NP6560/NP6360/ NP6260

SERVICE HANDBOOK

REVISION 0

Canon

NOV. 1997

FY8-23AS-000

COPYRIGHT © 1997 CANON INC.

CANON NP6560/NP6360/NP6260 REV.0 NOV. 1997 PRINTED IN JAPAN (IMPRIME AU JAPON)

IMPORTANT

THIS DOCUMENTATION IS PUBLISHED BY CANON INC., JAPAN, TO SERVE AS A SOURCE OF REFERENCE FOR WORK IN THE FIELD.

SPECIFICATIONS AND OTHER INFORMATION CONTAINED HEREIN MAY VARY SLIGHTLY FROM ACTUAL MACHINE VALUES OR THOSE FOUND IN ADVERTISING AND OTHER PRINTED MATTER.

ANY QUESTIONS REGARDING INFORMATION CONTAINED HEREIN SHOULD BE DIRECTED TO THE COPIER SERVICE DEPARTMENT OF THE SALES COMPANY.

THIS DOCUMENTATION IS INTENDED FOR ALL SALES AREAS, AND MAY CONTAIN INFORMATION NOT APPLICABLE TO CERTAIN AREAS.

COPYRIGHT © 1997 CANON INC.

Printed in Japan
Imprimé au Japon

Use of this manual should be strictly supervised to avoid disclosure of confidential information.

Prepared by

OFFICE IMAGING PRODUCTS TECHNICAL SUPPORT DEPARTMENT 1
OFFICE IMAGING PRODUCTS TECHNICAL SUPPORT DIVISION

CANON INC.

5-1, Hakusan 7-chome, Toride-shi, Ibaraki 302 Japan

CONTENTS

CHAPTER 1 MAINTENANCE AND INSPECTION

A. Scheduled Servicing Chart 1-1
1. Copier.....1-1
2. Paper Deck-A1.....1-3
B. Periodically Replaced Parts 1-4
C. Consumables and Durables.....1-5
1. Copier.....1-5
2. Paper Deck-A1.....1-6
D. Image Adjustment Basic Procedure.....1-7
E. Points to Note for Scheduled Servicing 1-8

CHAPTER 2 STANDARDS AND ADJUSTMENTS

A. Image Adjustment 2-1
1. Adjusting the Image Leading Edge Margin.....2-1
2. Adjusting the Image Leading Edge Non-Image Width (registration) 2-1
3. Adjusting the Left/Right Registration (left/right front deck paper deck, cassette) 2-2
3-1. Adjusting the Left/Right Registration (paper deck-A1)...2-3
4. Adjusting the Left/Right Registration (holding tray position; 2nd side of two-sided/overlay copies).....2-4
5. Adjusting the Left/Right Margin 2-4
6. Executing AE Automatic Adjustment 2-5
7. Adjusting the AE Slope 2-6
B. Exposure System 2-7
1. Routing the Scanner Drive Cable 2-7
2. Orientation of the Heat Absorbing Glass.....2-8
3. Adjusting the Tension of the Scanning Lamp Cable.....2-8
4. Adjusting the Position of the Mirror.....2-9
5. Cleaning the Mirror (No. 5 mirror).....2-10
6. Routing the Light-Blocking Belt 2-10
7. Routing the Lens X Direction Drive Belt.....2-11
8. Adjusting the Position of the Scanner Locking Solenoid (SL1) 2-11
C. Image Formation System 2-12
1. Grid Wire of the Primary Charging Assembly 2-12
2. Adjusting the Height of the Charging Wire 2-14
3. Adjusting the Position of the Blanking Exposure Lamp 2-15
4. Position of the Roller Electrode 2-16
5. Adjusting the Position of the Cleaning Assembly Side Seal 2-16
6. Cleaning the Cleaner Side Scraper.....2-17
D. Pick-Up/Feeding System.....2-19
1. Orientation of the Cassette/ Front Paper Deck Pick-Up Roller.....2-19
2. Orientation of the Cassette/ Front Paper Deck Separation Roller.....2-20
3. Orientation of the Feeding Roller (cassette/ front paper deck).....2-20
4. Orientation of the Multifeeder Pick-Up Roller 2-21
4-1. Orientation of the Paper Deck-A1 Pick-Up Roller 2-21

5. Rotation of the Multifeeder Feeding Roller 2-22
5-1. Orientation of the Paper Deck-A1 Feeding Roller 2-22
6. Adjusting the Separation Roller Pressure of the Cassette/Front Paper Deck ...2-23
7. Adjusting the Separation Roller Pressure of the Holding Tray.....2-24
8. Pick-Up/Feeding Roller of the Multifeeder 2-24
9. Adjusting the Position of the Pick-Up Roller Releasing Solenoid (cassette) 2-25
9-1. Adjusting the Position of the Pick-Up Roller Releasing Solenoid (front paper deck)...2-26
9-2. Adjusting the Position of the Pick-Up Roller Releasing Solenoid (paper deck-A1) 2-26
10. Adjusting the Position of the Pick-Up Roller Releasing Solenoid (multifeeder) 2-27
11. Routing the Timing Belt of the Side Guide (multifeeder assembly).....2-28
12. Adjusting the Position of the Solenoid (delivery paper deflecting plate solenoid) 2-28
13. Adjusting the Position of the Holding Tray Paper Deflecting Plate Drive Solenoid.....2-29
14. Adjusting the Position of the Holding Tray Assembly Side Guide Plate 2-29
15. Adjusting the Position of the Holding Tray Paper Jogging Plate 2-30
16. Adjusting the Timing Belt of the Holding Tray Paper Jogging Guide Plate.....2-30
17. Adjusting the Position of the Holding Tray Paper Jogging Plate Solenoid 2-31
18. Drive Belt.....2-31
E. Fixing System.....2-33
1. Points to Note When Installing the Fixing Heater.....2-33
2. Adjusting the Position of the Fixing Assembly Inlet Guide.....2-33
3. Adjusting the Lower Roller Pressure (nip).....2-35
4. Adjusting the Fixing Clutch ...2-36
F. Electrical System.....2-37
1. When Replacing the DC Controller PCB 2-37
2. Checking the Surface Potential Control System.....2-37
3. Checking the Potential System 2-41
4. Potential Control System Conversion Table.....2-43
5. Checking the Environment Sensor 2-48
6. Checking the Photointerrupters.....2-49
7. Registering the Paper Width Basic Value (✻4✻; cassette/ multifeeder) 2-57

CHAPTER 3 ARRANGEMENT AND FUNCTIONS OF ELECTRICAL PARTS

A. Sensors 3-2
B. Switches and Solenoids.....3-6
C. Motors and Fans 3-10
D. Clutches 3-12
E. Lamps, Heaters, and Photosensors 3-14
F. PCBs 3-16
G. Paper Deck-A1 3-18
1. Sensors and Switches 3-18
2. Motors, Clutches, Solenoids, and PCBs.....3-20
H. Variable Resistors (VR), Light-Emitting Diodes (LED), and Check Pins by PCB.....3-22
1. DC Controller PCB.....3-22
2. AC Driver PCB 3-25
3. DC Power Supply PCB 3-25
4. Control CPU PCB 3-26
5. Holding Tray Driver PCB 3-27
6. Potential Measurement PCB.....3-28
7. HVT1 PCB.....3-29
8. HVT2 PCB.....3-30
9. Inverter PCB.....3-30

10. Lamp Regulator PCB 3-31
11. Counter PCB 3-31
12. Side Deck Driver (paper deck-A1) 3-32

CHAPTER 4 SERVICE MODE

A. Outline 4-1
B. Using Service Mode 4-2
C. Using Adjustment Mode and Options Mode 4-2
D. Display Mode (✻1✻) 4-4
E. I/O Display Mode (✻2✻) 4-17
F. Adjustment Mode (✻3✻) 4-53
G. Function Mode (✻4✻) 4-62
H. Options Mode (✻5✻) 4-66
I. Counter Mode (✻6✻) 4-72

CHAPTER 5 SELF DIAGNOSIS

A. Copier 5-1
B. RDF-D1 5-6
C. Sorter 5-8

APPENDIX

A. GENERAL TIMING CHART I A-1
B. SIGNALS AND ABBREVIATIONS A-3
1. Signals A-3
2. Abbreviations A-4
C. GENERAL CIRCUIT DIAGRAM A-5
D. PAPER DECK-A1 GENERAL CIRCUIT DIAGRAM A-7
E. SPECIFICATIONS A-9
A. Copier A-9
1. Type A-9
2. Mechanisms A-9
3. Performance A-10
4. Others A-13
B. Paper Deck-A1 .....A-16

CHAPTER 1 MAINTENANCE AND INSPECTION

A. Scheduled Servicing Chart

Caution:
Do not use solvents or oils other than those specified.

1. Copier

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

Unit	Part	Intervals					Remarks
		at installation	every 250,000	every 500,000	every 750,000	every 1,000,000	
Optical path	No. 1/No. 6 mirror		△				Use blower brush; for No. 5 mirror, use mirror cleaning tool.
	Dust-proofing glass		△				
	Heat absorbing glass		△				
	Standard white plate		△				
	Reflecting shade (scanning lamp)		△				
Use alcohol; then, apply oil.	Scanner rail		△ ×				Use alcohol; then, apply lubricant.
	Scanner cable		□ ◎				Check and adjust if for initial 250,000.
Charging assembly	Charging wire (primary, pre-transfer, transfer, separation)	△	●				
	Grid wire (primary)	△	△	●			
	Shielding plate (each charging assembly)	△	△				
	Roller electrode waste toner case (pre-transfer charging assembly)		△				
Photosensitive drum	Photosensitive rum		△				Use solvent.
	Anti-stray toner sheet (primary charging assembly)		△				
	Slip ring					△ ×	Use alcohol; then, apply BARRIERTAIMI.
Developing assembly	Developing cylinder	◎					
	Developing roller		△				

Note 1: Take care not to touch the mirrors or the lenses.

Unit	Part	Intervals					Remarks
		at installation	every 250,000	every 500,000	every 750,000	every 1,000,000	
Developing assembly	Anti-stray toner sheet (developing assembly)		△				
Cleaner	Blade			*		●	*Replace edge. Apply toner.
	Side scraper assembly			△			Remove paper lint.
	Separation claw		●				
Fixing assembly	Inlet guide		△				
	Fixing Cleaning belt	◎					Take up during installation.
	Thermistor		△				
	Oil receptacle		△				
Delivery assembly	Separation claw (upper/lower)		△	● (upper)		● (lower)	
Waste toner collection assembly	Waste toner		◎				Remove as necessary.
Externals	Copyboard glass		△				
	Ozone filter		△				
	Air filter (scanner cooling fan)		△				
Pick-up assembly	Pick-up roller		●				
	Feeding roller		●				
	Separation roller		●				
Feeding assembly	Transfer guide/roll		△				
	Registration roller (upper/lower)		△				
	Feeding belt		△				
	Feeding roller		△				
Holding tray	Pick-up roller (crescent)		●				
	Upper separation belt		●				
	Separation lower feeding roller		●				
Hopper	Toner supply mouth		△				
	Toner receptacle		△				

2. Paper Deck-A1

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

Unit	Part	Intervals					Remarks
		at installation	every 250,000	every 500,000	every 750,000	every 1,000,000	
Pick-up assembly	Pick-up roller		●				
	Feeding roller		●				
	Separation roller		●				
	Vertical path, roll		△				

B. Periodically Replaced Parts

Some parts of the machine must be replaced on a periodical basis to maintain the performance of the machine at a specific level regardless of the presence/absence of damage (when they fail, they will affect the performance to a significant degree).

Schedule the replacement so that it coincide with a scheduled service visit.

as of November 1997

No.	Parts name	Part number	Q'ty	Life (copies)	Remarks
1	Primary/pre-transfer/transfer/ separation charging wire	FY3-0030-000	AR	250,000	100V
		FY3-0040-000	AR	250,000	120/230V
2	Primary charging assembly grid wire	FY1-0883-000	AR	500,000	

Note: The above values are all estimates and are subject to change based on future data.

Table 1-1

C. Consumables and Durables

Some parts of the machine may need replacement once or more because of wear or damage. Use the table as a reference, and replace them as needed.

