

# **iR2200/iR2800/ iR3300**

## **SERVICE HANDBOOK**

**REVISION 0**

**Canon**

**MAY 2001**

**FY8-23BD-000**

## Application

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# CHAPTER 1 MAINTENANCE AND INSPECTION

## 1 Periodically Replaced Parts

Some of the parts used in the machine must be replaced on a periodical basis to ensure a specific level of product performance; be sure to replace them as indicated, as they will affect the machine functions appreciably once they fail.

If possible, plan the replacement to coincide with a scheduled visit to the user's.



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The estimates are subject to change depending on the conditions of the site of installation or how the machine is used.

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### 1.1 Reader Unit

The reader unit does not have parts that require periodical replacement.

### 1.2 Printer Unit

The printer unit does not have parts that require periodical replacement.

### 1.3 Side Paper Deck

The side paper deck does not have parts that require periodical replacement.

### 1.4 Cassette Feeding unit

The cassette feeding unit does not have parts that require periodical replacement.

### 1.5 Inner 2-Way Tray

The inner 2-way tray does not have parts that require periodical replacement.

## 2 Consumables and Durables

Some parts of the machine may require replacement over the period of product warranty because of wear or damage. Replace them as needed.

### 2.1 Checking the Time of Replacement

Use service mode to find out when to replace a specific part:  
 COPIER>COUNTER>DRBL-2.

### 2.2 Reader Unit

The reader unit does not have parts designated as a durable.

### 2.3 Printer Unit

					As of March 2001
No.	Part name	Part No.	Q'ty	Life (prints)	Remarks
1	Transfer roller	FF6-0104	1	240,000	
2	Transfer static eliminator	FF5-7246	1	240,000	
3	Developing cylinder	FG6-5714	1	480,000	
4	Fixing cleaning roller	FG6-5709	1	150,000	
5	Pre-exposure lamp	FG5-6297	1	240,000	
6	Pickup roller	FF5-4552-020	2	120,000	Actual prints made
7	Feeding roller	FF5-4552-020	2	120,000	Actual prints made
8	Separation roller	FF5-4634-020	2	120,000	Actual prints made
9	Pickup roller (multifeeder)	FB1-8581	1	240,000	Actual prints made
10	Separation pad (multifeeder)	FE5-4132	1	240,000	Actual prints made
11	Fixing film unit (100V)	FG6-5712	1	150,000	
12	Fixing film unit (115V)	FG6-6039	1	150,000	
13	Fixing film unit (230V)	FG6-6041	1	150,000	

T01-203-01

## 2.4 Side Paper Deck

As of March 2001

No.	Part name	Part No.	Q'ty	Life (prints)	Remarks
1	Pickup roller (front)	FF5-7830	1	240,000	Actual prints made
2	Pickup roller (rear)	FF5-7829	1	240,000	Actual prints made
3	Feeding roller	FF5-7541	1	240,000	Actual prints made
4	Separation roller	FB2-7777-020	1	240,000	Actual prints made

T01-204-01

## 2.5 Cassette Feeding Unit

As of March 2001

No.	Part name	Part No.	Q'ty	Life (prints)	Remarks
1	Pickup roller	FF5-4552-020	2	120,000	Actual prints
2	Feeding roller	FF5-4552-020	2	120,000	Actual prints
3	Separation roller	FF5-4634-020	2	120,000	Actual prints

T01-205-01

## 2.6 Inner 2-Way Tray-A1

The inner 2-way tray-A1 does not have parts that are designated as a durable.

### 3 Periodical Servicing Procedure

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- 
1. As a rule, provide periodical servicing every 120,000 prints.
  2. Before setting out on a scheduled visit, check the Service Book, and take any parts that may require replacement.
- 

As of June 2001

#### Work Procedure

1. Report to the person in charge, and check the general condition.
2. Record the counter reading, and check the faulty prints.
3. Make test prints, and check them for the following: (1) image density, (2) white background for soiling, (3) characters for clarity, (4) margin, (5) fixing, registration, and back for soiling.

The margin must meet the following standards:

Leading edge:  $2.5 \pm 1.5$  mm

Left edge:  $2.5 \pm 1.5$  mm

Right edge: 0.5 mm or more

Trailing edge:  $2.5 + 1.1, -1.7$  mm (smaller than B4)  $\langle 2.5 \pm 2.0$  mm  $\rangle$

$3.5 + 0.6, -2.8$  mm (B4 or larger)  $\langle 3.5 \pm 2.0$  mm  $\rangle$

$5.5 + 1.5, -5.0$  mm (free size)

$\langle \rangle$ : when the DADF-H1 picks up an original  
(in stream readig mode).

#### 4. Optical Unit

Clean the following using a blower brush to clean; if the dirt is excessive, use alcohol:

- (1) No. 1/2/3 mirror, (2) original illuminating reflecting plate, (3) lens, (4) original size sensor.

#### 5. Scanner Drive System

- (1) Scanner cable; check the tension, and adjust as necessary. Inspect and adjust the scanner cable only when the machine has made the first 250,000 prints.
- (2) Scanner rail; clean the slide area, and apply silicone oil (FY9-6011).

6. Feeding System

Clean the following: (1) feeding assembly base, (2) fixing inlet guide (upper, lower), (3) transfer guide, (4) pre-registration assembly (paper lint).

7. Image Formation System

Clean the following: developing member, (2) developing assembly bottom.

8. Optical Unit

Clean the following with a special tool: (1) bending mirror.

9. Image Formation System

Inspect and, as necessary, remove the waste toner and then clean the waste toner case; or, replace the waste toner case if any:



- 
1. Be sure to dispose of the water toner according to the standards imposed by the government concerned.
  2. Do not dispose of waste toner into fire (to avoid explosion).
- 

10. Make test copies.

11. Make sample copies.

12. Check the operation of the leakage breaker.

While the power switch is ON, press the test switch of the leakage breaker to make sure that it operates normally (i.e., the lever goes OFF to cut the power).

If the leakage breaker fails to operate normally, replace it and make a check once again.

To reset,

After making a check, turn off the main power switch (the lever should go ON), and then turn on the main power switch.

13. Put the sample copies into order, and clean up the area around the machine.

14. Fill out the Service Book, and report to the person in charge; put a description of the check made on the operation of the leakage breaker in the Service Book.

## 4 Scheduled Servicing Chart



Do not use solvents or oils not indicated herein.

### 4.1 Reader Unit

△: Clean ●: Replace ×: Lubricate □: Adjust ◎: Inspect

Unit	Part	Maintenance intervals		Remarks
		Upon installation	every 120,000	
Scanner	Scanner cable		◎	
Optical unit	Scanner rail		△ ×	Silicone oil (S20; FY9-6011)
	Copyboard glass		△	
	No. 1 through No. 3 mirror		△	
	Original illumination reflecting plate		△	
	Original size sensor		△	
	Lens		△	

T01-401-01

## 4.2 Printer Unit

△: Clean ●: Replace ×: Lubricate □: Adjust ◎: Inspect

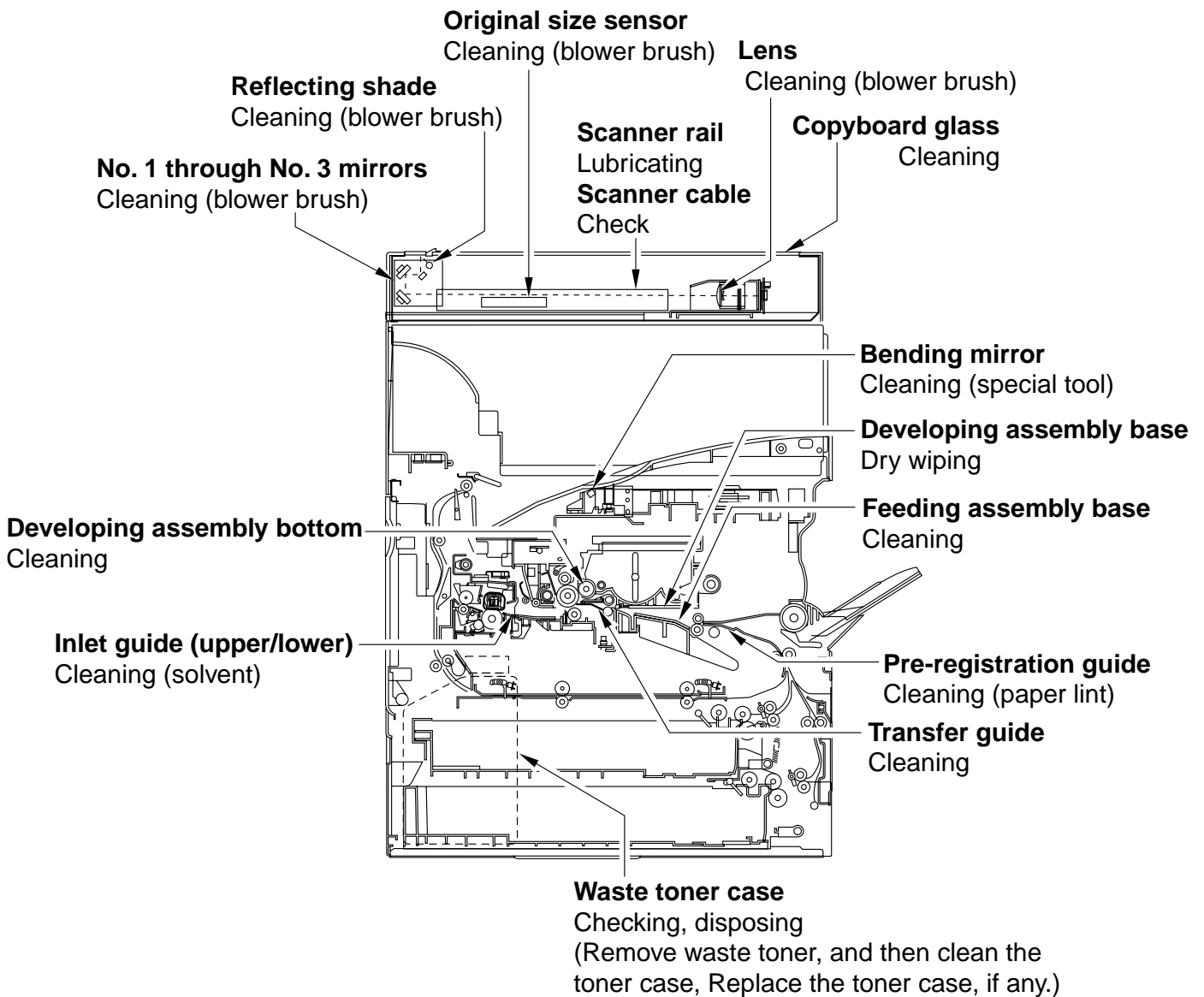
Unit	Part	Maintenance intervals			Remarks
		Upon installation	every 120,000	Upon replacement of drum cartridge	
Laser optical unit	Folding mirror		△		Use special tool.
Pickup/feeding assembly	Feeding assembly base Fixing inlet guide, upper/lower Pre-registration (paper lint) Transfer guide		△ △  △	△	
Developing assembly	Developing member Base (developing assembly)		△ △		
Waste toner collection assembly	Waste toner case		◎		Inspect/remove. (Remove the contents and clean with alcohol. Replace the bottle if necessary.)

## 5 Points to Note for Scheduled Servicing

Unless otherwise indicated, use lint-free paper and alcohol.



- If you used solvent, check to make sure that the solvent has dried before mounting the component back into the machine.
- Unless otherwise specified, do not use a moist cloth for cleaning.
- Provide scheduled servicing at the specified intervals.



F01-500-01

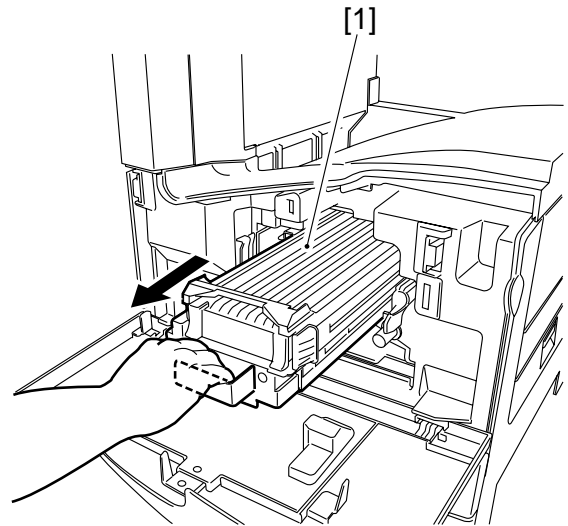


## 6 Cleaning the Bottom of the Developing Assembly

If the bottom of the developing assembly is not cleaned thoroughly, the residual toner can soil the back and the leading edge or left/right edges of prints. If soiling is noted, clean also the transfer guide and the static eliminator at the same time as the bottom of the developing assembly.

### 6.1 Cleaning the Bottom of the Developing Assembly

- 1) Open the front door.
- 2) Slide out the developing assembly [1].
- 3) Dry wipe the bottom of the developing assembly.
- 4) Slide in the developing assembly.
- 5) Close the front door.



F01-601-01



# CHAPTER 2 IMAGE ADJUSTMENT BASIC PROCEDURE

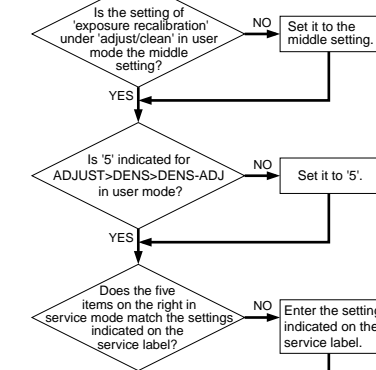
## 1 Making Initial Checks

- Requirements:
1. Use paper fresh out of package. (Moist paper will not allow correct evaluation of images.)
  2. Use paper with the highest degree of "whiteness," of all available papers.
  3. Use A3 paper (11x17), if possible.

Execute 'roller clean' in user mode ('adjust/clean').

Reference:  
The following will be cleaned:  
[1] Primary charging roller  
[2] Transfer charging roller

Clean the separation static eliminator.



Output Condition  
■ F value=5

Using the NA3 Test Chart, make 2 copies in the following:  
[1] TYPE4 (blank)  
Reference: At optimum density, the copy image should barely show gray scale No. 0.

Generate 2 test prints each of the following in COPIER>TEST>PG:  
[1] TYPE4 (blank)  
[2] TYPE5 (halftone)  
[3] TYPE6 (solid black)

In service mode COPIER>ADJUST,  
1. AE>AE-TBL  
2. DEVELOP>DE-DC  
3. DEVELOP>DE-OFST  
4. HV-PRI>P-DC  
5. HV-PRI>OFST1-DC

If the copy image has a fault, Go to 2 Checking the Scanner Side.

If the test print has a fault, Go to 3 Checking the Printer Side (1/3).

## 2 Checking the Scanner Side

- Check/clean the following:  
[1] Mirrors [2] Lens  
[3] Standard white plate [4] Copyboard glass  
[5] Scanning lamp [6] Reflecting plate

Make a copy in text mode.

Is there a vertical line in the image?

Execute the following in service mode:  
COPIER>FUNCTION>CCD>CCD-ADJ.

Make a copy in text mode.

Is there a vertical line in the image?

Change the shading position. (Note 1)

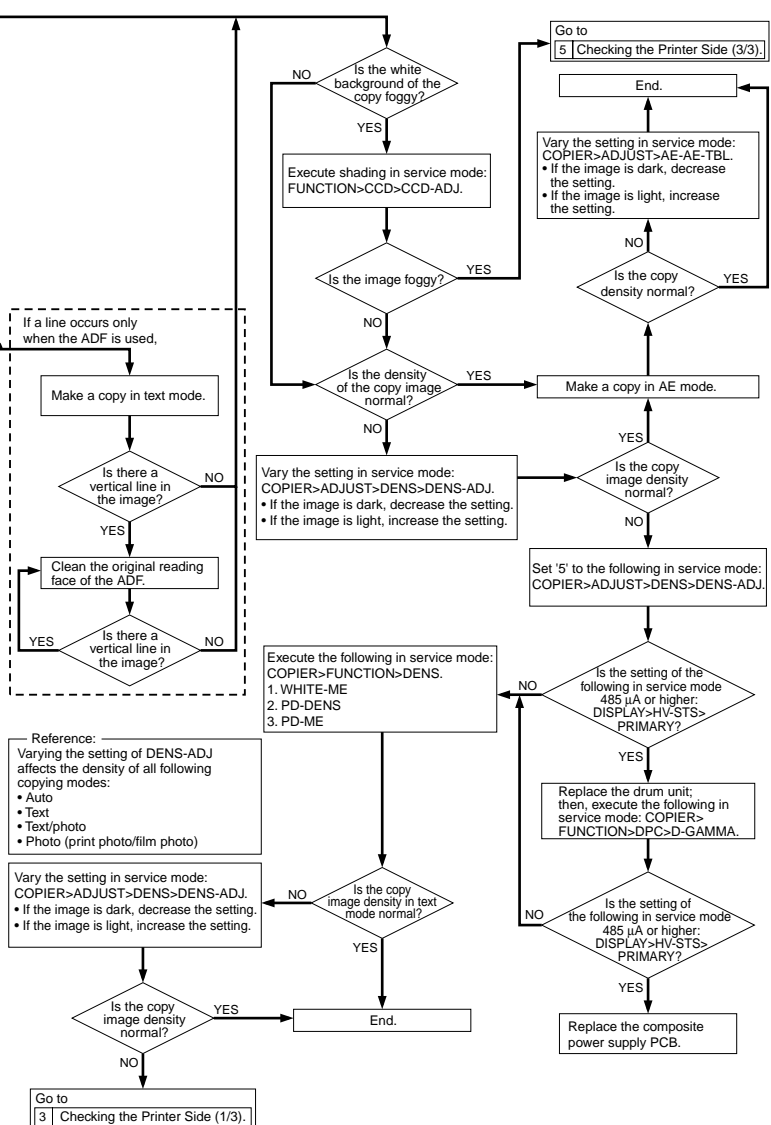
Is there a vertical line in the image?

Clean the copyboard glass. (white plate position)

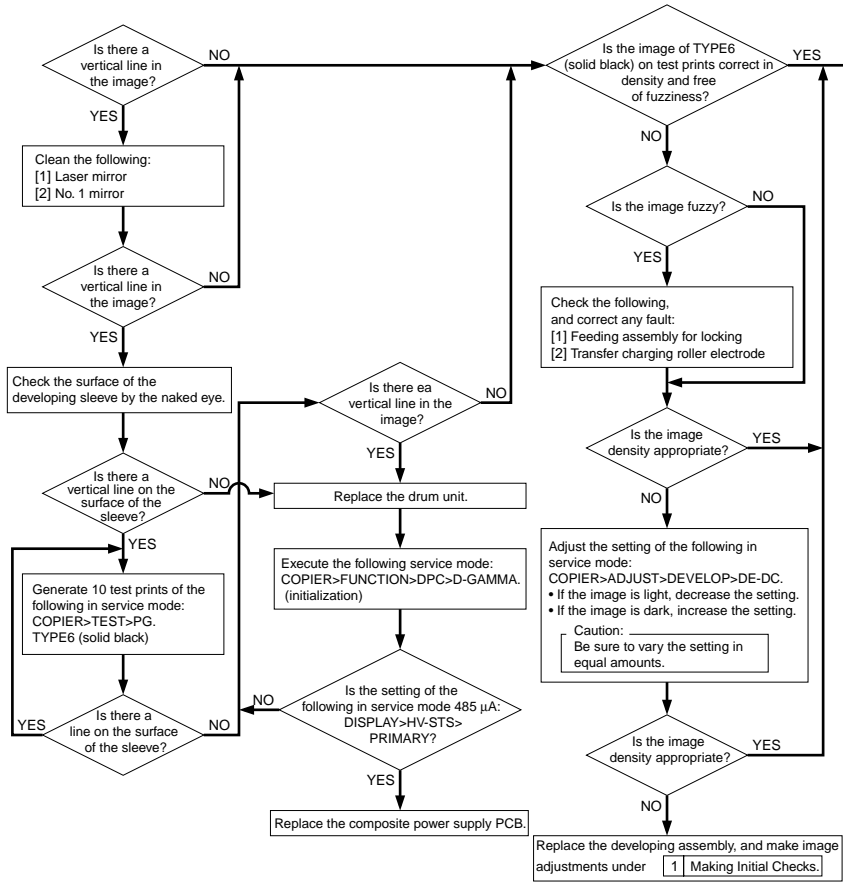
Is there a vertical line in the image?

Change the shading position.

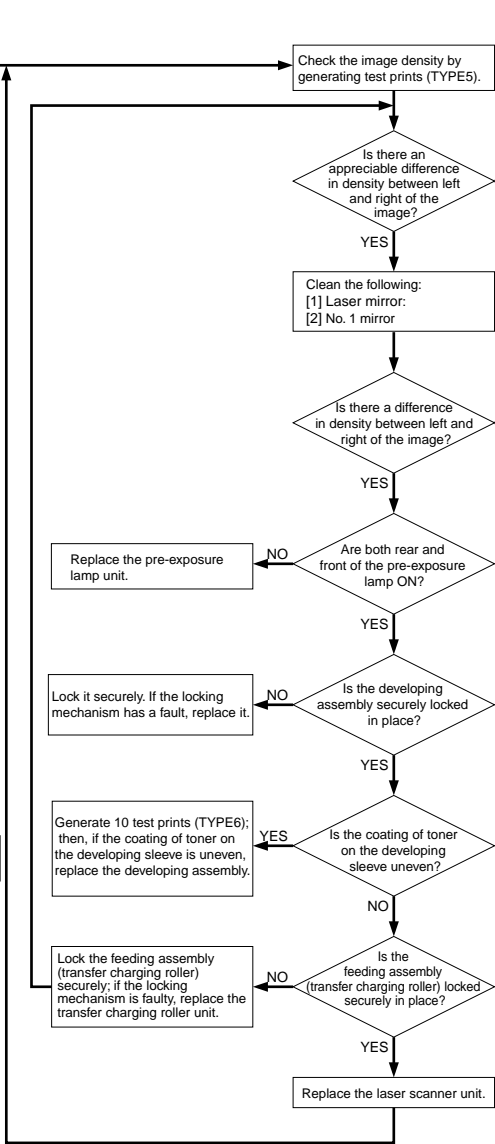
Note 1: In units of 8s, increase or decrease the setting of FUNCTION>CCD >SHDG-POS. Then, execute FUNCTION>CCD>SH-PS-ST to see that 'OK!' is indicated.



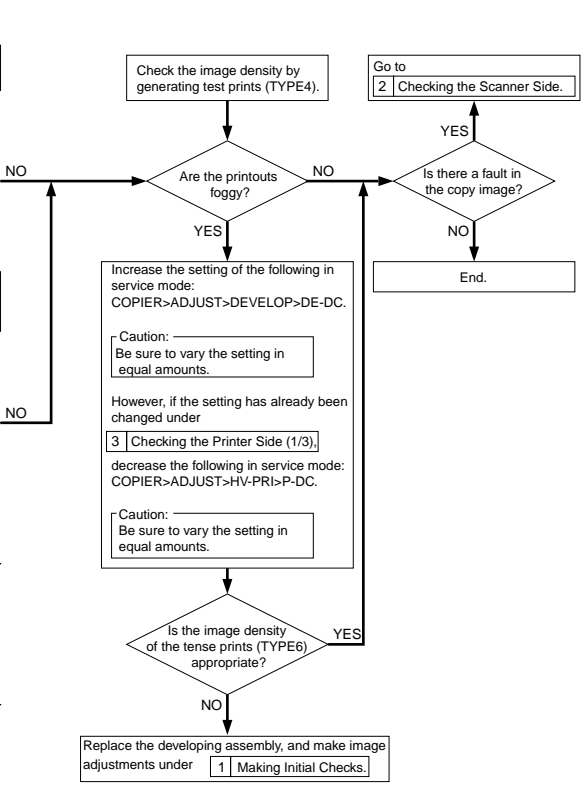
3 Checking the Printer Side (1/3)



4 Checking the Printer Side (2/3)



5 Checking the Printer Side (3/3)



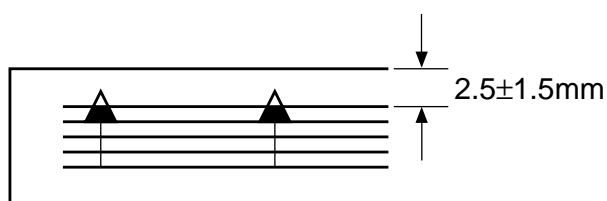
# CHAPTER 3 STANDARDS AND ADJUSTMENTS

## 1 Image Adjustments

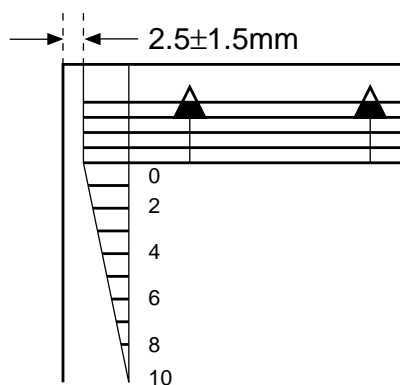
### 1.1 Standards of Image Position

The image margin/non-image width of a print made in Direct must be as follows:

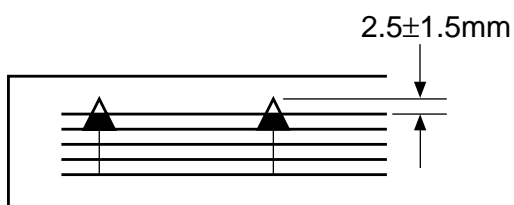
**3**



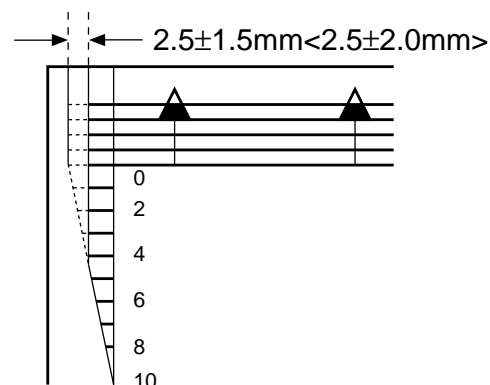
F03-101-01 Image Leading Edge Margin



F03-101-02 Left/Right Image Margin



F03-101-03 Leading Edge Non-Image Width



F03-101-04 Left Non-Image Width  
 < >: when the DADF-H1 picks up an original  
 (in stream readig mode).

## 1.2 Checking the Image Position

Make prints using the following as the source of paper (10 prints each), and check to see that the image margin and the non-image width are as indicated:

- Each cassette
- Manual feed tray
- Duplex feeding unit
- Side paper deck

If not as indicated, adjust the image position in the following order:

1. Adjusting the left/right image margin (registration)
2. Adjusting the image leading edge margin (registration)
3. Adjusting the left/right non-image width (CCD read start position)
4. Leading edge non-image width (scanner image leading edge position)

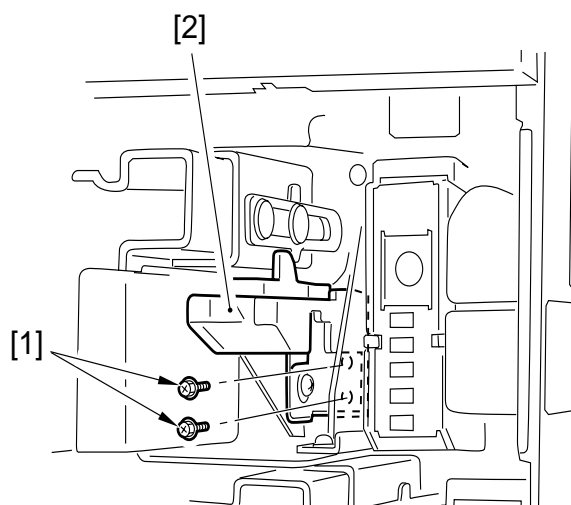
## 1.3 Adjusting Left/Right Large Margin

### 1.3.1 Adjusting the Registration for the Cassette Rear Front



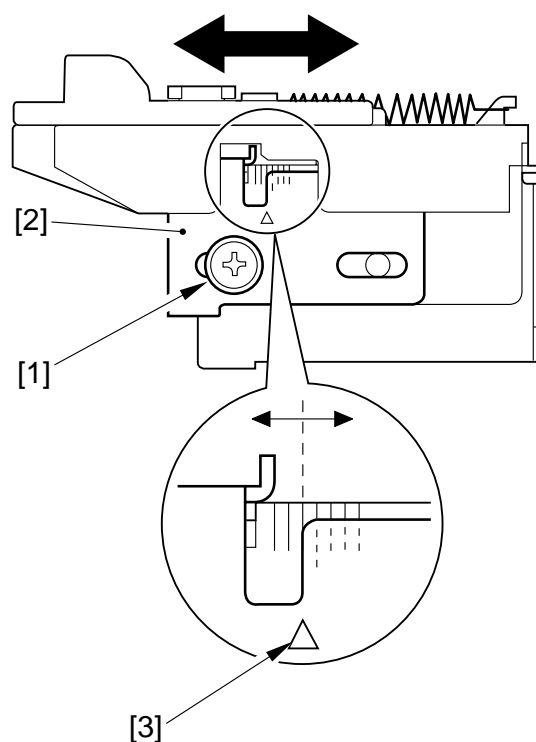
Try the following service mode first; if not corrected, perform the adjustments that follow:  
 COPIER>FUNCTION>MISC-  
 P>CI-ADJ-Y/C2-ADJ-Y/C3-  
 ADJ-Y/C4-ADJ-Y

- 1) Remove the cassette.
- 2) Remove the two screws [1], and detach the horizontal registration base assembly [2].



F03-103-01

- 3) Loosen the screw [1], and adjust the horizontal registration plate [2]. When making adjustments, try to match the arrow [3] against the index (each graduation being about 1 mm).



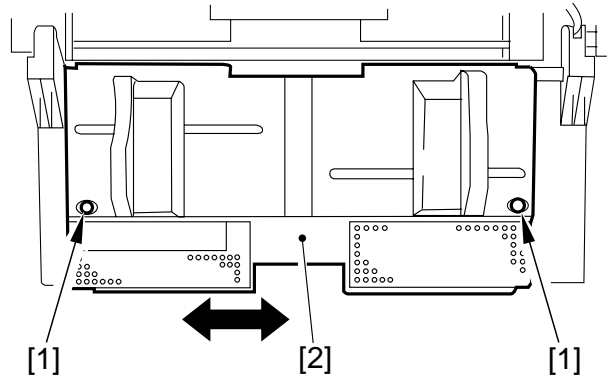
F03-103-02

### 1.3.2 Adjusting the Registration for the Multifeeder Rear Front



Try the following service mode first; if not corrected, perform the adjustments that follow:  
COPIER>FUNCTION>MISC-  
P>MF-ADJ

- 1) Open the multifeeder tray.
- 2) Loosen the two screws [1], and move the side guide plate unit [2] back and forth to adjust.



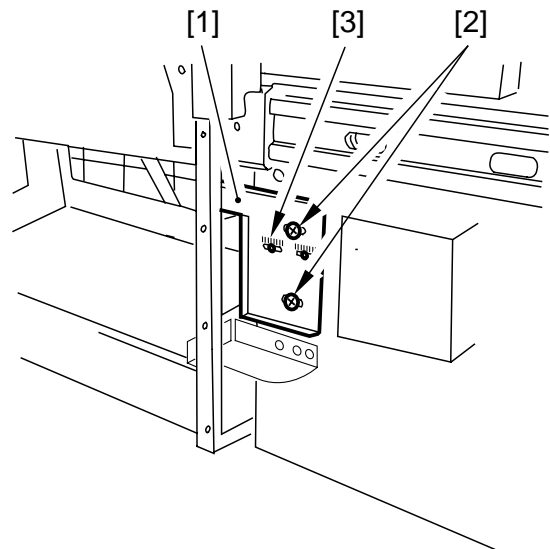
F03-103-03

### 1.3.3 Adjusting the Registration for the Deck



Try the following service mode first; if not corrected, perform the adjustments that follow:  
COPIER>FUNCTION>MISC-  
P>DK-ADJ-Y

- 1) Slide out the compartment.
- 2) Using the two screws [2], change the position of the latch plate [1] of the deck open solenoid (SL2D) found at the left rear. (At this time, use the index [3] on the latch plate as a reference.)



F03-103-04

- 3) Close the compartment, and check to make sure that the gap of the front cover is  $3 \pm 1$  mm.
- 4) If the gap is not  $3 \pm 1$  mm, adjust the front cover.

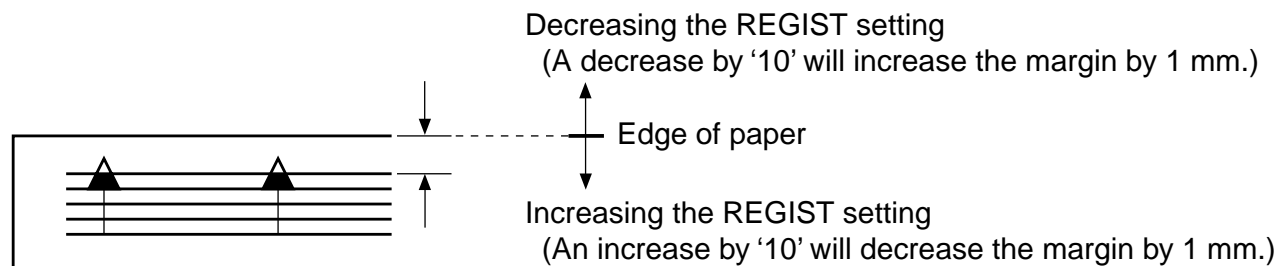


### 1.3.4 Duplex Feeding Unit

- 1) Adjust the image margin as indicated using service mode: COPIER>ADJUST>FEED-ADJ>ADJ-REFE.

## 1.4 Adjusting the Image Leading Edge Margin

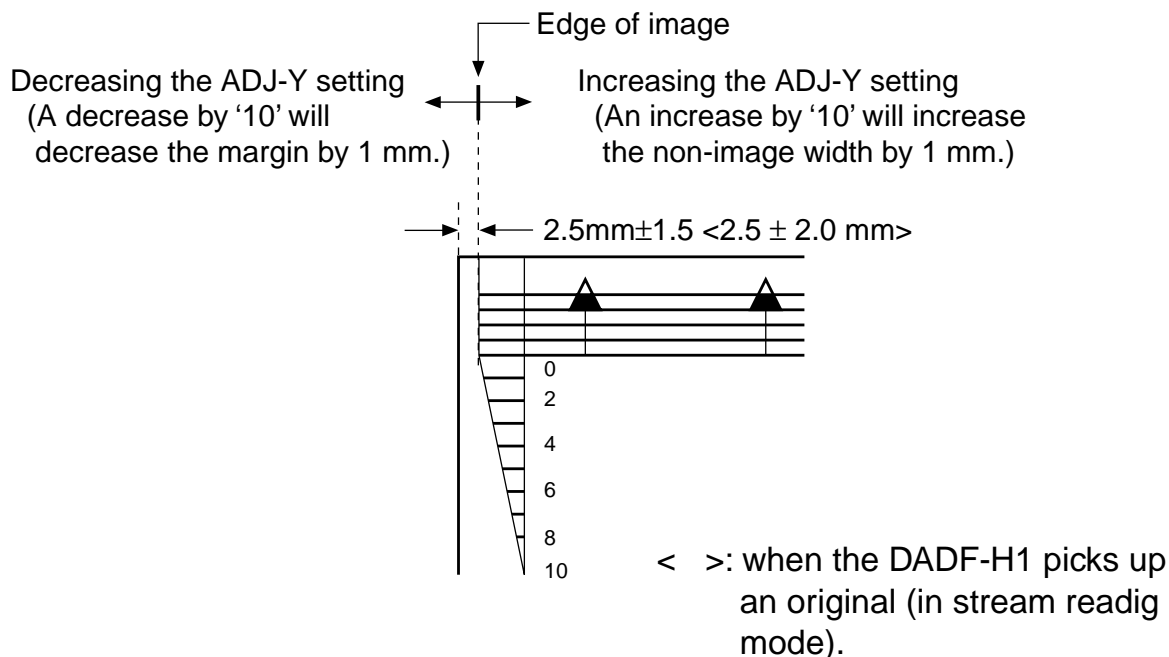
- 1) Adjust the image margin in service mode so that it is as indicated: COPIER>ADJUST>FEED-ADJ>REGIST.



F03-104-01

## 1.5 Adjusting the Left/Right Non-Image Width

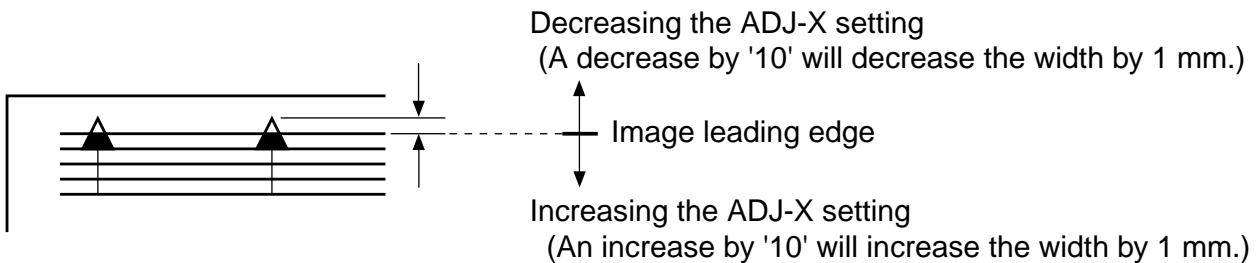
- 1) Adjust the non-image width in service mode so that it is as indicated: COPIER>ADJUST>ADJ-XY>ADJ-Y.



F03-105-01

## 1.6 Adjusting the Leading Edge Non-Image Width

- 1) Adjust the non-image width in service mode so that it is as indicated:  
COPIER>ADJUST>ADJ-XY>ADJ-X.



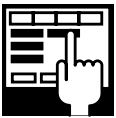
F03-106-01

## 2 Scanning System

---

### 2.1 After Replacing the Scanning Lamp

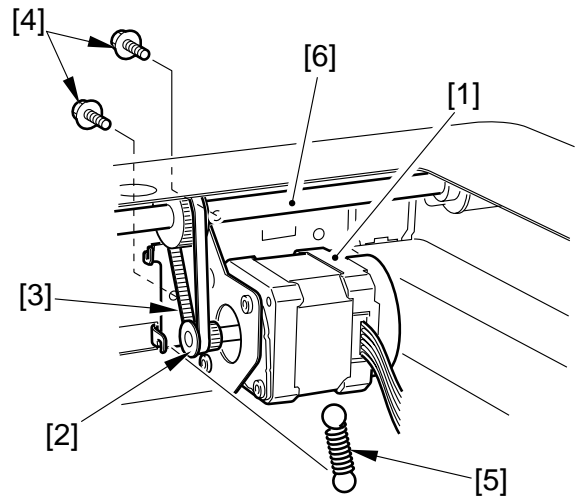
Run CCD auto adjustment in Service Mode. This updates the CCD adjustment data. Print out a new service label.



1. CCD Auto Adjust  
COPIER>FUNCTION>CCD>  
CCD-ADJ
  2. CCD Adjustment Data  
All items under  
COPIER>ADJUST>CCD.
-

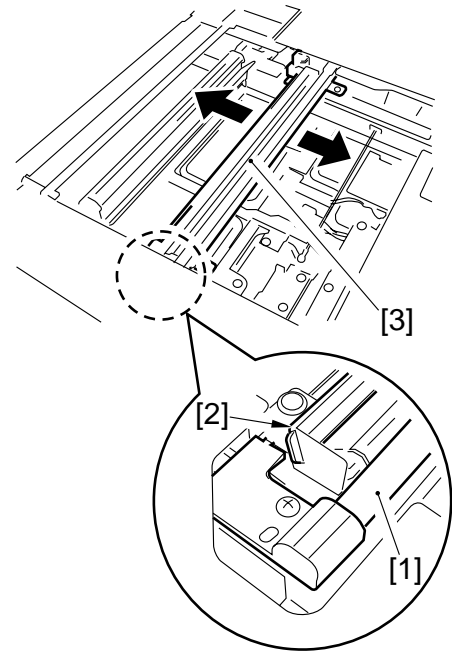
## 2.2 Mounting the Motor Unit

- 1) Engage the pulley [2] of the motor unit [1] with the belt [3].
- 2) Using two screws [4], mount the motor unit [1] temporarily.
- 3) Fit the spring [5] to apply tension to the belt [3].
- 4) Check to make sure that the belt [3] is vertical.



F03-202-01

- 5) While taking care not to hold the scanning lamp [1] or the reflecting shade [2], move the No. 1 mirror base [3] back and forth two to three times to make a check once again.



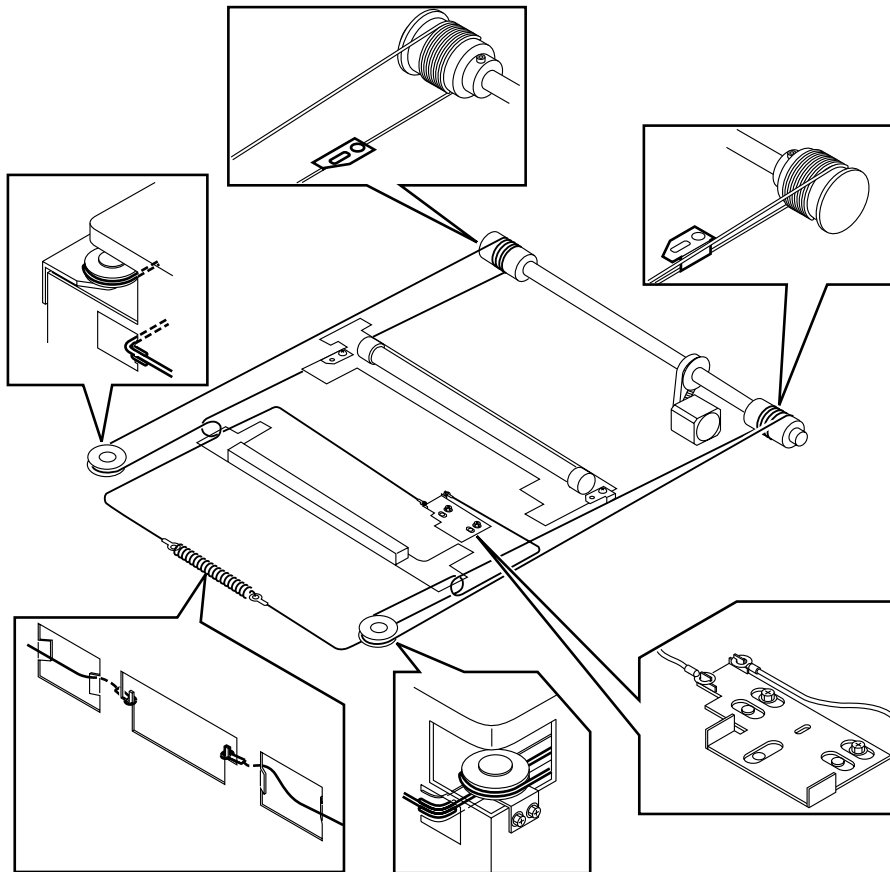
F03-202-02

- 6) Tighten the two screws to secure the motor unit in place.

## 2.3 Routing the Scanner Drive Cable

Route the scanner cable as follows to the pulleys and the hook mirror base:

- 1) Loosen the screw on the cable fixing plate.
- 2) Put the ball of the cable into the hole in the drive pulley, and wind the cable firmly so that it will not turn idly (4 runs inside, 5 runs outside); then, tape it in place. At this time, check to make sure that the cable fixing is on the inside.
- 3) Engage the cable with each pulley, and temporarily fix one of its ends to the cable fixing plate and the other to the hook on the reader frame.
- 4) Temporarily secure the cable fixing in place to the No. 1 mirror base. (Do not tighten the screw fully.)
- 5) Fit the reader upper frame.
- 6) Adjust the position of the No. 1 and No. 2 mirror bases.

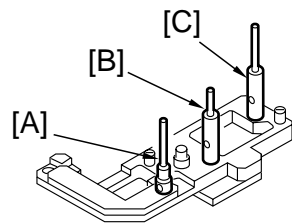


F02-203-01

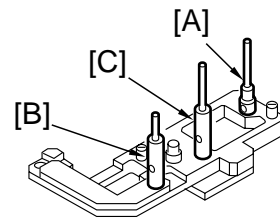
## 2.4 Adjusting the Position of the No. 1/No. 2 Mirror Base

1) Set the pins of the mirror positioning tool as indicated:

- For the Front (F marking)



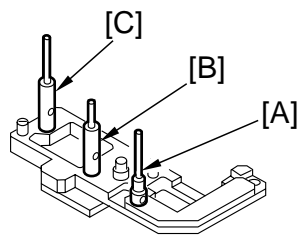
(initial; FY9-3009)



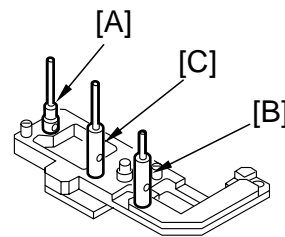
(set for the machine)

F03-204-01

- For the Rear (R marking)



(initial; FY9-3009)

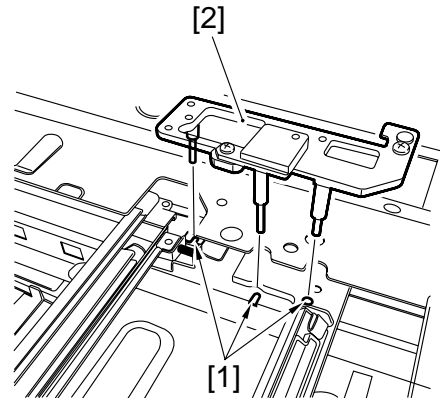


(set for the machine)

F03-204-02

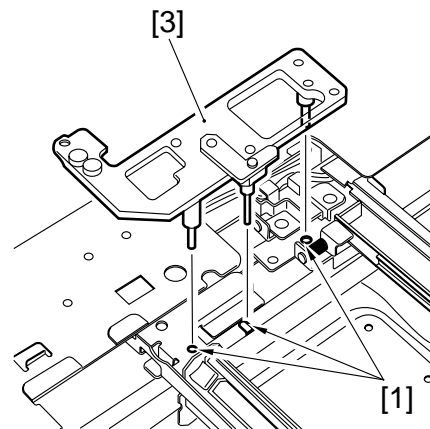
- 2) Fit the pins of the mirror positioning tool (front [2], rear [3]) into the holes [1] of the rail and the No. 1/No. 2 mirror base. The No. 2 mirror base is adjusted in keeping with the back-and-froth movement of the cable fixing plate.

Front Side (F marking)



F03-204-03

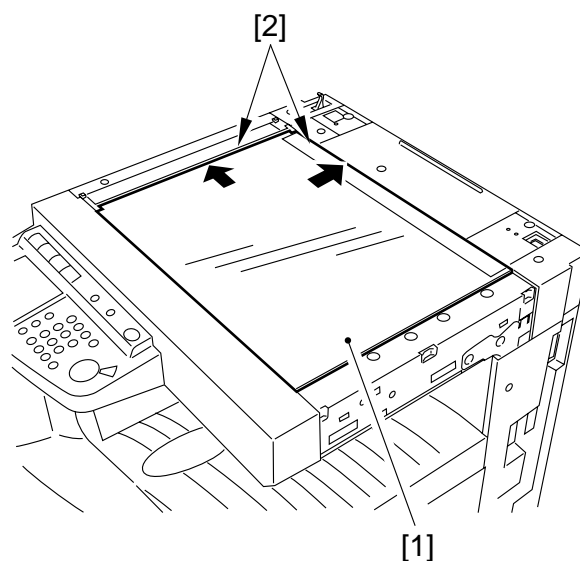
Rear Side (R marking)



F03-204-04

- 3) Fix the end of the cable (which is temporarily secured on the hook of the reader frame) in place using the spring.
- 4) Fully tighten the screw on the cable fixing plate.
- 5) Fully tighten the screw on the cable fixing so that it is secured on the No. 1 mirror base.
- 6) Detach the mirror positioning tool (2 pc.).

## 2.5 Mounting the Copyboard Glass



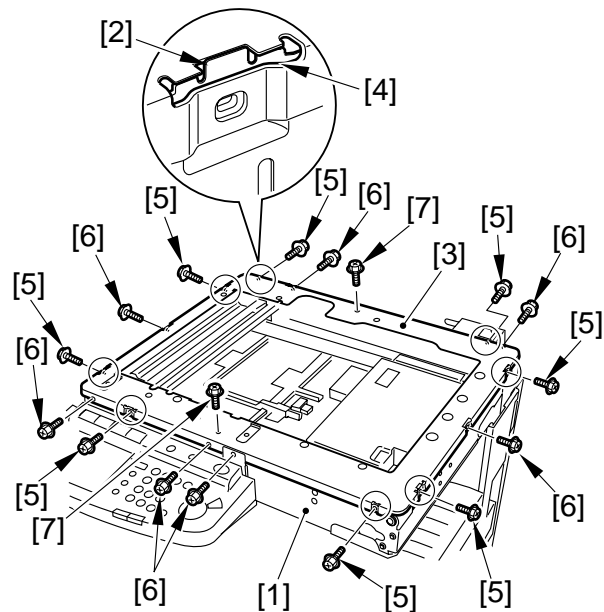
F03-205-01



- When mounting the copyboard glass, butt the copyboard glass [1] against the vertical/horizontal size plate [2]. If not done properly, the shadow of the size plate will appear on images made in enlargement mode. (After mounting, make an 800% enlargement copy to check.)
- Thereafter, execute optimum position auto adjustment for the standard white plate to ensure correct shading correction:  
COPIER>FUNCTION>CCD>SH-PS-ST.

## 2.6 Mounting the Reader Upper Frame

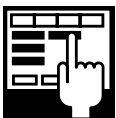
- 1) Fit the eight claws [2] of the reader frame [1] (circled) into the cut-offs [4] in the reader upper frame [3]; take care so that the engagement is secure.
- 2) Fit the eight screws [5] of the claw assembly first.
- 3) Fit the seven screws [6] of the side.
- 4) Lastly, fit the two screws [7] on the top face.



F03-206-01

## 2.7 Points to Note When Replacing the CCD Unit

Run CCD auto adjustment and End gain control position auto adjustment in Service Mode. This updates the CCD adjustment data. Print out a service label with the new CCD adjustment data.



- 1) CCD Auto Adjustment  
COPIER>FUNCTION>CCD>  
CCD-ADJ
- 2) Edge Gain Correction Auto  
Adjustment  
COPIER>FUNCTION>  
CCD>EGGN-POS
- 3) CCD Adjustment Data  
all items under  
COPIER>ADJUST>CCD

## 2.8 When Replacing the Reader Controller PCB

See “Troubleshooting” > Chapter 3 “Standards and Adjustment” > 7. “Electrical Components”



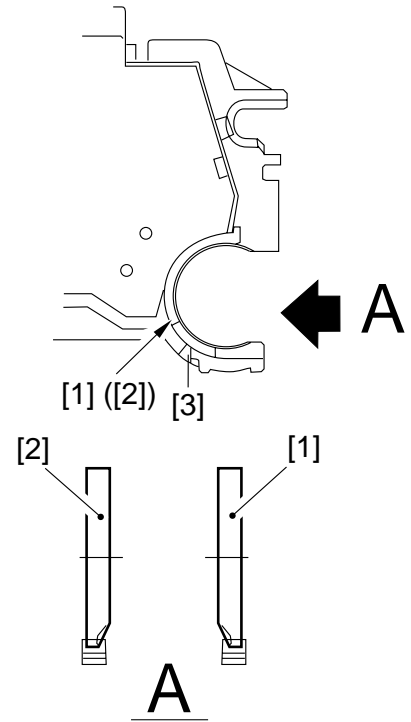
### 3 Image Formation System

#### 3.1 Positioning the Developing Assembly Magnetic Seal

- 1) The front magnetic seal [1] and the rear magnetic seal [2] must be butted against the opening [3] (stop reference) when they are mounted.



Check to make sure that the magnetic seal is in firm contact with the casing.



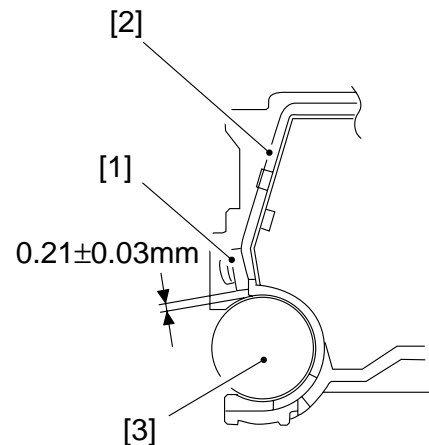
F03-301-01

#### 3.2 Mounting the Developing Assembly Blade



The blade [1] and the blade base [2] of the blade base unit are adjusted to a high accuracy at the factory. Do not disassemble the unit.

If you happen to have removed the blade, adjust its position so that the gap between the blade and the developing cylinder [3] is  $0.21 \pm 0.03$  mm using a gap gauge (CK-0057-000).



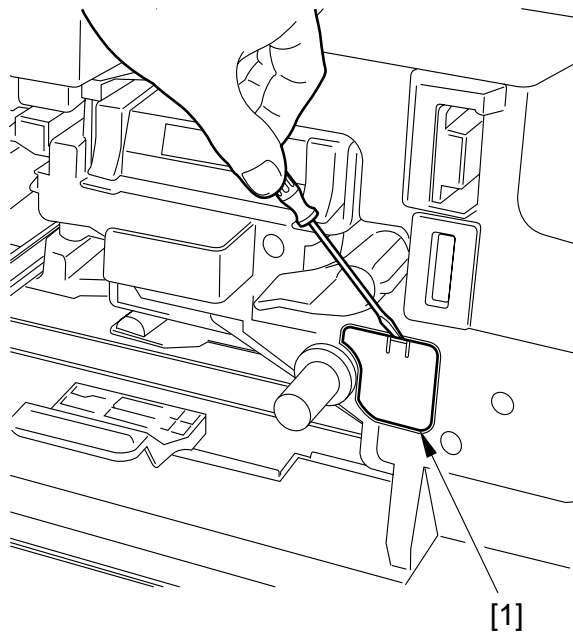
F03-302-01



The surface of the developing cylinder is highly susceptible to scratches. Be sure to fit the gap gauge on ends of the developing cylinder.

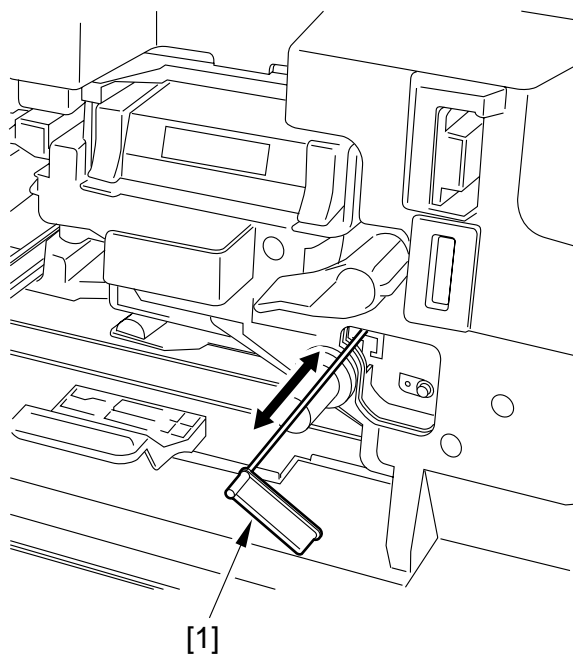
### 3.3 Removing the Paper Lint

- 1) Open the front cover.
- 2) Remove the paper lint cleaning cover [1] by inserting a flat-blade screwdriver.



F03-303-01

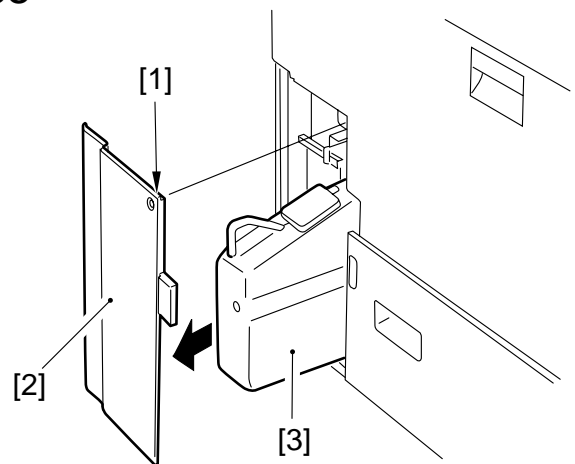
- 3) Slide out the paper lint cleaning lever [1], and move it back and forth.



F03-303-02

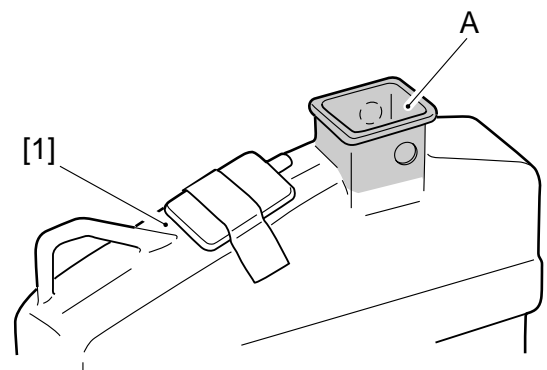
### 3.4 Cleaning the Waste Toner Case

- 1) Remove the screw [1], and detach the waste toner case cover [2].
- 2) Take out the waste toner case [3].



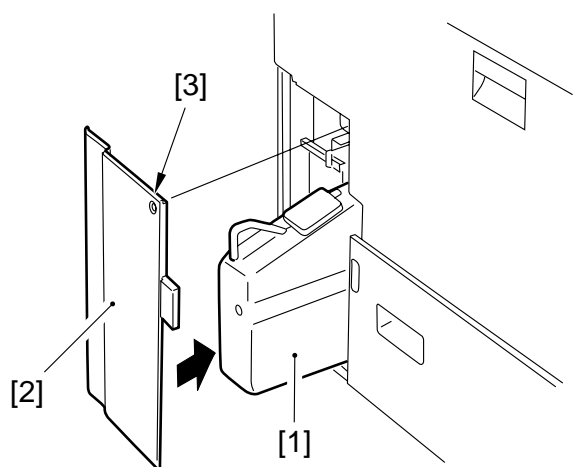
F03-304-01

- 3) Dispose of the waste toner collecting inside the waste toner case.
- 4) Clean both inside and the outside of the waste toner case [1] (area A, indicated by shading) with alcohol.



F03-304-02

- 5) Fit the waste toner case [1] back in the machine, and mount the waste toner case cover [2] with a screw [3].



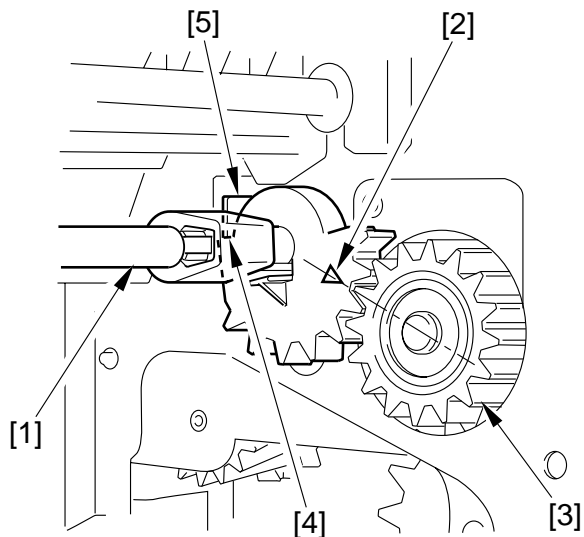
F03-304-03

## 4 Fixing System

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### 4.1 Mounting the Locking Cam Unit

- 1) Check to see if the feeding assembly is locked in place.
- 2) Match the arrow of the gear of the locking cam unit [1] against the middle of the gear [3] of the fixing drive unit (e.i., where the rear [4] of the gear of the locking cam unit is in contact with the cut-up [5] of the frame).

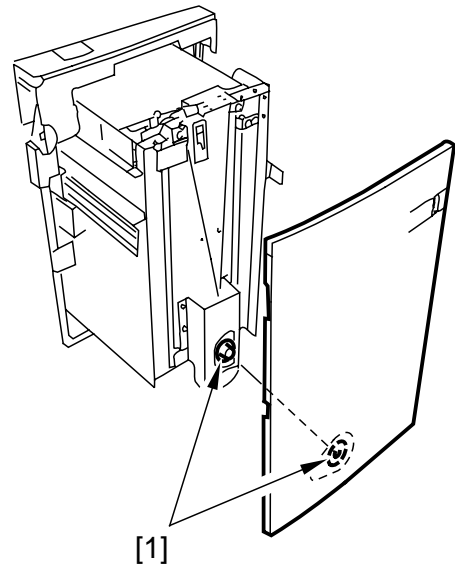


F03-401-01

## 5 Paper Deck

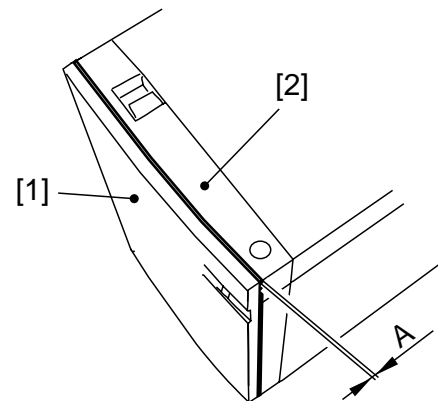
### 5.1 Mounting the Front Cover

- 1) When mounting the front cover, be sure to match it against the coupling [1] of the paper level indicator.



F03-501-01

- 2) Be sure to mount the front cover so that gap A between the front cover [1] and the front upper cover [2] is  $3 \pm 1$  mm.



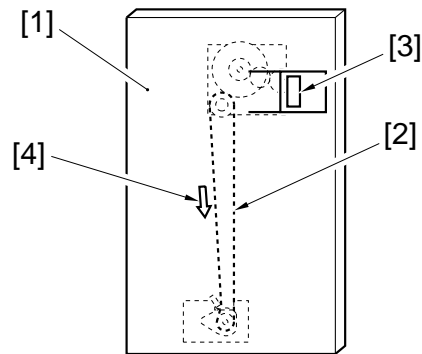
F03-501-02



If you operate the deck without matching the position of the paper level indicator and the deck lifter, the drive mechanism of the paper level indicator can become damaged. If you have moved the paper level indicator drive belt behind the front cover or the deck lifter, be sure to perform the following two tasks:

## 5.2 Adjusting the Paper Level Indicator

- 1) Move the drive belt [2] of the paper level indicator behind the front cover [1] by hand so that the white area inside the window [3] increases, i.e., in the direction for the arrow [4]; move it until a little resistance is felt.

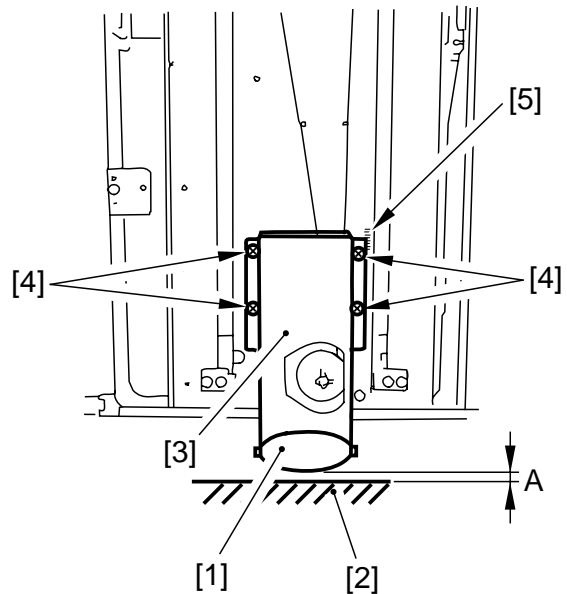


F03-502-01

## 5.3 Adjusting the Position of the Support Member

If the compartment cannot be opened/closed smoothly and the position of the support roller must be adjusted, perform the following:

- 1) Remove the front cover.
- 2) Using the four screws [4] of the roller support plate [3], make adjustments so that the support roller [1] and the floor [2] is about 3 mm when the compartment is fully slid out. (At this time, use the scale [5] on the front side plate as a reference.)

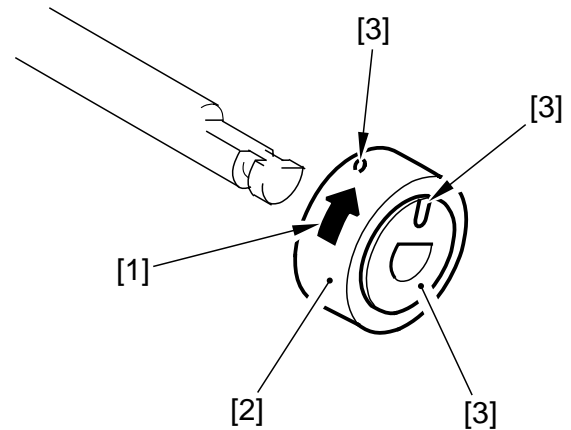


F03-503-01

## 5.4 Mounting the Deck Pickup Roller

Body Front (collar: silver-colored)

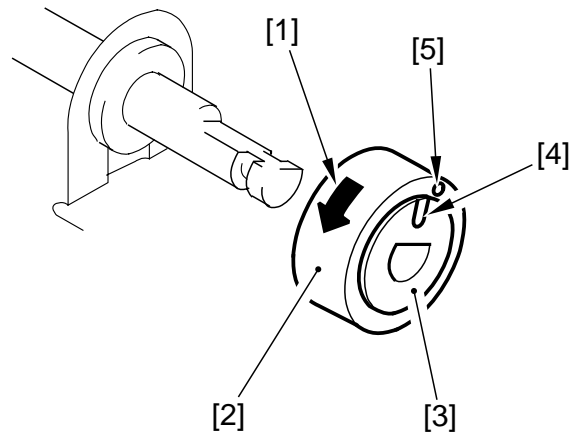
When mounting the deck pickup roller [2] to the front of the machine, be sure that the marking [4] on the collar [3] is toward the front of the machine and the marking [5] on the side of the roller is toward the rear of the machine.



F03-504-01

Body Rear (collar: gold-colored)

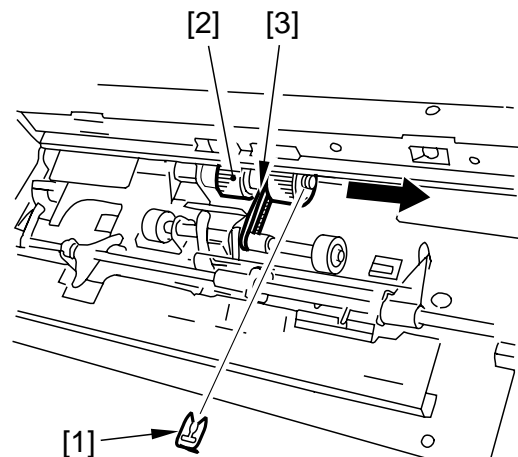
When mounting the deck pickup roller [2] to the rear of the machine, be sure that the marking [4] on the collar [3] and the marking [5] on the side of the roller are toward the rear of the machine.



F03-504-02

## 5.5 Removing the Deck Pickup/Feeding Roller

- 1) Remove the deck pickup unit. (p. 8-36P)
- 2) Turn over the deck pickup unit.
- 3) Remove the resin ring [1], and detach the deck pickup/feeding roller [2] and the drive belt [3] to the front.

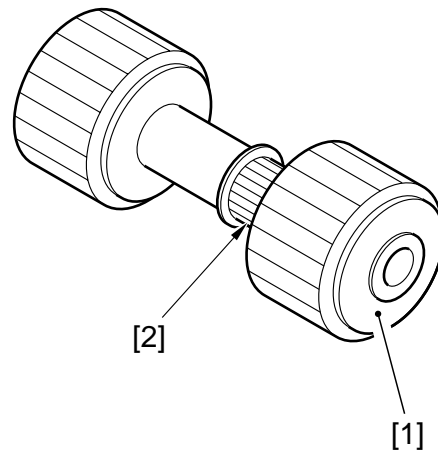


F03-505-01

## 5.6 Orientation of the Deck Pickup/Feeding Roller

When mounting the deck pickup/feeding roller [1], be sure that the belt pulley [2] is toward the front of the machine.

The pickup/feeding roller rubber, on the other hand, may be attached to the pickup/feeding roller shaft in either orientation.

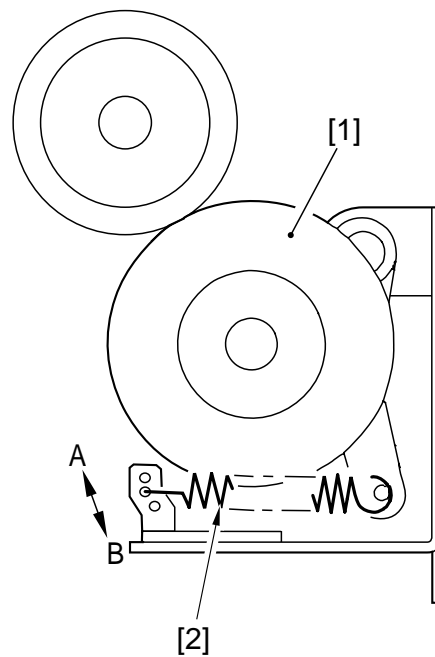


F03-506-01

## 5.7 Adjusting the Deck Separation Roller Pressure

If double feeding or pickup failure occurs when the deck is used as the source of paper, move the position of the pressure spring [2] of the deck separation roller [1].

- If pickup failure occurs, move the spring in the direction of arrow A.
- If double feeding occurs, move the spring in the direction of arrow B.

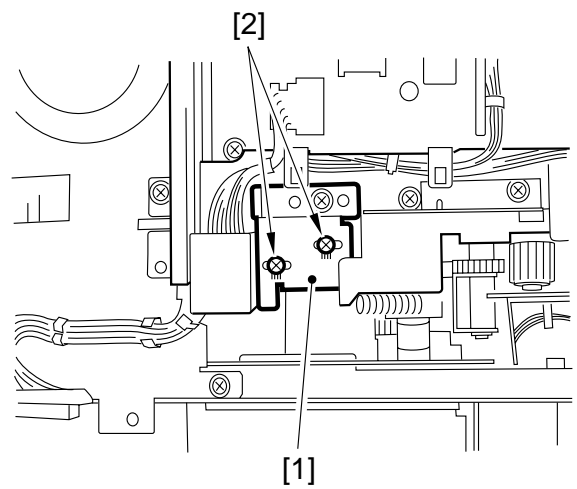


F03-507-01



## 5.8 Position of the Deck Pickup Roller Releasing Solenoid (SL1D)

Before detaching the deck pickup roller releasing solenoid [1] from the support plate, keep note of the position of the solenoid with reference to the two fixing screws [2] on the solenoid. Or, mark the position of the solenoid on the support plate with a scribe to indicate the position. The solenoid must always be positioned in its initial location.



F03-508-01

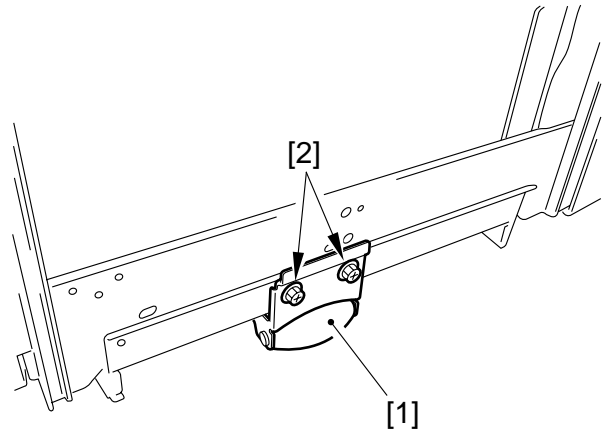
## 5.9 Adjusting the Height of the Side Member

### 5.9.1 Before Making Adjustments

- 1) Disconnect the machine from its host machine, and then connect it once gain, thereby finding out whether the impact of connection causes the host machine to slide over or the machine to wobble. If any such problem is noted, adjust the height of the side member as follows; otherwise, these steps need not be performed:

### 5.9.2 Making Adjustments

- 1) Connect the machine to the host machine.
- 2) Take out the paper from the deck.
- 3) Remove the right cover of the machine.
- 4) Loosen the two fixing screws [2] of the side member [1].
- 5) With the side member in contact with the floor, tighten the fixing screws. At this time, refer to the index so that the left and right screws match against the same index.
- 6) Disconnect the machine from the host machine, and then connect it once again. If it can be done without extra force, mount the right cover for the machine, and put the paper back into the deck. If extra force is needed, go to the next step.
- 7) Check the index of the side member.
- 8) Loosen the fixing screws of the side member.
- 9) While referring to the index, raise the side member 1 mm, and then tighten the fixing screws.
- 10) Mount the right cover, and then put the paper back into the deck.

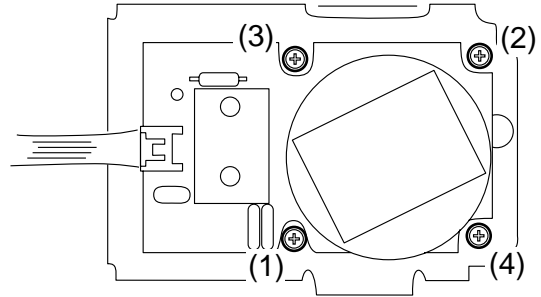


F03-509-01

## 6 Cassette Feeding Unit-W1

### 6.1 Mounting the Pedestal Main Motor

- 1) When mounting the pedestal main motor, be sure to tighten the screws in the order indicated in the figure: (1) through (4).



F03-601-01

## 7 Envelope Feeder Attachment

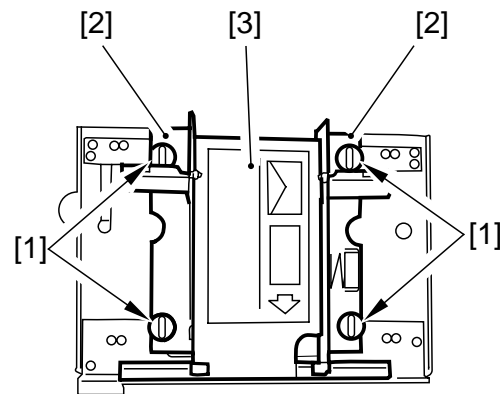
### 7.1 Envelopes and Type of Spring

- Use the green-painted spring for COM10, Monarch, DL, and YOUKEI 4.
- Use the red-painted spring for C5 and B5.

### 7.2 Replacing the Spring

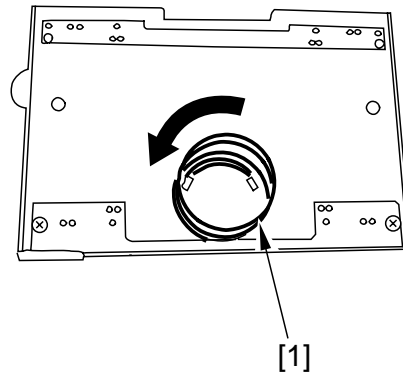
#### 7.2.1 Replacing the Spring

- 1) Remove the two mounting screws [1] each, and detach the side guide plate [2] (front, rear) and the lifter [3].



