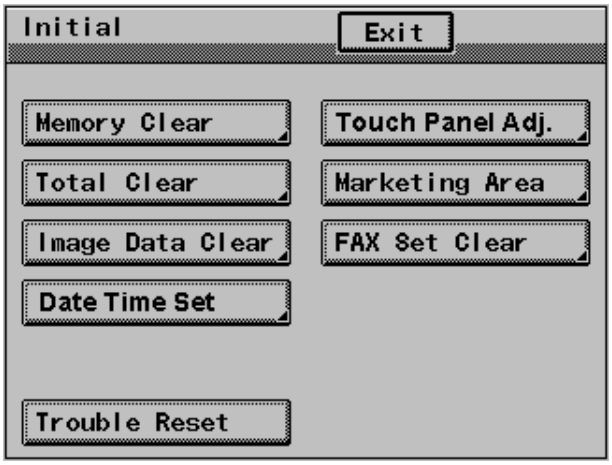
Tech. Rep. Mode ▶ Adjust

Touch Panel Display	Setting (The default is **Highlighted**).
Registration	Adjust registration of the Scanner in the main and sub-scanning directions. Main scaning (CD) -72 dot.....**0**.....+72 dot Smaller ◄——► Greater Sub scaning (FD) -24 dot.....**0**.....+127 dot Smaller ◄——► Greater
Zoom Adjust	Adjust the scanning zoom ratio of the Scanner in the main and sub-scanning directions. 0.990.....**1.000**.....1.010 Smaller ◄——► Greater

8 INITIAL MODE

- Initial mode is used to initialize the various service functions.

8-1. Initial Mode Menu Screen



1167S013CB

8-2. Initial Mode Function Setting Procedure

<Setting Procedure>

1. Enter the Initial mode by pressing the following keys in this order:

   Warm Restart Switch ON ➡ Enter "3" from the 10-Key Pad when "." appears at the center on the left side of the screen while the start-up screen is being displayed.

2. Select the particular Initial mode function to be set.
3. Make the necessary settings by following the instructions given sequentially on the screen.

✻ The function selected is highlighted.

<Exiting the Mode>

- Touch [Exit] on the Initial mode screen to go back to the Basic screen.

8-3. Settings in the Initial Mode

Tech. Rep. Mode ▶ Initial

Touch Panel Display	Setting (The default is **Highlighted**).
Memory Clear	Clears all data except the electronic counters, Adjust, Copy Track-related, and DT-related settings. Yes / **NO**
Touch Panel Adj.	Corrects deviation in the sensitive area of the Touch Panel. <Procedure> Sequentially touch the four points marked with + on the screen as instructed by the arrow.
Total Clear	Clears all of the electronic counters and Copy Track-related data. Yes / **NO**
Marketing Area	Selects the settings for the fixed zoom ratios, paper sizes, and others according to the marketing area. **MJ** / MC / MH / Others
Image Data Clear	Clears the image data stored in file memory of the MFB Board. Yes / **NO**
FAX Set Clear	Clears the fax-related settings. ✻ Two or more items can be selected. Own Setting / The Address / Transmission Manage / Soft Switch — Yes / **NO**
Date Time Set	Sets the time-of-day and date.
Trouble Reset	Resets all malfunctions including the Fusing ones (C05XX). ✻ Malfunctions other than Fusing ones can be reset by turning OFF and ON the Power Switch and opening and closing the Side Cover.

FrameMaker Ver.5.5E(PC) Di350 TROUBLESHOOTING
98.12.09

Di350

TROUBLESHOOTING

MINOLTA

14413

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1 INTRODUCTION

1-1. General Precautions

1. When servicing the copier with its covers removed, use utmost care to prevent your hands, clothing, and tools from being caught in revolving parts including the chains and gears. When servicing the copier with the Rear Cover removed, be sure to fit the interlock switch actuating jig in position.
2. Before attempting to replace parts and unplug connectors, make sure that the power cord of the copier has been unplugged from the wall outlet.
3. Never create a closed circuit across connector pins except those specified in the text and on the printed circuit.
4. When creating a closed circuit and measuring a voltage across connector pins specified in the text, be sure to use the green wire (GND).
5. 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.
6. Keep all disassembled parts in good order and keep tools under control so that none will be lost or damaged.

1-2. How to Use This Book

1. 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.
2. 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.
3. For the removal procedures of covers and parts, see DIS/REASSEMBLY, ADJUSTMENT.
4. The troubleshooting procedures are given in the order of greater frequency of trouble or order of operation.
5. The procedures preclude possible malfunctions due to noise and other external causes.

1-3. Reading the Text

1. The paper transport failure troubleshooting procedures are given according to the symptom. First identify the location where the paper is present and start the procedure for that particular location. For malfunction troubleshooting, start with step 1 and onward.
2. Make checks in numerical order of steps and, if an item is checked okay, go to the next step.

Pattern 1

Step	Check Item	Result	Action
1	Is--?	YES	Do this.
2		↑	

Go to step 2 if you answered No.

Pattern 2

Step	Check Item	Result	Action
1	Is--?	YES	Do this.
		NO	Check that.
2			↑

Go to step 2 if it checks okay.

2 I/O CHECK

2-1. Controlled Parts Check Procedure

To allow the Tech. Rep. to easily and safely determine whether a particular controlled part is fully operational, this copier provides the following provision: checking the data of the input port of the board IC with the copier in the standby state (including a misfeed, malfunction, and closure failure condition) allows the Tech. Rep. to determine whether signals are properly input to a controlled part.

<Procedure>
1. When a misfeed or malfunction occurs, locate on a circuit diagram accompanying the text the controlled part which is probably defective.
2. Select “I/O Check” from the Tech. Rep. Mode menu screen and then access the screen which contains the controlled part picked out in step 1 above. (See SWITCHES ON PWBs/TECH. REP. MODE.)
3. Check the input port data to determine if a signal is probably input to the controlled part.

<Controlled Part Check Procedure Through Checking Input Port Data>

Example
When a paper misfeed occurs in the paper take-up section of the copier, Synchronizing Roller Sensor PC2 is considered to be responsible for it.

<Procedure>
1. Remove the sheet of paper misfed.
2. From the I/O Check list, it is found that the signal input to PC2 is “Timing Roller.”
3. Select “I/O Check” from Tech. Rep. Mode and then “Printer.” Now, access the screen that contains “Timing Roller.”
4. Check that the input port data of “Timing Roller” is “0” (sensor is blocked).
5. Move the PC2 actuator to unblock the sensor.
6. Check at this time that the input port data on the screen changes from “0” to “1.”

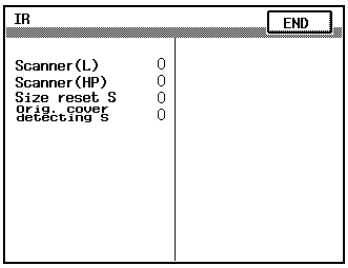
1: PC2 is operational. 0: PC2 is faulty.

2-2. I/O Check List

<I/O Check Screens>

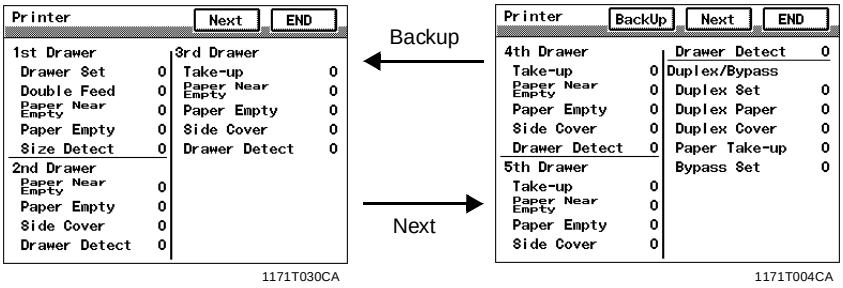
- The following screens are only typical and the input data shown does not necessarily represent the actual one.

IR



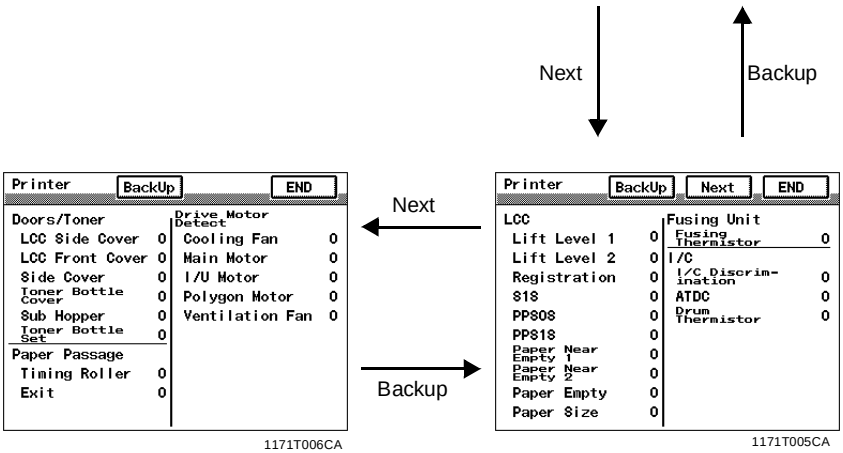
1171T002CA

Printer



1171T030CA

1171T004CA



1171T006CA

1171T005CA

<I/O Check List>
IR

Symbol	Panel Display	Parts/Signal Name	Operation Characteristics/Panel Display		Input Board	IC No.	Port No.	CN/PJ No.
			1	0				
PC13	Scanner (L)	Scanner Home Position Sensor 2	Blocked	Unblocked	HGB Board HGB	—	——	CN7HGB-27
PC12	Scanner (HP)	Scanner Home Position Sensor 1	At home	Not at home		—	——	CN7HGB-26
S5	Size reset S	Size Reset Switch	When closed	When opened		—	——	CN7HGB-24
PC14	Orig. cover detecting S	Original Cover Detecting Sensor	Within 15°	15° or more		—	——	CN7HGB-25

Printer

Symbol	Panel Display		Parts/Signal Name		Operation Characteristics/Panel Display		Input Board	IC No.	Port No.	CN/PJ No.
					1	0				
PC6	1st Drawer	Drawer Set	Cassette Set Sensor		In position	Out of position	Master Board PWB-A	IC1	PO1	PJ13A-5B
PWB-H		Double Feed	Double Feed Detecting Board		Blocked ✻1	Unblocked ✻1		IC1	PO2	PJ14A-8B
PC5		Paper Near Empty	Paper Near Empty Sensor		Unblocked	Blocked		IC1	PO3	PJ13A-2B
PC4		Paper Empty	Paper Empty Sensor		Paper not present	Paper present		IC1	PO5	PJ14A-13A
PWB-I		Size Detect	Paper Size Detecting Board		Analog value			IC1	P103/ AN3	PJ14A-1B to PJ14A-4B
S5	2nd Drawer	Paper Near Empty	Paper Near Empty Sensor		Unblocked	Blocked	Cassette Main Board PWB-A	IC1	P12	PJ3A-11B
S4		Paper Empty	Paper Empty Sensor		Paper not present	Paper present		IC1	P6	PJ3A-5B
S2		Side Cover	Side Cover Set Sensor		When opened	When closed		IC1	P9	PJ3A-8B
S1		Drawer Detect	Cassette Set Switch		In position: 2 displayed Out of position: 0 displayed			IC1	P11	PJ3A-12A
S3	3rd Drawer	Take-up	Take-Up Sensor		Paper present	Paper not present	Cassette Main Board PWB-A: PF-108/ PF-110	IC1	P5	PJ3A-2B
S5		Paper Near Empty	Paper Near Empty Sensor		Unblocked	Blocked		IC1	P12	PJ3A-11B
S4		Paper Empty	Paper Empty Sensor		Paper not present	Paper present		IC1	P6	PJ3A-5B
S2		Side Cover	Side Cover Set Sensor		When opened	When closed		IC1	P9	PJ3A-8B
S1		Drawer Detect	Cassette Set Switch	When PF-110 is used	In position	Out of position		IC1	P10	PJ3A-9A
				When PF-108 is used	In position: 2 displayed Out of position: 0 displayed			IC1	P11	PJ3A-12A

✻ 1: The display of 1 or 0 is selected only while Main Motor M2 is being energized.