1. Copier

as of November 1997

No.	Parts name	Parts number	Q'ty	Life (copies)	Remarks
1	Multifeeder pick-up roller	FF5-1220-000	1	120,000	Front Actual number of copies.
		FF5-1221-000	1	120,000	Rear Actual number of copies.
2	Multifeeder feeding roller	FB2-7522-000	2	120,000	Actual number of copies.
3	Multifeeder separation roller	FB2-7545-000	1	120,000	Actual number of copies.
4	Scanning lamp	FH7-3333-000	1	250,000	100V/120V
5	Scanning lamp	FH7-3282-000	1	250,000	220V/240V
6	Cleaner separation claw	FB2-6899-000	3	250,000	
7	Fixing cleaning belt	FA3-8908-000	1	250,000	
8	Delivery upper separation claw	FC1-0391-030	6	500,000	
9	Pick-up roller (paper deck, cassette)	FF5-1220-000	4	250,000	Rear Actual number of copies.
		FF5-1221-000	4	250,000	Front Actual number of copies.
10	Feeding roller (paper deck, cassette)	FB2-7695-000	8	250,000	Actual number of copies.
11	Separation roller (paper deck, cassette)	FB2-7777-000	4	250,000	Actual number of copies.
12	Duplexing pick-up crescent roller	FC2-1532-000	2	250,000	Actual number of copies.
13	Duplex upper separation belt	FA5-5427-000	8	250,000	Actual number of copies.
14	Duplexing feeding roller	FC2-1533-000	1	250,000	Actual number of copies.
15	Primary charging wire cleaner 1	FF2-3552-000	2	500,000	
16	Primary charging cleaner 2	FF2-3551-000	2	500,000	
17	Transfer charging wire cleaner	FF2-3551-000	1	500,000	
		FF2-3552-000	1	500,000	
18	Separation charging wire cleaner	FF5-3090-000	2	500,000	
19	Pre-transfer charging wire cleaner	FF5-3090-000	1	500,000	
20	Pre-transfer charging assembly scraperr	FB4-3689-000	1	500,000	
21	Upper fixing roller	FB4-3690-000	1	500,000	
22	Lower fixing roller	FB3-9164-000	1	500,000	

Table 1-2a

No.	Parts name	Parts number	Q'ty	Life (copies)	Remarks
23	Heat insulating bush (front, rear)	FB4-3689-000	2	500,000	Simultaneously w/ upper fixing roller.
24	Fixing main thermistor (TH1)	FH7-7349-000	1	500,000	
25	Fixing sub thermistor (TH2)	FG5-8812-000	1	500,000	
26	Pick-up clutch (left deck, cassette)	FH7-5763-000	3	1,000,000	Actual number of copies.
27	Pick-up clutch (right deck)	FH7-5729-000	1	1,000,000	Actual number of copies.
28	Cleaning blade	FB2-8453-000	1	1,000,000	Use both edges; 500,000 for each.
29	Primary charging assembly	FG5-4378-030	1	1,000,000	
30	Transfer/separation charging assembly	FG5-9592-000	1	1,000,000	
31	Pre-transfer charging assembly	FG5-8809-000	1	1,000,000	
32	Fixing thermal switch	FH7-7154-000	1	1,000,000	
33	Delivery lower separation claw	FA2-9037-000	2	1,000,000	
34	Developing cylinder	FG5-8230-020	1	1,000,000	
35	Developing assembly roll	FB2-6933-000	2	1,000,000	

Table 1-2b

2. Paper Deck-A1

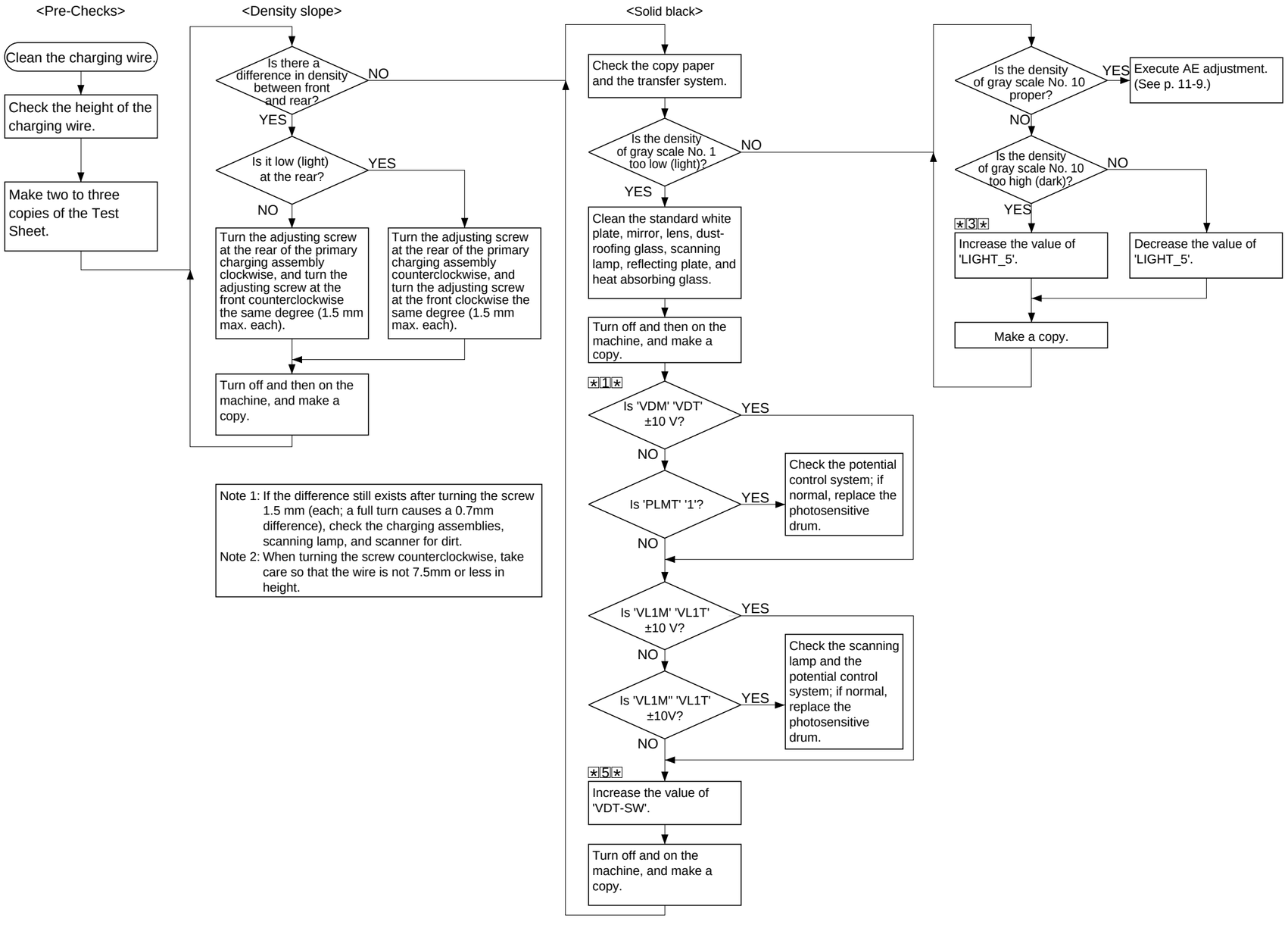
as of November 1997

No.	Parts name	Parts number	Q'ty	Life (copies)	Remarks
1	Side paper deck pick-up roller*	FF5-1220-000	1	250,000	Front Actual number of copies.
		FF5-1221-000	1	250,000	Rear Actual number of copies.
2	Side paper deck feeding roller	FB2-7695-000	2	250,000	Actual number of copies.
3	Side paper deck separation roller	FB2-7777-000	1	250,000	Actual number of copies.

***** Exercise care during replacement; the pick-up roller of the side paper deck and the pick-up roller of the machine must be oriented differently.

Table 1-2c

■ Non-AE, Copy Density at 5

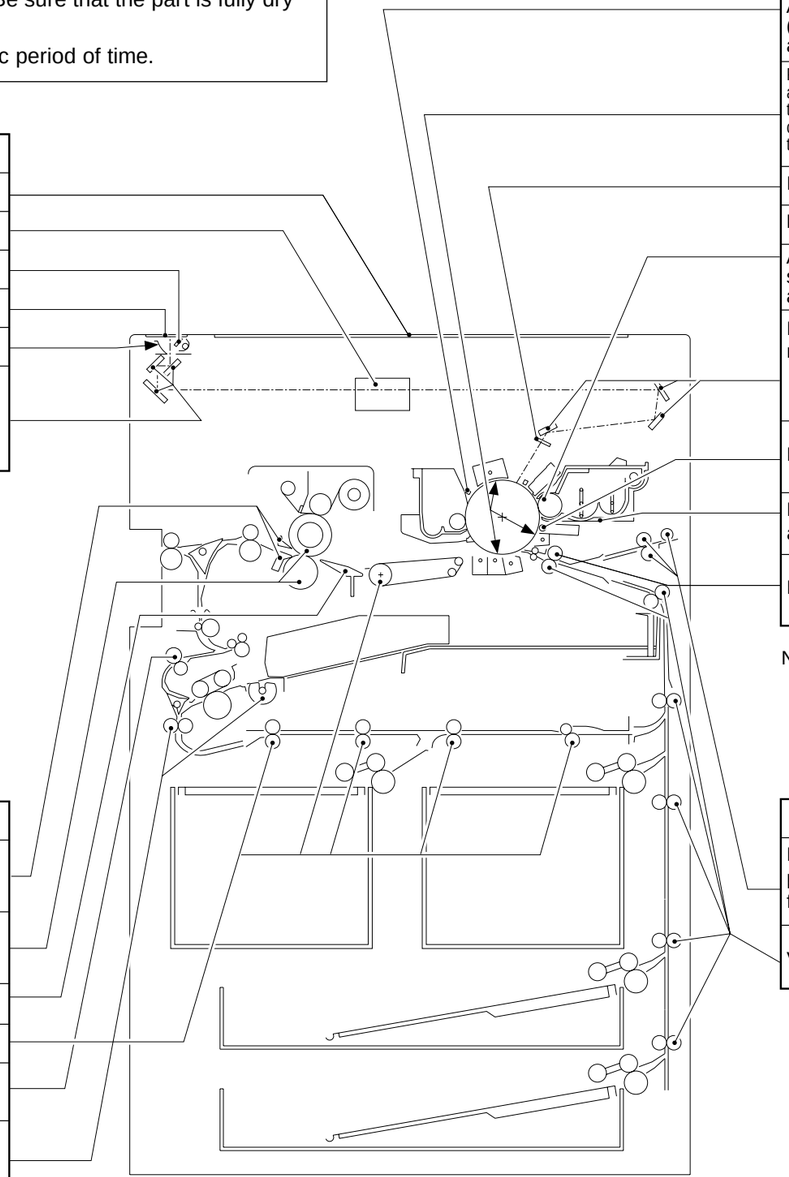


E. Points to Note for Scheduled Servicing

Caution:

- Make thorough checks of the block (front, rear) for melting by leakage, deformation by heat, tears, and yellowing. If any fault is found, replace it.
- Be sure to check and clean the inner side as well as the outer side of the block (front, rear).
- Do NOT use a cloth coated with metal powder for cleaning.
- Do NOT use a moist cloth for cleaning. Use lint-free paper, and clean. (Be sure that the part is fully dry before putting it back into the machine.
- Try to finish all work (scheduled servicing/maintenance) within a specific period of time.

Parts	Tools/chemicals	Remarks
Copyboard glass	Alcohol	Cleaning
Lens	Blower brush	Cleaning
Heat absorbing glass	Lint-free paper	Dry wiping
Standard white plate	Lint-free paper	Dry wiping
Reflecting plate	Blower brush	Cleaning
No. 1 through No. 3 mirrors	Blower brush or lint-free paper	Cleaning with blower brush; if necessary, lint-free paper



Parts	Tools/chemicals	Remarks
Pre-exposure lamp		Cleaning
Anti-stray toner (primary charging assembly)		Cleaning
Primary charging assembly, transfer/separation charging assembly, pre-transfer charging assembly	Alcohol, lint-free paper	Dry wiping; then, using lint-free paper moistened with alcohol
Dust-proofing glass	Lint-free paper	Cleaning
Blanking exposure lamp		Cleaning
Anti-stray toner sheet (developing assembly)		Cleaning
No. 4 through No. 6 mirrors	Blower brush or lint-free paper	Cleaning with blower brush; if necessary, using lint-free paper. For No. 5 mirror, use mirror cleaning tool
Roller electrode		Dispose of toner collecting on roller electrode
Developing assembly mount	Moist cloth (Note)	Cleaning
Registration roller	Alcohol, lint-free paper	Cleaning

Note: Make sure no droplets of water remain.

Parts	Tools/chemicals	Remarks
Separation claw	Solvent and lint-free paper	Cleaning
Upper roller, lower roller	Cleaning oil, lint-free paper	Cleaning
Paper guide	Solvent, lint-free paper	Cleaning
Feeding assembly	Moist cloth (Note)	Cleaning
Re-pick up assembly, refreshing roller	Alcohol, lint-free paper	Cleaning
Re-pick up assembly, pick-up roller, registration roller	Alcohol, lint-free paper	Cleaning

Parts	Tools/chemicals	Remarks
Multifeeder tray, pick-up roller, feeding roller	Alcohol, lint-free paper	Cleaning
Vertical path roller	Alcohol, lint-free paper	Cleaning

CHAPTER 2 STANDARDS AND ADJUSTMENTS

A. Image Adjustment

1. Adjusting the Image Leading Edge Margin

Select 'LE_BLANK' in service mode (✻ 3 ✻).

Make adjustments so that the image leading edge margin is 4.5 ±1.5 mm when the Test Sheet is copied in Direct.

(unit: 0.1 mm)

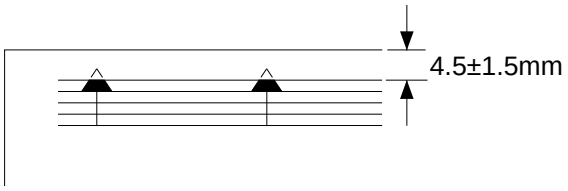


Figure 2-1

2. Adjusting the Image Leading Edge Non-Image Width (registration)

Select 'REGIST' in service mode (✻ 3 ✻).