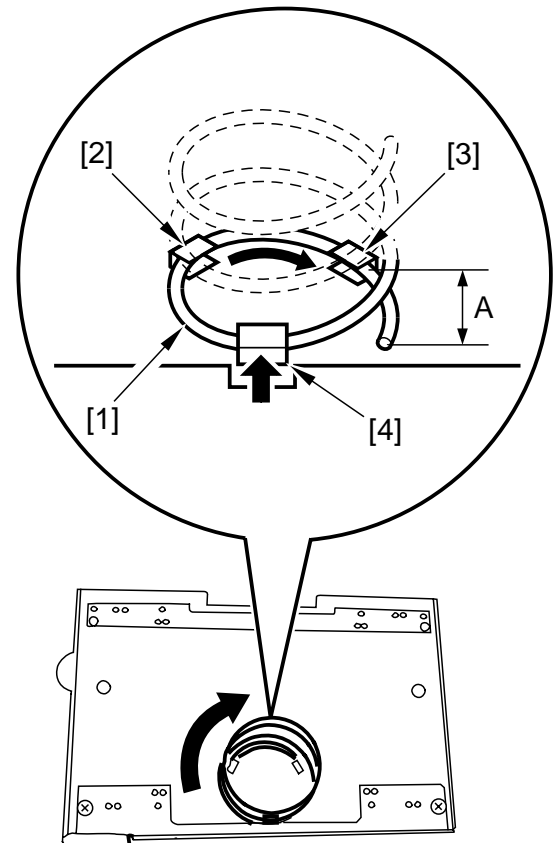
F03-702-01

- 2) Holding the bottom (1st, 2nd loops) of the spring [1], turn it clockwise to free it from the envelope feeder.



F03-702-02

- 3) Thread the edge of the spring [1] that comes as an attachment so as to fit it through the catch 1 [2] and then the catch 2 [3].
- 4) Holding the bottom (1st and 2nd loops) of the spring, fit it through the catch 3 [4]; then, thread it until distance A is about 15 mm from the catch 2 [3]. At this time, check to make sure that the spring is firmly on the bottom plate.

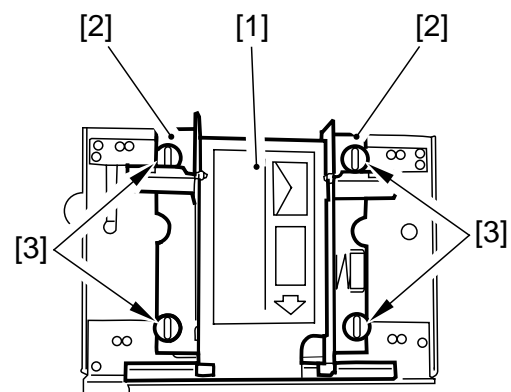


F03-702-03

## 7.3 Changing the Size

### 7.3.1 Changing the Size

- 1) Match the lifter [1] and the side guide plate [2] against the size positioning line of the envelope feeder in relation to the edges of the side guide plate; then, secure them in place by using two mounting screws [3] each.

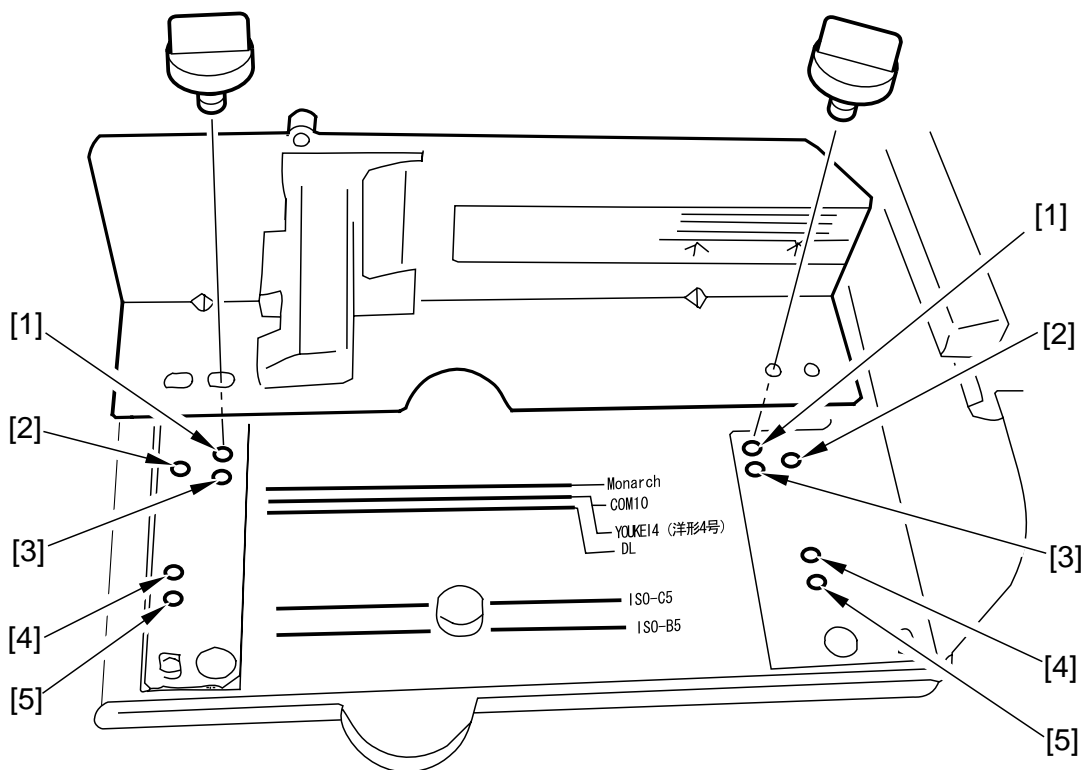


F03-703-01



Take care so that the side guide plate will not extend beyond the envelope feeder (as by choosing the wrong mounting hole). See the next page for the correct mounting hole.

Mounting Hole by Side Guide Plate (front)  
 (The side guide rear is symmetrically opposite.)



F03-703-02

- |                     |            |
|---------------------|------------|
| [1] Monarch         | [4] ISO-C5 |
| [2] COM10, YOUKEI 4 | [5] ISO-B5 |
| [3] DL              |            |

- 2) Register the specifications of the envelope using 'register envelope' offered as part of common settings.
- 3) Check to make sure that envelopes are fed correctly.

# CHAPTER 4 TROUBLESHOOTING IMAGE FAULTS/MALFUNCTIONS

## 1 Making Initial Checks

### 1.1 Checking the Site of Installation

1. There must be a source of power rated as indicated (rated voltage  $\pm 10\%$ ). The source must be exclusively of the machine, and the power plug must remain connected throughout the night.
  2. The machine must not be in a high-temperature/-humidity area (near a water faucet, water boiler, humidifier), must not be cold or subject to dust. There must not be a source of fire nearby.
  3. The machine must not be subjected to ammonium gas.
  4. The machine must not be subjected to the direct rays of the sun; as necessary, curtains must be provided.
  5. The room must be well ventilated.
  6. The floor must be flat to keep the machine level.
  7. The source of power must provide power night and day.
- Check the sight against the above requirements.

### 1.2 Checking the Originals

Check to find out if the symptom is caused by the originals used or by the machine:

1. The copy density is optimum if set to index  $5 \pm 1$ .
2. Originals with a reddish tone tend to prevent reproduction of good contrast.
3. Originals of specific densities can produce copies that can be mistaken as faulty.



- An original with a reddish tint can produce copies with poor contrast.
- Diazo copies used as originals or originals with a high degree of transparency can produce copies that can be mistaken as “light copies.”
- Originals prepared in pencil or with a greenish tint can produce copies that can be mistaken as “light copies.”

### 1.3 Checking the ADF Platen, Copyboard cover, and Copyboard glass (standard white plate)

If the ADF platen, copyboard cover, or copyboard glass is soiled, clean it with a solution of mild detergent; if scratched, replace it.

## 1.4 Charging Roller and Static Eliminator

1. Check the transfer charging roller and the separation static eliminator for dirt and a fault (damage).
2. Check to make sure that the transfer charging roller and the separation static eliminator are correctly mounted.

## 1.5 Checking the Developing Assembly

1. Check to make sure that the members on both ends of the drum are in contact. Otherwise, light images can result.
2. Check to see the surface of the developing cylinder is coated with an even layer of toner. Otherwise, light images or uneven density can result.

## 1.6 Checking the Paper

1. Check to see if the paper used is of a recommended type. Advise the user that paper not of a recommended type may fail to bring about expected results.
2. Check to see if the paper is moist. Moist paper can adversely affect transfer, causing poor images or separation faults (leading to jams and wrinkles). Advise the user on the correct method of storing paper.

## 1.7 Checking the Periodically Replaced Parts

Check with the scheduled servicing chart and the table of periodically replaced parts. Replace parts that have reached the ends of their lives.

## 1.8 Image Adjustment Basic Procedure

If the copies have uneven density (difference between front and rear), light images, or foggy background, try the Image Adjustment Basic Procedure first to see if the problem is corrected.



## 1.9 Others

In winter, bringing a machine from a cold to warm place can cause condensation inside the machine, causing various problems.



- 
1. Condensation in the optical system (glass, mirror, lens) can cause dark images.
  2. Condensation in the charging system can cause leakage.
  3. Condensation on the pickup/feeding guide can cause feeding faults.  
If condensation is noted, dry wipe the part, or leave the machine powered and alone for 60 min.
-

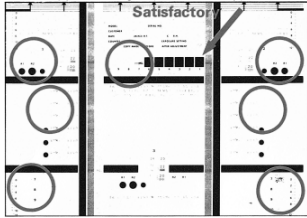
Blank Page



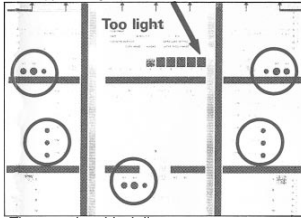
## 2. Samples of Image Faults

**Note:** The samples are made artificially to provide an idea of faulty copies, and may not represent actual faults. (The NA-3 Test Sheet was copied in DIRECT mode on A4 paper, and reduced for printing.)

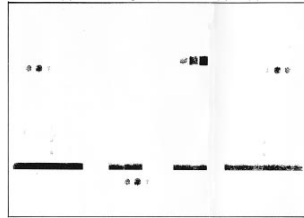
1. The copy is too light (halftone only).



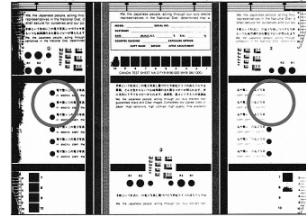
2. The copy is too light (both halftone and solid black).



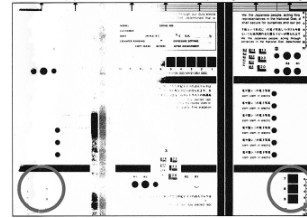
3. The copy is too light (entire copy, appreciably).



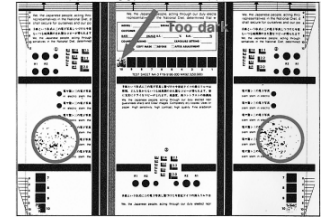
4. The copy has uneven density (darker along front).



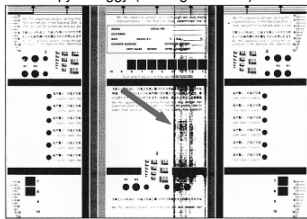
5. The copy has uneven density (lighter along front).



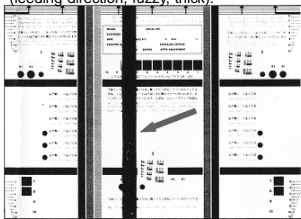
6. The copy is foggy (entire copy).



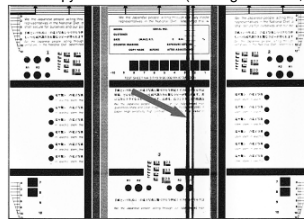
7. The copy is foggy (feeding direction).



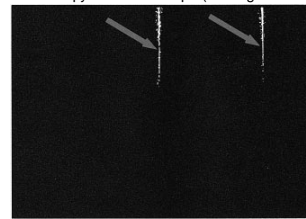
8. The copy has black lines (feeding direction, fuzzy, thick).



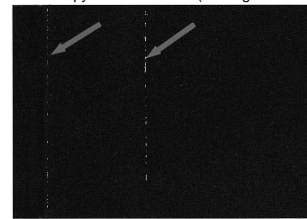
9. The copy has black lines (feeding direction, fine).



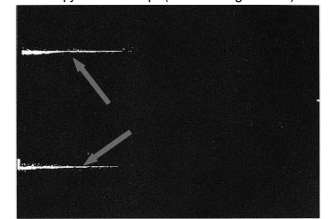
10. The copy has white strips (feeding direction).†



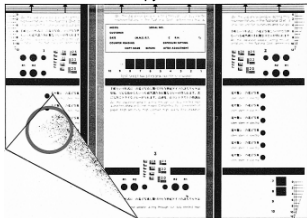
11. The copy has white lines (feeding direction).\*



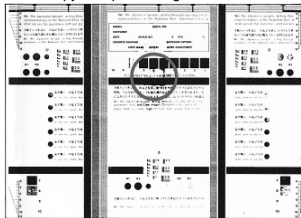
12. The copy has white strips (cross-feeding direction).



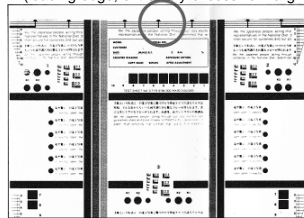
13. The back of the copy is soiled.



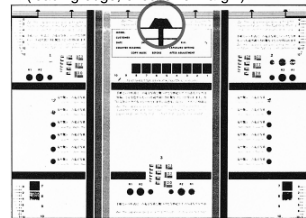
14. The copy has poor fixing.



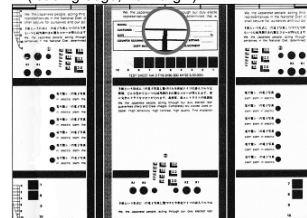
15. The copy has displaced registration (leading edge, extremely excessive margin).



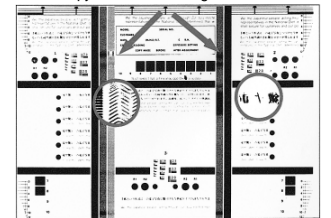
16. The copy has displaced registration (leading edge, excessive margin).



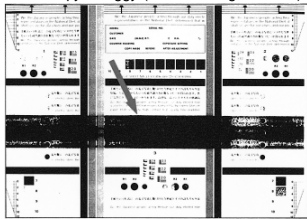
17. The copy has displaced registration (leading edge, no margin).



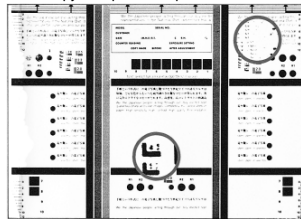
18. The copy has blurred images.



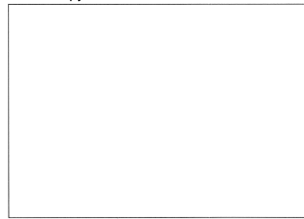
19. The copy is foggy (cross-feeding direction).



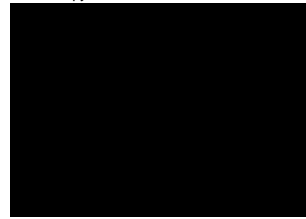
20. The copy has poor sharpness.



21. The copy is blank.



22. The copy is solid black.



\* Copies made with the copyboard lifted; faults may also appear on normally made copies.  
† Strips may vary in width.

## 3 Troubleshooting Image Faults

---

### 3.1 The copy is too light (halftone area only).

---

---

1) Perform the Image Adjustment Basic Procedure. Is the problem corrected?

Check to make sure that the placement of the pattern print when the following is executed in service mode is correct: FUNCTION>DENS>PD-ME.

YES: End.

---

#### AE adjustment

2) Make copies in AE mode. Is the text too light?

YES: Execute AE adjustment:

Decrease the setting of the following in service mode:

COPIER>ADJUST>AE>AE-TBL.

---

#### Developing assembly

3) Are the block members of the developing assembly in contact with the photosensitive drum?

NO: Check the developing assembly locking lever. Check the surface of the developing assembly block members for foreign matter (toner).

---

#### Developing assembly

4) Is the coating on the developing cylinder even?

NO: Check the developing assembly.

---

#### Scanner, Photosensitive drum

5) Clean the mirrors and lenses. Is the problem corrected?

YES: End.

NO: Replace the drum unit.

## 3.2 The copy is too light (including solid black).

---

---

1) Perform the Image Adjustment Basic Procedure. Is the problem corrected?

Check to make sure that the placement of the pattern print when the following is executed in service mode is correct: FUNCTION>DENS>PD-ME.

YES: End.

2) Turn off the main power switch in the middle of copying operation, and open the front cover. Is the toner image on the photopositive drum before transfer more or less normal?

NO: Go to step 7.

---

### Feeding unit (Transfer charging roller)

3) Is the feeding unit locked in place correctly?

NO: Check the transfer charging roller pressure spring.

4) Is there electrical leakage around the electrode of the feeding unit?

YES: Check the electrode of the feeding unit.

5) Is there dirt, cracking, or scratching on the transfer charging roller?

YES: Replace the transfer charging roller.

6) Are the position and the condition of the transfer charging roller locking spring normal?

NO: Correct the position of the spring, or replace the spring.

---

### Paper (transfer faulty)

7) Try paper fresh out of package. Is the problem corrected?

YES:

- The paper may be moist. Advise the user on the correct method of storing paper.
- Advise the user that the use of paper not of a recommended type may fail to produce poor images.

Transfer guide, High-voltage cord, Composite power supply PCB, DC controller PCB  
(transfer faulty)

8) Is there foreign matter in the transfer guide assembly or the transfer charging roller assembly, and is leakage noted?

YES: Remove the foreign matter.

NO:

1. Check the high-voltage cord for electrical continuity. (The resistance of the transfer high-voltage cord is about 10 k $\Omega$ .)
2. Check the composite power supply PCB and the DC controller PCB.

---

Developing assembly

9) Is the developing assembly fitted securely? (Check to see if the developing block members are in firm contact with the photosensitive drum.)

NO: Fit the developing assembly correctly.

---

Toner level detection assembly (development fault)

10) Is there toner inside the developing assembly?

NO:

- Check the toner sensor.
- Check the connectors and the harnesses for electrical continuity.

---

Drum unit, Reader controller PCB, Main controller PCB

11) Try replacing the drum unit. Is the problem corrected/

YES: End.

NO: Real the reader controller PCB and the main controller PCB.



Memo

- The resistance of the high-voltage cord for primary charging is about 10 k $\Omega$
  - The resistance of the high-voltage cord (white) is about 10 k $\Omega$
  - The resistance of the cord for the transfer guide is about 10 k $\Omega$
-

### 3.3 The copy is too light (entire face, considerable).

---

---

- 1) Perform the Image adjustment Basic Procedure. Is the problem corrected?

Check to make user that the placement of the pattern print when executing the folding is correct: FUNCTION>DENS>PD-ME.

YES: End.

---

#### AE adjustment

- 2) Turn off the main power switch in the middle of copying operation, and open the front cover. At this time, is the toner image on the surface of the photosensitive drum before transfer more or less normal?

NO: Go to step 5.

---

#### Developing assembly

- 3) Are the developing members in firm contract with the drum?

NO: Check the developing assembly locking lever. Check the surface of the developing members for foreign matter (toner).

---

#### Developing clutch

- 4) Is the developing cylinder rotating?

NO: Check the developing clutch (for a lose hex screw).

---

#### Feeding unit (transfer charging roller)

- 5) Is the feeding unit locked in place correctly?

Is the transfer roller in contact with the photosensitive drum when the feeding unit is locked in place?

NO:

- Check the transfer charging roller pressure spring.
- Check the feeding locking assembly.

- 6) Is there leakage in the electrode assembly of the feeding unit?

YES: Check the electrode assembly of the feeding unit.

---

#### High-voltage cord, Feeding unit (Transfer charging roller)

- 7) Is the feed electric continuity from the composite power supply PCB to the electrode assembly of the feeding unit? (The resistance of the high-voltage cord of the transfer charging roller is about 10 k $\Omega$ .)

NO:

- Replace the high-voltage cord.
  - Check the feeding unit.
- 

#### Composite power supply PCB, DC controller PCB

- 8) Is there electrical continuity from the composite power supply PCB to the feeding unit? (The resistance of the high-voltage cord of the transfer charging roller is about 10 k $\Omega$ .)

YES: Check the composite power supply PCB and the DC controller PCB.



---

Transfer guide

9) Is there foreign matter in the transfer guide assembly or the transfer charging roller assembly, and is there electrical leakage?

YES: Remove the foreign matter.

---

Paper

10) Is there foreign matter in the transfer guide assembly or the transfer charging roller, and is there leakage?

NO: Try fresh paper or paper of a different type.

---

Development (fault)

11) Is the developing assembly in firm contact with the photosensitive drum? (Check to see that the developing block members are in firm contact with the photosensitive drum.)

NO: Fit the developing assembly once again.

YES:

- Check the developing assembly.
- Check the developing bias.

3.4 The copy has uneven density (darker at front).

3.5 The copy has uneven density (lighter at front).

---

Developing assembly

1) Are the developing block members of the developing assembly in firm contact with the developing assembly?

NO: Check the developing assembly locking unit.

---

Scanner

2) Clean the scanning lamp, reflecting plate, mirrors, and lenses. Is the problem corrected?

YES: End.

---

Pre-exposure lamp

3) Is the pre-exposure lamp ON during copying operation?

NO:

1. Replace the pre-exposure lamp unit.
  2. Replace the DC controller PCB.
- 

Developing assembly

4) Is the coating of toner on the developing cylinder even?

NO:

1. Clean the tip of the blade of the developing assembly. (dry wiping)
  2. Clean the surface of the developing cylinder.
  3. Check the toner inside the developing assembly for uneven deposit.
- 

5) Try the following modes. Is the problem corrected?

- APVC adjustment once gain in service mode: FUNCTION>DPC>D-GAMMA.
- ATVC adjustment once again in user mode: 'roller clean' under 'adjust/clean'.

YES: End.

---

Drum cartridge, Shading

6) Is there an uneven image in the halftone area of PG?

YES: Replace the drum unit.

NO: Execute shading adjustment (i.e., FUNCTION>CCD>CCD-ADJ).

---

### 3.6 The copy is foggy (entire face).

---

---

#### Scanner

1) Clean the scanning lamp, reflecting plate, mirrors, and lenses. Is the problem corrected?

YES: End.

---

2) Perform the Image Adjustment Basic Procedure. Is the problem corrected?

YES: End.

---

3) Select the following in service mode, and press the OK key:

COPIER>FUNCTION>DPC>D-GAMAM. Is the problem corrected?

NO: Replace the drum unit. However, be sure to take appropriate measures, as a fault in the following is suspected: main controller PCB, DC controller PCB, composite power supply PCB.

---

#### Developing assembly

4) Is the developing cylinder insulated from the GND of the machine? (Turn off the main power switch, and disconnect the connector J130 of the composite power supply PCB; then, check the length between J130-1 and the metal plate of the host machine for electrical continuity.)

NO: Check the area around the developing cylinder and the development connectors.

---

#### High-voltage system

5) Is PG solid white foggy?

YES: Check the high-voltage system.

---

#### Service mode

6) Adjust the setting of the following up to +30 of the factory value: ADJUST>DEVELOP>DE-OFST. Is the problem corrected?

YES: End.

---

#### Developing bias, DC controller PCB

7) Try replacing the composite power supply. Is the problem corrected?

YES: End.

NO: Replace the DC controller PCB.

3.7 The copy is foggy (vertical).

3.8 The copy has a black line (vertical, fuzzy, thick).

---

---

Primary charging roller

- 1) Clean the charging roller in user mode. Is the problem corrected?  
YES: End.
- 

Scanner

- 2) Clean the mirrors and lenses. Is the problem corrected?  
YES: End.
- 

Developing assembly

- 3) Is the coating of toner on the developing cylinder even?  
NO:
    1. Check the edge of the blade of the developing assembly.
    2. Dry wipe the surface of the developing cylinder.
- 

Photosensitive drum, External light

- 4) Is there a scratch in the peripheral direction on the surface of the photosensitive drum?  
YES: Replace the drum unit.  
NO: Check to see if the photosensitive drum is subjected to light from outside.

### 3.9 The copy has a black line (vertical, fine).

---

---

#### Exposure system

- 1) Generate a halftone test print in service mode. Enter '5' to COPIER>PG>TYPE. Does the output image have a black line?  
NO: Suspect a fault in the exposure system. Clean it.
- 

#### Primary charging roller

- 2) Clean the primary charging roller. Is the problem corrected?  
YES: End.
- 

#### Photosensitive drum

- 3) Is there a scratch or a black line in the peripheral direction of the surface of the photosensitive drum?
    - Be sure to wipe the black line on the surface of the photosensitive drum with a cloth coated with toner, and make sure that the black line disappears.  
NO: Replace the drum unit.
    - If there is a scratch, be sure to identify the cause.
- 

#### Fixing assembly

- 4) Is there a scratch in the peripheral direction of the fixing roller?  
YES: Replace the fixing roller.  
NO: Check the fixing inlet assembly for dirt.

### 3.10 The copy has a white spot (vertical).

### 3.11 The copy has a white line (vertical).

---

---

#### Exposure system

- 1) Generate a halftone test print in service mode. Enter '4' to the following: COPIER>PG>TYPE. Does the output image have a white line/spot?  
NO: Go to step 7.
- 

#### dirt (lint)

- 2) Is there dirt (lint) in the drum unit or around the laser optical path of the developing assembly?  
YES: Remove the dirt (lint).
- 

#### Transfer charging roller, Separation static eliminator

- 3) Is the transfer charging roller or the separation static eliminator soiled or coated with foreign matter?  
YES: Clean the transfer charging roller or the separation static eliminator. If the problem is still not corrected, replace the transfer charging roller or the separation static eliminator.
- 

#### Developing assembly

- 4) Is the coating of toner on the developing cylinder even?  
NO: Check the edge of the developing assembly. If the developing assembly is without toner, see the descriptions under "The Add Toner message fails to go ON."
- 

#### Fixing film

- 5) Is there a scratch in the peripheral direction of the fixing film?  
YES: Replace the fixing film unit
- 

#### Fixing assembly inlet

- 6) Is there dirt or foreign matter on the fixing assembly inlet?  
YES: Clean the inlet.
- 

#### Photosensitive drum

- 7) Is there a scratch in the peripheral direction of the photosensitive drum?  
YES: Replace the drum unit.
    - Be sure to identify the cause of the scratch.
- 

#### Exposure system, Standard white plate

- 8) Clean the copyboard glass (stander white plate) and the mirrors. Is the problem corrected?  
YES: End.  
NO: Change the setting in the following service mode to change the point of shading measurement: FUNCTION>SHDG-POS. If the problem is not corrected after several attempts, replace the copyboard glass.

### 3.12 The copy has a white spot (horizontal).

---

---

#### Exposure system

- 1) Generate a halftone test print in service mode. Enter '4' to the following: COPIER>PG>TYPE. Does the output image have a white spot?  
NO: Go to step 4.
- 

#### Developing assembly

- 2) Does the problem occur at intervals of about 35 mm?  
YES:
    - Clean the developing block members.
    - Dry wipe the surface of the developing cylinder.
    - If a scratch is found on the surface of the developing cylinder, replace the developing cylinder.
- 

#### Drum unit

- 3) Does the problem occur at intervals of about 94 mm?  
YES:
    - Clean the drum.
    - If a scratch is found on the drum, replace the drum unit.
- 

#### Paper

- 4) Try paper fresh out of package.  
YES: The paper may be moist. Advise the user on the correct method of storing paper.
- 

#### Transfer charging roller, Developing bias

- 5) Is there a white spot on the photosensitive drum during copying operation?  
NO: Check the transfer charging roller for leakage.  
YES: Check the developing bias.

### 3.13 The back of the copy is soiled/Soiled edge.

---

---

#### Exposure system

- 1) Turn off the main power switch while paper is moving in the feeding assembly. At this time, is the back of the paper soiled?

NO: Go to step 5.

---

#### Transfer guide assembly

- 2) Does the back of paper soiled after replacing the drum that caused a black line or the like?

YES: Clean the transfer guide.

---

#### Transfer guide bias, Transfer guide

- 3) During copying, is the voltage between the transfer guide (+) and the machine side plate (-) about -50 to -650V?

NO:

- Check the transfer guide bias connector.
  - Clean the transfer guide.
  - Clean the bottom of the developing assembly.
- 

#### Developing assembly, Registration roller, Drum cleaner

- 4) Does the problem occur at intervals of about 50 mm?

YES:

- Clean the registration roller.
- Clean the transfer guide.
- Check the developing assembly for leakage of toner.
- Clean the bottom of the developing assembly.

NO:

- Clean the feeding assembly.
  - Clean the transfer guide.
  - Check the drum cleaner assembly fro leakage of waste toner.
- 

#### Transfer charging roller

- 5) Execute cleaning of the roller in user mode. Is the problem corrected?

YES: End.

---

#### Fixing assembly

- 6) Run COPIER>OPTION>BODY>FIX-CLN. Fixed?

No: If the fixing roller cleaner is soiled, replace it

YES: End.



### 3.14 The copy has a fixing fault.

---

---

1) Does the problem occur when the machine is first turned on (as in the morning)?

NO: Go to step 3.

---

2) Is the paper thick or the like, which has poor fixing quality?

YES: Select 'thick paper', and try feeding paper from the multifeeder.

---

#### Fixing film

3) Is the problem vertical?

YES: If a scratch is found on the fixing film, replace the film unit.

---

#### Fixing heater

4) Does the heater operate?

NO: See "The fixing heater fails to operate."

---

#### Fixing lower roller pressure

5) Is the lower roller pressure (nip width) as indicated?

NO: Replace the fixing assembly.

---

#### Thermistor

6) Does the indication in the following service mode increase:

COPIER>DISPLAY>ANALOG>FIX-C?

NO: Replace the film unit.

---

#### Paper

7) Is the paper of a recommended type?

NO: Try paper of a recommended type. If the result is good, advise the user to use paper of a recommended type.

---

#### Service mode

8) Set priority on fixing in the following service mode:

COPIER>OPTION>BODY>FIX-TEMP. Is the problem corrected?

YES: End.

3.15 The copy has a displaced leading edge.

3.16 The copy has a displaced leading edge (large margin).

3.17 The copy has a displaced margin (no margin).

---

---

1) Is an ADF used?

YES: Correct the displacement by referring to the Service Manual of the ADF.

---

Original

2) Is the original placed correctly?

NO: Place the original correctly.

---

Pickup roller, Feeding roller, Separation roller

3) Has the pickup, feeding, or separation roller of the cassette in question reached the end of its life?

YES: Check the roller; if worn, replace it.

---

REGIST

4) Execute the following in service mode: ADJUST>FEED-ADJ>REGIST. Is the problem corrected? (Note 1)

YES: End.

---

Registration roller, Pickup/Feeding guide

5) Does the problem occur only in double-sided mode?

YES: Check the rollers of the duplex feeding assembly.

NO: Check and clean the following:

- Registration rollers
  - Pickup/feeding guide
- 

Note 1:

Making Adjustments

- Generate a PG test pattern ( [6] ; solid bal).
- Make adjustments so that the leading edge margin is  $2.5 \pm 1.5$  mm. A higher setting will decrease the margin.

### 3.18 The copy is blurred.

---

---

#### Scanner drive cable

- 1) Is the cable wound on the wire pulley twisted or twined when the scanner is moving? Is there e foreign matter in the mirror pulley assembly?

YES:

- Route the cable correctly.
  - Replace the cable.
  - Remove the foreign matter.
- 

#### Scanner rail

- 2) Move the No. 1 mirror base slowly by hand. Does it move smoothly?

NO: Clean the surface of the scanner rail with alcohol; thereafter, apply a small amount of silicone oil.

---

#### Drum drive assembly, Photosensitive drum

- 3) Does the problem occur at intervals of about 94 mm?

YES:

- Check the drum drive assembly.
  - Check the drum ends (where developing block members remain in contact) for a scratch or foreign matter.
- 

#### Developing gear, Drum drive assembly, Drum unit

- 4) Does the problem occur at intervals of about 35 mm?

YES: Check the developing assembly.

NO:

- Check the drum drive assembly.
- Replace the drum unit.

### 3.19 The copy is foggy (horizontal).

---

---

1) Does the problem occur at the same position on all copies made in Direct.

YES: Go to step 5.

---

#### Scanning lamp

2) Does the scanning lamp flicker while the scanner is moving forward?

YES: Check the scanning lamp and the inverter PCB.

---

#### Drum unit

3) Does the problem occur at intervals of 94 mm?

YES: Replace the drum unit.

---

#### Wiring

4) Is the wiring between the scanning lamp, the inverter PCB and the reader assembly?

NO: Correct the wiring.

---

#### Developing assembly

5) Is the coating of toner on the developing cylinder normal?

NO: Check the developing bias.

---

#### Scanner, Feeding system

6) Make reduced copies (about 50% to 60%), and compare them against copies made in Direct. Is the position of the problem different?

YES: Check the scanner.

NO: Check the feeding assembly.

### 3.20 The copy has inadequate sharpness.

---

---

#### Copyboard glass

- 1) Is there oil or the like on the copyboard glass? Is there foreign matter on the copyboard glass stay?

YES: Clean the copyboard glass.

---

#### Scanner

- 2) Clean the scanning lamp, reflecting plate, mirrors, and lenses. Is the problem corrected?

YES: End.

---

#### Mirror (position)

- 3) Is the horizontal reproduction ratio in Direct as indicated?

NO: Adjust the position of the No. 1 mirror and the No. 2 mirror.

---

#### Developing bias

- 4) Are the connection and the electrical continuity of the high-voltage for the developing bias normal? (The resistance of the cable for the developing bias and the resistance between the terminal of the composite power supply PCB and the terminal on the developing assembly is about 10 k $\Omega$ .)

NO: Check the connection; and replace the cable. If the problem is still not corrected,

1. Replace the composite power supply PCB
  2. Replace the DC controller PCB.
- 

#### Drum unit, Transfer charging system

- 5) Try replacing the drum unit. Is the problem corrected?

YES: End.

NO: Check the transfer charging system.

### 3.21 The copy is completely blank.

---

---

#### Developing assembly

- 1) Is the developing assembly locked to the photosensitive drum during copying?

NO: Check the locking mechanism of the developing assembly.

---

#### Developing assembly drive mechanism

- 2) Is the developing cylinder rotating during copying?

NO: Check the drive mechanism of the developing assembly.

---

- 3) Is the image of the test print (PG>TYPE; 1 through 8) normal?

YES: Go to step 10.

---

#### Transfer charging roller

- 4) Is the transfer charging roller mounted properly?

NO: Check the mounting condition.

- 5) Is leakage noted on the transfer charging roller?

YES: Check the transfer charging roller.

---

#### Transfer high-voltage cord

- 6) Is the connection of the transfer high-voltage cord normal? Is there electrical continuity in the transfer high-voltage cord? (The resistance of the transfer high-voltage cord is about 10 k $\Omega$ .)

NO:

- Connect the cord properly.
  - Replace the transfer high-voltage cord.
- 

#### DC controller PCB

- 7) Try replacing the DC controller PCB. Is the problem corrected?

YES: End.

---

#### Composite power supply PCB

- 8) Try replacing the composite power supply PCB. Is the problem corrected?

YES: End.

---

#### Power supply (to CCD PCB)

- 9) Is about 12 VDC present on J602-1 of the CCD PCB? Is about 5 VDC present on J602-4?

NO: Check the wiring; if normal, replace the reader controller PCB.

---

Wiring

10) Is the wiring between the CCD PCB and the reader controller PCB normal?

NO: Correct the wiring.

---

Laser scanner unit, Drum unit

11) Try replacing the drum unit. Is the problem corrected?

NO: Check the laser shutter mechanism; if normal, replace the laser scanner unit.

YES: End.

## 3.22 The copy is completely black.

---

---

### Scanning lamp

- 1) Is the scanning lamp ON during copying operation?  
NO: See "The scanning lamp fails to go ON."
- 

### Margin

- 2) Is there a margin on copies made in normal mode?  
YES: Go to step 6.  
NO: Go to step 3.
- 

### Drum unit

- 3) Is the drum unit fitted correctly? (Is it fully pushed inside?)  
NO: Mount it correctly.
- 

### Primary charging roller

- 4) Are the contact of the connectors, connection of the harness, and electrical continuity from J130-7 of the composite power supply PCB to the primary charging roller normal? (The resistance of the high-voltage cord for primary charging is 10 k $\Omega$ .)  
NO: Correct the fault.
- 

### Mirror (position)

- 5) Generate test prints (PG>TYPE; 1 through 8). At this time, is the image on the photosensitive drum normal?  
NO: Go to step 7.
- 

### DC controller PCB, Composite power supply PCB

- 6) Is the output of J301-B4 (+) on the DC controller PCB 0 V during copying operation?  
NO: Replace the DC controller PCB.  
YES: Replace the composite power supply PCB.
- 

### Reader controller PCB, CCD unit

- 7) Try replacing the CCD unit. Is the problem corrected?  
NO: Replace the reader controller PCB.  
YES: End.



### 3.23 The copy has a block/white dot after replacement of the drum unit.

---

---

- 1) Execute the following in service mode: FUNCTION>DPC>D-GAMMA. Then, make copies of the NA-3 Chart. Is the copy image normal?

YES: End.

---

Drum unit

- 2) Set the following to '1': OPTION>BODY>PRIAC-SW. Then, make copies of the NA-3 Chart. Is the copy image normal?

YES: End.

NO: Replace the drum unit.

### 3.24 The copy has a black line (stream reading).

---

---

Reading glass, Dirt

- 1) Does the problem occur on the same position on all copies?

YES: Check the reading glass for dirt and a scratch.

NO: Paper lint (droppings) can be suspected. Clean the ADF roller, original path, and reading glass.

## 4 Troubleshooting Malfunctions

---

### 4.1 Power Supply System

#### 4.1.1 The AC power is absent.

---

---

##### 1. Initial checks

- [1] Is the power plug connected to the power outlet?
  - [2] Is the rated AC voltage present at the power outlet?
  - [3] Has the leakage breaker gone ON?
- 

##### 2. Switch PCB, Wiring, Connector

Is the resistance  $0\ \Omega$  when the switch is turned on and  $\infty\Omega$  when it is turned off?

NO: Replace the switch PCB.

YES: Check the AC power line (power cord, leakage breaker, switch PCB, main power supply PCB (J6)) for poor wiring (i.e., electrical continuity); check the connectors for poor contact.

### 4.1.2 The DC power is absent.

---

#### 1. AC power supply

Is the rated AC voltage present at the connector J6 (between 1 and 3) of the main controller PCB and at the connector J100 (between 1 and 3) of the composite power supply PCB?

NO: See “The AC power is absent.”

---

#### 2. Fuse (F1)

Is the fuse on the composite power supply PCB blown ?

YES: Remove the cause of the fuse, and replace the fuse.

---

#### 3. Main power supply PCB, Composite power supply PCB

Is the output voltage of each power supply PCB normal?

##### a. Main Power Supply PCB

<u>Connector</u>	<u>Output voltage</u>
J202-1, 3, 5	24VU1-SW
J203-2	24VU2
J204-1, 3, 7, 8, 9	24VU3
J206-2	24VU3
J206-3	5V

##### b. Composite Power Supply

<u>Connector</u>	<u>Output voltage</u>
J120-1, 4	5V
J121-1, 2, 3	3VA2
J121-4, 5	3VA1
J121-11,12,13	3VB
J122-1, 2	5V
J124-3, 4	3VA1
J124-6	3VB
J124-9, 10	5V
J126-2, 3, 5, 7	13V

YES: Check the wiring from each power supply PCB to each load.

NO: Replace the faulty power supply PCB.

## 4.2 Printer Unit

### 4.2.1 Pickup fails.

---

---

#### 1. General condition

Slide out and then in the cassette. Is the sound of the lifter fall heard?

NO: See "The lifter fails to move up."

---

#### 2. Sensor

In service mode (COPIER>DISPLAY>JAM) find the sensor that detected the jam. Is the sensor lever and the sensor itself normal?

NO: Replace the sensor lever or the sensor.

---

#### 3. Releasing lever (for pickup/separation roller)

Push in the releasing lever toward the rear. Is the pickup roller released? Do the feeding roller and the separation roller come into firm contact?

NO: The releasing lever (spring) is displaced or deformed. Correct or replace it.

---

#### 4. Pickup/feeding/separation roller

Execute pickup operation. Does the roller rotate?

YES: The movement of paper is faulty because of wear on the pickup/feeding/separate roller. Replace the roller.

---

#### 5. Pickup drive assembly

Is there damage/foreign matter on the gear of the pickup roller drive assembly?

YES: Replace the gear. Remove the foreign matter.

---

#### 6. Pickup motor (M2)

Execute the following in service mode: code 3 of COPIER>FUNCTION>PART-CHK>MTR; i.e., MTR-ON. Is the motor control signal present at J1602 of the pickup PCB? (J1602-1: A\*, J1602-2: A, J1602-3: B\*, J1602-4: B)

YES: Replace the pickup motor.

---

#### 7. Pickup PCB, DC controller PCB

Execute the following in service mode: code 3 of COPIER>FUNCTION>PART-CHK>MTR; i.e., MTR-ON. Is the motor control signal present at J302A of the DC controller PCB? (J302A-1: 24 V, J302A-3: GND, J302A-6: IN1, J302A-7: IN2, J302A-8: IN3, J302A-8: IN4)

YES: Replace the pickup PCB.

NO: Replace the DC controller PCB.

## 4.2.2 The lifter fails to move up (pickup from the cassette).

---

---

### 1. Releasing lever (for pickup roller)

Push in the releasing lever toward the rear. Does the descent movement of the pickup roller stop?

NO: The releasing lever (spring) is displaced or deformed. Correct or replace it.

---

### 2. Lifter gear retaining lever lock

When the cassette is slid in, is the lock of the lifter gear retaining level released?

NO: Correct the locking mechanism of the lifter gear retaining lever or replace it.

---

### 3. Lifter gear, Lifter gear retaining lever, Lifter ascent lever

Is any of the gear faulty (damaged)?

YES: Replace it.

---

### 4. Lifter drive assembly

Is the gear of the lifter drive assembly damaged or subject to foreign matter. Is the drive belt faulty?

YES: Replace the gear/belt. Remove the foreign matter.

---

### 5. Pickup roller descent solenoid (SL1C)

Execute the following in service mode: code 6 of COPIER>FUNCTION>PART-CHK>SL; i.e., SL-ON. Is the solenoid drive voltage present at J1604 of the pickup PCB? (J1604-4: 24 V, J1604-1: PICKUPSL\*)

YES: The pickup roller solenoid is faulty. Replace it.

---

### 6. Pickup PCB, DC controller PCB

Execute the following in service mode: code 6 of COPIER>FUNCTION>PART>CHK>SL; i.e., SL-ON. Is the solenoid control signal present at J302A-5 of the DC controller PCB? (J302A-5: FDOWN\_SL\*)

YES: Replace the pickup PCB.

NO: Replace the DC controller PCB.

### 4.2.3 The vertical path roller fails to rotate.

---

---

#### 1. Main motor

Is 'E010' (faulty main motor) indicated?

YES: See the descriptions on E010 in Chapter 6 "Self Diagnosis."

---

#### 2. Vertical path clutch (CL1)

Execute the following in service mode: code 1 of COPIER>FUNCTION>PART-CHK>CL, i.e., CL-ON. Is the clutch drive signal present at J1603 of the pickup PCB? (J1603-4: 24 V, J1603-1: VPATHCL\*)

YES: The vertical path clutch is faulty. Replace the clutch.

---

#### 3. Pickup PCB, DC controller PCB

Execute the following in service mode: code 1 of COPIER>FUNCTION>PART-CHK>CL; i.e., CL-ON. Is the clutch control signal present at J302A-4 of the DC controller PCB?

YES: Replace the pickup PCB.

NO: Replace the DC controller PCB.

---

### 4.2.4 The registration roller fails to rotate.

---

---

#### 1. Registration paper sensor (PS10)

When paper is placed over the sensor, does bit 3 change from '0' to '1'? (service mode: COPIER>I/O>DC-CON>IO-P015)?

NO: The registration paper sensor is faulty. Replace the sensor.

---

#### 2. Registration MOTOR (M9)

Execute the following in service mode: code 9 of COPIER>FUNCTION>PART-CHK>MTR. Is the motor drive signal present at J309 of the DC controller PCB? (J309-1: REG\_A, J309-2: REG\_A\*, J309-3: 24 VU, J309-4: 24 VU, J309-5: REG\_B, J309-6: REG\_B\*)

YES: The registration motor is faulty. Replace the motor.

NO: The DC controller PCB is faulty. Replace the PCB.

---

4.2.5 Pickup from the multifeeder tray fails (i.e., the pickup roller fails to rotate).

---

---

1. Main motor

Is 'E010' (faulty main motor) indicated?

YES: See the description on 'E010' in Chapter 6 "Self Diagnosis."

---

2. Multifeeder paper sensor (PS22)

Place paper in the multifeeder. Does bit 5 change from '0' to '1'? (service move COPIER>I/O>DC-CON>IO-PO16)

NO: Check the wiring and the link; if normal, replace the sensor.

---

3. Multifeeder clutch (CL2), DC controller PCB

Execute the following in service mode: code 2 of COPIER>FUNCTION>PATH-CHK>CL; i.e., CL-ON. Is the clutch drive signal present between J302B-7 and -8 of the DC controller PCB? (J302B-7: 24 V, J302B-8: MLT\_CL)

YES: Check the wiring; if normal, replace the clutch.

NO: Replace the DC controller PCB.

---

4.2.6 Pickup from the multifeeder tray fails (i.e., the multifeeder holding plate fails to move up).

---

---

1. Main motor

Is 'E010' (faulty main motor) indicated?

YES: See the description on 'E010' in Chapter 6 "Self Diagnosis."

---

2. Multifeeder holding plate releasing solenoid (SL5)

Execute the following in service mode: code 4 of COPIER>FUNCTION>PART-CHK>SL; i.e., SL-ON. Is the solenoid drive signal present between J308A-1 and -2 on the DC controller PCB? (J308A-2: 24 V, J308A-1: MLT\_SL)

YES: Check the wiring and the link; if normal, replace the solenoid.

NO: Replace the DC controller PCB.

---

#### 4.2.7 The photosensitive drum fails to rotate.

---

##### 1. Main motor

Is 'E010' (faulty main motor) indicated?

YES: See the description on 'E010' in Chapter 6 "Self Diagnosis."

---

##### 2. Drum unit, Drum drive unit

Remove and then mount back the drum unit. Is the problem corrected?

YES: Yes.

NO: Check the drum unit and the drive assembly of the drum drive unit.  
If a fault is discovered, correct the fault or replace the unit.

#### 4.2.8 The pre-exposure lamp fails to go ON.

---

---

##### 1. Pre-exposure lamp (LAMP2), DC controller PCB

Execute the following in service mode: COPIER>FUNCTION>MISC-P>PRE-EXP. Is the activation control signal present at J312B of the DC controller PCB? (J312B-6: 24 V, J312B-7: PREEXPOSE)

YES: Check the wiring from the DC controller PCB to the pre-exposure lamp; if normal, replace the pre-exposure lamp.

NO: Replace the DC controller PCB.



## 4.3 Reader Unit

### 4.3.1 The No. 1 mirror base fails to move.

---

---

#### 1. Initial check

Is the scanner motor driven?

YES: Go to step 2.

NO: Go to step 4.

---

#### 2. Cable (displacement, broken), Drive belt (displaced, broken)

Is the scanner drive cable or the drive belt normal?

NO: Replace or correct the cable of the drive belt.

---

#### 3. Scanner path (foreign matter)

Move the scanner by hand. Does it move smoothly?

NO: Remove the dirt/foreign matter from the scanner rail. Remove any object that comes into contact with the scanner. Use alcohol for cleaning; thereafter, apply a small amount of silicone oil (FY9-6010).

If the inverter PCB is not positioned correctly, it can come into contact with the scanner.

---

#### 4. Wiring, Connector

Is the connection of the wiring and connectors from J401 of the reader controller PCB to the scanner motor correct?

NO: Correct the wiring, and connect the connectors securely.

---

#### 5. Scanner motor (M400), Reader controller PCB

Is the drive signal present at J401 of the reader controller PCB? (J401-5/6: +24 V, J401-1/2/3/4: drive pulse)

YES: Replace the scanner motor.

NO: Replace the reader controller PCB.

### 4.3.2 The scanning lamp fails to go ON.

---

---

#### 1. Wiring, Connector

Is the connection of the wiring and the connectors between the inverter PCB (J4061) and the lamp correct?

NO: Correct the wiring, and connect the connectors securely.

---

#### 2. Inverter PCB

Is 'E220' indicated?

YES: Replace the inverter PCB.

---

#### 3. Scanning lamp, Reader controller PCB

Execute the following in service mode: COPIER>FUNCTION>MISC-R>SCANLAMP. Is the activation control signal present at J402 of the reader controller PCB? (J402-2: LMP\_ON, J402-3: GND, J402-4: +24 VU)

YES: The scanning lamp is faulty. Replace the lamp.

NO: The reader controller PCB is faulty. Replace the PCB.

## 4.4 Message Indication

### 4.4.1 The “Add Toner” message fails to go OFF.

---

---

#### 1. Toner sensor (S1), DC controller PCB

After toner supply, is ‘0’ (absence of toner) indicated in the following service mode: bit 0 of COPIER>I/O>DC-CON>P008?

YES: The toner sensor is faulty. Replace the sensor.

NO: Check the wiring; if normal, replace the DC controller PCB.

### 4.4.2 The “Control Card Set” message fails to go OFF (when no card reader is installed).

---

---

#### 1. Shorting connector

When the main controller is replaced, the shorting connector must be removed from the old PCB and mounted to the new PCB. Is the shorting connector fitted to the connector J1060 of the main control card?

NO: Fit the shorting connector.

YES: The main controller PCB is faulty. Replace the PCB.

### 4.4.3 The “Add Paper” message fails to go OFF.

---

---

#### 1. Cassette pickup assembly

Is the lifter mechanism of the cassette normal?

NO: See “The lifter fails to move up (pickup from cassette).”

#### 2. Cassette 1/2 paper sensor detecting lever

Are the shape, mounting, and operation of the paper sensor lever normal?

NO: Correct or replace the sensor.

#### 3. Pickup PCB, DC controller PCB

When paper is placed in the cassette, is the paper detection signal present at J302A of the DC controller PCB? (cassette 1: J302-A10 (from 0 to 5 V), cassette 2: J302-A11 (from 0 to 5 V))

NO: The paper sensor or the pickup PCB is faulty. Replace the PCB.

YES: The DC controller PCB is faulty. Replace the PCB.

#### 4.4.4 The “Close the Front Cover” message fails to go OFF.

---

---

##### 1. Connectors

Is the wiring between the PCBs secure?

[1] between composite power supply PCB (J136A) and DC controller PCB (J301A)

(24V detection signal: between J136A-3 and J301A-10)

[2] between composite power supply PCB (J135) and main power supply PCB (J202)

(J135-1: 24VU1-SW, J135-2: 0VU1, J202-5: 24VU1-SW, J202-6: 0VU1)

NO: Make the wiring secure.

---

##### 2. Front cover switch

Is there electrical continuity in the front cover switch when the front cover is closed?

(check the interval between J200-1 and J200-3 on the main power supply PCB for electrical continuity.)

NO: Replace the front cover switch.

---

##### 3. Main power supply PCB

Is 24 V supplied by the main power supply PCB to the composite power supply PCB?

- Main power supply PCB (J202-5: 24VU1-SW, J202-6: 0VU1)
- Composite power supply PCB (J135-1: 24VU1-SW, J135-2: 0VU1)

NO: Replace the main power supply PCB.

---

##### 4. Composite power supply PCB, DC controller PCB

When 24 V is supplied by the main power supply PCB to the composite power supply, is the front cover detection signal (FDOOR\_OPN) sent by the composite power supply PCB to the DC controller PCB?

- Composite power supply PCB (J136A-3)
- DC controller PCB (J301A-10)

YES: Replace the DC controller PCB.

NO: Replace the composite power supply PCB.

## 4.5 Paper Deck

### 4.5.1 Pickup fails.

---

---

#### 1. Right upper cover, Right lower cover

Are the right upper cover and the right lower cover closed securely?

NO: Close the covers.

---

#### 2. Lifter

When the compartment is slid out from the deck, does the lifter move down? Further, when the compartment is slid into the deck, does the lifter move up?

NO: See "The deck lifter fails to move up."

---

#### 3. Deck pickup roller

Does the deck pickup roller rotate?

YES: If the roller is soiled, clean it with alcohol. If it is deformed because of wear, replace it.

---

#### 4. Belt (displacement)

Is the belt used to transmit drive to the deck pickup roller fitted correctly?

NO: Fit the belt correctly.

---

#### 5. Gear

Is the drive from the deck main motor transmitted to the pickup assembly?

NO: Check the drive assembly.

---

#### 6. Deck pickup clutch (CL2), Deck drive PCB

Measure the voltage of the connector (J5B) on the deck driver PCB. When the Start key is pressed, is the clutch drive signal generated? (J5-B3: FEED\_CL\_ON\*, J5-B4: 24 V)

YES: Check the wiring; if normal, replace the clutch.

NO: Replace the deck driver PCB.

### 4.5.2 The deck lifter fails to move up.

---

---

#### 1. Deck body

Is the deck body mounted correctly?

NO: Mount the deck body correctly.

---

#### 2. Lifter cable

Is the lifter cable fitted correctly?

NO: Fit the cable correctly.

---

#### 3. Spring, Lever

Push up the deck pickup roller releasing lever with your finger. Does the pickup roller move down?

NO: Remove the pickup assembly, and check the spring and the lever.

---

#### 4. Deck lifter motor (M2D)

Does the deck lifter motor rotate?

YES: Go to step 6.

---

#### 5. Deck open detecting switch (SW1D), Deck drive PCB

Does the voltage between J7-1 (+ : 24V OUT) and J7-3 (GND : 24V IN) of the deck driver PCB change from about 0 to 24 V?

YES: Check the wiring to the switch; if normal, replace the switch.

NO: Replace the deck driver PCB.

---

#### 6. Deck lifter lower limit detecting switch (SW2D), deck driver PCB

Does the voltage between J4-7 (+ : LIFT\_LOW\_LMT) and J4-8 (GND) of the deck driver PCB change from about 0 to 5 V?

YES: Check the lever and the wiring; if normal, replaced the switch.

NO: Replace the deck driver PCB.

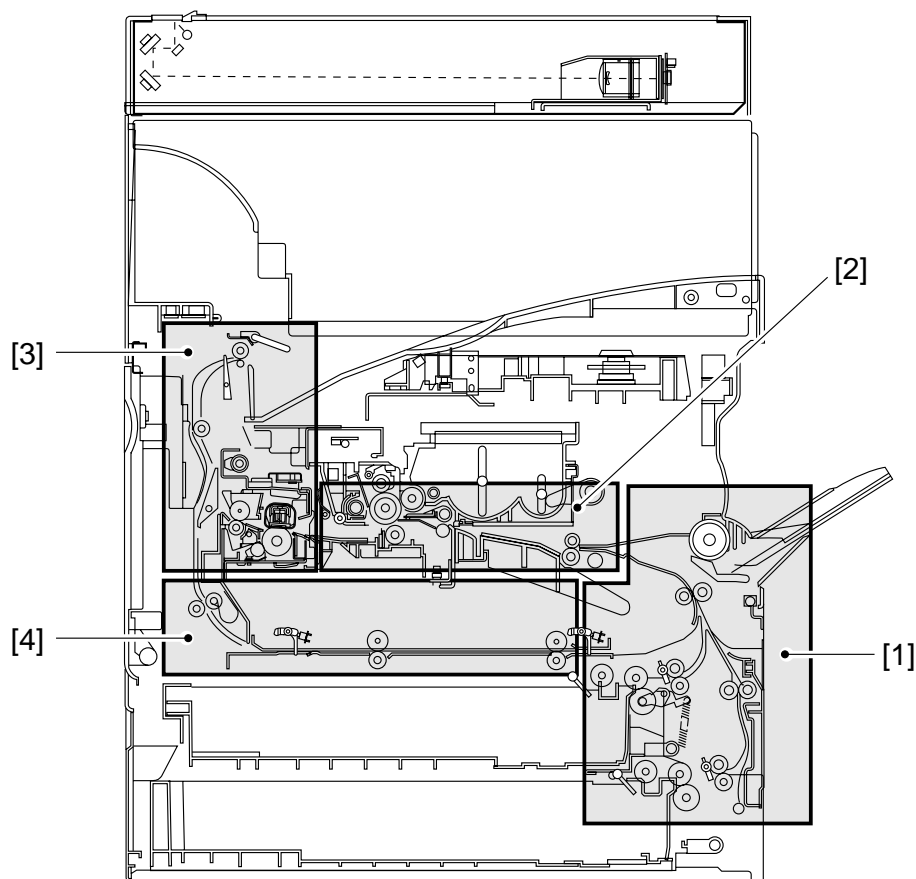
## 5 Troubleshooting Feeding Faults

### 5.1 Paper Jams

The jams that can occur inside the machine are grouped according to location:

- [1] Pickup assembly
- [2] Separation/feeding assembly
- [3] Fixing/delivery assembly, duplex reversing assembly
- [4] Duplex/feeding assembly

The descriptions that follow are also grouped according to the locations of jams; the location and the nature of a specific jam may be checked in the machine's service mode (COPIER>DISPLAY>JAM).



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### 5.1.1 Pickup Assembly

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#### 1. General condition

Do the pickup roller and the feeding roller of the selected cassette, manual feeder tray, and deck rotate during printing?

NO: See the descriptions for each (i.e., “fails to operate”).

---

#### 2. Cassette

Is the cassette fitted correctly? Is the dial set correctly?

NO: Correct the cassette and the dial.

---

#### 3. Cassette

Try a different cassette. Is the problem corrected?

YES: Check the faulty cassette.

---

#### 4. Paper (moist)

Is the paper curled or wavy or in any way different?

YES: Replace the paper. Advise the user on the correct method of storing paper.

---

#### 5. Paper (non-recommended)

Try paper of a recommended type. Is the problem corrected?

YES: Advise the user to use recommended paper.

---

#### 6. Paper guide plate

Is the paper guide plate deformed? Or, is there a piece of paper on it?

YES: Correct the deformation, and remove any piece of paper.

---

#### 7. Main motor (M1), Vertical path clutch (CL1)

Does the main motor rotate?

YES: Check the roller and the vertical path clutch of the vertical path assembly.

NO: Replace the main motor.



### 5.1.2 Separation/Feeding Assembly

---

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#### 1. Paper

Try paper of a recommended type. Is the problem corrected?

YES: Advise the user to use recommended paper.

---

#### 2. Separation static eliminator

Is the separation static eliminator fully inserted?

NO: Insert it fully.

---

#### 3. Pre-registration paper sensor lever, Registration paper sensor lever

Does the sensor lever in question move smoothly?

NO: Corrected it so that the lever moves correctly.

---

#### 4. Pr-registration paper sensor (PS9), Registration paper sensor (PS10)

Find out the sensor detecting the jam in service mode (COPIER>DISPLAY>JAM). Is there paper over the sensor?

NO: Check the wiring; if normal, replace the sensor.

---

#### 5. Registration roller, Feeding unit (transfer charging roller)

Does the registration roller rotate?

NO: Check the registration motor (M9).

YES: Check to make sure that the feeder unit is securely locked in place; if a fault is found, check the transfer charging roller assembly or the feeder locking assembly.

---

### 5.1.3 Fixing/Delivery Assembly, Duplex Reversing Assembly

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#### 1. Fixing film

Is the fixing film deformed, damaged, or subjected to foreign matter?

YES:

1. For deformation or foreign matter, replace the film unit.
  2. Remove foreign matter.
- 

#### 2. Fixing inlet guide plate

Is the fixing inlet guide plate soiled with toner or the like?

YES: Clean the guide.

---

#### 3. Fixing/ feed sensor lever, No. 1 delivery paper sensor lever

Does the lever of the sensor in question move smoothly?

NO: Correct the lever so that it moves smoothly.

---

---

4. Fixing/feed sensor (PS13), No. 1 delivery sensor (PS15)

Find the sensor that detected the jam in service mode (COPIER>DISPLAY>JAM). Is there paper over the sensor?

NO: Check the wiring; if normal, replace the sensor.

---

5. Delivery flapper (movement)

Does the delivery flapper move smoothly? Further, does it move back to its initial position by the work of the spring?

NO: Correct the mechanism so that the delivery flapper moves smoothly.

---

6. Delivery flapper

Is the delivery flapper deformed or scratched ?

YES: Replace the flapper.

NO: Check the leading edge of the paper to see if there is a margin.

---

### 5.1.4 Duplex Feeding Assembly

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1. Paper guide plate

Is there foreign matter around the paper guide? Or, is it deformed?

YES: Remove the foreign matter, and correct the deformation.

---

2. Duplex inlet paper sensor lever, Duplex output paper sensor lever

Does the lever of the sensor in question move smoothly?

NO: Correct the mechanisms so that the lever moves smoothly.

---

3. Duplex inlet paper sensor (PS17), Duplex outlet paper sensor (PS18)

Find the sensor that detected the jam in service mode: (COPIER>DISPLAY>JAM). Is the paper over the sensor?

NO: Check the wiring; if normal, replace the sensor.

---

4. Duplex motor (M6), roller (duplex assembly)

Select '4' in the following service mode: COPIER>FUNCTION>PART-CHK. When the OK key is pressed, does the duplex motor rotate?

YES: Check the roller of the duplex assembly.

NO: Check the wiring; if normal, replace the motor.

---

## 5.2 Faulty Feeding

### 5.2.1 Double Feeding

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#### 1. Pickup/feeding/separation roller releasing lever, Separation roller

When the releasing lever is pushed in toward the rear, is the pickup roller released? Further, do the feeding roller and the separation roller come into firm contact?

NO: The releasing lever (spring) is displaced or deformed. Correct or replace it.

YES: Check the separation roller for deformation and wear. If a fault is found, replace the separation roller.

### 5.2.2 Wrinkles

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#### 1. Pickup assembly

Turn off the power supply while paper is moving through the feeding assembly. At this time, is the paper wrinkled? Or, is it moving askew?

YES:

[1] Check the pickup assembly.

[2] Check the guide in front of the registration roller.

[3] Check the registration roller.

#### 2. Paper (moist)

Try new paper. Is the problem corrected?

YES: The paper may be moist. Advise the user on the correct method of storing paper.

#### 3. Paper (non-recommended type)

Try paper of a recommended type. Is the problem corrected?

YES: Advise the user to use paper of a recommended type.

#### 4. Paper guide, fixing inlet drive solenoid (SL1)

Is the paper guide coated with toner or foreign matter?

YES: Clean the paper guide with solvent.

#### 5. Fixing assembly, delivery feeding assembly

Is the fixing film, fixing lower roller, or cleaning roller faulty?

YES: Clean or replace it.

NO: Check the delivery feeding assembly for a fault.

## 6 Outline of Electrical Components

---

### 6.1 Introduction

The electrical components of the machine and its accessories are arranged as shown herein, and they possess the functions discussed; the notations and the I/O addresses used are based on those in the general circuit diagrams, enabling reference to the general circuit diagrams for wiring and signal descriptions. (For the general circuit diagrams, see the Appendix.)

#### 6.1.1 Guide to the List

The following notations are used to indicate the targets of connections:

DC-CON:	DC controller PCB
R-CON:	reader controller PCB
MN-CON:	main controller PCB
FEED:	pickup circuit PCB
MPWS:	main power supply PCB
DECK-CON:	side deck driver PCB
DECK-FEED:	2-Cassette Pedestal Pickup PCB
FAX-CON:	G3 FAX control PCB

### 6.1.2 Checking the Photointerrupters

The photointerrupters are checked in service mode; go through the tables attached to the lists of electrical components to find out the state\* of a specific sensor, which may be any of the following:

#### a. Paper Sensor

Move the sensor lever by hand to simulate the presence of paper; then, check the Service Mode screen.

If it is difficult to check the Service Mode screen while moving the sensor lever, put paper over the point of detection, and then check the Service Mode screen.

#### b. Open/Closed Sensor

Check the Service Mode screen while opening/closing the cover/unit in question.

#### c. Position Sensor, Presence/Absence Sensor

Move the unit in question by hand. Try removing and then mounting it. If the I/O level changes in response to operation, the sensor may be assumed to be normal.



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To check a photointerrupter found inside a unit which is detached in conjunction with a drawer connector, be sure to check the Service Mode while the unit in question is set.

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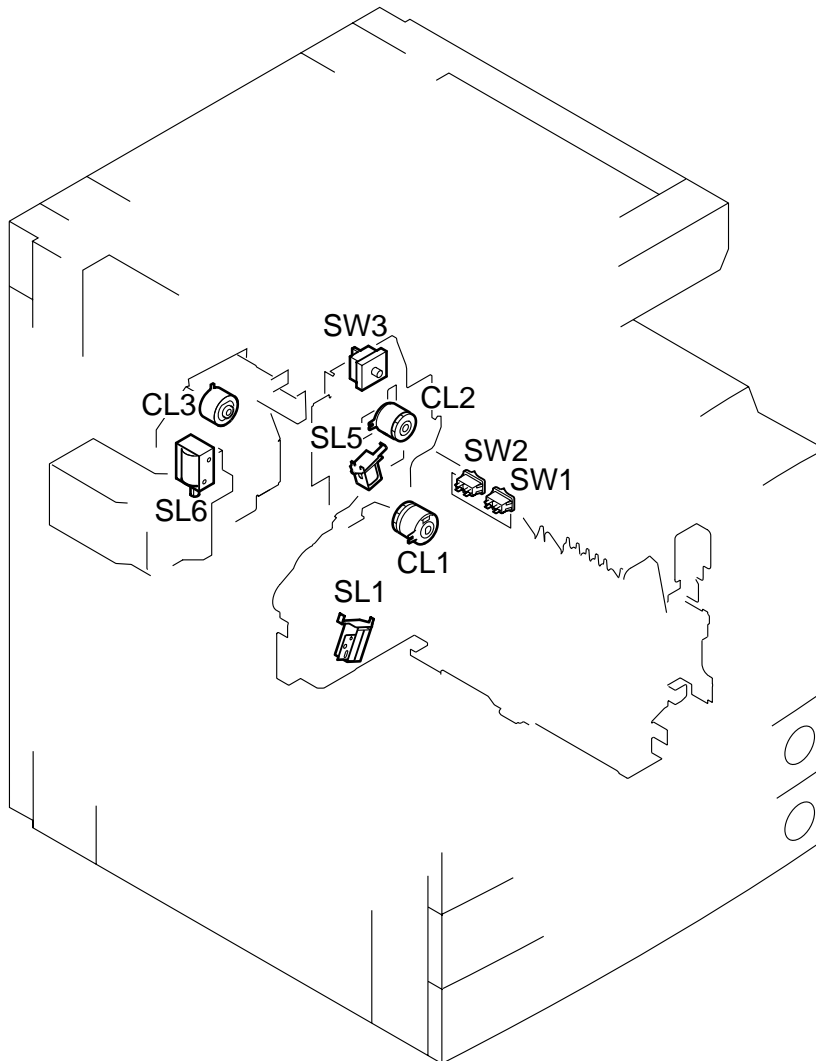
\*The state of a sensor refers to any of the following:

- For a paper sensor, the presence or the absence of paper.
- For an open/closed sensor, the state in which the cover/unit is closed.
- For a home position sensor or a set sensor, the item in question is in home position or set in place.

## 6.2 E201 (reader unit/printer unit)

### 6.2.1 Clutches

### 6.2.2 Solenoids, and Switches



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### 6.2.1 Clutches

- Reader Unit  
The reader unit does not have nay clutch.

- Printer Unit

Electrical signal (target) Name	Reference to general circuit diagram	I/O address I/O indication	Remarks
CL1 (DC-CON) Vertical path clutch	A3-20-N	P001-5 0: ON, 1: OFF	
CL2 (DC-CON) Multifeeder clutch	A3-18-N	P001-6 0: ON, 1: OFF	
CL3 (DC-CON) Developing clutch	A3-20-J	P001-7 0: ON, 1: OFF	

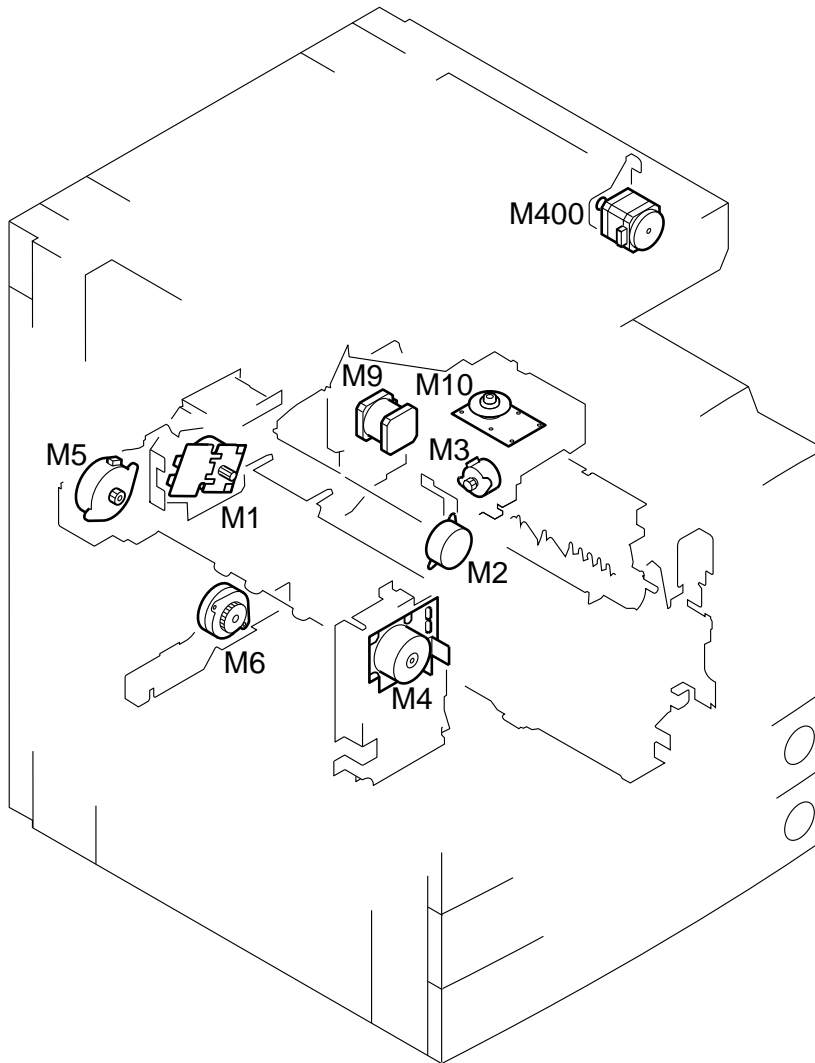
### 6.2.2 Solenoids, and Switches

- Reader Unit  
The reader unit does not have any solenoid or switch.