Symbol	Panel Display		Parts/Signal Name		Operation Characteristics/Panel Display		Input Board	IC No.	Port No.	CN/PJ No.
					1	0				
S3	4th Drawer	Take-up	Take-Up Sensor		Paper present	Paper not present	Cassette Main Board PWB-A: PF-108/ PF-110	IC1	P5	PJ3A-2B
S5		Paper Near Empty	Paper Near Empty Sensor		Unblocked	Blocked		IC1	P12	PJ3A-11B
S4		Paper Empty	Paper Empty Sensor		Paper not present	Paper present		IC1	P6	PJ3A-5B
S2		Side Cover	Side Cover Set Sensor		When opened	When closed		IC1	P9	PJ3A-8B
S1		Drawer Detect	Cassette Set Switch	When PF-110 is used	In position	Out of position		IC1	P10	PJ3A-9A
				When PF-108 is used	In position: 2 displayed Out of position: 0 displayed			IC1	P11	PJ3A-12A
S3	5th Drawer	Take-up	Take-Up Sensor		Paper present	Paper not present		IC1	P5	PJ3A-2B
S5		Paper Near Empty	Paper Near Empty Sensor		Unblocked	Blocked		IC1	P12	PJ3A-11B
S4		Paper Empty	Paper Empty Sensor		Paper not present	Paper present		IC1	P6	PJ3A-5B
S2		Side Cover	Side Cover Set Sensor		When opened	When closed		IC1	P9	PJ3A-8B
S1		Drawer Detect	Cassette Set Switch	When PF-110 is used	In position	Out of position		IC1	P10	PJ3A-9A
				When PF-108 is used	In position: 2 displayed Out of position: 0 displayed			IC1	P11	PJ3A-12A
——	Duplex/ Bypass	Duplex Set	Duplex Unit Set signal		In position	Out of position	Master Board PWB-A	IC1	P91	PJ4A-3B
PI1		Duplex Paper	Duplex Unit Transport Sensor		Paper present	Paper not present		IC1	P92	PJ4A-2B
S2		Duplex Cover	Duplex Unit Door Set Sensor		When opened	When closed		IC1	P90	PJ4A-1B
PC8		Paper Take-up	Manual Feed Paper Take-Up Sensor		Paper present	Paper not present		IC1	P00	PJ4A-7B
——		Bypass Set	Manual Bypass Tray Set signal		In position	Out of position		IC1	P30	PJ4A-9B

Symbol	Panel Display		Parts/Signal Name	Operation Characteristics/Panel Display		Input Board	IC No.	Port No.	CN/PJ No.
				1	0				
LS1	LCC	Lift Level 1	Lift-Up Sensor 1	At upper limit	Not at upper limit	LCC Main Board PWB-A: PF-106	IC4	P74/ ANI4	CN4A-6
LS2		Lift Level 2	Lift-Up Sensor 2	At upper limit	Not at upper limit		IC4	P73/ ANI3	CN4A-9
RSEN		Regis-tration	Registration Sensor	Paper present	Paper not present		IC4	P22/ INTP1	CN4A-2
S1		S1S	Paper Standby Position Sensor	Paper present ✻2	Paper not present ✻2		IC4	P23/ INTP2/ CI	CN3A-5
PPS0		PPS0S	LCC Take-Up Sensor	Paper present	Paper not present		IC4	P24/ INTP3	CN4A-11
PPS1		PPS1S	Paper Empty Sensor 1	Paper present	Paper not present		IC4	P25/ INTP4/ ASCK	CN3A-2
RS1		Paper Near Empty 1	Paper Near Empty Sensor 1	Blocked	Unblocked		IC4	P75/ ANI5	CN6A-1
RS2		Paper Near Empty 2	Paper Near Empty Sensor 2	Blocked	Unblocked		IC4	P76/ ANI6	CN5A-5
PPS2		Paper Empty	Paper Empty Sensor 2	Paper present	Paper not present		IC4	P72/ ANI2	CN3A-8
SW1		Paper Size	DIP switch	Letter C: 0 displayed A4C: 1 displayed B5C: 2 displayed			IC4	P13, P14, P15	———
TH1	Fusing Unit	Fusing Ther-mistor	Fusing Roller Thermistor	Analog value		Master Board PWB-A	IC1	P107/ AN7	PJ16A-5
——	I/C	I/C Dis-crimina-tion	I/C Type Detection signal	Analog value			IC1	P100/ AN0	PJ15A-3
E1		ATDC	ATDC Sensor	Analog value			IC1	P106/ AN6	PJ15A-5
TH2		Drum Ther-mistor	I/C Thermistor	Analog value			IC1	P104/ AN4	PJ13A-10A

✻ 2: The display of 1 or 0 is selected only while LCC Transport Motor HMOT is being energized.

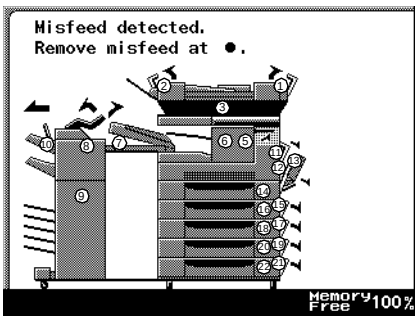
Symbol	Panel Display		Parts/Signal Name	Operation Characteristics/Panel Display		Input Board	IC No.	Port No.	CN/PJ No.
				1	0				
SIDE	Doors/ Toner	LCC Side Cover	Side Cover Set Sensor	When opened	When closed	LCC Main Board PWB-A	IC4	P34/ T00	CN3A-12
FRONT		LCC Front Cover	LCC Set Sensor	Out of position	In position		IC4	P35/ T01	CN6A-4
S2		Side Cover	Side Cover Interlock Switch	When opened	When closed	Master Board PWB-A	IC1	P31	PJ7A-1
PC11		Toner Bottle Cover	Toner Bottle Cover Sensor	When opened	When closed		IC1	P33	PJ11A-5B
S4		Sub Hopper	Sub Hopper Toner Empty Switch	Toner not loaded: 1 and 0 alternately displayed. Toner loaded: 0 displayed			IC1	P06	PJ11A-7B
PC10		Toner Bottle Set	Toner Bottle Home Position Sensor	At home	Not at home		IC1	P40	PJ11A-2B
PC2	Paper Passage	Timing Roller	Synchronizing Roller Sensor	Paper present	Paper not present		IC1	P41	PJ13A-7A
PC3		Exit	Paper Exit Sensor	Paper present	Paper not present		IC1	P77	PJ13A-12A
M3	Drive Motor Detect	Cooling Fan	Fusing Cooling Fan Motor/LOCK	When energized: 1 and 0 alternately displayed. When deenergized: 0 displayed			IC1	P04	PJ13A-5A
M2		Main Motor	Main Motor/LOCK	When energized	When deenergized		IC1	P43	PJ16A-2
M1		I/U Motor	I/C Motor/LOCK	When energized	When deenergized		IC1	P42	PJ16A-4
M10		Polygon Motor	Polygon Motor/ LOCK	When energized	When deenergized		IC1	P95	PJ8A-4
M8		Ventilation Fan	Ozone Fan Motor	When energized: 1 and 0 alternately displayed. When deenergized: 0 displayed			IC1	P51	PJ11A-3A

3 PAPER TRANSPORT FAILURE

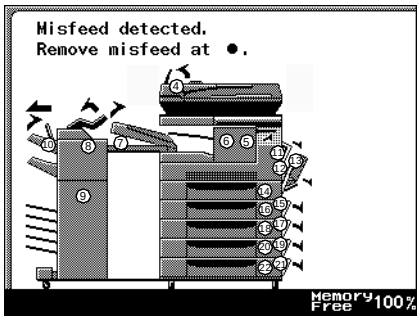
3-1. Paper Misfeed

When a paper misfeed occurs, the Touch Panel shows the corresponding message, misfeed location, and paper location.

⊗ display	Misfeed location
○ display	Paper location



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⊗ or ○ Display	Misfeed/Paper Location	Ref. Page
1	AFR-14 take-up, AFR-14 single feed	See the relevant option service manual.
2	AFR-14 reverse, AFR-14 exit	
3	AFR-14 transport	
4	AF-7 take-up, AF-7 transport	
5	JS-200 transport	
6	JS-200 exit	
7	Horizontal transport	
8	Finisher transport, 1st Tray exit, Elevator Tray exit	
9	Mailbin transport	
10	Finisher Tray	
11	Separator, Fusing Unit	(3)
12	Manual Bypass take-up	(2)
13	Duplex turnover, Duplex take-up	(6)
14	1st Drawer take-up	(1)
15	2nd Drawer transport	(1)
16	2nd Drawer take-up	(1)
17	3rd Drawer transport (PF-108/PF-110/PF-106)	(4) or (5)
18	3rd Drawer take-up (PF-108/PF-110/PF-106)	(4) or (5)
19	4th Drawer transport (PF-108/PF-110/PF-106)	(4) or (5)
20	4th Drawer take-up (PF-108/PF-110/PF-106)	(4) or (5)
21	5th Drawer transport (PF-108/PF-110)	(4)
22	5th Drawer take-up (PF-108/PF-110)	(4)

✻ If a communications error occurs between UN2 and PWB-A during a copy cycle, it forces a paper misfeed condition (○ displayed on the Touch Panel). If that happens, check the circuit between UN2 and PWB-A for proper connection and, if it is intact, replace the board.

<Resetting the Display>

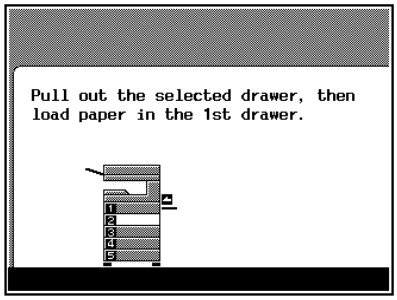
Misfeed in the copier	Misfeed in the option
Remove all sheets of paper misfed and left inside, and then open and close the Side Cover.	Remove all sheets of paper misfed and left inside, and then raise and lower or disconnect and reconnect the option.

✻ If the misfeed display is not reset by these procedures, check the misfeed detecting sensor at the paper location.

3-2. Size Error

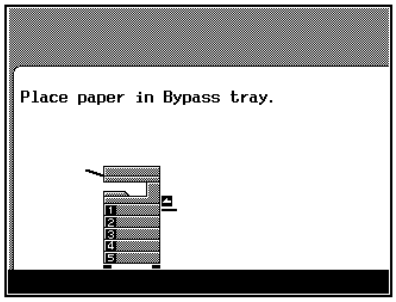
The following warning screen appears after a misfeed display has been reset if the actual size of the paper loaded in a paper source differs from the paper size set for that particular paper source.

[1st to 5th Drawer]



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[Manual Bypass]



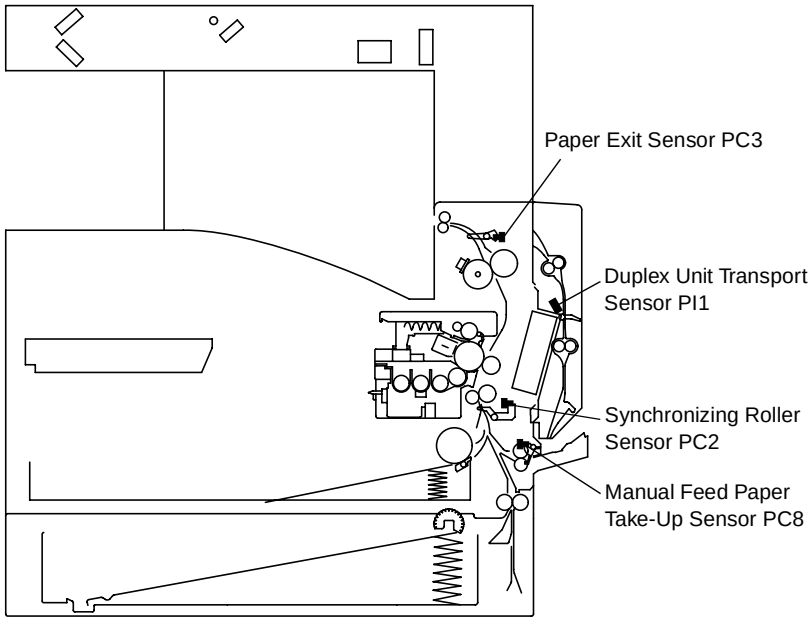
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✻ 1st to 5th Drawer: A size error is indicated by a highlighted paper source in the copier overview display. (In the above example, there is a size error in the 2nd Drawer.)

<Resetting the Size Error Display>
Slide out the drawer, then slide it back in, or load paper in the Manual Bypass Tray.

<Causes of a Size Error>
- Wrong paper size settings have been made.
- The user loads paper of a size different from what is set for the paper source.
- Two or more sheets of paper are being taken up and fed in.

3-3. Misfeed Detection Sensor Layout



3-4. Types of Misfeed Detection and Detection Timings

- The following are the types of misfeed detection and detection timings for different misfeed locations.

NOTE
For misfeed detection types and detection timings of options, see the relevant option service manual.

<Copier Take-Up Misfeed>

Type	Detection Timing	Timer Value T (sec.)
Paper take-up failure detection	• 1st Drawer paper take-up: Synchronizing Roller Sensor PC2 is not unblocked (H) even after the lapse of T sec. after Paper Take-Up Solenoid SL1 has been energized for the second paper take-up retry sequence.	0.92
	• 2nd Drawer paper take-up: PC2 is not unblocked (H) even after the lapse of T sec. after SL1 has been energized for the first paper take-up retry sequence.	1.63
	• 1st/2nd Drawer paper take-up: PC2 is unblocked (H) within T sec. after SL1 has been energized.	0.20

<Manual Bypass Take-Up Misfeed>

Type	Detection Timing	Timer Value T (sec.)
Bypass paper take-up failure detection	PC2 is not unblocked (H) even after T sec. after Manual Feed Paper Take-Up Clutch CL3 has been energized.	0.64
	PC2 is unblocked (H) within T sec. after CL3 has been energized.	0.20
Paper left	Manual Feed Paper Take-Up Sensor PC8 is blocked (L) when the Power Switch is turned ON, CPU is reset, or cover is opened and closed.	———

<Separator Misfeed>

Type	Detection Timing	Timer Value T (sec.)
Leading edge detection by Paper Exit Sensor PC3	PC3 is not blocked (L) even after the lapse of T sec. after PC2 has been unblocked (H).	1.38 ✻
Trailing edge detection by Synchronizing Roller Sensor PC2	PC2 is not blocked (L) even after the lapse of T sec. after it has been unblocked (H).	3.02 ✻
	PC2 is blocked (L) within T sec. after it has been unblocked (H).	0.75
Paper is stationary	During a sequence of detecting a paper size based on the period of time between when Synchronizing Clutch CL1 is energized and when PC2 is blocked (L), the paper size detected is longer than the size data sent from the controller by +260 mm or more.	———
Size error detection	The paper size detected based on the period of time between when CL1 is energized and when PC2 is blocked (L) is more than the size data sent from the controller by ±20 mm or more.	———
Paper left	PC2 is unblocked (H) when the Power Switch is turned ON, CPU is reset, or cover is opened and closed.	———

✻ Excludes the period of time during which the paper is stationary before the Synchronizing Roller.