Make adjustments so that the image leading edge non-image width is 4.5 ±1.5 mm when the Test Sheet is copied in Direct.

(unit: 0.1 mm)

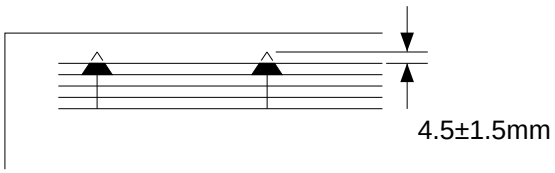


Figure 2-2

3. Adjusting the Left/Right Registration (left/right front deck paper deck, cassette)

Make adjustments by moving the horizontal registration adjusting plate of each left/right paper deck/cassette so that the distance between the line in the copy image and the the edge of copy paper is 10 ±1.5 mm.

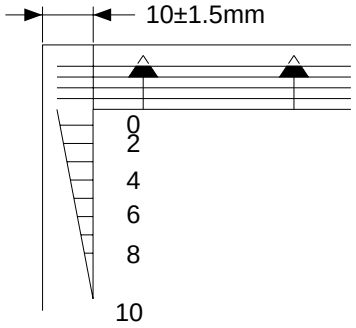


Figure 2-3

a. Left/Right Front Paper Deck

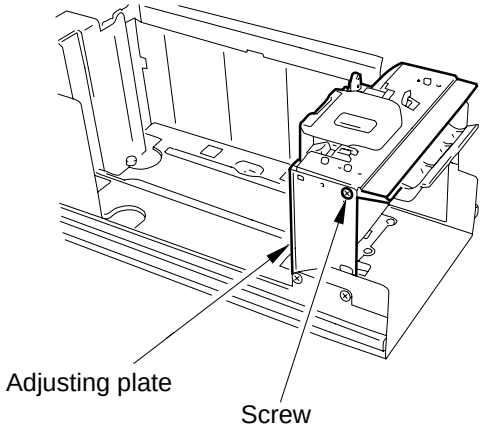


Figure 2-4a

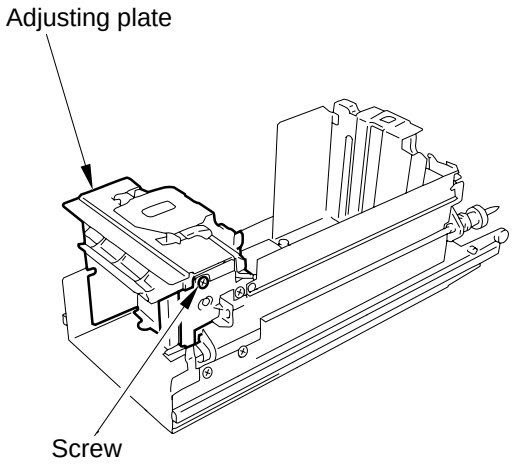


Figure 2-4b

b. Cassette

Turn the horizontal registration adjusting screw of each cassette, and make adjustments so that the copy image and the edge of copy sheet is 0 ± 1.5mm when the Test Sheet is copied in Direct.

1) Slide out the cassette, and loosen the two screws ① and the locking pick ② of the inside unit. (The cassette 4 is not equipped with a locking pick.)
2) Detach the paper size plate of the cassette, and turn the horizontal adjusting screw with a screwdriver ③.

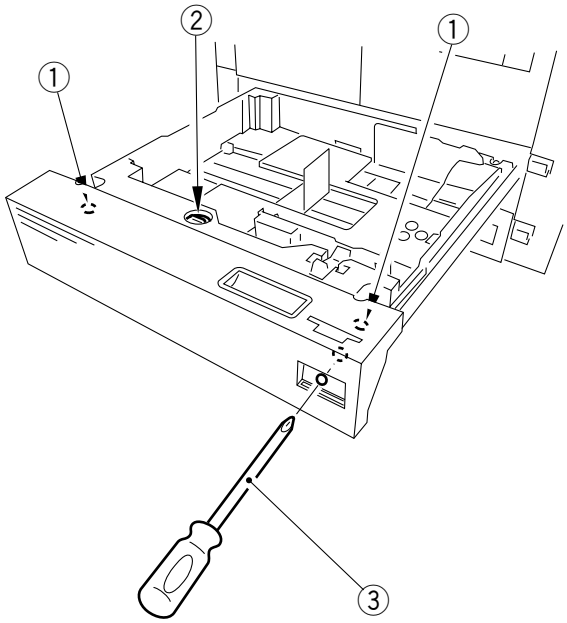


Figure 2-5

3-1 Adjusting the Left/Right Registration (paper deck-A1)

1) Make a copy of the Test Sheet, and check to make sure that the left/right registration between copy image and paper deck is 0 ±1.5 mm or less.
2) If the left/right registration is not as specified, adjust the position of the latch plate of the deck opening solenoid by turning the two adjusting screws. (At this time, use the scale on the latch plate as a reference.)

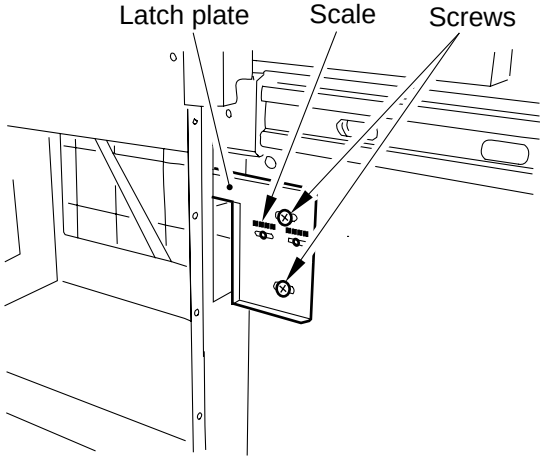


Figure 2-5a (rear left of compartment)

4. Adjusting the Left/Right Registration (holding tray position; 2nd side of two-sided/overlay copies)

Loosen the two screws, and move the guide plate of the holding tray assembly so that the distance between the line in the copy image and the edge of the copy paper is 0 ±2.0 mm in Direct.

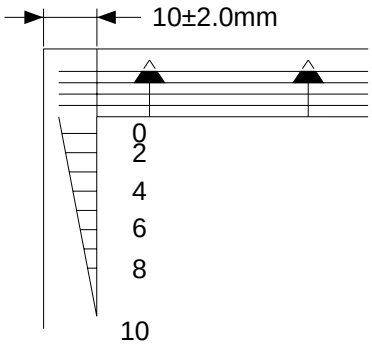


Figure 2-6

5. Adjusting the Left/Right Margin

Make adjustments so that the image left/right margin is 2.75 ±2.5 mm when the Test Sheet is copied in Direct.

Be sure to adjust the left/right registration before making this adjustment.

a. Front Margin Adjustment (left margin)

Select 'F-BLANK' in service mode (✻3✻), and change the setting. Increasing the setting increases the front margin.

(unit: 0.1 mm)

b. Adjusting the Rear Margin (right margin)

Select 'R-BLANK' in service mode (✻3✻), and change the setting. Increasing the setting increases the rear margin.

(unit: 0.1 mm)

6. Executing AE Automatic Adjustment

1) Open the front door, and insert the door switch actuator into the door switch actuator.
2) Push the service mode switch over the cover.
3) Select the following in service mode:
   AE_ADJ:0 ← (✻: START)
   (0: F5, 1:F9).
4) Place the Test Sheet on the copyboard, and close the copyboard cover.

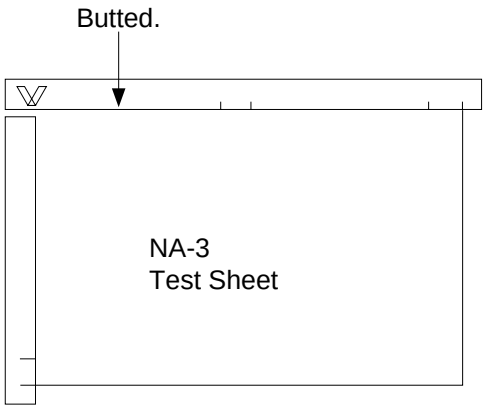


Figure 2-7

5) Press the user mode key ✻ once.
   • The scanning lamp turns on, and auto adjustment is executed.

   AE_ADJ: 1 ← (✻: START)
   Changes to '1'.

6) Place a newspaper on the copyboard, and close the copyboard cover.
7) Press the user mode key ✻ once.
   • The scanning lamp turns on, and automatic adjustment is executed.

   AE_ADJ: 0 ← (✻: START)
   Changes to '0'.

8) Press the Reset key twice to end service mode.

7. Adjusting the AE Slope

After executing AE auto adjustment, make a copy of a newspaper (or a rather dark original). If the copy is foggy or too light, perform the following:

1) Open the front door, and insert the door switch actuator into the door switch assembly.
2) Press the service mode switch over the cover with a clip.
3) Select 'AE_SLOP' in service mode (✻3✻).
4) Place a newspaper (or a relatively dark original) on the copyboard.
5) Change the setting using the numeric keypad, and press the user mode key (✻).
   ① If you decrease the setting in adjustment mode,
   →Copies of a newspaper will be lighter.
   ② If you increase the setting in adjustment mode,
   →Copies of a newspaper will be darker.

Note:
You may press the Copy Start key to make copies.

6) Press the Reset key twice to end service mode.

8. Adjusting the Distance between the Side Guide Plates of the Holding Tray Assembly

If a sheet of paper of a width different from the specified dimension (because of poor cutting) is used and tends to cause a fault during re-pick up, check the distance between the side guide plates of the holding tray assembly.

1) After copying on the first side of a two-sided copy, slide out the holding tray, butt the copy paper on the holding tray against the side guide plate at the rear, and check that the copy paper is 1.2 to 2.0 mm away (L) from the side guide plate at the front.
2) If the distance (L) is not between 1.2 and 2.0 mm, select 'paper size_PSZ' in service mode (*3*), and change the setting so that the distance is 1.2 to 2.0 mm.
3) A higher setting will increase the distance between the side guide plates in 0.367 mm increments.

Caution:
a. Each setting is effective only for the respective size. Adjust for the size suffering from re-pick up fault only.
a. If no re-pick up fault is noted, it is best to leave the setting as it is. An increase in the distance between copy paper and the front side guide plate will cause variation in registration for 2nd sides, while a decrease in the distance will affect the alignment of the stack of sheets.

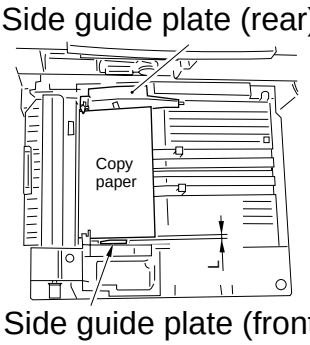


Figure 2-8a

B. Exposure System

1. Routing the Scanner Drive Cable

Route the cable as indicated (① through ⑧), and adjust the tension of the cable and the position of the mirror.

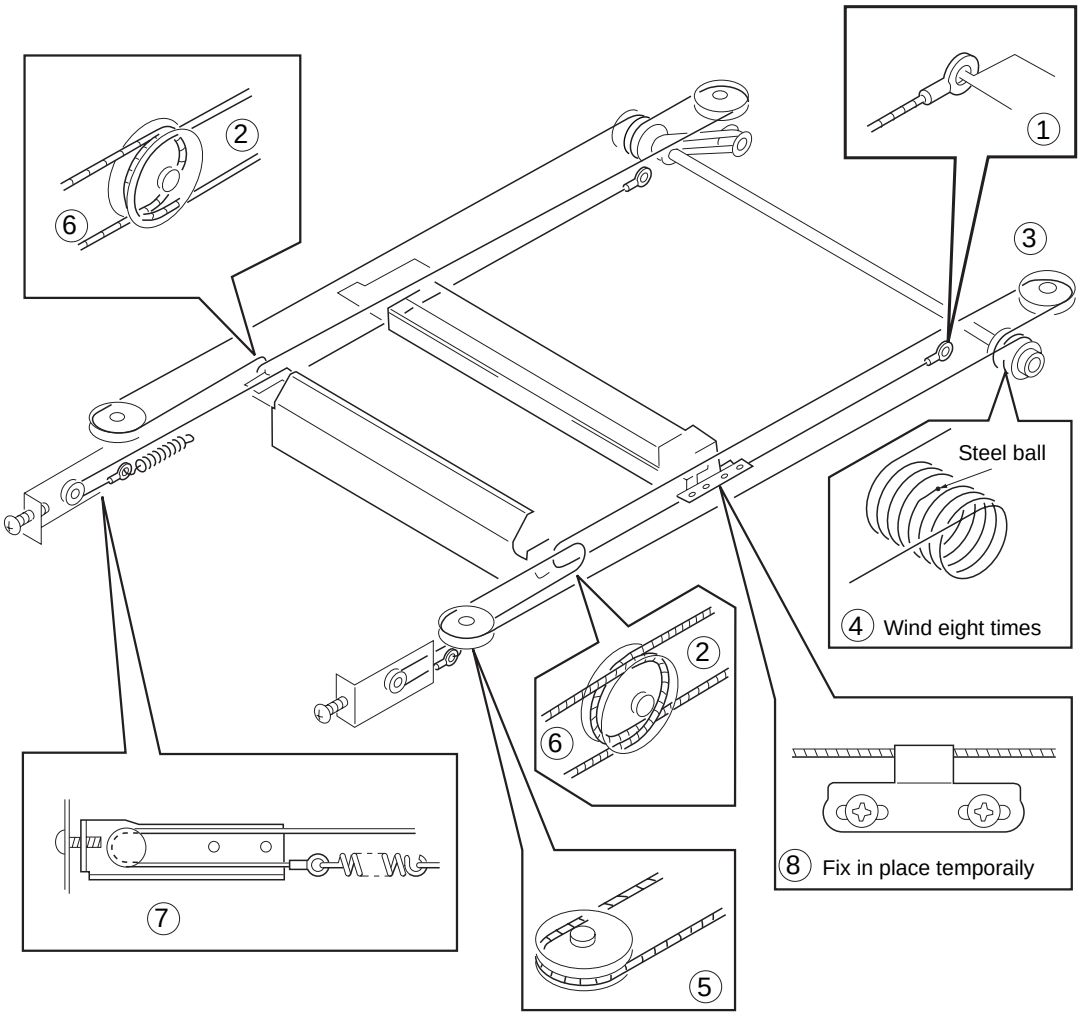


Figure 2-9

2. Orientation of the Heat Absorbing Glass

When replacing the heat absorbing glass, make sure that the white paint marking is toward the rear of the machine.