- Printer Unit

Electrical signal (target) Name	Reference to general circuit diagram	I/O address I/O indication	Remarks
SL1 (DC-CON) Pickup DOWN solenoid	A3-20-N	P002-0 1: ON, 0: OFF	
SL5 (DC-CON) Multifeeder holding plate releasing solenoid	A3-20-J	P002-3 1: ON, 0: OFF	
SL6 (DC-CON) Charging roller solenoid	A3-20-J	P002-4 1: ON, 0: OFF	
SW1 (MPWS) Main power switch	A3-12-B		
SW2 (MPWS) Environment heater switch	A3-12-B		
SW3 (MPWS) Front cover switch	A3-14-B	P008-7 0: open, 1: closed	

6.2.3 Motors (1/2)



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### 6.2.3 Motors (1/2)

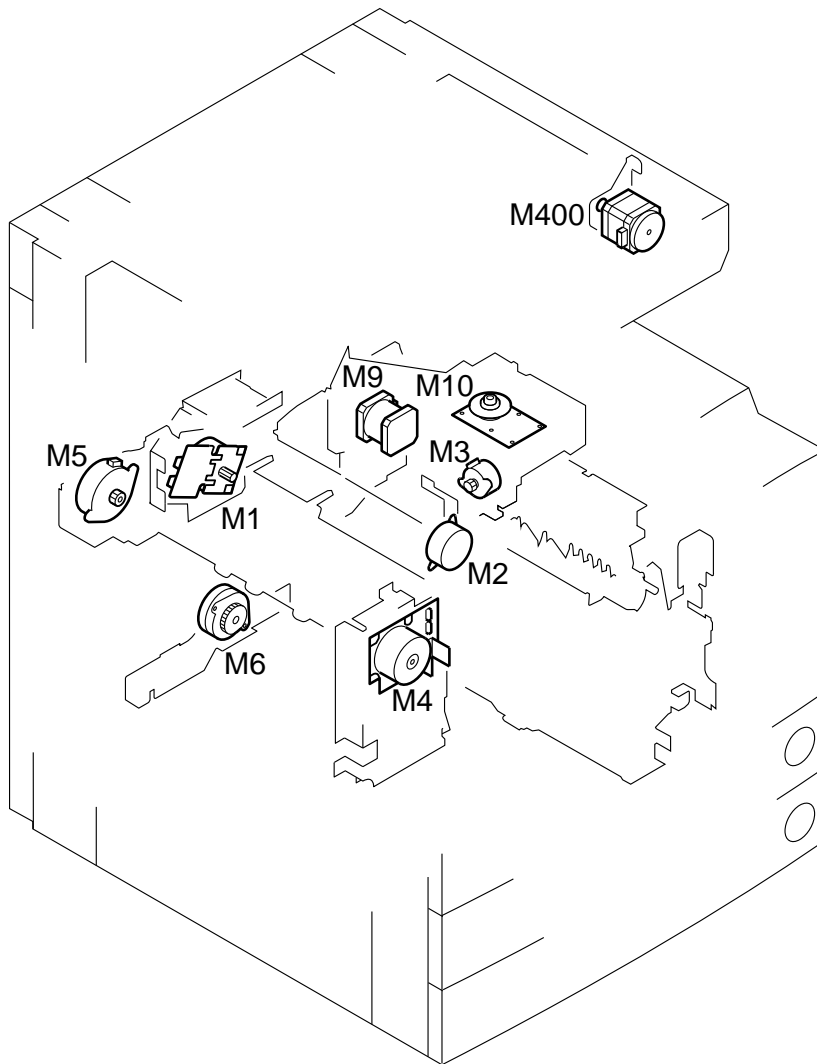
- Reader Unit

Electrical signal (target) Name	Reference to general circuit diagram	I/O address I/O indication	Remarks
M400 (R-CON) Scanner motor	A3-18-G	IO-P01-0	Clock signal
		IO-P01-1	
		0: CW	
		IO-P01-2	
		0: drive enabled	
		IO-P01-4	
		1→0: return to origin	
		IO-P01-5, 6	
			Default
		IO-P04-6	
			Analog
		IO-P06-0	
		0: new current mode	

- Printer Unit (1/2)

Electrical signal (target) Name	Reference to general circuit diagram	I/O address I/O indication	Remarks
M1 (DC-CON) Main motor	A3-20-I	P001-0	
		0: ON, 1: OFF	
		P008-3	
		0: lock	
M2 (FEED) Pickup motor	A3-20-N	P003-0 to 3	
M3 (DC-CON) Horizontal registration sensor shift motor	A3-17-N	P003-4 to 7	
M4 (DC-CON) Fixing motor	A3-15-J	P001-3	
		0: ON, 1: OFF	
		P001-4	
		1: ON, 0: OFF	
		P008-5	
		0: lock	
M5 (DC-CON) Delivery motor	A3-9-N	P010-0 to 8	

6.2.3 Motors (2/2)



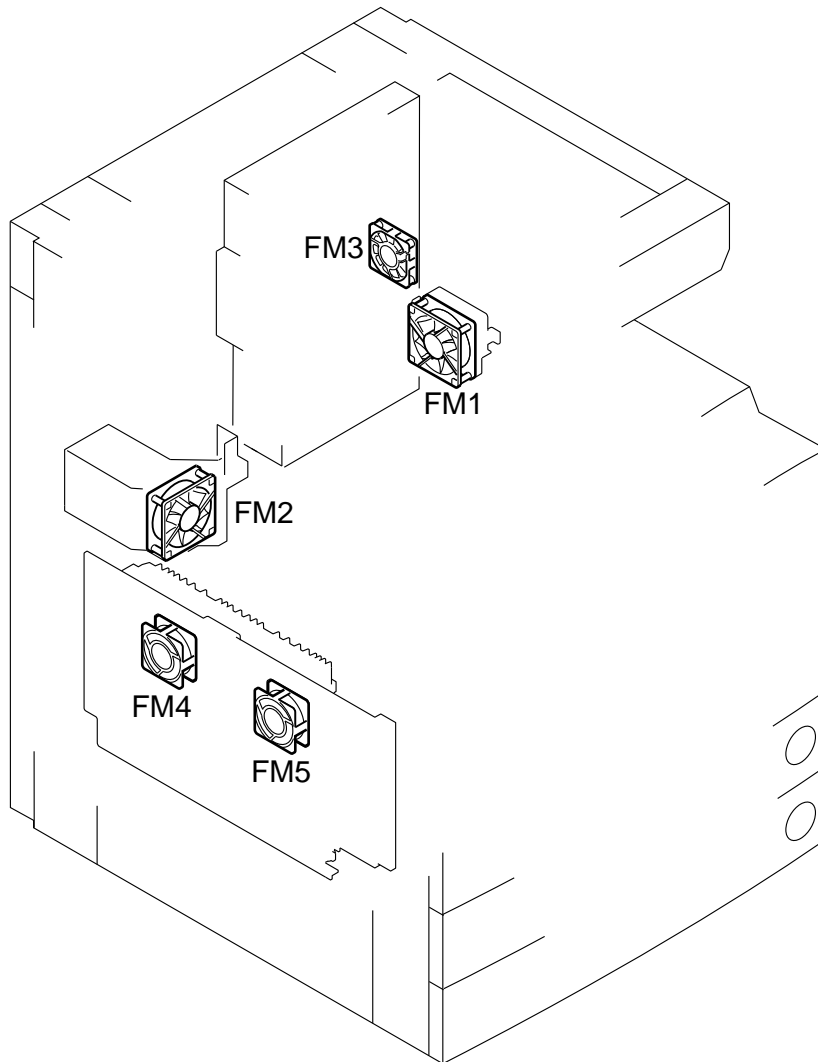
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### 6.2.3 Motors (2/2)

- Printer Unit (2/2)

Electrical signal (target) Name	Reference to general circuit diagram	I/O address I/O indication	Remarks
M6 (DC-CON) Duplex motor	A3-8-N	P005-0 to 7	
M9 (DC-CON) Registration motor	A3-14-M	P002-5 1: OFF, 0: ON P020-6, 7	
M10 (DC-CON) Laser scanner motor	A3-14-J	P001-2 0: lock P008-3 0: lock	

### 6.2.4 Fans



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### 6.2.4 Fans

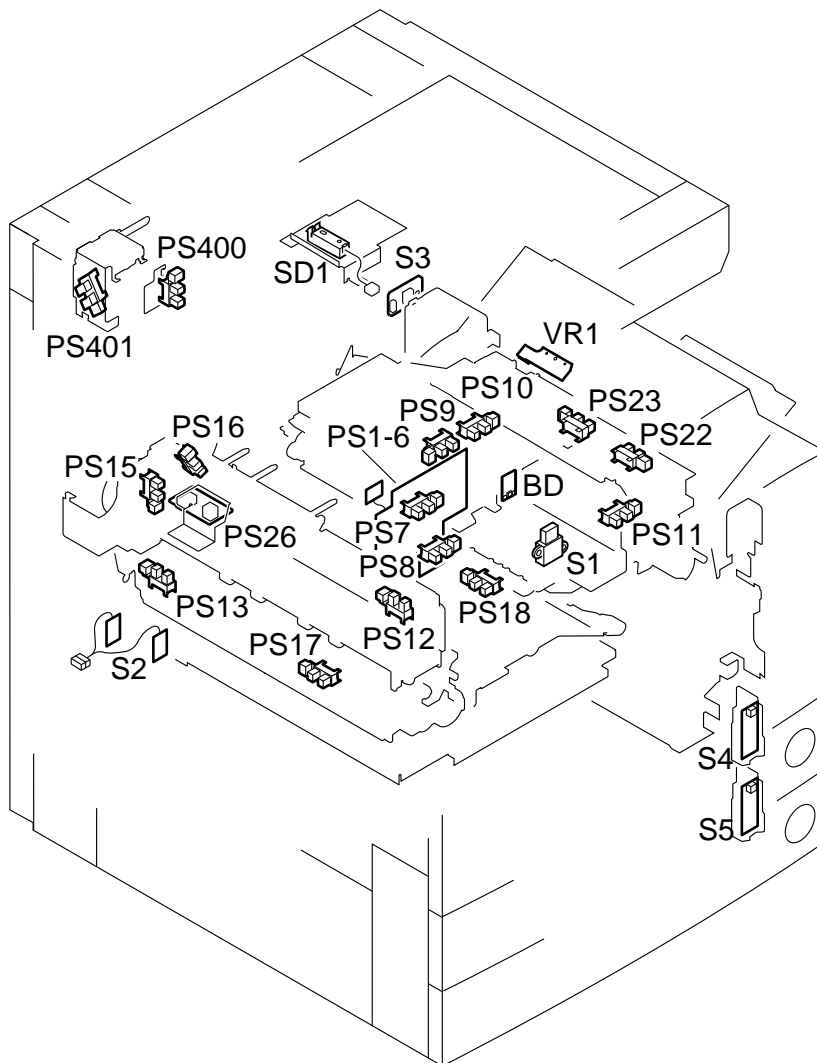
- Reader Unit

The reader unit does not have any fan.

- Printer Unit

Electrical signal (target) Name	Reference to general circuit diagram	I/O address I/O indication	Remarks
FM1 (DC-CON) Developing fan	A3-18-N	P004-0, 2 1: ON, 0: OFF P009-4 0: ON	
FM2 (DC-CON) Fixing fan	A3-18-J	P004-1, 3 1: ON, 0: OFF P009-5 0: ON	
FM3 (MN-CON) Electrical unit fan	A3-2-H		
FM4 (DC-CON) Curl reducing fan 1	A3-7-I	P005-6 1: ON, 0: OFF P009-6 0: ON	
FM5 (DC-CON) Curl reducing fan 2	A3-7-I	P005-7 1: ON, 0: OFF P009-7 0: ON	

6.2.5 Sensors (1/3)



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### 6.2.5 Sensors (1/3)

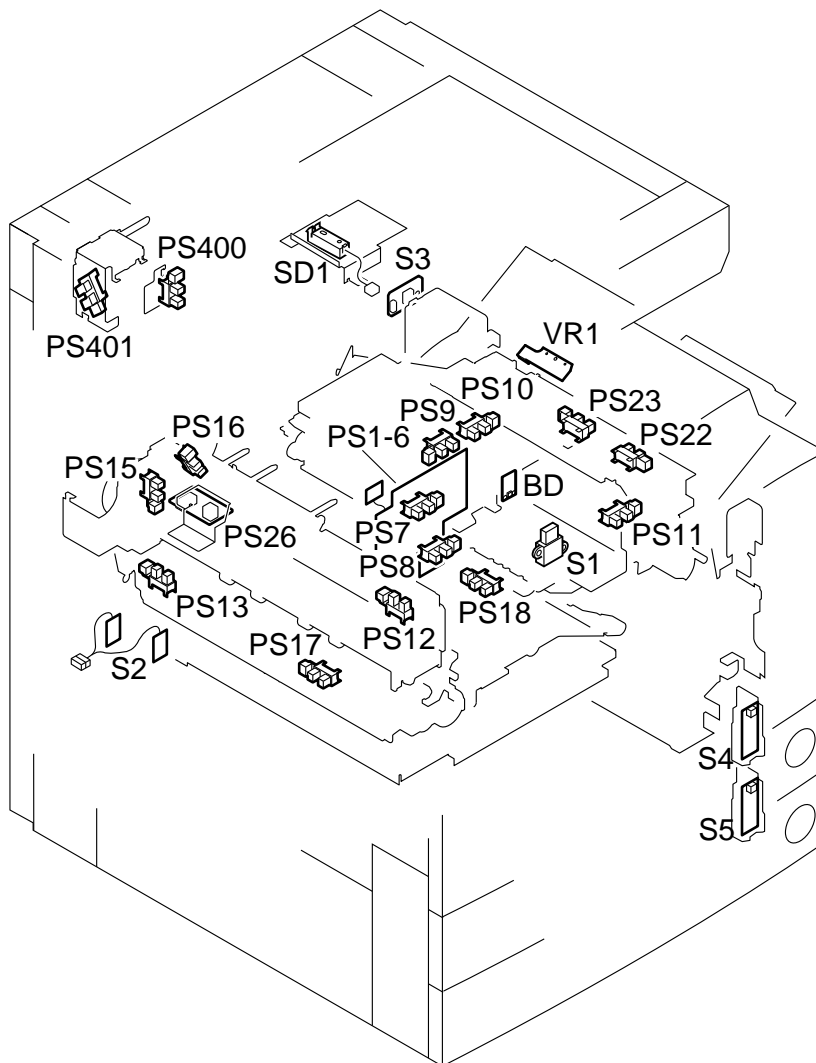
- Reader Unit

Electrical signal (target) Name	Reference to general circuit diagram	I/O address I/O indication	Remarks
PS400 (R-CON) Scanner home position sensor	A3-18-H	IO-P06-4 1: HP	
PS401 (R-CON) Copyboard cover sensor	A3-17-H	IO-P06-6 0: open, 1: closed(copyboard/ADF)	
SD1 (R-CON) Original sensor	A3-19-H	IO-P03-5 0: present, 1: absent IO-P04-4 0: ON, 1: OFF	(paper)

- Printer Unit (1/3)

Electrical signal (target) Name	Reference to general circuit diagram	I/O address I/O indication	Remarks
BD (DC-CON) BD sensor	A3-13-K		
PS1 (DC-CON) Cassette 1 paper sensor	A3-19-N	P013-5 0: present, 1: absent	(paper)
PS2 (DC-CON) Cassette 2 paper sensor	A3-19-M	P014-5 0: present, 1: absent	(paper)
PS3 (DC-CON) Cassette 1 paper level sensor 1	A3-20-M	P013-6	(paper) 25% (bit6=0; bit7=1)
PS4 (DC-CON) Cassette 1 paper level sensor 2	A3-20-M	P013-7	50% (bit6=1; bit7=1) 100% (bit6=0; bit7=0)
PS5 (DC-CON) Cassette 2 paper level sensor 1	A3-20-M	P014-6	(paper) 25% (bit6=0; bit7=1)
PS6 (DC-CON) Cassette 2 paper level sensor 2	A3-20-M	P014-7	50% (bit6=1; bit7=1) 100% (bit6=0; bit7=0)
PS7 (DC-CON) Cassette 1 re-try paper sensor	A3-20-M	P015-0 1: present, 0: absent	(paper)

6.2.5 Sensors (2/3)



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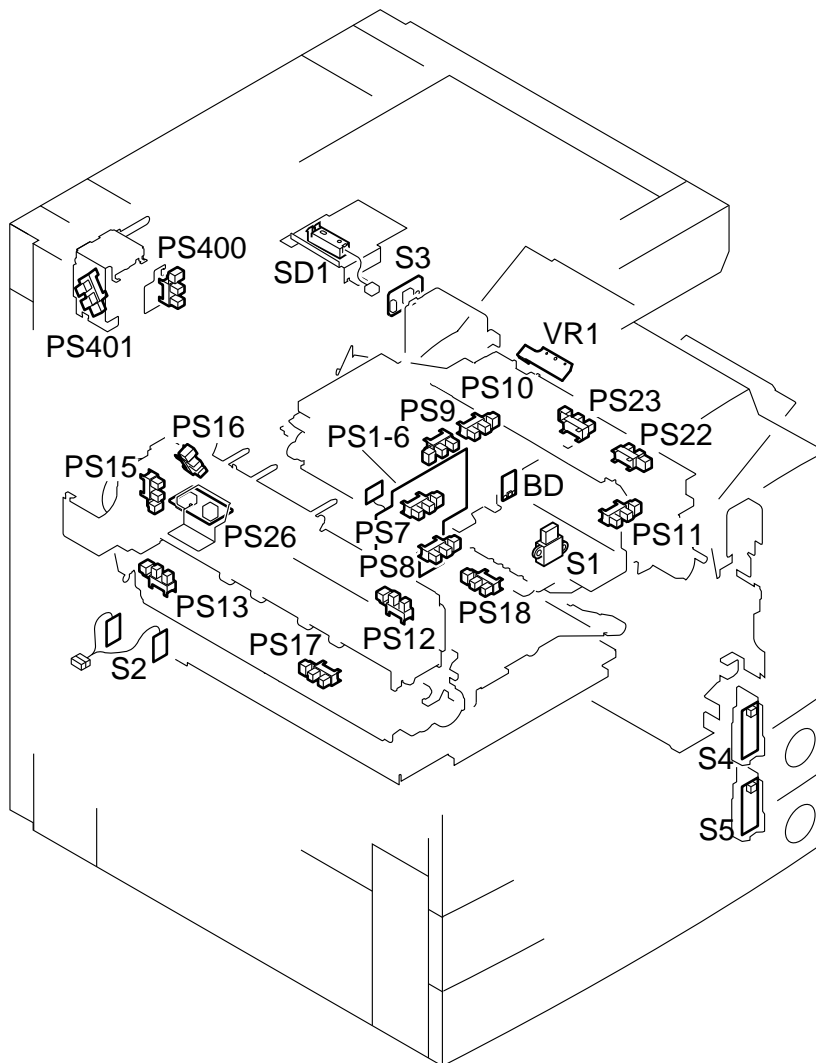


### 6.2.5 Sensors (2/3)

- Printer Unit (2/3)

Electrical signal (target) Name	Reference to general circuit diagram	I/O address I/O indication	Remarks
PS8 (DC-CON) Cassette 2 re-try paper sensor	A3-20-M	P015-1 1: present, 0: absent	(paper)
PS9 (DC-CON) Pre-registration paper sensor	A3-16-N	P015-2 1: present, 0: absent	(paper)
PS10 (DC-CON) Registration paper sensor	A3-16-N	P015-3 1: present, 0: absent	(paper)
PS11 (DC-CON) Horizontal registration paper sensor	A3-16-N	P015-4 0: present, 1: absent	(paper)
PS12 (DC-CON) Image leading edge sensor	A3-16-I	P025-7 1: present, 0: absent	(paper)
PS13 (DC-CON) Fixing/feeding sensor	A3-8-J	P015-5 0: present, 1: absent	(paper)
PS15 (DC-CON) No. 1 delivery sensor	A3-8-N	P015-6 1: present, 0: absent	(paper)
PS16 (DC-CON) No. 1 delivery full sensor	A3-9-N	P015-7 1: present, 0: absent	(paper)
PS17 (DC-CON) Duplex unit inlet paper sensor	A3-7-N	P016-0 0: present, 1: absent	(paper)
PS18 (DC-CON) Duplex unit outlet paper sensor	A3-7-N	P016-1 0: present, 1: absent	(paper)
PS22 (DC-CON) Multifeeder paper sensor	A3-15-N	P016-5 0: present, 1: absent	(paper)
PS23 (DC-CON) Right cover open/closed sensor	A3-15-N	P016-6 1: open, 0: closed	
PS26 (DC-CON) Fixing film sensor	A3-8-J	P021-0	
S1 (DC-CON) Toner sensor	A3-18-N	P008-0 1: present, 0: absent	(toner)
S2 (DC-CON) Waste toner case full sensor	A3-6-I	P008-2 1: full	(waste toner)
S3 (DC-CON) Environment sensor	A3-17-N	P023-4, P33 A/D P023-5, P34 A/D	(humidity)  (room temperature)

6.2.5 Sensors (3/3)

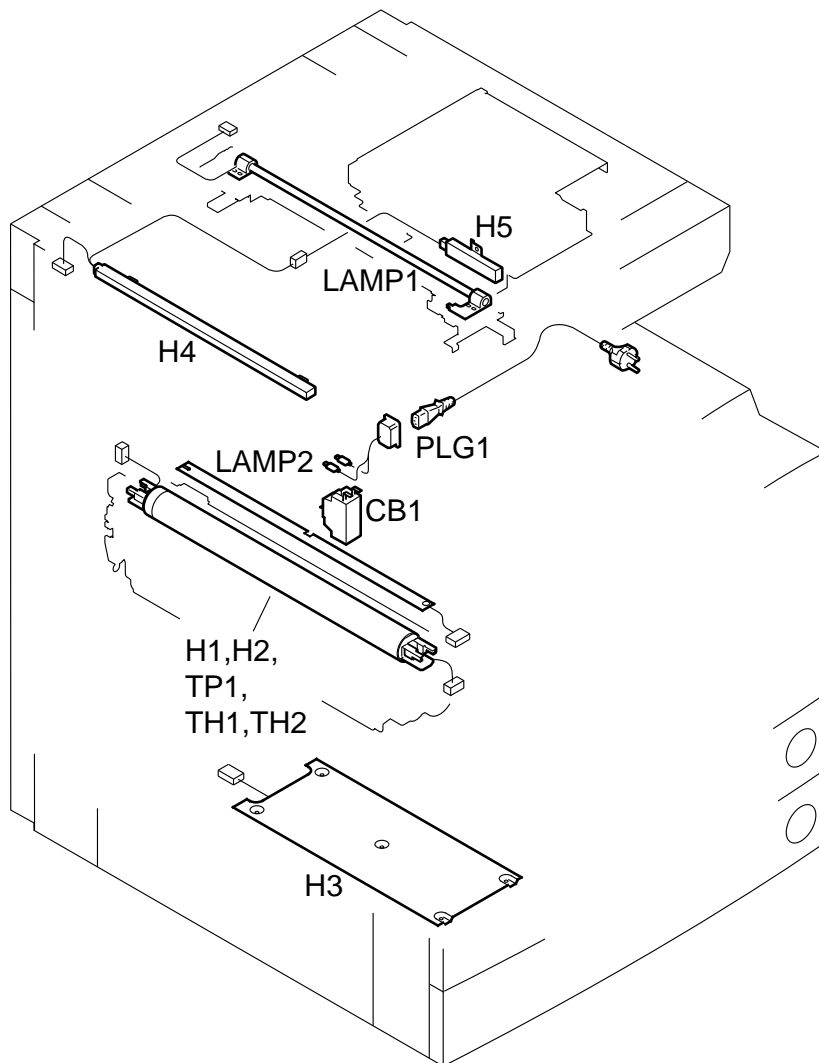


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### 6.2.5 Sensors (3/3)

Electrical signal (target) Name	Reference to general circuit diagram	I/O address I/O indication	Remarks
S4 (DC-CON) Cassette 1 size sensor	A3-17-J	P013-0 to 4	
S5 (DC-CON) Cassette 2 size sensor	A3-16-J	P014-0 to 4	
VR1 (DC-CON) Multifeeder paper width sensor	A3-18-M	P023-2, P31 A/D	

### 6.2.6 Lamps, Heaters, and Others



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### 6.2.6 Lamps, Heaters, and Others

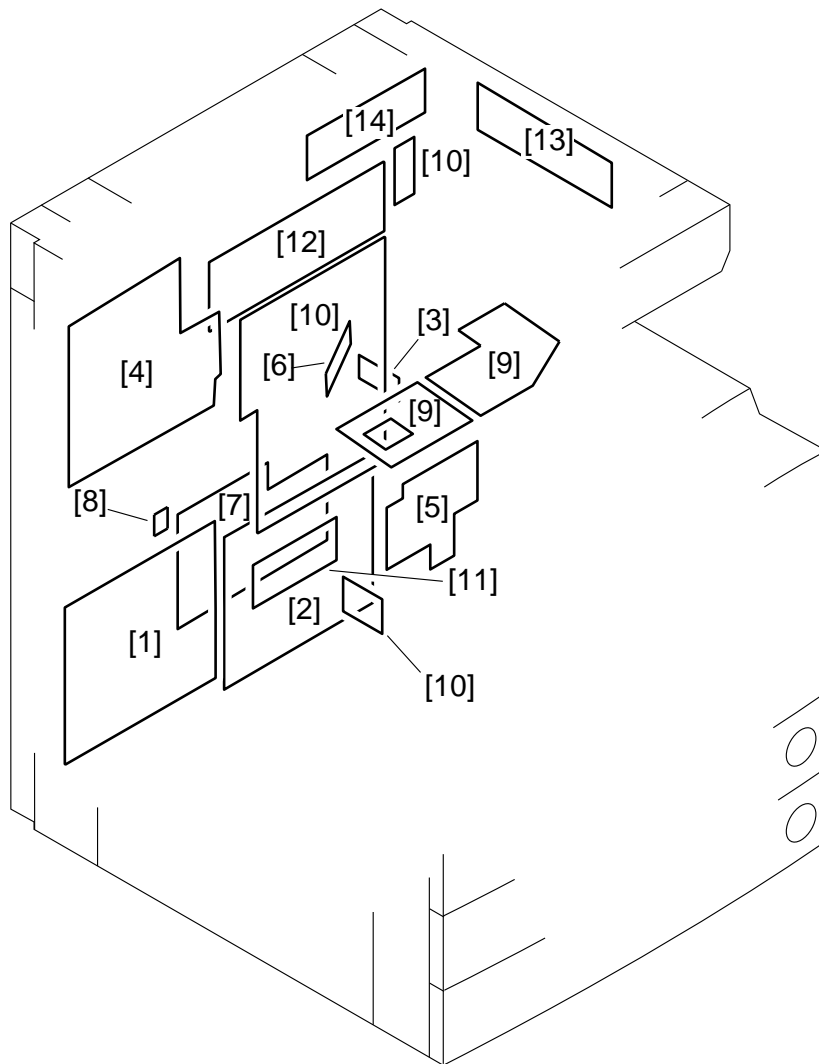
- Reader Unit

Electrical signal (target) Name	Reference to general circuit diagram	I/O address I/O indication	Remarks
H4 (MPWS) Mirror heater	A3-9-A		(accessory)
H5 (MPWS) Lens heater	A3-9-A		(accessory)
LAMP1 (R-CON) Scanning lamp	A3-17-H		

- Printer Unit

Electrical signal (target) Name	Reference to general circuit diagram	I/O address I/O indication	Remarks
CB1 (MPWS) Leakage breaker	A3-14-A		
H1 (MPWS) Fixing main heater	A3-9-C		
H2 (MPWS) Fixing sub heater	A3-9-B		
H3 (MPWS) Cassette heater	A3-9-B		(accessory)
LAMP2 (DC-CON) Pre-exposure lamp	A3-14-J	P001-1 1: ON, 0: OFF	
PLG1 (Switch PCB) Power supply cord	A3-14-A		
TH1 (MPWS) Main thermistor	A3-12-J	P023-0, P29 A/D	
TH2 (DC-CON) Sub thermistor	A3-12-J	P023-1, P30 A/D	
TP1 (DC-CON) Thermal switch	A3-9-B		

6.2.7 PCBs



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### 6.2.7 PCBs

- Reader Unit

Ref. Name	Description	Remarks
[12] Reader controller PCB	Controls the reader unit/ADF.	
[13] CCD PCB	Drives the CCD.	
[14] Inverter PCB	Controls the scanning lamp.	

- Printer Unit

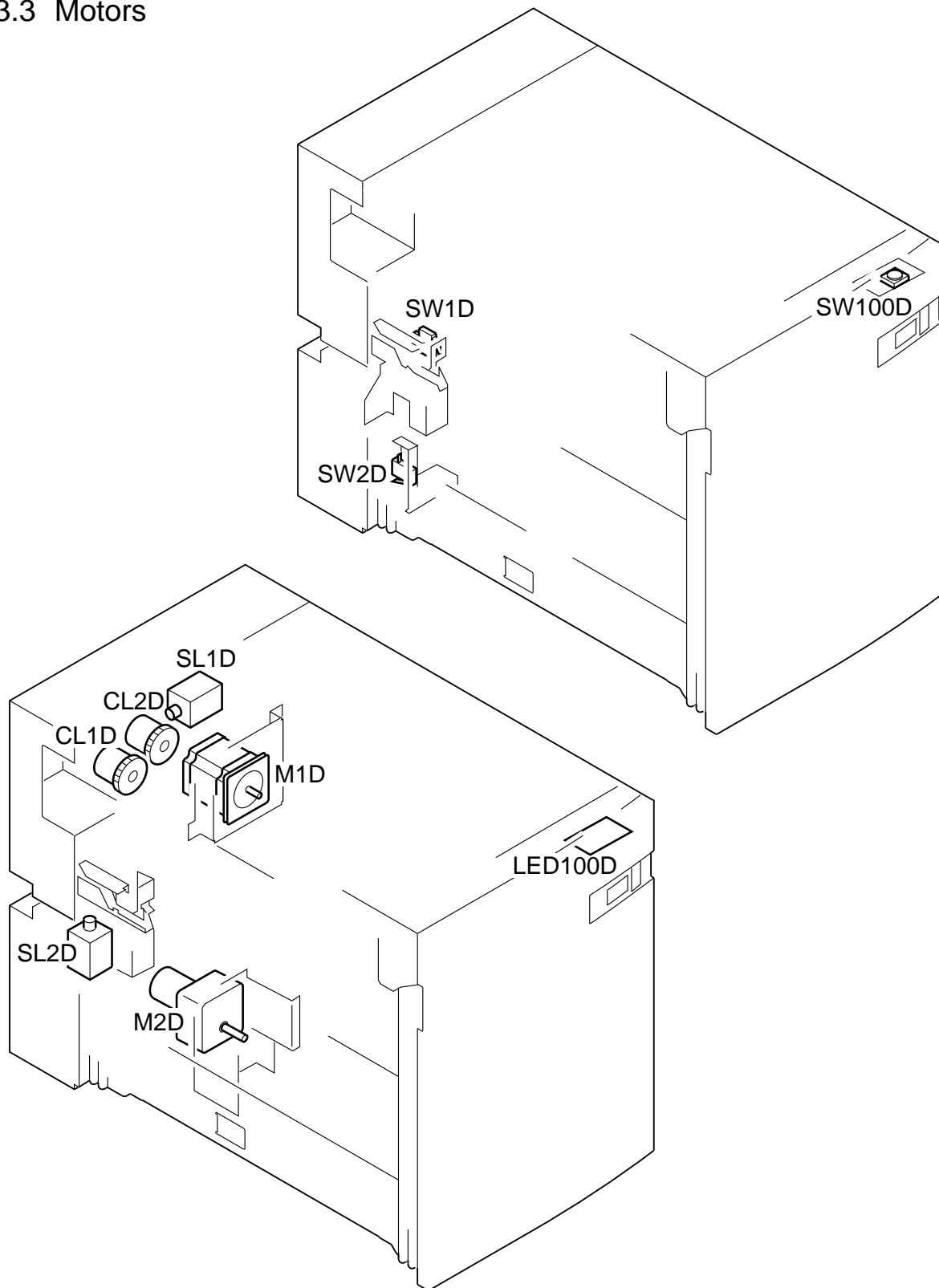
Ref. Name	Description	Remarks
[1] Composite power supply PCB	Controls the generation of high voltage.	
[2] Main power supply PCB	Controls the supply of DC . power	
[3] Switch PCB	Controls the main power switch/heater.	
[4] DC controller PCB	Controls the printer unit.	
[5] Pickup PCB	Controls the pickup assembly.	
[6] Laser driver PCB	Controls laser drive.	
[7] Accessories power supply PCB	Controls the supply of power to the finisher/paper deck.	
[8] Drum sensor PCB	Detects temperature of the drum.	
[9] Control panel PCB	Controls keys and LEDs.	
[10] Main controller PCB	Controls digital image processing/system.	Includes counter PCB, soft ID PCB, Centronics PCB.
[11] Thermistor separation power supply PCB	Controls the DC-DC converter.	200V model only.

## 6.3 Side Paper Deck-L1

### 6.3.1 Clutches

### 6.3.2 Solenoids, and Switches

### 6.3.3 Motors



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### 6.3.1 Clutches

Electrical signal (target) Name	Reference to general circuit diagram	I/O address I/O indication	Remarks
CL1D (DECK-CON) Deck feeding clutch	A5-9-A	0: ON, 1: OFF	
CL2D (DECK-CON) Deck pickup clutch	A5-8-A	0: ON, 1: OFF	

### 6.3.2 Solenoids and Switches

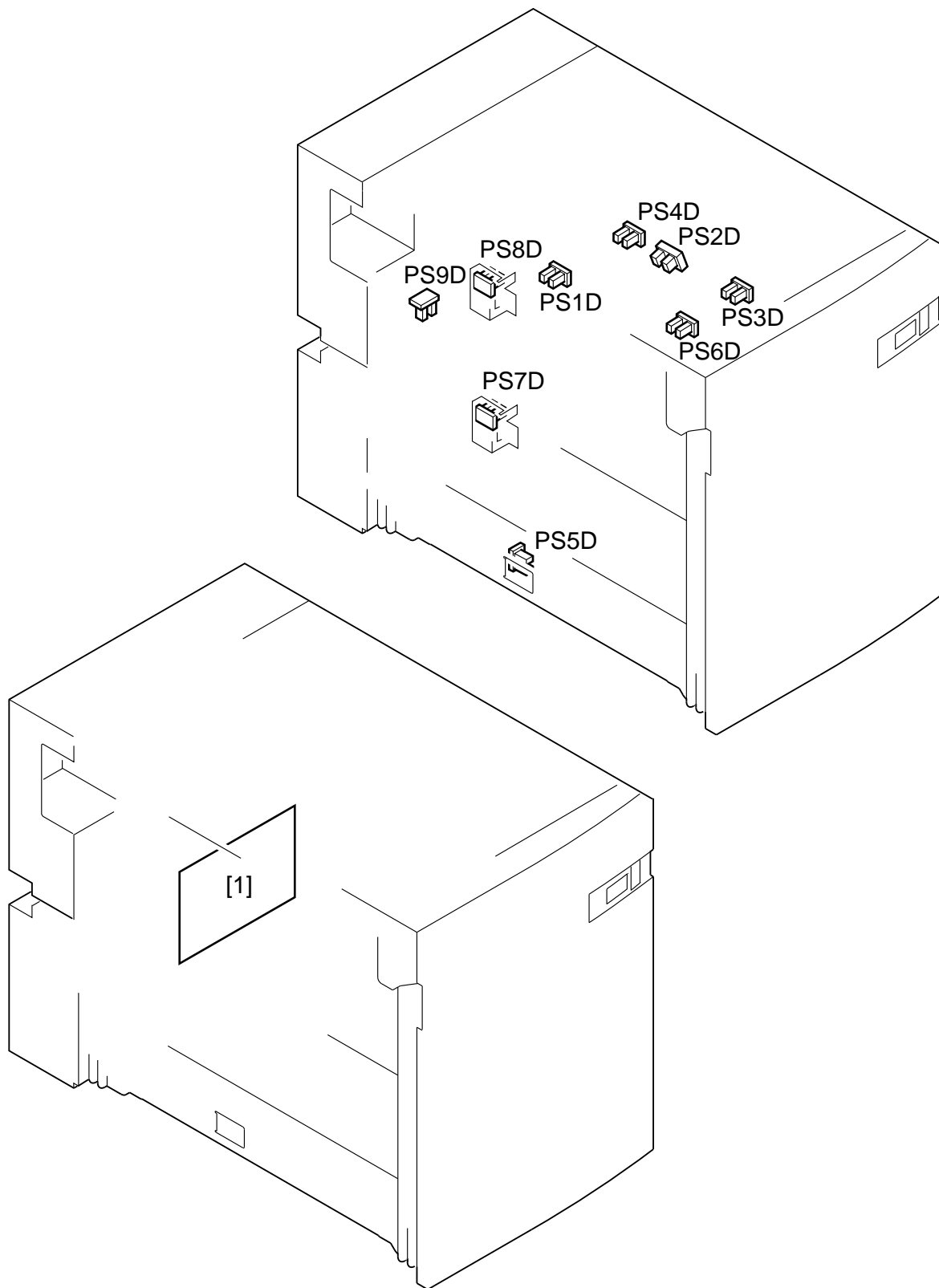
Electrical signal (target) Name	Reference to general circuit diagram	I/O address I/O indication	Remarks
SL1D (DECK-CON) Deck pickup roller releasing solenoid	A5-10-A	0: ON, 1: OFF	
SL2D (DECK-CON) Deck open solenoid	A5-4-B	0: ON, 1: OFF	
SW1D (DECK-CON) Deck open detecting switch	A5-3-H		
SW2D (DECK-CON) Deck lifter lower limit detecting switch	A5-5-B		
SW100D (DECK-CON) Deck open switch	A5-13-A		
LED100D (DECK-CON) Deck open indication	A5-13-A		

### 6.3.3 Motors

Electrical signal (target) Name	Reference to general circuit diagram	I/O address I/O indication	Remarks
M1D (DECK-CON) Deck main motor	A5-5-H		
M2D (DECK-CON) Deck lifter motor	A5-5-B		

6.3.4 Sensors

6.3.5 PCBs



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### 6.3.4 Sensors

Electrical signal (target) Name	Reference to general circuit diagram	I/O address I/O indication	Remarks
PS1D (DECK-CON) Deck pickup sensor	A5-8-A		
PS2D (DECK-CON) Deck paper absent sensor	A5-12-A		
PS3D (DECK-CON) Deck lifter upper limit sensor	A5-11-A		
PS4D (DECK-CON) Deck lifter position sensor	A5-11-A		
PS5D (DECK-CON) Deck set sensor	A5-3-C		
PS6D (DECK-CON) Deck feed sensor	A5-10-A		
PS7D (DECK-CON) Deck paper level sensor	A5-6-C		
PS8D (DECK-CON) Deck paper supply position sensor	A5-7-C		
PS9D (DECK-CON) Deck open sensor	A5-3-C		

### 6.3.5 PCBs

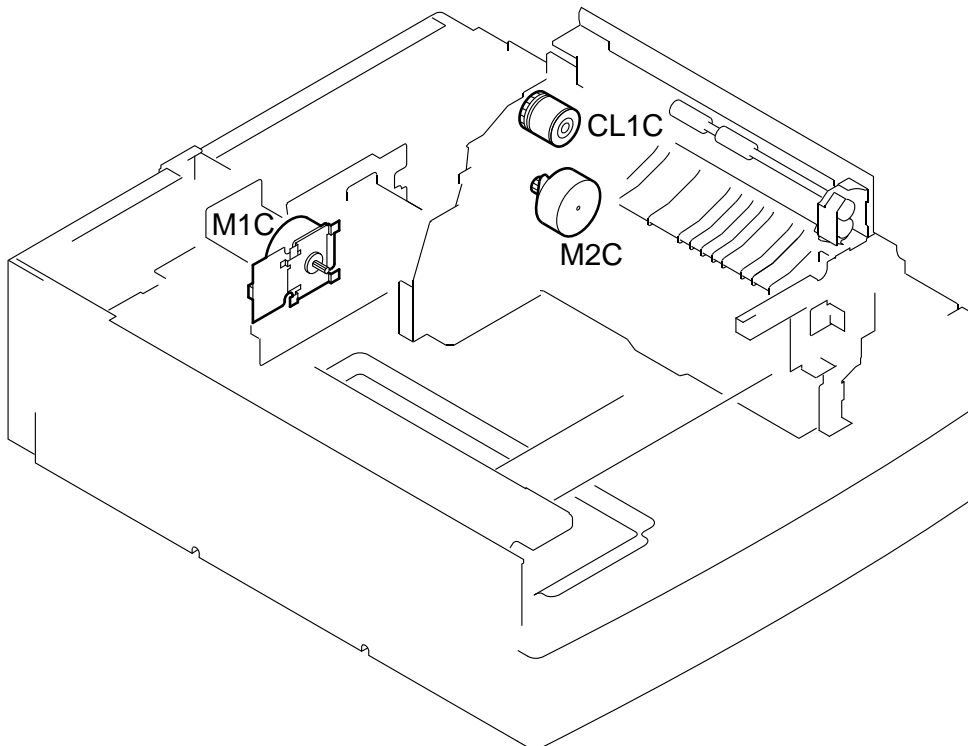
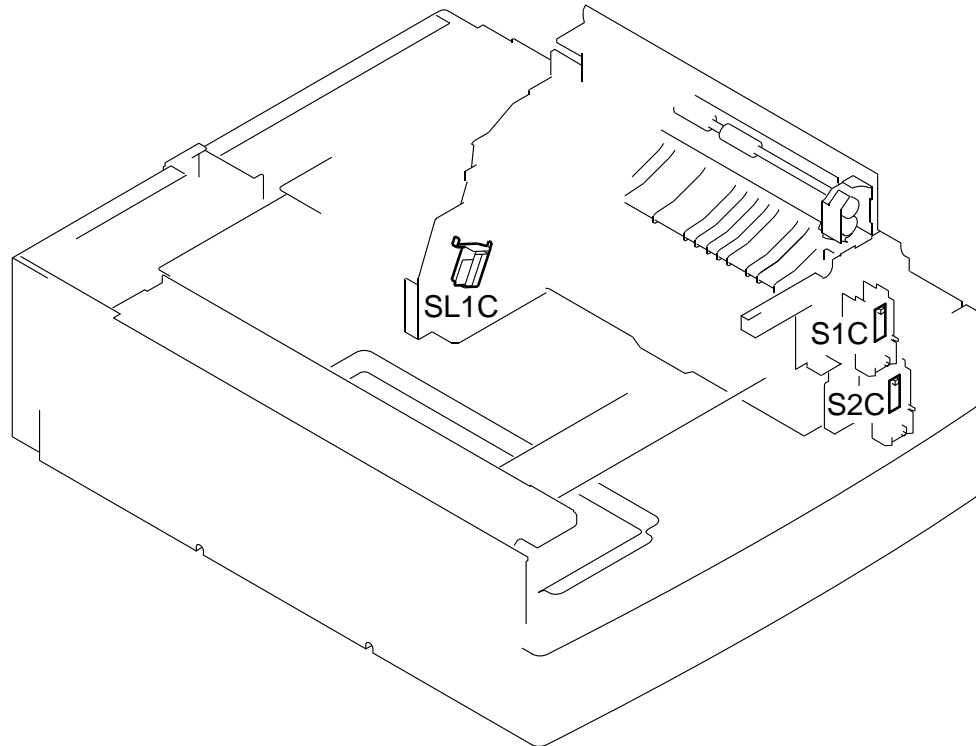
Ref. Name	Description	Remarks
[1]	Side deck driver PCB	

## 6.4 2-Cassette Feeding Unit-W1

### 6.4.1 Clutches

### 6.4.2 Solenoids and Switches

### 6.4.3 Motors



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### 6.4.1 Clutches

Electrical signal (target) Name	Reference to general circuit diagram	I/O address I/O indication	Remarks
CL1C (PEDE-FEED) Vertical path roller clutch	A6-11-F	0: ON, 1: OFF	

### 6.4.2 Solenoids and Switches

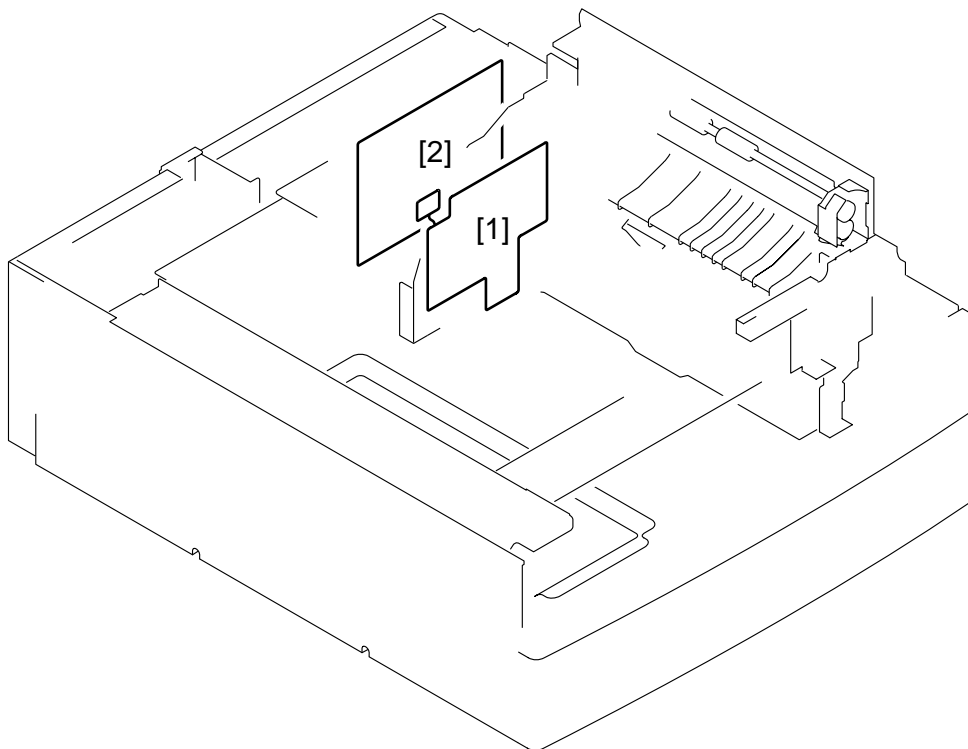
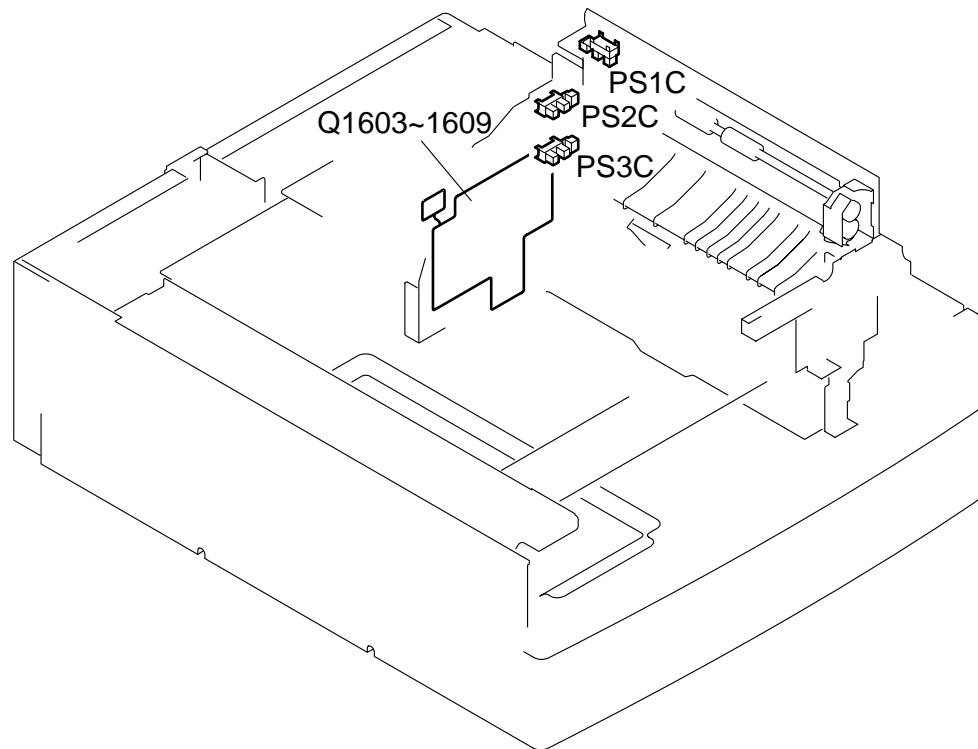
Electrical signal (target) Name	Reference to general circuit diagram	I/O address I/O indication	Remarks
SL1C (PEDE-FEED) Pickup roller DOWN solenoid	A6-11-F	0: ON, 1: OFF	
S1C (PEDE-CON) Cassette 3 size detecting switch	A6-7-A		
S2C (PEDE-CON) Cassette 4 size detecting switch	A6-6-A		

### 6.4.3 Motors

Electrical signal (target) Name	Reference to general circuit diagram	I/O address I/O indication	Remarks
M1C (PEDE-CON) Pedestal main motor	A6-2-E		
M2C (PEDE-FEED) Cassette pickup motor	A6-11-G		

6.4.4 Sensors

6.4.5 PCBs



F04-604-02

### 6.4.4 Sensors

Electrical signal (target) Name	Reference to general circuit diagram	I/O address I/O indication	Remarks
PS1C (PEDE-CON) Right cover open/closed sensor	A6-6-H		
PS2C (PEDE-FEED) Cassette 3 re-try paper sensor	A6-11-D		
PS3C (PEDE-FEED) Cassette 4 re-try paper sensor	A6-11-C		
Q1603 (PEDE-CON) Vertical path paper sensor	A6-9-E		
Q1604 (PEDE-FEED) Cassette 3 paper sensor	A6-12-E		
Q1605 (PEDE-CON) Cassette 4 paper sensor	A6-9-E		
Q1606 (PEDE-CON) Cassette 3 paper level sensor 0	A6-9-E		
Q1607 (PEDE-CON) Cassette 3 paper level sensor 1	A6-9-E		
Q1608 (PEDE-CON) Cassette 4 paper level sensor 0	A6-9-E		
Q1609 (PEDE-CON) Cassette 4 paper level sensor 1	A6-9-E		

### 6.4.5 PCBs

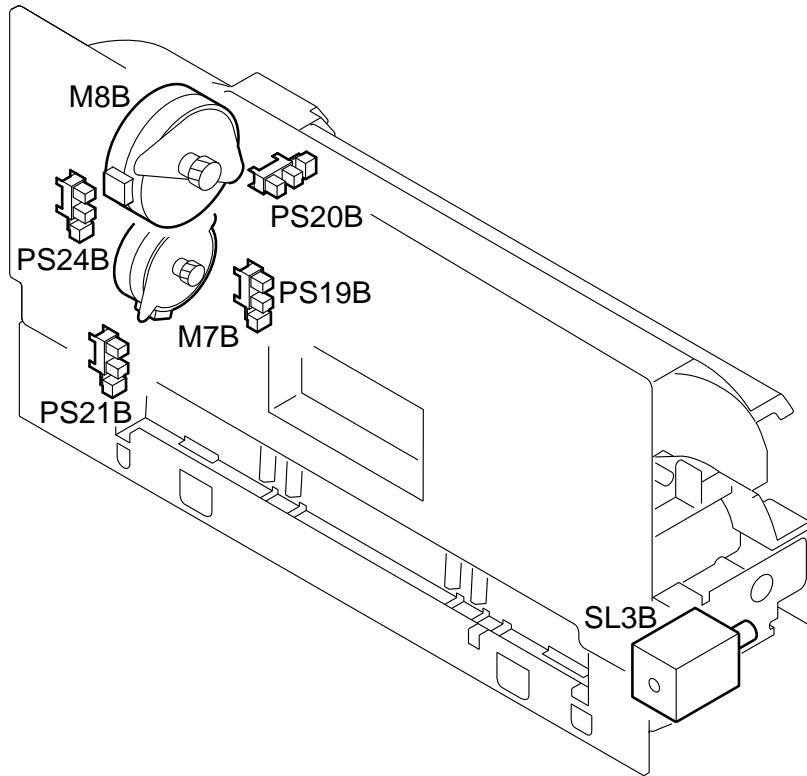
Ref. Name	Description	Remarks
[1] 2-cassette pedestal pickup PCB	Controls the pickup assembly.	
[2] Pedestal controller PCB	Controls the paper deck.	

## 6.5 Inner 2-Way Tray-A1

### 6.5.1 Solenoids

### 6.5.2 Motors

### 6.5.3 Sensor



F04-605-01



### 6.5.1 Solenoids

Electrical signal (target) Name	Reference to general circuit diagram	I/O address I/O indication	Remarks
SL3B (DC-CON) 2-way delivery solenoid	A7-2-K	0: ON, 1: OFF	

### 6.5.2 motors

Electrical signal (target) Name	Reference to general circuit diagram	I/O address I/O indication	Remarks
M7B (DC-CON) 2-way delivery inlet motor	A7-10-H	P011-0 to 7	
M8B (DC-CON) 2-way deliver outlet motorr	A7-6-H	P004-4 to 8 P006-7 1: 70%, 0: 100%	

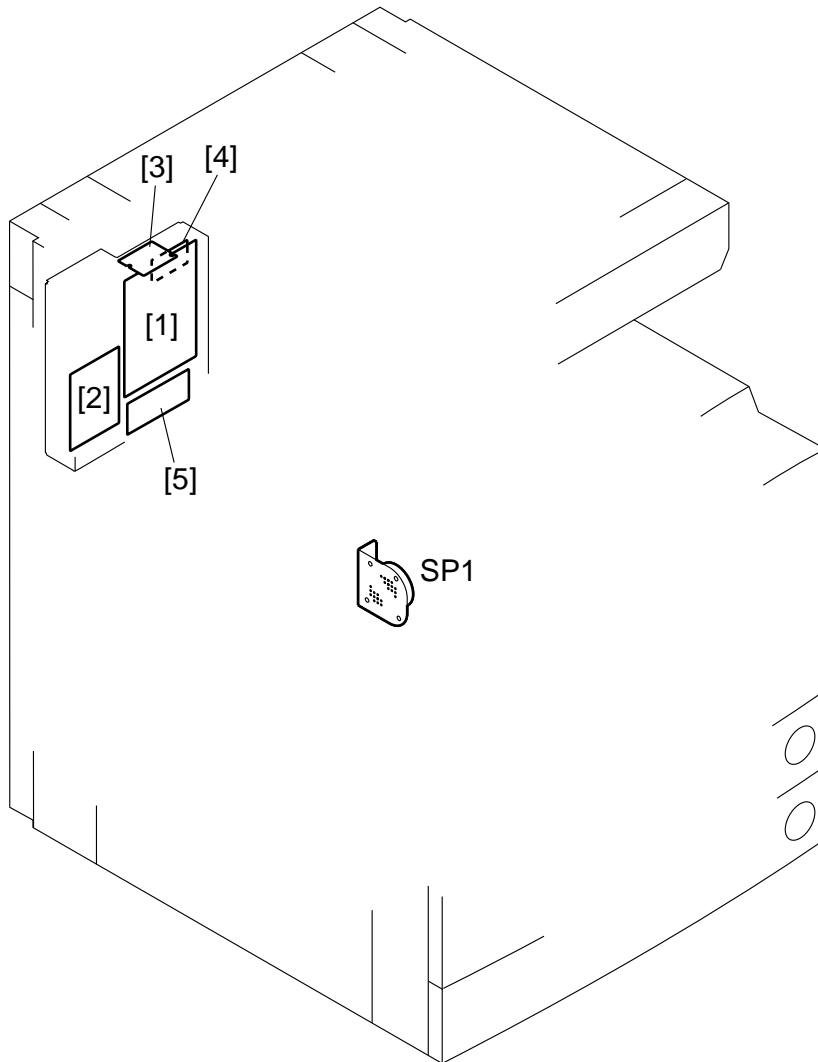
### 6.5.3 Sensors

Electrical signal (target) Name	Reference to general circuit diagram	I/O address I/O indication	Remarks
PS19B (DC-CON) No. 2 delivery sensor	A7-3-G	P016-2 1: present, 0: absent	(paper)
PS20B (DC-CON) No. 2 delivery full sensor	A7-8-G	P016-3 1: present, 0: absent	(paper)
PS21B (DC-CON) No. 3 delivery sensor	A7-8-G	P016-4 1: present, 0: absent	(paper)
PS24B (DC-CON) 2-way delivery open/closed sensor	A7-4-G	P016-7 1: open, 0: closed	

## 6.6 Super G3 FAX Board-J1

### 6.6.1 Others

### 6.6.2 PCBs



F04-606-01

### 6.6.1 Others

Electrical signal (target) Name	Reference to general circuit diagram	I/O address I/O indication	Remarks
SP1 (FAX-CON) Speaker	A3-1-E		

### 6.6.2 PCBs

Ref. Name	Description	Remarks
[1] G3 FAX control PCB	Controls the fax system.	
[2] NCU PCB	Serves as an interface between telephone line and fax system.	100V and 120V models use different interfaces.
[3] G3 modular PCB	Connects a modular cable.	100V and 120V models use different interfaces.
[4] DIMM	Stores firmware for the fax system.	16M bit
[5] Pseudo CI PCB	Generates a pseudo CI signal.	100V
[6] Off-hook detection PCB	Detects off-hook state of the telephone	120V

## 6.7 Variable Resistors (VR), Light-Emitting Diodes, and Check Pins by PCB

Of the variable resistors, light-emitting diodes, and switches used in the machine, those needed for service work in the field are discussed:



- 
1. Some LEDs emit dim light when they are off because of leakage current; this is a normal condition, and must be kept in mind.
  2. VRs that may be used in the field:



VRs that must not be used in the field:

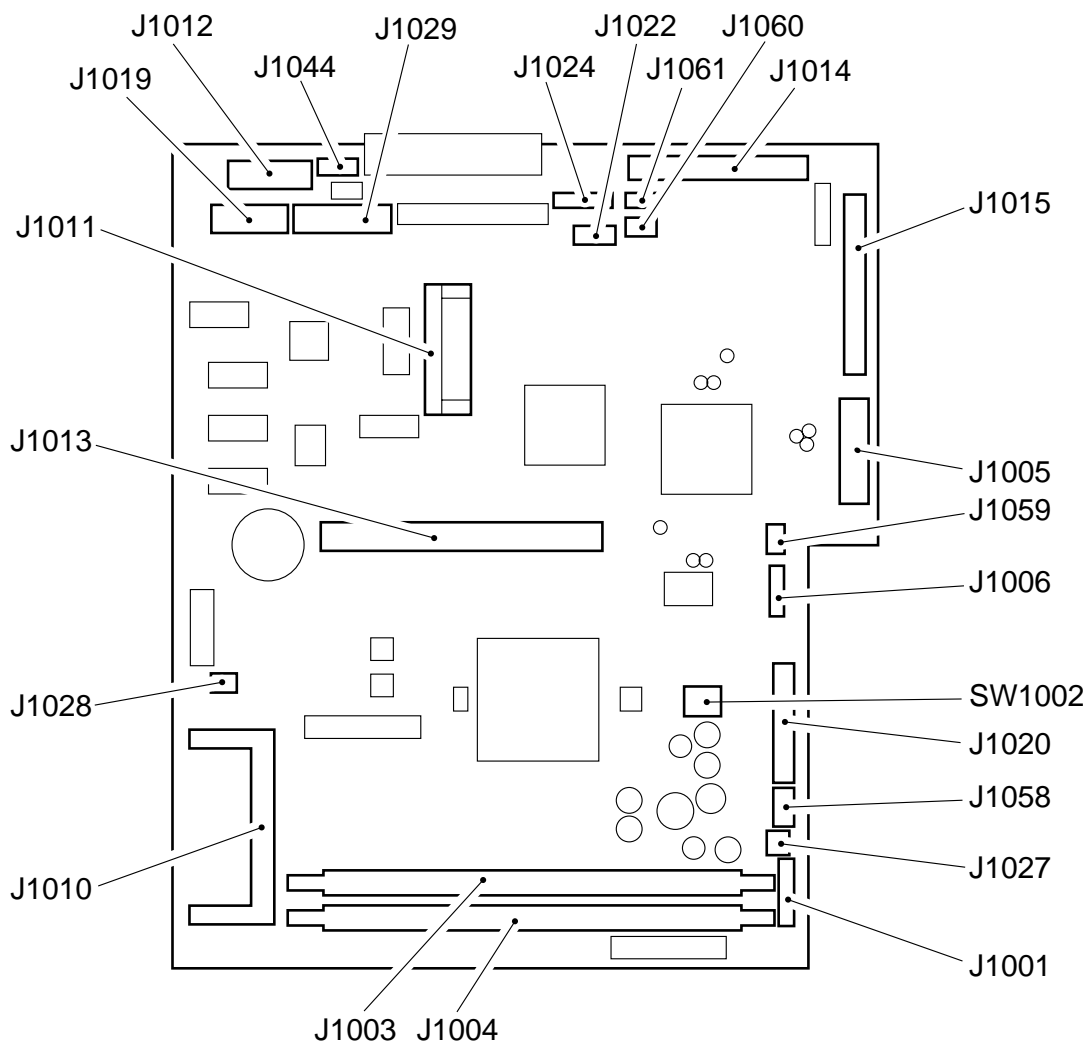


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Do not touch those VRs and check pins not discussed herein; they are for exclusive use in the factory, and require high accuracy and special instruments.

---

6.7.1 Main Controller PCB



F04-607-01

The DIP switch (SW1002) is designed for adjustments at the factory, and is not normally used in the field.

<When Replacing the PCB>

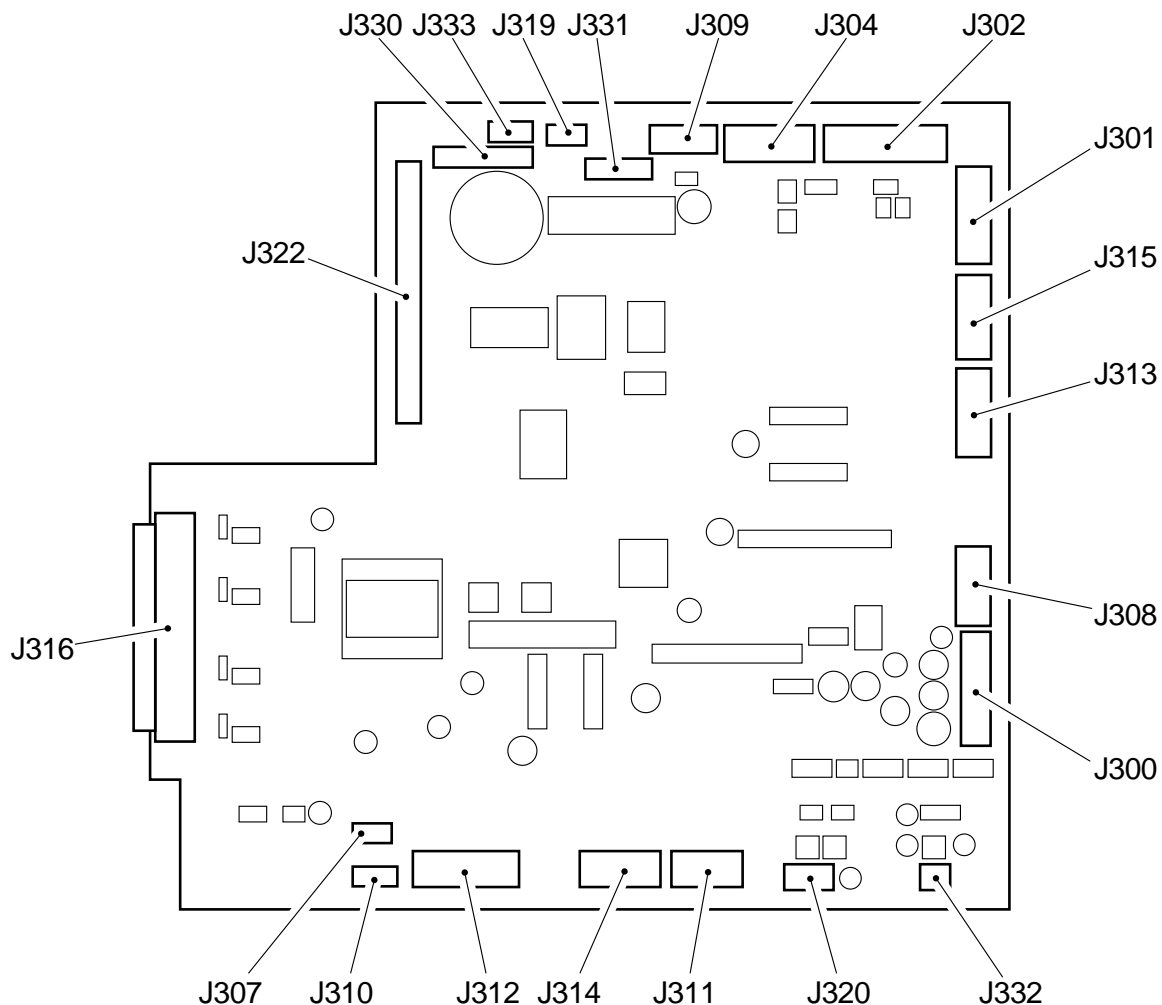
a. Transfer the following from the old to new PCB:

- shorting connector of J1060
- BOOT ROM of J1010
- SDRAM
- counter memory PCB

b. Protect the back-up data as follows:

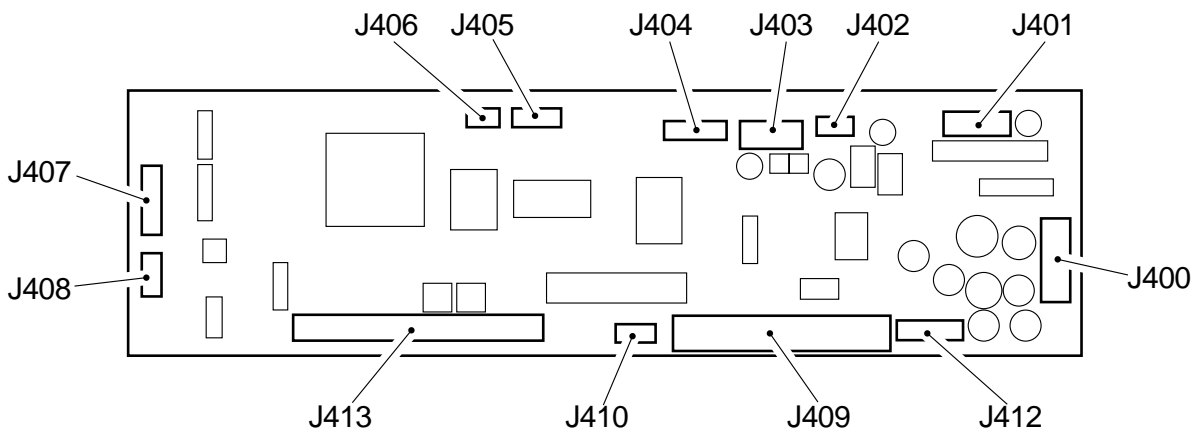
- 1) Back up all data using the Service Support Tool.
- 2) Replace the main controller.
- 3) While holding down the keys '2' and '8' of the control panel, turn on the main power (to start download mode). You will not be able to perform the following if you start up in the usual way, since the Box text file data and control data on the hard disk will be initialized.
- 4) Download all data using the Service Support Tool.

6.7.2 DC Controller PCB



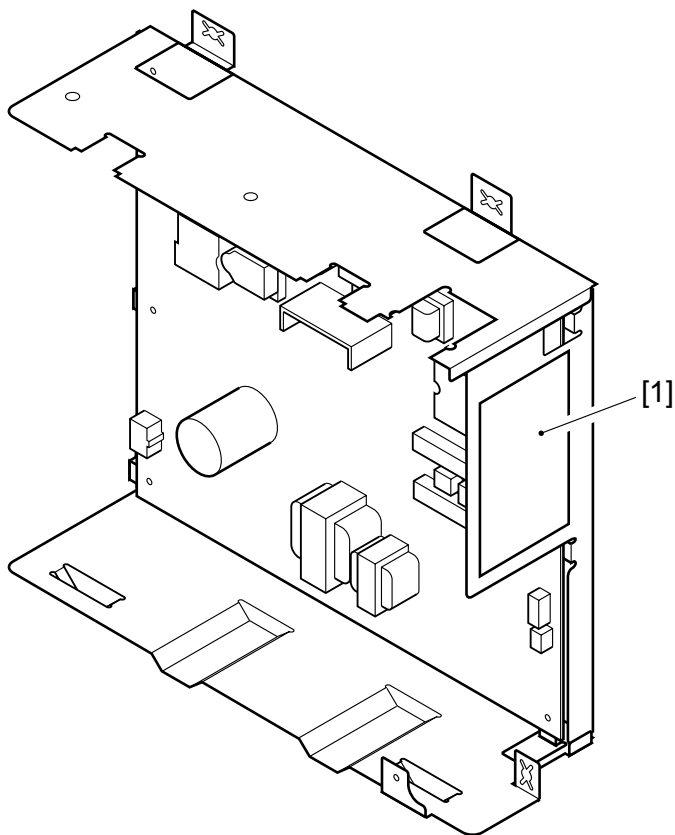
F04-607-02

6.7.3 Reader Controller PCB



F04-607-03

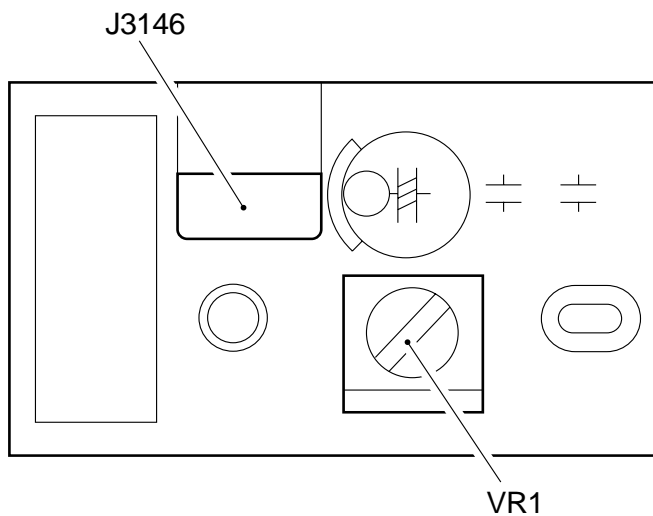
### 6.7.4 Composite Power Supply PCB



When replacing the PCB, be sure to enter the settings indicated on the service label [1] in service mode.

F04-607-04

### 6.7.5 Fixing Film Sensor PCB



F04-607-05



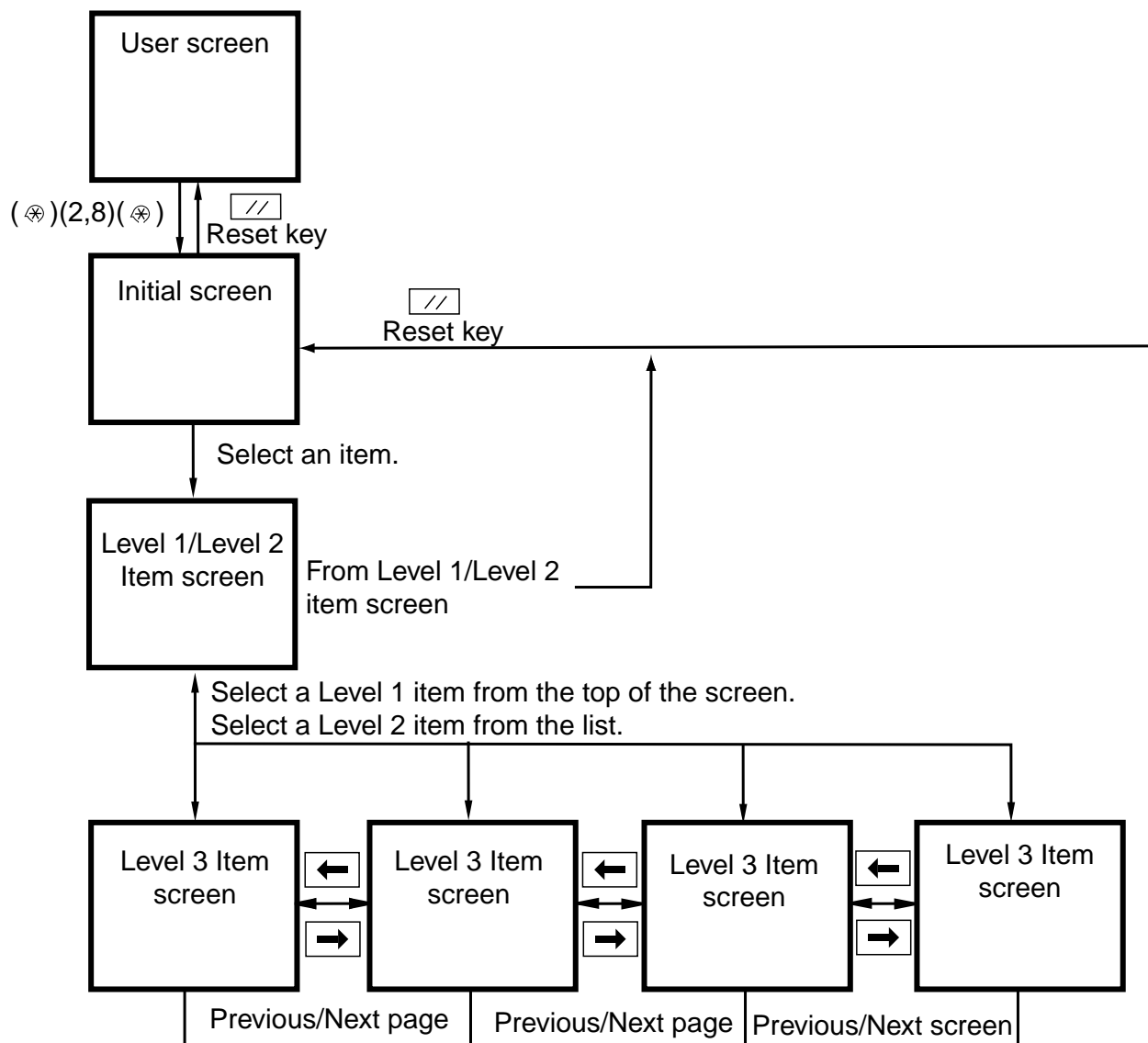


# CHAPTER 5 SERVICE MODE

## 1 Outline of Service Mode

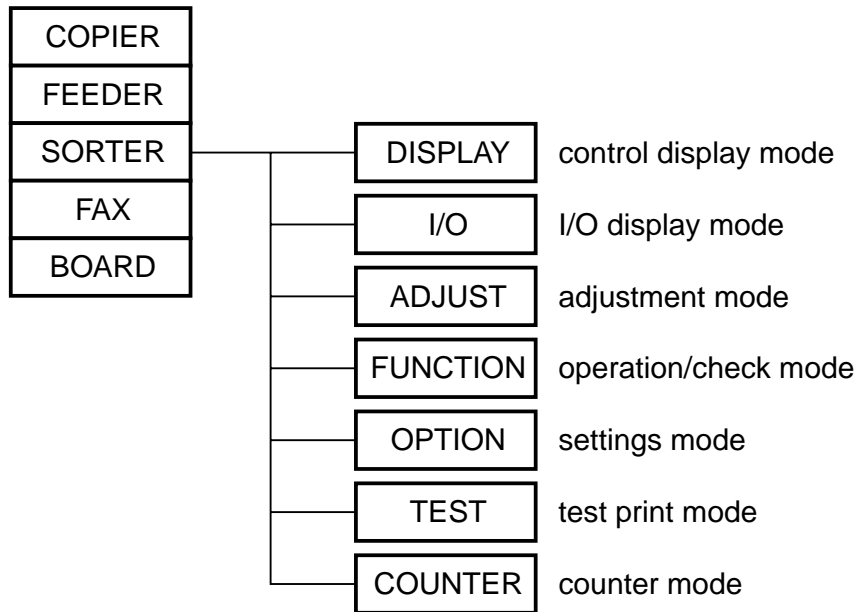
### 1.1 Outline

The service mode screens are organized in three levels: Initial screen, Level 1/Level 2 Item screen, Level 3 Item screen.



F05-101-01

The machines' service mode consists of the following seven types:

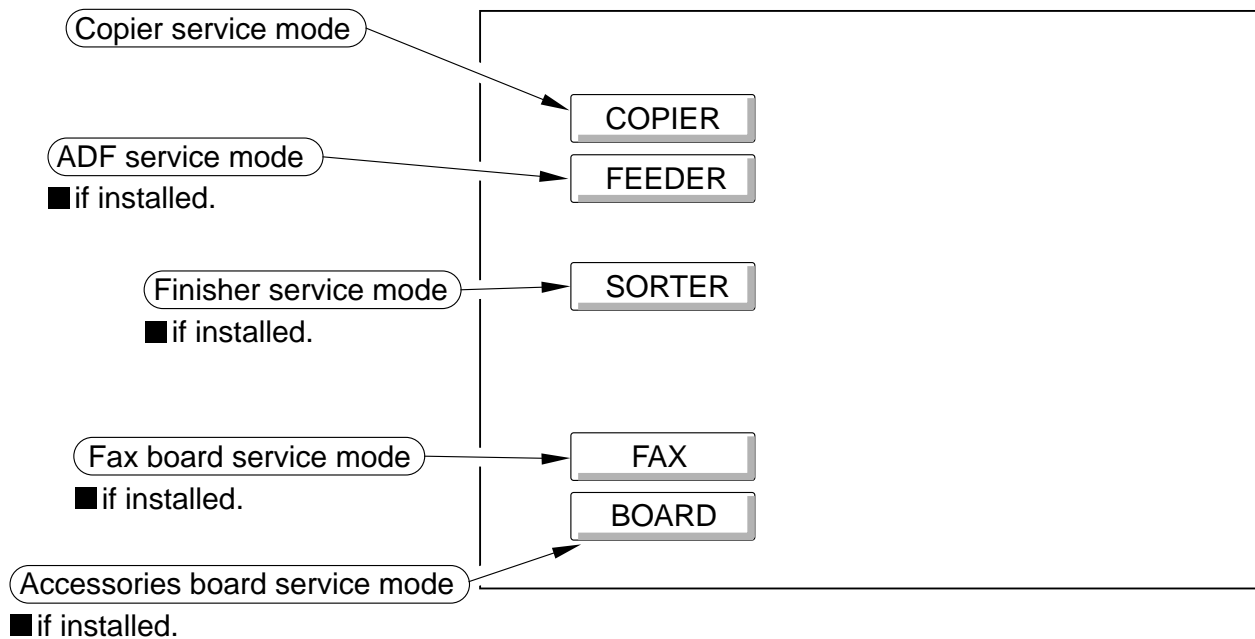


F05-101-02

## 1.2 Starting Service Mode and Making Selections

- 1) Press the User Mode key '⊗'.
- 2) Press '2' and '8' on the keypad at the same time.
- 3) Press the User Mode key '⊗' on the control panel.

In response, the following Initial screen will appear:



F05-102-01

## 1.3 Ending Service Mode

- Press the Reset key once to return to the Service Mode Initial screen (F05-101-03).
- Press the Reset key twice to end service mode and return to the User screen (standard).



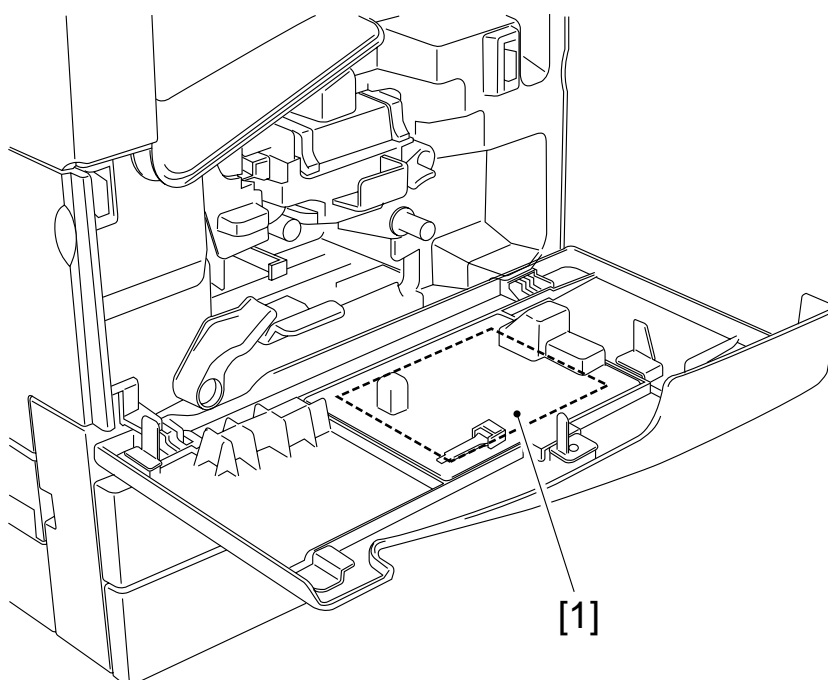
If you have used service mode (ADJUST, FUNCTION, OPTION), be sure to turn off and then on the main power switch after ending service mode.