<Fusing Misfeed>

Type	Detection Timing	Timer Value T (sec.)
Trailing edge detection by Paper Exit Sensor PC3	PC3 is not unblocked (H) even after the lapse of T sec. after PC2 has been blocked (L).	1.41
Paper left	PC3 is blocked (L) when the Power Switch is turned ON, CPU is reset, or cover is opened and closed.	———

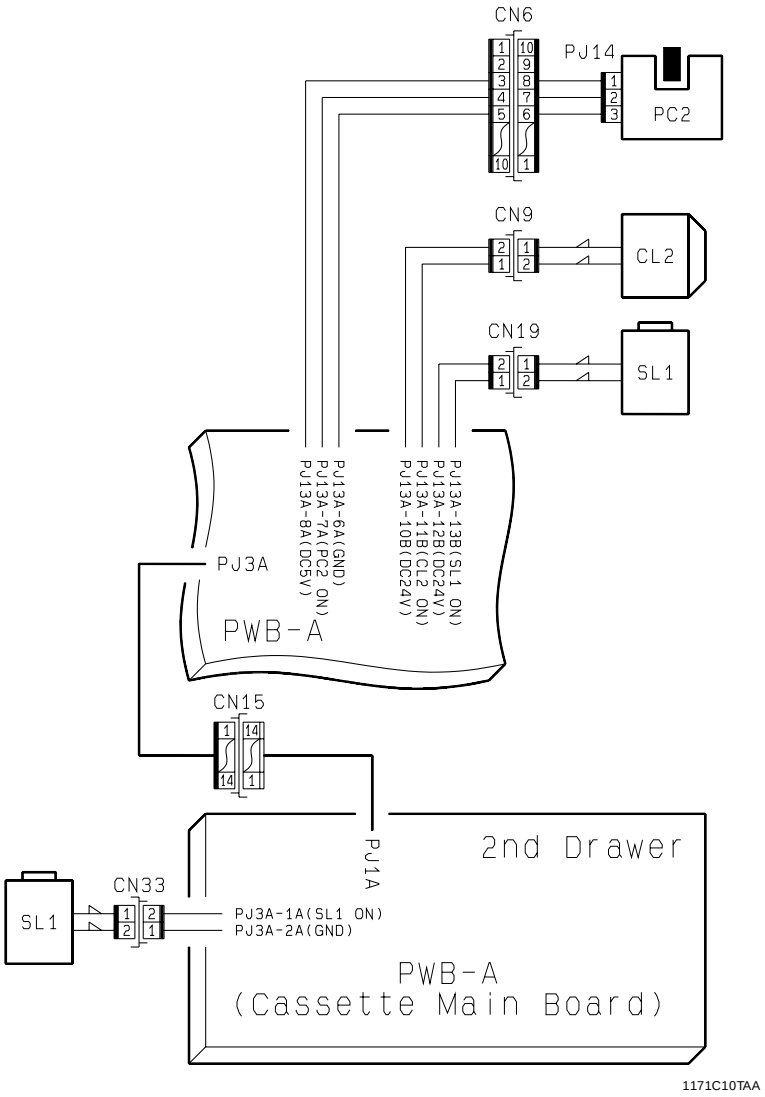
<Duplex Turnover/Take-Up Misfeed>

Type	Detection Timing	Timer Value T (sec.)
Leading edge detection during Duplex transport	Duplex Unit Transport Sensor PI1 is not blocked (H) even after the lapse of T sec. after Paper Exit Sensor PC3 has been unblocked (H).	1.52
Paper take-up failure detection	PC2 is not unblocked (H) even after the lapse of T sec. after the Duplex paper take-up sequence has been started.	0.88
	PC2 is unblocked (H) within T sec. after the Duplex paper take-up sequence has been started.	0.20
Paper left	PI1 is blocked (H) when the Power Switch is turned ON, CPU is reset, or cover is opened and closed.	———

3-5. Misfeed Troubleshooting Procedures

(1) Copier Take-Up Misfeed

Relevant Electrical Parts	
Paper Take-Up Solenoid SL1	Master Board PWB-A
Synchronizing Roller Sensor PC2	Cassette Main Board PWB-A

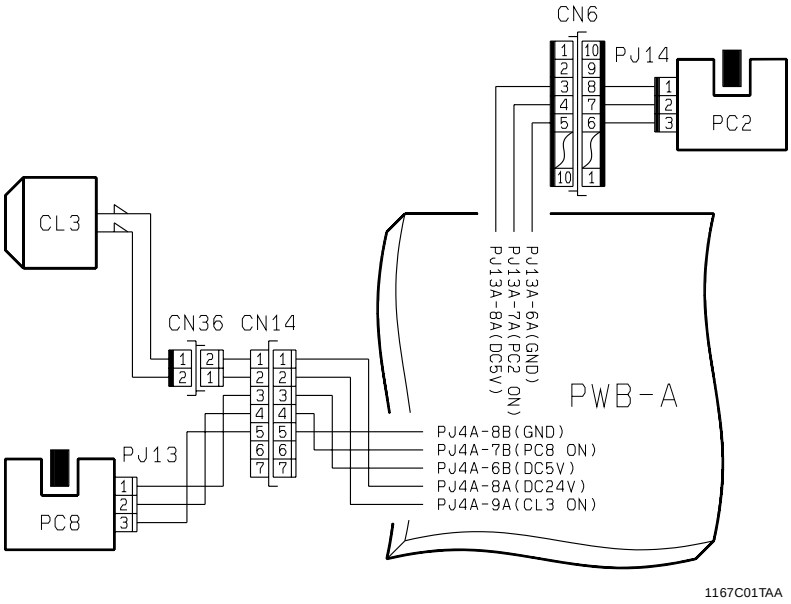


<Copier Take-Up Misfeed Troubleshooting Procedure>

Symptom	Step	Check Item	Result	Action
Paper is not taken up at all.	1	Does the paper being used meet the product specifications?	NO	Instruct the user to use the paper that meets product specifications.
	2	Is the paper curled, wavy, or damp?	YES	Change the paper. Instruct the user on the storage of paper.
	3	Are the Edge Guide and Trailing Edge Stop (of the drawer) positioned to the exact size of the paper used?	NO	Slide the guides to the exact size of the paper.
	4	Is the Paper Take-Up Roll deformed, worn, or dirty with paper dust?	YES	Clean or change the Paper Take-Up Roll.
	5	If the Paper Lifting Plate dirty or deformed?	YES	Clean or change the Paper Lifting Plate.
	6	Has the misfeed been detected while the Multi Purpose Cassette was being used?	YES	Check steps 7 and 8.
			NO	Check steps 9 and onward.
	7	Is the Paper Separator Pad deformed, worn, or dirty with paper dust?	YES	Clean or change the Paper Separator Pad.
	8	Check SL1 for operation. Does the voltage across CN19-1 on the PWB-A side and GND change from DC24V to DC0V when the Start key is pressed?	YES	Check various parts for possible overload and, if they are okay, change SL1.
			NO	Change PWB-A.
	9	Is the Paper Separator Finger dirty or deformed?	YES	Clean or change the Paper Separator Finger.
	10	Check CL2 for operation. Does the voltage across CN9-1 on the PWB-A side and GND change from DC24V to DC0V when the Start key is pressed?	NO	Change PWB-A.
	11	Check SL1 for operation. Does the voltage across PJ3A-1A on PWB-A (Cassette Main Board) and GND change from LOW to HIGH when the Start key is pressed?	YES	Check various parts for possible overload and, if they are okay, change SL1 or CL2.
			NO	Change PWB-A (Cassette Main Board) or PWB-A.
• Paper is at a stop before the vertical transport section. • Paper is at a stop near the Synchronizing Rollers.	1	Is the Vertical Transport Roller deformed, worn, or dirty with paper dust?	YES	Clean or change the Vertical Transport Roller.
	2	If the Vertical Transport Guide Plate dirty or deformed?	YES	Clean or change the Vertical Transport Guide Plate.
	3	Is PC2 fully operational? Check the input data using I/O Check.	YES	Check various parts for possible overload and, if they are okay, change PWB-A.
			NO	Check the PC2 actuator for operation and, if it is intact, change PC2.

(2) Manual Bypass Take-Up Misfeed

Relevant Electrical Parts	
Manual Feed Paper Take-Up Clutch CL3	Manual Feed Paper Take-Up Sensor PC8
Synchronizing Roller Sensor PC2	Master Board PWB-A

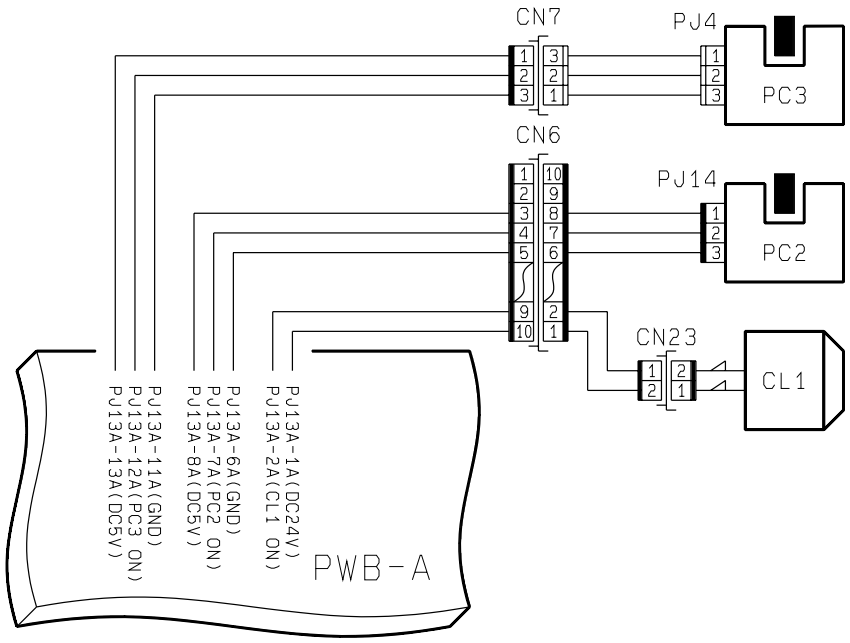


<Manual Bypass Take-Up Misfeed Troubleshooting Procedure>

Symptom	Step	Check Item	Result	Action
Paper is not taken up at all.	1	Does the paper being used meet the product specifications?	NO	Instruct the user to use the paper that meets product specifications.
	2	Is the paper curled, wavy, or damp?	YES	Change the paper. Instruct the user on the storage of paper.
	3	Is the Manual Feed Paper Take-Up Roller or Roll deformed, worn, or dirty with paper dust?	YES	Clean or change the Manual Feed Paper Take-Up Roller or Roll.
	4	Is PC8 fully operational? Check the input data using I/O Check.	NO	Check the PC8 actuator for operation and, if it is intact, change PC8.
	5	Check CL3 for operation. Does the voltage across CN14-2 and GND change from DC24V to DC0V when the misfeed condition is reset?	YES	Check various parts for possible overload and, if they are okay, change CL3.
			NO	Change PWB-A.
Paper is at a stop near the Synchronizing Rollers.	1	Is PC2 fully operational? Check the input data using I/O Check.	YES	Check various parts for possible overload and, if they are okay, change PWB-A.
			NO	Check the PC2 actuator for operation and, if it is intact, change PC2.