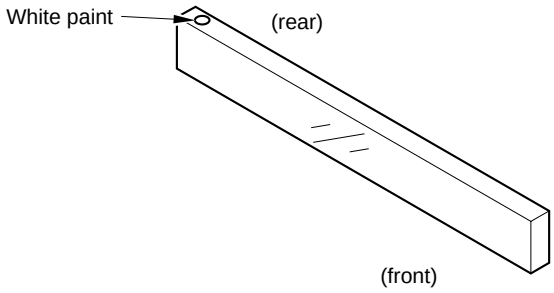


Figure 2-10

3. Adjusting the Tension of the Scanning Lamp Cable

1) Remove the two mounting screws, and remove the left cover.
2) Loosen the fixing screw on the tension spring bracket.
3) Turn the tension adjusting screw so that the reading is as indicated.
   • Turn the tension adjusting screw A so that the reading of the spring gauge is 200 ±50 g when the center of the scanner cable is pulled about 10 mm.

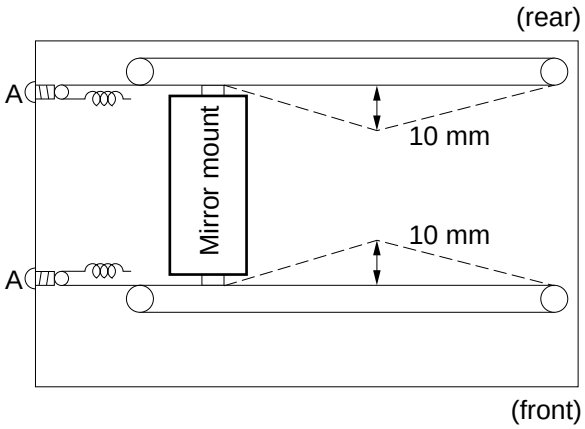


Figure 2-11

4. Adjusting the Position of the Mirror

You must always adjust the position of the mirror whenever you have installed the scanner drive cable.

1) Move the No. 1 mirror mount and the No. 2/No. 3 mirror to the left.
2) Set the mirror positioning tool (front, rear; FY9-3011) as shown.

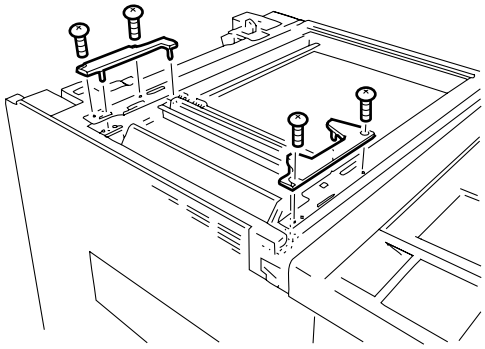


Figure 2-12

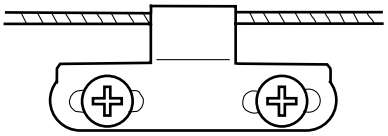


Figure 2-13

5. Cleaning the Mirror (No. 5 mirror)

1) Remove the copyboard glass.
2) Remove the lens hood.
3) Remove the mirror guide plate.
4) Move the lens stage in the direction of Enlarge.
5) Remove the screw, and remove the mirror cleaning tool.
6) While butting the mirror cleaning tool ① against the No. 5 mirror as shown, clean the mirror by moving the tool in the direction of the arrow.
   At this time, be sure that your finger or the cleaning tool will not touch the No. 4 mirror.

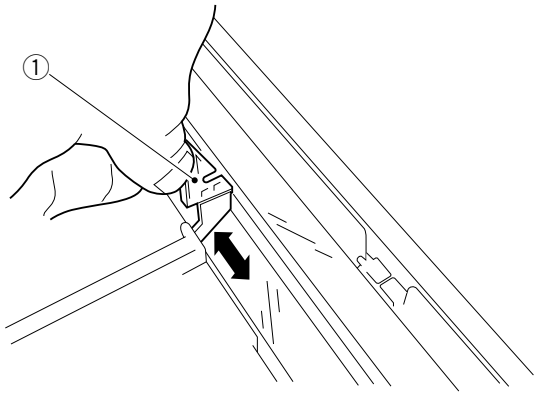
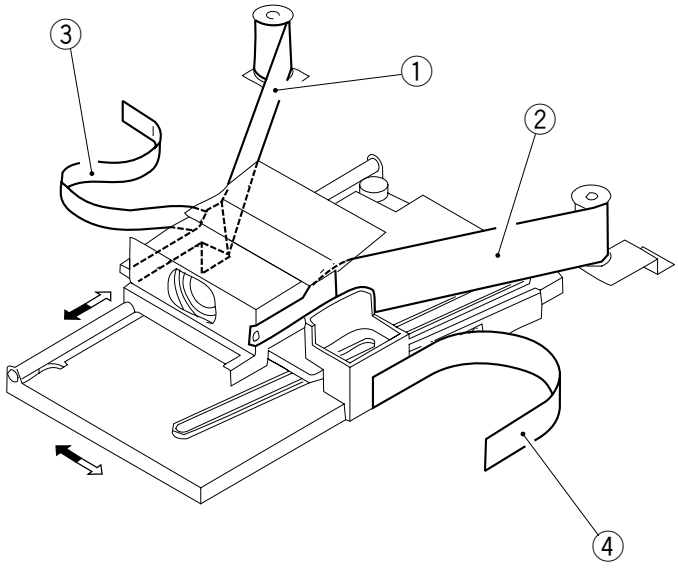


Figure 2-14

6. Routing the Light-Blocking Belt



① Light-blocking belt 1
② Light-blocking belt 2
③ Light-blocking belt 3
④ Light-blocking belt 4

Figure 2-15

7. Routing the Lens X Direction Drive Belt

Fix the lens X direction drive motor ① with the mounting screw ② where the motor has lowered on its own weight.

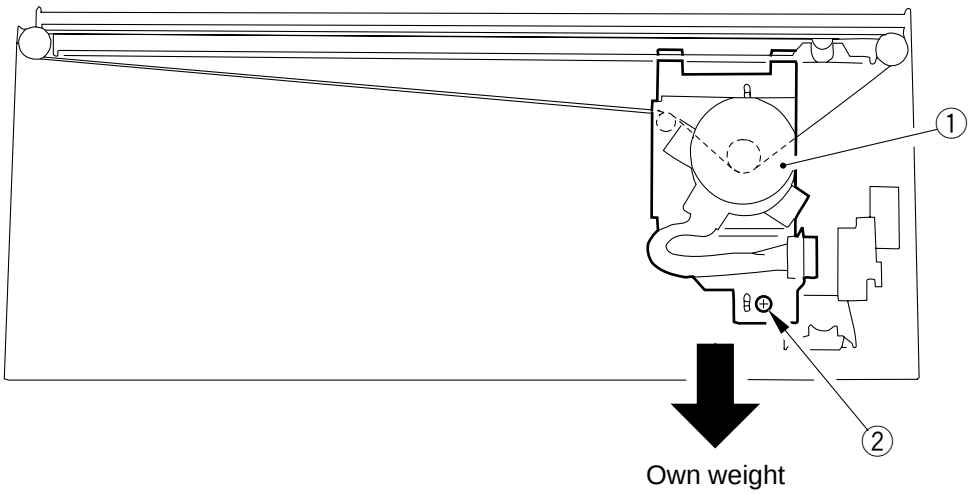


Figure 2-16

8. Adjusting the Position of the Scanner Locking Solenoid (SL1)

1) Remove the rear cover.
2) Remove the multifeeder assembly. (See Service Manual Chapter 5.)
3) Adjust the stroke of the scanner locking solenoid as indicated.

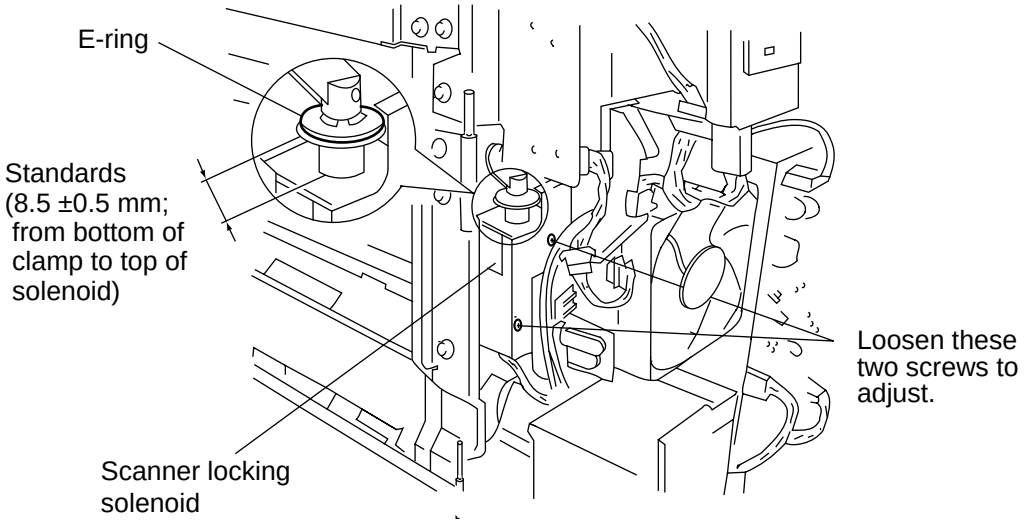


Figure 2-17

C. Image Formation System

1. Grid Wire of the Primary Charging Assembly

1) Loosen the two mounting screws used to fix the left/right shielding plate in place.
2) Loosen the three mounting screws used to fix the motor unit in place at the front.

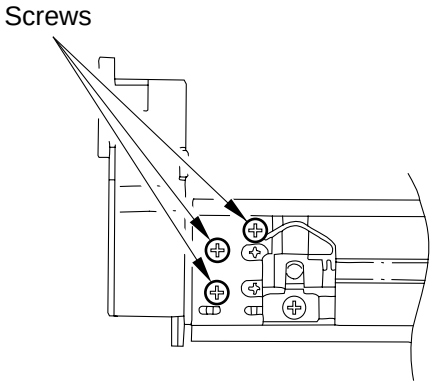


Figure 2-18

3) Loosen the mounting screw, and move the assembly in the direction indicated in Figure 2-19; then, fix it in place temporarily.

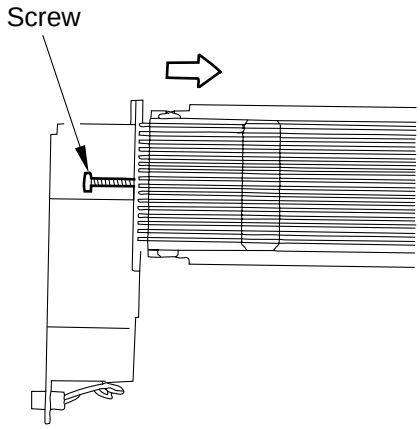


Figure 2-19

4) Free a length of charging wire (about 5 cm) from the charging wire reel (0.1mm dia.); then, form a loop at its end (2mm dia.)

Reference:

To form a loop, wind the charging wire around a hex key three to four times, and twist the charging wire.

5) Cut the twisted charging wire (excess) with a nipper.

6) Hook the loop on the stud A shown in Figure 2-20.