## 1.4 Backing Up Service Mode

At the factory, each machine is adjusted, and its adjustment settings are recorded on the service label [1] (inside the service book case behind the front cover).

If you have cleared the RAM and replaced the PCB, the settings under ADJUST and OPTION will all return to the factory settings. Be sure to enter the settings indicated on the service label. You can print out the settings stored in the machine in service mode:

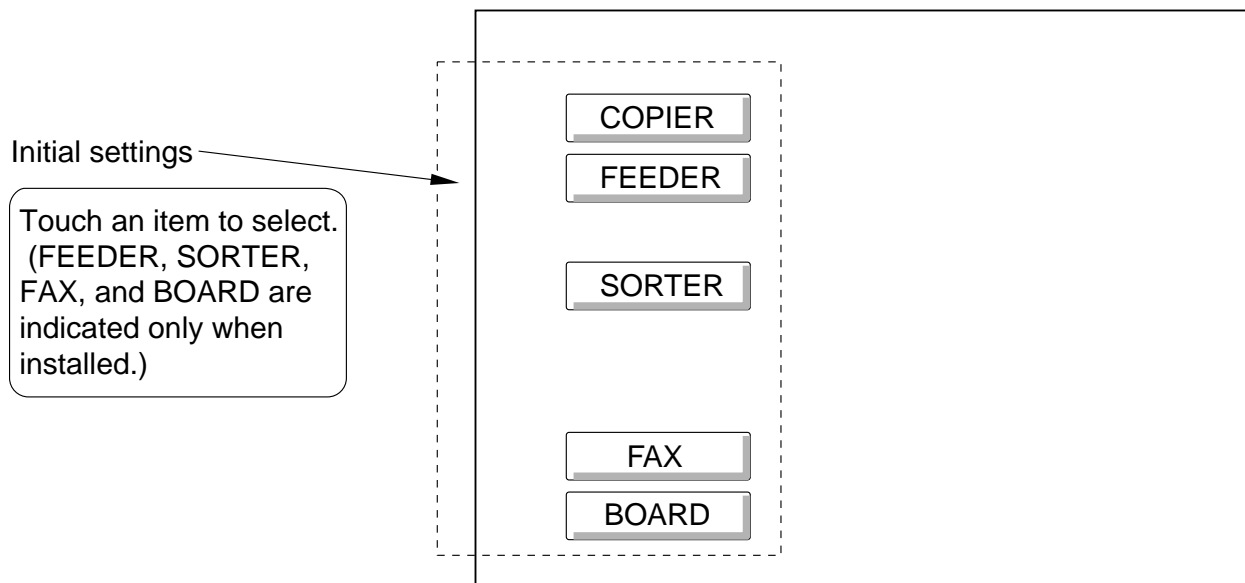
COPIER>FUNCTION>MISC-P>P-PRINT. In addition, you can obtain a new service label using service mode: COPIER>FUNCTION>MISC-P>LBL-PRINT.



F05-104-01

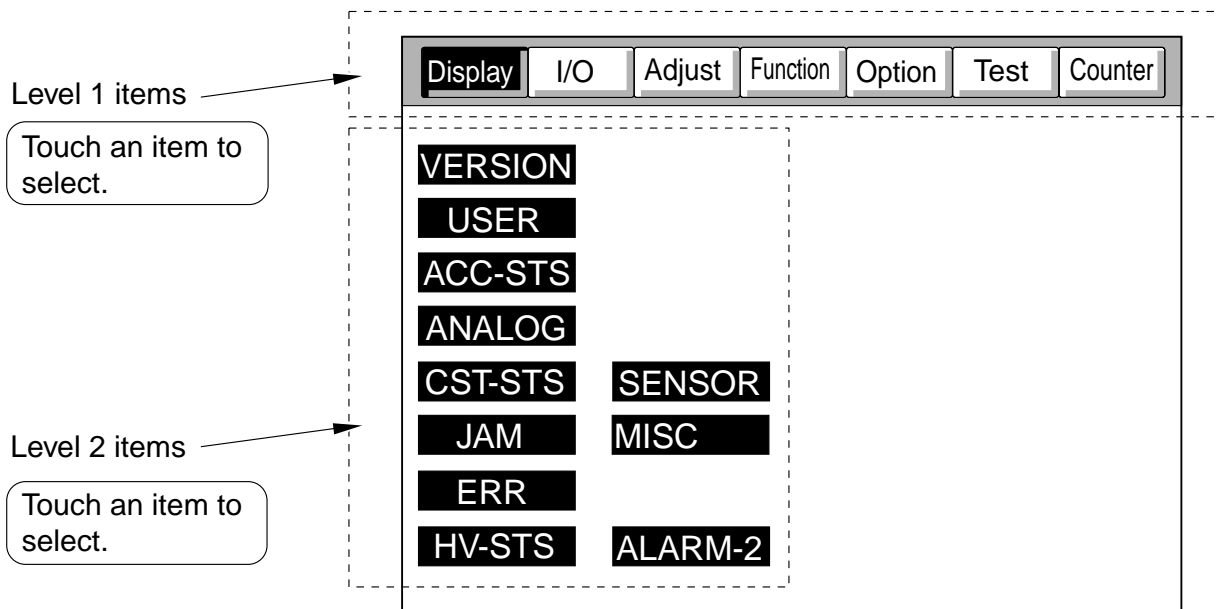
## 1.5 Using Service Mode

### 1.5.1 Initial Screen



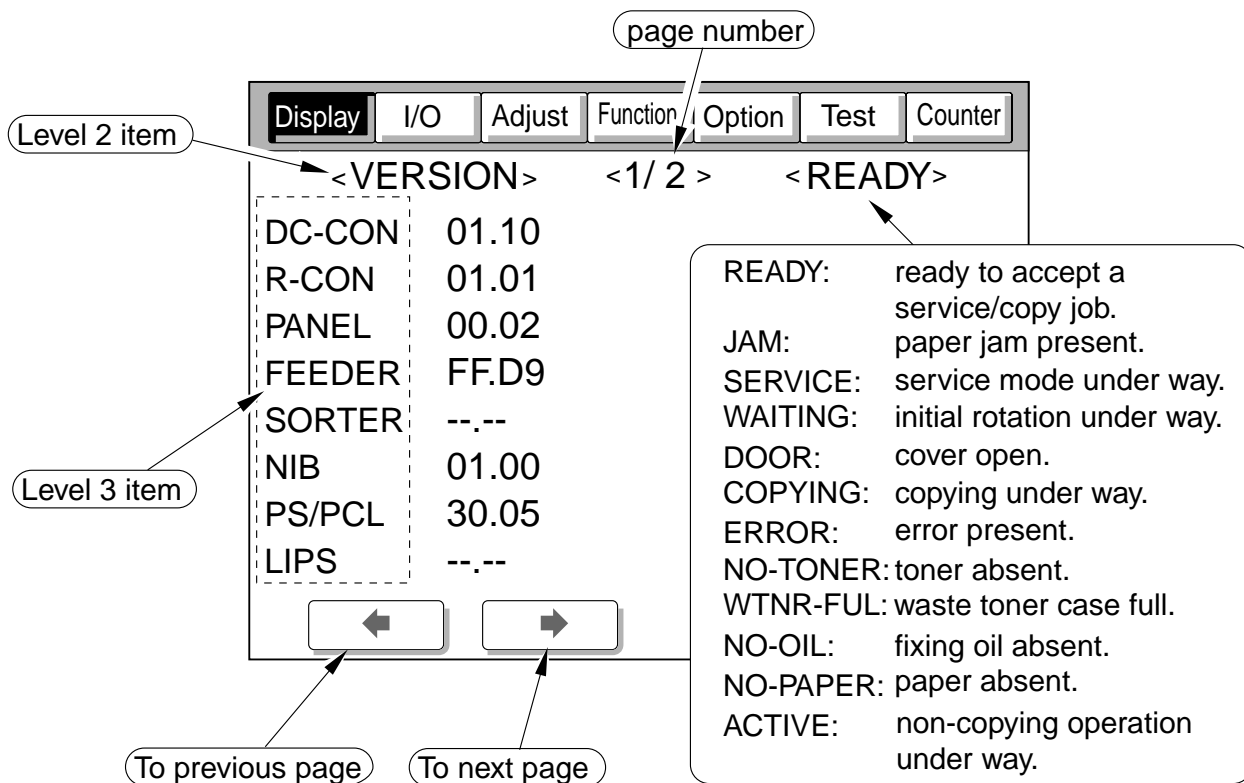
F05-105-01

### 1.5.2 Level 1/Level 2 Item Screen

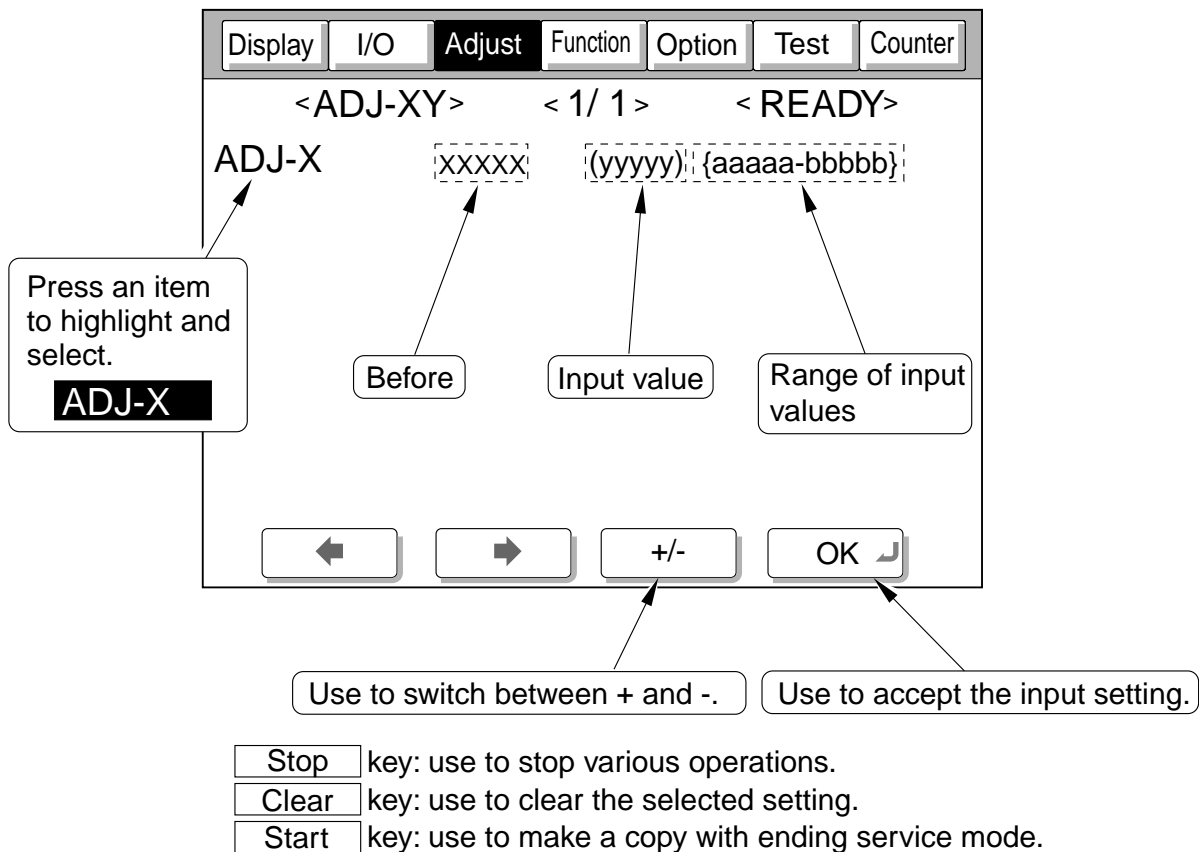


F05-105-02

1.5.3 Level 3 Item Screen



F05-105-03



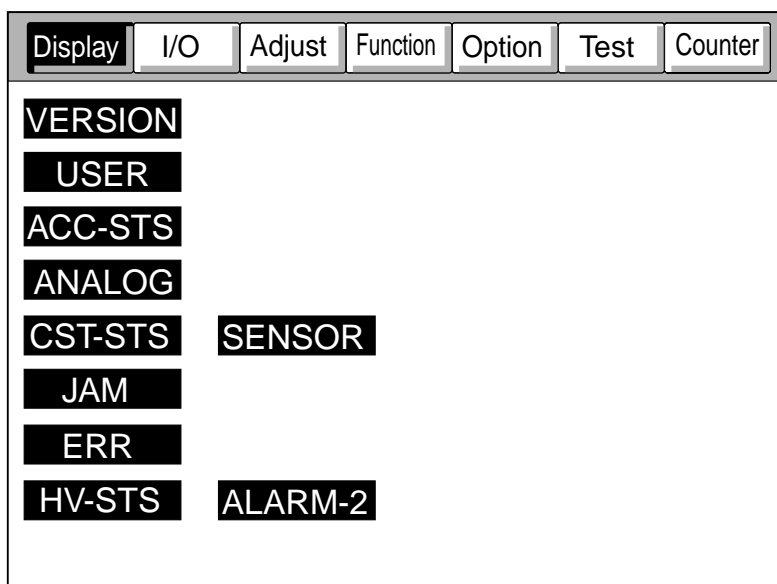
F05-105-04

## 2 DISPLAY Control Display Mode

---

### 2.1 COPIER

The following screen will appear in response to COPIER>DISPLAY; the respective item follows:



F05-201-01

**<VERSION>**

Indicates the version of the machine and the version of the ROM on the accessories PCB.

Indication: <xx,yy>

Where, xx: version number, yy: R&D control number

DC-CON	Indicates the version of the ROM on the DC controller PCB.
R-CON	Indicates the version of the ROM on the reader controller PCB.
PANEL	Indicates the version of the ROM on the control panel CPU PCB.
FEEDER	Indicates the version of the ROM on the ADF controller PCB.
SORTER	Indicates the version of the ROM on the finisher controller PCB.
NIB	Indicates the version of the network software.
PS/PCL	Indicates the version of the printer board (PS/PCL).
LIPS	Indicates the version of the printer board (LIPS).
MN-CONT	Indicates the version of the software of the main controller PCB.
BOOT-ROM	Indicates the version of the BOOT ROM of the main controller. Indication: for copier model, xx.yyC; for PSPCL model; xx.yyP; for PCL model, xx.yyL
DIAG-DVC	Indicates the version for the remote diagnostic device.
RUI	Indicates the version of the RUI.

PUNCH	Indicates the version of the software of the punch unit.
LANG-EN	Indicates the version of the English file.
LANG-FR	Indicates the version of the French file.
LANG-DE	Indicates the version of the German file.
LANG-IT	Indicates the version of the Italian file.
LANG-JP	Indicates the version of the Japanese file.
LANG-CS	Indicates the version of the Czech file.
LANG-DA	Indicates the version of the Danish file.
LANG-EL	Indicates the version of the Greek file.
LANG-ES	Indicates the version of the Spanish file.
LANG-ET	Indicates the version of the Estonian file.
LANG-FI	Indicates the version of the Finnish file.
LANG-HU	Indicates the version of the Hungarian file.
LANG-KO	Indicates the version of the Koran file.
LANG-NL	Indicates the version of the Dutch file.



LANG-NO	Indicates the version of the Norwegian file.
LANG-PL	Indicates the version of the Polish file.
LANG-PT	Indicates the version of the Portuguese file.
LANG-RU	Indicates the version of the Russian file.
LANG-SL	Indicates the version of the Slovenian file.
LANG-SV	Indicates the version of the Swedish file.
LANG-TW	Indicates the version of the Chinese file (traditional).
LANG-ZH	Indicates the version of the Chinese file (simplified).

**<USER>**

Indicates items related to the User screen and the user.

LANGUAGE	<p>Indicates the language/paper size configuration used.            Indication &lt;LANGUAGE xxyy.zz.aa&gt;            Where,            xx (higher 2 characters): country code (See JIS.)            yy (lower 2 characters): language code (See ISO639.)            zz: destination code (00: Canon, 01: OEM, 02: common (all))            aa: paper size configuration code (00: AB, 01: Inch, 02: A, 03: all sizes)</p>
MODEL	<p>Indicates the model (0: iR2200, 1: iR2800, 2: iR3300).</p>

**<ACC-STS>**

Indicates the connection of accessories.

FEEDER	<p>Indicates the connection of an ADF. (0: absent, 1: present)</p>
SORTER	<p>Indicates the connection of a finisher and a puncher nit.            Indication: XY            Where,            X=0: absent, 1: finisher, 2: saddle finisher            Y=0: puncher unit absent; 1: 2-hole, 2: 2-/3-hole, 3: 4-hole (FRN), 4: 4-hole (SWDN)</p>
DECK	<p>Indicates the connection of a paper deck (option). (0: absent, 1: present)</p>
CARD	<p>Indicates the connection of a card reader (option). (0: absent, 1: present)</p>
DATA-CON	<p>Indicates the connection of a remote diagnostic device. (0: absent, 1: copy data controller, 2: NE controller)</p>

RAM	Indicates the size of memory mounted to the main controller. (64 MB, 128 MB)
NIB	Indicates the connection of a network board. (0: absent, 1: Ethernet board, 2: TokenRing, 3: both)
LIPS-RAM	Indicates the size of memory mounted on the LIPS board. (xx MB)
LIPS	Indicates the connection of a LIPS board. (0: absent, 1: present)
PS/PCL	Indicates the connection of a PS/PCL board. (0: absent, 1: PS/PCL, 2: PS kanji)
NETWARE	Indicates the installation of netware firmware. (0: absent, 1: installed)

## &lt;ANALOG&gt;

Indicates the readings of analog sensors.

TEMP	Indicates the machine inside temperature. (environment sensor; in °C)
HUM	Indicates the machine inside humidity. (environment sensor; in % RH)
ABS-HUM	Indicates the machine inside humidity absolute value. (sensor: in g)
DR-TEMP	Indicates the temperature around the photosensitive drum. (drum sensor; in °C)
FIX-C	Indicates the temperature of the fixing heater. (main thermistor; in °C)
FIX-E	Indicates the temperature of the edge of the fixing heater. (sub thermistor; in °C)

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<CST-STS>

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Indicates the size of paper in the cassettes and the manual feeder.

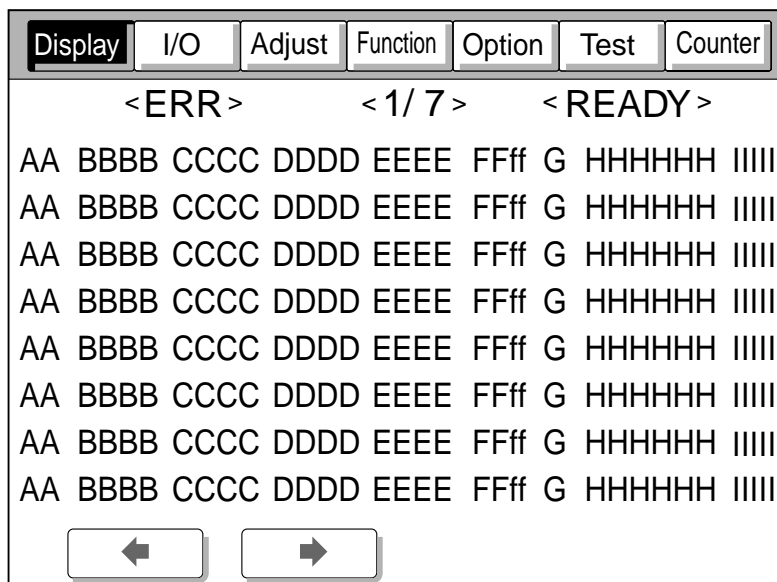
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WIDTH-MF

Indicates the width of paper in terms of paper size (manual feed).

<JAM>

Indicates jam data.



F05-201-02

COPIER>DISPLAY>JAM

Item	Description	Remarks
AA	Indicates the order of jams (the higher the number, the older the jam).	1 to 50 (50 max.)
BBBB	Indicates the date of occurrence.	Month, day (2 characters each)
CCCC	Indicates the time of occurrence.	24-hr notation
DDDD	Indicates the time of recovery.	24-hr notation
E	Indicates the location of occurrence.	0: copier 1: feeder 2: finisher
EFff	Indicates a jam code.	FF: type of jam (T05-201-01) ff: jam sensor (T05-201-02) For the feeder, see T05-201-04; for the finisher, see T05-201-05, -06.
G	Indicates the source of paper.	See T05-201-03.
HHHHHH	Indicates the soft counter of the source of paper.	
IIII	Indicates paper size.	

**FF: Types of Jams**

Code	Type
00xx	none
01xx	delay jam
02xx	stationary jam
0Axx	power-on stationary jam
0Bxx	cover open jam
9003	logic jam (*1)
9011	logic jam (*2)
10xx	finisher jam

\*1: standby jam from the Finisher-J1.

\*2: image request absent jam.

T05-201-01

**ff: Jam Sensors**

Code	Sensor
xx01	registration paper sensor (PS10)
xx02	multifeeder paper sensor (PS22)
xx03	pre-registration paper sensor (PS9)
xx04	vertical path paper sensor (Q1603)
xx05	cassette 1 re-try sensor (PS7)
xx06	cassette 2 re-try sensor (PS8)
xx07	cassette 3 re-try sensor (PS2C)
xx08	cassette 4 re-try sensor (PS3C)
xx09	deck pickup sensor (PS1D)
xx0A	deck feed sensor (PS6D)
xx11	image leading edge sensor (PS12)
xx12	fixing/feed sensor (PS13)
xx13	No. 1 delivery sensor (PS15)
xx14	No. 2 delivery sensor (PS19B)/ relay delivery sensor (PS19Z)
xx15	No. 3 delivery sensor (PS21B)
xx21	duplex inlet paper sensor (PS17)
xx22	duplex output paper sensor (PS18)
xx33	front cover switch (SW3)
xx34	right cover open/closed sensor (PS23)
xx35	2-way delivery open/closed sensor (PS24B)/ relay delivery open/closed sensor (PS24Z)
xx36	right cover open/closed sensor (PS1C)
xx37	deck set sensor (PS5D)
xx39	finisher front cover sensor (S1)

T05-201-02

**G: Source of Paper**

Code	Source
1	cassette 1
2	cassette 2
3	cassette 3
4	cassette 4
5	not used
6	not used
7	paper deck
8	manual feed tray
9	duplex unit

T05-201-03

**FFff: Sensor/Type (jams in feeder)**

Code	Sensor/type	Sensor used
0001	registration sensor delay	PI6
0002	registration sensor stationary	PI6
0003	read sensor delay	PI6, PI7
0004	read sensor stationary	PI7
0005	delivery sensor delay	PI7, PI8
0006	delivery sensor stationary	PI8
0007	ADF open	PI1
0008	user ADF open	PI1
0009	ADF cover open	PI9
000A	user cover open	PI9
000B	initial stationary	PI6, PI7, PI8
000C	pickup fault	-

T05-201-04

**FFff: Sensor/Type**  
**(jams in Saddle Finisher-G1)**

Code	Sensor/type	Sensor used
1006	stapler staple jam	PI19
1007	power-on jam	PI1, PI10
1008	cover open jam	PI22, PI23, MS2
1011	inlet sensor delay	PI1
1012	folding position sensor delay	PI10
1021	inlet sensor stationary	PI1
1022	folding position sensor stationary	PI10

T05-201-05

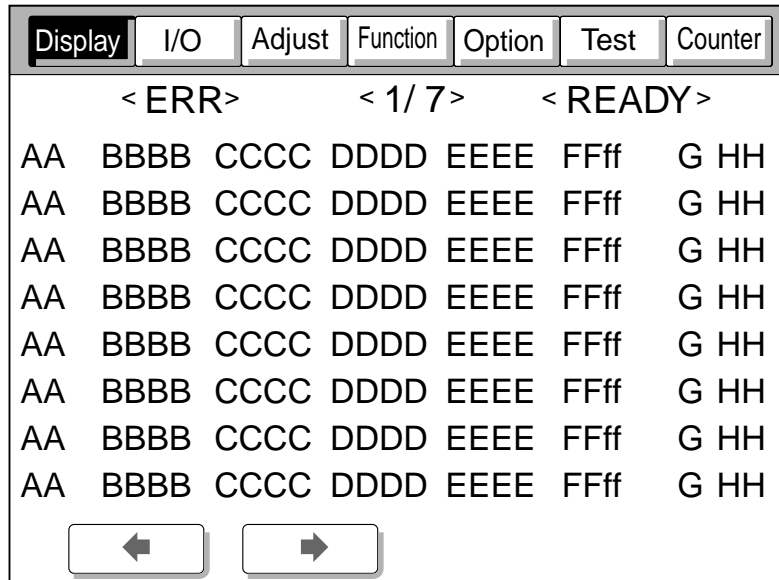
**FFff: Sensor/Type**  
**(jams in Finisher-J1)**

Code	Sensor/type	Sensor used
0003	inlet sensor delay	S2
0004	inlet sensor stationary	S2
0006	stapler staple jam	S17
0007	power-on jam	S2
0081	stack delivery	S8
0082	stack return	S3
0114	relay delivery sensor delay	PS19Z
0214	relay delivery sensor stationary	PS19Z
0B35	relay delivery cover open jam	PS24Z
0B39	front cover open jam	S1

T05-201-06

<ERR>

Indicate error data.



F05-201-03

Item	Description	Remarks
AA	Indicates the order of errors (the higher the number, the older the error).	1 to 50 (50 max.)
BBBB	Indicates the date of occurrence.	Month, day (2 characters each)
CCCC	Indicates the time of occurrence.	24-hr notation
DDDD	Indicates the time of recovery.	24-hr notation.
EEEE	Indicates an error code.	See Chapter 6 "Self Diagnosis."
EFff	Indicate a detail code.	If none, '0000'.
G	Indicates the location of occurrence.	0: copier/main controller 1: feeder 2: finisher 3: CFF 4: reader 5: printer 6: PDL 7: fax
HH	not used	



**<HV-STTS>**

Indicates the measurements taken of voltage/current.

PRIMARY	<p>Indicates the level of current of primary charging in relation to photosensitive drum resistance detection control (APVC).            Unit: <math>\mu\text{A}</math>            Reference:</p> <ul style="list-style-type: none"> <li>• If 353 <math>\mu\text{A}</math> or less, the drum unit can well be used.</li> <li>• 353&lt;485 <math>\mu\text{A}</math> or less, the drum unit may be used without a problem.</li> <li>• 485 <math>\mu\text{A}</math> or more, the drum unit should be replaced.</li> </ul>						
TR	<p>Indicates the mode selected for the level of current of transfer charging.            0: transfer constant voltage mode, 1: transfer constant voltage mode (mid),            2: transfer constant voltage mode (max.), 3: transfer constant voltage mode (min.)</p>						
BIAS	<p>Indicates the developing bias DC level (in V)</p>						
TR-V	<p>Indicates the voltage level in relation to transfer charging roller resistance detection control (ATVC). (in V)            Reference:</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 40%;">1500 to 6000V:</td> <td>the transfer charging system is normal.</td> </tr> <tr> <td>6001V or more:</td> <td>the transfer charging roller may have a locking fault.</td> </tr> <tr> <td>1499V or less:</td> <td>leakage and a transfer charging roller fault are possibilities.</td> </tr> </table>	1500 to 6000V:	the transfer charging system is normal.	6001V or more:	the transfer charging roller may have a locking fault.	1499V or less:	leakage and a transfer charging roller fault are possibilities.
1500 to 6000V:	the transfer charging system is normal.						
6001V or more:	the transfer charging roller may have a locking fault.						
1499V or less:	leakage and a transfer charging roller fault are possibilities.						

**<SENSOR>**

Indicates the condition of sensors.

DOC-SZ	<p>Indicates the size of the original detected by the original size sensor.</p>
--------	---

<ALARM-2>

Indicates alarm data.



F05-201-04

Item	Description	Remarks
AA	Indicates the order of alarms (the higher the number, the older the alarm).	1 to 50
BBBB	Indicates the date of occurrence.	Month/day (2 characters each)
CCCC	Indicates the time of occurrence.	Hour/minute (24-hr notation)
DDDD	Indicates the time of return.	Hour/minute (24-hr notation)
EFFFFF	Indicates the total counter reading at time of occurrence.	See the table below.
GGGG	Indicates the detail code.	R&D control code.
HHHHHHHH	Indicates the total counter of occurrence.	

## COPIER&gt;DISPLAY&gt;ALAM-2

EE (location code)	EE (location)	FFFF (description)
02	scanner in reader unit	0002: Indicate of dirt on reading glass in stream reading mode (small-size)
04	pickup/feed system	0008: paper deck lifter fault 0011: cassette 1 re-try alarm 0012: cassette 2 re-try alarm 0013: cassette 3 re-try alarm 0014: cassette 4 re-try alarm 0018: paper deck re-try alarm
61	stapler system of sorter/finisher	0001: staple absent
62	saddle stitcher system	0001: stitch staple absent
65	puncher system of sorter/finisher	0001: punch waste case full

## FEEDER&gt;DISPLAY

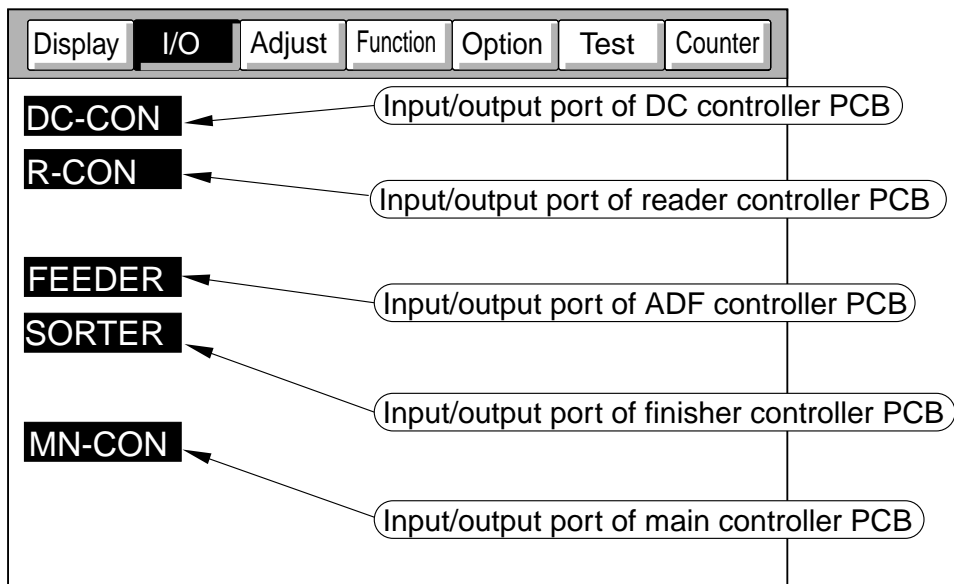
## 2.2 FEEDER

## FEEDSIZE

Indicates the size of the original detected by the ADF.

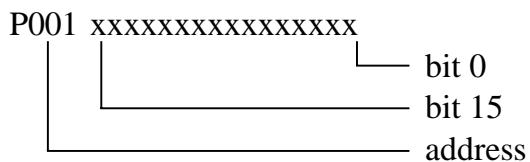
### 3 I/O, I/O Display mode

The following screen will appear in response to COPIER>I/O; discussions on items follow:



F05-301-01

<Guide to the screen>



### 3.1 DC-CON

Indicates the input/output ports of the DC controller PCBs.

#### <DC-CON (1/7)>

Address	bit	Notation	Description	Remarks
P001	0	M1	main motor drive signal	0: ON
	1	LAMP2	pre-exposure lamp ON signal	1: ON
	2	M10	laser scanner motor dive signal	0: ON
	3	M4	fixing motor dive signal	0: ON
	4	M4	fixing motor low-speed drive signal	1: ON
	5	CL1	vertical path clutch drive signal	1: ON
	6	CL2	multifeeder clutch drive signal	1: ON
	7	CL3	developing assembly clutch drive signal	1: ON
P002	0	SL1	pickup DOWN solenoid drive signal	1: ON
	1	SL3Z	relay delivery solenoid drive signal	1: ON
	2		not used	
	3	SL5	multifeeder holding plate releasing solenoid drive signal	1: ON
	4	SL6	charging roller solenoid drive signal	1: ON
	5	M9	registration motor drive OFF signal	1: off, 0: excited
	6		not used	
	7		not used	
P003	0	M2	pickup motor drive signal 1	-
	1	M2	pickup motor drive signal 2	-
	2	M2	pickup motor drive signal 3	-
	3	M2	pickup motor drive signal 4	-
	4	M3	horizontal registration sensor shift motor pulse signal A	-
	5	M3	horizontal registration sensor shift motor pulse signal A*	-
	6	M3	horizontal registration sensor shift motor pulse signal B	-
	7	M3	horizontal registration sensor shift motor pulse signal B*	-
P004	0	FM1	developing fan (full speed ) signal	1: ON
	1	FM2	fixing fan (full speed) signal	1: ON
	2	FM1	developing fan (half speed) signal	1: ON
	3	FM2	fixing fan (half speed signal)	1: ON
	4	M8B	2-way delivery outlet motor pulse signal IN1	Inner 2-Way Tray-A1
		M7Z	relay delivery output motor pulse signal IN1	relay delivery assembly
	5	M8B	2-way delivery output motor pulse signal IN2	Inner 2-Way Tray-A1
		M7Z	relay delivery outlet motor pulse signal IN2	relay delivery assembly
	6	M8B	2-way delivery outlet motor pulse signal IN3	Inner 2-Way Tray-A1
		M7Z	relay delivery outlet motor pulse signal IN3	relay delivery assembly
	7	M8B	2-way delivery outlet motor pulse signal IN4	Inner 2-way tray-A1
		M7Z	relay delivery outlet motor pulse signal IN4	relay delivery assembly

## &lt;DC-CON (2/7)&gt;

Address	bit	Notation	Description	Remarks
P005	0	M6	duplex motor pulse signal IN1	-
	1	M6	duplex motor pulse signal IN2	-
	2	M6	duplex motor pulse signal IN3	-
	3	M6	duplex motor pulse signal IN4	-
	4	M6	duplex motor drive signal I0	-
	5	M6	duplex motor drive signal I1	-
	6	FM4	curl reducing fan 1 drive signal	1: ON
	7	FM5	curl reducing fan 2 drive signal	1: ON
P006	0		primary DC charging motor signal	1: ON
	1		primary charging ON signal	1: ON
	2		static eliminator ON signal	1: ON
	3		developing AC bias ON signal	1: ON
	4		developing DC bias ON signal	1: ON
	5		fixing bias ON signal	1: ON
	6		heater relay ON signal	1: ON
	7	M8B	2-way delivery outlet motor pulse signal I0	1: 70%, 0: 100%
P007	0		transfer mode signal 0	1: ON
	1		transfer mode signal 1	1: ON
	2		transfer mode signal 2	1: ON
	3		transfer mode signal 3	1: ON
	4		transfer ON signal	1: ON
	5		scanner output signal 4	-
	6		scanner output signal 5	-
	7		not used	
P008	0	S1	toner level detection signal	1: toner present
	1		not use	
	2	S2	waste toner case full detection signal	1: full
	3	M1	main motor lock detection signal	0: locked
	4	M10	laser scanner motor lock detection signal	0: locked
	5	M4	fixing motor lock detection signal	0: locked
	6		24V detection signal	0: detected
	7	SW3	front over open/close sensor signal	1: closed
P009	0		factory mode signal 0	-
	1		factory mode signal 1	-
	2		factory mode signal 2	-
	3		factory mode signal 3	-
	4	FM1	developing fan rotation detection signal	0: in rotation
	5	FM2	fixing fan rotation detection signal	0: in rotation
	6	FM4	curl reducing fan 1 rotation detection signal	0: in rotation
	7	FM5	curl reducing fan 2 rotation detection signal	0: in rotation

## &lt;DC-CON (3/7)&gt;

Address	bit	Notation	Description	Remarks
P010	0	M5	delivery motor pulse signal A_D0	-
	1	M5	delivery motor pulse signal A_D1	-
	2	M5	delivery motor pulse signal A_D2	-
	3	M5	delivery motor pulse signal A_PHASE	-
	4	M5	delivery motor pulse signal B_D0	-
	5	M5	delivery motor pulse signal B_D1	-
	6	M5	delivery motor pulse signal B_D2	-
	7	M5	delivery motor pulse signal B_PHASE	-
	8	M5	delivery motor pulse signal IO	-
	9		not used	
	10		not used	
	11		not used	
	12		not used	
	13		not used	
	14		not used	
	15		not used	
P011	0	M7B	2-way delivery inlet motor pulse signal A_D0	-
	1	M7B	2-way delivery inlet motor pulse signal A_D1	-
	2	M7B	2-way delivery inlet motor pulse signal A_D2	-
	3	M7B	2-way delivery inlet motor pulse signal A_PHASE	-
	4	M7B	2-way delivery inlet motor pulse signal A_D0	-
	5	M7B	2-way delivery inlet motor pulse signal A_D1	-
	6	M7B	2-way delivery inlet motor pulse signal A_D2	-
	7	M7B	2-way delivery inlet motor pulse signal IA_PHASE	-
	8	M7B	2-way delivery inlet motor pulse signal IO	-
	9		not used	
	10		not used	
	11		not used	
	12		not used	
	13		not used	
	14		not used	
	15		not used	
P012	0		laser output enable signal	0: enabled
	1		printer output prepare signal	-
	2		transmission ready signal	-
	3		scanner start signal	-
	4		optional output signal 0	-
	5		optional output signal 1	-
	6		optional output signal 2	-
	7		optional output signal 3	-

## &lt;DC-CON (4/7)&gt;

Address	bit	Notation	Description	Remarks
P013	0	S4	cassette 1 cassette size detection signal bit 0	-
	1	S4	cassette 1 cassette size detection signal bit 1	-
	2	S4	cassette 1 cassette size detection signal bit 2	-
	3	S4	cassette 1 cassette size detection signal bit 3	-
	4	S4	cassette 1 cassette size detection signal bit 4	-
	5	PS1	cassette 1 paper detection signal	1: paper absent
	6	PS3	cassette 1 paper level detection signal bit 0	25% (bit6=0:bit7=1)
	7	PS4	cassette 1 paper level detection signal bit 1	50% (bit6=1:bit7=1) 100% (bit7=0)
P014	0	S5	cassette 2 cassette size detection signal bit 0	-
	1	S5	cassette 2 cassette size detection signal bit 1	-
	2	S5	cassette 2 cassette size detection signal bit 2	-
	3	S5	cassette 2 cassette size detection signal bit 3	-
	4	S5	cassette 2 cassette size detection signal bit 4	-
	5	PS2	cassette 2 paper detection signal	1: paper absent
	6	PS5	cassette 2 paper level detection signal bit 0	25% (bit6=0:bit7=1)
	7	PS6	cassette 2 paper level detection signal bit 1	50% (bit6=1:bit7=1) 100% (bit7=0)
P015	0	PS7	cassette 1 re-tray paper detection signal	1: paper present
	1	PS8	cassette 2 re-tray paper detection signal	1: paper present
	2	PS9	pre-registration paper detection signal	1: paper present
	3	PS10	registration paper detection signal	1: paper present
	4	PS11	horizontal registration paper detection signal	1: paper absent
	5	PS13	fixing/feeding detection signal	1: paper absent
	6	PS15	No. 1 delivery detection signal	1: paper present
	7	PS16	No. 1 delivery full detection signal	1: paper present
P016	0	PS17	duplex inlet paper detection signal	1: paper absent
	1	PS18	duplex outlet power detection signal	1: paper absent
	2	PS19B	No. 2 delivery detection signal	1: paper present
	3	PS20B	No. 2 delivery full detection signal	1: paper present
	4	PS21B	No. 3 delivery detection signal	1: paper present
	5	PS22	multifeeder paper detection signal	1: paper absent
	6	PS23	right cover open/closed detection signal	1: open
	7	PS24B	2-way delivery open/closed detection signal	1: open
P017	0		optional input signal 0	-
	1		optional input signal 1	-
	2		optional input signal 2	-
	3		optional input signal 3	-
	4		optional input signal 4	-
	5		not used	
	6		not used	
	7		not used	



## &lt;DC-CON (5/7)&gt;

Address	bit	Notation	Description	Remarks
P018	0		print start signal	-
	1		transmission request signal	-
	2		controller power supply inlet ready signal	-
	3		printer power supply inlet signal	-
	4		not used	
	5		not used	
	6		not used	
	7		not used	
P019	0		BD cycle error signal	1: present
	1		phsync cycle error signal	1: present
	2		sub scanning select line interrupt signal	-
	3		image end signal	-
	4		not used	
	5		not used	
	6		not used	
	7		not used	
P020	0		zero-cross signal	-
	1		heater trigger 1 signal	0: ON
	2		heater trigger 2 signal	0: ON
	3		heater error OFF signal	0: error
	4		not used	
	5		not used	
	6	M9	registration motor phase A pulse signal	-
	7	M9	registration motor phase B pulse signal	-
P021	0	PS26	fixing film rotation detection signal	-
	1		not used	
	2		not used	
	3		not used	
	4		not used	
	5		not used	
	6		finisher detection signal	inner 2-way tray absent: bit 6=1
	7		saddle finisher detection signal	finisher: bit6=0, bit 7=1 saddle finisher: bit 6=0, bit 7=0

## &lt;DC-CON (6/7)&gt;

Address	bit	Notation	Description	Remarks
P022	0		controller communication signal	-
	1		power supply communication signal	-
	2		controller communication signal	-
	3		power supply communication signal	-
	4		not used	
	5		power supply communication signal	-
	6		not used	
	7		not used	
P23	0	TH1	main thermistor ON signal	A/D
	1	TH2	sub thermistor ON signal	A/D
	2	VR1	multifeeder paper width detection signal	A/D
	3		drum thermistor ON signal	A/D
	4	S3	humidity detection signal	A/D
	5	S3	room temperature detection signal	A/D
	6		AC monitor signal	A/D 200V model only
	7		not used	
P024	0		RS232C detection signal for debug	-
	1		RS233C detection signal for debug	-
	2		not used	
	3		power supply communication signal	-
	4		not used	
	5		not used	
	6		not used	
	7		not used	
P025	0		not used	
	1		ADC reception data signal	-
	2		ADC serial clock signal	-
	3		ADC transmission data signal	-
	4		error interrupt signal	-
	5		DDI interrupt signal	-
	6		power supply communication signal	-
	7	PS12	image leading edge sensor detection signal	1: paper present
P026	0		not used	
	1		not used	
	2		not used	
	3		not used	
	4		not used	
	5		not used	
	6		not used	
	7		not used	

## &lt;DC-CON (7/7)&gt;

Address	bit	Notation	Description	Remarks
P027	0		100/200V detection signal	1: 100V, 0: 200V
	1		not used	
	2		ADC chip select signal	-
	3		not used	
	4		not used	
	5		not used	
	6		not used	
	7		used as $\Phi$ terminal	-
P028	0		CPU check LED On signal	-
	1		not used	
	2		not used	
	3		not used	
	4		not used	
	5		not used	
	6		not used	
	7		not used	
P29		TH1	main thermistor ON signal	A/D hexadecimal notation
P30		TH2	sub thermistor ON signal	A/D hexadecimal notation
P31		VR1	multifeeder paper width detection signal	A/D hexadecimal notation
P32			drum thermistor ON signal	A/D hexadecimal notation
P33		S3	humidity detention signal	A/D hexadecimal notation
P34		S3	room temperature detection signal	A/D hexadecimal notation
P35			AC monitor signal	A/D hexadecimal notation

## 3.2 R-CON

Indicates the input/output ports of the reader controller PCB.

### <R-CON (1/3)>

Address	bit	Notation	Description	Remarks
IO-P01	0	M400	scanner motor clock signal	clock signal
	1	M400	scanner rotation direction signal	0: cw
	2	M400	scanner motor drier drive enable signal	0: drive enabled
	3		not used	
	4	M400	scanner motor excitation original return signal/ motor driver controller reset signal	1→0: return to original
	5	M400	scanner motor excitation mode set signal	default
	6	M400	scanner motor excitation mode set signal	default
IO-P02	7		not used	
	0		EEPROM several clock signal	clock signal
	1		EEPROM chip select signal	1: output
	2		EEPROM read serial data signal	data
	3		EEPROM write serial data signal	data
	4		scanner reception ready signal (DDI)	0: ready to receive
	5		scanner power supply ready signal (DDI)	0: ready
6		not used		
7		+12V ON/OFF control signal for CCD	1: ON	
IO-P03	0		serial transmission signal for DDI	data
	1		serial transmission signal for RS-232C	data
	2		serial reception signal for DDI	data
	3		serial transmission signal for RS-232C	data
	4		CCD drive signal output control signal	1: ON
	5	SD1	original sensor drive control signal	0: ON
	6		not used	
7		not used		
IO-P04	0		not used	
	1		not used	
	2		not used	
	3		not used	
	4	SD1	original sensor signal	0: ON
	5		not used	
	6	M400	scanner drive current set signal	analog signal
7		not used		

## &lt;R-CON (2/3)&gt;

Address	bit	Notation	Description	Remarks
IO-P05	0		printer start signal (DDI)	0: ON
	1		analog processor data signal	data
	2		analog processor clock signal	clock signal
	3		analog processor load signal	data
	4		not used	
	5		not used	
	6		not used	
	7		not used	
IO-P06	0	M400	motor drive current mode signal	0: new current mode
	1		PCB check mode signal	0: check mode
	2	FL1N	original exposure lamp ON/OFF control signal	1: ON
	3	FL1N	original exposure lamp inverter error signal	1: error
	4	PS400	scanner home position signal	1: HP
	5		image leading edge signal (ADF)	1: ADF image leading edge interrupt
	6	PS401	copyboard cover open/closed detection signal	1: copyboard cover closed
7		not used		
IO-P07	0		not used	
	1		not used	
	2		not used	
	3		not used	
	4		not used	
	5		IP-Lifter/IP-STD ID signal	1: Lifter model
	6		+24V monitor (L: +24V live) signal	0: 24V ON
	7		+3.3V voltage drop detection signal	1: detected
IO-P08	0		general port (0) for DDI: reader → controller	not used
	1		general port (1) for DDI: reader → controller	not used
	2		general port (2) for DDI: reader → controller	not used
	3		not used	
	4		not used	
	5		not used	
	6		not used	
	7		not used	
IO-P09	0		ON LED (not used)	
	1		not used	
	2		not used	
	3		not used	
	4		not used	
	5		not used	
	6		not used	
	7		not used	

## &lt;R-CON (3/3)&gt;

Address	bit	Notation	Description	Remarks
IO-P10	0-7		not used	
IO-P11	0-7		not used	
IO-P12	0-7		not used	
IO-P13	0		general port (0) for DDI: controller → reader	1*
	1		general port (1) for DDI: controller → reader	not used
	2		general port (2) for DDI: controller → reader	not used
	3		controller power supply ready signal (DDI)	0: ready
	4		controller reception enable signal (DDI)	0: ready to receive
	5		no used	
	6		not used	
	7		not used	

\*1: If the port is '0' when 24V is supplied, the initial rotation is omitted (to prevent turning on the reader in response to a PING command while the machine is in sleep mode); if '1', the initial operation is executed.

### 3.3 MN-CON

Indicates the input/output ports for the main controller PCB.

#### <MN-CON (1/2)>

Address	bit	Notation	Description	Remarks
P001	7	Gpdata	not used (fixed; 1)	
	6		not used (fixed; 1)	
	5		LED1008	for check on operation
	4		fan ON	cooling fan control
	3		PCI power save control	1: normal operation
	2		watchdog timer clear	
	1		PWR2	1: normal operation
	0		PWR1	1: normal operation
P002	3	SPI	SPRTST signal (printer start-up signal)	0: reader image start
	2		input for DDI-S general	not used
	1		input for DDI-S general	not used
	0		input for DDI-S general	not used
P003	3	PPI	PSCNST signal (scanner start-up signal)	0: reader start
	2		input for DDI-P general	not used
	1		input for DDI-P general	not used
	0		input for DDI-P general	not used
P004	3	SPO	SSCNST signal	not used
	2		3.3V non-all night power OFF signal	0: normal (ON), 1=5W (OFF) sleep mode
	1		output for DDI-S general	not used
	0		output for DDI-S general	not used
P005	3	PPO	PPRTST signal	0: printer image start
	2		output for DDI-P general	not used
	1		output for DDI-P general	not used
	0		output for DDI-P general	not used
P006	7	GPI	HD connection detection	1: HD present
	6		serial EEPROM D0	access port for EEPORM
	5		operation enable (coin robot)	1: enabled
	4		operation enable (CC-IV)	1: enabled
	3		serial ROM connection detection	1: connected
	2		flash RPOM R/B#	0: Busy, 1: Ready
	1		parallel EEPROM R/B#	for factory
	0		battery alarm	0: Normal, 1: Error

## &lt;MN-CON (2/2)&gt;

Address	bit	Notation	Description	Remarks
P007	15	GPO	fax SSB forced reset	0: Reset, 1: Normal
	14		parallel EEPROM write protect	for factory
	13		not used	
	12		LCD back-light control signal	1: ON
	11		coin robot delivery count	1: count
	10		coin robot pickup count	1: count
	9		delivery count	1: count
	8		pickup count	1: count
	7		serial EEPROM DIN	for factory
	6		serial EPROM SCK	for factory
	5		serial EEPROM CS	for factory
	4		PCI (PDL) soft reset	0: LIPS board forced reset
	3		not used	
	2		SP0 (2)	output (2) for DDI-S general
	1		not used	
0	battery charge control	0: Enable, 1: Disable		
P008	7	IPC-PA	not used	
	6		not used	
	5		battery board detect	0: present
	4		BW UI detect	0: B/W UI present
	3		color UI detect	0: color UI present
	2		FOPTION2	for fax SSB ID
	1		FOPTION1	for fax SSB ID
	0		FOPTION0	for fax SSB ID
P009	7-0	IPC-PB	not used	0: fixed
P010	7-0	IPC-PO	not used	0: fixed



### 3.4 FEEDER

Indicates the input/output ports of the ADF controller PCB.

#### <FEEDER (1/2)>

Address	bit	Notation	Description	Remarks
IO-P01 (output)	0		not used	
	1		not used	
	2		not used	
	3		not used	
	4		not used	
	5	LED	original detection LED ON signal	0: ON
	6	SL1	locking solenoid drive signal	0: ON
	7	SL2	stamp solenoid drive signal	0: ON
IO-P02 (input)	0	PI8	delivery reversal sensor signal	1: paper present
	1	PI7	read sensor signal	1: paper present
	2	PI6	registration sensor signal	1: paper present
	3	PI1	ADF open/closed sensor signal	1: open
	4	M1	pickup motor phase A output	-
	5	M1	pickup motor phase A* signal	-
	6	M1	pickup motor phase B output	-
	7	M1	pickup motor phase B* output	-
IO-P03 (input)	0		not used	
	1		not used	
	2		image leading edge signal	-
	3		not used	
	4		not used	
	5		not used	
	6		not used	
	7		not used	
IO-P04	0		EEPROM data input	-
	1		EEPROM data output	-
	2		EEPROM clock	-
	3		EEPROM chip select	-
	4	PI10	original set sensor signal	1: paper present
	5	PI9	cover open/close sensor signal	0: open
	6	M2	feed motor clock signal	
	7	M1	pickup motor clock signal	

## &lt;FEEDER (2/2)&gt;

Address	bit	Notation	Description	Remarks
IO-P05	0	VR1	original width volume	-
(input)	1	PI5	last original sensor signal	-
	2	PI4	tray sensor 2	-
	3	PI3	tray sensor 1	-
	4	PI2	A4R/LTR ID sensor	-
	5		push switch	-
	6	M2	feed motor V ref	-
	7	M1	pickup motor V ref	-
IO-P06	0	M2	feed motor phase A output	-
(output)	1	M2	feed motor phase A* output	-
	2	M2	feed motor phase B output	-
	3	M2	feed motor phase B* output	-
	4		not used	
	5		not used	
	6	PI7	read sensor signal	1: paper prevent
	7		not used	
IO-P07	0-7		not used	
IO-P08	0-7		not used	
IO-P09	0	LED4	LED ON signal 4	-
(output)	1	LED3	LED ON signal 3	-
	2	LED2	LED ON signal 2	-
	3	LED1	LED ON signal 1	-
	4		not used	
	5		not used	
	6		not used	
	7		not used	
IO-P10	0	DIPSW8	mode set DIP switch 8	-
(input)	1	DIPSW7	mode set DIP switch 7	-
	2	DIPSW6	mode set DIP switch 6	-
	3	DIPSW5	mode set DIP switch 5	-
	4	DIPSW4	mode set DIP switch 4	-
	5	DIPSW3	mode set DIP switch 3	-
	6	DIPSW2	mode set DIP switch 2	-
	7	DIPSW1	mode set DIP switch 1	-
IO-P11	0-7		not used	
AD-P01		VR1	original width volume	(analog port)
AD-P02		M2	feed motor current level	(analog port)
AD-P03		M1	pickup motor current level	(analog port)

## 3.5 SORTER

Indicates the input/output ports for the finisher controller PCB.

### <SORTER (1/8)>

#### 3.5.1 Finisher-J1

Address	bit	Notation	Description	Remarks
IO-P001	0		not used	
(input)	1		not used	
	2	S10	stack tray paper height sensor signal	1: upper limit
	3	S1	fisher front cover sensor signal	1: closed
	4	S11	stack tray paper sensor signal	1: paper present
	5	S12	stack tray lower limit sensor signal	1: lower limit
	6	S13	stack tray upper limit sensor signal	1: upper limit
	7	S3	return roller home position sensor signal	1: HP
IO-P002	0	S11	stack tray paper sensor signal	1: HP
(input)	1		IPC chip select	1: selected
	2	S2	input sensor signal	1: paper present
	3	S4	stack retaining lever home position sensor signal	0: HP
	4-7		not used	
IO-P003	0	S7	rear alignment home position sensor signal	1: HP
(input)	1	S6	front alignment home position sensor signal 1: HP	
	2	S8	stack delivery lever home position sensor signal	0: HP
	3	S5	intermediate handling tray paper sensor signal	1: paper present
	4	S14	staple cartridge sensor signal	0: detected
	5	S15	staple absent sensor	0: detected
	6	S16	stapling home position sensor signal	0: detected
	7	S17	stapler edging sensor signal	0: detected
IO-P004	0		delivery motor clock sensor signal	-
(input)	1	S9	stack tray up/down clock sensor signal	-
	2-7		not used	
IO-P005	0	M5	stack tray ascent/decent motor CW signal	1: up ON
(output)	1		not used	
	2	M5	stack try ascent/descent motor CCW signal	1: down ON
	3-4		not used	
	5	M1	delivery motor current switch 2	(T05-301-01)
	6-7		not used	

## &lt;SORTER (2/8)&gt;

Address	bit	Notation	Description	Remarks
IO-P006	0	M3/M4	alignment motor pulse INA	-
(input)	1	M3/M4	alignment motor pulse INB	-
	2	M4	rear alignment motor enable signal	1: enable
	3	M3	front alignment motor enable signal	1: enable
	4	M2	stack delivery motor pulse INA	-
	5	M2	stack delivery motor pulse INB	-
	6	M6	stapler motor CW2 signal	0: CW ON
	7	M6	stapler motor CCW2 signal	0: CCW ON
IO-P007	0	M6	stapler motor CW signal	0: CW ON
(input)	1	M6	stapler motor CCW signal	0: CCW ON
	2	M5	stack tray ascent/descent motor CW2 signal	1: up ON
	3	M5	stack tray ascent/descent motor CCW2 signal	1: down ON
	4	M1	delivery motor pulse INA	-
	5	M1	delivery motor pulse INB	-
	6		not used	
	7	M1	delivery motor OFF signal	1: current ON
IO-P008	0	SW1	push switch signal	0: ON
(input)	1-6		not used	
	7		24VP detection signal	0: power ON
IO-P009	0-7		not used	
IO-P010	0	DSW1-0	mode set DIP switch 0	0: ON
(input)	1	DSW1-1	mode set DIP switch 1	0: ON
	2	DSW1-2	mode set DIP switch 2	0: ON
	3	DSW1-3	mode set DIP switch 3	0: ON
	4	DSW1-4	mode set DIP switch 4	0: ON
	5	DSW1-5	mode set DIP switch 5	0: ON
	6	DSW1-6	mode set DIP switch 6	0: ON
	7	DSW1-7	mode set DIP switch 7	0: ON
IO-P011	0	LED1	LED ON signal 1	0: ON
(input)	1	LED2	LED ON signal 2	0: ON
	2	LED3	LED ON signal 3	0: ON
	3	M1	delivery motor current switch 1 signal	(T05-301-01)
	4	M2	stack delivery motor current switch 1 signal	0: current high
	5	M2	stack delivery motor current switch 2 signal	0: current medium
	6	M4	rear alignment motor current switch signal	0: current high
	7	M3	front alignment motor current switch signal	0: current high

## &lt;SORTER (3/8)&gt;

Address	bit	Notation	Description	Remarks
IO-P012	0-7		not used	
IO-P013	0-7		not used	
IO-P014	0-7		not used	
IO-P015	0-7		not used	
IO-P016	0-7		not used	
IO-P017	0-7		not used	
IO-P018	0-7		not used	
IO-P019	0-7		not used	
IO-P020	0-7		not used	
IO-P021	0-7		not used	
IO-P022	0-7		not used	
IO-P023	0-7		not used	
IO-P024	0-7		not used	
IO-P025	0-7		not used	
IO-P026	0-7		not used	
IO-P027	0-7		not used	
IO-P028	0-7		not used	
IO-P029	0-7		not used	
IO-P030	0-7		not used	
IO-P031	0-7		not used	
IO-P032	0-7		not used	
IO-P033	0-7		not used	
IO-P034	0-7		not used	
IO-P035	0-7		not used	
IO-P036	0-7		not used	
IO-P037	0-7		not used	
IO-P038	0-7		not used	

&lt;SORTER (4/8)&gt;

## 3.5.2 Saddle Finisher-G1

Address	bit	Notation	Description	Remarks
P001 (output)	0	M4	front aligning plate motor phase A output	0: ON
	1	M4	front aligning plate motor phase B output	0: ON
	2	M8	slide motor phase A output	0: ON
	3	M8	slide motor phase B output	0: ON
	4	M3	delivery motor phase A output	0: ON
	5	M3	delivery motor phase A* output	1: ON
	6	M3	delivery motor phase B output	0: ON
	7	M3	delivery motor phase B* output	1: ON
P002 (output)	0	M2	paddle motor phase A output	0: ON
	1	M2	paddle motor phase A* output	1: ON
	2	M2	paddle motor phase B output	0: ON
	3	M2	paddle motor phase B* output	1: ON
	4	M6	shift motor UP drive output	-
	5	M6	shift motor DOWN drive output	-
	6	M7	bind motor PWM output	0: ON
	7	M7	bind motor clock sensor input	0: ON
P003	0		puncher unit transmission signal (output)	
	1		commercial device TXD (output)	
	2		puncher unit reception signal (input)	
	3		commercial device RXD (input)	
	4	PI24	full stack sensor (full detection)	1: FULL
	5	CL1	bind clutch	1: ON
	6-7		not used	
P004 (input)	0		not used	
	1		push switch 1, 2	-
	2		DIP switch 7, 8	-
	3		DIP switch 5, 6	-
	4		DIP switch 3, 4	-
	5		DIP switch 1, 2	-
	6	PI10	fold position sensor light emission (output)	-
	7	PI10	fold position sensor (analog)	-
P005 (output)	0		EEPROM chip select	1: selected
	1		EEPROM/DA clock output (used in common)	-
	2		EEPROM/DA data output (used in common)	-
	3		DA load signal output (used in common)	1: load
	4-7		not used	

## &lt;SORTER (5/8)&gt;

Address	bit	Notation	Description	Remarks
P006	0	PI21	cartridge sensor signal	1: ready
(input)	1	PI20	staple sensor signal	1: staple ascent
	2	M5	rear alignment motor phase A (output)	0: ON
	3	M5	rear alignment motor phase B (output)	0: ON
	4	PI19	stapler drive home position sensor signal	0: HP
	5	PI18	slide home position sensors signal	0: HP
	6	PI7	delivery belt home position sensor signal	1: HP
	7		commercial device REQ	
P007	0-4		not used	
(input)	5	PI10	fold position sensor signal	1: paper present
	6	PI17	shift motor clock sensor signal	
	7	PI1P	punch home position sensor	0: HP
P008	0	M1	feed motor phase A output	0: ON
(output)	1	M1	feed motor phase A* output	1: ON
	2	M1	feed motor phase B output	0: ON
	3	M1	feed motor phase B* output	1: ON
	4	M8/4, 5	slide/aligning plate motor current cut	-
	5		not used	
	6		not used	
	7	PI8	tray paper sensor (input)	1: paper present
P009	0	M7	bind motor (CW)	-
(output)	1	M7	bind motor (CCW)	-
	2	M6	shift motor enable signal	-
	3-7		not used	
P010	0	PI9	paper sensor (input)	1: paper detected
(input)	1	PI4	front aligning plate home position sensor signal	0: HP
	2		EEPROM data input	-
	3-7		not used	
P011	0	PI16	shift lower limit sensor signal	1: limit
(input)	1	PI15	shift upper limit sensor signal	1: limit
	2		power supply monitor signal	0: power ON
	3	PI6	handling tray paper sensor signal	1: paper present
	4		push switch 3 signal	0: ON
	5	MS3	stapler safety detecting switch signal	1: open
	6	MS1	front cover open detecting switch signal	1: open
	7	MS2	joint open detecting switch signal	1: open

## &lt;SORTER (6/8)&gt;

Address	bit	Notation	Description	Remarks
P012	0	PI23	upper cover open sensor signal	1: open
(input)	1	PI22	front cover open sensor signal	1: open
	2	PI5	rear aligning plate home position sensor signal	0: HP
	3	PI3	stack roller home position sensor signal	0: HP
	4	PI2	paddle home position sensor signal	0: HP
	5	PI1	inlet paper sensor signal	0: paper present
	6	PI11	fold home position sensor signal	1: HP
	7		stapler connection signal	1: connected
P013	0	PI12	fold roller home position sensor signal	0: HP
(output)	1		punch connection signal	0: connected
	2	PI13	bid tray paper sensor signal (input)	1: paper present
	3		power save switch signal	1: power save mode
	4	LED1	LED ON signal 1	0: ON
	5	LED2	LED ON signal 2	0: ON
	6	LED3	LED ON signal 3	0: ON
	7		commercial device ACK	1: paper present
P014	0		DPISW1 bit 1 signal	0: ON
(input)	1		DPISW1 bit 2 signal	0: ON
	2		DPISW1 bit 3 signal	0: ON
	3		DPISW1 bit 4 signal	0: ON
	4		DPISW1 bit 5 signal	0: ON
	5		DPISW1 bit 6 signal	0: ON
	6		DPISW1 bit 7 signal	0: ON
	7		DPISW1 bit 8 signal	0: ON
P015	0		PUSHSW1 signal	0: ON
(input)	1		PUSHSW2 signal	0: ON
	2		PUSHSW3 signal	0: ON
	3-7		not used	
P023		PI10	fold position sensor	(analog port)
P024			not used	(analog port)
P025			push switch 1, 2	(analog port)
P026			DIP switch 7, 8	(analog port)
P027			DIP switch 5, 6	(analog port)
P028			DIP switch 3, 4	(analog port)
P029			DIP switch 1, 2	(analog port)
P030		PI10	fold position sensor (light emission; output)	(analog port)



&lt;SORTER (7/8)&gt;

## 3.5.3 Puncher Unit (Saddle Finisher-G1)

Address	bit	Notation	Description	Remarks
P016	0		ladder circuit bit 1	-
(output)	1		ladder circuit bit 2	-
	2		ladder circuit bit 3	-
	3		ladder circuit bit 4	-
	4		ladder circuit bit 5	-
	5		ladder circuit bit 6	-
	6		ladder circuit bit 7	-
	7		ladder circuit bit 8	-
P017	0	PI1P	punch home position sensor signal	0: HP
(input)	1	PI2P	horizontal registration home position signal	1: HP
	2, 3		not used	
	4		DIPSW1001 bit 1 signal	0: ON
	5		DIPSW1001 bit 2 signal	0: ON
	6		DIPSW1001 bit 3 signal	0: ON
	7		DIPSW1001 bit 4 signal	0: ON
P018	0	PSW1	push SW1 signal	0: ON
(input)	1	PSW2	push SW2 signal	0: ON
	2, 3		not used	
	4		power detection signal	0: power OFF
	5	LED1	LED ON signal 1 (output)	-
	6	LED2	LEE ON signal 2 (output)	-
	7	LED3	LED ON signal 3 (output)	-
P019	0		horizontal registration sensor light intensity adjustment signal	level UP: intensity increased
(output)	1		registration sensor light intensity adjusted signal	level UP: intensity increased
	2, 3		not used	
	4		EEPROM DO (input)	-
	5		EEPROM DI	-
	6		EEPROM CLK	-
	7		EEPROM CS	-
P020	0, 1		not used	
(input)	2		registration interrupt horizontal registration signal	H: blocked
	3		REQ	-
	4		HFS communication RXD	-
	5		HFS communication TXD (output)	-
	6		not used	
	7		ACK (output)	

## &lt;SORTER (8/8)&gt;

Address	bit	Notation	Description	Remarks
P021	0	M2P	horizontal registration motor current set	-
(output)	1	M2P	horizontal registration motor current set	-
	2	M2P	horizontal registration motor phase B output	-
	3	M2P	horizontal registration motor phase A output	-
	4	M1P	punch motor REV	-
	5	M1P	punch motor FWD	-
	6	M1P	punch motor PWM	-
	7	M1P	punch motor encoder (input)	0: blocked
P022	0, 1		not used	
(input)	2		dust sensor	1: full
	3		registration sensor 5 horizontal registration	-
	4		registration sensor 4 B5R	-
	5		registration sensor 3 A4R	-
	6		registration sensor 2 B4	-
	7		registration sensor 1 A4	-
P031			dust sensor signal	1: full (analog port)
P032			registration sensor 5 horizontal registration	(analog port)
P033			registration sensor 4 B5R	(analog port)
P034			registration sensor 3 A4R	(analog port)
P035			registration sensor 2 B4	(analog port)
P036			registration sensor 1 A4	(analog port)
P037			horizontal registration sensor light intensity adjustment	level UP: intensity increased (analog port)
P038			registration sensor light intensity adjustment	level UP: intensity increased (analog port)

## COPIER&gt;I/O&gt;SORTER

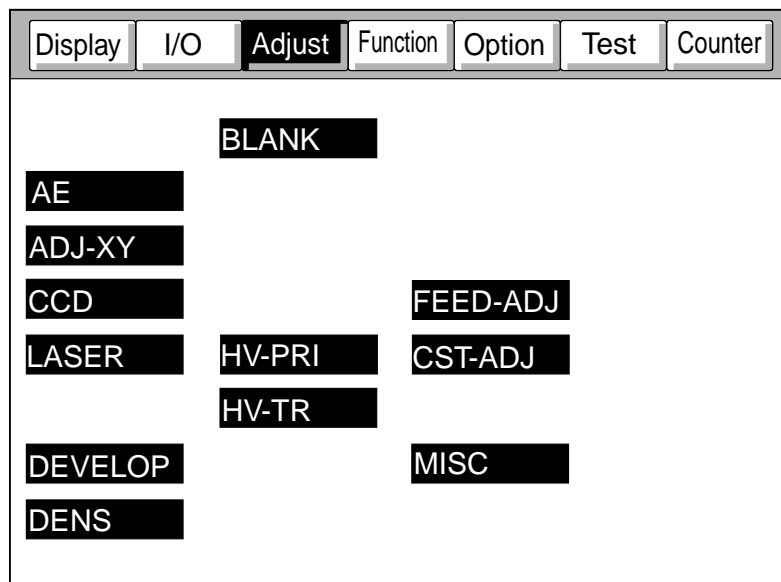
delivery motor current switch 1 (P011-3)	delivery motor current switch 2 (P005-5)	Current (A)
1	1	0.1
0	1	0.3
0	0	0.5

T05-305-01

## 4 ADJUST Adjustment Mode

### 4.1 COPIER

The following screen will appear in response to COPIER>ADJUST:



F05-401-01

**<AE>**

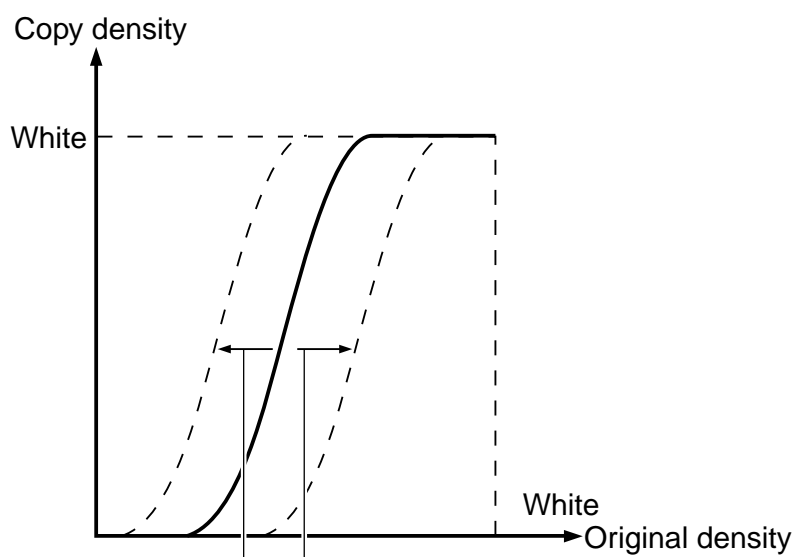
Use it to execute AE adjustment.

If you have cleared the RAM on the reader controller PCB, enter the settings indicated on the service label.

**AE-TBL****Range of adjustment**

Use it to adjust the density of text for image density adjustment.

**1 to 9; default: 5**



A higher setting generates darker text.

A lower setting generates lighter text.

F05-401-02

<ADJ-XY>

Use it to adjust the image read start position.

If you have cleared the RAM on the reader controller PCB and replaced the PCB, use it to enter the settings indicated on the service label.

<p><b>ADJ-X</b></p> <p><b>Range of adjustment</b></p> <p><b>Caution</b></p>	<p>Use it to adjust the scanner image leading edge (x direction).</p> <p><b>250 to 290 ('1' being 0.1mm)</b></p> <p>Be sure to execute it before adjusting the margin.</p> <p>Do not use this mode to create a margin.</p> <div> </div>
<p><b>ADJ-Y</b></p> <p><b>Range of adjustment</b></p>	<p>Use it to adjust the CCD read start position (X direction).</p> <p><b>100 to 400 ('1' being 0.1 mm)</b></p> <div> </div>

<p>ADJ-S</p> <p><b>Range of adjustment</b></p> <p>Caution</p>	<p>Use it to adjust the scanner home position.</p> <p><b>16 to 128</b></p> <p>Do not use this mode; it is for factory use only.</p>
<p>ADJ-Y-DF</p> <p><b>Range of adjustment</b></p>	<p>Use it to adjust the read start position in main scanning direction when the ADF is in use (ADF horizontal registration adjustment).</p> <p><b>100 to 400 ('1' being 0.1 mm)</b></p> <div> </div> <p>F05-401-06</p>
<p>STRD-POS</p> <p><b>Range of adjustment</b></p>	<p>Use it to adjust the CCD read position for stream reading.</p> <p><b>0 to 60 ('1' being 0.1 mm)</b></p>

**<CCD>**

Use it to make CCD/shading-related adjustments.

If faulty images are generated after the execution of COPIER>FUNCTION>CCD>CCD-ADJ, enter the settings indicated on the service label.

SH-TRGT	Use it to enter the white level target value for shading correction.
SH-PATIO	Use it to enter the data on the white level ratio (the standard white plate and the standard white paper) for shading correction.
EGGN-ST	Use it to enter the adjustment value for the edge gain correction start position of the CCD.
EGGN-END	Use it to enter the adjustment value for the end gain correction end position of the CCD.

**<LASER>**

Use it to adjust the laser output.

If you have cleared the RAM on the DC controller PCB and replaced the PCB, enter the settings indicated on the service label.

PVE-OFST	Use it to adjust the point of laser exposure.
<b>Range of adjustment</b>	<b>-600 to +600 (a change of '23' causes a shift of about 1 mm; a higher setting shifts the image toward the rear in main scanning direction)</b>
LA-OFF	Use it to adjust the laser trailing edge OFF timing when non-default paper is used.
<b>Range of adjustment</b>	<b>0 to 600 (a higher setting increases the time interval up to de-activation)</b>
POWER	Use it to adjust the laser paper for non-potential control mode.
<b>Range of adjustment</b>	<b>0 to 255</b>



## &lt;DEVELOP&gt;

Use it to adjust the developing bias output.

<p>DE-DC</p> <p><b>Range of adjustment</b></p> <p>Caution</p>	<p>Use it to enter the adjustment value for the DC component of the developing bias within the image area.</p> <p><b>0 to 255 (a higher setting generates lighter images)</b></p> <p>If you have replaced the DC controller PCB, be sure to enter the settings indicated on the service label.</p>
<p>DE-OFST</p> <p><b>Range of adjustment</b></p> <p>Caution</p>	<p>Use it to enter the offset value for the DC component of the developing bias.</p> <p><b>0 to 255 (a higher setting generates lighter images)</b></p> <ul style="list-style-type: none"> <li>• be sure to keep the setting between +30 and -30.</li> <li>• If you have replaced the composite power supply PCB, be sure to enter the settings indicated on the label attached to the new PCB (case).</li> </ul>

<DENS>

Use it to fine-adjust the copy density auto correction mechanism.

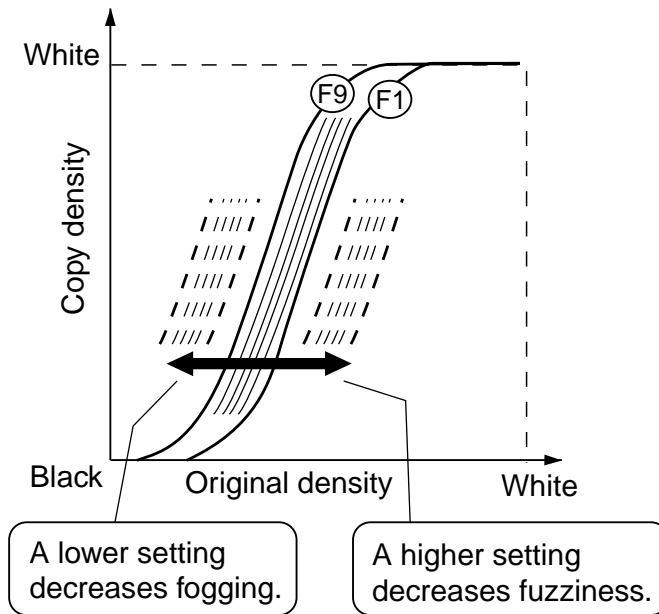
If you have cleared the RAM on the DC controller PCB and replaced the PCB, be sure to enter the settings indicated on the service label.

DENS-ADJ

Use it to correct the density of images (copier/printer).  
Use it to correct the F-value table if the image is foggy or the high-density area is fuzzy.

**Range of adjustment**

**1 to 9; default: 5**



F05-401-07

<BLANK>

Use it to adjust the non-image width.

If you have cleared the RAM on the DC controller PCB and replaced the PCB, be sure to enter the settings indicated on the service label.

BLANK-T

Use it to enter the leading edge non-image width.

**Range of adjustment**

**-100 to +100**

BLANK-B

Use it to enter the trailing edge non-image width.

**Range of adjustment**

**-100 to +100**

## &lt;HV-PRI&gt;

Use it to adjust the output of the primary charging assembly.