(3) Separator/Fusing Misfeed

Relevant Electrical Parts	
Paper Exit Sensor PC3	Synchronizing Clutch CL1
Synchronizing Roller Sensor PC2	Master Board PWB-A



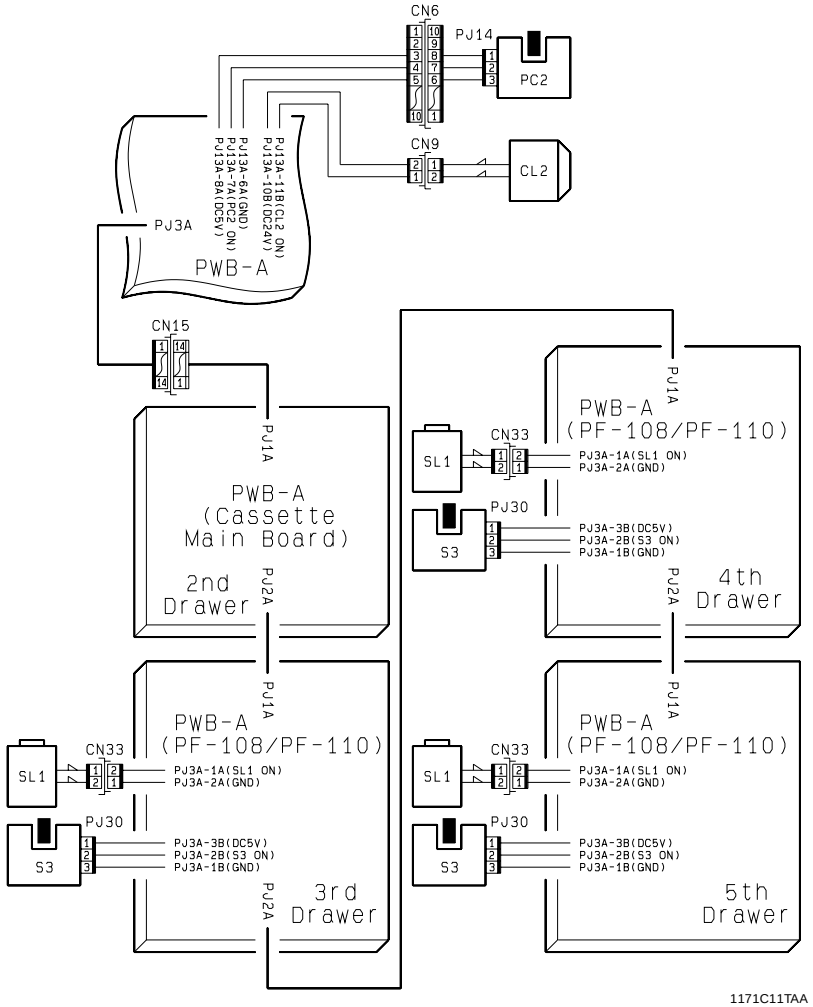
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<Separator/Fusing Misfeed Troubleshooting Procedure>

Symptom	Step	Check Item	Result	Action
Paper is at a stop near the Synchronizing Rollers.	1	Are the Synchronizing Rollers deformed, worn, or dirty with paper dust?	YES	Clean or change the Synchronizing Rollers.
	2	Is a good length of loop formed before the Synchronizing Rollers?	NO	Select the following functions in this order: Tech. Rep. Mode → Tech. Rep. Choice → Printer → Loop Adjustment and make the loop adjustment.
	3	Is a size error displayed when the misfeed display is reset?	YES	Check that the size of the paper actually loaded in the current paper source matches the size set for it.
	4	Is PC2 fully operational? Check the input data using I/O Check.	NO	Check the PC2 actuator for operation and, if it is intact, change PC2.
	5	Check CL1 for operation. Does the voltage across CN6-9 on the PWB-A side and GND change from DC24V to DC0V when the Start key is pressed?	YES	Check various parts for possible overload and, if they are okay, change CL1.
			NO	Change PWB-A.
Paper is at a stop near the PC Drum.	1	Is the Pre-Image Transfer Guide Plate dirty or deformed?	YES	Clean or change the guide plate.
	2	Is the Image Transfer Roller deformed, worn, or dirty with paper dust?	YES	Clean or change the Image Transfer Roller.
Paper is wedged at the PC Drum Paper Separator Fingers.	1	Are the PC Drum Paper Separator Fingers dirty or deformed?	YES	Clean or change the separator fingers.
			NO	Check the clearance between the PC Drum Paper Separator Fingers and PC Drum.
Paper is at a stop before the Fusing Rollers.	1	Is the Fusing Guide Plate dirty or deformed?	YES	Clean or change the Fusing Guide Plate.
Paper is at a stop at the Fusing Rollers.	1	Are the Fusing Rollers deformed, worn, or dirty with paper dust?	YES	Clean or change the Fusing Rollers.
	2	Are the Fusing Separator Fingers dirty or deformed?	YES	Clean, correct, or change the Fusing Separator Fingers.
Paper is at a stop at the exit section.	1	Is the Paper Exit Roller deformed, worn, or dirty with paper dust?	YES	Clean or change the Paper Exit Roller.
	2	Is PC3 fully operational? Check the input data using I/O Check.	YES	Check various parts for possible overload and, if they are okay, change PWB-A.
			NO	Check the PC3 actuator for operation and, if it is intact, change PC3.

(4) Paper Take-Up/Transport Misfeed (PF-108/PF-110)

Relevant Electrical Parts	
Paper Take-Up Solenoid SL1	Master Board PWB-A
Take-Up Sensor S3	Cassette Main Board PWB-A
Synchronizing Roller Sensor PC2	Cassette Main Board PWB-A: PF-108/PF-110
Transport Clutch CL2	

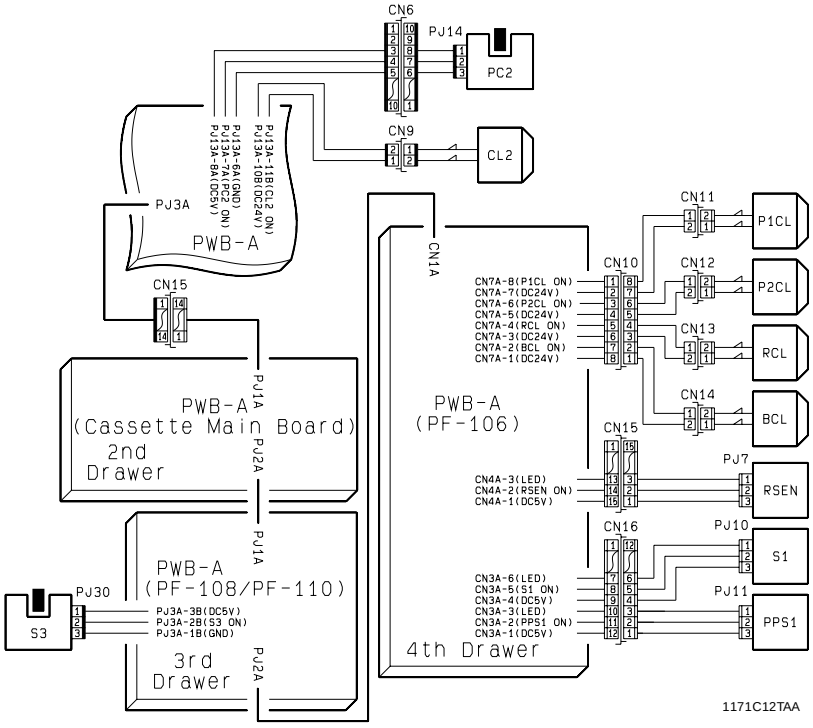


<Paper Take-Up/Transport Misfeed (PF-108/PF-110) Troubleshooting Procedure>

Symptom	Step	Check Item	Result	Action
Paper is not taken up at all.	1	Does the paper being used meet the product specifications?	NO	Instruct the user to use the paper that meets product specifications.
	2	Is the paper curled, wavy, or damp?	YES	Change the paper. Instruct the user on the storage of paper.
	3	Are the Edge Guide and Trailing Edge Stop (of the drawer) positioned to the exact size of the paper used?	NO	Slide the guides to the exact size of the paper.
	4	Is the Paper Take-Up Roll deformed, worn, or dirty with paper dust?	YES	Clean or change the Paper Take-Up Roll.
	5	Is the Paper Lifting Plate dirty or deformed?	YES	Clean or change the Paper Lifting Plate.
	6	Is the Paper Separator Finger dirty or deformed?	YES	Clean or change the Paper Separator Finger.
	7	Check CL2 for operation. Does the voltage across CN9-1 on the PWB-A side and GND change from DC24V to DC0V when the Start key is pressed?	NO	Change PWB-A.
	8	Check SL1 for operation. Does the voltage across PJ3A-1A on PWB-A (PF-108/PF-110) and GND change from LOW to HIGH when the Start key is pressed?	YES	Check various parts for possible overload and, if they are okay, change SL1 or CL2.
			NO	Change PWB-A (PF-108/PF-110), PWB-A (Cassette Main Board), or PWB-A, in that order.
• Paper is at a stop at the vertical transport section. • Paper is at a stop near the Synchronizing Rollers.	1	Is the Vertical Transport Roller deformed, worn, or dirty with paper dust?	YES	Clean or change the Vertical Transport Roller.
	2	Is the Vertical Transport Guide Plate dirty or deformed?	YES	Clean or change the Vertical Transport Guide Plate.
	3	Is a size error displayed when the misfeed display is reset?	YES	Check that the size of the paper loaded in the current drawer matches the size set for that drawer.
	4	✻ A misfeed is detected at the transport section of the 3rd Drawer. Is PC2 fully operational? Check the input data using I/O Check.	NO	Check the PC2 actuator for operation and, if it is intact, change PC2.
	5	Are all S3's fully operational? Check the input data using I/O Check.	YES	Check various parts for possible overload and, if they are okay, change PWB-A.
	6	Does the voltage across PJ3A-2B on PWB-A (PF-108/PF-110) and GND change to DC0V when S3 is blocked and to DC5V when S3 is unblocked?	YES	Change PWB-A (PF-108/PF-110) or PWB-A (Cassette Main Board).
			NO	Check the S3 actuator for operation and, if it is intact, change S3.

(5) Paper Take-Up/Transport Misfeed (PF-106)

Relevant Electrical Parts	
Take-Up Clutch 1 P1CL	Synchronizing Roller Sensor PC2
Take-Up Clutch 2 P2CL	Transport Clutch CL2
Paper Empty Sensor 1 PPS1	Take-Up Sensor S3
Paper Standby Position Sensor S1	LCC Main Board PWB-A: PF-106
Separator Clutch BCL	Cassette Main Board PWB-A: PF-108/PF-110
Registration Clutch RCL	Cassette Main Board PWB-A
Registration Sensor RSEN	Master Board PWB-A



<Paper Take-Up/Transport Misfeed (PF-106) Troubleshooting Procedure>

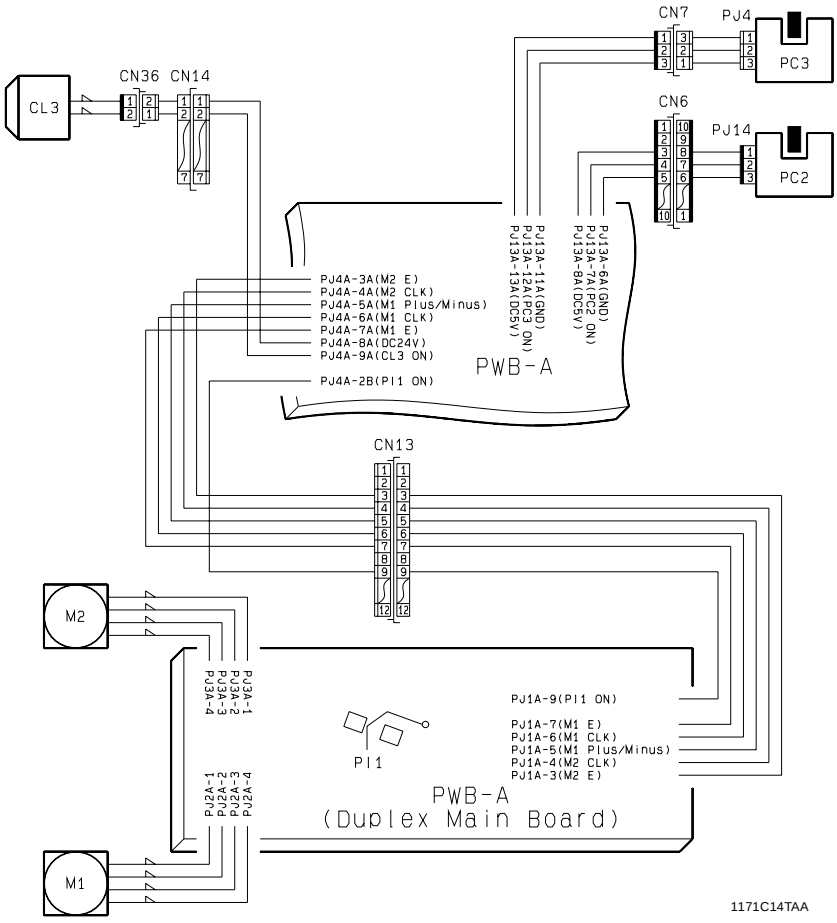
Symptom	Step	Check Item	Result	Action
• Paper is not taken up at all. • Paper is at a stop before the Paper Feed/ Separator Rolls.	1	Does the paper being used meet the product specifications?	NO	Instruct the user to use the paper that meets product specifications.
	2	Is the paper curled, wavy, or damp?	YES	Change the paper. Instruct the user on the storage of paper.
	3	Is the Paper Take-Up Roll deformed, worn, or dirty with paper dust?	YES	Clean or change the Paper Take-Up Roll.