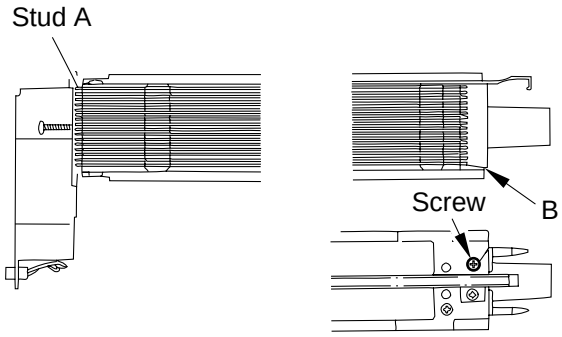


Figure 2-20

7) After routing the wire for 31 runs, lead it through section B, give it a 1/2 turn, lead it between washer and motor unit, wind it once around the mounting screw clockwise, and fix it in place with the mounting screw.
8) Cut the excess charging wire with a nipper.
9) Tighten the mounting screw loosened in step 8).
Take care to avoid deformation (slack) of the charging assembly. Try to tighten the mounting screw (front) on the shielding plate (left, right) earlier.

2. Adjusting the Height of the Charging Wire

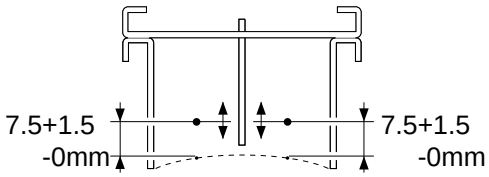
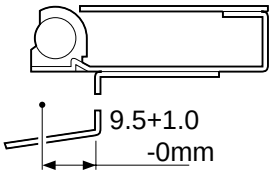
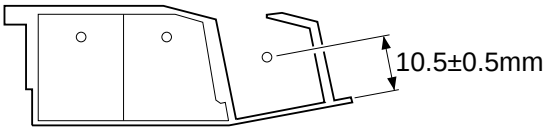
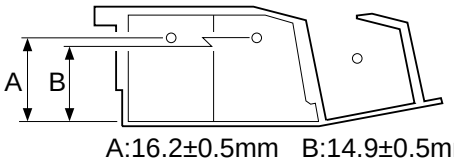
Charging assembly	Height of charging wire	Tolerance
Primary		±1mm
Pre-transfer		No adjusting mechanism
Transfer		±2mm
Separation		±2mm

Table 2-1

Reference:

You can adjust the height (position) of the primary, transfer/separation charging wire by turning the screw behind the charging assembly. A full turn changes the position of the charging wire by about 0.7 mm.

3. Adjusting the Position of the Blanking Exposure Lamp

1) Place the Test Sheet on the copyboard.
2) Select A4 copy paper.
3) Make a copy, and check that the left/right registration is correct.
4) Make a copy in Direct.
5) Check the image, and measure the non-image width shown in Figure 2-21.

Standard

Paper	Left/right non-image width (W1)
All sizes	2.75 ± 2.5mm

(w/ standard frame erasing)

Table 2-2

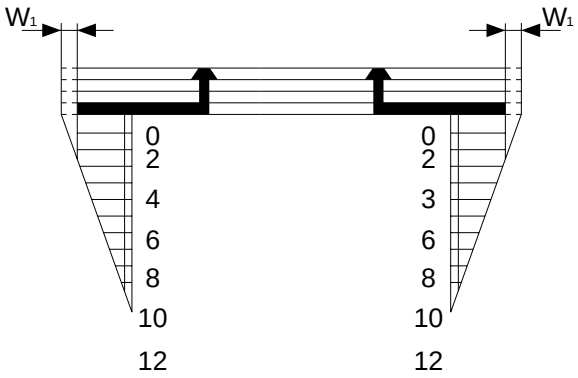


Figure 2-21

6) If the non-image width is not as specified, turn the adjusting screw to adjust the position of the blanking exposure lamp assembly.

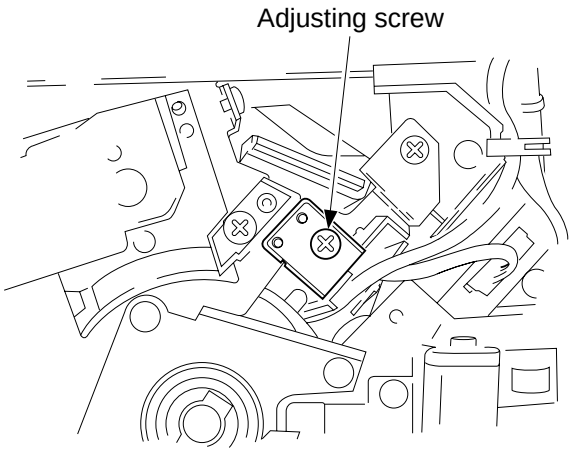


Figure 2-22

4. Position of the Roller Electrode

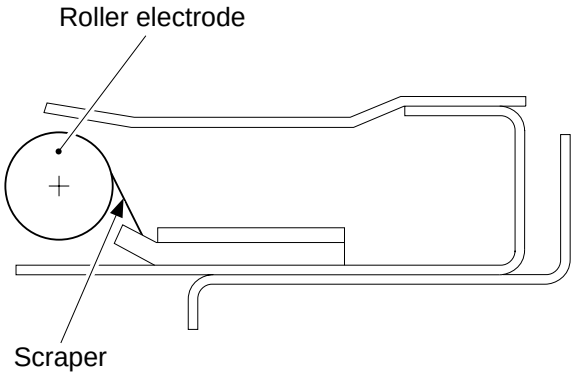


Figure 2-23

5. Adjusting the Position of the Cleaning Assembly Side Seal

1) Attach the side seal ① to the location indicated (both ends; make sure that the edge of the seal is as follows):
- If you are replacing the side seal at the front, push the magnetic roller ② toward the rear; then, work so that the inner edge of the side seal is within the washer area ③.
- If you are replacing the side seal ① at the rear, push the magnetic roller ② toward the front; then, work so that the inner edge of the side seal is within the washer area ③.

2) Make sure that the bottom edge of each side seal ① is 0 to 0.5 mm ④ away from the corner of the cleaner housing.
3) Fix the size seal ① (both front and rear) to the cleaner housing at the location indicated.

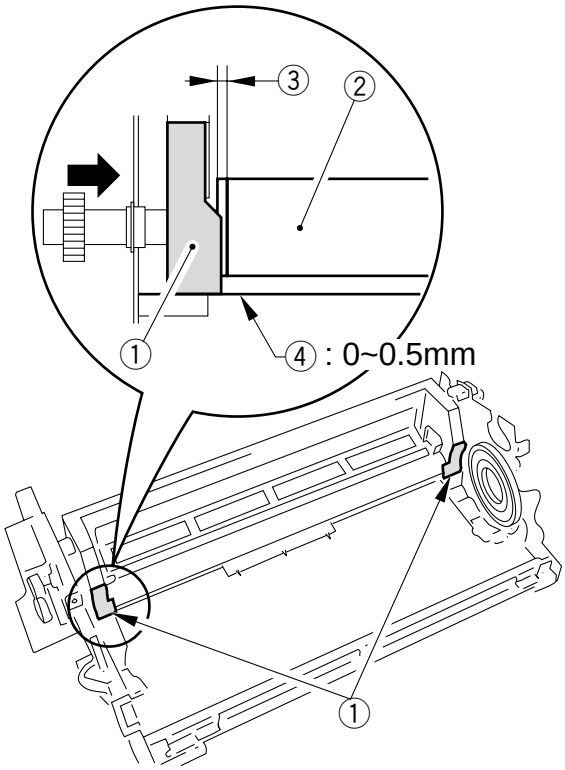


Figure 2-24

6. Cleaning the Cleaner Side Scraper

Perform the following steps whenever you have replaced the cleaning blade (every 500,000 copies).

1) Remove the cleaning blade.
2) Remove the paper lint collecting at the tip of the side scraper (gap Ⓐ between magnet roller and toner guide roller) with tweezers.
3) Remove the toner coated on the surface of the magnet roller. (Shape copy paper into the letter U, and scoop up the toner.)

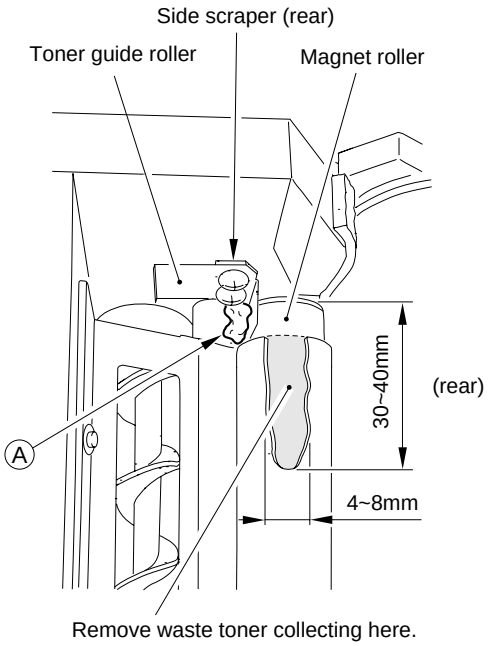


Figure 2-25 (rear)

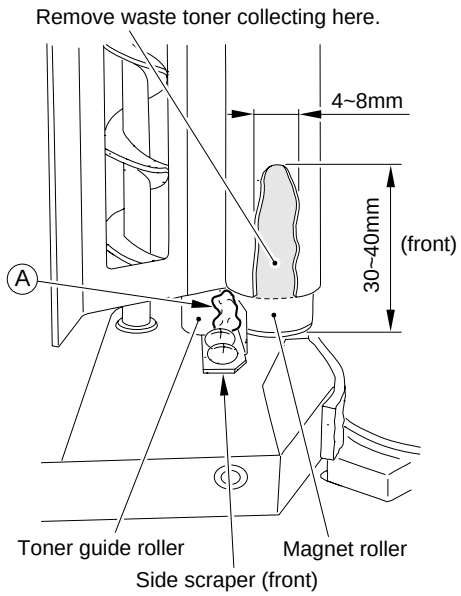


Figure 2-25a (front)

4) Turn the magnet roller clockwise (viewing it from the front).
5) When the area from which toner was removed in step 3) is everly coated, repeat steps 3) through 5).

D. Pick-Up/Feeding System

1. Orientation of the Cassette/Front Paper Deck Pick-Up Roller

Install the pick-up roller by reversing the steps used to remove it with the following in mind:

- The pick-up roller at the front and the one at the rear are not interchangeable.
- The collar of the pick-up roller at the front is gold.
  When installing the pick-up roller ① to the pick-up assembly, make sure that the round marking ② on the side of the roller and the round marking ③ on the collar (gold) face the front of the copier.

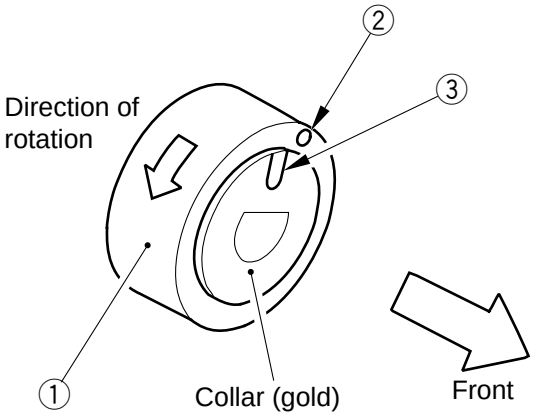


Figure 2-26

- The collar of the pick-up roller at the rear is silver. When installing the pick-up roller ④ to the pick-up roller, make sure that the round marking ⑤ on the collar (silver) faces the rear.

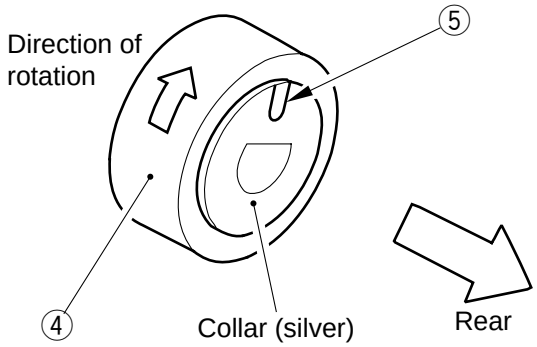


Figure 2-26a

2. Orientation of the Cassette/Front Paper Deck Separation Roller

Keep the following in mind when replacing the separation roller.

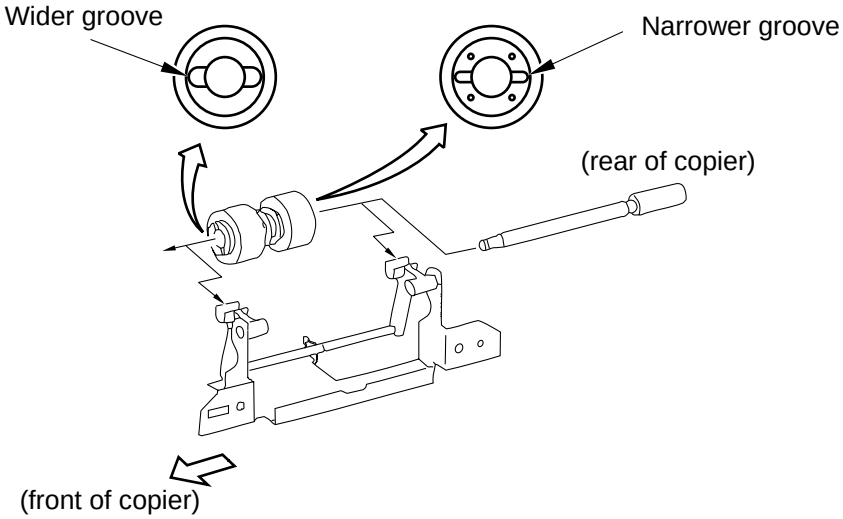


Figure 2-27

3. Orientation of the Feeding Roller (cassette/front paper deck)

When installing the feeding roller assembly ① of the cassette/deck pick-up assembly, be sure that the belt pulley ② is toward the front.