If you have cleared the RAM on the DC controller PCB and replaced the PCB, be sure to enter the setting indicated on the service label.

<p>P-DC</p> <p><b>Range of adjustment</b></p> <p>Caution</p>	<p>Use it to enter the adjustment value for the primary charging DC component of the image area.</p> <p><b>0 to 255</b></p>
<p>P-AC</p> <p><b>Range of adjustment</b></p>	<p>Use it to enter the adjustment value for the primary charging AC component of the image area.</p> <p><b>0 to 255</b></p>
<p>AGS-GAIN</p> <p>Caution</p> <p><b>Range of adjustment</b></p>	<p>Use it to adjust the gain adjustment value for the photosensitive drum resistance detection control (APVC) mechanism.</p> <p>If you have replaced the composite power supply PCB, be sure to enter the settings indicated on the label attached to the new PCB (case).</p> <p><b>0 to 255</b></p>
<p>AGS-OFST</p> <p>Caution</p> <p><b>Range of adjustment</b></p>	<p>Use it to enter the offset adjustment value for the photosensitive drum resistance detection control (APVC) mechanism.</p> <p>If you have replaced the composite power supply PCB, be sure to enter the settings indicated on the label attached to the new PCB (case).</p> <p><b>0 to 255</b></p>

<p>OFST1-DC</p> <p>Caution</p> <p><b>Range of adjustment</b></p>	<p>Use it to enter the adjustment value for the primary charging DC offset 1.</p> <p>If you have replaced the composite power supply PCB, be sure to enter the settings indicated on the label attached to the new PCB (case).</p> <p><b>0 to 255 (a lower setting generates lighter images)</b></p>
<p>OFST1-AC</p> <p>Caution</p> <p><b>Range of adjustment</b></p>	<p>Use it to enter the adjustment value for the primary charging AC offset 1.</p> <p>If you have replaced the composite power supply PCB, be sure to enter the settings indicated on the label attached to the new PCB (case).</p> <p><b>0 to 255</b></p>
<p>P-AC2</p> <p><b>Range of adjustment</b></p>	<p>Use it to enter the adjustment value for the primary charging AC component 2 for the image area.</p> <p><b>0 to 255</b></p>
<p>P-AC3</p> <p><b>Range of adjustment</b></p>	<p>Use it to enter the adjustment value for the primary charging AC component 3 for the image area.</p> <p><b>0 to 255</b></p>

## &lt;HV-TR&gt;

User it to adjust the output for transfer charging/pre-transfer.

If you have cleared the RAM on the DC controller PCB and replaced the PCB, be sure to enter the settings indicated on the service label.

<b>TR-N1</b>  <b>Range of adjustment</b>	Use it to enter the output adjustment value for the transfer charging current (for plain paper, printing on one side or the 1st side of a double-sided print). <b>0 to 10</b>
<b>TR-N2</b>  <b>Range of adjustment</b>	Use it to enter the output adjustment value for the transfer bias (for plain paper, the 2nd side of a double-sided print). <b>0 to 10</b>
<b>TR-OFST</b>  <b>Range of adjustment</b>	Use it to enter the output adjustment offset value for transfer charging current. <b>0 to 255</b>
<b>TR-SPP</b>  <b>Range of adjustment</b>	Use it to enter the output adjustment bias value of thick paper transfer (for thick paper, printing on one side or printing on the 1st/2nd side of a double-sided print). <ul style="list-style-type: none"> <li>• A higher setting causes stronger effects.</li> </ul> <b>0 to 10</b>

**<FEED-ADJ>**

Use it to make feeder-related adjustments.

If you have cleared the RAM on the DC controller PCB and replaced the PCB, be sure to enter the settings indicated on the service label.

<b>REGIST</b>  <b>Range of adjustment</b>	Use it to adjust the timing at which the registration roller clutch goes ON. <ul style="list-style-type: none"> <li>• A higher setting delays the timing at which the registration roller clutch goes ON, thereby decreasing the leading edge margin.</li> </ul> <b>-600 to +600 (in mm)</b>
<b>ADJ-REFE</b>  <b>Range of adjustment</b>	Use it to adjust the horizontal registration for re-pickup. <ul style="list-style-type: none"> <li>• If the image is displaced to the front, increase the setting.</li> </ul> <b>-50 to +50 (in mm)</b>
<b>ARCH</b>  <b>Range of adjustment</b>	Use it to adjust the degree of arching on the registration roller. <ul style="list-style-type: none"> <li>• Use it to fine-adjust the degree of arching paper is caused to make against the registration roller.</li> </ul> <b>-100 to +200 (in 0.1 mm); default: 80</b>

**<CST-ADJ>**

Use it to make cassette/manual feeder-related adjustments.

If you have cleared the RAM on the DC controller PCB and replaced the PCB, be user to enter the settings indicated on the service label. If you have replaced the paper width detecting VR or want to enter settings newly, be sure to execute FUNCTION>CST in service mode.

<b>MF-A4R</b>  <b>Range of adjustment</b>	Use it to enter the paper width basic value for the multifeeder tray (A4R). <b>0 to 1024</b>
<b>MF-A6R</b>  <b>Range of adjustment</b>	Use it to enter the paper width basic value for the multifeeder tray (A6R). <b>0 to 1024</b>

<b>MF-A4</b>  <b>Range of adjustment</b>	Use it to enter the paper width basic value for the multifeeder tray (A4). <b>0 to 1024</b>
--	--

COPIER&gt;ADJUST&gt;FIXING

## &lt;FIXING&gt;

Use it to make fixing-relating adjustments.

If you have cleared the RAM on the DC controller PCB and replaced the PCB, be sure to enter the settings indicated on the service label.

<b>FX-FL-TH</b>  <b>Range of adjustment</b>	Use it to enter the fine-adjusted value for the fixing film speed for thick paper. <ul style="list-style-type: none"> <li>Use it to make fine-adjustments in relation to the target control speed of the fixing film when thick paper is selected.</li> </ul> <b>-3 to +3 (in msec; default: 0)</b>
<b>FX-FL-SP</b>  <b>Range of adjustment</b>	Use it to enter the fine adjustment value for the fixing film when plain paper is selected. <ul style="list-style-type: none"> <li>Use it to fine-adjust the target control speed for the fixing film when plain paper is selected.</li> </ul> <b>-3 to +3 (in msec; default: 0)</b>

## &lt;MISC&gt;

Use it to make other adjustments.

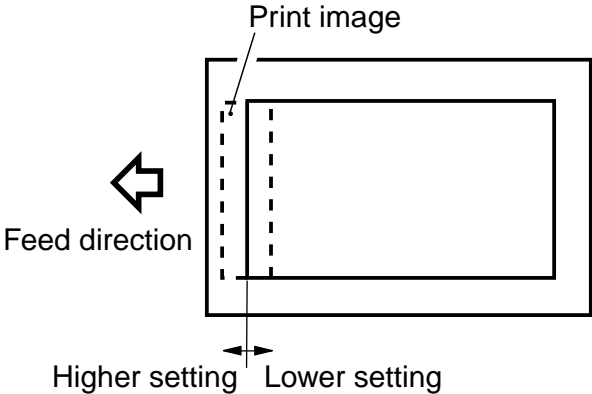
If you have cleared the RAM on the DC controller PCB and replaced the PCB, be sure to enter the settings indicated on the service label.

<b>C1-ADJ-Y</b>  <b>Range of adjustment</b>	Use it to enter the cassette 1 horizontal registration adjustment value. <ul style="list-style-type: none"> <li>• Enter a value in relation to the registered value for the laser write start position for paper picked up from the cassette 1.</li> </ul> <b>-32 to + 32 (in steps; '1' step being 0.16 mm)</b>
<b>C2-ADJ-Y</b>  <b>Range of adjustment</b>	Use it to enter the cassette 2 horizontal registration adjustment value. <ul style="list-style-type: none"> <li>• Enter a value in relation to the registered value for the laser write start position for paper picked up from the cassette 2.</li> </ul> <b>-32 to +32 (in steps; '1' step being 0.16mm)</b>
<b>C3-ADJ-Y</b>  <b>Range of adjustment</b>	Use it to enter the cassette 3 horizontal registration adjustment value. <ul style="list-style-type: none"> <li>• Enter a value in relation to the registered value for the laser write start position for paper picked up from the cassette 3.</li> </ul> <b>-32 to +32 (in steps; '1' step being 0.16mm)</b>
<b>C4-ADJ-Y</b>  <b>Range of adjustment</b>	Use it to enter the cassette 4 horizontal registration adjustment value. <ul style="list-style-type: none"> <li>• Enter a value in relation to the registered value for the laser write start position for paper picked up from the cassette 4.</li> </ul> <b>-32 to +32 (in steps; '1' step being 0.16mm)</b>
<b>MF-ADJ-Y</b>  <b>Range of adjustment</b>	Use it to enter the horizontal registration adjustment value for the multifeeder. <ul style="list-style-type: none"> <li>• Use it to enter a laser write start position value in relation to the registered value for paper picked up from the multifeeder tray.</li> </ul> <b>-32 to +32 (in steps; '1' step being 0.16mm)</b>



<p>DK-ADJ-Y</p> <p><b>Range of adjustment</b></p>	<p>Use it to enter the horizontal registration adjustment value for the paper deck.</p> <ul style="list-style-type: none"> <li>Use it to enter a laser write position value in relation to the registered value for paper picked up from the paper deck.</li> </ul> <p><b>-32 to +32 (in steps; 1 step being 0.16 mm)</b></p>
<p>FRAME-X</p> <p><b>Range of adjustment</b></p>	<p>Use it to enter a zoom fine-adjustment value (sub scanning direction).</p> <ul style="list-style-type: none"> <li>Use it to enter an extra length of the image in sub scanning direction in relation to the registered value.</li> </ul> <p><b>-50 to +50 (-1% to +1%)</b></p>
<p>FRAME-Y</p> <p><b>Range of adjustment</b></p>	<p>Use it to enter the zoom fine-adjustment value (main scanning direction).</p> <ul style="list-style-type: none"> <li>Use it to enter an extra length for the image in main scanning direction in relation to the register value.</li> </ul> <p><b>-50 to +50 (-1% to +1%)</b></p>
<p>IMG-DLY</p> <p><b>Range of adjustment</b></p>	<p>Use it to enter a fine-adjustment value (sub scanning direction) for image delay.</p> <ul style="list-style-type: none"> <li>Use it to make fine adjustments for the length of image delay in sub scanning direction when sending image data from the main controller PCB to the DC controller PCB.</li> </ul> <p><b>-20 to +20 (in 0.1 mm)</b></p>

## 4.2 FEEDER

<p><b>DOCST</b></p> <p><b>Range of adjustment</b></p>	<p>Use it to adjust the original leading edge registration when the ADF is used.</p> <ul style="list-style-type: none"> <li>• A higher setting decreases the leading edge margin.</li> <li>• The data is stored on the ADF controller PCB.</li> </ul> <p><b>-10 to +10 (in 0.5 mm)</b></p> <p>Using the Mode</p> <ol style="list-style-type: none"> <li>1) Make a print of the Test Chart, and check the position of the image.</li> <li>2) Select the item, and change the setting to adjust.</li> <li>3) Press the OK key.</li> <li>4) Make a print of the Test Chart once again, and check to make sure that the image position is as indicated.</li> </ol>  <p style="text-align: center;">F05-402-01</p>
<p><b>LA-SPEED</b></p> <p><b>Range of adjustment</b></p>	<p>Use it to adjust the original feed speed in stream reading mode with the ADF in use.</p> <ul style="list-style-type: none"> <li>• A higher setting increases the speed.</li> <li>• The data is stored on the ADF controller PCB.</li> </ul> <p><b>-30 to +30 (in 0.1%)</b></p>

## 4.3 SORTER

## PNCH-HLE

Use it to adjust the punch hole position (paper feed direction) when the puncher unit is in use.

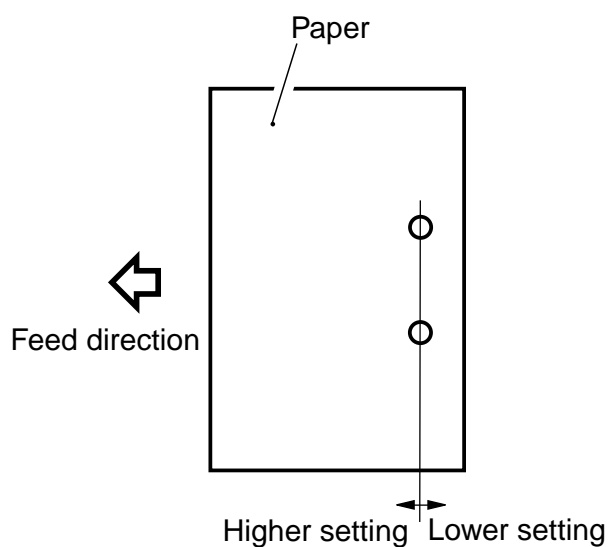
- A higher setting shifts the punch hole toward the leading edge of paper (middle of paper).

**Range of adjustment**

**-3 to +3 (in mm)**

Using the Mode

- 1) Make a print of the Test Chart, and check the position of the hole.
- 2) Select the item, and change the setting to adjust.
- 3) Press the OK key.
- 4) Make a print of the Test Chart once again, and check to make sure that the hole position is as indicated.

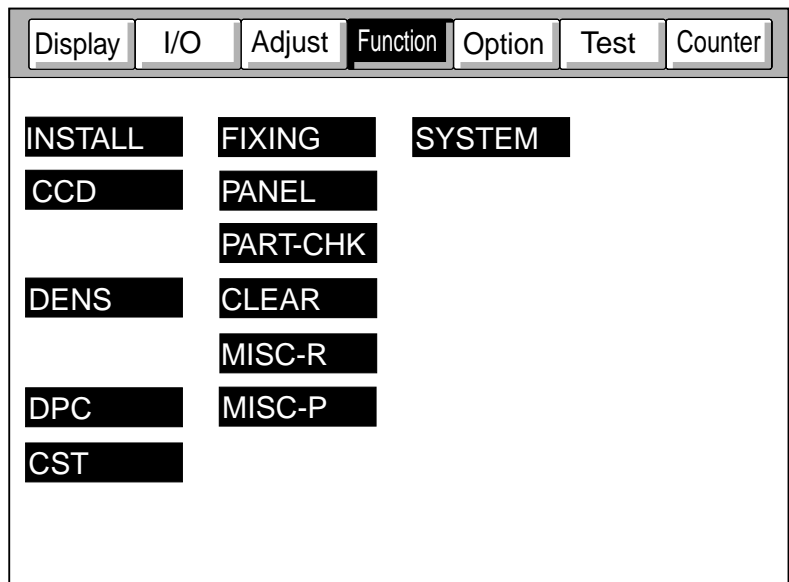


F05-403-01

## 5 FUNCTION Operation/Inspection Mode

### 5.1 COPIER

The following screen will appear in response to COPIER>FUNCTION; lists of items follow:



F05-501-01

**<INSTALL>**

Use it as part of installation work.

<p><b>TONER-S</b></p> <p>Caution</p>	<p>Use it to stir the toner inside the developing assembly.</p> <ul style="list-style-type: none"> <li>• Check to make sure that the developing assembly is securely mounted before pressing the OK key.</li> <li>• Do not execute any operation. (The Stop key may be pressed.)</li> </ul> <p>Using the Mode</p> <ol style="list-style-type: none"> <li>1) Select &lt;TONER-S&gt; to highlight; then, press the OK key.</li> <li>2) The machine stirs toner (about 4 min), during which time a count-down is indicated to the right of &lt;TONER-S&gt; from 240 to 0.</li> <li>3) The machine automatically stops after stirring toner.</li> </ol>
<p><b>STRD-POS</b></p> <p>Caution</p>	<p>Use it to execute automatic adjustment of the CCD read position in stream mode.</p> <ul style="list-style-type: none"> <li>• Execute this mode when installing the ADF or if you have removed and then installed the ADF once again.</li> </ul> <p>Using the Mode</p> <ol style="list-style-type: none"> <li>1) Select &lt;STRD-POS&gt; to highlight; then, press the OK key.</li> <li>• The machine executes automatic adjustment.</li> <li>2) The machine stops operation automatically after adjustment.</li> <li>3) The settings under COPIER&gt;ADJUST&gt;ADJ-XY&gt;STRD-POS is updated. Record the new settings to the service label.</li> </ol>
<p><b>CARD</b></p>	<p>Use it when installing the card reader.</p> <p>Using the Mode</p> <p>Enter the number of the card to use. 1 to 2701 (default: 1; as many as 300 cards may be used starting with the entered number)</p> <p>Use it to initialize card control information:</p> <ul style="list-style-type: none"> <li>• initializing the card names (group ID; starting with the entered number).</li> <li>• initializing ID numbers for cards.</li> </ul>

<CCD>

Use it to execute CCD/shading-related automatic adjustment.

CCD-ADJ

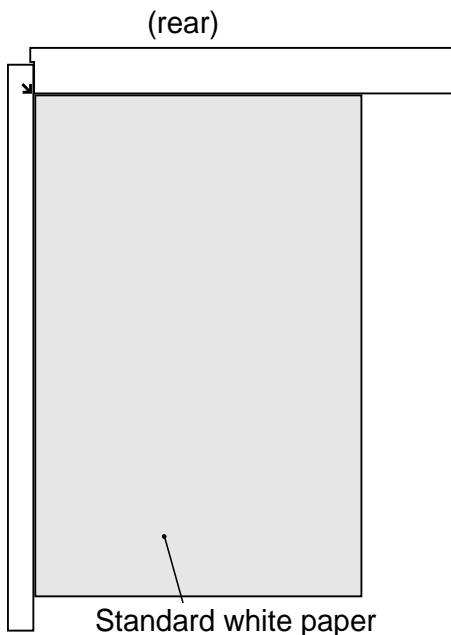
Caution

Use it to execute automatic adjustment of the CCD.

- Execute the mode if you have replaced any of the following: CCD unit, scanning lamp, inverter PCB, copyboard glass (standard white plate).
- Use the whitest of all papers used by the user (excluding color print paper).

Using the Mode

- 1) Place ten or more sheets of standard white paper on the copyboard glass.
- 2) Select <CCD-ADJ> to highlight, and press the OK key.
- 3) The machine executes automatic adjustment (about 15 sec), during which time <SERVICE> appears in the upper right of the screen.
- 4) During the operation, the scanning lamp will go ON; at the end of the automatic adjustment, the screen will indicate <OK!>.
- 5) All items under COPIER>ADJUST>CCD are updated. Record the new settings on the service label.



F05-501-02

## SHDG-POS

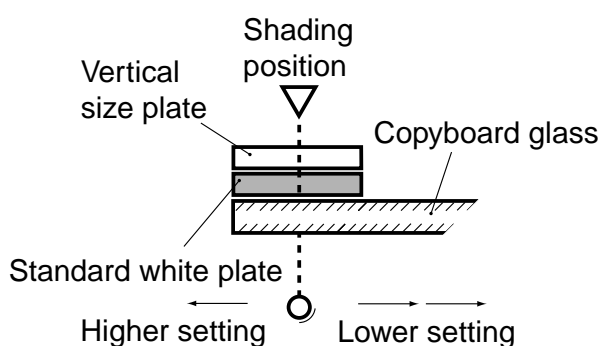
Use it to enter data for changing the position of measurement on the standard white plate used for shading correction.

**Range of adjustment**

**240 to 320 (a multiple of 8 causes a shift of about 0.17 mm)**

**Caution**

- Execute this mode if a white line still appears after executing COPIER>FUNCTION>CCD>SH-PS-ST or after cleaning the scanner mechanisms.
- After entering a setting and executing COPIER>FUNCTION>CCD>SH-PS-ST, check to make sure that 'OK' is indicated. Thereafter, make a test print to be user that no white line is found in its halftone area.



F05-501-03

## SH-PS-ST

Use it to execute optimum position auto adjustment for the standard white plate for shading correction.

## Caution

- You must execute COPIER>FUNCTION>CCD>CCD-ADJ before executing this move.

- Execute this mode if you have replaced the copyboard glass (standard white plate) or a white line is noted in halftone areas.

Using the Mode

- 1) Clean the back of the copyboard glass.
- 2) Open the ADF (copyboard cover).
- 3) Select <SH-PS-ST> to highlight, and press the OK key.
- 4) The machine executes automatic adjustment (about 10 sec).
- 5) When done, the machine stops automatically indicating the result (OK/NG).
  - If 'NG' is indicated, perform the following, and execute the mode once again:
    - a. Is the ADF (copyboard cover) open?
    - b. Is the copyboard glass mounted correctly?
    - c. Is the standard white plate (attached to the copyboard glass) normal?
    - d. Does the scanning lamp go ON?
- 6) The items under COPIER>ADJUST>ADJ-XY and ADJ-S are updated. Record the new settings on the service label.



## EGGN-POS

Use it to execute automatic adjustment of the edge gain correction for the CCD. (The edge gain correction of the CCD is effective only when the ADF is in use.)

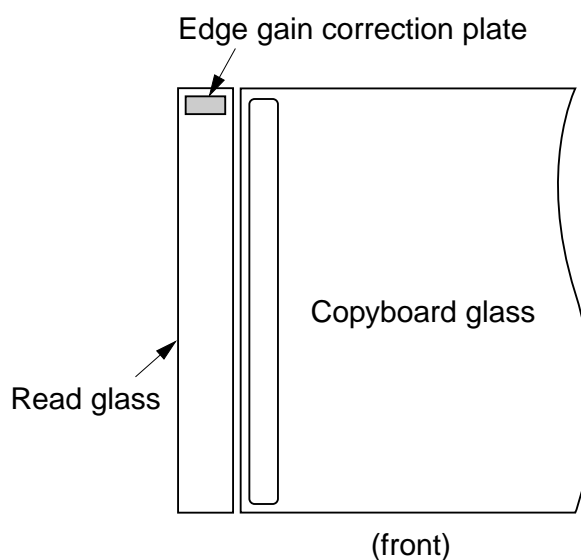
## Caution

- If you have replaced the CCD unit, be sure to execute the following first: COPIER>FUNCTION>CCD>CCD-ADJ.

- Execute this mode if you have replaced any of the following: CCD unit, No. 1 mirror base, No. 2 mirror base.

Using the Mode

- 1) Open the ADF (copyboard cover).
  - 2) Select <EGGN-POS> to highlight, and press the OK key.
  - 3) The machine executes automatic adjustment (about 1 sec).
  - 4) When done, the machine stops automatically, and indicates the result (OK/NG).
- If 'NG' is indicated, perform the following, and execute this mode once again:
    - a. Is the ADF (copyboard cover) open?
    - b. Is the read glass mounted correctly?
    - c. Is the edge gain correction plate (attached to the read glass) normal?
    - d. Does the scanning lamp go ON?
- 5) The items under COPIER>ADJUST>CCD>EGGN-ST and EGGN-END are updated. Record the new settings on the service label.



F05-501-04

<DENS>

Use it to execute automatic density adjustment.

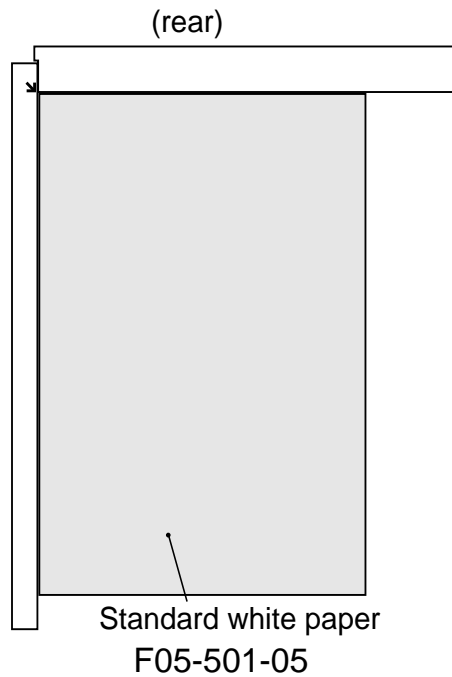
Execute this mode after shading correction, and be sure to execute all of the following in sequence: WHITE-ME, PD-DENS, PD-ME.

WHITE-ME

Use it to execute automatic density correction of the white level.

Using the Mode

- 1) Place standard white paper (10 sheets or more; of papers commonly used by the user) on the copyboard glass.
- 2) Select <WHITE-ME> to highlight, and press the OK key.
- 3) The scanning lamp makes a single scan, and the machine ends operation.



PD-DENS

Caution

Use it to generate a print pattern for density auto adjustment for text mode.

- The machine uses the PD method for binary processing in text mode; be sure to use this mode as automatic density adjustment.

Using the Mode

- 1) Select <PD-DENS> to highlight, and press the OK key.
- 2) See that the machine uses cassette 2 as the source of paper and generate a 17-gradation print pattern. The print pattern will be used when executing <PD-ME>.

## PD-ME

Use it to execute automatic density correction for text mode (to read PD-DENS output).

Using the Mode

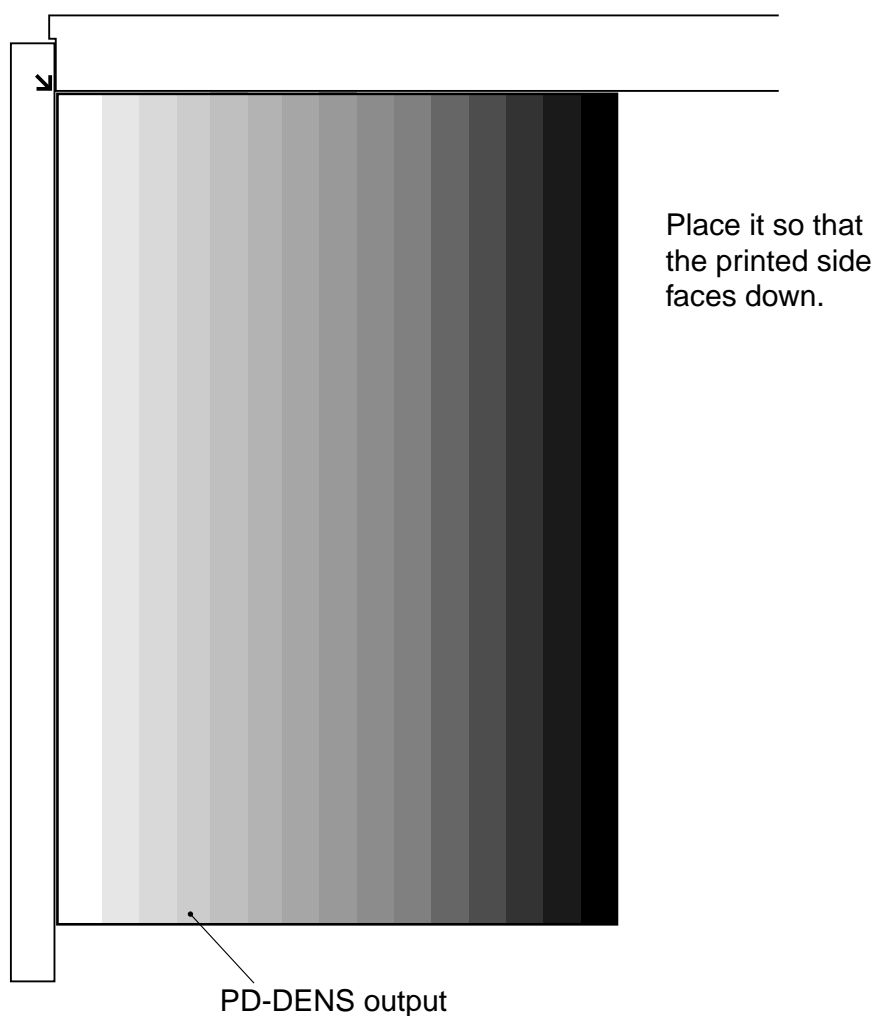
1) While keeping the following in mind, place the PD-DENS output on the copyboard glass as indicated:

- The printed side must face down.
- The whiter side (lighter; of the 17 gradations) must face the vertical size plate.
- The output must be placed in relation to the index in the left rear of the copyboard glass.

2) Select <PD-ME> to highlight, and press the OK key.

3) The scanning lamp goes ON and OFF 13 times, making as many scans automatically.

- If 'OK' is indicated, end the work.
- If 'NG' is indicated, discussed under "Standards and Adjustments" in Chapter 3.



F05-501-06

## &lt;DPC&gt;

Use it to execute potential-related operations.

## D-GAMMA

Use it to execute photosensitive drum resistance measurement control (APVC).

## Caution

Use this mode only for the following; do not rely on this mode unless necessary:

- When making adjustments after replacing the drum unit.
- When isolating the cause when copy density automatic adjustment (PD-ME) ends in NG.
- When obtaining an idea of the life of the drum.

Using the Mode

- 1) Select the item, and press the OK key.
- 2) The machine generates a blank copy and ends automatically.
- 3) See that the machine indicates the result of measurement under DISPLAY>HV-ST>PRIMARY.

## &lt;CST&gt;

Use it to execute size automatic adjustment for the multifeeder.

## MF-A4R

## MF-A6R

## MF-A4

Use it to adjust the paper width basic value for the multifeeder.

A4R: width: 210 mm, A6R width: 105 mm, A4 width: 297 mm

## Caution

To make fine-adjustments after entering the basic value, use ADJUST>CST-ADJ>MF-A4R, MF-A6R, MF-A4.

Using the Mode

- 1) Place A4R paper in the multifeeder, and adjust the side guide to A4R.
- 2) Select <MF-A4R> to highlight, and press the OK key.
  - The machine executes automatic adjustment and stores the value.
- 3) Likewise, perform steps 1. and 2. for A6R and A4.

## &lt;FIXING&gt;

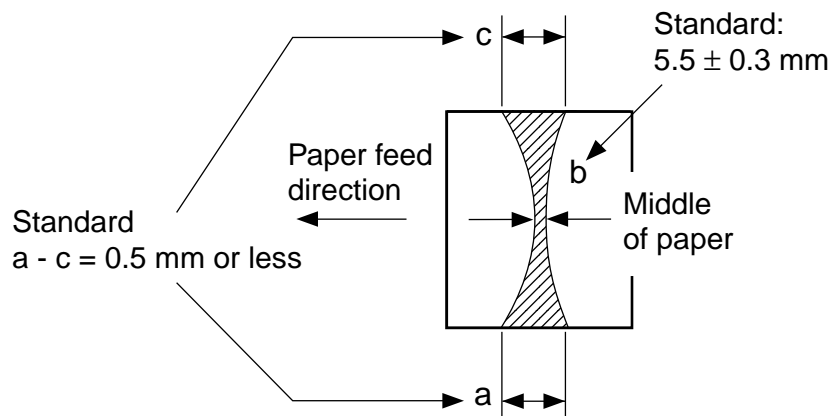
Use it to execute fixing assembly-related automatic adjustments.

## NIP-CHK

Use it to obtain output for automatic measurement of the fixing nip width.

Using the Mode

- 1) Make a solid black print in A4/LTR.
- 2) Make about 20 A4/LTR prints of the Test Sheet.
- 3) Place the A4/LTR solid black output obtained in step 1. in the manual feed tray with the printed side facing down.
- 4) Select <NIP-CHK>, and press the OK key.
  - After pickup, the paper will stop between the fixing rollers and then delivered in about 20 sec.
- 5) Measure the width indicated in the diagram.



F05-501-07

Caution

a and b are points 10 mm from both ends of the paper.

**<PANEL>**

Use it to check the control panel.

LCD-CHK	<p>Use it to check the touch panel for missing dots.</p> <p>Using the Mode</p> <ol style="list-style-type: none"> <li>1) Select &lt;LCD-CHK&gt; to highlight, and press the OK key. The entire face of the touch panel will go ON and remain white for several seconds and then blue for several seconds.</li> <li>2) Press the Stop key to end the operation.</li> </ol>
LED-CHK	<p>Use it to check the LEDs of the control panel for activation.</p> <p>Using the Mode</p> <ol style="list-style-type: none"> <li>1) Select &lt;LED-CHK&gt; to highlight, and press the OK key so that the LEDs will go ON in sequence.</li> <li>2) Select &lt;LED-OFF&gt; to end the operation.</li> </ol>
LED-OFF	<p>Use it to end a check on the LEDs of the control panel.</p> <p>Using the Mode</p> <ol style="list-style-type: none"> <li>1) Select &lt;LED-OFF&gt; to end the operation.</li> </ol>
KEY-CHK	<p>Use it to check the key inputs.</p> <p>Using the Mode</p> <ol style="list-style-type: none"> <li>1) Select &lt;KEY-CHK&gt; so that the numbers/names of the input keys will appear.</li> <li>2) Press a key to check. If normal, its corresponding notation will appear on the touch panel. (T05-501-01)</li> <li>3) Select &lt;KEY-CHK&gt; once again to end the key input check.</li> </ol>
TOUCHCHK	<p>Use it to adjust the coordinates on the touch panel.</p> <p>Caution</p> <ul style="list-style-type: none"> <li>• Use it to match points (presses) on the touch panel and the LCD coordinates.</li> <li>• Execute this mode if you have replaced the LCD.</li> </ul> <p>Using the Mode</p> <ol style="list-style-type: none"> <li>1) Select &lt;TOUCHCHK&gt; to highlight, and press the OK key.</li> <li>2) Press the nine +’s that paper on the touch panel in sequence.</li> <li>3) The machine ends operation when all nine +’s been pressed.</li> </ol>

## Input Keys/Indications

Key name	Indication on screen	Key name	Indication on screen
Counter Check	BILL	ID	ID
Copy	COPY	Additional Functions	USER
Fax	FAX	Start	START
Mail Box	PB	Stop	STOP
Scan	OTHER	Reset	RESET
O to 9, #, *	O to 9, #, *	Interrupt	INTERRUPT
Clear (C)	CLEAR	Guide	?

T05-501-01

COPIER&gt;FUNCTION&gt;PART-CHK

## &lt;PART-CHK&gt;

Use it to check the operation of a specific load.

CL	<p>Use it to select a clutch whose operation you want to check.</p> <p>Using the Mode</p> <ol style="list-style-type: none"> <li>1) Select the item.</li> <li>2) Enter the code (T05-501-02) of the clutch using the keypad.</li> <li>3) Press the OK key.</li> </ol>
CL-ON	<p>Use it to check the operation of the clutch.</p> <p>Using the Mode</p> <ol style="list-style-type: none"> <li>1) Select the item, and press the OK key. <ul style="list-style-type: none"> <li>• ON → OFF for 10 sec → ON → OFF for 10 sec → ON → OFF</li> </ul> </li> </ol>
MTR	<p>Use it to select a motor whose operation you want to check.</p> <p>Using the Mode</p> <ol style="list-style-type: none"> <li>1) Select the item.</li> <li>2) Enter the code (T05-501-03) of the motor using the keypad.</li> <li>3) Press the OK key.</li> </ol>

MTR-ON	<p>Use it to check the motor.</p> <p>Using the Mode</p> <ol style="list-style-type: none"> <li>1) Select the item, and press the OK key.</li> </ol> <ul style="list-style-type: none"> <li>• ON for 20 sec → OFF</li> <li>• For the duplex horizontal registration motor, ON for 10 sec → OFF</li> </ul>
SL	<p>Use it to select a solenoid whose operation you want to check.</p> <p>Using the Mode</p> <ol style="list-style-type: none"> <li>1) Select the item.</li> <li>2) Enter the code (T05-501-04) of the solenoid using the keypad.</li> <li>3) Press the OK key.</li> </ol>
SL-ON	<p>Use this mode to check the operation of a solenoid.</p> <p>Using the Mode</p> <ol style="list-style-type: none"> <li>1) Select the item and press the OK key.</li> </ol> <ul style="list-style-type: none"> <li>• ON → OFF for 5 sec → ON → OFF for 5 sec → ON → OFF</li> </ul>

### Codes and Clutches

Code	Name
1	Vertical path clutch (CL1)
2	Multifeeder pickup clutch (CL2)
3	Developing clutch (CL3)
4	Vertical path roller clutch (CL1C)
5	Deck feeding clutch (CL1D)
6	Deck pickup clutch (CL2D)

T05-501-02



## Codes and Motors

Code	Name	Code	Name
1	Main motor (M1)	8	Horizontal registration sensor shift motor (M3)
2	Fixing motor (M4)	9	Registration motor (M9)
3	Pickup motor (M2)	10	Laser scanner motor (M10)
4	Duplex motor (M6)	11	Pedestal main motor (M1C)
5	Delivery motor (M5)	12	Cassette pickup motor (M2C)
6	2-way delivery outlet motor (M8B)/ Relay delivery motor (M7Z)	13	Deck main motor (M1D)
7	2-way delivery inlet motor (M7B)	14	Deck lifter motor (M2D)

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## Codes and Solenoids

Code	Name	Code	Name
1	Pickup DOWN solenoid (SL1)	5	---
2	2-way delivery solenoid (SL3B)/ Relay delivery solenoid (SL3Z)	6	Pickup roller DOWN solenoid (SL1C)
3	Charging roller solenoid (SL6)	7	Deck pickup roller releasing solenoid (SL1D)
4	Multifeeder holding plate releasing solenoid (SL5)	8	Deck open solenoid (SL2D)

T05-501-04

**<CLEAR>**

Use it to clear the RAM, jam history, or error code history.

The effect does not take place unless the main power switch has been turned off and then on.

ERR	<p>Use this mode to clear an error code: E000, E001, E002, E003, E004, E032, E717.</p> <p>Using the Mode</p> <ol style="list-style-type: none"> <li>1) Select &lt;ERR&gt; to highlight, and press the OK key.</li> <li>2) Turn off and then on the main power switch.</li> </ol>
DC-CON	<p>Use it to clear the RAM on the DC controller PCB.</p> <p>Using the Mode</p> <ol style="list-style-type: none"> <li>1) Select &lt;DC-CON&gt; to highlight, and press the OK key.</li> <li>2) Turn off and then on the main power switch.</li> </ol>
R-CON	<p>Use it to clear the RAM on the reader controller PCB.</p> <p>Using the Mode</p> <ol style="list-style-type: none"> <li>1) Select &lt;R-CON&gt; to highlight, and press the OK key.</li> <li>2) Turn off and then on the main power switch.</li> </ol>
SERVICE	<p>Use it to clear the backup data for the service mode (COPIER&gt;OPTION).</p> <p>Using the Mode</p> <ol style="list-style-type: none"> <li>1) Select &lt;SERVICE&gt; to highlight, and press the OK key.</li> <li>2) Turn off and then on the main power switch.</li> </ol>
JAM-HIST	<p>Use it to clear the jam history.</p> <p>Using the Mode</p> <ol style="list-style-type: none"> <li>1) Select &lt;JAM-HSIT&gt; to highlight, and press the OK key.</li> <li>2) Turn off and then on the main power switch.</li> </ol>
ERR-HIST	<p>Use it to clear the error code history.</p> <p>Using the Mode</p> <ol style="list-style-type: none"> <li>1) Select &lt;ERR-HITS&gt; to highlight, and press the OK key.</li> <li>2) Turn off and then on the main power switch.</li> </ol>
E345-CLR	---

E355-CLR	---
PWD-CLR	<p>Use it to clear the password of the system administrator in user mode.</p> <p>Using the Mode</p> <ol style="list-style-type: none"> <li>1) Select &lt;PWD-CLR&gt; to highlight, and press the OK key.</li> <li>2) Turn off and then on the main power switch.</li> </ol>
ADRS-BK	<p>Use it to clear the address book data.</p> <p>Using the Mode</p> <ol style="list-style-type: none"> <li>1) Select &lt;ADRS-BK&gt; to highlight, and press the OK key.</li> <li>2) Turn off and then on the main power switch.</li> </ol>
CNT-MCON	<p>Use it to clear the counters for servicing on the main controller PCB.</p> <p>Using the Mode</p> <ol style="list-style-type: none"> <li>1) Select &lt;CNT-MCON&gt; to highlight, and press the OK key.</li> <li>2) Turn off and then on the main power switch.</li> </ol>
CNT-DCON	<p>Use it to clear the counter for servicing on the DC controller PCB.</p> <p>Using the Mode</p> <ol style="list-style-type: none"> <li>1) Select &lt;CNT-DCON&gt; to highlight, and press the OK key.</li> <li>2) Turn off and then on the main power switch.</li> </ol>
MMI	<p>Use it to clear the backup data for the user mode settings (specifications, ID mode, group ID, mode memory, etc.).</p> <p>Using the Mode</p> <ol style="list-style-type: none"> <li>1) Select &lt;MMI&gt; to highlight, and press the OK key</li> <li>2) Turn off and then on the main power switch.</li> </ol>
CARD	<p>Use it to clear the card (group) ID-related data.</p> <p>Using the Mode</p> <ol style="list-style-type: none"> <li>1) Select &lt;CARD&gt; to highlight, and press the OK key.</li> <li>2) Turn off and then on the main power switch.</li> </ol>
ALARM	<p>Use it to clear the alarm log.</p> <p>Using the Mode</p> <ol style="list-style-type: none"> <li>1) Select &lt;ALARM&gt; to highlight, and press the OK key.</li> <li>2) Turn off and then on the main power switch.</li> </ol>

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<MISC-R>

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Checking reader unit-related operations.

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SCANLAMP

Use it to check the scanning lamp for activation.

Using the Mode

- 1) Select <SCANLAMP> to highlight, and press the OK key.
- 2) The scanning lamp goes ON.
- 3) Press the Stop key to turn off the lamp.

**<MISC-P>**

Use it to check the operation of the printer unit.

**P-PRINT**

Use it to print out the contents of service mode (ADJUST, OPTION, COUNTER).

**Caution**

- It may take several dozens of seconds to print out the list.

Using the Mode

- 1) Select <P-PRINT> to highlight, and press the OK key.
- 2) The machine will deliver a total of three lists face down.

Source of Paper

- If a specific paper is selected on the basic screen, the corresponding source will be used.
- If auto paper selection is used, the topmost cassette will be used as the source of paper.

**KEY-HIST**

Use it to print out the history of key inputs made from the control panel.

Using the Mode

- 1) Select <KEY-HITS> to highlight, and press the OK key.

- The machine generates a key input history.

AA:AA BBBB CCCC xxxxxxxx

AA            time at which the key is pressed

BB            if number:            soft key number

HARD:            hard key

SOFT:            soft key

ONET:            one touch key

CC key type RESET:            reset key

START:            start key

GUIDE:            guide key

USER MODE:            additional function key

FNC\_COPY:            'copy' key within extended keys

FNC\_FAX:            'fax' key within extended keys

POWER\_MIMI:            control panel power key

xxxxxxx            function value

HIST-PRT	<p>Use it to print out the jam history and the error history stored for service mode.</p> <p>Using the Mode</p> <ol style="list-style-type: none"> <li>1) Select the item, and press the OK key.</li> <li>2) The machine prints out the jam history and the error history.</li> </ol>
USER-PRT	<p>Use it to print out the user mode settings from service mode.</p> <p>Using the Mode</p> <ol style="list-style-type: none"> <li>1) Select the item, and press the OK key.</li> <li>2) The machine prints out a list of user mode settings.</li> </ol>
C1-ADJ-Y	<p>Use it to execute cassette 1 horizontal registration automatic adjustment.</p> <p>Using the Mode</p> <ol style="list-style-type: none"> <li>1) Select the item, and press the OK key.</li> <li>2) The machine prints a halftone PG image on paper from cassette 1. (At the same time, the horizontal registration sensor measures the displacement, and stores the result as back-up data.)</li> </ol>
C2-ADJ-Y	<p>Use it to execute cassette 2 horizontal registration automatic adjustment.</p> <p>Using the Mode</p> <ol style="list-style-type: none"> <li>1) Select the item, and press the OK key.</li> <li>2) The machine prints a halftone PG image on paper from cassette 2. (At the same time, the horizontal registration sensor measures the displacement, and stores the result as back-up data.)</li> </ol>
C3-ADJ-Y	<p>Use it to execute cassette 3 horizontal registration automatic adjustment.</p> <p>Using the Mode</p> <ol style="list-style-type: none"> <li>1) Select the item, and press the OK key.</li> <li>2) The machine prints a halftone PG image on paper from cassette 3. (At the same time, the horizontal registration sensor measures the displacement, and stores the result as back-up data.)</li> </ol>
C4-ADJ-Y	<p>Use it to execute cassette 4 horizontal registration automatic adjustment.</p> <p>Using the Mode</p> <ol style="list-style-type: none"> <li>1) Select the item, and press the OK key.</li> <li>2) The machine prints a halftone PG image on paper from cassette 4. (At the same time, the horizontal registration sensor measures the displacement, and stores the result as back-up data.)</li> </ol>

MF-ADJ-Y	<p>Use it to execute multifeeder horizontal registration automatic adjustment. Using the Mode</p> <ol style="list-style-type: none"> <li>1) Select the item, and press the OK key.</li> <li>2) The machine prints a halftone PG image on paper from the multifeeder tray. (At the same time, the horizontal registration sensor measures the displacement, and stores the result as back-up data.)</li> </ol>
DK-ADJ-Y	<p>Use it to execute paper deck horizontal registration automatic adjustment. Using the Mode</p> <ol style="list-style-type: none"> <li>1) Select the item, and press the OK key.</li> <li>2) The machine prints a halftone PG image on paper from the paper deck. (At the same time, the horizontal registration sensor measures the displacement, and stores the result as back-up data.)</li> </ol>
LBL-PRNT	<p>Use it to print out a service label. Using the Mode</p> <ol style="list-style-type: none"> <li>1) Put paper in the manual feed tray.</li> <li>2) Select the item, and press the OK key.</li> <li>3) The machine prints out a service label. <ul style="list-style-type: none"> <li>• The label also indicates the settings of ADJUST and OPTION.</li> </ul> </li> </ol>
PRE-EXP	<p>Use it to check the pre-exposure lamp for activation. Using the Mode</p> <ol style="list-style-type: none"> <li>1) Select the item, and press the OK key.</li> <li>2) The pre-exposure lamp goes ON and remains ON for several seconds, and goes OFF automatically.</li> </ol>

**<SYSTEM>**

Use it to check system-related operations.

<b>DOWNLOAD</b>	<p>Use it to switch to system program download mode.</p> <ul style="list-style-type: none"> <li>• Use it to download the system program.</li> </ul> <p>Using the Mode</p> <ol style="list-style-type: none"> <li>1) Turn off the machine and the PC.</li> <li>2) Disconnect the network cable from the machine.</li> <li>3) Connect the machine and the PC with a bi-Centronics cable.</li> <li>4) Turn on the PC.</li> <li>5) Turn on the machine.</li> <li>6) Select &lt;DOWNLOAD&gt; to highlight, and press the OK key.</li> <li>7) Use the Service Support Tool to download the data.</li> <li>8) When done, turn off and then on the main power switch.</li> </ol>
<b>CHK-TYPE</b>	<p>Use it to select a partition number for HD-CHECK.</p> <p>Using the Mode</p> <ol style="list-style-type: none"> <li>1) Selects the item.</li> <li>2) Selects a partition number using the keypad (0: check and recover entire HDD for faulty sectors, 1: image storage area, 2: general file storage area, 3: PDL-related file storage area, 4: firmware storage area).</li> <li>• A general file refers to the following: user settings data, log data, PDL spool data, image data.</li> <li>3) Press the OK key.</li> </ol>
<b>HD-CHECK</b>	<p>Use it to execute a check and recovery of the partition selection using CHK-TYPE.</p> <p>Using the Mode</p> <ol style="list-style-type: none"> <li>1) Select the item.</li> <li>2) Press the OK key.</li> <li>3) The machine indicates the result (1: OK, 2: NG (hardware), 3: NG (software); recovery sensor/alternate sector).</li> </ol>
<b>HD-CLEAR</b>	<p>Use it to initialize the partition selected using CHK-TYPE.</p> <ul style="list-style-type: none"> <li>• If '0' or '4' is selected, the executing will be invalid.</li> <li>• If '1' is selected, the image control data stored in the SRAM area or the general file storage area will also be initialized.</li> </ul> <p>Using the Mode</p> <ol style="list-style-type: none"> <li>1) Select the item.</li> <li>2) Press the OK key.</li> </ol>



## 6 OPTION Machine Settings Mode

### 6.1 COPIER

The following screen will appear in response to COPIER>OPTION; lists of items will follow:

Display	I/O	Adjust	Function	<b>Option</b>	Test	Counter
<b>BODY</b>						
<b>USER</b>						
<b>CST</b>						
<b>ACC</b>						
<b>INT-FACE</b>						

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## BODY

Use it to make machine-related settings.

<b>MODEL-SZ</b>  <b>Settings</b>	Use it to select the mode of indication by destination and of the ADF original size detection. <b>0: AB (6R5E), 1: INCH (5R4E), 2: A (3R3E), 3: AB/INCH (6R5E)</b>
<b>FIX-CLN</b>  <b>Settings</b>	Use it to set fixing cleaning mode: <ul style="list-style-type: none"> <li>• During last rotation after the end of printing, the fixing assembly is rotated idly at 1/4 the fixing speed.</li> </ul> <b>0: no cleaning (default)</b> <b>1: once per 500 sheets; temperature control at 225 °C , idle rotation for 60 sec</b> <b>2: once per 200 sheets; temperature control at 225 °C , idle rotation for 60 sec</b> <b>3: once per 100 sheets; temperature control at 225 °C , idle rotation for 60 sec</b> <b>4: not used</b> <b>5: not used</b>
<b>FIX-TEMP</b>  <b>Settings</b>	Use it to select a fixing control temperature. <b>0: disable (default)</b> <b>1: place priority on productivity; keep control temperature constant: -10 °C</b> <b>2: keep control temperature constant: -6 °C</b> <b>3: keep control temperature constant: -3 °C</b> <b>4: place priority on fixing; keep control temperature constant: +3 °C</b> <b>5: keep control temperature constant: +6 °C</b> <b>6: keep control temperature constant: +10 °C</b> <b>7: keep control temperature constant: +15 °C</b>
<b>HUM-SW</b>  <b>Settings</b>	Use it to enable or disable the environment sensor. <b>0: auto control by environment sensor</b> <b>1: fixed mode (for high humidity)</b> <b>2: fixed mode (for normal humidity)</b> <b>3: fixed mode (for low humidity)</b> (In 1, 2, or 3, the move of control does not depend on the environment sensor.)

SCANSLCT	<p>Use it to enable or disable the original size detection mechanism for the ADF.</p> <ul style="list-style-type: none"> <li>When enabled, the scan size is determined in relation to the original size.</li> </ul> <p><b>0: off (default), 1: on</b></p>
TRANS-SW	<p>Use it to set the transfer charging bias output control method for large-size paper.</p> <p><b>0: normal (auto mode), 1: constant voltage control (manual mode)</b></p> <p>Caution When manual mode is selected, make fine settings in ADJUST&gt;HV-TR&gt;TR-N1.</p>
PRIAC-SW	<p>If an image fault occurs as a result of faulty charging of the drum unit, change the level of primary charging current to correct the fault. It is effective if a sandy image (white dots in solid areas) occurs between the installation of the drum unit to printing of 2000 sheets.</p> <p><b>0: no increase in charging current (default), 1: increase in charging current</b></p> <p>Caution The setting of this mode is cleared (1 → 0) for the following:</p> <ul style="list-style-type: none"> <li>When APVC is executed after installing a new drum unit.</li> <li>When COPIER&gt;FUNCTION&gt;D-GAMMA is executed in service mode.</li> <li>When the setting is changed in this service mode.</li> </ul>
SENS-CNF	<p>Use it to set the arrangement of the original sensors.</p> <p><b>0: AB-configuration (default, 1: Inch-configuration, 2: A-configuration)</b></p> <p>Caution If you have changed the arrangement of the original sensors, select the appropriate setting to suit the new arrangement.</p>

CONFIG	<p>Use it to select any of the multiple pieces of firmware stored on the hard disk to suit the selected destination and paper size:</p> <p><b>Settings</b> <b>XXYYZZAA</b> XX: country (JP), YY: language (ja), ZZ (00): destination, AA (00): paper configuration The method of indication COPIER&gt;DISPLAY&gt;USER&gt;LANGUAGE. The selections in parentheses are default selections; for the country and the languages, names are given. Using the Mode 1) Select &lt;CONFIG&gt;. 2) Select the item to change (to highlight), and press the +/- key. 3) Each press on the +/- key move the selection to the next item. 4) When the desired item is indicated, press the OK key. 5) Turn off and then on the main power switch.</p>
SHARP	<p>Use it to change the level of sharpness of soft the image.</p> <ul style="list-style-type: none"> <li>• A higher setting makes the image sharper.</li> </ul> <p><b>Settings</b> <b>1 to 5 (default: 3)</b></p>
COTDPC-D	<p>for factory.</p> <p><b>Settings</b> <b>0 to 3 (default: 0)</b></p>
DF-BLINE	<p>Use it to enable or disable black line reduction mode (disabling edge emphasis) for stream reading.</p> <p>Caution When enabled, the black lines will be less conspicuous but the edges of the images will be less crisp.</p> <p><b>Settings</b> <b>0: disable (default)</b> <b>1: enable</b></p>
FIX-SMR	<p>Use it to set the fixing trail removal mode in a high humidity environment.</p> <p>Caution When '1' is set, the following will occur:</p> <ul style="list-style-type: none"> <li>• The laser intensity will be reduced by 50 V.</li> <li>• The fixing film control speed is changed from 539 to 535 m/sec.</li> <li>• The fixing/feeding speed is reduced: <ul style="list-style-type: none"> <li>B4: from 14 → 10 ppm</li> <li>B5R: from 28 → 15 ppm</li> <li>LGL: from 14 → 10 ppm</li> <li>A4R,etc.: from 18 → 10 ppm</li> </ul> </li> </ul> <p><b>Settings</b> <b>0: disable (default)</b> <b>1: enable</b></p>

DECRL-FN	Use it to enable or disable delivery curl reducing fan.
Settings	<b>0: disable (default)</b> <b>1: enable</b>
Caution	When '1' is selected, the curl reducing fan is rotated for 30 sec after the image leading edge sensor goes ON.
TR-CLN	Use it to enable or disable transfer charging roller cleaning enhancement mode.
Settings	<b>0: disable (default)</b> <b>1: enable</b>
Caution	Make sure that the transfer output between sheets for single-sided printing is set to cleaning bias output.
FAN-EXTN	Use it to enable or disable the fan extension mode at the end of a job.
Settings	<b>0: disable (default)</b> <b>1: enable</b>
Caution	Use it to drive all fans for 5 min after the end of a print job received in sleep mode.

## USER

Making user-related settings

COPY-LIM	Use it to change the upper limit imposed on the number of copies.
Settings	<b>1 to 999 copies (default: 999)</b>
SLEEP	Use it to enable or disable sleep mode.
Settings	<b>0: enable (default), 1: disable</b>
SIZE-DET	Use it to enable or disable the original size detection function.
Settings	<b>0: enable (default), 1: disable</b>
Caution	After making a selection, be user to turn off and then on the main power switch.
COUNTER1	Use it to indicate the type of software counter 1 of the control panel.
Caution	The type of soft counter 1 cannot be changed.
Settings	<b>101: total 1 (default: fixed to 101) (T05-601-01)</b>

COUNTER2	Use it to change the type of soft counter 2 of the control panel to suit the needs of the user. <b>Settings</b> <b>000 to 804 (T05-601-01); default: 000 (100V model), 103 (120/230V model)</b>
COUNTER3	Use it to change the type of soft counter 3 in the control panel to suit the needs of the user. <b>Settings</b> <b>000 to 804 (T05-601-01); default: 000 (100V model), 201 (120/230V model)</b>
COUNTER4	Use it to change the type of soft counter 4 of the control panel to suit the needs of the user. <b>Settings</b> <b>000 to 804 (T05-601-01); default: 000 (100V model), 203 (120/230V model)</b>
COUNTER5	Use it to change the type of soft counter 5 of the control panel to suit the needs of the user. <b>Settings</b> <b>000 to 804 (T05-601-01); default: 000</b>
COUNTER6	Use it to change the type of soft counter 6 of the control panel to suit the needs of the user. <b>Settings</b> <b>000 to 804 (T05-601-01); default: 000</b>
DATE-DSP	Use it to change the notation of date. Caution In the 120V model, the default is '1'. <b>Settings</b> <b>0: YY MM/DD (default), 1: DD/MM YY, 2: MM/DD/YY</b>
MB-CCV	Use it to impose restrictions on the Box function for the Control Card IV (CC-IV). <b>Settings</b> <b>0: enable operation and do not use remote charge regardless of presence/absence of card</b> <b>1: enable operation regardless of presence/absence of card; enable print job, but disable print with card (if card is present, enable printing and charge); default</b> <b>2: disable operation for remote; disable print job from remote</b>
B4-L-CNT	Use it to specify whether B4 paper is counted as large-size or small-size for soft counters 1 through 6. <b>Settings</b> <b>0: small size (default), 1: large size</b>

TRY-STP	Use it to impose a limit to the number of sheets for stapling in the finisher and to suspend printing if sizes are mixed. Caution If '1' is set, occurrence of jams and alignment will be outside the consideration. Settings <b>0: normal mode (suspend printing if limit to number/mixed sizes is detected); default</b> <b>1: suspend when height sensor goes ON (paper full)</b>
MF-LG-ST	Use it to indicate the Extra Length key for paper up to 630 mm long (multifeeder, free; the ADF will also accommodate paper up to 630 mm long). Settings <b>0: normal mode (default), 1: extra length mode (key indicated)</b>
SPECK-DP	Use it to enable or disable a warning for the result of dust detection in stream reading mode. Settings <b>0: disable indication (default), 1: enable indication</b>
CNT-DISP	Use it to enable or disable the indication of the serial number in response to a press on the Counter Check key. Settings <b>0: enable (default), 1: disable</b>
PH-D-SEL	Use it to select the number of lines for printing in photo mode. Settings <b>0: 141 lines (default), 1: 134 lines</b>
COPY-JOB	Use it to enable or disable the use of a copy job auto start when the coin robot/ card reader is used. Settings <b>0: enable copy job auto start (default)</b> <b>1: disable copy job auto start</b>
OP-SZ-DT	Use it to enable or disable original size detection in book mode. Settings <b>0: disable (original size entered from control panel; default)</b> <b>1: enable (original size detected automatically)</b>
NW-SCAN	Use it to enable or disable the network scan function. Settings <b>0: disable (default), 1: enable</b>

## Soft Counter Specifications

The soft counters are classified as follows in terms of input numbers:

100s:	total	500s:	scan
200s:	copy	600s:	box
300s:	print	700s:	received file print
400s:	copy + print	800s:	report print

### Guide to the Table

- O: counter used in the machine
- 4C: full color
- mono: mono color (Y, M, C/R, G, B/sepia)
- Bk: black mono
- L: large size (larger than B4)
- S: small size (B4 or smaller)
- 1/2: count of large-size sheets; B4 or larger may be counted as large-size paper in service mode:  
COPIER>OPTION>USER>B4-L-CNT.

Yes/No	No.	Counter	Yes/No	No.	Counter
<input type="radio"/>	000	no indication	<input type="radio"/>	205	copy A (total 1)
<input type="radio"/>	101	total 1	<input type="radio"/>	206	copy A (total 2)
<input type="radio"/>	102	total 2	<input type="radio"/>	207	copy A (L)
<input type="radio"/>	103	total (L)	<input type="radio"/>	208	copy A (S)
<input type="radio"/>	104	total (S)	<input type="radio"/>	209	local copy (total 1)
	105	total (4C1)	<input type="radio"/>	210	local copy (total 2)
	106	total (4C2)	<input type="radio"/>	211	local copy (L)
	107	total (mono)	<input type="radio"/>	212	local copy (S)
	108	total (Bk1)	<input type="radio"/>	213	remote copy (total 1)
	109	total (Bk2)	<input type="radio"/>	214	remote copy (total 2)
	110	total (mono/L)	<input type="radio"/>	215	remote copy (L)
	111	total (mono/S)	<input type="radio"/>	216	remote copy (S)
	112	total (Bk/L)		217	copy (4C1)
	113	total (Bk/S)		218	copy (4C2)
<input type="radio"/>	114	total (4C + mono + Bk/double-sided) total 1 (double-sided)		219	copy (mono 1)
				220	copy (mono 2)
<input type="radio"/>	115	total 2 (double-sided)		221	copy (Bk 1)
<input type="radio"/>	116	L (double-sided)		222	copy (Bk 2)
<input type="radio"/>	117	S (double-sided)		223	copy (4C/L)
<input type="radio"/>	201	copy (total 1)		224	copy (4C/S)
<input type="radio"/>	202	copy (total 2)		225	copy (mono/L)
<input type="radio"/>	203	copy (L)		226	copy (mono/S)
<input type="radio"/>	204	copy (S)		227	copy (Bk/L)
				228	copy (Bk/S)

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			COPIER>OPTION>USER		
Yes/No	No.	Counter	Yes/No	No.	Counter
	229	copy (4C + mono/L)		325	print (4C/L/double-sided)
	230	copy (4C + mono/S)		326	print (4C/S/double-sided)
	231	copy (4C + mono/2)		327	print (mono/L/double-sided)
	232	copy (4C + mono/1)		328	print (mono/S/double-sided)
	233	copy (4C/L/double-sided)		329	print (Bk/L/double-sided)
	234	copy (4C/S/double-sided)		330	print (Bk/S/double-sided)
	235	copy (mono /L/double-sided)		331	PDL print (total 1)
	236	copy (mono/S/double-sided)		332	PDL print (total 2)
	237	copy (Bk/L/double-sided)	○	333	PDL print (L)
	238	copy (Bk/S/double-sided)	○	334	PDL print (S)
○	301	print (total 1)		401	copy + print (4C/L)
○	302	print (total 2)		402	copy + print (4C/S)
○	303	print (L)		403	copy + print (Bk/L)
○	304	print (S)		404	copy + print (Bk/S)
○	305	print A (total 1)		405	copy + print (Bk 2)
○	306	print A (total 2)		406	copy + print (Bk 1)
○	307	print A (L)		407	copy + print (4C + mono/L)
○	308	print A (S)		408	copy + print (4C + mono/S)
	309	print (4C1)		409	copy + print (4C + mono/2)
	310	print (4C2)		411	copy + print (L)
	311	print (mono 2)		412	copy + print (S)
	313	print (Bk 1)		413	copy + print (2)
	314	print (Bk 2)		414	copy + print (1)
	315	print (4C/L)		501	scan (total 1)
	316	print (4C/S)			copy san (total/4)
	317	print (mono/L)		502	scan (total 2)
	318	print (mono/S)	○	503	scan (L)
	319	print (Bk/L)			copy scan (L/4)
	320	print (Bk/S)	○	504	scan (S)
	321	print (4C + mono/L)	○		copy scan (S/4)
	322	print (4C + mono/S)			
	323	print (4C + mono/2)	○		
	324	print (4C + mono/1)			

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			COPIER>OPTION>USER		
Yes/No	No.	Counter	Yes/No	No.	Counter
	505	Bk scan (total 1) copy scan (Bk)	<input type="radio"/>	601	box print (total 1)
	506	Bk scan (total 2)	<input type="radio"/>	602	box print (total 2)
	507	Bk scan (L) copy scan (Bk/L)	<input type="radio"/>	603	box print (L)
	508	Bk scan (S) copy scan (Bk/S)	<input type="radio"/>	604	box print (S)
	509	color scan (total 1) copy scan (4C)	<input type="radio"/>	701	received file print (total 1)
	510	color scan (total 2)	<input type="radio"/>	702	received file print (total 2)
	511	color scan (L) copy scan (4C/L)	<input type="radio"/>	703	received file print (L)
	512	color scan (S) copy scan (4C/S)	<input type="radio"/>	704	received file print (S)
	513	copy scan (L)	<input type="radio"/>	801	report print (total 1)
	514	copy scan (S)	<input type="radio"/>	802	report print (total 2)
	515	copy scan (total)	<input type="radio"/>	803	report print (L)
				804	report print (S)

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## CST

Use it to make cassette-related settings.

Be sure to turn off and then on the power after making the settings.

U1-NAME U2-NAME U3-NAME U4-NAME U5-NAME U6-NAME U7-NAME U8-NAME	
<b>Settings</b>	Use it to enable or disable the indication of the name of paper detected (size groups from U1 through U8). <b>0: disable (default; if the paper size dial on the cassette is set to U1 through U8, the touch panel will indicate 'U1' through 'U8')</b> <b>1: enable (if the paper size dial on the cassette is set to U1 through U8, the names selected in CST-U1 through -U8 is indicate on the touch panel)</b>
CST-U1	Use it to select the name of paper used for paper size group U1. Select a number from T05-601-02 (codes and paper names).
<b>Caution</b>	This mode is designed for entering a number, and such notations as 'FLSC' or 'OFI' will not be indicated in service mode.
<b>Settings</b>	<b>U1: 24, 26, 27, 28, 33, 36, 37</b>
CST-U2 CST-U3 CST-U4 CST-U5 CST-U6 CST-U7 CST-U8	
<b>Caution</b>	Select a number from T05-601-02; codes and paper names for the name of paper (notation) to be used for paper size groups U2 through U8. However, U2 through U8 size cassettes are designed for specific paper sizes.
<b>Settings</b>	<b>U2: 35, U3: 25, U4: 31, U5: 32, U6: 34, U7: 22, 29, U8: 23, 30</b>

ENV1	Use it to register envelope cassette ENV1. <b>Settings</b> 21: COM10, 22: ISO-B5, 23: Monarch, 24: ISO-C5, 25: DL, 26: No. 4
ENV2	Use it to register envelope cassette ENV2. <b>Settings</b> 21: COM10, 22: ISO-B5, 23: Monarch, 24: ISO-C5, 25: DL, 26: No. 4

## Codes and Paper Names

Code	Notation	Name	Code	Notation	Name
01	A1	A1	21	LGL	LEGAL
02	A2	A2	22	K-LGL	Koran Government
03	A3R	A3R	23	K-LGLR	Korean Government R
04	A3	A3	24	FLSC	FOOLSCAP
05	A4R	A4R	25	A-FLS	Australian FOOLSCAP
06	A4	A4	26	OFI	OFFICIO
07	A5	A5	27	E-OFI	Ecuadorian OFFICIO
08	A5R	A5R	28	B-OFI	Bolivian OFFICIO
09	B1	B1	29	A-LTR	Argentine LETTER
10	B2	B2	30	A-LTRR	Argentine LETTERR
11	B3	B3	31	G-LTR	Government LETTER
12	B4R	B4R	32	G-LTRR	Government LETTERR
13	B4	B4	33	A-LGL	Argentine LEGAL
14	B5R	B5R	34	G-LGL	Government LEGAL
15	B5	B5	35	FOLI	FOLIO
16	11 × 17	11 × 17	36	A-OFI	Argentine OFFICIO
17	LTRR	LETTERR	37	M-OFI	Mexican OFFICIO
18	LTR	LETTER	38		
19	STMT	STATEMENT	39		
20	STMTR	STATEMENTR	40	ALL	

T05-601-02

## ACC

Use it to make accessory-related selections.

COIN	<p>Use it to enable or disable the indication of the coin vendor.</p> <ul style="list-style-type: none"> <li>Use it to change the indication for the control card in the control panel for the coin vendor.</li> </ul> <p><b>Settings</b>    <b>0: disable (default), 1: enable for coin vendor</b></p>
DK-P	<p>Use it to select a paper size for use in the paper deck.</p> <p>Caution    After making a selection, be sure to turn off and then on the main power switch.</p> <p><b>Settings</b>    <b>0: A4 (default), 1: B5, 2: LTR, 3: A-LTR</b></p>

## INT-FACE

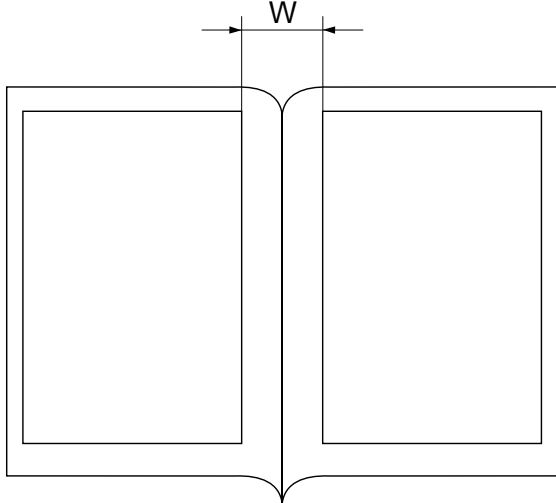
Use it to set conditions for connection to an external controller.

IMG-CONT	<p>Use it to set the detection of connection of an external controller.</p> <ul style="list-style-type: none"> <li>Set it so that the connection of an external controller is indicated.</li> <li>Use it to change the User Mode screen.</li> <li>Use it to change the network settings.</li> </ul> <p><b>Settings</b>    <b>0: absent (default), 1: external controller present</b></p>
----------	--

## 6.2 FEEDER

<p>SIZE-SW</p> <p><b>Settings</b></p>	<p>Use it to enable or disable detection of mixed original sizes (AB and Inch sizes).</p> <p><b>0: disable (default), 1: enable</b></p>
---------------------------------------	---

## 6.3 SORTER

<p>BLNK-SW</p> <p><b>Settings</b></p>	<p>Use it to set the margin width (W) for both sides of a fold when a saddle stitcher is used.</p> <p><b>0: normal width (5 mm), 1: large width (10 mm; default)</b></p> <div style="text-align: center;">  <p>The diagram shows a top-down view of a saddle-stitched book. Two rectangular pages are shown, one on the left and one on the right, with a central spine. A horizontal double-headed arrow labeled 'W' indicates the margin width on the top edge of the right page. The pages are outlined with a double-line border, and the spine is shown as a vertical line with a slight curve at the bottom.</p> </div> <p>F05-603-01</p>
---------------------------------------	--

<p>MD-SPRTN</p> <p><b>Caution</b></p> <p><b>Settings</b></p>	<p>Use it to set the retraction movement in response to a finisher error (excluding a delivery motor error).</p> <p>After making a selection, be sure to turn off and then on the main power switch.</p> <p><b>0: disable retraction movement (default), 1: enable detracton movement</b></p>
--	---

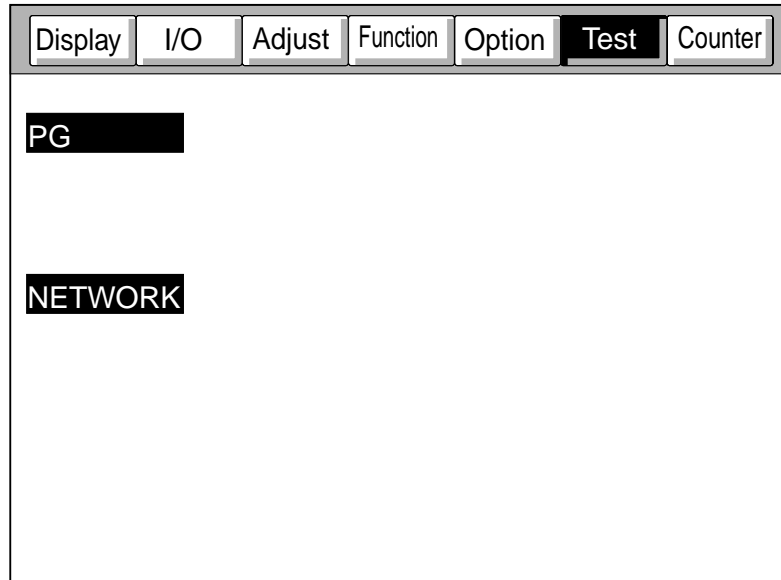
## 6.4 BOARD

MENUE-1	Use it to indicate level 1 of the printer settings menu. <b>Settings</b> <b>0: do not indicate (default), 1: indicate</b>
MENUE-2	Use it to indicate level 2 of the printer settings menu. <b>Settings</b> <b>0: do not indicate (default), 1: indicate</b>
MENUE-3	Use it to indicate level 3 of the printer settings menu. <b>Settings</b> <b>0: do not indicate (default), 1: indicate</b>
MENUE-4	Use it to indicate level 4 of the printer settings menu. <b>Settings</b> <b>0: do not indicate (default), 1: indicate</b>
PCI1-OFF	Use it to enable or disable the function of slot 1 as when the board in slot 1 of PCI is out of order. <b>Settings</b> <b>0: normal (default), 1: disable (not to use board function)</b>
PCI2-OFF	Use it to enable or disable the function of slot 2 as when the board in slot 2 of PCI is out of order. <b>Settings</b> <b>0: normal (default), 1; disable (not to use board function)</b>
PCI3-OFF	Use it to enable or disable the function of slot 3 when the board in slot 3 of PCI is out of order. <b>Settings</b> <b>0: normal (default), 1: disable (not to use board function)</b>

## 7 TEST Test Print Mode

---

The following screen will appear in response to COPIER>TEST; lists of items will follow:



F05-701-01



## PG

Use it to select the type of test print and generate it.

<b>TYPE</b>	Enter the number or the type of test print you want, and press the OK key to generate it.
<b>Caution Settings</b>	Be sure to return it to '00' after printing the test print. <b>00: normal print, 01 through 08: as in T05-701-01</b>
<b>TXPH</b>	Use it to switch between print modes for test printing (PG>TYPE).
<b>Settings</b>	<b>0: text mode, 1: photo mode</b>
<b>PG-PICK</b>	Use it to select the source of paper when generating a test print.
<b>Settings</b>	<b>1: cassette 1 (default), 2: cassett 2, 3: cassette 3, 4: cassette 4, 5: through 6: not used, 7: paper deck, 8: multifeder tray</b>

## Type Input Numbers and Test Prints

Input No.	Description	Input No.	Description
00	image from CCD (normal print)	04	blank
01	grid	05	halftone
02	17 gradations (w/ image correction)	06	solid black
03	17 gradations (w/o image correction)	07	vertical straight lines
		08	horizontal straight lines
		-	-

T05-701-01

# NETWORK

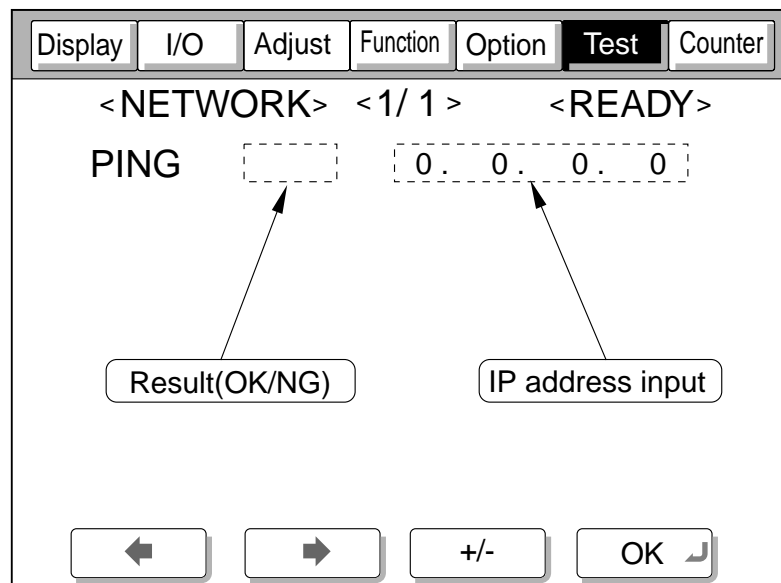
Use it to check the network-related items for connection.

## PING

Use it to check the connection between machine and the network (TCP/IP only).

### Caution

Use this mode when checking the connection to the network at time of installation or when the connection to the network is faulty.



F05-701-02

### Using the Mode

- 1) Turn off the main power switch.
- 2) Connect the network cable to the machine, and turn on the main power switch.
- 3) Inform the user's system administrator that the machine has been installed, and ask him/her to set up the network.
- 4) Inform the system administrator that the network connection will be checked, and obtain the remote host address (IP address of the PC on the user's network) for sending a PING.
- 5) Make the following selections: COPIER>TEST>NETWORK>PING.

Then, enter the IP address obtained in step 4) using the keypad; and press the OK key.

- If the connection to the network is correct, 'OK' will be indicated. (End the work.)
- If 'NG' is indicated, check the connection for the network cable; if normal, go to step 6). If a fault is found, connect the cable correctly, and go to step 5).