Symptom	Step	Check Item	Result	Action
• Paper is not taken up at all. • Paper is at a stop before the Paper Feed/ Separator Rolls.	4	Is PPS1 fully operational? Check the input data using I/O Check.	YES	Perform steps 6 and onward.
	5	Does the voltage across CN3A-2 on PWB-A (PF-106) and GND change from LOW to HIGH when PPS1 is blocked?	YES	Change PWB-A (PF-106), PWB-A (PF-108/PF-110), or PWB-A (Cassette Main Board), in that order.
			NO	Change PPS1.
	6	Is paper fed up to S1 when paper is loaded in Lift 2 only and the drawer is slid into the copier?	YES	Perform steps 8 and onward.
	7	Check P2CL for operation. Does the voltage across CN7A-6 on PWB-A (PF-106) and GND change from DC24V to DC0V when step 6 is performed again?	YES	Check various parts for possible overload and, if they are okay, change P2CL.
			NO	Change PWB-A (PF-106), PWB-A (PF-108/PF-110), PWB-A (Cassette Main Board), or PWB-A, in that order.
	8	Check P1CL for operation. Does the voltage across CN7A-8 on PWB-A (PF-106) and GND change from DC24V to DC0V when step 6 is performed again?	NO	Change PWB-A (PF-106), PWB-A (PF-108/PF-110), PWB-A (Cassette Main Board), or PWB-A, in that order.
	9	Is S1 fully operational? Check the input data using I/O Check. Does the "S1S" input signal change from 0 to 1 when the drawer loaded with paper is slid into the copier?	YES	Perform steps 11 and onward.
	10	Does the voltage across CN3A-5 on PWB-A (PF-106) and GND change from LOW to HIGH when step 9 is performed again?	YES	Change PWB-A (PF-106), PWB-A (PF-108/PF-110), or PWB-A (Cassette Main Board), in that order.
			NO	Change S1.
	11	Is the Paper Feed Roll or Separator Roll deformed, worn, or dirty with paper dust?	YES	Clean or change the Paper Feed Roll or Separator Roll.
	12	Check BCL for operation. Does the voltage across CN7A-2 on PWB-A (PF-106) and GND change from DC24V to DC0V when the Start key is pressed?	YES	Check various parts for possible overload and, if they are okay, change P1CL or BCL.
			NO	Change PWB-A (PF-106), PWB-A (PF-108/PF-110), PWB-A (Cassette Main Board), or PWB-A, in that order.

Symptom	Step	Check Item	Result	Action
• Paper is at a stop at the vertical transport section. • Paper is at a stop near the Synchronizing Rollers.	1	Is the Vertical Transport Roller or Roll deformed, worn, or dirty with paper dust?	YES	Clean or change the Vertical Transport Roller or Roll.
	2	Is RSEN fully operational? Check the input data using I/O Check.	YES	Check step 4 and onward.
	3	Does the voltage across CN4A-2 on PWB-A (PF-106) and GND change from LOW to HIGH when RSEN is blocked?	YES	Change PWB-A (PF-106), PWB-A (PF-108/PF-110), or PWB-A (Cassette Main Board), in that order.
			NO	Change RSEN.
	4	Check RCL for operation. Does the voltage across CN7A-4 on PWB-A (PF-106) and GND change from DC24V to DC0V when the Start key is pressed?	NO	Change PWB-A (PF-106), PWB-A (PF-108/PF-110), PWB-A (Cassette Main Board), or PWB-A, in that order.
	5	Check CL2 for operation. Does the voltage across CN9-1 on PWB-A and GND change from DC24V to DC0V when the Start key is pressed?	NO	Change PWB-A.
	6	✻ If the 3rd Drawer is PF-106 Is PC2 fully operational? Check the input data using I/O Check.	YES	Check various parts for possible overload and, if they are okay, change RCL, CL2, or PWB-A, in that order.
			NO	Check the PC2 actuator for operation and, if it is intact, change PC2.
	7	✻ If the 4th Drawer is PF-106 Is S3 fully operational? Check the input data using I/O Check.	YES	Check various parts for possible overload and, if they are okay, change RCL, CL2, or PWB-A, in that order.
	8	Does the voltage across PJ3A-2B on PWB-A (PF-108/PF-110) and GND change to DC0V when S3 is blocked and to DC5V when S3 is unblocked?	YES	Change PWB-A (PF-108/PF-110) or PWB-A (Cassette Main Board).
			NO	Check the S3 actuator for operation and, if it is intact, change S3.

(6) Duplex Turnover/Take-Up Misfeed

Relevant Electrical Parts	
Paper Exit Sensor PC3	Duplex Unit Transport Motor M2
Duplex Unit Transport Sensor PI1	Manual Feed Paper Take-Up Clutch CL3
Synchronizing Roller Sensor PC2	Master Board PWB-A
Switchback Motor M1	Duplex Main Board PWB-A



<Duplex Turnover/Take-Up Misfeed Troubleshooting Procedure>

Symptom	Step	Check Item	Result	Action
Paper is at a stop near the exit section.	1	Is the Paper Exit Roller deformed, worn, or dirty with paper dust?	YES	Clean or change the Paper Exit Roller.
	2	Is PC3 fully operational? Check the input data using I/O Check.	NO	Check the PC3 actuator for operation and, if it is intact, change PC3.
	3	Check M1 for operation. Does the voltage across PJ1A-7 on PWB-A (Duplex Main Board) and GND change from DC5V to DC0V during a 2-sided copy cycle?	YES	Check gears for proper engagement.
			NO	Change PWB-A.
	4	Does the voltage across PJ1A-5 on PWB-A (Duplex Main Board) and GND change from DC5V to DC0V during a 2-sided copy cycle?	YES	Check various parts for possible overload and, if they are okay, change M1 or PWB-A (Duplex Main Board).
			NO	Change PWB-A.
Paper is at a stop inside the Duplex Unit.	1	Is the Duplex Unit Transport Roller or Roll deformed, worn, or dirty with paper dust?	YES	Clean or change the Duplex Unit Transport Roller or Roll.
	2	Is a torn piece of paper present on the paper path surface?	YES	Remove the torn piece of paper.
	3	Is the Manual Feed Take-Up Roller or Roll deformed, worn, or dirty with paper dust?	YES	Clean or change the Manual Feed Take-Up Roller or Roll.
	4	Check M2 for operation. Does the voltage across PJ1A-3 on PWB-A (Duplex Main Board) and GND change from DC5V to DC0V during a 2-sided copy cycle?	YES	Check gears for proper engagement.
			NO	Change PWB-A.
	5	Is PI1 fully operational? Check the input data using I/O Check.	NO	Check the PI1 actuator for operation and, if it is intact, change PWB-A (Duplex Main Board).
	6	Check CL3 for operation. Does the voltage across CN14-2 and GND change from DC24V to DC0V when paper is taken up from the Duplex Unit?	YES	Check various parts for possible overload and, if they are okay, change CL3 or M2.
			NO	Change PWB-A.
Paper is at a stop near the Synchronizing Rollers.	1	Is PC2 fully operational? Check the input data using I/O Check.	YES	Check various parts for possible overload and, if they are okay, change PWB-A.
			NO	Check the PC2 actuator for operation and, if it is intact, change PC2.

4 MALFUNCTION

The copier CPU has a function that self-diagnoses the copier conditions. On detection of a malfunction, the corresponding code representing a particular malfunction name, location, and details as listed below is displayed on the Touch Panel together with a Tech. Rep. call message.

- Perform the following steps to reset the malfunction.

Malfunction Resetting Procedure

- Turn OFF, then ON the Power Switch or open and close the Side Cover for all malfunctions except fusing-related ones (C05✻✻).
- Use "Trouble Reset" of the "Initial" screen to reset all malfunctions including fusing-related ones (C05✻✻).

4-1. Detection Timing by Malfunction Code

Code	Description	Detection Timing
C0000	Main Motor M2 malfunction	The Lock signal remains HIGH for a continuous 1-sec. period or more while M2 remains energized.
C0010	I/C Motor M1 malfunction	The Lock signal remains HIGH for a continuous 1-sec. period or more while M1 remains energized.
C0045	Fusing Cooling Fan Motor M3 malfunction	The Lock signal remains HIGH or LOW for a continuous 1-sec. period or more while M3 remains energized.
C004C	Ozone Fan Motor M8 malfunction	The Lock signal remains HIGH or LOW for a continuous 1-sec. period or more while M8 remains energized.
C004E	Power Unit Cooling Fan Motor M4	The Lock signal (analog input voltage) remains 0.4V or less for a continuous 0.5-sec. period or more while M4 remains energized.
C0070	Main Hopper Toner Replenishing Motor M6 malfunction	• Toner Bottle Home Position Sensor PC10 remains blocked (L) for a continuous 2-sec. period or more while M6 remains energized. • PC10 remains unblocked (H) for a continuous 6-sec. period or more while M6 remains energized.
C0050	Warming-up failure	The temperature of the Fusing Rollers do not reach the required level even after the lapse of a given period of time during a warming-up cycle. • From room temperature to 100°C: Within 65 sec. • From 100°C to 140°C: Within 25 sec. • From 140°C to 170°C: Within 20 sec. • From 170°C to the completion of warming-up: Within 22 sec.
C0510	Abnormally low fusing temperature	• The fusing temperature remains 130°C or less for a continuous 0.1-sec. period or more during the standby state or printing. • The fusing temperature remains 105°C or less for a continuous 2-min. period or more during the low-temperature standby state.
C0520	Abnormally high fusing temperature	The fusing temperature remains 230°C or more for a continuous 0.1-sec. period or more.

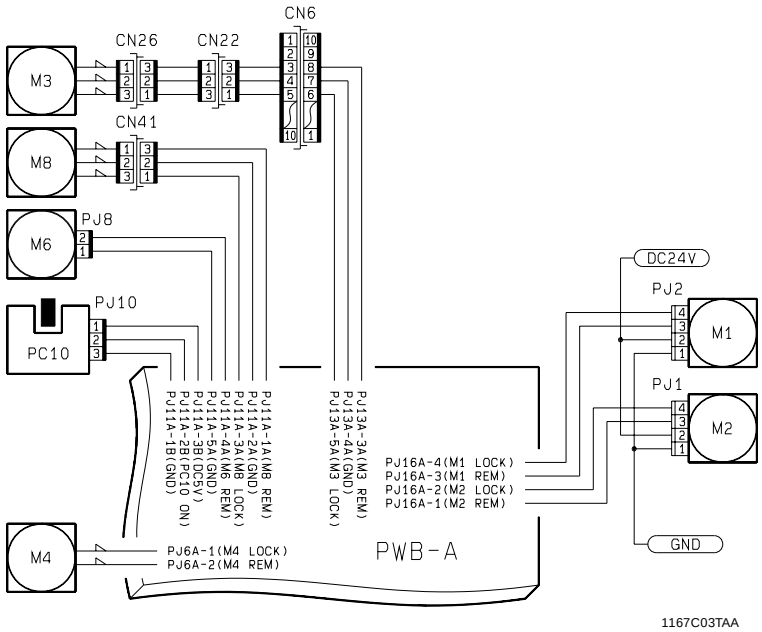
Code	Description	Detection Timing
C0650	Faulty Scanner Home Position Sensor 1 PC12	<The Power Switch is turned ON, Original Cover lowered, or Start key pressed when the Scanner is at its home position> • PC12 is not unblocked (H) even when the Scanner moves 10 mm to the left. • PC12 is not blocked (L) even when the Scanner moves 4 mm to the right after PC12 has been unblocked (H). <The Power Switch is turned ON, Original Cover lowered, or Start key pressed when the Scanner is at any position other than home> • PC12 is not blocked (L) even when the Scanner moves 469.5 mm to the right.
C0651	Faulty Scanner Home Position Sensor 2 PC13	When the Start key is pressed with a document loaded in the Document Feed Tray of AF-7, PC13 is not blocked (L) even when the Scanner moves 463 mm to the left after PC12 has been unblocked (H).
C0990	LCC Lift-Up Motor EMOT malfunction (PF-106)	✻ See option service manual.
C0991	Lift 1 ascent motion failure (PF-106)	
C0995	LCC Transport Motor HMOT malfunction (PF-106)	
C0999	Lift 2 ascent motion failure (PF-106)	
C099D	Communications error (PF-106)	
C0B00	Transport Motor M1 drive malfunction (FN-100/FN-500)	
C0B0F	Paper Entrance Switching Motor M1 drive malfunction (FN-100/FN-500)	
C0B30	CD Aligning Motor M4 drive malfunction (FN-100/FN-500)	
C0B38	Shift Motor M5 drive malfunction (FN-100/FN-500)	
C0B4D	Paper Holding Tray Motor M10 drive malfunction (FN-100/FN-500)	
C0B4E	Finisher Tray Motor M8 drive malfunction (FN-100/FN-500)	
C0B50	Stapling Motor drive malfunction (FN-100/FN-500)	
C0BA0	Elevator Motor M9 drive malfunction (FN-100/FN-500)	
C0F32	Faulty ATDC Sensor E1	The value of data read by E1 is faulty. [E1 reading is 7% or less (3.92V or more) or 19% or more (1.41V or less).]