When installing the feeding roller ③ to the feeding roller shaft ④, be sure that the marking "5" ⑤ faces the front.

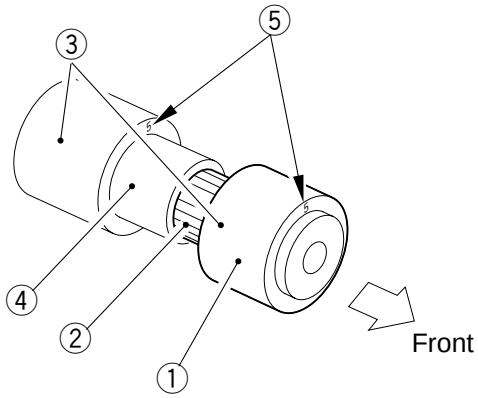


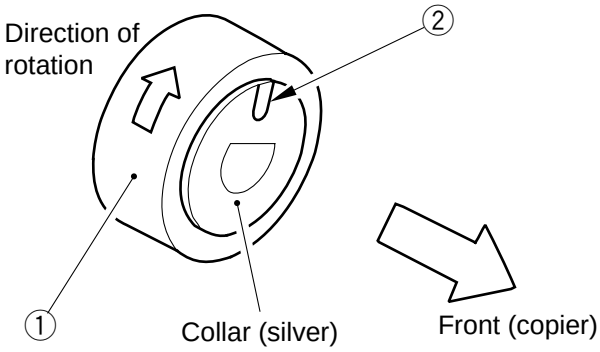
Figure 2-28

4. Orientation of the Multifeeder Pick-Up Roller

4-1 Orientation of the Paper Deck-A1 Pick-Up Roller

Install the pick-up roller by reversing the steps used to remove it with the following in mind:

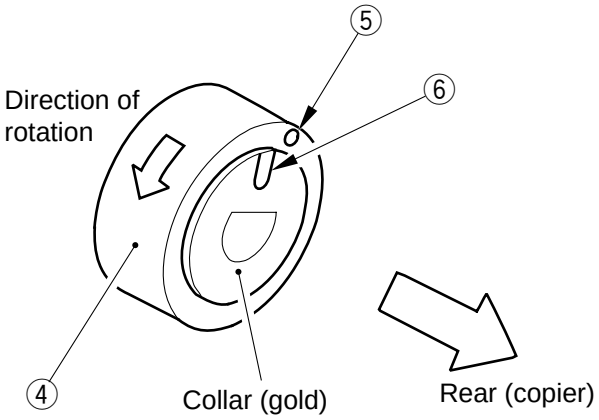
- The pick-up roller at the front and the rear are not interchangeable.
- The collar of the pick-up roller at the front is silver.
  When installing the pick-up roller ① to the pick-up assembly, be sure that the round marking ② on the collar (silver) faces the front.



① Pick-up roller
② Marking (collar)

Figure 2-29

- The collar of the pick-up roller at the rear is gold.
  When installing the pick-up roller ④ to the pick-up assembly, make sure that the round marking ⑤ on the side of the roller and the round marking ⑥ on the collar (gold) face the rear.



④ Pick-up roller
⑤ Marking (roller)
⑥ Marking (collar)

Figure 2-29a

5. Rotation of the Multifeeder Feeding Roller

When installing the pick-up roller ① to the multifeeder pick-up assembly, be sure that the belt pulley ② is toward the rear.

When installing the feeding roller ③ to the feeding roller shaft ④, make sure that the marking "5" ⑤ faces the front.

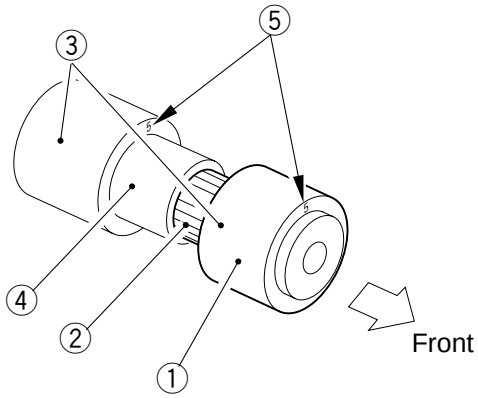


Figure 2-30

5-1 Orientation of the Paper Deck-A1 Feeding Roller

When installing the feeding roller assembly ① to the paper deck pick-up assembly, make sure that the belt pulley ② is toward the front.

When installing the feeding roller ③ to the feeding roller shaft ④, make sure that the marking "5" ⑤ faces the rear.

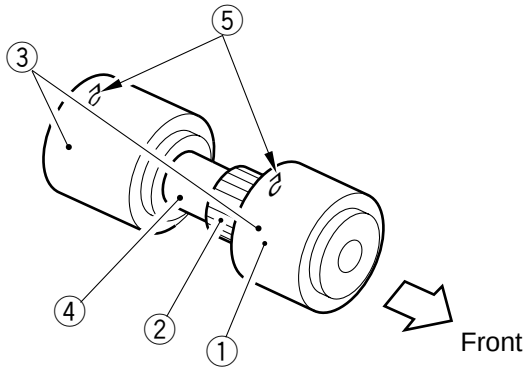
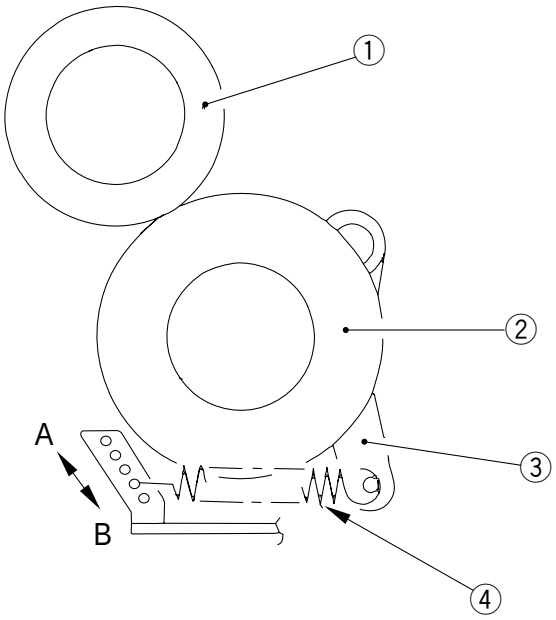


Figure 2-30a

6. Adjusting the Separation Roller Pressure of the Cassette/Front Paper Deck

If double feeding or pick-up failure occurs during pick-up, adjust the position of the separation roller pressure spring.

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



① Feeding roller
② Separation roller
③ Locking lever
④ Pressure spring

Figure 2-31

7. Adjusting the Separation Roller Pressure of the Holding Tray

Turn the separation adjusting roll so that the shaft distance to the separation belt is 32.7 ±0.1 mm.

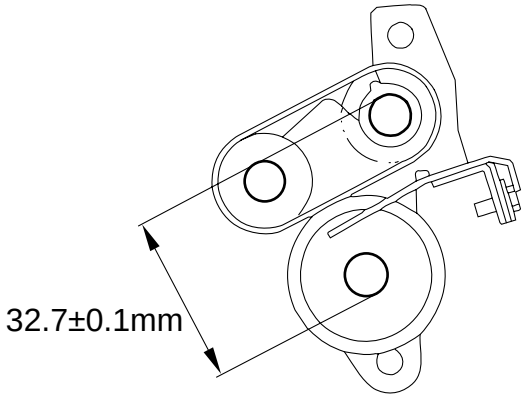


Figure 2-32

8. Pick-Up/Feeding Roller of the Multifeeder

If double feeding or pick-up failure occurs during pick-up, adjust the position of the pressure spring of the separation roller.

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

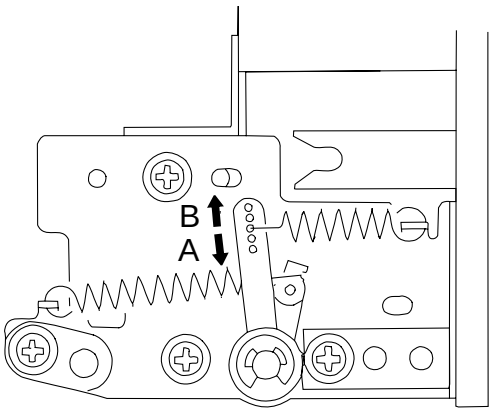


Figure 2-33

9. Adjusting the Position of the Pick-Up Roller Releasing Solenoid (cassette)

Turn the screw to adjust so that the distance of the bottom edge of the A roller support plate bushing from the bottom face of the pick-up unit of each holder is 36 ±0.5 mm when the plunger of the pick-up roller releasing solenoid is pulled as shown.

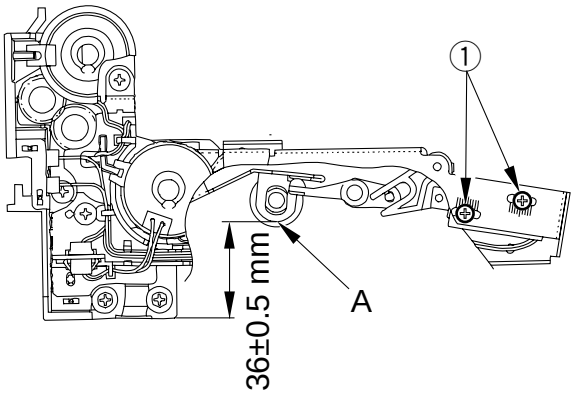


Figure 2-34

9-1 Adjusting the Position of the Pick-Up Roller Releasing Solenoid (front paper deck)

Adjust the position of the solenoid so that the left edge of the right solenoid arm 2 is 57.2 ±0.5 mm from the center of the solenoid mount as shown in Figure 2-34a.

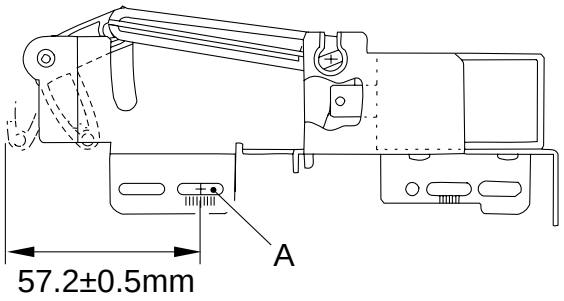


Figure 2-34a

9-2 Adjusting the Position of the Pick-Up Roller Releasing Solenoid (paper deck-A1)

Before removing the deck pick-up roller releasing solenoid ① from the support plate, remember the position of the two fixing screws ② on the solenoid with reference to the scale on the support plate. Or, mark the position of the solenoid on the support plate with a scribe.

If you are installing the solenoid on its own, be sure to fix it in its initial position.

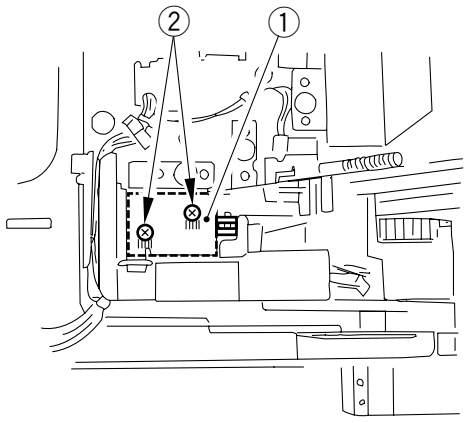


Figure 2-34b

10. Adjusting the Position of the Pick-Up Roller Releasing Solenoid (multifeeder)

Slide the solenoid in the direction of A so that the gap between the shutter ① and the shutter plate ② is 0.4 ±0.2 mm when the solenoid is pulled.

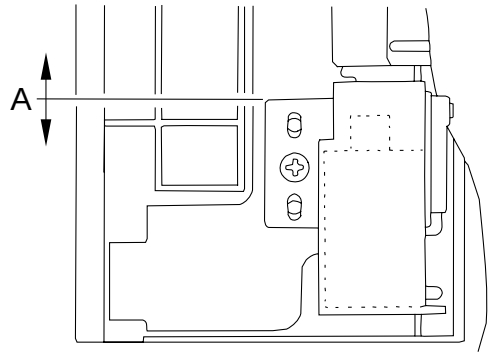


Figure 2-35

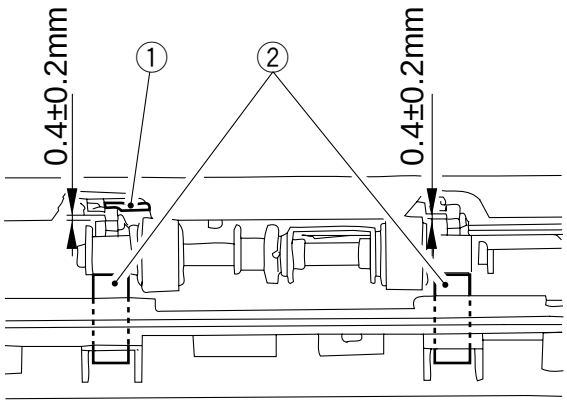


Figure 2-35a

11. Routing the Timing Belt of the Side Guide (multifeeder assembly)

Butt the rack plate of the multifeeder against section A (open condition).
Move the slide volume in the direction of B, and attach the timing belt on the pulley.