6) Make the following selections : COPIER>TEST>NETWORK>PING. Then, enter the loop-back address\* (127.0.0.1), and press the OK key and then the Start key.

- If 'NG' is indicated, suspect a fault in the TCP/IP settings of the machine. Go back to step 3), and check the settings once again.
- If 'OK' is indicated, the TCP/IP setting may be assumed to be free of a problem. However, the connection of the network interface board (NIC) or the board itself may have a fault. Go to step 7).

\*The loop-back address is returned in front of the NIC and, therefore, it enables a check on the TCP/IP settings of the machine.

7) Make the following selections in service mode:

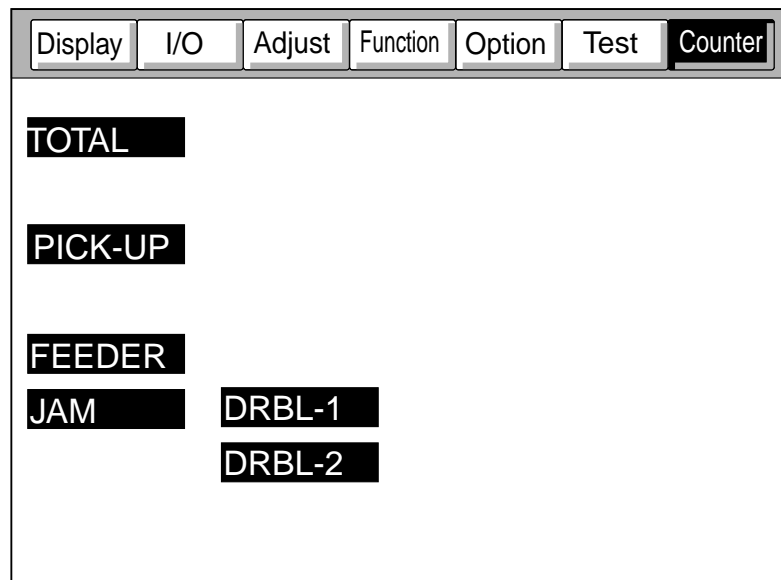
COPIER>TEST>NETWORK>PING. Then, press the OK key.

- If 'NG' is indicated, suspect a fault in the connection of the NIC or in the NIC itself. Check the connection of the NIC or replace it.
- If 'OK' is indicated, the network setting of the machine and the NIC may be assumed to be free of a fault.

In this case, the user's network may have a problem. Report to the system administrator for corrective action.

## 8 COUNTER Counter Mode

The following screen will appear in response to COPIER>COUNTER; lists of items will follow:



F05-801-01

### Clearing the Counter Readings

- 1) Select the item to clear (highlight).
  - 2) Press the Clear key of the control panel.
- The counter will be cleared, and it will read '00000000'.

### Dividing Papers Between Small-Size and Large-Size

- Large-size (L): larger than A4/LTR
- Small-size (S): A4/LTR or smaller

## Guide to the Counters for Periodically Replaced Parts and Durables

The machine is equipped with counters for periodically replaced parts and durables (DRBL-1/DRBL-2) so as to provide an idea of when to replace the parts.

A small-size sheet increments the counter reading by '1', while a large-size sheet increments the count by '2'.

EX.

TR-ROOL / 00000201 / 00240000 / 0% !! 000082

[1]            [2]            [3]    [4] [5]   [6]

- [1] indicates the name of the part; in the case of the example, the transfer charging roller.
- [2] indicates the counter reading (actual number of sheets; be sure to clear the reading after replacing the part).
- [3] indicates the limit (number of sheets before replacement); to change, select the item, and enter a number using the keypad, and then press the OK key.
- [4] indicates the relationship between the counter reading and the limit.
- [5] indicates a single exclamation mark (!) for a ratio between 90% and 100%, two marks for 100% and higher; in the case of the example, no indication is made.
- [6] indicates the number of days to the estimated time of replacement; the example shows 82 days.

## List of COUNTER Items

Level 1: COUNETR            Mode description

Level 2: TOTAL

Level 3: SERVICE1	total counter 1 for service
SERVICE2	total counter 2 for service
COPY	copy counter
PDL-PRT	PDL print counter
FAX-PRT	fax received file print counter
RMT-PRT	remote copy/print counter
BOX-PRT	Box print counter
RPT-PRT	repro print counter
2-SIDE	double-sided print counter
SCAN	scan counter

COPIER>COUNTER>PICK-UP

Level 2: PICK-UP

Level 3: C1	cassette 1 pickup counter
C2	cassette 2 pickup counter
C3	cassette 3 pickup counter
C4	cassette 4 pickup counter
MF	multifeeder tray pickup counter
DK	paper deck pickup counter
2-SIDE	double-sided 2nd side pickup counter

COPIER>COUNTER>FEEDER

Level 2: FEEDER

Level 3: FEED	feeder(ADF) pickup total counter
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COPIER>COUNTER>JAM

Level 2: JAM

Level 3: TOTAL	machine total jam counter
FEEDER	feeder (ADF) jam counter
SORTER	sorter (finisher) jam counter
2-SIDE	duplex unit jam counter
MF	multifeeder tray jam counter
C1	cassette 1 jam counter
C2	cassette 2 jam counter
C3	cassette 3 jam counter
C4	cassette 4 jam counter
DK	paper deck jam counter

## COPIER&gt;COUNTER&gt;DRBL-1

## Level 2: DRBL-1

Level 3: PRE-LMP	pre-exposure lamp counter
TR-ROLL	transfer charging roller counter
SP-SC-EL	separation static eliminator paper passage counter
DVG-CYL	developing cylinder counter
C1-PU-RL	cassette 1 pickup roller counter
C1-SP-RL	cassette 1 separation roller counter
C1-FD-RL	cassette 1 feeding roller counter
C2-PU-RL	cassette 2 pickup roller counter
C2-SP-RL	cassette 2 separation roller counter
C2-FD-RL	cassette 2 feeding roller counter
C3-PU-RL	cassette 3 pickup roller counter
C3-SP-RL	cassette 3 separation roller counter
C3-FD-RL	cassette 3 feeding roller counter
C4-PU-RL	cassette 4 pickup roller counter
C4-SP-RL	cassette 4 separation roller counter
C4-FD-RL	cassette 4 feeding roller counter
M-PU-RL	multifeeder pickup counter
M-SP-PD	multifeeder separation pad counter
FX-LW-RL	fixing lower roller counter
FX-UNIT	fixing unit count
FX-FILM	fixing film counter
FX-CL-RL	fixing cleaning roller counter

## COPIER&gt;COUNTER&gt;DRBL-2

## Level 2: DRBL-2

Level 3: DF-PU-RL	ADF pickup roller counter
DF-SP-RL	ADF separation plate counter
DF-SP-RD	ADF separation pad counter
DF-FD-RL	ADF feeding roller counter
LNT-TAPE	ADF dust collecting tape counter
PD-PU-PL	paper deck pickup roller counter
PD-SP-RL	paper deck separation roller counter
PD-FD-RL	paper deck feeding roller counter
FIN-STPR	stapler counter
SDL-STPL	saddle stapler counter
PUNCH	punch counter





## CHAPTER 6 SELF DIAGNOSIS

### 1 Self Diagnosis

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The machine is equipped with a mechanism that checks the condition of the machine (especially sensor outputs) and indicates an error code in the control panel upon detection of a fault.

The following tables show the codes used, timing of detection, and possible causes; a 4-digit code is a detail code, and may be checked in service mode (COPIER>DISPLAY>JAM/ERR).

Code	Description	Code	Description
[Copier]		E716	Communication error (with pedestal)
E000	Heater temperature fault (fails to increase)	E717	Communication error (with ASSIST)
E001	Overheating detection error	E719	Card reader, coin vendor communication error
E002	Heater temperature error (fails to reach specific level; inadequate increase)	E732	Reader communication error
E003	Heater temperature error (abnormal drop; low-temperature detection)	E733	Printer communication error
E007	Fixing film rotation error	E737	SDRAM error
E010	Main motor rotation error	E740	Ethernet board error
E014	Fixing motor rotation error	E741	PCI bus error
E019	Waste toner case full, sensor error	E742	RIP1 board error
E032	DA unit communication error	E743	Mcon-Rcon communication error (Rcon detection)
E051	Horizontal registration HP detention error	E803	MPWS power supply voltage error (low voltage error)
E064	Power supply voltage error (high-voltage error)	E805	Fan rotation error
E100	Laser BD error	E901	Pedestal main motor rotation error
E110	Polygon motor rotation error	[ADF]	
E202	No. 1 mirror base HP detecting error	E420	Back-up data read error
E204	ADF image leading edge signal detection fault (absent)	E421	Back-up data write error
E220	Lamp ON error	E422	IPC error
E225	Standard white plate/edge white plate read error	[Saddle Finisher-G1]	
E240	Mcon-Dcon communication error	E501	Communication error (Punch unit)
E243	Mcon-control panel communication error	E505	Back-up RAM
E248	Backup (EEPROM) error	E510	Feed motor
E261	Zero-cross signal error	E514	Delivery motor
E302	Shading error	E530	Width plate shift motor
E315	Image data processing error	E531	Stapler motor
E601	Image transfer error	E532	Stapler slide motor
E602	Hard disk error	E537	Alignment motor
E604	Image memory fault	E540	Tray ascent/descent motor
E605	Image memory battery fault	E577	Paddle motor
E606	HDD error	E590	Puncher motor
E674	Fax board error	E592	Puncher sensor error
E677	PDL board mounting error	E593	Puncher shift motor
E710	IPC initialization error (Rcon)	E5F1	Saddle folder motor
E711	IPC register error (ctrl)	[Finisher-J1]	
E712	Communication error (with ADF)	E500	Communication error
E713	Communication error (with sorter finisher)	E514	Stack handling motor
		E530	Rear alignment motor
		E531	Stapler motor
		E537	Front alignment motor
		E577	Delivery motor
		E580	Delivery tray ascent/descent motor
		E585	Stack handling error

---

## 1.1 Detail Codes (copier)

---

### E000

0000      The reading of the main thermistor does not reach 30°C 1 sec after the main power switch is turned on. Or, it does not reach 70°C 2 sec thereafter.

Main cause      The fixing film unit is faulty. The main thermistor has an open circuit. The fixing heater has an open circuit. The main power supply PCB is faulty. The DC controller PCB is faulty.

Caution      To reset the error, execute the following in service mode:  
COPIER>FUNCTION>CLEAR>ERR.

#### Action

---

##### 1. Connector

Is the connector of the fixing assembly connected?

- a. main power supply PCB (J8) <-> relay connector <-> heater
- b. DC controller PCB (J320) <-> relay connector <-> thermistor

NO:      Connect the connector.

---

##### 2. Fixing film unit (thermistor)

Check the interval between pin 1 and pin 2 and between pin 3 and pin 4 of the connector (4-pin) of the thermistor for electrical continuity. Is it  $\infty\Omega$  (open)?

YES:      The heater has an open circuit, or the thermal switch is open. Replace the fixing film unit.

---

##### 4. Main power supply PCB, DC controller PCB

Press the Start key. Is the drive voltage of the heater supplied by the connector J8 of the main power supply PCB?

Main heater:      between J8-1 (FSR1) and J8-5 (FSR COM)

Sub heater:      between J8-3 (FSR2) and J8-5 (FSR COM)

YES:      The heater drive power supply is faulty. Replace the main power supply PCB.

NO:      The thermistor control mechanism is faulty. Replace the DC controller PCB.

## E001

- 0000 The main thermistor detects 250°C or higher.  
 0001 The main thermistor or the sub thermistor detects overheating (hardware circuit detection).  
 0002 The sub thermistor detects about 295°C or higher.

**Main cause** The fixing film unit is faulty (i.e., the thermistor has a short circuit). The main power supply PCB is faulty. The DC controller PCB is faulty.

**Caution** To clear the error, execute the following in service mode:  
 COPIER>FUNCTION>CLEAR>ERR.

### Action

#### 1. Fixing film unit

Check the interval between pin 1 and pin 2 and between pin 3 and pin 4 of the connectors (4-pin) of the thermistor for electrical continuity. Is it 0 Ω (short circuit)?

YES: The thermistor has a short circuit. Replace the fixing film unit.



If the thermistor has a short circuit, the indication in service mode (COPIER>DISPLAY>ANALOG) will be as follows from the start: FIX-C=250°C for the main thermistor; FIX-E=310°C for the sub thermistor.

#### 2. Main power supply PCB, DC controller PCB

Try replacing the main power supply PCB. Is the problem corrected?

YES: End.

NO: Replace the DC controller PCB.

---



---

## E002

0000	The temperature of the fixing film is as follows: 1. has exceeded 100°C, but does not reach 115°C within 1 sec thereafter. 2. has exceeded 140°C, but does not reach 150°C within 1 sec thereafter. 3. has exceeded 160°C, but does not reach 165°C within 1 sec thereafter.
Main cause	The fixing film unit is faulty (i.e., the main thermistor TH1 has poor contact, or the fixing heater is faulty). The main power supply PCB is faulty. The DC controller PCB is faulty.
Caution	To clear the error, execute the following in service mode: COPIER>FUNCTION>FCLEAR>ERR.
Action	See the description for E003.

---



---

## E003

0000	The main thermistor reading is lower than 140°C when paper is moved.
Main cause	The fixing film unit is faulty (i.e., the main thermistor (TH1) has poor contact or has an open circuit; or, the fixing heater is faulty). The main power supply PCB is faulty. The DC controller PCB is faulty.
Caution	To clear the error, execute the following in service mode: COPIER>FUNCTION>CLEAR>ERR.

### Action

---

#### 1. State

Turn on the power switch, and clear E002/E003. Thereafter, turn off and then on the power switch. Does the fixing heater operate?  
NO: See “The fixing heater fails to operate.”

---

#### 2. Wiring

Is the wiring from the DC controller PCB to the fixing film unit normal?  
NO: Correct the wiring.

---

#### 3. Fixing film unit, DC controller PCB

Try replacing the fixing film unit. Is the problem corrected?  
YES: End.  
NO: Replace the DC controller PCB.

## E007

0000      An error in the rotation of the fixing film is detected.  
The reading of the main thermistor is 100°C or higher and, in addition, the fixing film sensor does not detect the rotation of the film for 6 sec or more while the fixing motor is driven.

Main cause      The fixing film sensor (PS45) is faulty. The DC controller PCB is faulty.

Caution      To clear the error, execute the following in service mode:  
COPIER>FUNCTION>CLEAR>ERR.

### Action

---

#### 1. Wiring

Are the wiring and the connectors connected securely?  
DC controller PCB (J311) <-> relay connector <-> fixing film sensor  
NO:    Connect the wiring and the connectors.

---

#### 2. Fixing film sensor

Check the fixing film rotation signal. When the fixing motor is rotating, is the film rotation detection signal sent by the fixing film sensor to the connector J311 of the DC controller PCB?  
Film rotation detection signal: 5V pulse signal between J311-A9 (FILM\_ROT\_D) and J311-A8 (GND); at intervals of 100 msec ON and 440 msec OFF  
NO:    If the fixing film is normal, replace the sensor.

---

#### 3. Fixing film unit, DC controller PCB

Is there a fault in the fixing film edge rotation detection mechanism?  
YES:    Replace the fixing film unit.  
NO:    Replace the DC controller PCB.

---

---

## E010

0000      After the main motor drive signal is generated, the clock signal does to arrive within 1.3 sec.

Main cause    The main motor (M2) is faulty. the DC controller PCB is faulty.

### Action

---

#### 1. Connector

Is the connector of the main motor connected?

NO:    Connect the connector.

---

#### 2. Main power supply PCB

Is the drive voltage (24 V) of the main motor supplied by the main power supply PCB?

Main power supply PCB: between J202-1 (24VU1-SW) and J202-2 (OVU1)

NO:    Replace the main power supply PCB.

---

#### 3. Main motor (M2), DC controller PCB

Press the Start key. Is the lock signal of the main motor present at the connector J308 on the DC controller PCB?

Lock signal:    J318-A10 (MM\_LOCK)

YES:    Replace the main motor.

NO:    Check the wiring; if normal, replace the DC controller PCB.

## E014

000            After the fixing motor drive signal is generated, the clock signal does not arrive within 1.3 sec.

Main cause    The fixing motor (M19) is faulty. The DC controller PCB is faulty.

### Action

---

#### 1. Connector

Is the connector of the fixing motor connected?

NO:    Connect the connector.

---

#### 2. Main power supply PCB

Is the drive voltage (24 V) of the fixing motor supplied by the main power supply PCB?

Main power supply PCB: between J202-3 (24VU1-S) and J202-4 (OVU1)

NO:    Replace the main power supply PCB.

---

#### 3. Fixing motor (M19), DC controller PCB

Press the Start key. Is the lock signal of the fixing motor present at the connector (J312) on the DC controller PCB?

Lock signal:    J312-B4 (FSRM\_LOCK\*)

the DC controller PCB change from 0 to about 5 V?

YES:    Replace the fixing motor.

NO:    Replace the DC controller PCB.



---

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## E019

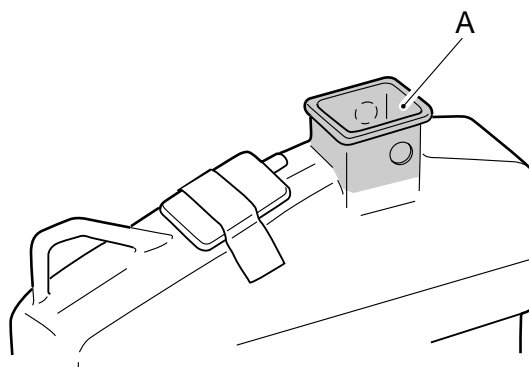
0000	The waste toner case is full of waste toner.
Main cause	The waste toner case is full. The waste toner case full detection mechanism is soiled. The waste toner sensor is faulty. The DC controller PCB is faulty.
Caution	To clear the error, dispose of the waste toner, and turn off and then on the main power switch.
Action	If the error is still indicated after disposing of the waste toner, perform the following:

---

### 1. Waste toner case full detection mechanism

Remove the waste toner case, and turn off and then on the main power switch. Is 'E019' absent?

YES: The waste toner case full detection assembly is soiled with toner. Clean both inside and outside of area A of the waste toner case with alcohol. Make sure that no dirt remains inside and outside the area around the round recess.



---

### 2. Waste toner full sensor, DC Controller PCB

Try replacing the waste toner case full sensor. Is the problem corrected?

YES: End.

NO: Replace the DC controller PCB.

## E032

0001            The DA unit connection is disconnected (after connection).

Main cause    The DA unit is faulty. The main controller PCB is faulty.

### Action

---

#### 1. Connector

Is the DA unit connected securely?

NO:    Connect it securely.

---

#### 2. DA controller, Main controller PCB

Try replacing the DA unit. Is the problem corrected?

YES:    End.

NO:    Replace the main controller PCB.

---

---

## E051

0000      At start-up, home position is not detected when the horizontal registration assembly is moved 100 mm in the direction of home position.

Main cause      The horizontal home position sensor is faulty. The horizontal registration motor is faulty. The DC controller PCB is faulty.

### Action

---

#### 1. Connector

Are the connectors of the horizontal registration home position sensor and the horizontal registration motor connected?

a. DC controller PCB (J304) <-> relay connector <-> horizontal registration home position sensor

b. DC controller PCB (J304) <-> relay connector <-> horizontal registration motor

NO:      Connect the connectors.

---

#### 2. Sensor lever (damage and interference), Sensor

Is abnormal noise heard from the horizontal registration assembly in keeping with the motor rotation?

YES: a. The horizontal registration assembly is out of place because of damage to the sensor lever. Replace the sensor lever.

b. The horizontal registration assembly malfunctions because of the presence of foreign matter. Remove the foreign matter.

c. The sensor is faulty and cannot detect home position. Replace the sensor.

---

#### 3. Horizontal registration motor, DC controller PCB

Is the horizontal registration motor control signal generated by the DC controller PCB?

J304-1/2: 24 V, J304-3/4/5/6: motor excitation signal

YES:      The horizontal registration motor is faulty. Replace the motor.

NO:      Replace the DC controller PCB.

## E064

0000      The presence of a high-voltage error is communicated by the composite power supply PCB. (The output for primary charging, developing, or transfer has deviated from a specific level of voltage.)

Main cause      The contact has poor connection. The wiring is faulty. The composite power supply PCB is faulty. The DC controller PCB is faulty.

### Action

---

#### 1. Contact

Is any of the contacts of the primary charging roller, developing assembly, or transfer charging roller soiled? Or, is there poor contact?

YES: Clean the contact, and set it once again.

---

#### 2. Wiring

Is the wiring between the contacts for the following normal: DC controller PCB (J301), composite power supply PCB (J136), primary charging roller, developing assembly, transfer charging roller?

- a. DC controller PCB (J301) <-> composite power supply PCB (J136)
- b. composite power supply PCB (J130-7) <-> primary charging roller contact
- c. composite power supply PCB (J130-1) <-> developing assembly contact
- d. composite power supply PCB (FT133) <-> transfer roller contact

NO: Correct the connection.

---

#### 3. Composite power supply PCB, DC controller PCB

Try replacing the composite power supply PCB. Is the problem corrected?

YES: Yes.

NO: Replace the DC controller PCB.

---

---

## E100

- 0001      The BD signal is not detected 10 times or more within 10 msec in 5 msec after the generation of the laser drive signal.
- 0002      While the laser is ON, the BD signal cycle is outside a specific range 20 times or more continuously.
- 0003      While the laser is ON, the horizontal sync signal cycle is outside a specific range 20 times or more.

Main cause      The wiring is faulty (short circuit, open circuit). The BD PCB is faulty. The laser scanner unit is faulty. The DC controller PCB is faulty.

### Action

---

#### 1. BD PCB

Try replacing the BD PCB. Is the problem corrected?  
YES: End.

---

#### 2. Laser scanner unit, DC controller PCB

Try replacing the laser scanner unit. Is the problem corrected?  
YES: End.  
NO: Replace the DC controller PCB.

## E110

0000      The motor ready signal does not arrive within 15 sec after the laser scanner motor drive signal is generated.

Main cause      The wiring is faulty (short circuit, open circuit, disconnection). The laser scanner motor (M10) is faulty. The main power supply PCB is faulty. The DC controller PCB is faulty.

### Action

---

#### 1. Connector

Are the connector (J312) on the DC controller PCB and the relay connector connected securely?

NO:    Connect the connectors securely.

---

#### 2. Main power supply PCB

During printing, does the voltage between J204-1 (+) and J204-2 (-) on the main power supply PCB change from 0 to about 24 V?

NO:    Replace the main power supply PCB.

---

#### 3. Laser scanner unit, DC controller PCB

Try replacing the laser scanner unit. Is the problem corrected?

YES:    End.

NO:    Replace the DC controller PCB.

---



---

## E202

The home position sensor does not go ON when the main power switch is turned on.

0001 The scanner home position sensor does not go OFF when the scanner is moved forward by 40 mm.

0002 The scanner home position sensor does not go ON when the scanner is moved reverse 450 mm.

Main cause The scanner home position sensor (PS400) is faulty. The scanner motor (M400) is faulty. The reader controller PCB is faulty.

### Action

---

#### 1. State

Does the scanner operate when the power is turned on?

NO: See 4.2.9 “The No. 1 mirror base does not operate.”

---

#### 2. Scanner home position sensor (PS400), Reader controller PCB

Move the No. 1 mirror base by hand from home position. Does the output of the scanner home position sensor change? (J405-2 on the reader controller PCB is 5 V (in HP) or 0V (away from HP))

NO: Replace the sensor.

YES: Replace the rear controller PCB.

---



---

## E204

0001 While an original is being read, the image leading edge signal does not arrive from the ADF.

Main cause The ADF controller PCB is faulty. The reader controller PCB is faulty.

Caution When this code occurs, no code is indicated, but the keys are locked. The code may be checked in service mode: COPIER>DISPLAY>ERR.

### Action

---

#### 1. Read sensor (S2)

Try replacing the read sensor of the ADF. Is the problem corrected?

YES: End.

---

#### 2. ADF controller PCB, Reader controller PCB

Try replacing the ADF controller PCB. Is the problem corrected?

YES: End.

NO: Replace the reader controller PCB.

## E220

0001 A fault is detected on the inverter PCB for the scanning lamp.

Main cause The inverter PCB is faulty. The reader controller PCB is faulty.

### Action

---

#### 1. Wiring

Is the wiring from the scanning lamp to the reader controller PCB normal?

NO: Connect the connector firmly, and correct or replace the wiring.

---

#### 2. Inverter PCB, Reader controller PCB

Try replacing the lamp inverter PCB. Is the problem corrected?

YES: End.

NO: Replace the reader controller PCB.

---

---

## E225

0000 A specific level cannot be attained for the signal during CCD gain correction at power-on.

0002 The edge gain correction level is different from the correction level for the preceding sheet by a specific level or more.

Main cause The scanning lamp is faulty. The CCD PCB is faulty. The rear controller PCB is faulty.

### Action

---

#### 1. Scanning lamp (LAMP1)

Is the lamp ON during the initial operation after the main power switch is turned on?

NO: Replace the scanning lamp.

---

#### 2. CCD unit, Reader controller PCB

Try replacing the CCD unit. Is the problem corrected?

YES: End.

NO: Replace the reader controller PCB.

---

---



---

---

## E240

0000      A fault occurs in communication between the CPU of the main controller PCB and the CPU of the DC controller PCB.

Main cause    The main controller PCB is faulty. The DC controller PCB is faulty.

### Action

---

#### 1. Wiring

Is the wiring from the min controller PCB to the DC controller PCB normal?

NO:    Correct the wiring.

---

#### 2. DC controller PCB, Main controlled PCB

Try replacing the DC controller PCB. Is the problem corrected?

YES:    End.

NO:    Replace the main controller PCB.

---

---

## E243

0000      A fault occurs in the communication between the CPU of the control panel PCB and the CPU of the main controller PCB.

Main cause    The control panel CPU PCB is faulty. The main controller PCB is faulty.

### Action

---

#### 1. Wiring

Is the wiring from the main controller PCB to the DC controller PCB normal?

NO:    Correct the wiring.

---

#### 2. Control panel CPU PCB, Main controller PCB

Try replacing the control panel CPU PCB. Is the problem corrected?

YES:    End.

NO:    Replace the main controller PCB.

---

---

## E248

- 0001 A difference is discovered between the ID in EEPROM read when the main power switch is turned on and the ID in ROM upon comparison.
- 0002 The data read does not match the data written to EEPROM.
- 0003 A difference is discovered between the ID of EEPROM and the ID of ROM upon comparison while writing data.

**Main cause** The EEPROM (IC403) of the reader controller PCB is faulty. The reader controller PCB is faulty.

### Action

- 
1. Execute the following in service mode: COPIER>FUNCTION>CLEAR>CON. Is the problem corrected?  
YES: End. After executing the service mode, be sure to enter the service mode data newly.
- 
2. EE-PROM, Reader controller PCB  
Try replacing the EE-PROM. Is the problem corrected?  
YES: End. After replacement, be sure to enter the service mode data newly.  
NO: Replace the rear controller PCB. After replacement, be sure to enter the service mode data newly.
- 

## E261

- 0000 The intervals of zero-cross signals deviate from the tolerance range while the fixing heater is supplied with power.
- Main cause** The wiring is faulty (short circuit, open circuit). The main power supply PCB is faulty. The DC controller PCB is faulty.

### Making Corrections

- 
1. Connectors  
Are the connector J205 on the main power supply PCB and the connector J308B on the DC controller PCB securely connected? (zero-cross signal: J205-7 <-> J308B-1)  
NO: Connect the connectors securely.
- 
2. Main power supply PCB, Main controller PCB  
Try replacing the main power supply PCB. Is the problem corrected?  
YES: End.  
NO: Replace the DC controller PCB.

---

---

## E302

- 0001 During shading, the shading processing does not end on the reader controller PCB after 1 sec.
- 0002 During stream reading, the edge white addition processing does not end on the rear controller PCB after 10 sec.

Main cause The CCD PCB is faulty. The wiring is faulty (short circuit, open circuit).  
The reader controller PCB is faulty.

### Action

---

#### 1. Connector

Are the connectors (J6001/J6002) on the CCD PCB and the connectors (J5002/J5003) on the reader controller PCB connected securely?

NO: Connect the connectors securely.

---

#### 2. CCD unit

Try replacing the CCD unit. Is the problem corrected?

YES: End.

---

#### 3. Reader controller PCB, Main controller PCB

Try replacing the reader controller PCB. Is the problem corrected?

YES: End.

NO: Check the wiring; if normal, replace the main controller PCB.

## E315

Any of the following is true in the image processing by the main controller:

1. The image data has a fault.
2. The encoding/decoding operation for image data has a fault.
3. The image processing element of the main controller PCB has a fault.

Main cause    The image data is faulty. The main controller PCB is faulty. The HDD is faulty.

### Action

---

If this error occurs during normal copying or printing, the job in question (image data) is cleared when the main power switch is turned off and then on again; i.e., the machine will be reset.

If this error occurs frequently, however, a fault on the main controller PCB is a possibility. Further, if this error occurs in a specific image within the MAIL BOX, damage in data may be assumed; be sure to delete the image from the MAIL BOX.

---

---

## E601

0000	When an image is transferred between the main controller PCB and the HDD, the main controller PCB detects a fault in control information.
0001	When an image is transferred between the main controller PCB and the DC controller PCB, the DC controller PCB detects a fault in the control information.
Main cause	The wiring is faulty (short circuit, open circuit). The HDD is faulty. The DC controller PCB is faulty. The main controller PCB is faulty

### Action

---

#### a. E601-0000

---

##### 1. Wiring

Are the connection and the cable between the connector J1017 on the main controller PCB and the connector J1551 on the HDD normal?

YES: End.

NO: Correct the connection/cable.

---

##### 2. HDD, Main controller PCB

Try replacing the HDD, and download the system software. Is the problem corrected?

YES: End.

NO: Replace the main controller PCB.

---

#### b. E601-0001

---

##### 1. Wiring

Are the connection and cable between the connector J122 on the DC controller PCB and the connector J1015 on the main controller PCB normal?

NO: Correct the connection/cable.

---

##### 2. DC controller PCB, Main controller PCB

Try replacing the DC controller PCB. Is the problem corrected?

YES: End.

NO: Replace the main controller PCB.

## E602

- 0001 A mounting fault of the HDD is detected when the HDD is started up from the BOOT ROM.
- 0002 A data read fault of the HDD is detected when the HDD is started up from the BOOT ROM.
- Main cause The wiring is faulty (short circuit, open circuit). The HDD is faulty. The main controller PCB is faulty.

### Action

---

#### 1. Wiring

Are the connection and the cable between connector J1025 of the main controller PCB and the connector J2005 of the HDD normal?

NO: Correct the connector/cable.

---

#### 2. System software

Try re-installing the system software. Is the problem corrected?

YES: End.

---

#### 3. HDD, Main controller PCB

Try replacing the HDD, and download the system software. Is the problem corrected?

YES: End.

NO: Replace the main controller PCB.

---

---

## E604

- 0000 A fault is detected in the image memory.
- Main cause The wiring is faulty (short circuit, open circuit). The HDD is faulty. The main controller PCB is faulty.
- 
- 

## E605

- 0001 A fault is detected in the battery for the image memory.
- Main cause The wiring is faulty (short circuit, open circuit). The HDD is faulty. The main controller PCB is faulty.

---

---

## E606

0001            A mounting fault of the HDD is detected when the HDD is started up from the BOOT ROM.

Main cause    The HDD is faulty. The main controller PCB is faulty.

### Making Corrections

---

#### 1. Wiring

Are the connection and cable normal between the connector J1025 on the main controller PCB and the connector J2005 of the HDD?

NO:    Correct the connection and the cable.

---

#### 2. System software

Try re-installing the system software. Is the problem corrected?

YES:   End.

---

#### 3. HDD, Main controller PCB

Try replacing the HDD and downloading the system software. Is the problem corrected?

YES:   End.

NO:    Replace the main controller PCB.

---

---

## E674

0000            A faulty occurs in the communication between the fax PCB and the main controller PCB.

Main cause    The wiring is faulty (short circuit, open circuit). The fax PCB is faulty. The main controller PCB is faulty.

### Making Corrections

---

#### 1. Wiring

Are the connection and the cable between the connector J 1005 on the main controller PCB and the connector J31 on the FAX PCB normal?

NO:    Correct the connection and the cable.

---

#### 2. FAX PCB, Main controller PCB

Try replacing the FAX PCB. Is the problem corrected?

YES:   End.

NO:    Replace the main controller PCB.

---

---

## E677

0001            A fault occurs in the combination between any of the printer boards (accessories) and the main controller PCB.

Main cause    Any of the printer boards (accessories) is faulty. The main controller PCB is faulty.

### Action

---

#### 1. Connector

Is the printer board (accessory) connected correctly?

NO:    Correct the connection.

---

#### 2. Printer board, Main controller PCB

Try replacing the printer board. Is the problem corrected?

YES:    End.

NO:    Replace the main controller PCB.



## E710

- 0001      When the main power is turned on, the communication IC (IPC) on the reader controller PCB cannot be initialized.
- 0002      When the main power is turned on, the communication IC (IPC) on the DC controller PCB cannot be initialized.
- 0003      When the main power is trend on, the communication IC (IPC) on the main controller PCB cannot be initialized.

Main cause      The DC controller PCB is faulty. The reader controller PCB is faulty. The machine controller PCB is faulty.

### Action

---

#### Malfunction, PCBs

Turn off and then on the main power switch. Is the problem corrected?

YES: End.

NO: If E7100001, replace the reader controller PCB.

      If E710-002, replace the DC controller PCB.

      If E71-0003, replace the main controller PCB.

## E711

- 0001 Data is written to the error register of the communication IC (IPC) on the reader controller PCB four times or more within 1.5 sec.
- 0002 Data is written to the error register of the communication IC (IPC) on the DC controller PCB four times or more within 2 sec.
- 0003 Data is written to the error register of the communication IC (IPC) on the main controller PCB four times or more within 2 sec.

Main cause The connector has poor connection. The ADF controller PCB is faulty. The finisher controller PCB is faulty. The DA unit PCB is faulty. The card reader PCB is faulty.

### Action

---

a. E711-0001

---

Connector, ADF controller PCB

Is the interface cable between the ADF controller PCB and the reader controller PCB normal?

NO: Correct the cable.

YES: Replace the ADF controller PCB.

---

b. E711-0002

---

connector, Finisher controller PCB

Is the interface cable between the finisher controller PCB and the DC controller PCB normal?

NO: Correct the cable.

YES: Replace the finisher controller PCB.

---

c. E711-0003

---

Connector, DA unit PCB

Is the interface cable between the DA unit PCB and the main controller PCB normal?

NO: Correct the cable.

YES: Replace the NE controller PCB.

---

---

## E712

- 0001      The communication is not resumed 3 sec or more after data has been written to the error register of the communication IC (IPC) on the ADF controller PCB.
- 0002      The transmission bit is not enabled 10 sec or more in the sync register of the communication IC (IPC) on the reader controller PCB.
- Main cause      The connect has poor connection. The main power supply PCB is faulty. The ADF controller PCB is faulty. The reader controller PCB is faulty.

### Action

---

#### 1. Connector

Is the interface cable between the ADF controller PCB and the reader controller PCB normal?

NO:    Correct the cable.

---

#### 2. Main power supply PCB

While the ADF is in operation, does the voltage between J203-2 (+) and J203-1 (-) on the main power supply PCB change from 0 to about 24 V?

NO:    Replace the main power supply PCB.

---

#### 3. ADF controller PCB, Reader controller PCB

Try replacing the ADF controller PCB. Is the problem corrected?

YES:    End.

NO:    Replace the rear controller PCB.

## E713

0000      The communication with the finisher is not resumed 3 sec or more after it is disrupted.

Main cause      The connector has poor connection. The option power supply PCB is faulty. The finisher controller PCB is faulty. The DC controller PCB is faulty.

### Action

---

#### 1. Connector

Is the wiring between the finisher controller PCB and the options power supply PCB and between the options power supply PCB and the DC controller PCB normal?

NO:    Correct the wiring.

---

#### 2. Options power supply PCB

Is the voltage between HJ701-6 (+) and J701-7 (-) on the options power supply PCB about 24 V?

NO:    Replace the options power supply PCB.

---

#### 3. Finisher controller PCB, DC controller PCB

Try replacing the finisher controller PCB. Is the problem corrected?

YES:    End.

NO:    Replace the DC controller PCB.

---

---

## E716

0000      The ID signal is not detected within a specific period of time after the presence of a pedestal is detected.

Main cause      The connector has poor connection. The main power supply PCB is faulty. The pedestal controller PCB is faulty. The DC controller PCB is faulty.

### Action

---

#### 1. Connector

Is the wiring between the pedestal controller PCB and the main power supply PCB and between the main power supply PCB and the DC controller PCB normal?

NO:    Correct the wiring.

---

#### 2. Main power supply PCB

Is the voltage between J206-2 (+) and J206-1 (-) on the main power supply PCB about 24 V?

NO:    Replace the main power supply PCB.

---

#### 3. Pedestal controller PCB, DC controller PCB

Try replacing the pedestal controller PCB. Is the problem corrected?

YES:    End.

NO:    Replace the DC controller.

---



---

---

## E717

0001      The communication with the DA unit is not resumed 3 sec or more after it is disrupted.

Main cause      The wiring is faulty (short circuit, open circuit). The DA unit PCB is faulty. The main controller PCB is faulty.

Caution      To clear the error, execute the following in service mode:  
COPIER>FUNCTION>CLEAR>ERR.

### Action

---

#### 1. Connector

Is the connection between the DA unit PCB and the main controller PCB secure?

NO:    Correct the connection.

---

#### 2. DA unit PCB, main controller PCB

Try replacing the DA unit PCB. Is the problem corrected?

YES:    End.

NO:    Replace the main controller PCB.

---

## E719

0001            The communication between the Card Reader-C1 or the coin vendor and the main controller PCB is disrupted.

Main cause    The wiring is faulty (short circuit, open circuit). The Card Reader-C1 is faulty. The coin vendor is faulty. The main controller PCB is faulty.

Caution       To clear the error, execute the following in service mode:  
COPIER>FUNCTION>CLEAR>ERR.

### Action

---

#### 1. Connector

Is the Card Reader-C1 or the coin vendor connected securely?  
NO:    Connect it securely.

---

#### 2. Coin vendor, Main controller PCB

Try replacing the Card Reader-C1 or the coin vendor. Is the problem corrected?  
YES:    End.  
NO:    Replace the main controller PCB.

---

## E732

0001            A fault is detected by the main controller PCB in the communication between reader controller PCB and the main controller PCB.

Main cause    The connector has poor connection. The reader controller PCB is faulty.

### Action

---

#### 1. Connector, Reader controller PCB

Is the connection between the connector J1014 on the main controller PCB and the connector J409 on the reader controller PCB normal?  
NO:    Correct the connection.  
YES:    Replace the reader controller PCB.

---

---

## E733

0001      A fault is detected by the main controller PCB in the communication between the DC controller PCB and the main controller PCB.

Main cause    The connector has poor connection. The DC controller PCB is faulty.

### Action

---

#### 1. Connector, DC controller PCB

Is the connection between the connector J1015 on the main controller PCB and the conductor J316 on the DC controlled PCB normal?

NO:    Correct the connection.

YES:    Replace the DC controller PCB.

---

---

---

## E737

0000      During self diagnosis at power-on, the DRAM check finds a fault in the main controller PCB.

Main cause    The connection of the IC socket is faulty. The main controller PCB is faulty.

### Action

---

#### 1. Connection

Is the DRAM fitted to the socket securely?

NO:    Fit the DRAM securely.

---

#### 2. DRAM, Main controller PCB

Try replacing the DRAM. Is the problem corrected?

YES:    End.

NO:    Replace the main controller PCB.

## E740

- 0001 At power-on, the LAN card has a fault.
- 0002 The MAC address has a fault.
- 0003 The LAN card cannot be read.

Main cause The LAN card is faulty. The main controller PCB is faulty.

### Action

---

#### 1. Connector

Is the connection between the LAN card and the main controller PCB normal?

NO: Correct the connection.

---

#### 2. LAN card, Main controller PCB

Try replacing the LAN card. Is the problem corrected?

YES: End.

NO: Replace the main controller PCB.

---

## E741

- 0000 The PCI bus has a fault.

Main cause The PCI bus has poor connection. The main controller PCB is faulty.

Action Each PCI slot may be disabled in service mode to prevent the error:  
BOARD>PCI1-OFF through PCI3-OFF.

---

#### 1. Board

Is the connection between the relay board and the main controller PCB normal?

NO: Correct the connection.

---

#### 2. Relay board, Main Controller PCB

Try replacing the relay board. Is the problem corrected?

YES: End.

NO: Replace the main controller PCB.



## E743

0000      The reader controller PCB detects a fault in the communication between the main controller PCB and the reader controller PCB.

Main cause    The connector has poor connection. The main controller PCB has a fault.

### Action

---

#### 1. Connector, Main controller PCB

Is the connection between the connector J1014 on the main controller PCB and the connector J409 on the reader controller PCB normal?

NO:    Correct the connection.

YES:   Replace the main controller PCB.

---

---

## E744

0000      The BootROM on the main controller PCB and the system software are for different models or are of different types.

Main cause    The BootROM is not mounted correctly, or a fault occurred during downloading or when downloading the system software.

### Making Corrections

---

#### Downloading (system software)

Check the types of the BootROM and the system software, and download system software of the correct type.

## E803

0000      The 24V output from the composite main power supply PCB is absent for 1 sec or more.

Main cause      The wiring is faulty (short circuit, open circuit). The composite power supply PCB is faulty. The DC controller PCB is faulty.

### Making Corrections

---

#### 1. Connectors

Are the connectors J204 on the main power supply PCB and the connector J300 on the DC controller PCB connected securely?

NO:      Connect the connectors securely.

---

#### 2. Main power supply PCB

Is 24 V supplied by the main power supply PCB (J204) to the DC controller PCB (J300)?

(J204-5 <-> J300-5: OVU3, J204-6 <-> J300-6: OVU3,  
J204-7 <-> J300-7: 24VU3, J204-8 <-> J300-8: 24VU3)

NO:      Replace the main power supply PCB.

YES:      Replace the DC controller PCB.

---



---

## E805

The clock signal is absent for 5 sec or more after the fan drive signal has been generated. The detail codes of the fans in question are as follows:

0001	developing fan (FM1)
0002	fixing fan (FM2)
0003	curl reducing fan (FM4)
0004	curl reducing fan (FM5)
0005	electrical unit fan (FM3)

Main cause    The fan wiring is faulty (short circuit, open circuit). The fan is faulty. The DC controller PCB is faulty.

### Action

---

#### 1. Foreign matter

Is there foreign matter that prevents the rotation of the fan?

YES: Remove the foreign matter.

---

#### 2. Wiring, Connector

Are the wiring and connector of the fan normal?

Developing fan (FM1):                      DC controller PCB (J302B)

Fixing fan (FM2):                          DC controller PCB (J308B)

Curl reducing fan (FM4):                DC controller PCB (J311B)

Curl reducing fan (FM5):                DC controller PCB (J311B)

Electrical unit fan (FM3):              main controller PCB (J1028)

NO: Correct the wiring and the connection.

---

#### 3. Fan, DC controller PCB

Try replacing the fan. Is the problem corrected?

YES: End.

NO: Replace the DC controller PCB.

## E901

0000      The motor ready signal does not arrive within 1.3 sec after the pedestal main motor drive signal is generated.

Main cause      The connector has poor connector. The pedestal main motor is faulty. The main power supply PCB is faulty. The pedestal controller PCB is faulty. The DC controller PCB is faulty.

### Action

---

#### 1. Connector

Is the wiring between the pedestal controller PCB and the main power supply PCB and between the main power supply PCB and the DC controller PCB normal?

NO:    Correct the wiring.

---

#### 2. Main power supply PCB

Is the voltage between J206-2 (+) and J206-1 (-) on the main power supply PCB about 24 V?

NO:    Replace the main power supply PCB.

---

#### 3. Pedestal main motor

Try replacing the pedestal main motor. Is the problem corrected?

YES:    End.

---

#### 4. Pedestal controller PCB, DC controller PCB

Try replacing the pedestal controller PCB. Is the problem corrected?

YES:    End.

NO:    Replace the DC controller PCB.

## 1.2 ADF Error Codes

When the ADF's self diagnostic mechanism has gone ON, it may be reset by turning off and then on its host machine.

The host machine can still generate copies in book mode if the ADF cable is disconnected even while the ADF is out of order.

---

### E420

0001            When the power switch of the host machine is turned on, the back-up data from the EEPROM cannot be read or the data that has been read has a fault.

Main cause    The EEPROM is faulty. The ADF controller PCB is faulty.

---

### E421

0001            The back-up data cannot be written to the EEPROM, or the data that has been written has a fault.

Main cause    The EEPROM has a fault. The ADF controller PCB has a fault.

---

### E422

0001            While the ADF is in standby, the communication with its host machine is disrupted for 5 sec or more; or, while the ADF is in operation, the communication with its host machine is disrupted for 0.5 sec or more.

Main cause    The IPC communication is faulty. The communication line has an open circuit. The ADF controller PCB is faulty.

---

## 1.3 Saddle Finisher-G1 Error Codes

When the finisher's self diagnostic mechanism has gone ON, it may be reset by turning off and then on its host machine.

The host machine can still generate copies if the finisher cable is disconnected and the delivery path is set to the delivery tray of the host machine.

### 1.3.1 Error Code of the Finisher Unit

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#### E501

0001            The communication between the finisher controller PCB and the puncher drive PCB is disrupted.

Main cause    The finisher controller PCB is faulty. The puncher drive PCB is faulty.

---

---

#### E505

0001            When the main power is turned on, the checksum of the finisher controller PCB has a fault.

0002            When the main power is turned on, the checksum of the puncher driver PCB has a fault.

Main cause    The EEPROM is faulty. The finisher controller PCB is faulty. The puncher driver PCB is faulty.

---

---

#### E510

0001            The feeding roller does not leave home position when the feed motor is driven for 2 sec.

0002            The feeding roller does not return to home position when the feed motor is driven for 2 sec.

Main cause    The feed motor (M1) is faulty. The setting roller home position sensor is faulty. The finisher controller PCB is faulty.

---

---

## E514

- 0001 The delivery belt does not leave home position when the stack delivery motor is driven for 3 sec.
- 0002 The delivery belt does not return to home position when the stack delivery motor is driven for 3 sec.
- Main cause The stack delivery motor (M3) is faulty. The delivery belt home position motor (PI7) is faulty. The finisher controller PCB is faulty.
- 
- 

## E530

- 0001 The aligning plate (rear) does not leave home position when the alignment motor (rear) is driven for 3 sec.
- 0002 The aligning plate (rear) does not return to home position when the alignment motor (rear) is driven for 3 sec.
- Main cause The alignment motor (rear; M5) is faulty. The aligning plate home position sensor (rear; PI5) is faulty. The finisher controller PCB is faulty.
- 
- 

## E531

- 0001 The stapler does not leave home position when the stapler/folder motor is driven for 1.5 sec.
- 0002 The stapler does not return to home position when the stapler/folder motor is driven for 1.5 sec.
- 0003 The clock signal is disrupted for 1 sec or more while the stapler/folder motor is driven.
- Main cause The stapler home position sensor (PI19) is faulty. The stapler/folder motor (M7) is faulty. The stapler/folder clock sensor (PI4) is faulty. The finisher controller PCB is faulty.
- 
- 

## E532

- 0001 The stapler unit does not leave home position when the stapler slide motor is driven for 4.5 sec.
- 0002 The stapler unit does not return to home position when the stapler slide motor is driven for 4.5 sec.
- Main cause The slide home position sensor PI180 is faulty. The stapler slide motor (M8) is faulty. The finisher controller PCB is faulty.
- 
-

## E537

- 0001 The aligning plate (front) does not leave home position when the alignment motor (front) is driven for 3 sec.
- 0002 The aligning plate (front) does not return to home position when the alignment motor (front) is driven for 3 sec.
- Main cause The alignment motor (front; M4) is faulty. The aligning plate home position sensor (front; PI4) is faulty. The finisher controller PCB is faulty.
- 
- 

## E540

- 0001 The paper surface sensor remains unchanged 10 sec after the tray ascent/descent motor is driven.
- 0002 The tray upper sensor goes ON while the tray is moving up.
- 0003 The clock for the clock sensor is disrupted for 10 sec or more while the tray ascent/descent motor is driven.
- Main cause The paper surface sensor (PI9) is faulty. The tray ascent/descent motor clock sensor (PI17) is faulty. The tray upper limit sensor (PI15) is faulty. The tray ascent/descent motor (M6) is faulty. The finisher controller PCB is faulty.
- 
- 

## E577

- 0001 The paddle does not leave home position when the paddle motor is driven for 2 sec or more.
- 0002 The paddle does not return to home position when the paddle motor is driven for 2 sec or more.
- 0003 The stack ascent/descent guide does not leave home position when the paddle motor is driven for 2 sec or more.
- 0004 The stack ascent/descent guide does not return to home position when the paddle motor is driven for 2 sec or more.
- Main cause The paddle home position sensor (PI2) is faulty. The stack ascent/descent home point sensor Pixx0 is faulty. The paddle motor (M2) is faulty. The finisher controller PCB is faulty.



---

---

## E590

- 0001 The puncher does not return to home position when the puncher motor is driven for 250 msec.
- 0002 The clock from the puncher motor clock sensor is disrupted for 60 msec or more when the puncher motor is driven.

Main cause The puncher home position sensor (PI1P) is faulty. The puncher motor (M1P) is faulty. The puncher motor clock sensor (PI3P) is faulty. The puncher driver PCB is faulty.

---

---

## E592

In the course of sensor output automatic adjustment, the light-receiving voltage is 2.5 V or less even when the light-emitting voltage is set to 4.4 V. In the course of output automatic adjustment, the light-receiving voltage is 2.5 V or more even when the light-emitting voltage is set to 0 V. In the course of sensor output automatic adjustment, the light-emitting voltage is set to 4.4 V or more.

- 0001 to 0005 Horizontal registration sensor
- 0006 Puncher waste full sensor

Main cause The horizontal registration sensor is faulty. The puncher waste sensor is faulty. The puncher driver PCB is faulty.

---

---

## E593

- 0001 The puncher not leave home position when the puncher shift motor is driven for 1 sec.
- 0002 The puncher does not return to home position when the puncher shift motor is driven for 1 sec.

Main cause The horizontal registration home position sensor (PI2P) is faulty. The puncher shift motor (M2P) is faulty. The puncher drive PCB is faulty.

## E5F1

- 0001      The folding roller does not leave home position when the stapler/folder motor is driven for 1.5 sec.
- 0002      The folding roller does to return to home position when the stapler/folder motor is driven for 3.5 sec or more.
- 0003      The clock is disrupted for 1 sec or more while the stapler/folder motor is driven.
- Main cause      The folding roller home position sensor (PI12) is faulty. The stapler/folder motor (M7) is faulty. The stapler/folder clock sensor (PI14) is faulty. The finisher controller PCB is faulty.

## 1.4 Finisher-J1 Error Codes

When the finisher's self diagnostic mechanism has gone ON, it may be reset by turning off and then on its host machine.

While the finisher is out of order, prints can still be made by disabling the finisher operation as follows (other than delivery):

- 1) Service mode
  - [1] Turn off and then on the main power switch.
  - [2] Set '1' to SORTER>OPTION>MD-SPRTN.
  - [3] Turn off and then on the main power switch.
- 2) User mode
  - [1] Turn off and then on the main power switch.
  - [2] Set 'OFF' the following: 'adjustment/cleaning'>'staple/offset function'.
  - [3] Turn off and then on the main power switch.

---



---

### E500

0000            The communication between the copier and the finisher is disrupted and is not corrected for 5 sec or less.

Cause            The copier harness is faulty. (disconnected connector, open circuit) The finisher controller PCB or the copier's DC controller PCB is faulty.

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### E514

0000            At the start of the motor CW operation, the stack handling motor (M2) may be driven for a specific number of rotations; however, the stack delivery lever home position sensor (S8) does not go ON.

Cause            The stack handling motor (M2) is faulty. The stack delivery lever home position sensor (S8) is faulty, the connector is disconnected, or an open circuit exists. The stack handling motor (M2) relay harness is faulty. The return roller is faulty.

---



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### E530

0000            The alignment motor (M4) is driven for a specific number of rotations, but the aligning plate home position sensor (S7) does not go ON.  
The alignment motor (M4) is driven for a specific number of rotations, but the aligning plate home position sensor (S7) does not go OFF.

Cause            The rear alignment motor (M4) is faulty. The rear aligning plate home position sensor (S7) is faulty. The rear alignment motor relay harness is faulty. The rear aligning plate is subjected to an excess load.

## E531

0000      The stapling home position sensor (S16) does not go off 0.5 sec after the stapler motor is rotated CW.  
The stapling home position sensor (S16) dos not go ON with 0.5 sec after the stapler motor is rotated CW and, thereafter, the sensor does not go ON within 0.5 sec after the motor is rotated in reverse.

Cause      The stapler motor (M6) is faulty. The stapling home position sensor (S16) is faulty. The stapler harness is faulty. The finisher controller PCB is faulty.

---

---

## E537

0000      The aligning plate home position sensor (S6) does not go ON when the front alignment motor (M3) is driven for a specific number of rotations.  
The aligning plate home position sensor (S6) does not go OFF when the front alignment motor (M3) is driven for a specific number of rotations.

Cause      The front alignment motor (M3) is faulty. The front aligning plate home position sensor (S6) is faulty. The front alignment motor relay harness is faulty. The front aligning plate is subjected to an excess load.

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---

## E577

0000      The return roller does not reach home position when the delivery motor (M1) has been driven as much as will move it to the return roller home position sensor (S3).

Cause      The delivery motor (M1) or the finisher controller PCB is faulty. The return roller home position sensor (S3) is faulty, the harness connector is disconnected, or an open circuit exists. The delivery motor relay harness is faulty. The return roller is faulty.

---

## E580

- 0000      The delivery tray upper limit sensor (S13) goes ON while the delivery tray ascent/descent motor (M5) is in operation.  
The clock signal of the delivery tray ascent/descent motor clock sensor (S9) is not detected 15 times or more within 0.8 sec while the delivery tray ascent/descent motor (M5) is in operation.  
The delivery tray paper height sensor (S10) does not go ON 4 sec after the delivery tray ascent/descent motor (M5) starts to move up.  
The delivery tray paper height sensor (S10) does not go OFF 4 sec after the delivery tray ascent/descent motor (M5) starts to move down.
- Cause      The delivery tray ascent/descent motor (M5) is faulty. The delivery tray paper height sensor (S10) is faulty, the harness is disconnected, or an open circuit exists. The delivery tray ascent/descent motor lock sensor (S9) is faulty, the connector is disconnected, or an open circuit exists. The delivery tray ascent/descent motor is subjected to an excess load. The finisher controller PCB is faulty.
- 

## E585

- 0000      At the start of the motor CCW operation, the stack handling motor (M2) may be driven for a specific number of rotations; however, the stack delivery lever home position sensor (S8) does not go ON.
- Cause      The stack handling motor (M2) is faulty. The stack delivery lever home position sensor (S8) is faulty, the connector is disconnected, or an open circuit exists. The stack handling motor (M2) relay harness is faulty. The return roller is faulty.



# CHAPTER 7 UPGRADING

## 1 Upgrading

### 1.1 Outline

The machine is upgraded either by downloading data from a PC or by replacing its DIMM/ROM.

The following five items are upgraded by downloading from a PC:

- BOOT ROM (machine J1009 DIMM ROM)
- HD Format (machine HDD; formatting)
- Language (machine HDD)
- RUI (machine HDD)
- System (machine HDD)
- DADF-H1 (CPU; Use the downloader PCB)      See 1.6 Downloader PCB
- Finisher-J1 (CPU; Use the downloader PCB)      See 1.6 Downloader PCB

As indicated, the language module may also be downloaded.

The machine may be connected to a network when downloading data from a PC.

For instructions on upgrading by means of replacing the DIMM/ROM, see 1.7 “Upgrading by Replacing the DIMM/ROM.”

#### 1.1.1 Download Mode

The machine provides two types of download modes; although any of the two may be used to download all files, select with care if you want to format the hard disk (select the HD Format), as a specific partition must be selected.

You can use any of the two when using a parallel cable; however, the use of a network cable will require you to start up the machine’s network environment, necessitating the use of downloading in service mode.

- **Downloading in Download Mode**

To start download mode,

- 1) While holding down ‘2’ and ‘8’ on the keypad at the same time, turn on the power switch.
- 2) Hold down ‘2’ and ‘8’ on the keypad until the bottom of the touch panel indicates the message “Download Mode.”

Partition Available for Formatting the Hard Disk

/BOOTDEV

ALL

- **Downloading in Service Mode**

To start download mode,

- 1) Start service mode.
- 2) Make the following selection: COPIER>FUNCTION>SYSTEM>DOWNLOAD. Then, press 'OK' so that the machine will be in download standby mode (message "STANDBY").

Partition Available for Formatting the Hard Disk

/PDLDEV

/FSTDEV

/DOSDEV



---

If you use the Service Support Tool while the machine is not in download mode, the machine will treat data from the interface as a local print job and, accordingly, will increment the job count.

When you use the Service Support Tool, be sure to switch the machine to download mode in advance by following the instructions on the screen.

---

### 1.1.2 Making Pre-Checks

Prepare the following:

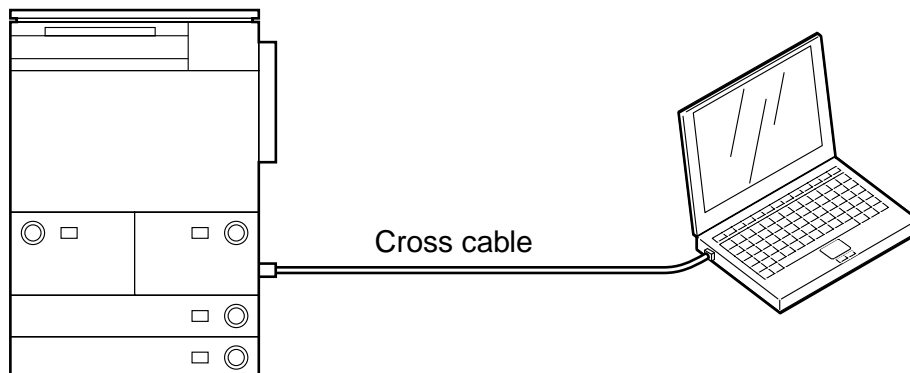
- PC to which the Service Support Tool (version 1.25 or later) has been installed
- System CD (for iR2200/iR2800/iR3300TYPE)
- Connection cable

The type of cable depends on how the machine is to be connected to the PC.

- In the case of a bi-Centronics interface, obtain a parallel cable (indicating IEEE 1284Std-compliant).
- Using a Network Cable

Connect the machine with the PC using a cross Ethernet cable or a straight Ethernet cable and a HUB.

The following shows how a cross Ethernet cable may be used.



F07-101-01

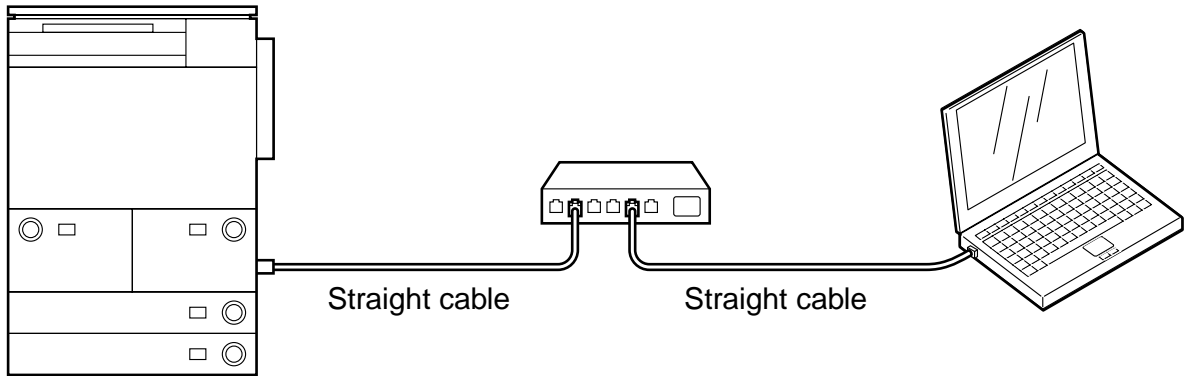




---

If you are using a straight Ethernet cable and a HUB, you are encouraged to connect the machine with the PC on a one-on-one basis, outside the user's network environment.

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F07-101-02



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### Differences in Connection Between Bi-Centronics Cable and Network Cable

Each has its own advantages and disadvantages; select one to suit specific needs:

#### Connection with a Bi-Centronics Cable (using a parallel cable)

##### Advantages:

- You can use the Service Support Tool without considering the environment of the user's network.
- If the system is not installed on the hard disk, the system may be installed or the hard disk may be formatted using download mode.

##### Disadvantages:

- The specifications of the PC used or the chip set may not allow the use of high-speed mode, i.e., it has a low level of compatibility.
- The PC must have a parallel interface.
- You can not use high-speed mode on Windows NT or Windows 2000.

#### Connection with a Network Cable

##### Advantages:

- It is relatively high speed.
- It is less dependent on the PC to be used.
- The use of a cross cable enables direct connection.

##### Disadvantages:

- You must change the network settings of the machine or the PC to suit the user's network environment. More importantly, you must change the machine back to its initial settings after the task.
  - You must have a good knowledge of networking.
  - The system must start up normally and the network settings must be correct.
- 



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### Points to Note When Using a Bi-Centronics Interface and a Network

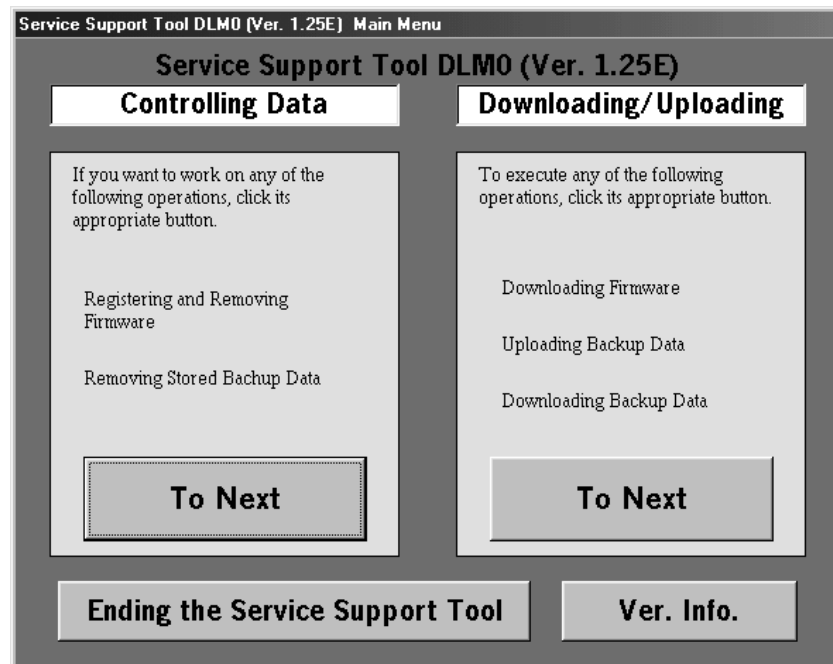
The Service Support Tool allows you to select one of two interfaces to suit specific needs. If both are in use, you must turn the machine off and then on first before making a switch-over (i.e., from Bi-Centronics to Network or vice versa), thereby preventing errors in the event of simultaneous writing operations.

---

## 1.2 Data Control

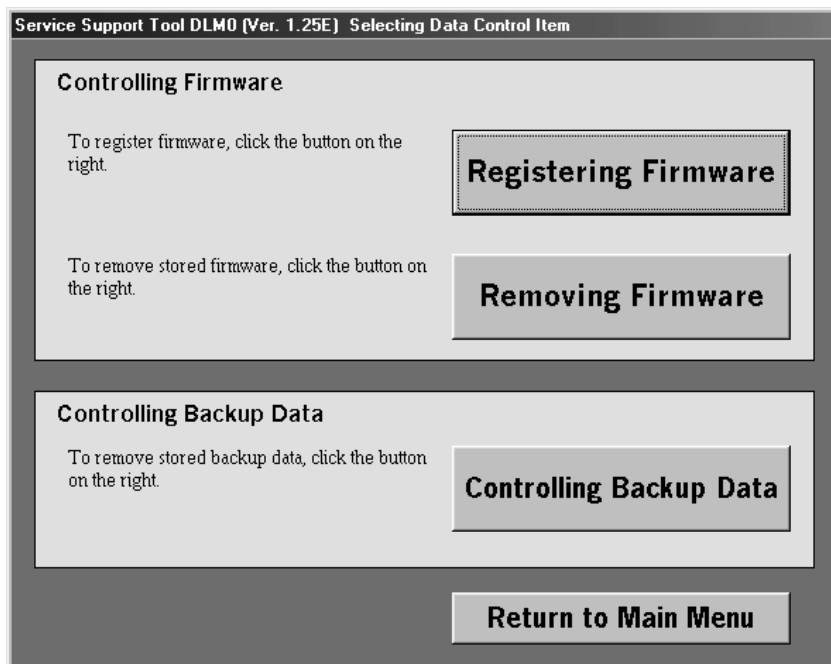
You must install the files to use (System, RUI, HD Format , BOOT, Language) before executing downloading.

- 1) Start up the Service Support Tool.
- 2) Under 'Controlling Data', select 'To Next'.



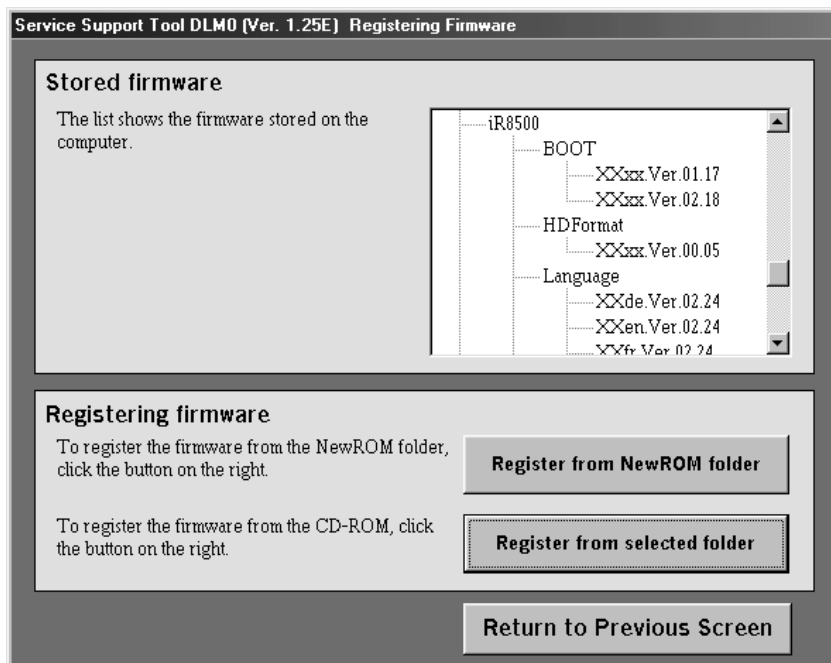
F07-102-01

3) From the Control Work screen of the firmware, select 'Registering Firmware'.



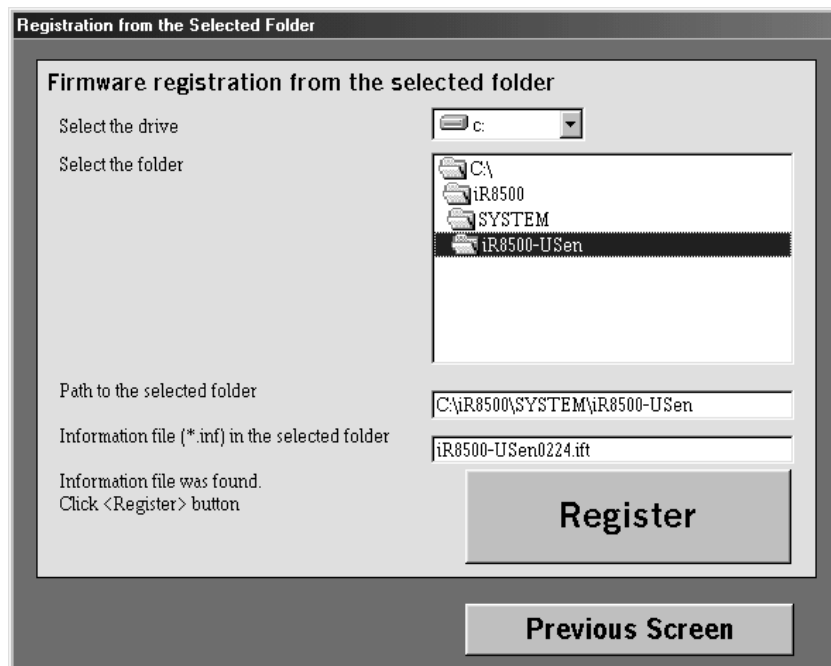
F07-102-02

4) From the following screen, select 'Register from selected folder'.



F07-102-03

- 5) Select the drive to which you have inserted the System CD.
- 6) Select the folder of the suitable version, and click 'Register'.  
On this screen, it is in the case of iR8500.



F07-102-04

Note: For iR2800/iR3300 User  
You must select the folder of iR2200.  
Such software can be used in common.

## 1.3 Downloading the System Software, RUI, and Language Module

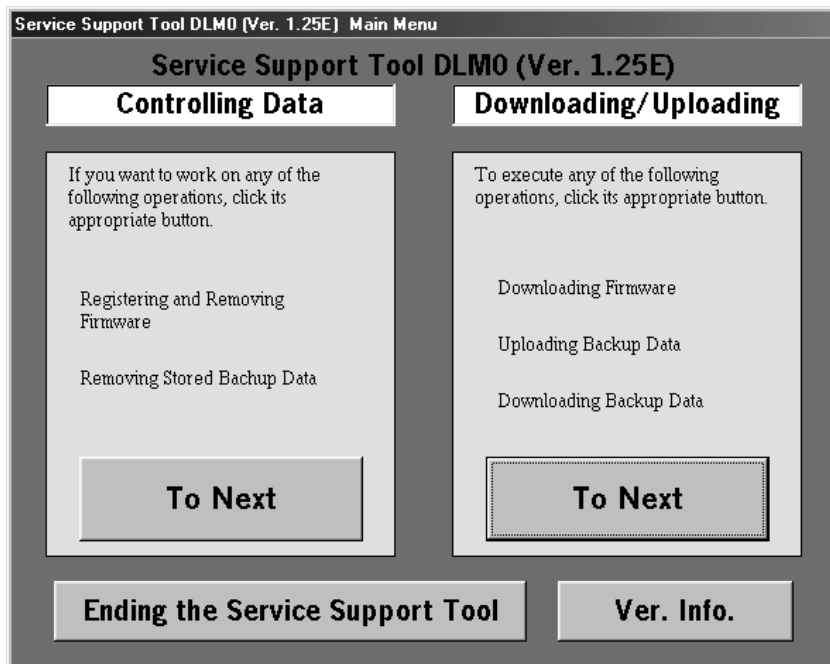
### 1.3.1 Making Connections

The discussions that follow are based on the use of a parallel cable:

- Check to make sure that the Processing/Data lamp is OFF.
  - 1) Turn off the machine's main power switch, and disconnect the power plug and the network cable.
  - 2) Using a parallel cable, connect the PC to the parallel connector on the left side of the controller.
- At this time, the PC must remain OFF.
- Connect the 25-pin connector of the cable to the PC and the 36-pin connector to the machine.
  - 3) Turn on the power switch of the PC, and start up the Service Support Tool.
  - 4) Connect the machine's power plug to the power outlet, and turn on the main power switch.

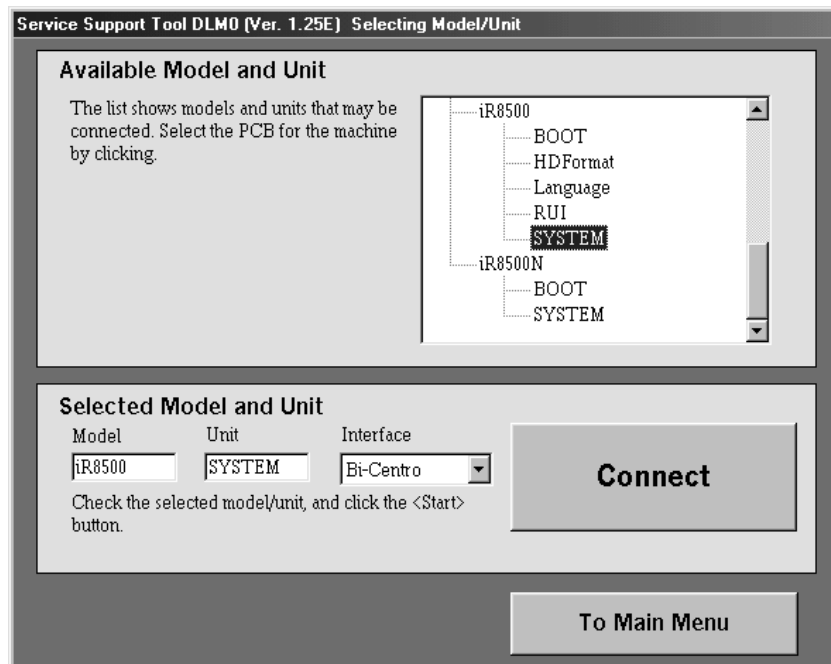
### 1.3.2 Downloading

- 1) Under 'Downloading/Uploading', select 'To Next'.



F07-103-01

- 2) Start the machine's service mode, and make the following selections: COPIER>FUNCTION>SYSTEM>DOWNLOAD. Then, press 'OK' so that the machine will be in download standby mode (notation "STNDBY").
- 3) Select SYSTEM, RUI, or Language, and select the interface (either Bi-Centronics or Network). The discussions that follow assume that you have selected bi-Centronics. On this screen, it is in the case of iR8500.



F07-103-02

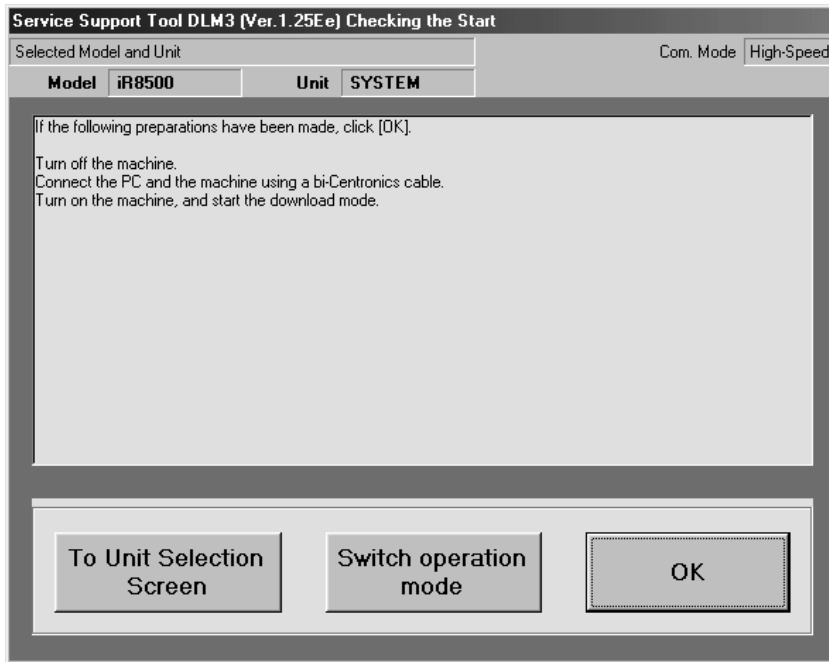


Memo

### About the Language Module (Language)

A language module is a unit containing the language data needed to indicate messages in the control panel, each module designed for a specific language. Install only those language modules you need, thus saving time spent for downloading. You can switch among installed language modules in user mode: common settings> display language. At time of shipment, five modules (languages) are installed. The modules will be lost once you format the hard disk, requiring you to install them once again to suit the needs of the user. To check the version of the modules, make the following selections: COPIER>DISPLAY>VERSION>LANG-XX. Check to make sure that the version of each language module matches the version of the installed system software; otherwise, use the language module built into the system software to start up. The built-in module is not part of the modules that may be selected as the display language; for this reason, you will not be able to make use of the language switch unless you have installed modules independently of the system software. If you replace an existing language module with a module of an inappropriate version, 'E744-0001' will be indicated when the machine is started up for the first time; to reset the error, install a module of the correct version.