Code	Description	Detection Timing
C0F33	ATDC adjustment failure	• In an F8 (ATDC control voltage automatic adjustment) operation, the adjustment of ATDC control voltage is not completed within 1 min. after E1 sampling. • In an F8 operation, the control voltage falls outside the range of 5.39V to 8.15V.
C1038	Engine connection error	• The system fails in checking initial engine connection when Power Switch S1 is turned ON. • The system succeeded in checking initial connection when S1 was turned ON; then it fails in rechecking initial connection through the execution of a software reset when a communications error occurs during operation.
C1300	Polygon Motor M10 malfunction	<Resolution selection failure detection> • The Lock signal is not detected for a given period of time after the resolution has been selected. (The Lock signal is not, however, detected for 1 sec. after the start.) <Faulty Lock signal detection> • No Lock signals are detected for the 1-sec. period which starts 1 sec. after the first Lock. ✻ First Lock: The first Lock signal following 1 sec. after the selection of start or half speed. <Out-of-timing Lock detection> • The Lock signal is not detected for a continuous 0.5-sec. period while M10 is in the stabilized turning state (after a Lock has been detected). <Abnormal Lock detection> • The Lock signal remains ON for a continuous 5-sec. period while M10 remains deenergized.
C133A	Communications error (G/A)	————————————————
C133B	Communications error (option I/F)	————————————————
C13C0	I/C initialization failure	After failing to blow the imaging cartridge fuse 2 consecutive times, 3.6V or more is detected and the I/C is determined to be new.
C13D0	Faulty EEPROM	No initial data is written in EEPROM.
C13F0	HSYNC detection failure	• The SOS rising edge is not detected even after the lapse of 0.2 sec. after Polygon Motor M10 has started and laser output started. • No SOS rising edges are detected while VIA remains ON.

4-2. Troubleshooting Procedures by Malfunction Code

(1) C0000: M2 Malfunction
C0010: M1 Malfunction
C0045: M3 Malfunction
C004C: M8 Malfunction
C004E: M4 Malfunction
C0070: M6 Malfunction

Relevant Electrical Parts	
I/C Motor M1	Main Hopper Toner Replenishing Motor M6
Main Motor M2	Ozone Fan Motor M8
Fusing Cooling Fan Motor M3	Toner Bottle Home Position Sensor PC10
Power Unit Cooling Fan Motor M4	Master Board PWB-A



C0000

Step	Check Item	Result	Action
1	Does M2 turn after the malfunction has been reset?	NO	Check various parts for possible overload.
2	Check M2 for operation. Does the voltage across PJ1-3 of M2 and GND change from DC5V to DC0V after the malfunction has been reset?	NO	Change PWB-A.
3	Does the voltage across PJ1-4 of M2 and GND change from DC5V to DC0V after the malfunction has been reset?	YES	Change PWB-A.
		NO	Change M2.

C0010

Step	Check Item	Result	Action
1	Does M1 turn after the malfunction has been reset?	NO	Check various parts for possible overload.
2	Check M1 for operation. Does the voltage across PJ2-3 of M1 and GND change from DC5V to DC0V after the malfunction has been reset?	NO	Change PWB-A.
3	Does the voltage across PJ2-4 of M1 and GND change from DC5V to DC0V after the malfunction has been reset?	YES	Change PWB-A.
		NO	Change M14.

C0045

Step	Check Item	Result	Action
1	Does M3 turn after the malfunction has been reset?	NO	Check the connector and harness between M3 and PWB-A.
2	Check M3 for operation. Does the voltage across CN6-8 on the PWB-A side and GND change from DC0V to DC24V after the malfunction has been reset?	NO	Change PWB-A.
3	Does the “C0045” display persist even after M3 has been replaced with a new one?	YES	Change PWB-A.

C004C

Step	Check Item	Result	Action
1	Does M8 turn after the malfunction has been reset?	NO	Check various parts for possible overload.
2	Check M8 for operation. Does the voltage across CN41-3 on the PWB-A side and GND change from DC0V to DC24V after the malfunction has been reset?	NO	Change PWB-A.
3	Does the “C004C” display persist even after M8 has been replaced with a new one?	YES	Change PWB-A.

C004E

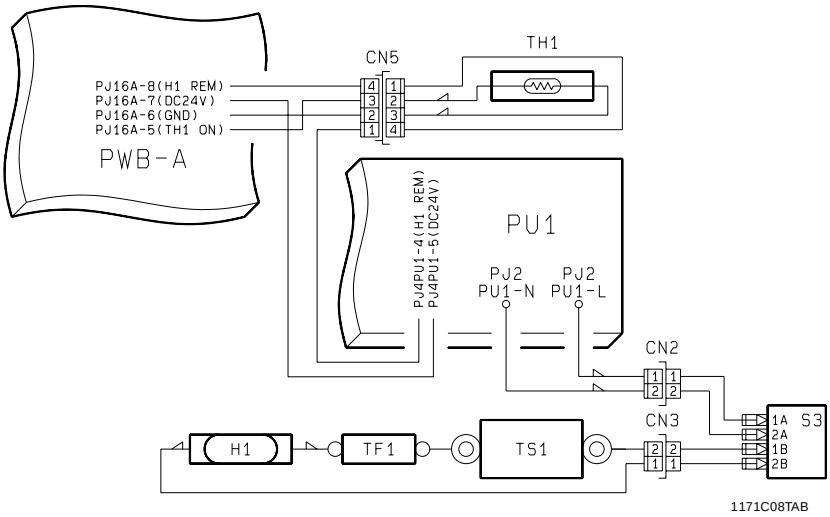
Step	Check Item	Result	Action
1	Does M4 turn after the malfunction has been reset?	YES	Change PWB-A.
2	Does the “C004E” display persist even after M4 has been replaced with a new one?	YES	Change PWB-A.

C0070

Step	Check Item	Result	Action
1	After the malfunction has been reset, remove the Rear Lower Cover and block Toner Bottle Cover Sensor PC11. Then, unlocking the Toner Bottle Lock Lever, turn the Toner Bottle a half turn by hand. Does the Toner Bottle turn when PC11 is unblocked (H) with the Toner Bottle Lock Lever kept unlocked?	YES	Perform step 3.
		NO	Check various parts for possible overload.
2	Does the voltage across PJ8-2 of M6 and GND change from DC0V to DC24V when step 1 is performed again?	YES	Change M6.
		NO	Change PWB-A.
3	Is PC10 fully operational? Check the input data using I/O Check. Does the input signal value for “Toner Bottle Set” change between “0” and “1” when the Toner Bottle is turned by hand?	YES	Change PWB-A.
		NO	Change PC10.

(2) C0500: Warming-up Failure
C0510: Abnormally Low Fusing Temperature
C0520: Abnormally High Fusing Temperature

Relevant Electrical Parts	
Fusing Roller Heater Lamp H1	Fusing Roller Heater Lamp Fuse TF1
Fusing Roller Thermistor TH1	Side Cover Interlock Switch 2 S3
Fusing Roller Thermostat TS1	Power Supply Unit 1 PU1
	Master Board PWB-A



C0500, C0510

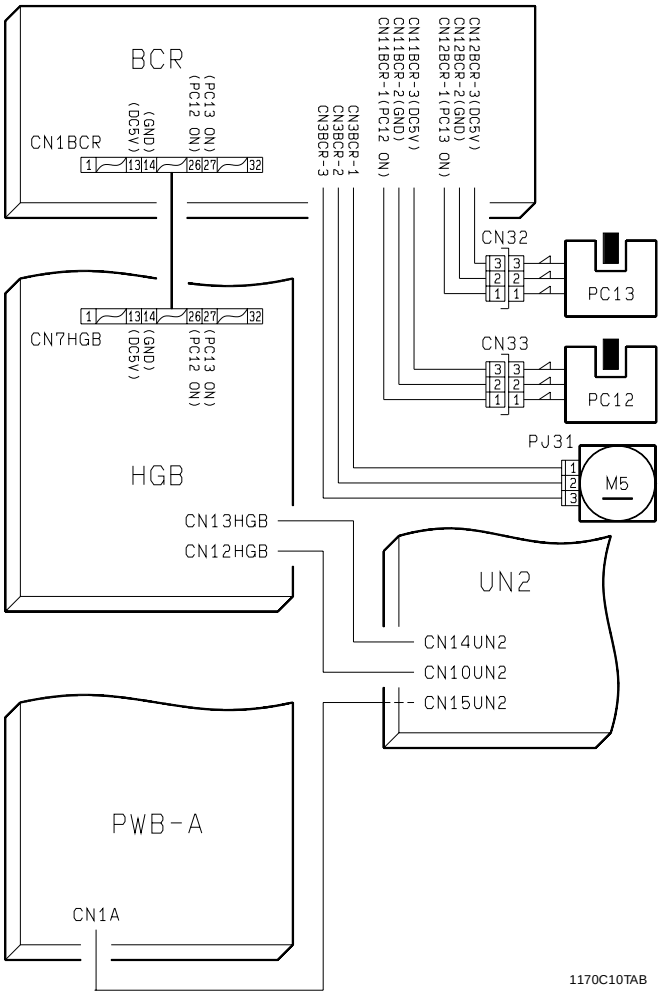
Step	Check Item	Result	Action
1	Does H1 turn ON after the malfunction is reset?	YES	Check TH1 for contamination or installation.
2	Is there continuity across CN3-1 and 2 on the Fusing Unit end with CN3 (2P) disconnected?	NO	Check H1, TS1, and TF1 for continuity.
3	Is there continuity across 1A and 1B, and across 2A and 2B, of S3 when S3 is turned ON?	NO	Change S3.
4	Is the resistance of TH1 (across CN5-2 and 3 on the Fusing Unit end) infinity?	YES	Change TH1.
5	Is Fuse F2 on PU1 conducting?	YES	Change PU1 or PWB-A.
		NO	Change the fuse.

C0520

Step	Check Item	Result	Action
1	Is TH1 installed properly?	NO	Install TH1 correctly.
2	Is TH1 dirty?	YES	Clean or change TH1.
3	Is the circuit across CN5-2 and 3 on the Fusing Unit end closed when CN5 (4P) is disconnected?	YES	Change TH1.
		NO	Change PWB-A or PU1.

(3) C0650: Faulty PC12
C0651: Faulty PC13

Relevant Electrical Parts	
Scanner Home Position Sensor 1 PC12	BCR Board BCR
Scanner Home Position Sensor 2 PC13	HGB Board HGB
Scanner Motor M5	MFB Board UN2
Master Board PWB-A	

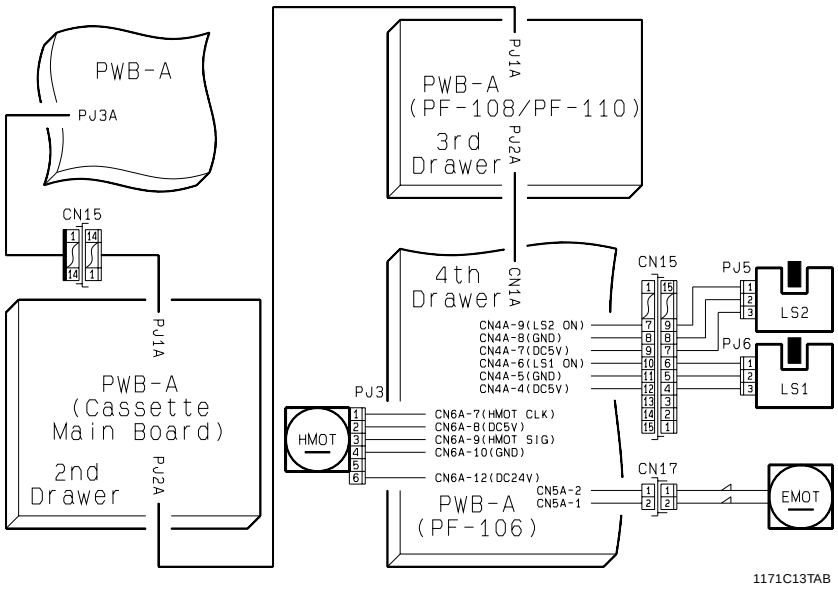


C0650, C0651

Step	Check Item	Result	Action
1	Is M5 energized? Select the following functions in this order: Tech. Rep. Mode → Movement Check → Scanner. Then, enter an appropriate value in “Absolute Position” or “Relative Position” and energize M5.	NO	Check various parts for possible overload and, if they are okay, change M5, BCR, HGB, UN2, or PWB-A, in that order.
2	Is “C0650” being displayed?	YES	Perform steps 3 and 4.
		NO	Perform steps 5 and 6.
3	Does the voltage across CN11BCR-1 on BCR and GND change from DC0V to DC5V when step 1 is performed a second time and PC12 is unblocked?	NO	Change PC12.
4	Does the voltage across CN1BCR-26 on BCR and GND change from DC0V to DC5V when step 3 is performed a second time?	YES	Change HGB, UN2, or PWB-A, in that order.
		NO	Change BCR.
5	Does the voltage across CN12BCR-1 on BCR and GND change from DC5V to DC0V when step 1 is performed a third time and PC13 is unblocked?	NO	Change PC13.
6	Does the voltage across CN1BCR-27 on BCR and GND change from DC0V to DC5V when step 5 is performed a second time?	YES	Change HGB, UN2, or PWB-A, in that order.
		NO	Change BCR.

(4) C0990: EMOT Malfunction
C0991: Lift 1 Ascent Motion Failure
C0995: HMOT Malfunction
C0999: Lift 2 Ascent Motion Failure
C099D: Communications Error

Relevant Electrical Parts	
LCC Lift-Up Motor EMOT	LCC Main Board PWB-A: PF-106
Lift-Up Sensor 1 LS1	Cassette Main Board PWB-A: PF-108/PF-110
Lift-Up Sensor 2 LS2	Cassette Main Board PWB-A
LCC Transport Motor HMOT	Master Board PWB-A



C0990

Step	Check Item	Result	Action
1	Does “C0990” reappear even after EMOT has been replaced with a new one?	YES	Change PWB-A (PF-106), PWB-A (PF-108/PF-110), PWB-A (Cassette Main Board), or PWB-A, in that order.