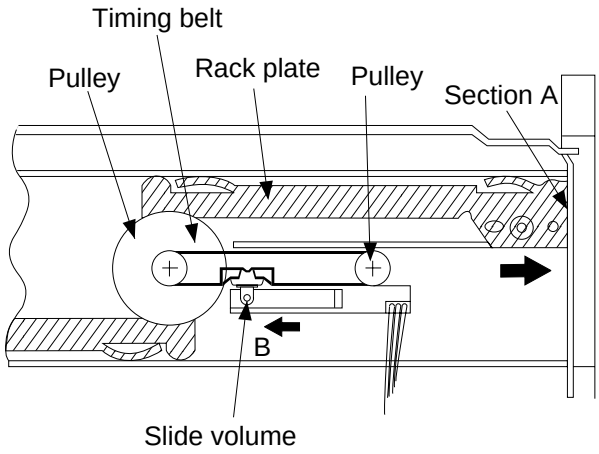


Figure 2-36

12. Adjusting the Position of the Solenoid (delivery paper deflecting plate solenoid)

Fix the delivery paper deflecting plate solenoid temporarily in place with a mounting screw; then, move down the lever ① in the direction of arrow A, push the delivery deflecting plate drive solenoid ② B in the direction of arrow B, and tighten the mounting screw ③.

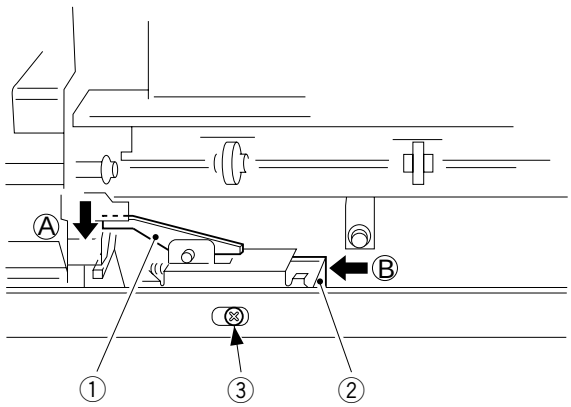


Figure 2-37

13. Adjusting the Position of the Holding Tray Paper Deflecting Plate Drive Solenoid

Install the solenoid so that its stroke (end-to-end distance between rubber silencer and solenoid) is 5.0 ±0.3 mm.

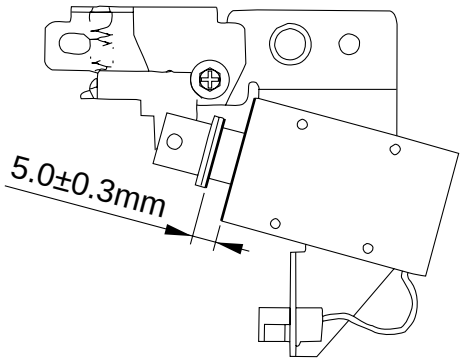


Figure 2-38

14. Adjusting the Position of the Holding Tray Assembly Side Guide Plate

Mark the position of the side guide plate with a pencil in advance, and install it with reference to the marking.

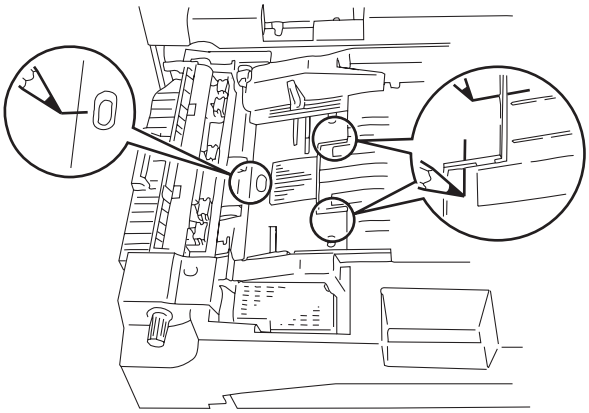


Figure 2-39

15. Adjusting the Position of the Holding Tray Paper Jogging Plate

Mark the position of the holding tray paper jogging plate in advance, and install it with reference to the marking.

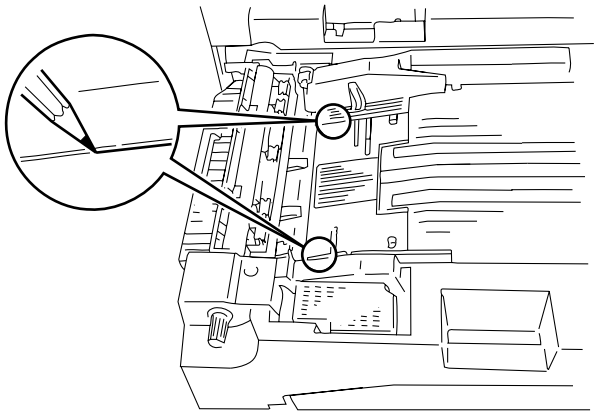


Figure 2-40

16. Adjusting the Timing Belt of the Holding Tray Paper Jogging Guide Plate

Butt the rack plate of the paper jogging guide plate against section A (open state). Then, attach the timing belt to the pulley.

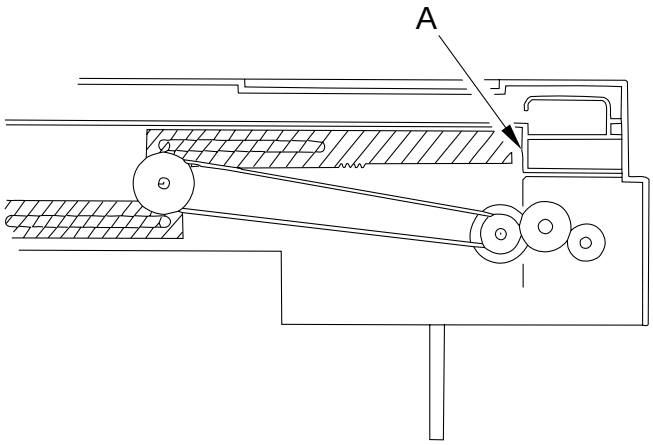


Figure 2-41

17. Adjusting the Position of the Holding Tray Paper Jogging Plate Solenoid

Install the solenoid so that its stroke (end-to-end distance between rubber silencer and solenoid) is 1.5 ±0.3 mm.

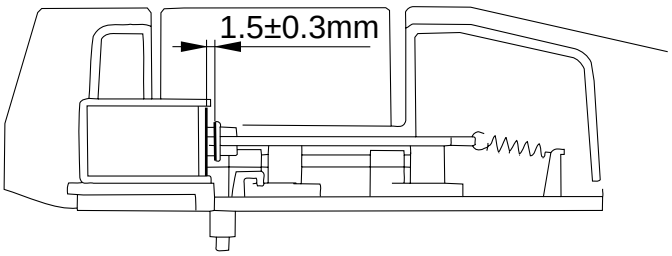


Figure 2-42

18. Drive Belt

Route the drive belt on the pulley and the roller as shown.

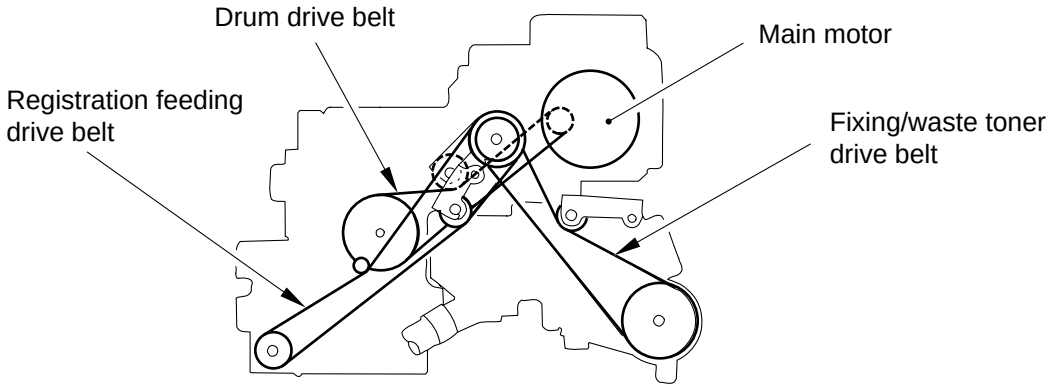


Figure 2-43

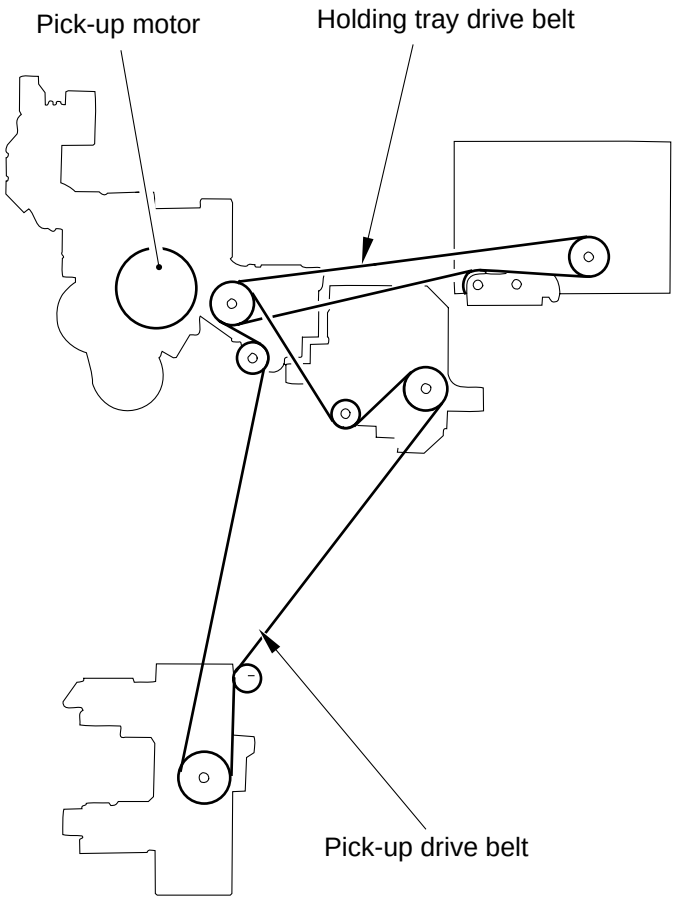


Figure 2-44

Caution:
When installing the holding drive belt, be sure to attach the holding tray drive belt on the pulley at the bottom (inside when viewing form the rear) and to attach the pick-up drive belt on the pulley at the top (outside when viewing from the rear).

E. Fixing System

1. Points to Note When Installing the Fixing Heater

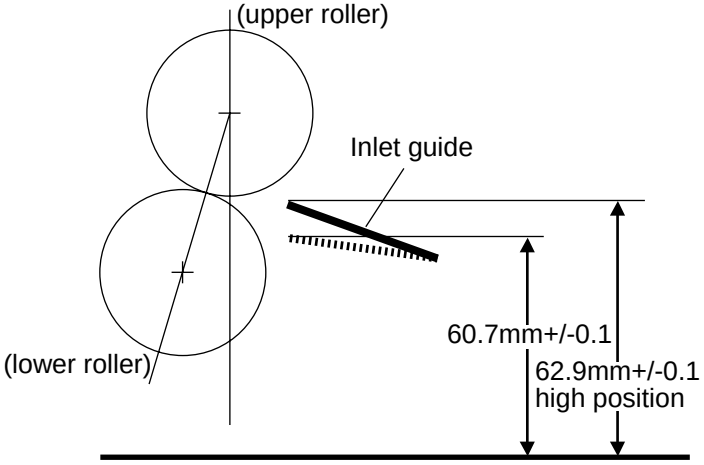
1) Do not touch the surface of the heater.
2) For both heaters, install them with the side with the longer heater wire toward the front.
3) Install the main heater (600 W) on the right and the sub heater (600 W) on the left (viewing from the front).
4) Connect the heater wire on the right to the main heater and the one at the top to the sub heater (when viewing from the rear).

2. Adjusting the Position of the Fixing Assembly Inlet Guide

• Points to Note in the Field

① For the position, see the diagram.
② The “low” position is when the solenoid (SL16) is ON.
③ Make sure the difference in height of the inlet guide between front and rear is 0.5 mm or less.
④ To adjust the height of the inlet guide, loosen the fixing screw on the height adjusting support plate.
⑤ Make checks by removing the lower roller.