- 4) If the notation in the upper right of the screen is 'High-Speed', go to step 6); if 'Low-Speed', go to step 5).



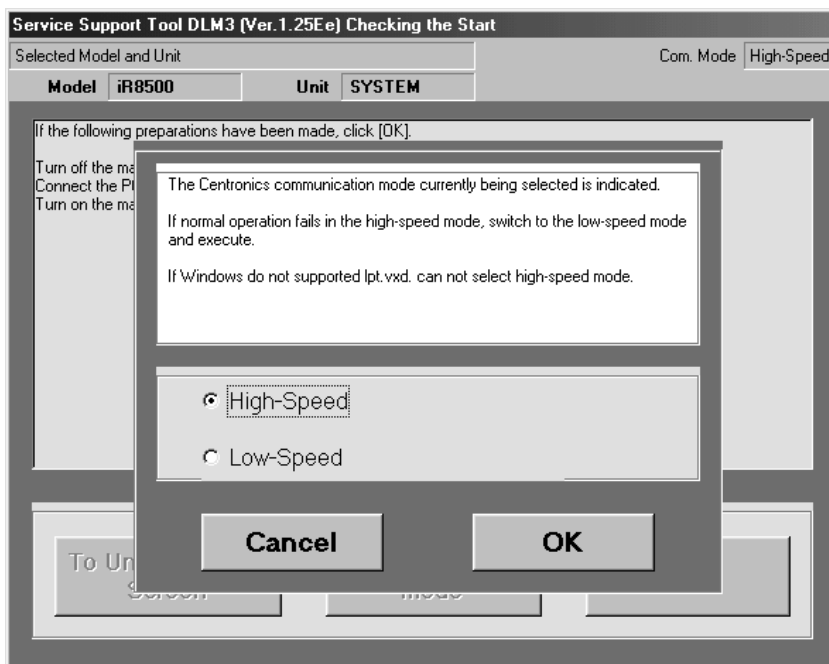
F07-103-03

- 5) Click 'Switch operation mode' to bring up the Centronics Communication Mode Change screen. Select 'High-Speed', and press 'OK' to move to step 6).



Memo

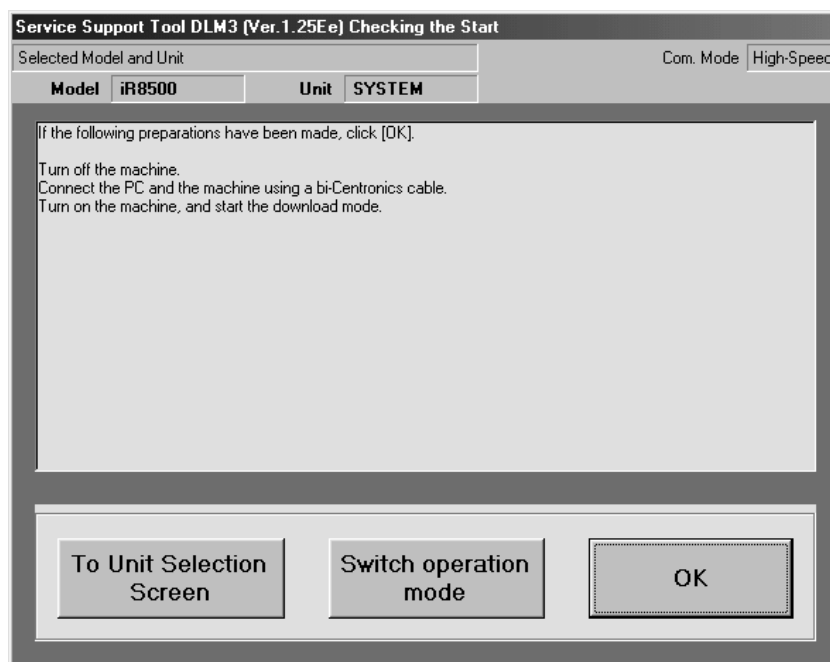
High-speed mode is not supported on Windows NT and Windows 2000.



F07-103-04

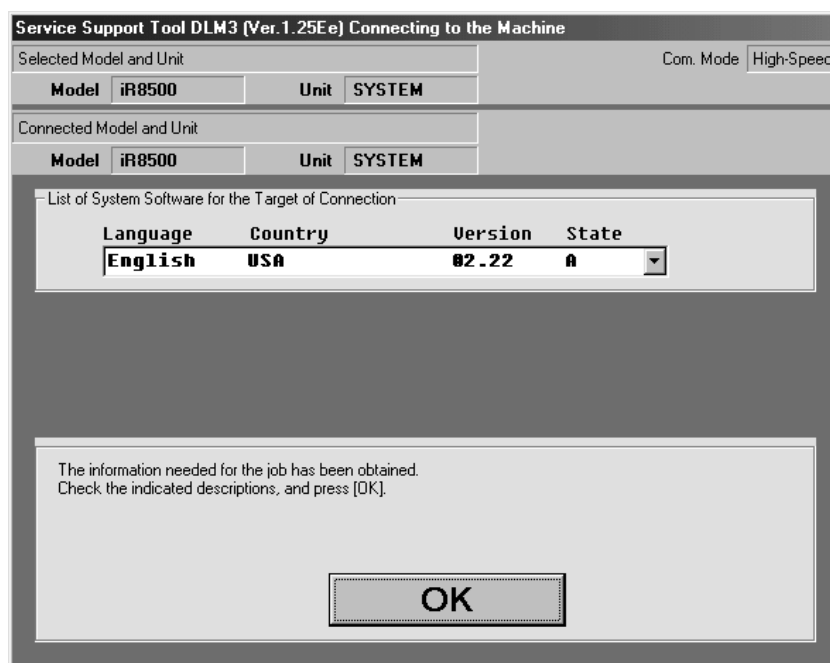


6) Click 'OK' to start connection.



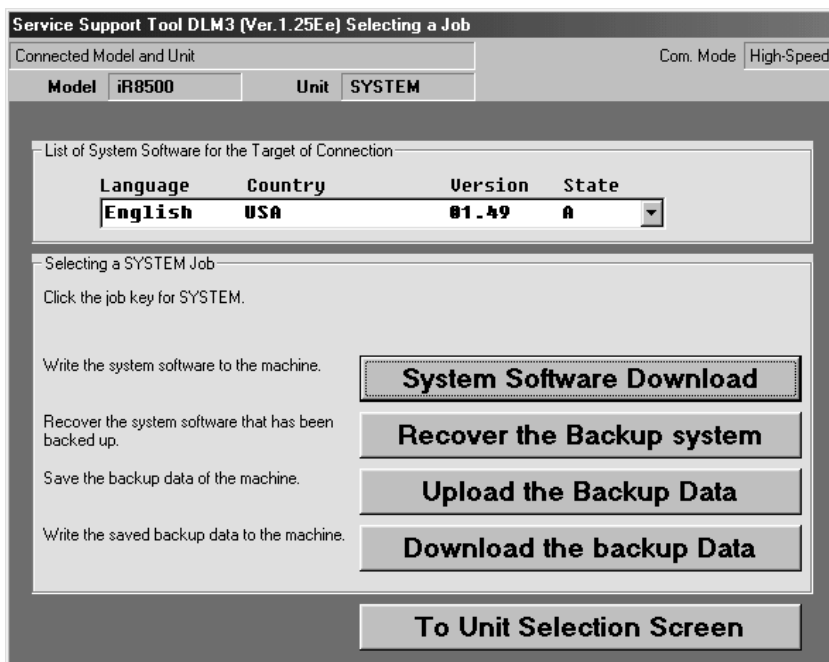
F07-103-05

7) When connection is done, the following screen will appear. Click 'OK'.



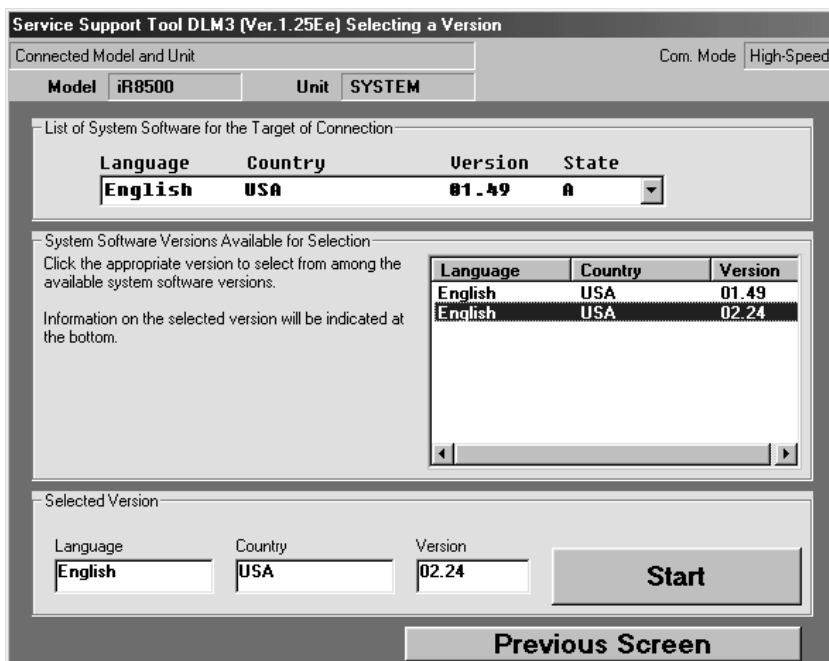
F07-103-06

8) Select 'System Software Download' of the Service Support Tool screen.



F07-103-07

9) Select the files suited to the language and the country in question from the 'list of software' on the Service Support Tool screen, and click 'Start'.



F07-103-08

- 10) The following screen will appear to indicate the types of software that will be downloaded: “Function: COPY/PRINTER” “NetWare: YES/NO.” If the indications are correct, click ‘Start’.

**Service Support Tool DLM3 (Ver. 1.25Ee) Selecting a Version**

Connected Model and Unit: Model **iR8500** Unit **SYSTEM** Com. Mode **High-Speed**

List of System Software for the Target of Connection

Language	Country	Version	State
<b>English</b>	<b>USA</b>	<b>01.49</b>	<b>A</b>

Connected target has functions below.

Function: COPY  
NetWare: NO

**Select Again** **Start**

Selected Version

Language: **English** Country: **USA** Version: **02.24** **Start**

**Previous Screen**

F07-103-09



### Installing System Software with Different Functions

Normally, you cannot upgrade existing system software by means of downloading unless the old and new systems have the same functions; an attempt to do so will result in an error. If the user obtains the official Upgrading kit and follow the appropriate procedure, however, such upgrading is possible; for details, see the Installation Procedure that comes with the Upgrading kit.

- 11) Check the progress bar, which indicates the progress of downloading.
- 12) When downloading ends, turn off the PC by making the following selections: OK>To Unit Selection Screen>OK>To Main Menu>Ending the Service Support Tool>End.

### 1.3.3 After Downloading

- 1) Turn off the machine's main power switch, and disconnect its power plug.
- 2) Turn off the PC.
- 3) Disconnect the parallel cable from the PC and the machine.
- 4) If a network cable is connected, connect it to its correct location, and turn on the machine's main power switch.
- 5) When the machine has started up, start service mode to check the system version for the HDD: COPIER>DISPLAY>VERSION>MN-CONT.

## 1.4 Upgrading the BOOT ROM

### 1.4.1 Making Preparations

When you upgrade the machine's BOOT ROM, you will directly replace the contents of the ROM DIMM. Take full care.

- 1) Check to see that the machine's Data lamp is OFF.
- 2) Turn off the machine's main power switch, and disconnect the power plug and the network cable.



---

#### Limits on Preparing the BOOT ROM

You will not be able to prepare the BOOT ROM unless the following conditions are met:

On this screen, it is in the case of iR8500.

- The model of the machine is the same; e.g., you cannot use the iR2200 BOOT ROM data to upgrade an iR5000.
- The parameter "function" (COPY or PRINTER) must match when downloading the system software; i.e., you cannot use the iR2200N (PS/PCL model) BOOT ROM data to upgrade an iR2200. (The same is true of from PS/PCL model to COPY.)

Any attempt made in disregard of the above will cause a mismatch error when the machine runs a check before writing.

---

## 1.4.2 Connection

The following discussions assume the use of a network cable (cross cable).

### Making Preparations

If you want to download firmware to the machine using a network, you need to set up the PC and the machine's network environment.

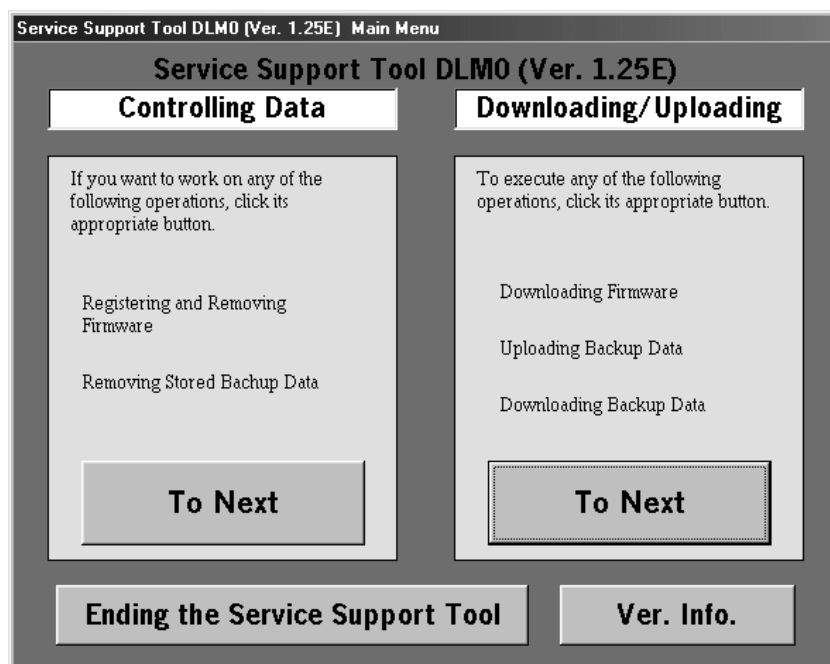
Use TCP/IP as the communication protocol for downloading from a network using the Service Support Tool. Connect the PC to the machine by way of the network, and check to make sure that all are ready for communication by sending a PING command from the PC or the machine.

- 1) Connect the machine's network connector (RJ-45) and the network connector of the PC using a network cable (cross cable).
- 2) Turn on the PC, and start up the Service Support Tool.
- 3) Connect the machine's power plug to the power outlet, and start service mode; make the following selections: COPIER>FUNCTION>SYSTEM>DOWNLOAD. Then, click 'OK' so that the machine will be in download standby mode (notation "STNDBY").

## 1.4.3 Preparing BOOT ROM

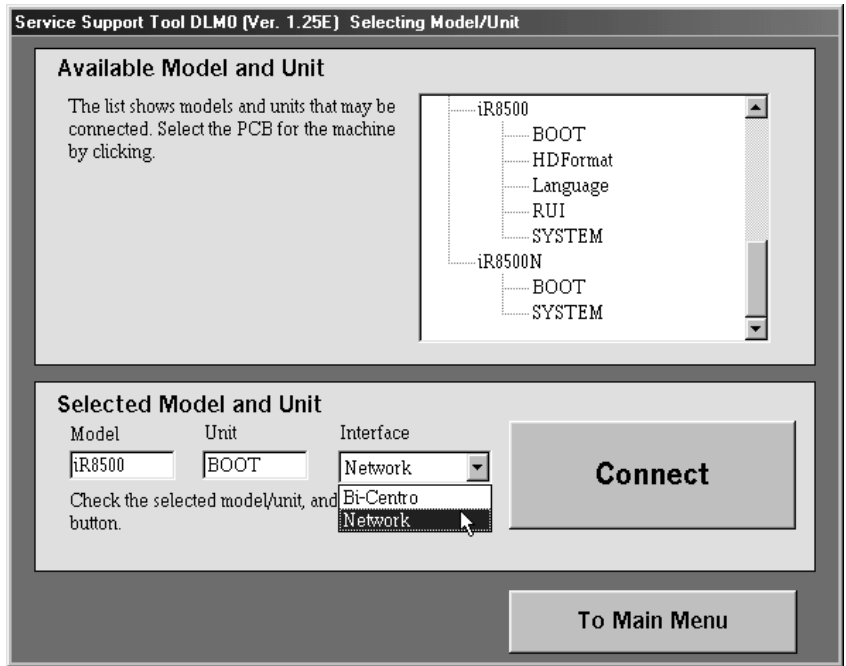
The discussions that follow assume upgrading an iR8500 (COPY model).

- 1) User 'Downloading/Uploading', select 'To Next'.



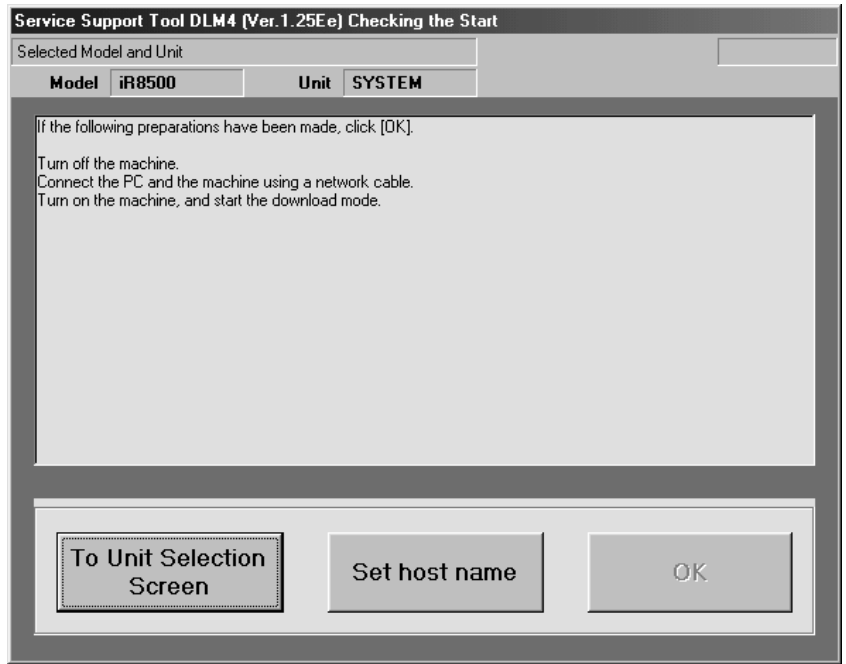
F07-104-01

- 2) Select the correct BOOT, and select an interface (bi-Centronics or Network). (The example selects iR8500 for BOOT, and Network is selected for Interface.)



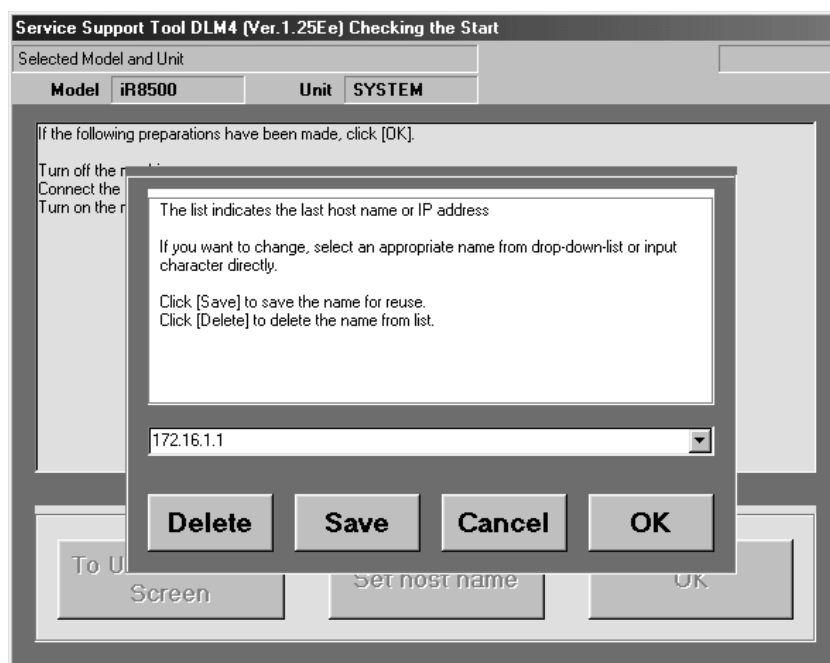
F07-104-02

- 3) To enter the IP address or the host name of the machine to connect, click 'Set host name'.



F07-104-03

- 4) Enter the IP address or the host name (here, 172.16.1.1), and click 'Save'. Then, click 'OK'.



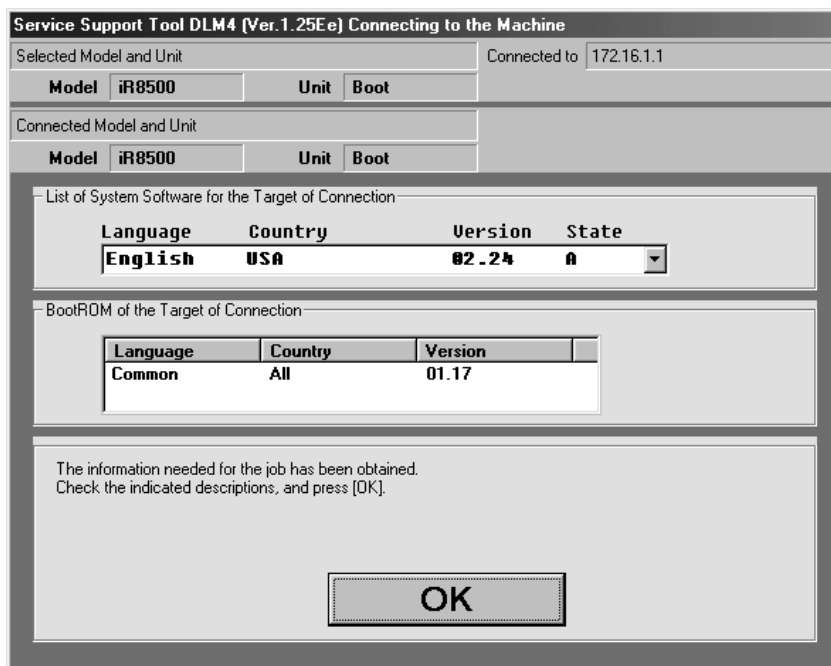
F07-104-04

- 5) Check to see that the notation in the upper right indicates the IP address or the host name of the machine to connect; then, click 'OK' to start connection.



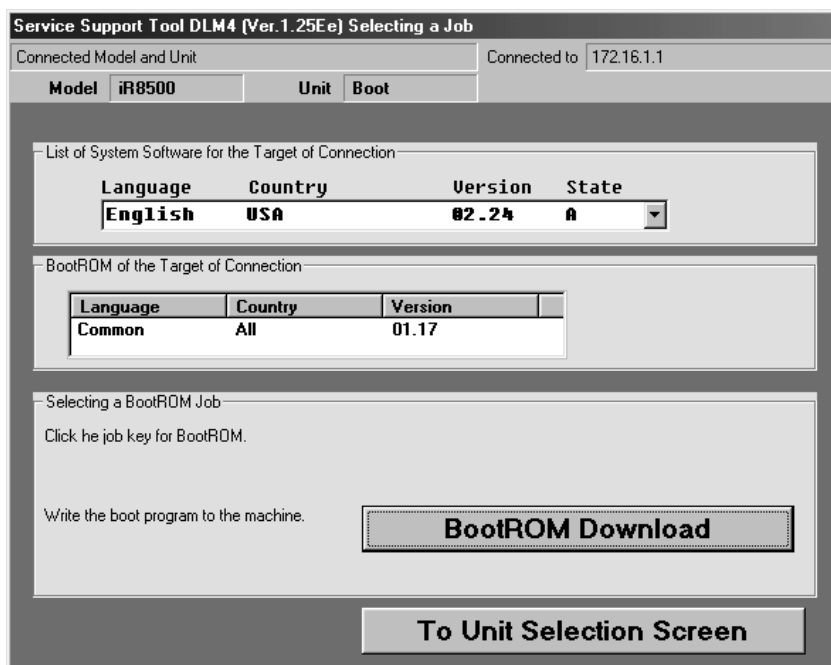
F07-104-05

6) When connection is done, the following screen appears. Click 'OK'.



F07-104-06

7) Select 'BOOT ROM Download' on the Service Support Tool screen.



F07-104-07



- 8) Select the files for the version in question of the Service Support Tool from 'list of software'; then, click 'Start' to start downloading.

**Service Support Tool DLM4 (Ver. 1.25Ee) Selecting a Version**

Connected Model and Unit:  Unit:  Connected to:

**BootROM of the Target of Connection**

Language	Country	Version
Common	All	01.17

**BootROM Versions Available for Selection**

Click the appropriate version to select from among the available BootROM versions.  
Information of the selected version will be indicated at the bottom.

Language	Country	Version
Common	All	01.17
Common	All	02.18

**Selected Version**

Language:  Country:  Version:

**Start**

**Previous Screen**

F07-104-08

- 9) See the progress bar, which indicates the progress of downloading.



Take full care so that the machine and the PC will not be turned off while downloading is taking place. Otherwise, they may fail to start up.

- 10) When downloading ends, turn off the PC by making the following selections: OK>To Unit Selection Screen>OK>To Main Menu>Ending the Service Support Tool>End.

#### 1.4.4 After Downloading

- 1) Turn off the machine's main power switch, and disconnect the power plug.
- 2) Turn off the PC.
- 3) Disconnect the network cable (cross cable) and the PC from the machine.
- 4) If a network cable is connected, connect it to the correct location, and turn on the machine's main power switch.
- 5) When the machine has started up, start service mode, and check the version of the BOOT ROM: COPIER>DISPLAY>VERSION>BOOT-ROM.

## 1.5 Formatting the HDD

If you have replaced the HDD, you must format it and then download the system software, RUI, and language.

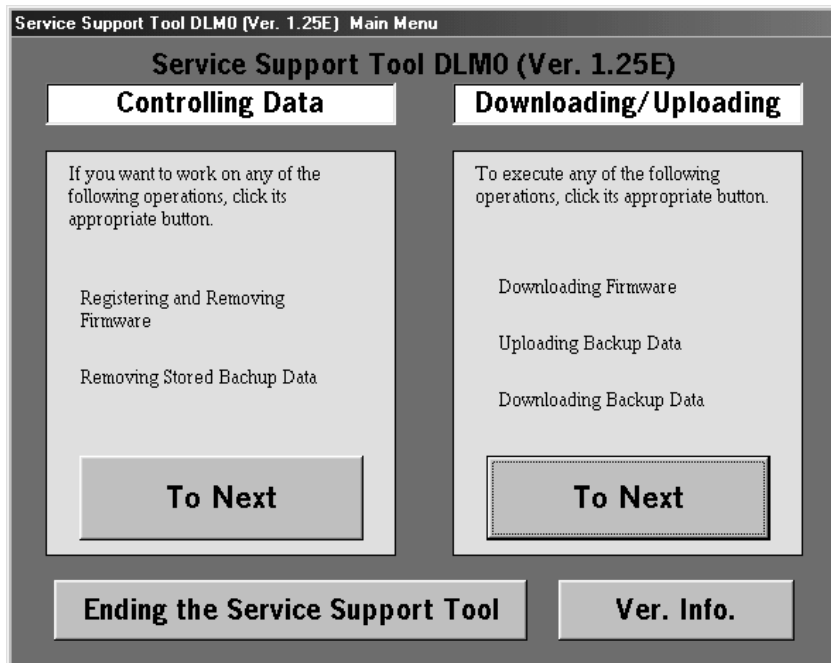
### 1.5.1 Making Connections

The discussions that follow assume the use of a parallel cable:

- 1) Using a parallel cable, connect the PC to the parallel connector on the left side of the controller.
  - At this time, the PC must remain OFF.
  - Connect the 25-pin connector of the bi-Centronics cable to the PC and the 36-pin connector to the machine.
- 2) Turn on the PC, and start up the Service Support Tool.
- 3) Connect the machine's power plug to the power outlet; while holding down '2' and '8' of the keypad at the same time, turn on the main power switch.

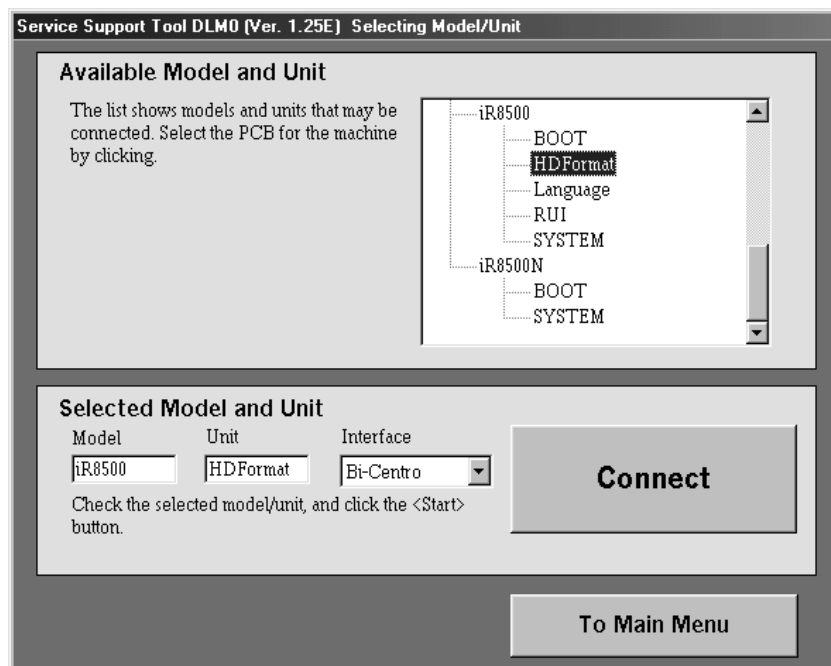
### 1.5.2 Starting Formatting

- 1) Under 'Downloading/Uploading', select 'To Next'.



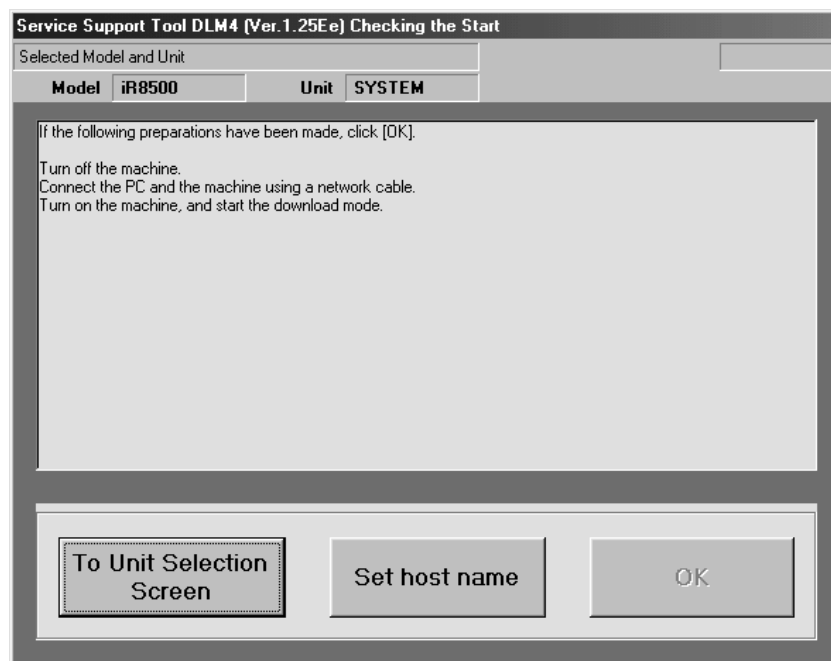
F07-105-01

- 2) Select 'HD Format', and select 'Connect'.



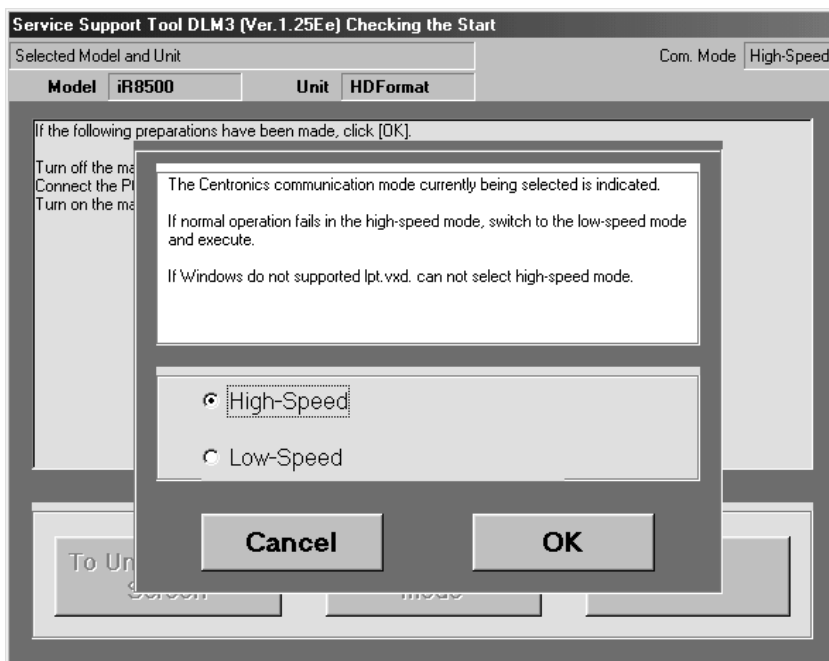
F07-105-02

- 3) At this time, if the notation in the upper right of the screen is 'High-Speed', go to step 5); if 'Low-Speed', go to step 4).



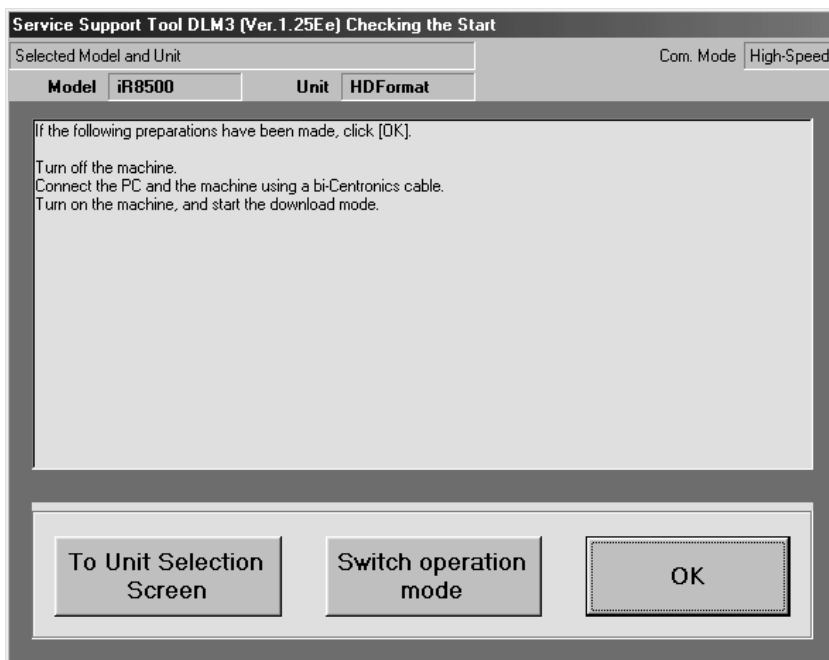
F07-105-03

- 4) Click 'change operation mode' so that the Centronics Communication Mode change screen will appear. Select 'high-speed', and click 'OK'; then, go to step 6).



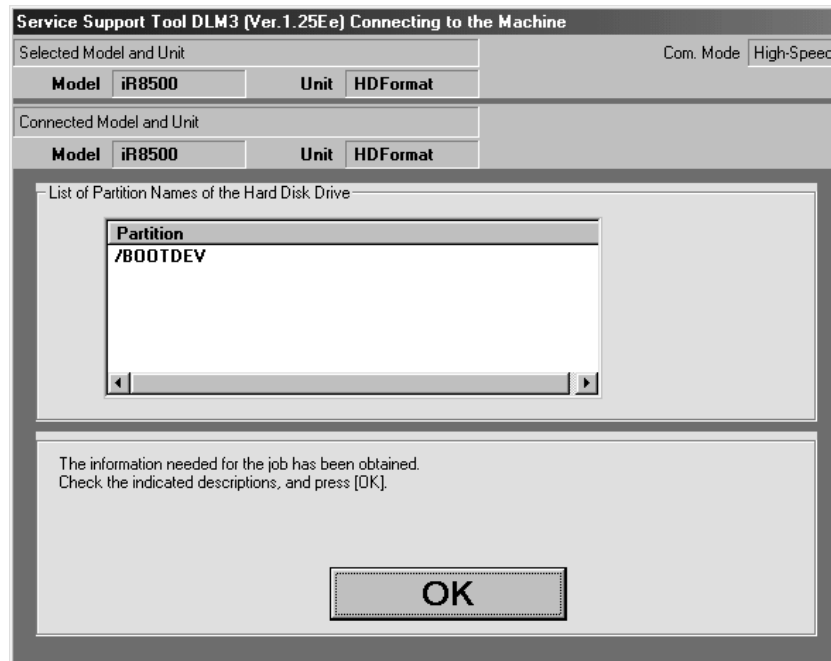
F07-105-04

- 5) Click 'OK' to start connection.



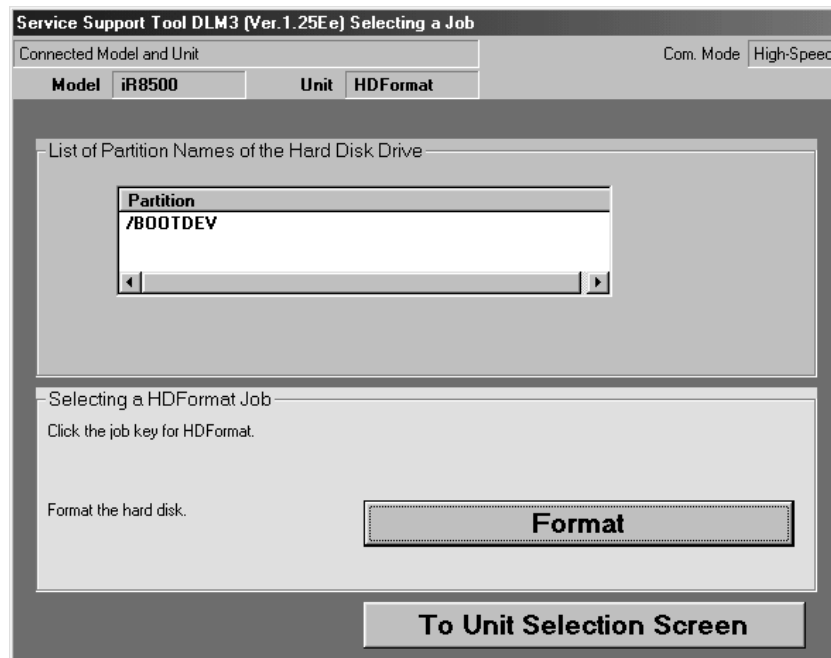
F07-105-05

- 6) When connection is done, the following screen will appear. Select 'OK'.



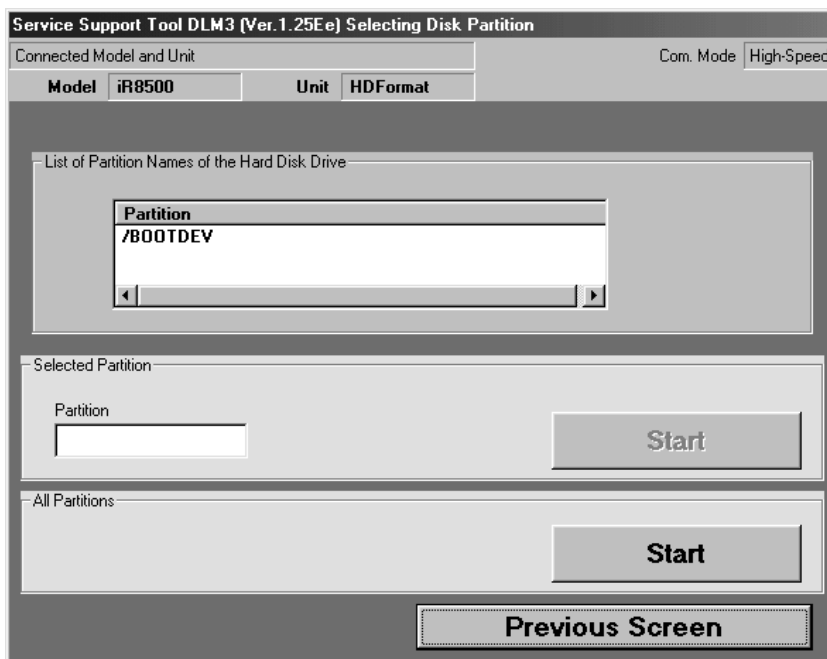
F07-105-06

- 7) When the Check screen appears, select 'Format'.



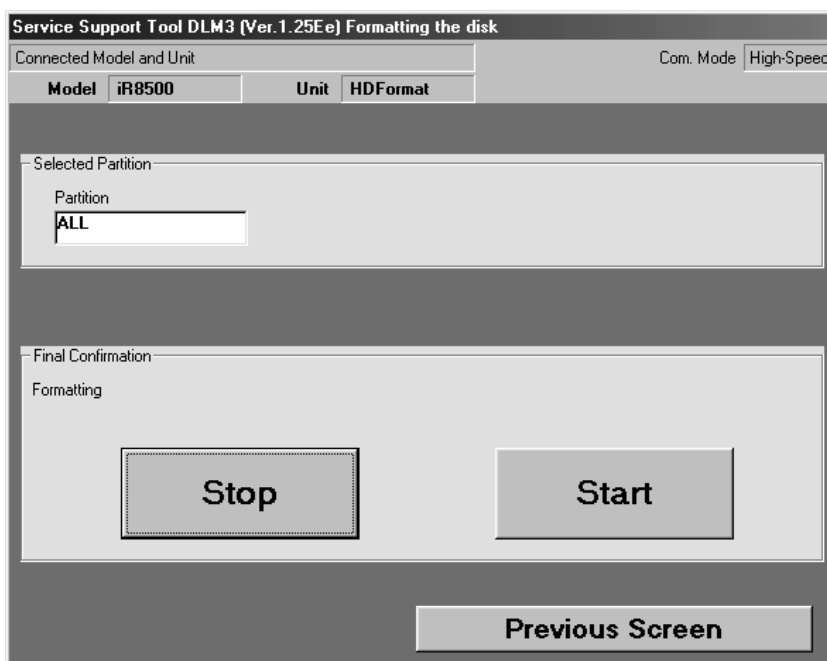
F07-105-07

8) When the Start Check screen appears, select 'Start' to format all partitions.



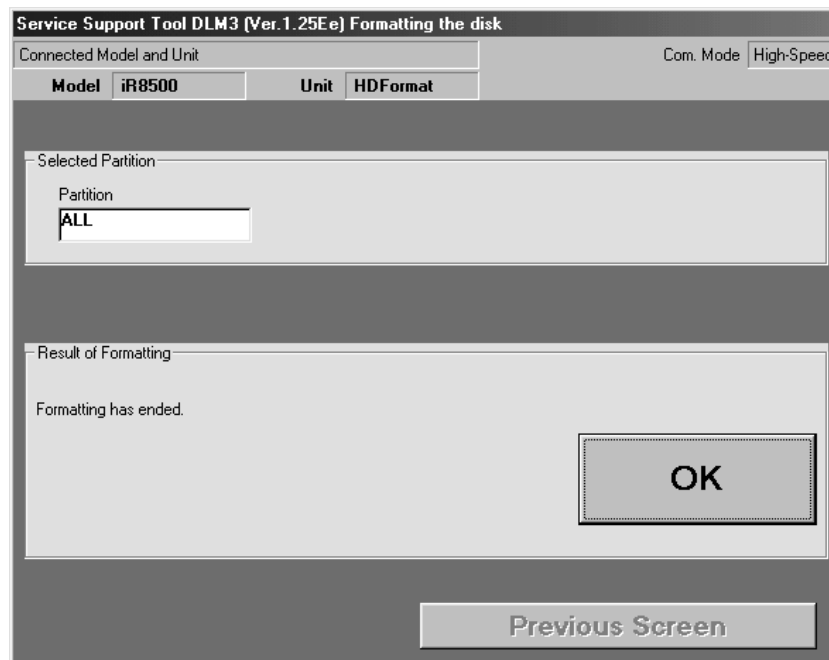
F07-105-08

9) When the Start Check screen appears once again, select 'Start'.



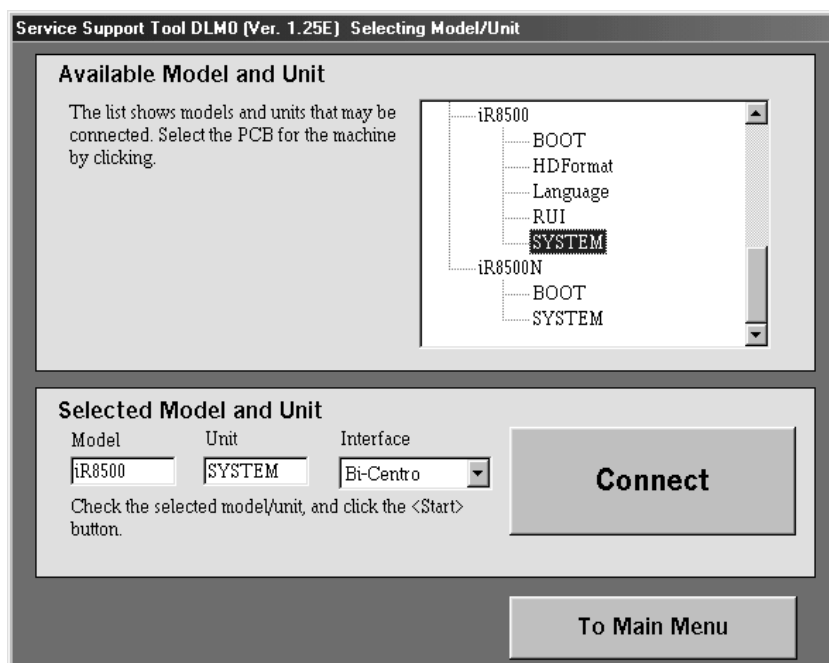
F07-105-09

10) When formatting is done, the message “Format Finished” appears. Click ‘OK’.



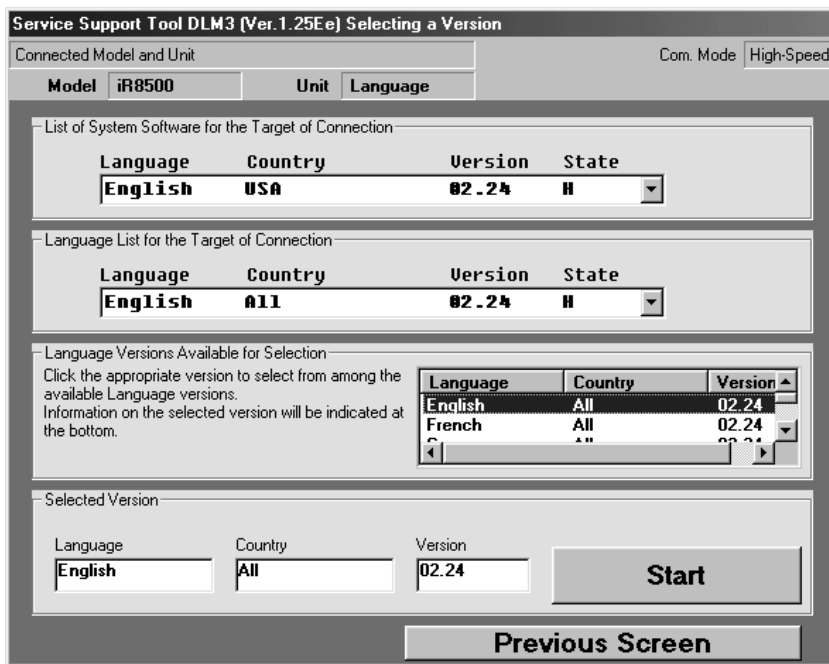
F07-105-10

11) To continue downloading system, select ‘To Unit Selection Screen’, and click ‘OK’. Then, start downloading system.



F-07-105-11

12) When the system downloading ends, install the RUI and the Language module in the same way.



F07-105-12

### 1.5.3 Points to Note When Formatting the Hard Disk



1. If you have formatted the hard disk, you must also download the system software at the same time. Otherwise, 'E602-0002' will be indicated when you turn on the power.  
If the system software is yet to be installed to the hard disk, the hard disk may still be formatted or the system software may be downloaded in download mode.  
Connecting to the Network (using network cable)
2. If you want to install the Language module after installing the system software, you must be sure that its version is compatible with the version of the system software. If you install a Language module not compatible with the system software in question and, in addition, if that language is selected in user mode, 'E744-0001' will be indicated.
3. If you installed the system software after formatting the hard disk, you may notice a faulty image on the control panel display. This is a normal condition, and will disappear when you turn off and then on the machine twice.

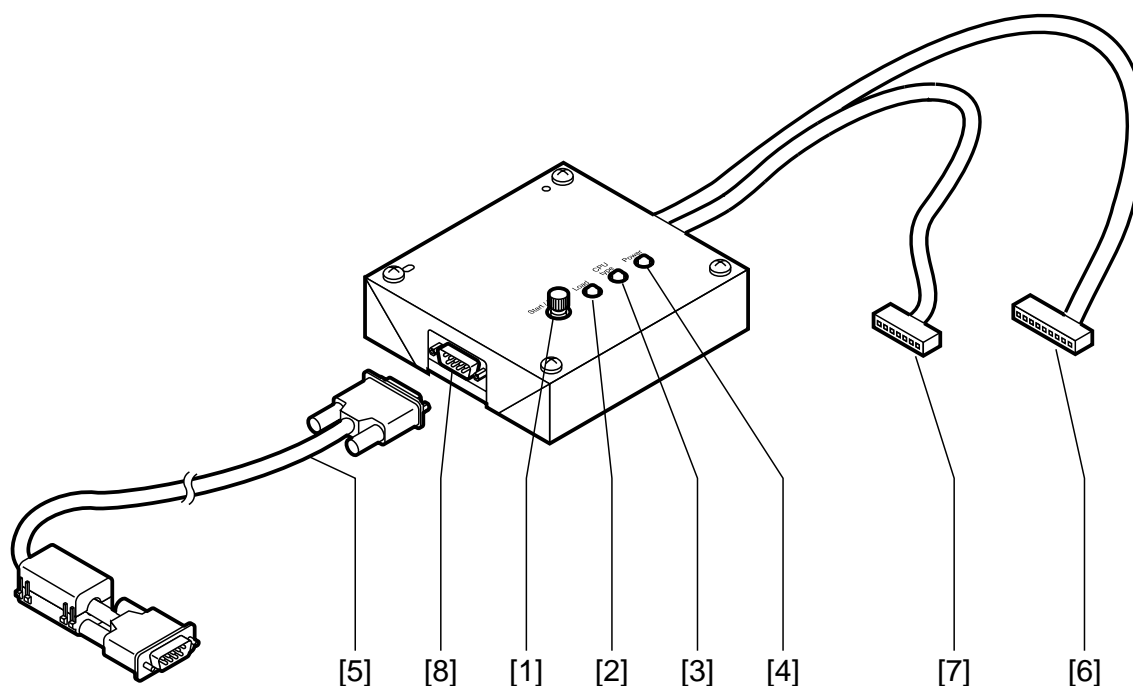


## 1.6 Downloader PCB(FY9-2034)

### 1.6.1 Purpose

Used for upgrading the CPU mounted on the option's PCB (For DADF-H1/Finisher-J1).

### 1.6.2 Downloader PCB Components



F07-106-01

#### Component names and functions

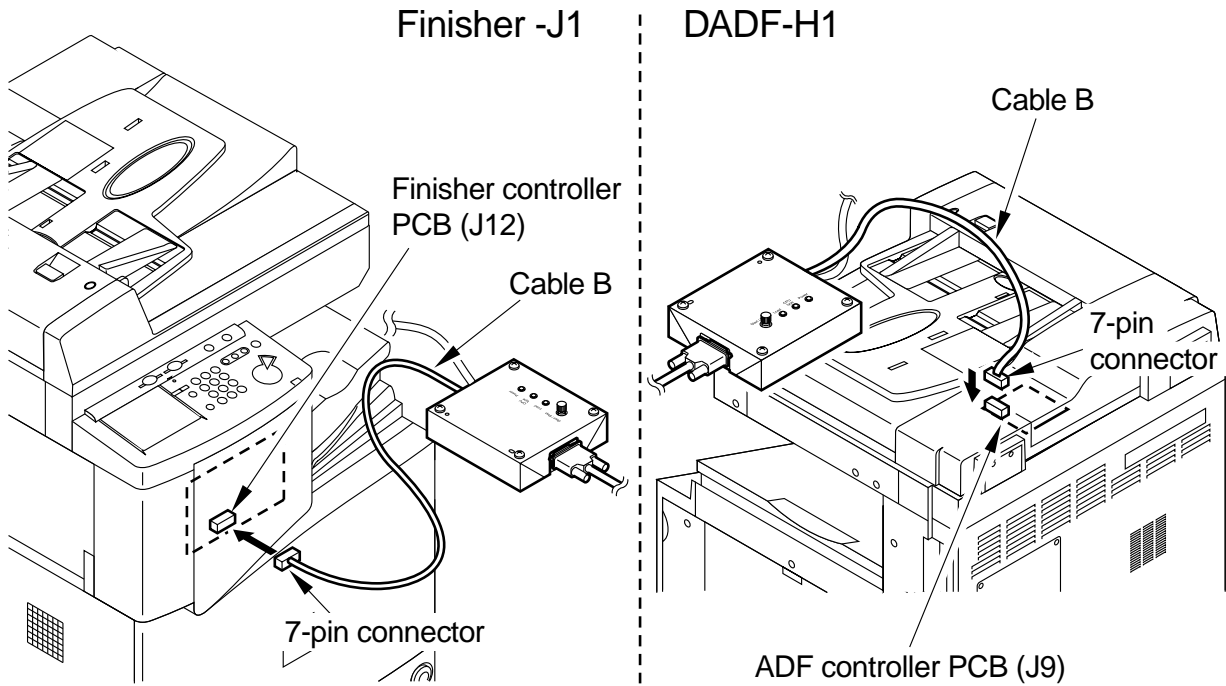
Ref.	Name	Function
[1]	START/STOP key	Press to start or stop downloading.
[2]	LOAD LED	Lights when downloading is enabled.
[3]	Model indicating LED	Not use in this model.
[4]	Power indicating LED	Lights when power is supplied to the downloader PCB from the finisher.
[5]	RS-232C cable (totally wired straight, 9-pin)	Connects the downloader PCB and the PC to each other. Connect the cable so the ferrite core of the cable is positioned on the PC side.
[6]	Cable A (9-pin) (about 70 cm long)	Not use in this model.
[7]	Cable B (7-pin) (about 50 cm long)	Connects the downloader PCB and the option's PCB to each other.
[8]	RS-232C connector	Connects the RS-232c cable to the downloader PCB.

T07-106-01

### 1.6.3 Download Procedure

#### a. Connecting to the option

- 1) Turn off the copier.
- 2) Detach the ADF or Finisher PCB cover.
- 3) Insert cable B (7pin) into ADF controller PCB (J9) or Finisher controller PCB (J12).

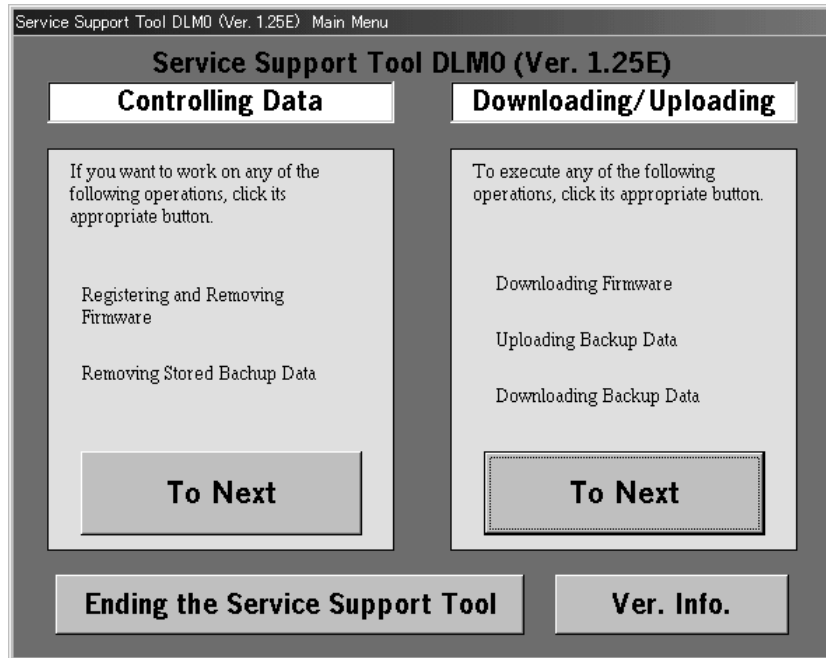


F07-106-02

- 4) Connect the RS-232C cable to the PCB and the RS-232C connector of the PC. The ferrite core of the cable is positioned on the PC side.
- 5) Turn on the copier.  
The power indicating LED on the PCB light.

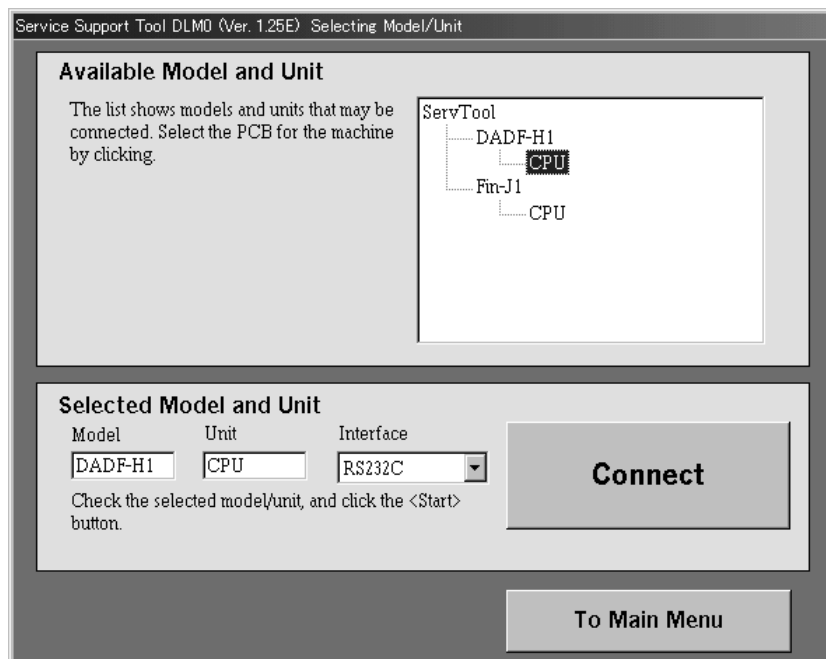
b. Downloading

- 1) Start the service support tool.
- 2) Choose “Downloading/Uploading.”



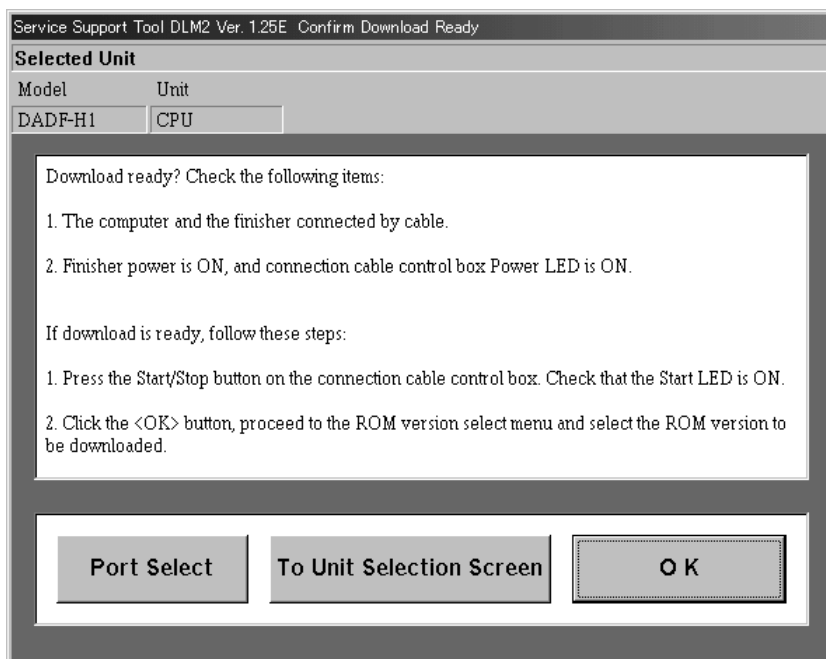
F07-106-03

- 3) Press the START/STOP key.  
The LOAD LED lights.
- 4) Choose suitable folder.  
Highlight the model name and click Connect. (ex.DADF-H1)



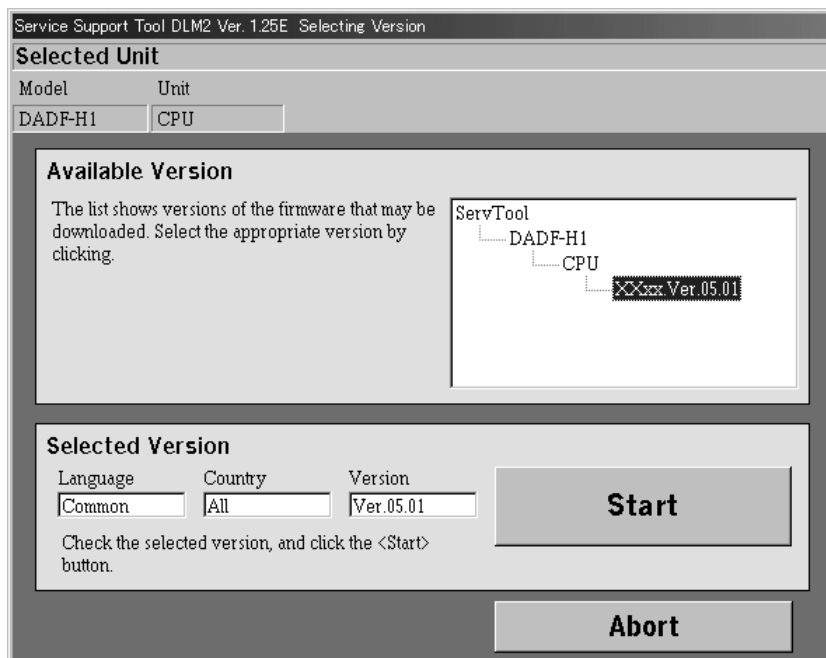
F07-106-04

- 5) Get ready for downloading as instructed on the screen.  
Click OK to proceed further.



F07-106-05

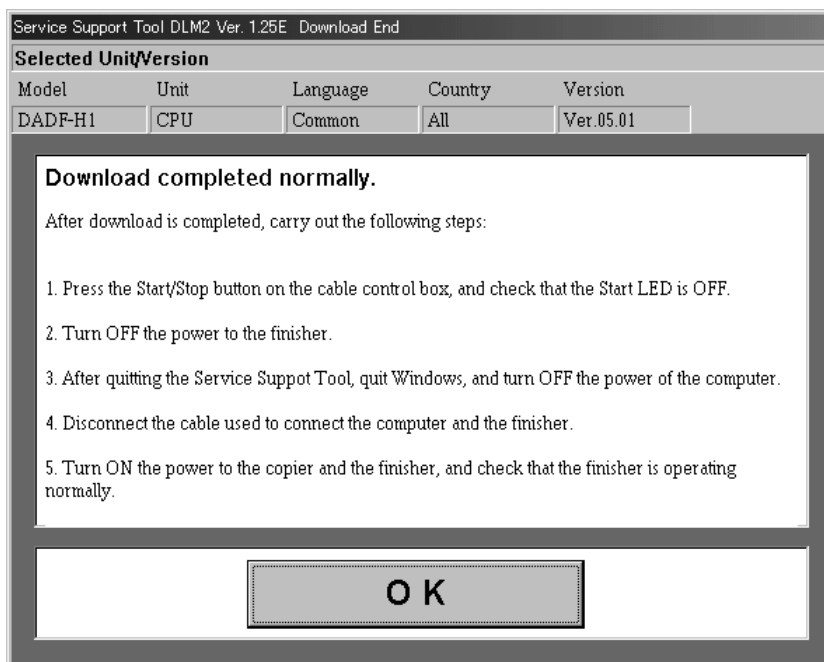
- 6) Choose the ROM version to download.



F07-106-06



9) Exit as instructed on the screen.



F07-106-09

#### 1.6.4 Disconnecting

- 1) Press the START/STOP key.  
The LOAD LED goes off.
- 2) Turn off the copier.
- 3) Disconnect cable B from the finisher or ADF.
- 4) Reattach the cover to the finisher or ADF.
- 5) Turn on the copier

## 1.7 Upgrading by Replacing the DIMM/ROM

The following items may be upgraded by replacing the DIMM/ROM; the DIMM/ROM will be provided as a service part on its own:

- Copier
  - Reader controller PCB: by replacement of flash ROM DIMM 5V; J413 [1]
  - DC controller PCB: by replacement of flash ROM DIMM 5V; J322 [2]
  - Main controller PCB: by replacement of BOOT ROM 3.3V; J1010, see MEMO [3]

### Saddle Finisher-G1

- Finisher controller PCB: by replacement of ROM; IC6 (DIP type) [4]
- Punch driver PCB: by replacement of ROM; IC1001 (DIP type) [5]




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#### DADF-H1/Finisher-J1

These products are updated using a personal computer.

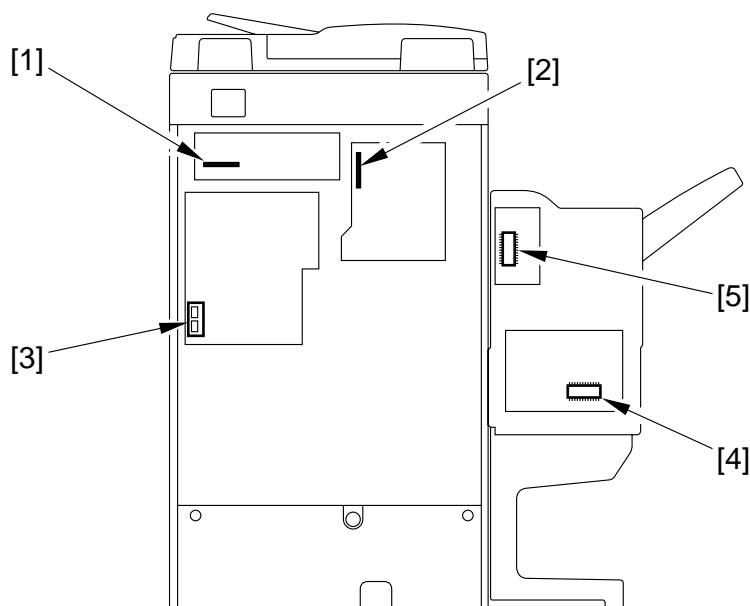
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The BOOT ROM [3] on the main controller PCB may be upgraded using a PC. For details, see the descriptions under 1.4 “Upgrading the BOOT ROM.”

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F07-107-01

## 2 Backing Up Data

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### 2.1 Outline

Using the Service Support Tool, you can back up the data of the SRAM mounted to the main controller PCB.

The SRAM contains the following items of data:

- Service mode settings
- User mode settings
- Various MACHINE DATA

Once you have backed up the data, you may write it to the main controller PCB after replacing the PCB; or, you can simplify the work involved in entering service mode or user mode settings.

It is recommended to back up the data whenever possible using the Service Support Tool when you have updated the service mode settings or the user mode settings.



## 2.2 Backing Up Data

### 2.2.1 Making Preparations

- Install the system software to the Service Support Tool, making sure that its version is the same as that of the machine in question.
- Check to make sure that the machine's Data lamp is OFF.
- Turn off the machine's main power switch, and disconnect the power plug; as necessary, disconnect the network cable.

### 2.2.2 Making Connections

The discussions that follow assume the use of a parallel cable:

- 1) Using a parallel cable, connect the PC to the parallel connector on the right side of the controller.
  - At this time, the PC must remain OFF.
  - Connect the 25-point connector of the parallel cable to the PC and the 36-pin connector to the machine.
- 2) Turn on the power switch of the PC, and start up the Service Support Tool.
- 3) Connect the machine's power plug to the power outlet, and turn on its main power switch.
- 4) Start service mode.
- 5) Make the following selections so that the machine will enter download standby mode (notation "STNDBY"): COPIER>FUNCTION>SYSTEM>DOWNLOAD.



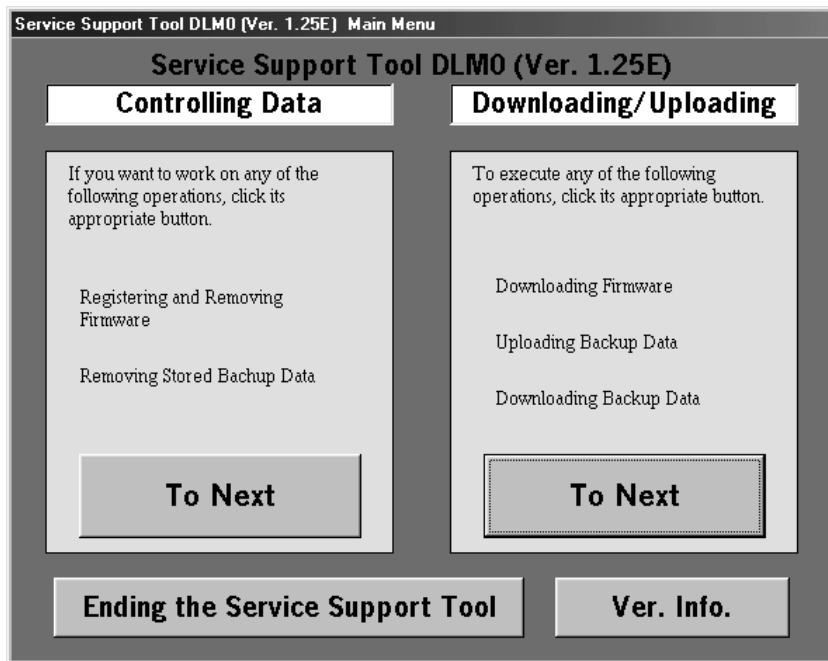
---

You can select 'network' as the interface for data backup. Here, the use of a bi-Centronics cable is assumed.

---

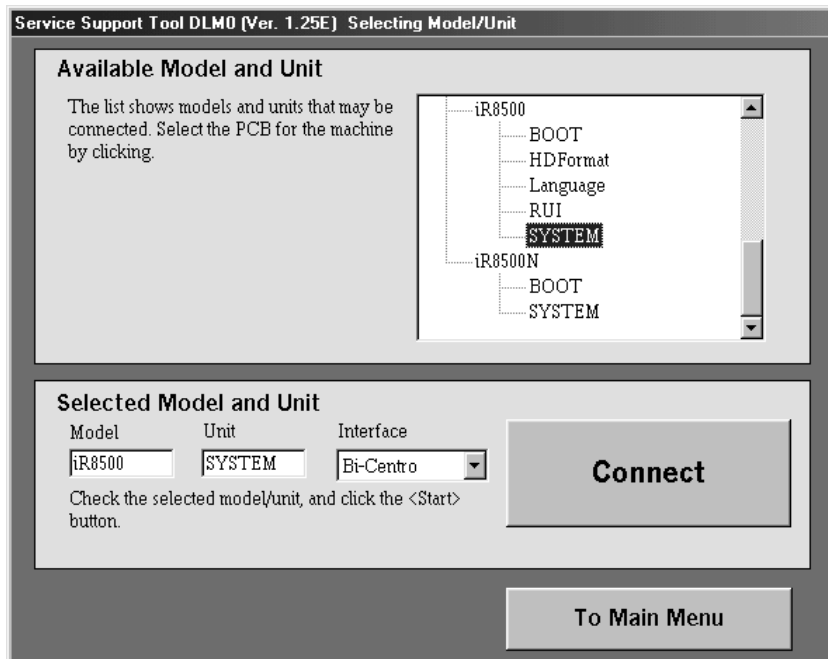
### 2.2.3 Backing Up Data

- 1) Under 'Downloading/Uploading', select 'To Next'.



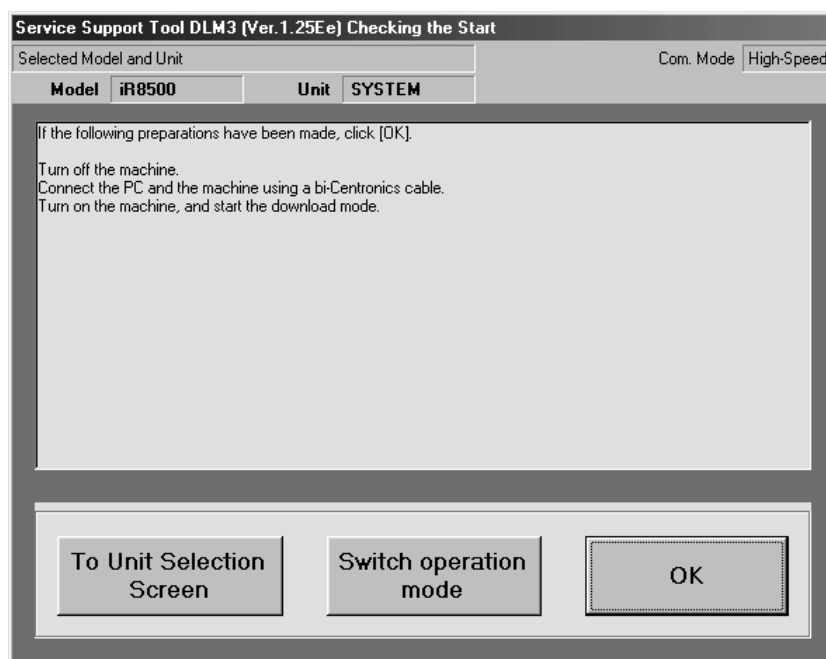
F07-202-01

- 2) Select 'SYSTEM', and select 'Connect'. The discussions that follow assume the use of a bi-Centronics cable as the interface.