C0991

Step	Check Item	Result	Action
1	Is LS1 fully operational? Check the input data using I/O Check.	YES	Perform step 3 and onward.
2	Does the voltage across CN4A-6 on PWB-A (PF-106) and GND change to DC5V when LS1 is blocked and to DC0V when LS1 is unblocked?	YES	Change PWB-A (PF-106), PWB-A (PF-108/PF-110), or PWB-A (Cassette Main Board), in that order.
		NO	Change LS1.
3	Does EMOT turn when a drawer loaded with paper is slid into the copier?	YES	Check gears and couplings for proper engagement and, if they are okay, change PWB-A.
4	Does the voltage across CN5A-1 on PWB-A (PF-106) and GND change from DC0V to DC24V when step 3 is performed again?	YES	Check various parts for possible overload and, if they are okay, change EMOT.
		NO	Change PWB-A (PF-106), PWB-A (PF-108/PF-110), PWB-A (Cassette Main Board), or PWB-A, in that order.

C0995

Step	Check Item	Result	Action
1	Does “C0995” reappear even after HMOT has been replaced with a new one?	YES	Change PWB-A (PF-106), PWB-A (PF-108/PF-110), PWB-A (Cassette Main Board), or PWB-A, in that order.

C0999

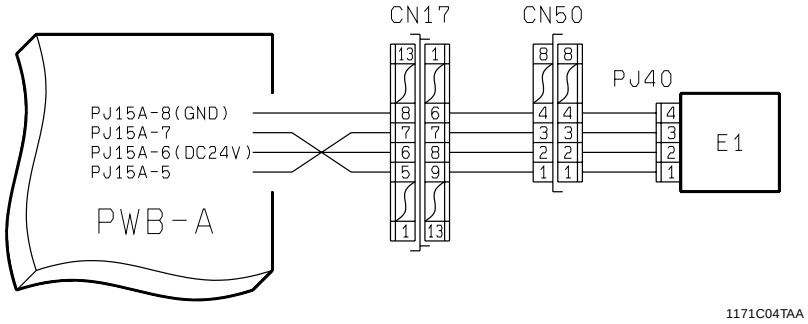
Step	Check Item	Result	Action
1	Is LS2 fully operational? Check the input data using I/O Check.	YES	Perform step 3 and onward.
2	Does the voltage across CN4A-9 on PWB-A (PF-106) and GND change to DC5V when LS2 is blocked and to DC0V when LS2 is unblocked?	YES	Change PWB-A (PF-106), PWB-A (PF-108/PF-110), or PWB-A (Cassette Main Board), in that order.
		NO	Change LS2.
3	Does EMOT turn when a drawer loaded with paper is slid into the copier?	YES	Check gears and couplings for proper engagement and, if they are okay, change PWB-A.
4	Does the voltage across CN5A-1 on PWB-A (PF-106) and GND change from DC0V to DC24V when step 3 is performed again?	YES	Check various parts for possible overload and, if they are okay, change EMOT.
		NO	Change PWB-A (PF-106), PWB-A (PF-108/PF-110), PWB-A (Cassette Main Board), or PWB-A, in that order.

C099D

Step	Check Item	Result	Action
1	Does “C099D” reappear even after PWB-A (PF-106) has been replaced with a new one?	YES	Change PWB-A (PF-108/PF-110), PWB-A (Cassette Main Board), or PWB-A, in that order.

(5) C0F32: Faulty E1
C0F33: ATDC Adjustment Failure

Relevant Electrical Parts	
ATDC Sensor E1	Master Board PWB-A



C0F32, C0F33

Step	Check Item	Result	Action
1	Are PJ40, CN50, CN17, and PWB-A PJ15A connected properly?	NO	Connect them properly.
2	Is the CN50 connection dirty?	YES	Clean.
3	Is “C0F32” or “C0F33” displayed even when an I/C with the same T/C as that of a new one has been installed?	NO	Change the I/C with a new one.
4	Is “C0F32” or “C0F33” displayed even when an I/C with the same T/C as that of a new one has been installed and an F8 operation run? (Be sure to record the ATDC control voltage setting value if an F8 operation is to be run.)	YES	Change PWB-A, install the old I/C, and return the ATDC control voltage setting to the value recorded. If “C0F32” or “C0F33” redisplayed, change the I/C with a new one.
		NO	Change the I/C with a new one.

(6) C10✻✻ to C13✻✻

- These malfunctions are concerned with faulty symptoms as they relate to software, hardware, and communications. For remedial actions, change the board, check for cable connections, and turn the Power Switch OFF and ON.

Code	Action
C1038	1. Check the connection between PWB-A and UN2, reset the malfunction, and turn OFF and ON the Power Switch. 2. If the same malfunction persists, change PWB-A or UN2.
C1300	1. Reset the malfunction and turn OFF and ON the Power Switch. 2. If the same malfunction persists, check the harnesses and PJs between UN3, PH Unit, and PWB-A and, if they are intact, change UN3, PH Unit, or PWB-A, in that order.
C133A	1. Reset the malfunction and turn OFF and ON the Power Switch. 2. If the same malfunction persists, check the connection between the copier PWB-A and A to E below: A. 2nd Drawer paper source unit B. 3rd Drawer paper source unit (PF-108/PF-110/PF-106) C. 4th Drawer paper source unit (PF-108/PF-110/PF-106) D. 5th Drawer paper source unit (PF-108/PF-110) E. Job Tray (JS-200) 3. If the connection is made properly, unplug the connector between the copier and A to E and turn OFF and ON the Power Switch. →If the malfunction code display persists, change the copier PWB-A. →If the malfunction is no longer detected, connect the connectors sequentially and turn OFF and ON the Power Switch. When “C133A” is detected, check the connector of the corresponding paper source unit and, if it is intact, change the PWB-A of the unit.
C133B	1. Reset the malfunction and turn OFF and ON the Power Switch. 2. If the same malfunction persists, check the connection between the copier PWB-A and Finisher PWB-A. 3. If the connection is made properly, unplug the connector between the copier and Finisher and turn OFF and ON the Power Switch. →If the malfunction code display persists, change the copier PWB-A. →If the malfunction is no longer detected, check the connector and, if it is intact, change the Finisher PWB-A.
C13C0	1. Reset the malfunction, turn OFF and ON the Power Switch, and reinstall the I/C. 2. If the malfunction is detected again, check the terminal block for the I/C fuse and HV1 and, if it is intact, change HV1 or PWB-A.
C13D0	1. Reset the malfunction, turn OFF and ON the Power Switch, and unplug the power cord and plug it back in. 2. If the malfunction is detected again, check the connection between IC3 on PWB-A and the EEPROM and, if it is good, change PWB-A. 3. If the malfunction is still detected, change the EEPROM. ✻ For the precautions to be observed when replacing the EEPROM, see DIS/REASSEMBLY, ADJUSTMENT.
C13F0	1. Reset the malfunction and turn OFF and ON the Power Switch. 2. If the same malfunction persists, check the harnesses and PJs between UN3, PH Unit, and PWB-A and, if they are intact, change UN3, PH Unit, or PWB-A, in that order.

(7) The Copier Does not Turn ON.

Relevant Electrical Parts	
Power Switch S1 Side Cover Interlock Switch 1 S2 Power Supply Unit 1 PU1 Power Supply Unit 2 PU2	Master Board PWB-A Control Panel UN1 MFB Board UN2

Symptom	Step	Check Item	Result	Action
Power does not turn ON.	1	Is there an AC power supply voltage across PJ1PU1-1 and 3 on PU1 when S1 is turned ON?	NO	Check S1, PU1 fuse, and power supply voltage.
	2	Is the voltage across PJ5PU1-10 and GND DC5V when S1 is turned ON?	YES	Check the fuse on PWB-A.
			NO	Change PU1.
	3	Is the voltage across PJ5PU1-4 and GND DC24V when S1 is turned ON?	NO	Change PU1.
	4	Is the voltage across PJ5PU1-3 and GND DC24V when S1 is turned ON?	NO	Change PU1.
	5	Does the voltage across the S2 connector (yellow) and GND change from DC0V to DC24V when S2 is turned ON?	NO	Check S2.
	6	Is the voltage across PJ7PU1-9 on PU1 and GND DC3.3V?	NO	Change PU1.
	7	Is the voltage across CN1PU2-1 on PU2 and GND DC24V?	NO	Change PU1.
	8	Is the voltage across CN28UN2-8 on UN2 and GND DC-12V?	NO	Change PU2.
	9	Is the voltage across CN28UN2-7 on UN2 and GND DC12V?	YES	Change PWB-A.
			NO	Change PU2.
The control panel indicates nothing.	1	Is DC24V being output from UN2 to UN1? Disconnect CN1UN1 of UN1 and check to see if the voltage across CN1UN1-1 on the harness side and GND is DC24V.	NO	Change UN2.
	2	Is DC5V being output from UN2 to UN1? Disconnect CN1UN1 of UN1 and check to see if the voltage across CN1UN1-28 on the harness side and GND, and across CN1UN1-29 and GND, is DC5V.	YES	Change UN1.
			NO	Change UN2.

5 IMAGE FAILURE

5-1. Image Failure Troubleshooting

Image failures have many possible causes. For troubleshooting, it is necessary to determine whether a failure is attributable to:
1. A basic cause or any other cause
2. The input system (IR) or output system (engine).

In this chapter, troubleshooting is divided into “initial checks” and “troubleshooting procedures classified by image failures.” If an image failure has occurred, first make the initial checks, then proceed to the corresponding image failure troubleshooting procedure.

5-2. Initial Checks

1. Place of installation
- Is the source voltage normal? Does the voltage vary greatly?
- Is the copier installed in a hot, humid place where temperature varies sharply?
- Is the copier installed in a dusty place?
- Is the copier subjected to direct sunlight?
- Is the copier level?

2. Copy paper
- Is the recommended paper used?
- Is the paper damp?
- Does the paper size set in the paper source match the size of the paper loaded in it?

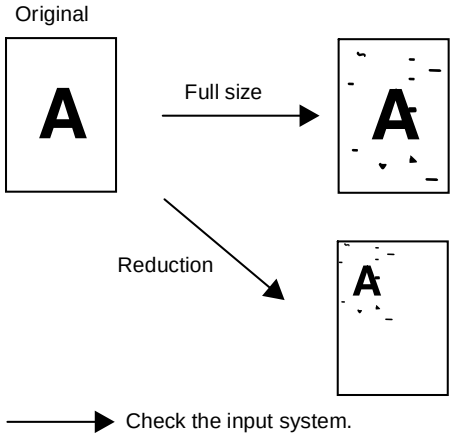
3. Original
- Is the original written in light pencil?
  → Use the test chart to check the image.
- Is the original transparent, or are transparencies being used?
  → Place a blank sheet of paper over the original and make a copy.
- Is the Original Glass dirty or scratched?
  → Clean a dirty glass, or replace a scratched one.

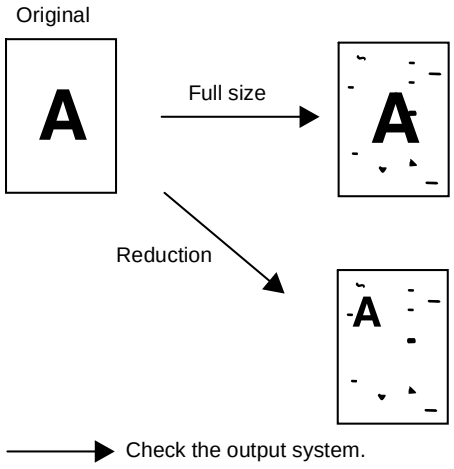
4. Adjust data and Level History data
- Do the values set for “Adjust” and “Level History” fall within the specified range?

5. PM parts (supplies)
- Have the PM parts (supplies), such as the PC Drum, Cleaning Blade, and other parts that affect image quality, reached the end of their cleaning or replacement cycle?
- Are two or more imaging cartridges being used alternately?

6. Adjustment items (registration, focus, etc.)
- Among the adjustment items given in DIS/REASSEMBLY, ADJUSTMENT, is there any adjustment that may remedy the image failure?

7. Input system (IR) or output system (engine)?
- Run “F12” which can be selected as follows: Tech. Rep. Mode → Function.
- If the test pattern output has the same problem as the copy image:
  → Check the output system.
- If the test pattern output is normal:
  → Check the input system.
- Make a copy at a different zoom ratio.