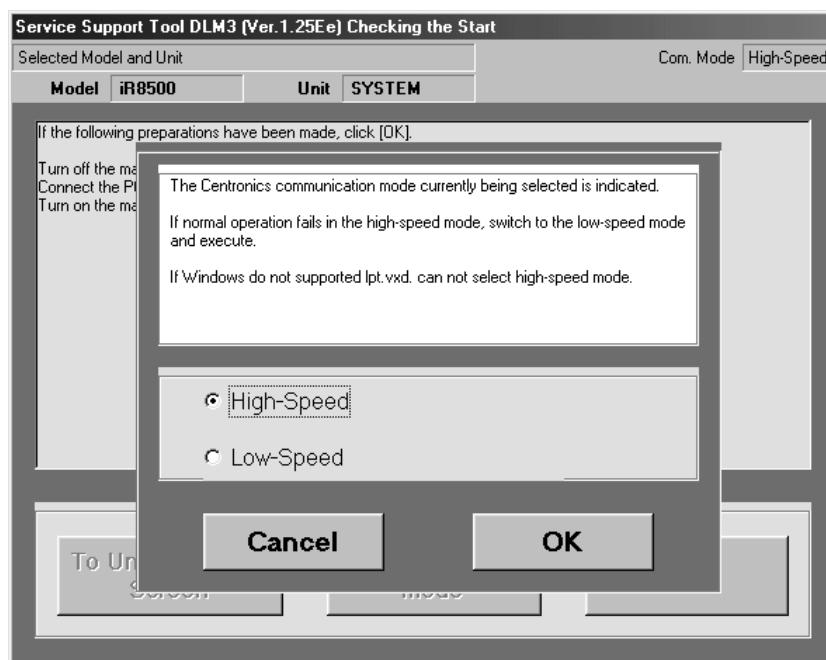
F07-202-02

- 3) At this time, if the notation in the upper right of the screen is 'High-Speed', go to step 5); if 'Low-Speed', go to step 4).



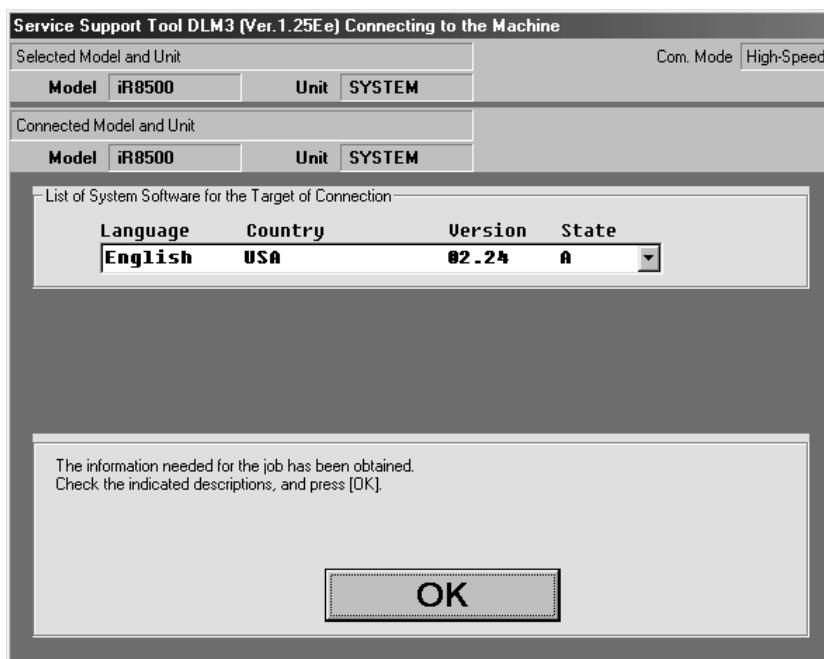
F07-202-03

- 4) Click 'Switch operation mode' to bring up the Centronics Communication Mode Change screen. Select 'High-Speed', and click 'OK' to move to step 5).



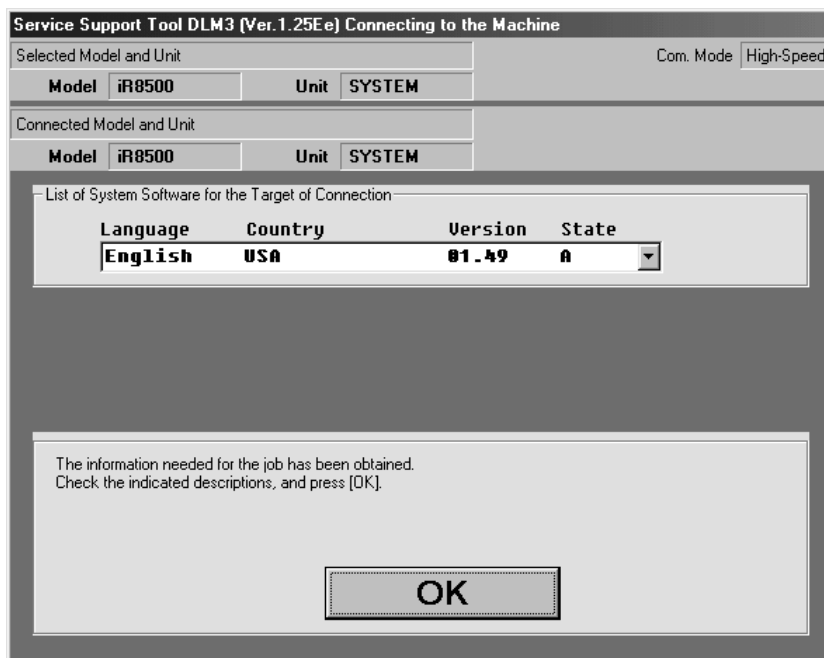
F07-202-04

5) Click 'OK' to start connection.



F07-202-05

6) When connection is done, the following screen appears. Click 'OK'.



F07-202-06

- 7) Select 'Upload the Backup Data' on the Service Support Tool screen.

**Service Support Tool DLM3 (Ver.1.25Ee) Selecting a Job**

Connected Model and Unit Com. Mode High-Speed

**Model** iR8500 **Unit** SYSTEM

List of System Software for the Target of Connection

Language	Country	Version	State
English	USA	01.49	A

Selecting a SYSTEM Job

Click the job key for SYSTEM.

Write the system software to the machine. **System Software Download**

Recover the system software that has been backed up. **Recover the Backup system**

Save the backup data of the machine. **Upload the Backup Data**

Write the saved backup data to the machine. **Download the backup Data**

**To Unit Selection Screen**

F07-202-07

- 8) Select 'ALL', and select 'Start Storing'.

**Service Support Tool DLM3 (Ver.1.25Ee) Selecting Backup Data**

Connected Model and Unit Com. Mode High-Speed

**Model** iR8500 **Unit** SYSTEM

List of System Software for the Target of Connection

Language	Country	Version	State
English	USA	01.49	A

Backup Data Available for Selection

The list indicates the data that may be saved, from among data saved on the hard disk of the selected unit.

Click the appropriate data to save. The selected data will be indicated at the bottom.

Name
ALL
COUNTER
DEPTMNG
LOGDATA
MISC

Selected Backup Data

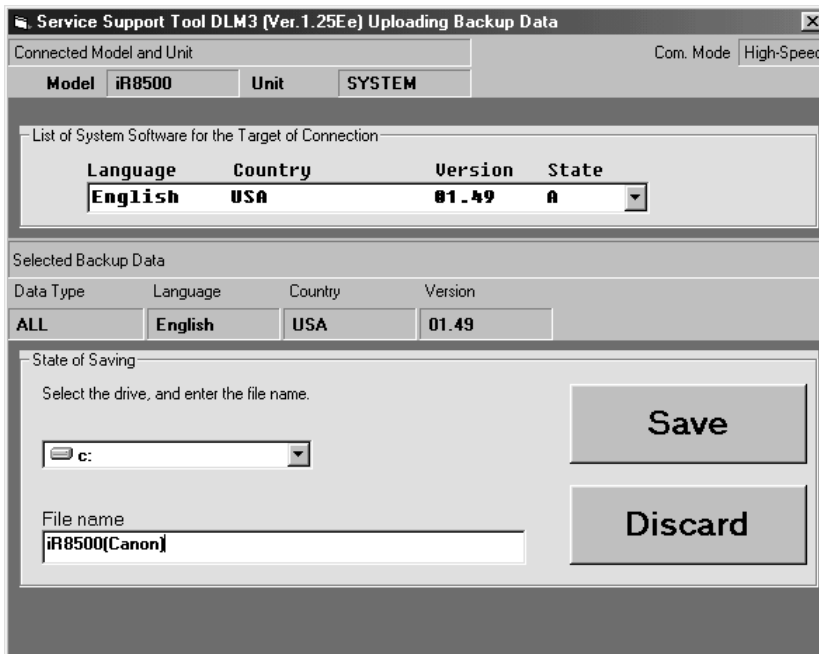
Data Type: ALL Language: English Country: USA Version: 01.49

**Start Storing**

**Previous Screen**

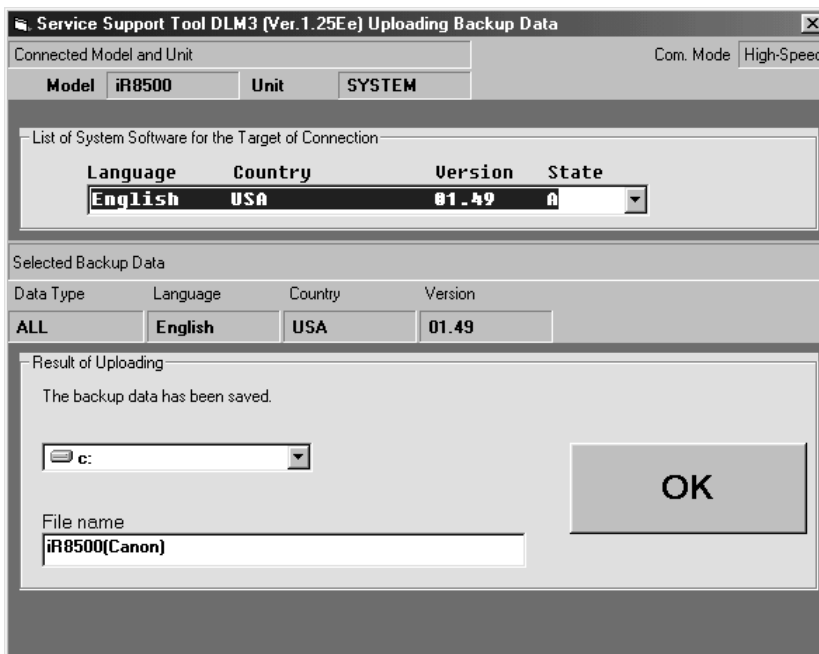
F07-202-08

- 9) See the progress bar, indicating the progress of the save operation.
- 10) Select the drive to save the data to, and enter the file name; then, select 'Save'.



F07-202-09

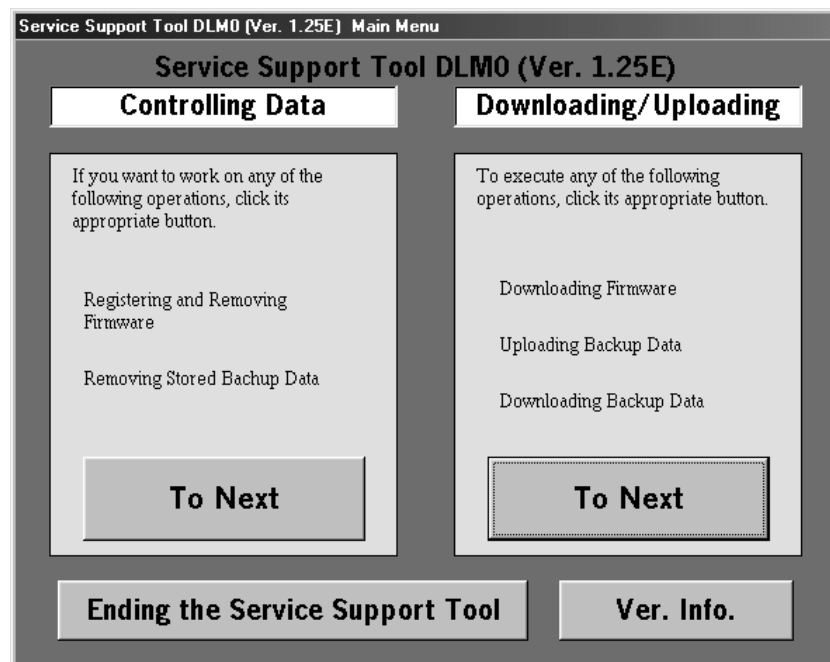
- 11) When the selected file has been stored on the selected drive, the following screen will appear; make the following selections to end the Service Support Tool: OK>To Unit Selection Screen>OK>To Main Menu>Ending the Service Support Tool>End.



F07-202-10

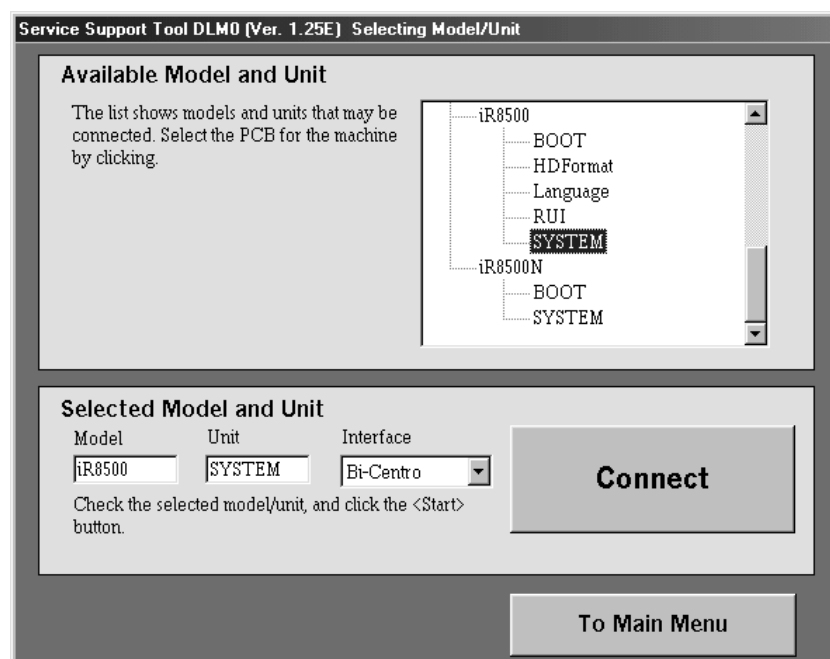
## 2.2.4 Downloading Backup Data

- 1) Under 'Downloading/Uploading', select 'To Next'.



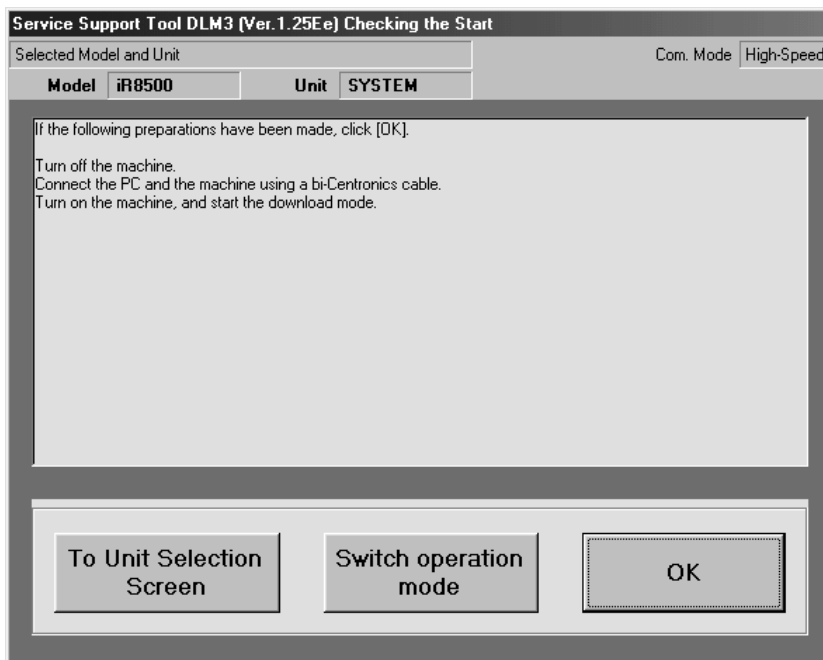
F07-202-11

- 2) Select 'SYSTEM', and select 'Connect'.



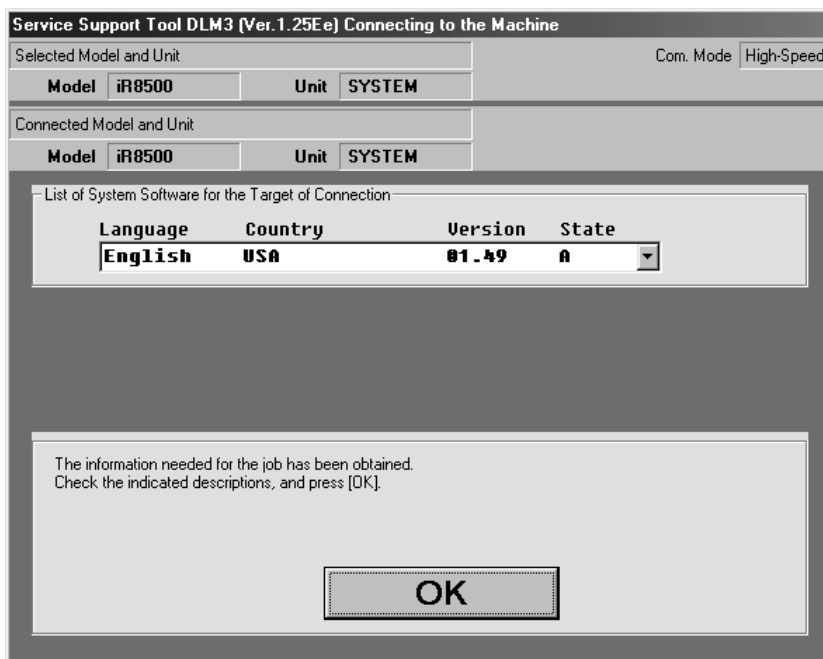
F07-202-12

3) Select 'OK', and start connection.



F07-202-13

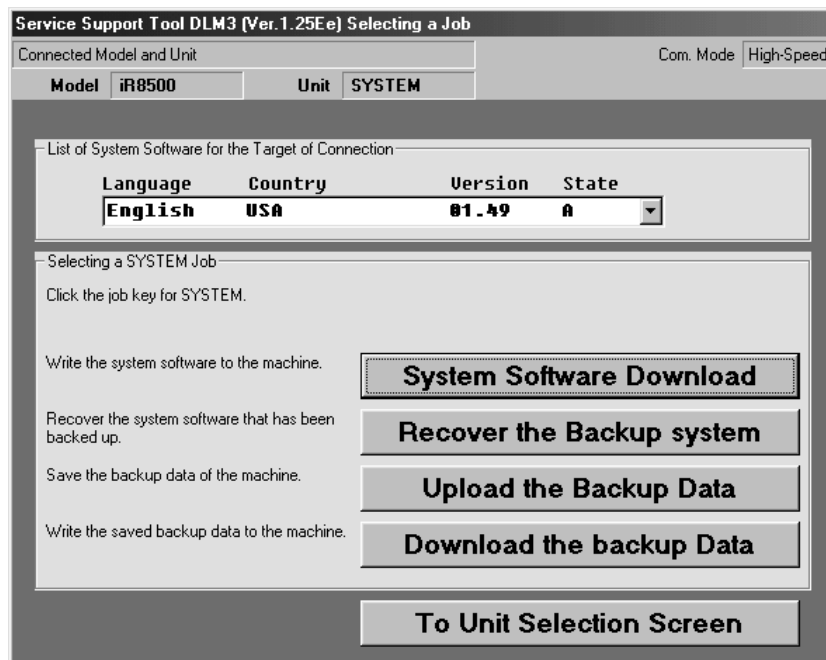
4) When connection is done, the following screen appears. Click 'OK'.



F07-202-14

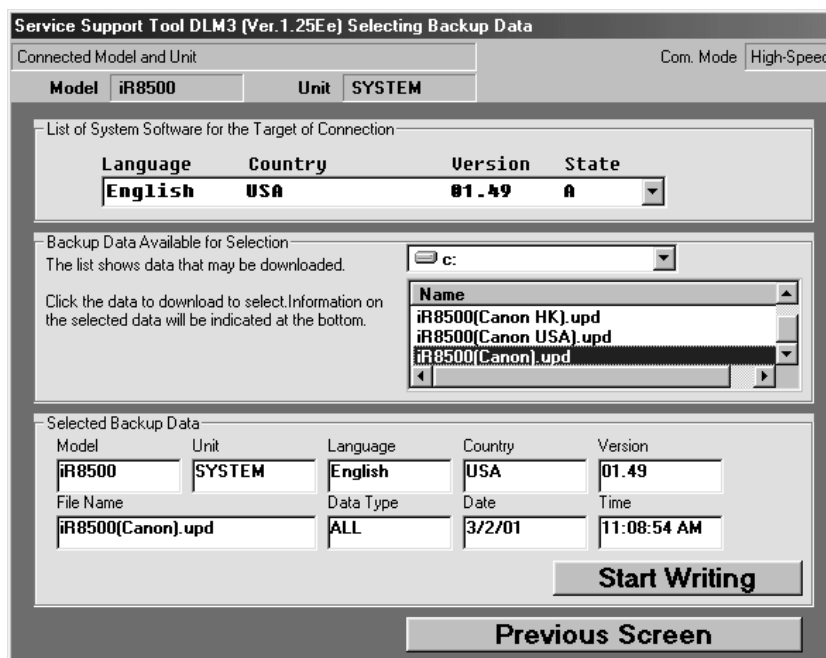


5) Select 'Download the backup Data'.



F07-202-15

6) Select the file to download, and select 'Start Writing'.



F07-202-16

- 7) See the progress bar, indicating the progress of the downloading operation. At the end, the following screen will appear. Select 'OK'.



F07-202-17

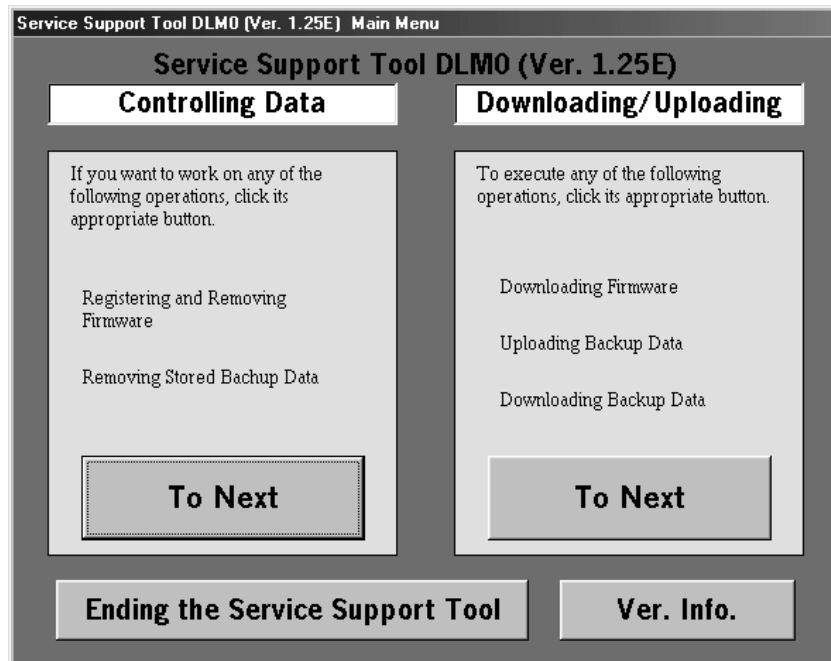
- 8) Make the following selections to end the Service Support Tool: To Unit Selection Screen>OK>To Main Menu>Ending the Service Support Tool>End.

### 2.2.5 Managing Backup Data

You can delete backup data that has become obsolete as follows:

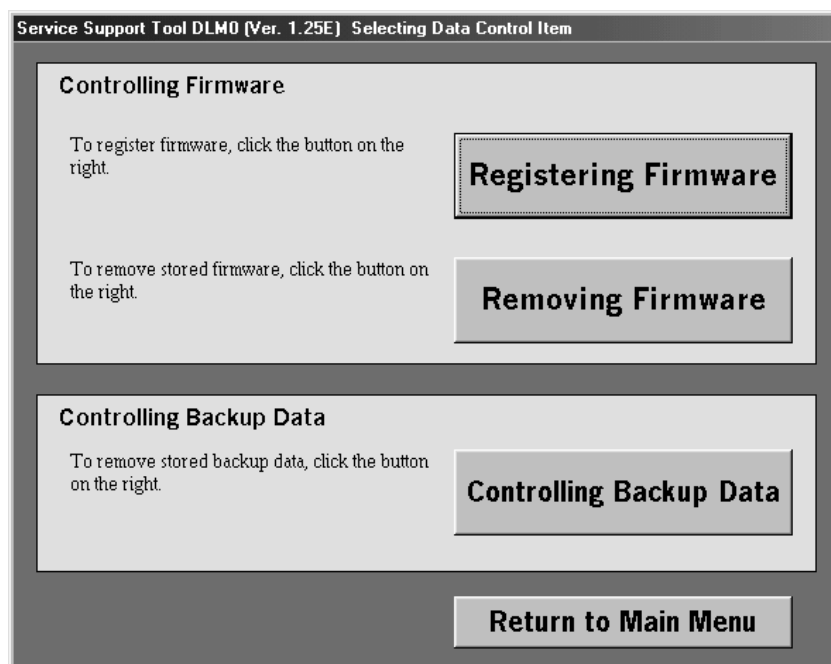
You need not connect a PC to the machine to do so.

- 1) Under 'Controlling Data', select 'To Next'.



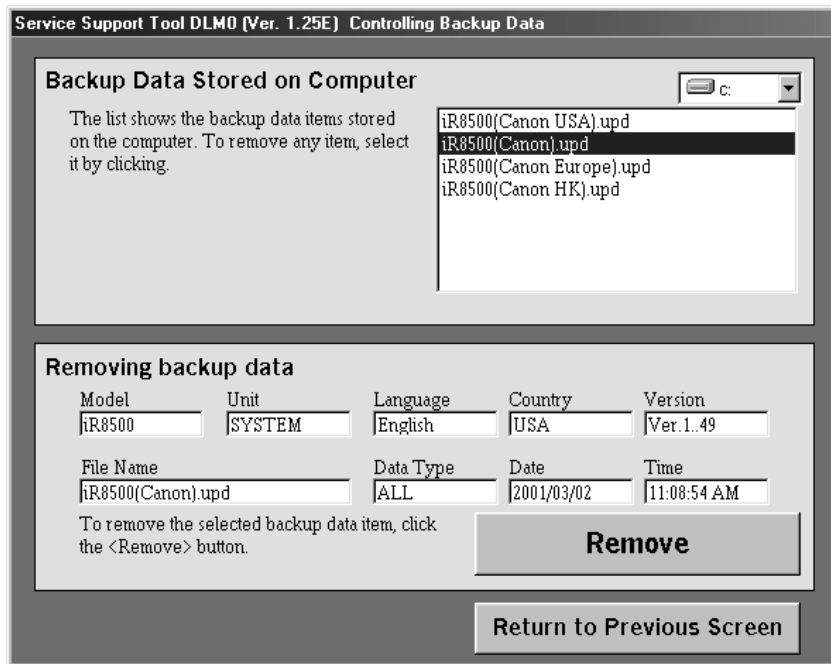
F07-202-18

- 2) Select 'Controlling Backup Data'.



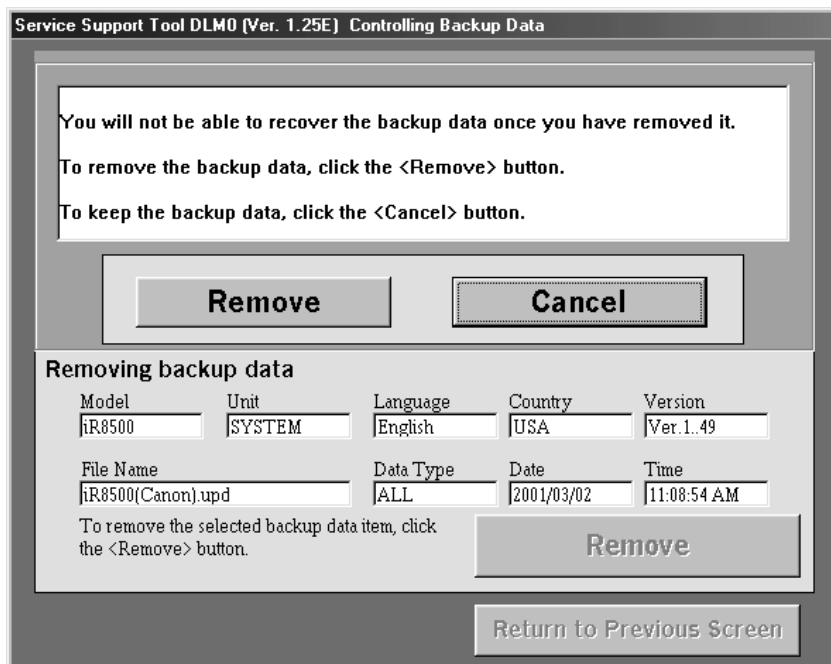
F07-202-19

- 3) Select the file to delete from the list of 'Backup Data Stored on Computer'; then select 'Remove'.



F07-202-20

- 4) When the Delete Check screen appears, check the description for the selected file, and select 'Remove'.



F07-202-21

- 5) When the Delete Finish screen appears, click 'OK'. Make the following selections to end the Service Support Tool: Return to Previous Screen>Return to Main Menu>Ending the Service Support Tool>End.

Service Support Tool DLM0 (Ver. 1.25E) Controlling Backup Data

You will not be able to remove the backup data. To keep the backup data, click the <Cancel> button. To remove the backup data, click the <Remove> button.

The selected backup data has been removed.

OK

**Removing backup data**

Model	Unit	Language	Country	Version
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
File Name	Data Type	Date	Time	
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	

To remove the selected backup data item, click the <Remove> button.

Remove

Return to Previous Screen

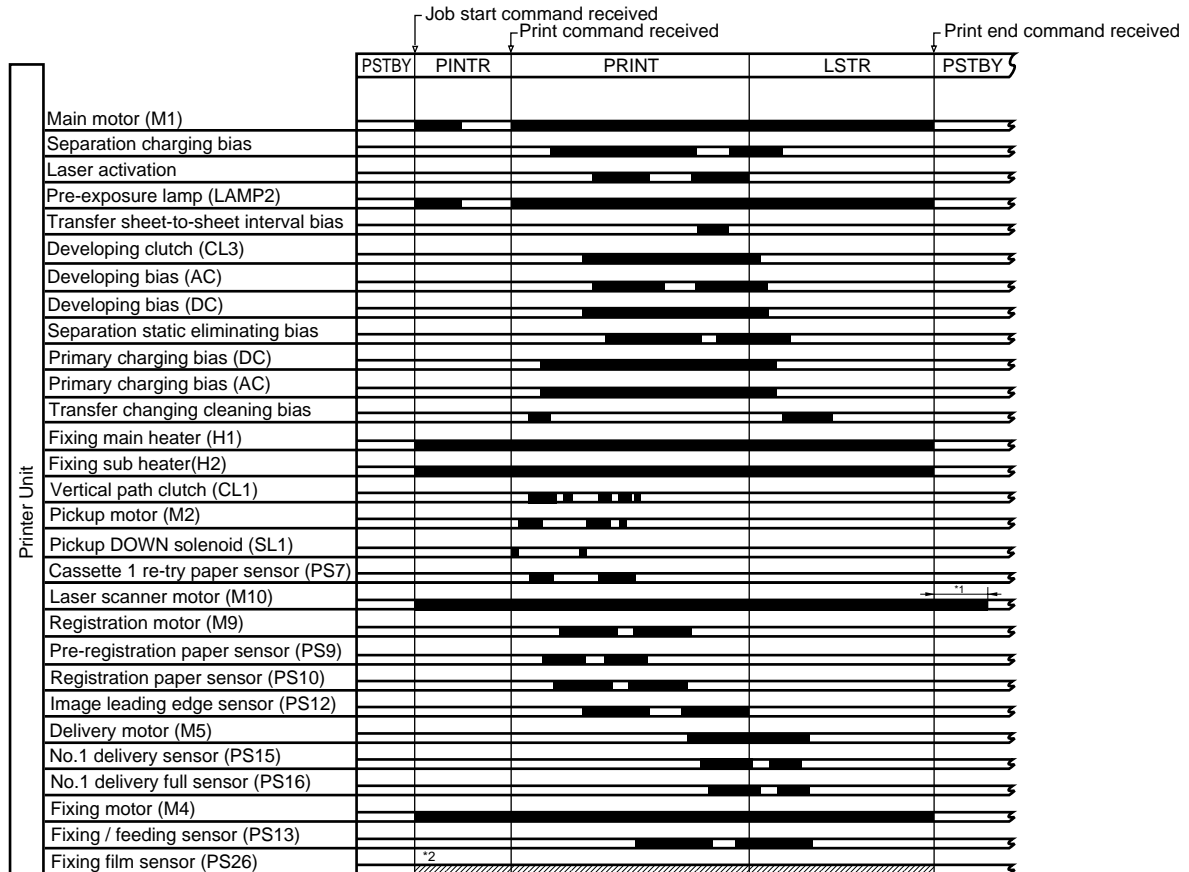
F07-202-22



# A. General Timing Chart

## General Timing Chart (printer unit)

- A4, 2 sheets, Single-sided, Direct, Cassette (reversal delivery)

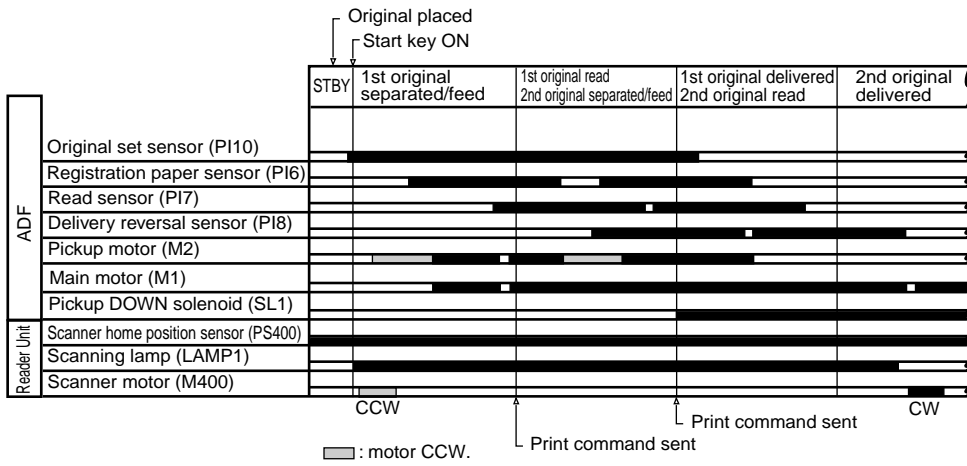


\*1: Varies between 0 and 9 min to suit the selected silent mode shift interval.

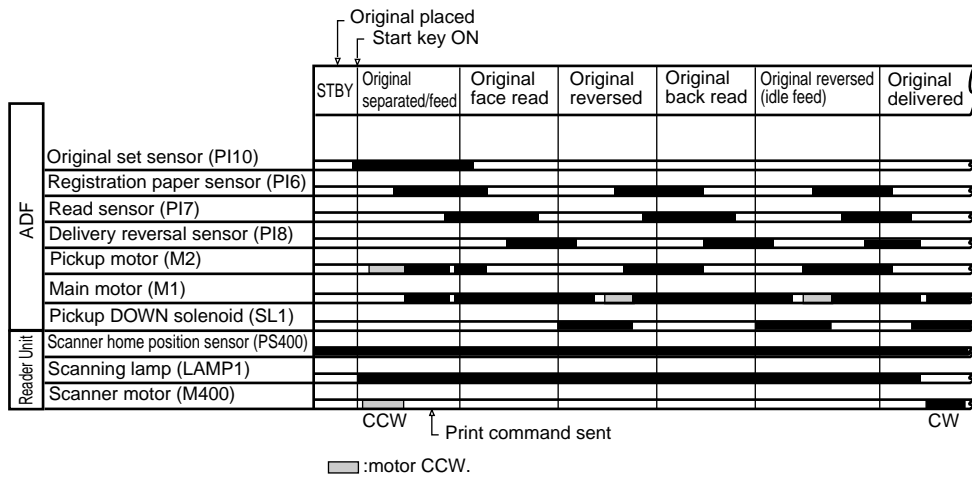
\*2: Goes ON once every 540 msec.

### General Timing Chart (reader unit w/ ADF)

- A4, 2 sheets, Signal-sided, Direct

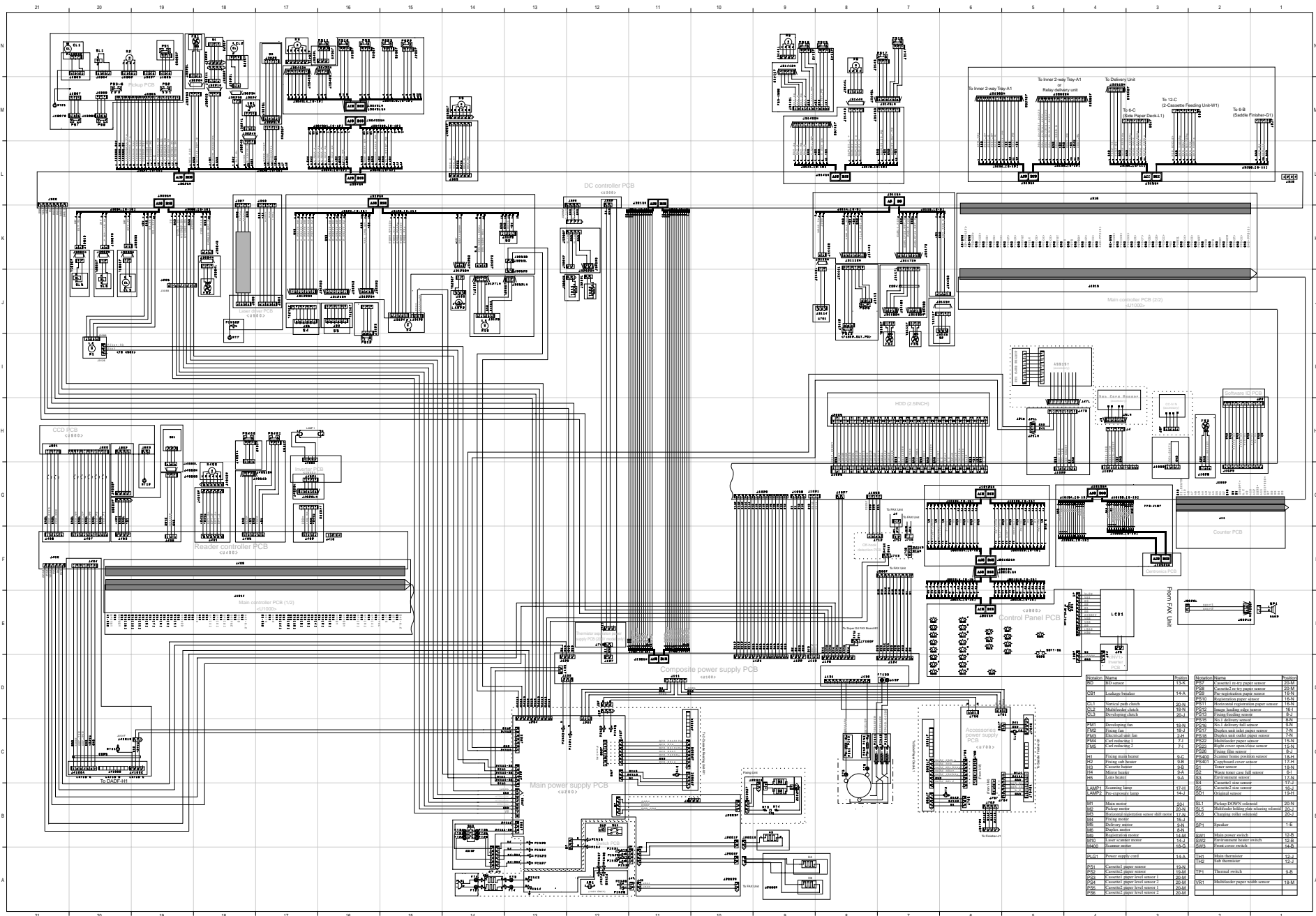


- A4, 1 sheet, Double-sided, Direct





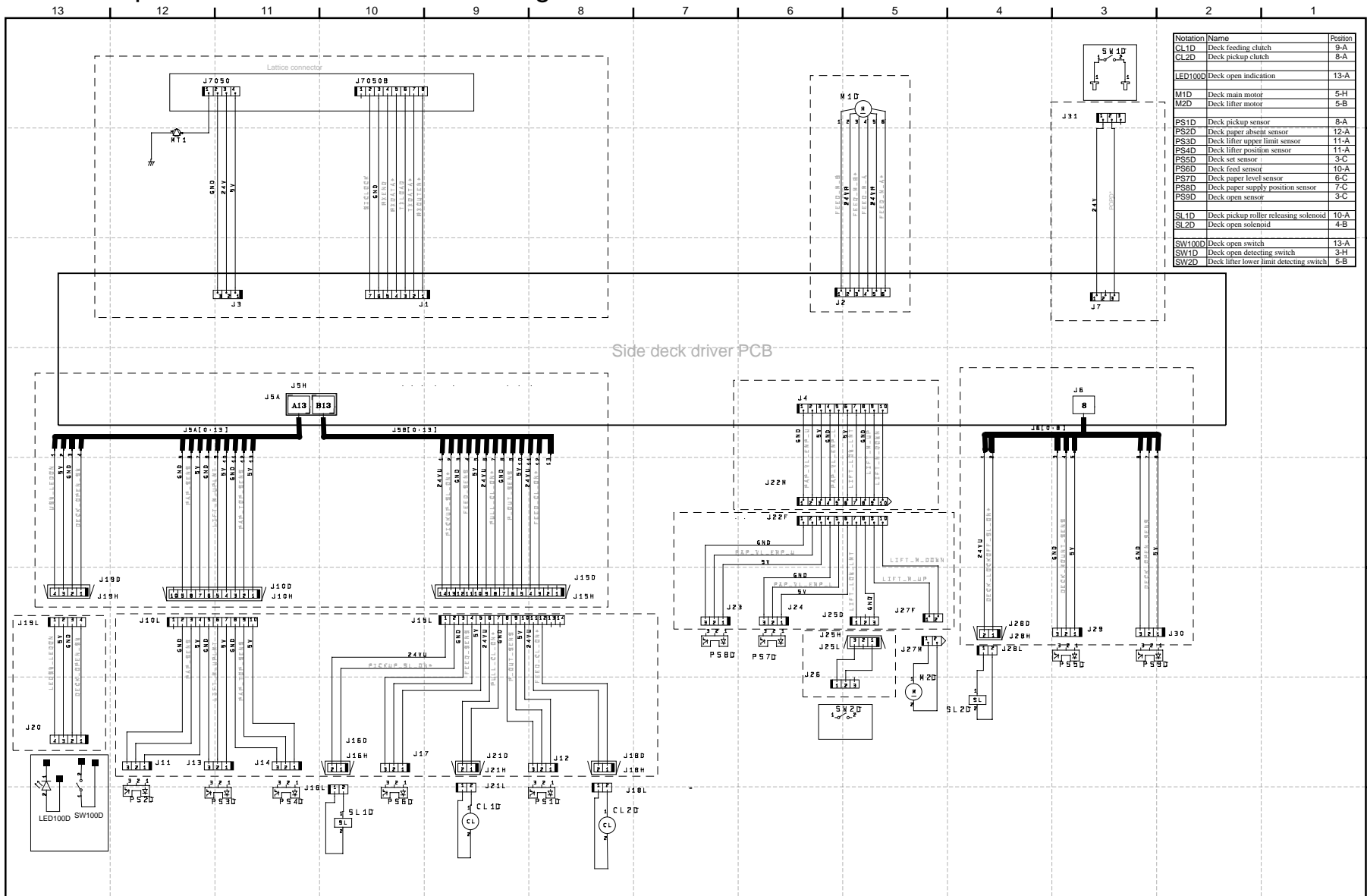
B. General Circuit Diagram



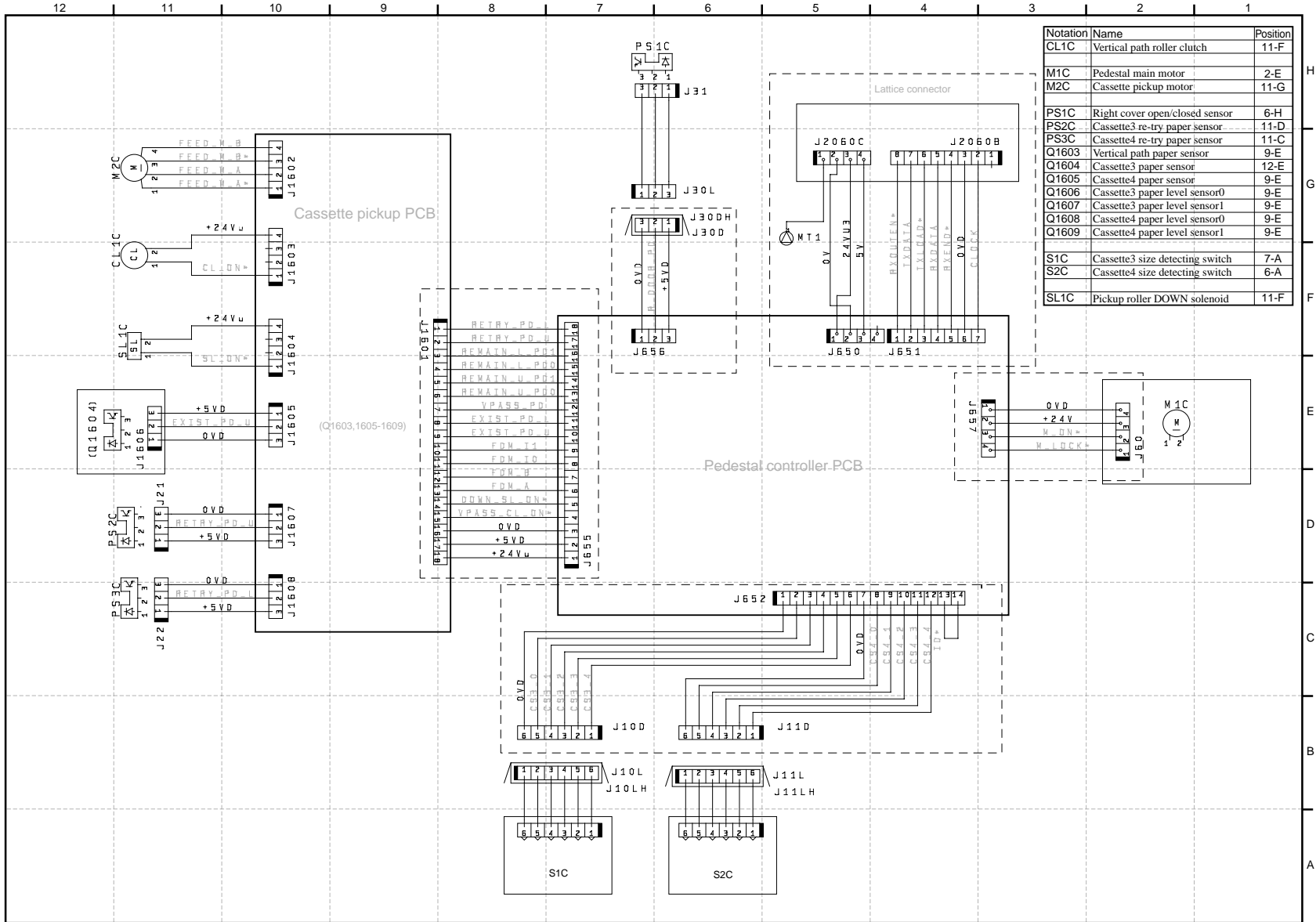
Pin	Pin Name	Signal	Pin	Pin Name	Signal
1	Power	Power	1	Power	Power
2	Ground	Ground	2	Power	Power
3	Power	Power	3	Power	Power
4	Power	Power	4	Power	Power
5	Power	Power	5	Power	Power
6	Power	Power	6	Power	Power
7	Power	Power	7	Power	Power
8	Power	Power	8	Power	Power
9	Power	Power	9	Power	Power
10	Power	Power	10	Power	Power
11	Power	Power	11	Power	Power
12	Power	Power	12	Power	Power
13	Power	Power	13	Power	Power
14	Power	Power	14	Power	Power
15	Power	Power	15	Power	Power
16	Power	Power	16	Power	Power
17	Power	Power	17	Power	Power
18	Power	Power	18	Power	Power
19	Power	Power	19	Power	Power
20	Power	Power	20	Power	Power
21	Power	Power	21	Power	Power



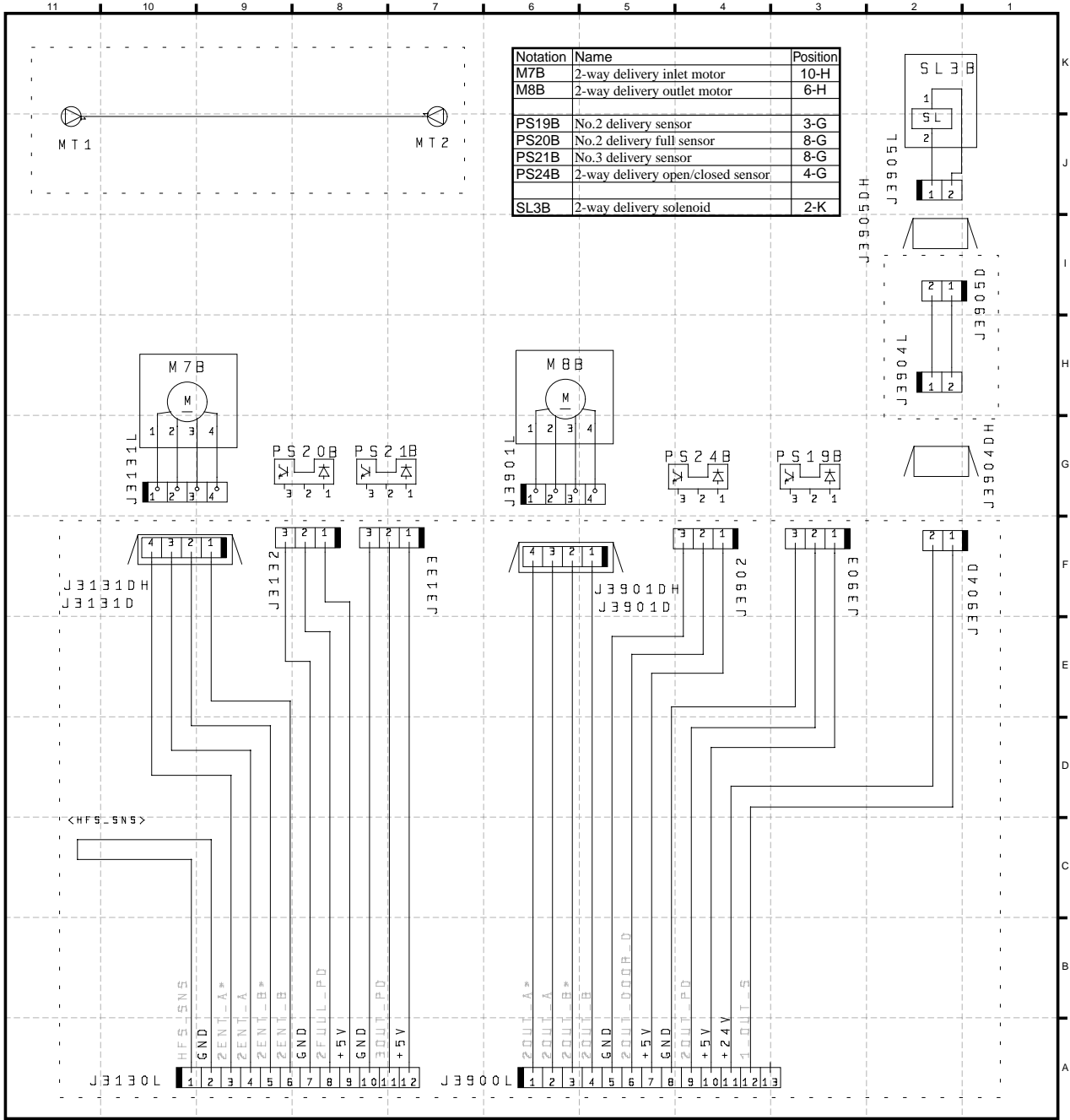
# C. Side Paper Deck-L1 General Circuit Diagram



# D. 2-Cassette Feeding Unit-W1 General Circuit Diagram



# E. Inner 2-Way Tray-A1 General Circuit Diagram



## F. Specifications

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### 1 Main Body

#### 1.1 Type

Item	Description
Body	Desktop
Copyboard	Fixed
Light source	Xenon lamp
Lens	Lens array
Photosensitive medium	OPC drum (30-mm dia.)

TA-101-01

#### 1.2 Systems

Item	Description
Reproduction	Indirect electrostatic
Charging	AC roller
Exposure	Laser
Copy density adjustment	Auto or manual
Development	Single-component toner projection
Pickup	Auto
	Front cassette (2 cassettes)
	Retard method (about 500 sheets of 80 g/m <sup>2</sup> paper, about 550 sheets of 64 g/m <sup>2</sup> paper)
	Manual
	Multifeeder
	Dual process method (about 50 sheets of 80 g/m <sup>2</sup> paper)
Transfer	Roller
Separation	Static eliminator (static separation) + curvature
Cleaning	Blade
Fixing	SURF method (plane heater and fixing film)

TA-101-02

### 1.3 Functions

Item	Description	
Resolution	Reading	600dpi×600dpi
	Copying	1200dpi×600dpi
	Printer output	2400dpi×600dpi
Original type	Sheet, book 3-D object (2 kg max.)	
Maximum original size	A3/279.4×431.8mm (11×17)	
Reproduction ratio	Direct (1:1), Reduce I (1:0.250), Reduce II (1:0.500), Reduce III (1:0.611), Reduce IV (1:0.707), Reduce III (1:1.414), Enlarge IV (1:2.000), Enlarge V (1:4.000), Enlarge VI (1:8.000), Zoom (1:0.250 to 8.000 ; 25% to 800% in 1% increments)	
Wait time	10 sec or less (at 20°C/168°F)	
First copy time	5.8 sec (book mode, cassette 1, Direct, A4/LTR, text mode)	
Continuous copying	999 copies max.	
Copy size	Cassette	A/B A3 max., A5 (vertical feed) min.
		Inch 279.4×431.8 mm (11×17) max., STMT (vertical feed) min.
	Manual feed	AB A3 max., postcard (vertical feed) min.
		Inch 279.4×431.8 mm (11×17) max., STMT (vertical feed) min.
Cassette 1/2	<ul style="list-style-type: none"> <li>• Plain paper (64 to 80 g/m<sup>2</sup>):A3, B4, A4, B5, A5R, A4R, B5R, 279.4×431.8mm (11×17), LGL, LTR, LTRR, STMT, STMTR</li> <li>• Tracing paper (SM-1):A3, B4, A4, B5, A4R, B5R</li> <li>• Colored paper (Canon-recommended):B4, A4, A4R</li> </ul>	
Multifeeder	<ul style="list-style-type: none"> <li>• Plain paper (64 to 80 g/m<sup>2</sup>):A3, B4, A4, B5, A5R, A4R, B5R, 279.4×431.8mm (11×17), LGL, LTR, LTRR, STMT, STMTR</li> <li>• Tracing paper (SM-1, GSN-75):A3, B4, A4, B5, A4R, B5R</li> <li>• Transparency (Canon-recommended):A4, A4R, LTR, LTRR</li> <li>• Colored paper (Canon-recommended):B4, A4, A4R</li> <li>• Postcard: Jpn (vertical feed), double-card, 4-sheet card</li> <li>• Label sheet (Canon-recommended):B4, A4, A4R, LTR, LTRR</li> <li>• Thick paper (90 to 128 g/m<sup>2</sup>):A3, B4, A4, B5, A4R, B5R, LTR, LTRR</li> <li>• Envelope</li> </ul>	

TA-101-03

Item	Description
Single-sided copying mode	<ul style="list-style-type: none"> <li>• Plain paper (64 to 80 g/m<sup>2</sup>):A3, B4, A4, B5, A5R, A4R, B5R, A5, 279.4×431.5mm (11×17), LGL, LTR, LTRR, STMT, STMTR</li> <li>• Tracing paper (SM-1, GSN-75):A3, B4, A4, B5, A4R, B5R</li> <li>• Transparency (Canon-recommended)A4, A4R, LTR, LTRR</li> <li>• Colored paper (Canon-recommended):B4, A4, A4R</li> <li>• Postcard: Jpn postcard (vertical feed), double-card, 4-sheet card</li> <li>• Label sheet (Canon-recommended):B4, A4, A4R, LTR, LTRR</li> <li>• Thick paper (90 to 128 g/m<sup>2</sup>):A3, B4, A4, B5, A4R, B5R, LTR, LTRR</li> <li>• Envelope</li> </ul>
Double-sided copying mode (automatic)	<ul style="list-style-type: none"> <li>• Plain paper (64 to 80 g/m<sup>2</sup>):A3, B4, A4, B5, A5R, A4R, B5R, 279.4×431.8mm (11×17), LGL, LTR, LTRR, STMT, STMTR</li> <li>• Colored paper (Canon-recommended):B4, A4, A4R</li> </ul>
Double-sided copying mode (multifeeder)	<ul style="list-style-type: none"> <li>• Plain paper (64 to 80 g/m<sup>2</sup>):A3, B4, A4, B5, A5R, A4R, B5R, 279.4×431.8mm (11×17), LGL, LTR, LTRR, STMT, STMTR</li> <li>• Colored paper (Canon-recommended):B4, A4, A4R</li> <li>• Postcard: Jpn (vertical feed), double-card, 4-sheet card</li> <li>• Thick paper (90 to 128 g/m<sup>2</sup>):A3, B4, A4, B5, A4R, B5R, LTR, LTRR</li> </ul>

TA-101-04



Item		Description
Cassette	Capacity	55 mm deep (approx.; about 500 sheets of 80 g/m <sup>2</sup> paper)
Hard disk		6GB
Non-image width (Direct,Enlarge/Reduce)	Leading edge	Single-side:2.5±1.5mm <2.5±1.5mm>*1
	Trailing edge	Single-side (Less than B4):2.5+1.1/-1.7mm <2.5+1.1/-1.7mm>*1 (Over B4):3.5+0.6/-2.8mm <3.5+0.6/-2.8mm>*1 (Free size):5.5+1.5/-5.0mm
	Left	Double-side (All):Over 0.5mm Single-side:2.5±1.5mm <2.5±1.5mm>*1 Double-side:2.5±2.0mm <2.5±2.0mm>*1
	Right	Single-side:Over 0.5mm Double-side:Over 0.5mm
Auto clear		Yes (2 min standard; may be changed in 1-min increments between 0 and 9 min)
Sleep mode		Yes (2 min standard; may be changed in user mode to 10sec, 1, 2, 10, 15, 20, 30, 40, 50, 60, 90 min, 2, 3, or 4 hr)
Accessory		<ul style="list-style-type: none"> <li>• DADF-H1</li> <li>• Platen Cover Type E</li> <li>• Document Tray-D2</li> <li>• Copy Tray-F1</li> <li>• Saddle Finisher-G1</li> <li>• Puncher Unit-K1 (2/3holes), G1/H1 (4holes), J1(2 holes)</li> <li>• Finisher-J1</li> <li>• Inner 2Way Tray-A1</li> <li>• Paper Deck-L1</li> <li>• Cassette Feeding Unit-W1</li> <li>• Card Reader-C1</li> <li>• Network Multi-PDL Printer Kit-C1</li> <li>• Token Ring Network Interface Adapter iN-TR2</li> </ul>

\*1:The values within parentheses indicate when the DADF is used.

### TA-101-05

The above specifications are subject to change for product improvement.

1.4 Others

Item		Description
Operating environment	Temperature range	15° to 30°C/59 to 86°F
	Humidity range	5 to 80%
	Atmospheric pressure	810.6 to 1013.3 hpa (0.8 to 1.0 atm)
Power consumption	Maximum	1350W or less
	Standby	48 W (approx.; reference only)
	Continuous	720 W (approx.; reference only)
Noise		Sound power level (Impulse mode)
	Copying	iR2200: 66 dB or less, iR3300: 71 dB or less
	Standby	iR2200: 40 dB or less, iR3300: 50 dB or less
Ozone		0.01 ppm or less avg., 0.02 ppm or less max.
Dimensions		565 (W) × 678 (D) × 1020 (H) mm
		22.2 (W) × 26.7 (D) × 40.2 (H) in (With Cassette Feeding Unit-W1)
Weight		80 kg (approx.)/176.3 lb (approx.)
Consumables	Copy paper	Keep wrapped to protect against humidity.
Toner		Keep away from direct sunshine, and keep at 40°C/85% or less.

TA-101-06

Reproduction mode	Side	Paper size	copies /min (1-to-N)			
			iR2200	iR2800	iR3300	
Direct	A3 (297×420mm)	A3	16	16	16	
	A4 (210×297mm)	A4	22	28	33	
	A5 (149×210mm)	A5	18	18	18	
	B4 (257×364mm)	B4	14	14	14	
	B5 (182×257mm)	B5	28	28	28	
	A4R (297×210mm)	A4R	18	18	18	
	B5R (257×182mm)	B5R	18	18	18	
	A5R (210×149mm)	A5R	18	18	18	
Reduce II (50.0%)	A3 → A5R	A5R	18	18	18	
	III (61.1%)	A3 → B5R	B5R	18	18	18
	IV (70.7%)	B4 → B5R	B5R	18	18	18
	V (81.6%)	A3 → A4R	A4R	18	18	18
		B4 → A4R	A4R	18	18	18
	VI (86.5%)	B5R → A5R	A5R	18	18	18
		A4 → B5	B5	28	28	28
		A3 → B4	B4	14	14	14
Enlarge IV (200.0%)	A5R → A3	A3	16	16	16	
	III (141.4%)	A4R → A3	A3	16	16	16
	II (122.4%)	B5R → B4	B4	14	14	14
		A4R → B4	B4	14	14	14
	I (115.4%)	A5 → B5	B5	28	28	28
		B4 → A3	A3	16	16	16
		B5 → A4	A4	22	28	33

Delivery by copier, Auto paper select ON, Auto density, Non-sort, Cassette

TA-101-07

APPENDIX

Reproduction mode	Size		(1toN)			
			iR2200	iR2800	iR3300	
Direct	279.4×431.8mm	279.4×431.8mm	16	16	16	
	(11×17)	(11×17)				
	LTR	LTR	22	28	33	
	LGL	LGL	14	14	14	
	LTRR	LTRR	18	18	18	
	STMTR	STMTR	18	18	18	
Reduce II (50.0%)	279.4×431.8mm	STMTR	18	18	18	
	(11×17) → STMTR					
	III	LTRR	18	18	18	
	(64.7%)	(11×17) → LTRR				
	IV	LGL	14	14	14	
(73.3%)	(11×17) → LGL					
V	LGL → LTRR	LTRR	18	18	18	
(78.6%)						
Enlarge IV (200.0%)	STMTR* →	279.4×431.8mm	16	16	16	
	279.4×431.8mm	(11×17)				
	(11×17)					
	III	LTRR →	279.4×431.8mm	16	16	16
	(129.4%)	279.4×431.8mm	(11×17)			
	(11×17)					
II	LGL →	279.4×431.8mm	16	16	16	
(121.4%)	279.4×431.8mm	(11×17)				
	(11×17)					
	Paper size	copies/min				

\*STMTR cannot be used as an original.

Delivery by copier, Auto paper select ON, Auto density, Non-sort, Cassette

TA-101-08

The above specifications are subject to change for product improvement.

## 2 Side Paper Deck-L1

### 2.1 Systems

Item	Description
Pickup method	Retard
Paper accommodation	Front loading
Paper type (horizontal feed only)	Plain paper (65 to 80 g/m <sup>2</sup> ): A4, B5, LTR Colored paper (Canon-recommended): A4
Capacity	2,500 sheets (approx.; 80 g/m <sup>2</sup> paper)
Paper size switch	By size guide plate/in service mode
Dimensions	324 (W) × 591 (D) × 432 (H) mm 12.8 (W) × 23.3 (D) × 17.0 (H) in
Weight	30 kg (approx.)/66.1 lb (approx.)
Power supply	None (DC power supplied by accessories power supply of host machine)
Operating conditions	Same as host machine

TA-102-01

The above specifications are subject to change for product improvement.

### 3 CASSETTE FEEDING UNIT-W1

#### 3.1 Systems

Item	Description	Remarks
Storage of paper	Front loading	
Method of pickup	Retard	
Cassette	2 (cassettes 3, 4)	The cassette 3 (4) is in common with the cassette 1 (2) of the host machine.
Switching of size	By user	
Type of paper	Plain paper, recycled paper (64 to 90 g/m <sup>2</sup> )	
Size of paper	A5/STMT to A3/11 × 17 (279mm × 432mm)	For the cassette 3, A5/STMT to B4 (LGL) max.
Size of source	500 × 2 = 1000 sheets (of 80 g/m <sup>2</sup> paper; if 64 g/m <sup>2</sup> , 550 × 2)	
Control panel	No (keys on host machine used)	
Display	No (keys on host machine used)	
Environmental considerations	No	A cassette heater (accessory) may be fitted.
Power supply	No (24 VDC/5 V supplied by main power supply of host machine)	
Dimensions	565 (W) × 678 (D) × 248 (H) mm / 22.2 (W) × 26.7 (D) × 9.76 (H) inches	
Weight	28 kg / 61.7 lb	
Operating noise	3 dB or less + that of host machine	

TA-103-01

## 4 INNER 2WAY TRAY-A1

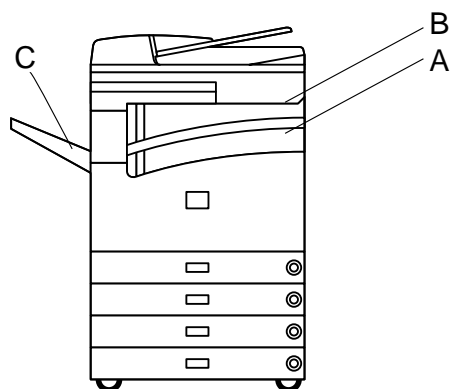
### 4.1 Type

Item	Description
Number of bins	3 in total 1 bin (No. 2 delivery slot) Delivery tray inside host machine External (No. 3 delivery slot; option)
Method of stacking	Face-down
Type of paper	Plain paper, recycled paper (between 64 g/m <sup>2</sup> and 90 g/m <sup>2</sup> )
Size of paper	A3/279.4×431.8mm (11"×17") to A5/STMT
Number of sheets (No. 2 delivery slot)	250 sheets (A4, B5, LTR); 100 sheets (other sizes)
Number of sheets (No. 3 delivery slot)	100 sheets (A4, B5, LTR); 50 sheets (other sizes)
Environmental considerations	None in particular
Power supply	None
Dimensions	149×420×254mm/5.87 in.×16.5 in.×10 in. (W×D×H)
Weight	3.5kg/7.7 lb

TA-104-01

#### Tray names

Without the Saddle Finisher-G1



FA-104-01

- A: No 1 delivery slot (host machine)
- B: No. 2 delivery slot
- C: No. 3 delivery slot (Copy Tray-F1/  
Saddle Finisher-G1)

## 5 ENVELOPE FEEDER ATTACHMENT-B1

### 5.1 Systems

Item	Description	Remarks
Method of pickup	Front loading	
Reference of paper movement	Center	
Switching of size	In user mode	By user.
	By cassette side plate	By user.
	By spring (to suit envelope size)	By service person.
Size of stack	As determined by envelope specifications	TA-105-02
Maximum number of envelopes	10 to 6CPM	The stack must not exceed the label index (with envelope YOUKEI 4 in use; decrease in speed occurring in continuous feed).
Control panel/display	No	Uses that of the host machine.
Power supply	No	
Dimensions	565(W)×523(D)×95(H)mm / 22.2(W)×20.6(D)×3.74(W)inches	
Weight	3.4 kg / 7.5 lb	
Operating environment	As determined by host machine	

TA-105-01



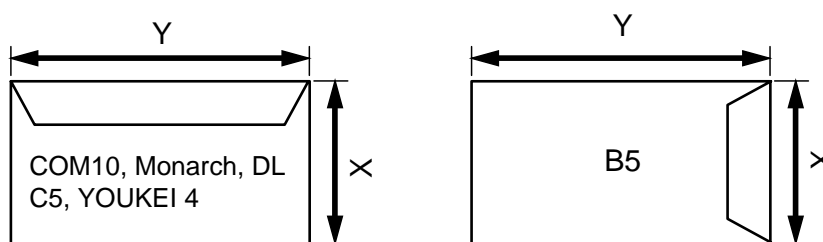
## 5.2 Envelopes

The envelope feeder is designed to accommodate envelopes of the following specifications:

Type	Shorter side (X) × longer side (Y)	Recommendation
COM10	104.7 × 241.3 (mm)	Mailwell No.553
Monarch	98.4 × 190.5 (mm)	Mailwell No.582
DL	110 × 220 (mm)	Mailwell Schneidersohne No.11345
C5	162 × 229 (mm)	Schneidersohne Kuvert No.17204
B5	176 × 250 (mm)	Schneidersohne Kuvert No.15269
YOUKEI 4	105 × 235 (mm)	Y-401

TA-105-02

Configuration of Envelopes



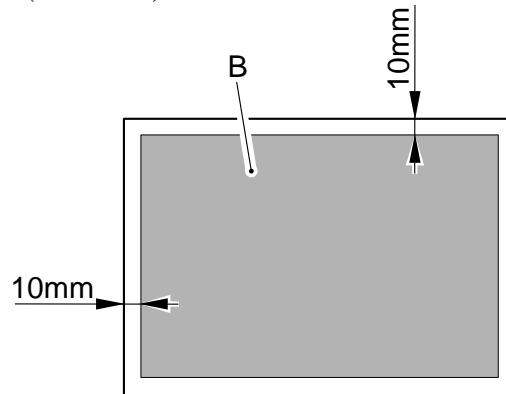
FA-105-01

### 5.3 Guaranteed Image Area

The guaranteed image area is 10 mm or more from each edge of the envelope; if triple-layered because of the flap, within 5 mm or more.

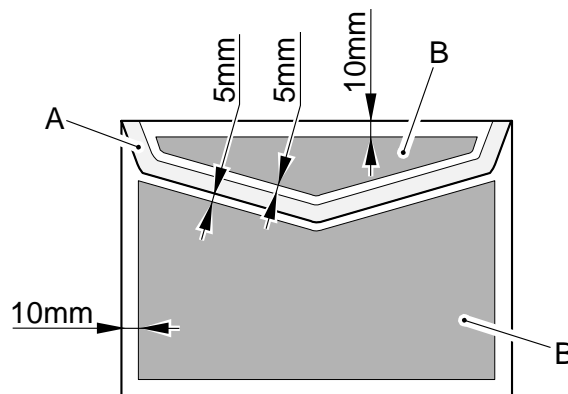
The figures show the guarantee image area (area B); they assume that the triple-layered area because of the flap is limited to area A:

- Face of the Envelope (common)



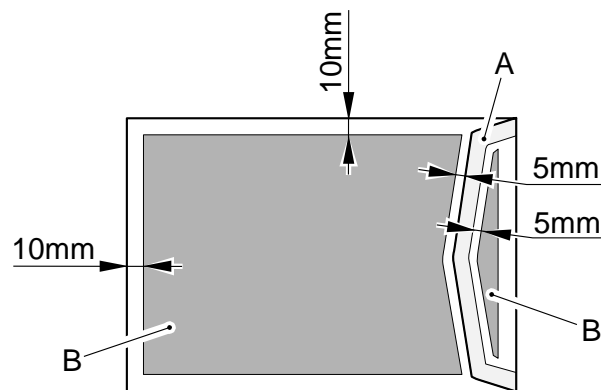
FA-105-02

- Back of the Envelope (COM10, Monarch, D, C5, YOUKEI 4)



FA-105-03

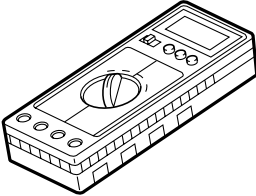
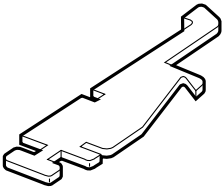
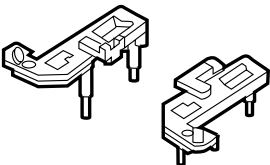
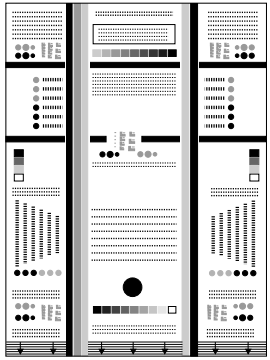
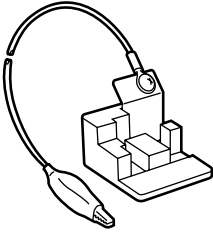
- Back of the Envelope (B5)



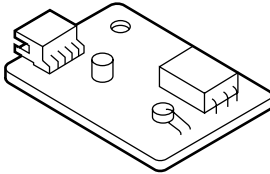
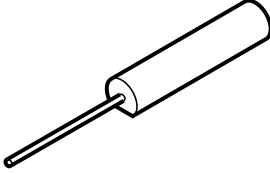
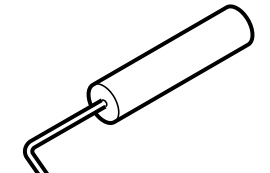
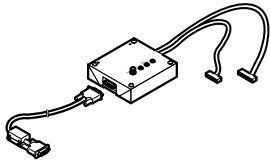
FA-105-04

## G. List of Special Tools

The following special tools will be needed in addition to the standard tools set:

No.	Name	Toll No.	Shape	Rank	Remarks
1	Digital multimeter	FY9-2002		A	Used when making electrical checks.
2	Door switch	TKN-0093		A	
3	Mirror positioning tool (front, rear)	FY9-3009		B	Used when positioning the No. 1/No. 2 mirror.
4	NA-3 Test Sheet	FY9-9196		A	Used when adjusting/checking images.
5	Potential sensor electrode	FY9-3012		B	Used to make zero-level checks on potential sensors.

APPENDIX

No.	Name	Toll No.	Shape	Rank	Remarks
6	Environment sensor checking sensor	FY9-3014		B	Used to check the environment sensor.
7	Tester extension pin	FY9-3038		A	Used when making electrical checks.
8	Tester extension pin (L-shaped)	FY9-3039		A	Used when making electrical checks.
9	Downloader PCB	FY9-2034		C	For DADF-H1, finisher J1 upgrade

Rank:

A: each service person is expected to carry one.

B: each group of five persons is expected to carry one.

C: each workshop is expected to carry one.

## H. List of Solvents/Oils

No.	Name	Uses	Composition	Remarks
1	Alcohol	Cleaning: e.g., glass, plastic, rubber parts; external covers.	Fluorescent family hydrocarbon, alcohol, surface ac- tivating agent, water	<ul style="list-style-type: none"> <li>• Do not bring near fire.</li> <li>• Procure locally.</li> <li>• Substitute: IPA (isopropyl alcohol)</li> </ul>
2	Solvent	Cleaning: metal part; oil, toner.	Fluorescent family hydrocarbon, chlorine family hydrocarbon, alcohol.	<ul style="list-style-type: none"> <li>• Do not bring near fire.</li> <li>• Procure locally.</li> </ul>
3	Heat resisting grease	Lubrication: fixing drive parts	Mineral family lithium soap, molybdenum disulfide,	Tool No.: CK-0427 (500g/can)
4	Lubricant		Mineral oil (paraffin family)	Tool No.: CK-0524 (100cc)
5	Lubricant	Lubrication: drive parts, friction parts	Silicone oil	Tool No.: CK-0551 (20g)
6	Lubricant	Lubrication: scanner rail	Silicone oil	Tool No.: FY9-6011 (50cc)



**Prepared by**

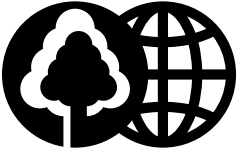
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