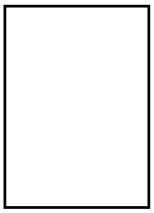


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5-3. Troubleshooting Procedures by Image Failure

<Image Failure Samples>

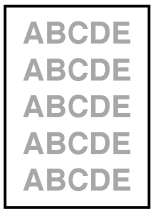
1. Blank copy



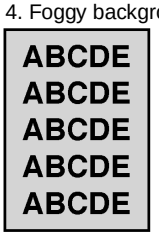
2. Black copy



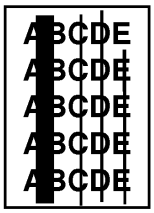
3. Low image density



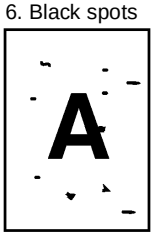
4. Foggy background



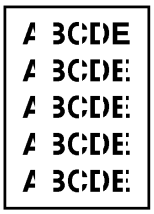
5. Black streaks or bands



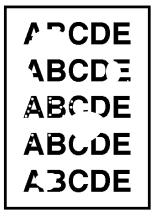
6. Black spots



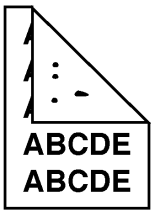
7. Blank streaks or bands

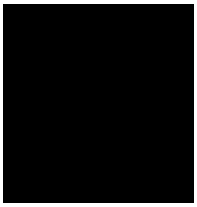


8. Void areas

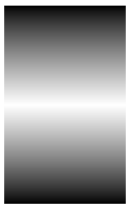


9. Smear on back

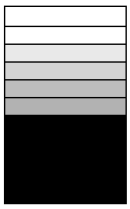




10. Uneven image density



11. Gradation reproduction failure



12. Rough image



13. Periodically uneven image



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(1) Blank Copy

Section	Step	Check Item	Result	Action
Engine	1	Is toner empty?	YES	Check Sub Hopper Toner Empty Switch S4 and change the Toner Bottle.
	2	Is the drive transmission mechanism to the Developing Unit in good condition?	NO	Check and change as necessary.
	3	Is the image transfer current terminal intact?	NO	Check and change as necessary.
	4	Does the laser shutter (the one located on the laser beam path between the PH Unit and PC Drum) open and close properly?	NO	Adjust so that the shutter opens and closes properly.
	5	Does the I/C Shutter open and close properly?	YES	Change HV1, PH Unit, or PWB-A, in that order.
			NO	Adjust so that the shutter opens and closes properly.
IR	1	Is the Scanner drive transmission mechanism in good condition?	NO	Check and change as necessary.
	2	Do the connections from CCD to HGB remain intact?	NO	Reconnect.
	3	Do the connections from HGB to UN2 remain intact?	YES	Change CCD, HGB, or UN2, in that order.
			NO	Reconnect.

(2) Black Copy

Section	Step	Check Item	Result	Action
Engine	1	Is the PC Drum charge voltage terminal in good condition?	NO	Check and change as necessary.
	2	Is the grid voltage terminal in good condition?	NO	Check and change as necessary.
	3	Is the developing bias terminal in good condition?	NO	Check and change as necessary.
	4	Does a black copy persist even after the I/C has been replaced with a new one?	YES	Change HV1 or PWB-A.
IR	1	Does the Exposure Lamp turn ON when "ON" is selected for "Lighting Exposure Lamp"? "Lighting Exposure Lamp" can be selected as follows: Tech. Rep. Mode → Movement Check → Scanner.	YES	Perform steps 4 and onward.
			NO	Check connectors and harnesses and perform steps 2 and 3.
	2	Does the voltage across CN13BCR-1 on BCR and GND change from DC24V to DC0V when step 1 is performed again?	NO	Change BCR, HGB, or UN2, in that order.
	3	Is an AC voltage output from INV to Exposure Lamp when step 1 is performed again?	YES	Change LA2.
			NO	Change INV.
	4	Are the mirrors and lens installed properly?	NO	Install them properly.
	5	Are the mirrors and lens dirty?	YES	Clean or change.

(3) Low Image Density

Section	Step	Check Item	Result	Action
Engine	1	Does the image get better when a copy is made with new paper loaded?	YES	Change the paper. Instruct the user on the storage of paper.
	2	Is toner empty?	YES	Check Sub Hopper Toner Empty Switch S4 and change the Toner Bottle.
	3	Is the image transfer current terminal intact?	NO	Check and change as necessary.
	4	Is the developing bias terminal intact?	NO	Check and change as necessary.
	5	Does the image density remain low even after the I/C has been replaced with a new one?	NO	This completes the procedure.
	6	Does the image density become higher when the “Image Density” value is changed toward the plus side? “Image Density” can be selected as follows: Tech. Rep. Mode → Tech. Rep. Choice → Printer.	YES	This completes the procedure.
	7	Does the image density become higher when the “VG Adjust” value is changed toward the plus side? “VG Adjust” can be selected as follows: Tech. Rep. Mode → Tech. Rep. Choice → Printer.	YES	This completes the procedure.
			NO	Change HV1, HGB, or UN2, in that order.
IR	1	Do the connections from CCD to HGB remain intact?	NO	Reconnect.
	2	Do the connections from HGB to UN2 remain intact?	YES	Change CCD, HGB, or UN2, in that order.
			NO	Reconnect.

(4) Foggy Background

Section	Step	Check Item	Result	Action
———	1	Is sunlight or any other extraneous light entering the copier?	YES	Protect the copier from extraneous light.
Engine	1	Is the PC Drum dirty with foreign matter?	YES	Clean the PC Drum.
	2	Is the PC Drum charge voltage terminal in good condition?	NO	Check and change as necessary.
	3	Is the grid voltage terminal in good condition?	NO	Check and change as necessary.
	4	Is the developing bias terminal in good condition?	NO	Check and change as necessary.
	5	Is the Charge Neutralizing Sheet voltage terminal in good condition?	NO	Check and change as necessary.
	6	Is Eraser Lamp LA1 dirty?	YES	Clean.
	7	Does foggy background persist even after the I/C has been replaced with a new one?	NO	This completes the procedure.
	8	Does foggy background persist when the “Image Density” value is changed toward the minus side? “Image Density” can be selected as follows: Tech. Rep. Mode → Tech. Rep. Choice → Printer.	NO	This completes the procedure.
	9	Does foggy background persist when the “VG Adjust” value is changed toward the minus side? “VG Adjust” can be selected as follows: Tech. Rep. Mode → Tech. Rep. Choice → Printer.	YES	Change HV1, PH Unit, or PWB-A, in that order.
			NO	This completes the procedure.
IR	1	Are the mirrors and lens dirty?	YES	Clean or change.
	2	Is the Exposure Lamp dirty or deteriorated?	YES	Clean or change.
	3	Do the connections between the Exposure Lamp and INV remain intact?	NO	Reconnect.
	4	Do the connections from INV to BCR remain intact?	NO	Reconnect.
	5	Do the connections from BCR to HGB remain intact?	NO	Reconnect.
	6	Do the connections from HGB to UN2 remain intact?	YES	Change INV, BCR, HGB, or UN2, in that order.
			NO	Reconnect.

(5) Black Streaks or Bands

Section	Step	Check Item	Result	Action
Engine	1	Is the PC Drum dirty?	YES	Clean the PC Drum.
	2	Has toner spilled from the I/C inside of the copier?	YES	Clean the interior and change I/C.
	3	Is the PC Drum charge voltage terminal in good condition?	NO	Check and change as necessary.
	4	Is the grid voltage terminal in good condition?	NO	Check and change as necessary.
	5	Are the Fusing Rollers dirty with foreign matter?	YES	Clean or change the Fusing Rollers.
			NO	Change I/C.
IR	1	Are the mirrors, lens, and Original Glass dirty with foreign matter?	YES	Clean the mirrors, lens, and Original Glass.
	2	Do the connections from CCD to HGB remain intact?	NO	Reconnect.
	3	Do the connections from HGB to UN2 remain intact?	YES	Change CCD, HGB, or UN2, in that order.
			NO	Reconnect.

(6) Black Spots

Section	Step	Check Item	Result	Action
Engine	1	Is the PC Drum dirty?	YES	Clean the PC Drum.
	2	Has toner spilled from the I/C inside of the copier?	YES	Clean the interior and change I/C.
	3	Is the PC Drum charge voltage terminal in good condition?	NO	Check and change as necessary.
	4	Is the grid voltage terminal in good condition?	NO	Check and change as necessary.
	5	Are the Fusing Rollers dirty with foreign matter?	YES	Clean or change the Fusing Rollers.
			NO	Change I/C.
IR	1	Are the mirrors, lens, and Original Glass dirty with foreign matter?	YES	Clean the mirrors, lens, and Original Glass.
	2	Do the connections from CCD to HGB remain intact?	NO	Reconnect.
	3	Do the connections from HGB to UN2 remain intact?	YES	Change CCD, HGB, or UN2, in that order.
			NO	Reconnect.

(7) Blank Streaks or Bands

Section	Step	Check Item	Result	Action
Engine	1	Is the PC Drum dirty with foreign matter?	YES	Clean the PC Drum.
	2	Is the image transfer current terminal intact?	YES	Check and change as necessary.
	3	Is the Image Transfer Roller dented or scratched?	YES	Change the Image Transfer Roller.
	4	Are the Fusing Rollers scratched or dirty?	YES	Clean or change the Fusing Rollers.
	5	Is the PH Unit window glass dirty?	YES	Clean the window glass.
	6	Is the light path between PH and PC dirty with dust?	YES	Remove dust.
			NO	Change the I/C.
IR	1	Is the Shading Sheet on the Original Glass dirty?	YES	Clean or change.
	2	Do the connections from CCD to HGB remain intact?	NO	Reconnect.
	3	Do the connections from HGB to UN2 remain intact?	YES	Change CCD, HGB, or UN2, in that order.
			NO	Reconnect.

(8) Void Areas

Section	Step	Check Item	Result	Action
Engine	1	Does the image get better when a copy is made with new paper loaded?	YES	Change the paper. Instruct the user on the storage of paper.
	2	Is the Image Transfer Roller installed correctly?	NO	Install correctly.
	3	Is the Image Transfer Roller dented or scratched?	YES	Change the Image Transfer Roller.
	4	Is the image transfer current terminal intact?	NO	Check and change as necessary.
	5	Are the Fusing Rollers scratched or deformed?	YES	Change the Fusing Rollers.
			NO	Change the I/C.
IR	1	Is the Original Glass dirty?	YES	Clean or change.
	2	Do the connections from CCD to HGB remain intact?	NO	Reconnect.
	3	Do the connections from HGB to UN2 remain intact?	YES	Change CCD, HGB, or UN2, in that order.
			NO	Reconnect.

(9) Smear on Back

Section	Step	Check Item	Result	Action
Engine	1	Is the Image Transfer Roller dirty?	YES	Clean or change.
	2	Has toner spilled from the I/C inside of the copier?	YES	Clean the interior and change I/C.
	3	Are the Fusing Rollers dirty?	YES	Clean or change the Fusing Rollers.

(10) Uneven Image Density

Section	Step	Check Item	Result	Action
Engine	1	Is the Image Transfer Roller dirty or deteriorated?	YES	Clean or change the Image Transfer Roller.
	2	Does the image get better when a copy is made with new paper loaded?	YES	Change the paper. Instruct the user on the storage of paper.
			NO	Change the I/C or PWB-A.
IR	1	Are the Original Glass, mirrors, and lens dirty with foreign matter?	YES	Clean the Original Glass, mirrors, and lens.
	2	Is the Shading Sheet on the Original Glass dirty?	YES	Clean or change.
	3	Is the Exposure Lamp dirty or deteriorated?	YES	Clean or change.
	4	Do the connections from CCD to HGB remain intact?	NO	Reconnect.
	5	Do the connections from HGB to UN2 remain intact?	YES	Change CCD, HGB, or UN2, in that order.
			NO	Reconnect.

(11) Gradation Reproduction Failure

Section	Step	Check Item	Result	Action
Engine	1	Does the image get better when a copy is made with new paper loaded?	YES	Change the paper. Instruct the user on the storage of paper.
			NO	Change PWB-A.
IR	1	Is the Shading Sheet dirty?	YES	Clean or change.
	2	Is the Original Glass dirty?	YES	Clean or change.
	3	Do the connections from CCD to HGB remain intact?	NO	Reconnect.
	4	Do the connections from HGB to UN2 remain intact?	YES	Change CCD, HGB, or UN2, in that order.
			NO	Reconnect.

(12) Rough Image

Section	Step	Check Item	Result	Action
Engine	1	Is the Image Transfer Roller dirty?	YES	Clean or change.
	2	Is the image transfer current terminal intact?	YES	Change HV1, I/C, PH Unit, or PWB-A, in that order.
			NO	Check and change as necessary.
IR	1	Do the connections from CCD to HGB remain intact?	NO	Reconnect.
	2	Do the connections from HGB to UN2 remain intact?	YES	Change CCD, HGB, or UN2, in that order.
			NO	Reconnect.

(13) Periodically Uneven Image

Section	Step	Check Item	Result	Action
Engine	1	Is the Developing Unit drive gear cracked or dirty with foreign matter?	YES	Clean or change.
	2	Is the PC Drum drive gear cracked or dirty with foreign matter?	YES	Clean or change.
	3	Is the Synchronizing Roller drive gear cracked or dirty with foreign matter?	YES	Clean or change.
	4	Is the Fusing Unit drive gear cracked or dirty with foreign matter?	YES	Clean or change.
	5	Is the PH Assy secured properly?	YES	Change the I/C or PWB-A.
			NO	Secure properly.
IR	1	Is the Scanner Motor drive gear cracked or dirty with foreign matter?	YES	Clean or change.
	2	Is the Scanner Motor secured properly?	NO	Secure properly.
	3	Is the Scanner secured properly?	NO	Secure properly.
	4	Are the Scanner Drive Cables wound properly?	NO	Wind the cables properly.
	5	Are the Scanner rails damaged or dirty with foreign matter?	YES	Clean or change.
	6	Do the connections from CCD to HGB remain intact?	NO	Reconnect.
	7	Do the connections from HGB to UN2 remain intact?	YES	Change CCD, HGB, or UN2, in that order.
			NO	Reconnect.