■Height of the Fixing Inlet Guide
(dimensions indicate center of inlet guide)



■Height of the Fixing Inlet Guide
(dimensions indicate center of inlet guide)

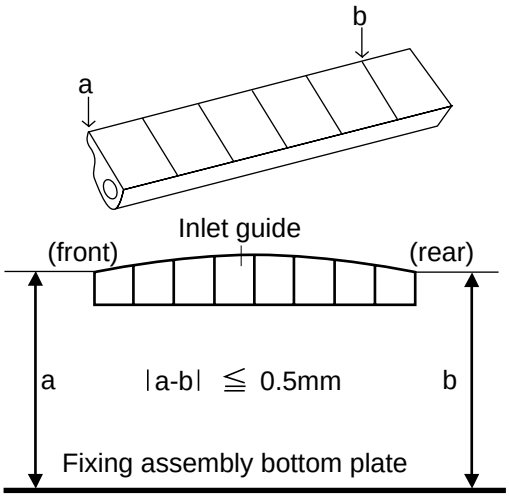


Figure 2-45

Caution:

Do not loosen the mounting screw on the inlet guide mount. If you have removed the inlet guide mount, you need to adjust the inlet guide plate.
If you should have loosened it, be sure to adjust it to its initial position with reference to the scale on the fixing assembly mount.

3. Adjusting the Lower Roller Pressure (nip)

The nip width must be as indicated in Table 2-3. Otherwise, adjust it by turning the pressure adjusting nut.

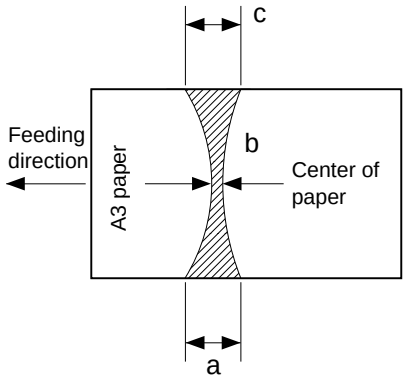


Figure 2-46

Note:
a and c represent points 10 mm from both ends of copy paper.

Dimensions	Measurement*
b	8.5±0.5mm
|a-c|	0.5 mm or less

*Take measurements when both upper and lower rollers are adequately warm.

Table 2-3

a. Taking Measurements
Wait 15 min after the end of the machine's warm-up period; then, make 20 A4 copies before taking measurements.

1) Select A3.
2) Open the copyboard cover.
3) Start service mode (✻ 4 ✻), and select 'NIP' (nip adjustment).
4) Press the user mode key ✻.
   - A3 copy paper is picked up and discharged as shown in Figure 2-45 ready for measurement.

Reference:
The paper is discharged halfway out. It is then discharged in about 20 sec.

5) Measure the nip.

4. Adjusting the Fixing Clutch

When installing the fixing clutch, make adjustments by using the set screws ③ so that the gap between the 41T gear ① and the washer ② is 0.1 to 0.2 mm (about two sheets of 64 g/m^2 paper). At this time, be sure to fix the set screws ③ in place on the cut face of the shaft ④; further, be sure also to tighten the screw on the support plate 1 ⑤ before tightening the screw on the support 2 ⑥.

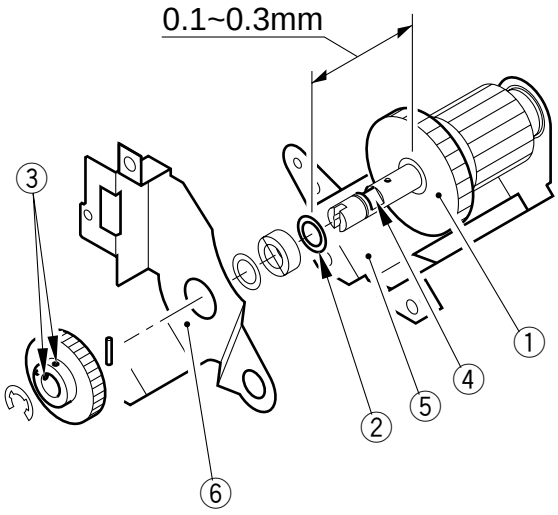


Figure 2-47

F. Electrical System

1. When Replacing the DC Controller PCB

1) Install the new DC controller PCB.
2) Press the service mode switch with a clip over the cover.
3) Select the following in service mode (✻ 4 ✻):
   'RAM_INIT':0 ← (✻: START)
4) Press the user mode key ✻.
5) Execute AE adjustment.
6) Enter the values indicated on the label attached behind the front door.
7) Enter the settings suited to the user in service mode (✻ 5 ✻).
8) Press the Reset key twice.

2. Checking the Surface Potential Control System

a. Outline

If an image fault occurs, try to find out whether the problem is in the latent image formation block (including the photosensitive drum and the potential control system) or the developing/transfer system, requiring a check on the surface potential. (You may check the surface potential in service mode.)

b. Disabling the Auto Control Mechanism

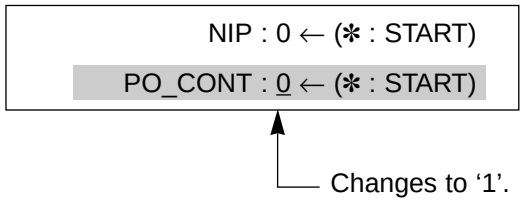
You may disable the auto control mechanism to find out whether the corona current control, lamp intensity control, or developing bias control is faulty or not (non-auto control mode).

Further, as a temporary remedy, you may use non-auto control mode against a fault in the auto control mechanism.

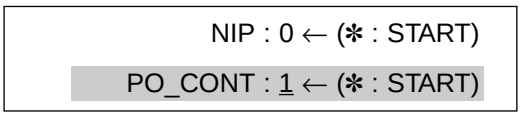
In auto control mode, all outputs are set to default settings.

① Steps

1) Select 'PO_CONT' in service mode (✻ 4 ✻).
2) Check to make sure that the indication on the display is as follows:



3) Press the user mode key ✻.
- Non-auto control mode starts.



4) Press the Reset key twice.

Caution:
When non-auto control mode is executed, all control (corona current, intensity, developing bias) is set to default settings stored in ROM.

② Using Non-Auto Control Mode

Use non-auto control mode to find out if a fault, if any, is on the input or the output side of the microprocessor on the DC controller PCB.

c. Zero-Level Check

You may use a zero-level check to find out whether the surface potential control circuit is good or not.

Reference:
In a zero-level check, a check is made to find out whether the microprocessor identifies a 0V condition when the surface potential of the drum is 0 V.

Using a zero-level check, you can find out whether the microprocessor on the DC controller PCB or the measuring unit is good or not.

A zero-level check may be either of the following:

Method 1 enables you to check the lever shift circuit on the DC controller, while method 2 enables you to check the potential measurement circuit.

① Method 1
1) Turn off the power switch.
2) Short J127-1 and -2 on the DC controller PCB, and disconnect J103.
3) Set the door switch actuator into the door switch assembly, and turn on the power switch.
4) Start service mode (✻2✻), and check that the indication of address P023 during initial rotation (hexa decimal analog value) is between '0003' and '0001B'.

If not between '0003' and '0001B', suspect a fault on the DC controller PCB.

5) Turn off the power switch, and remove the door switch actuator.
6) Remove the jumper wire from the DC controller PCB.
7) Connect the connector to J103 on the DC controller PCB.
8) Turn on the power switch.

② Method 2
1) Turn off the power switch.
2) Remove the blanking exposure lamp assembly.
3) Connect the connector of the potential sensor.
4) Set the potential sensor to the potential sensor checking electrode (FY9-3012).

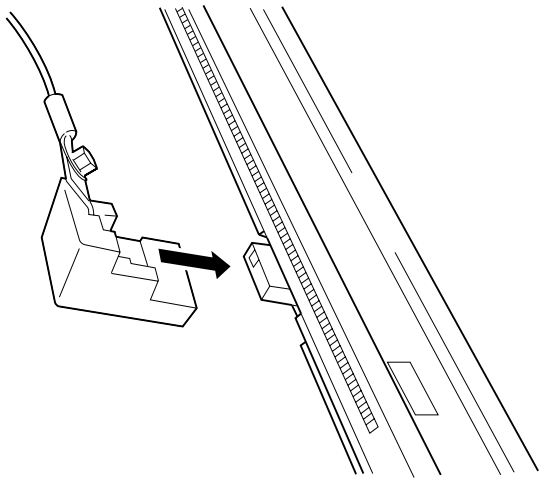


Figure 2-48

Caution:
When setting the checking electrode to the potential sensor, make sure that the magnet of the checking electrode will not touch the potential sensor cover.

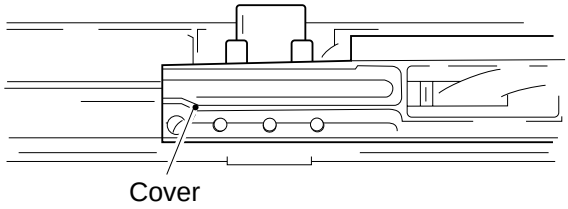


Figure 2-49

Caution:
Set the clip fully away from the sensor cover and the sensor window so that it will never come into contact with them.

5) Connect the cable of the potential sensor checking electrode to the support metal plate (GND) of the potential measurement PCB.
6) Insert the door switch actuator into the door assembly.
7) Turn on the power switch.

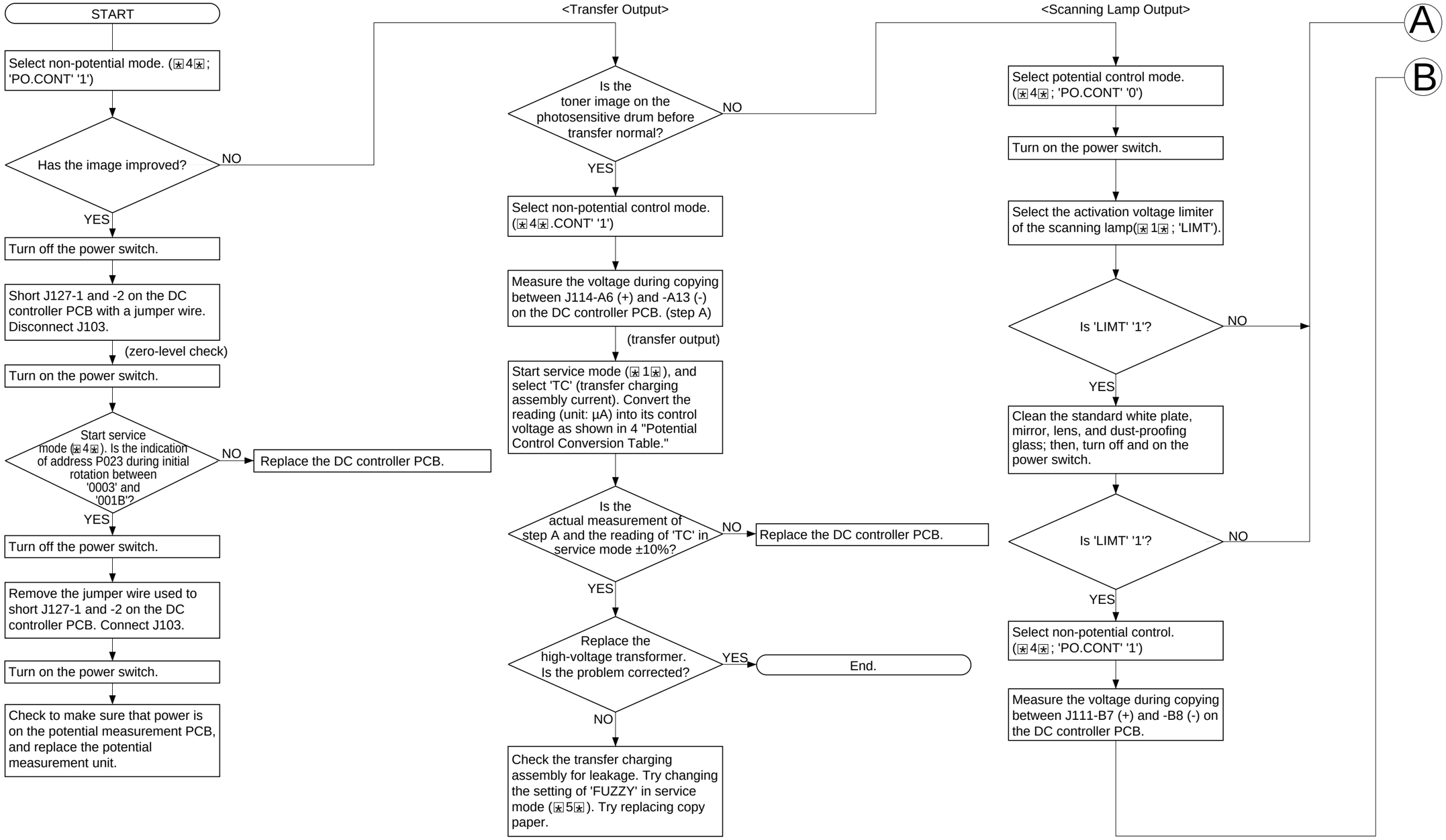
Caution:
Do not touch the potential sensor once you have turned on the power switch.

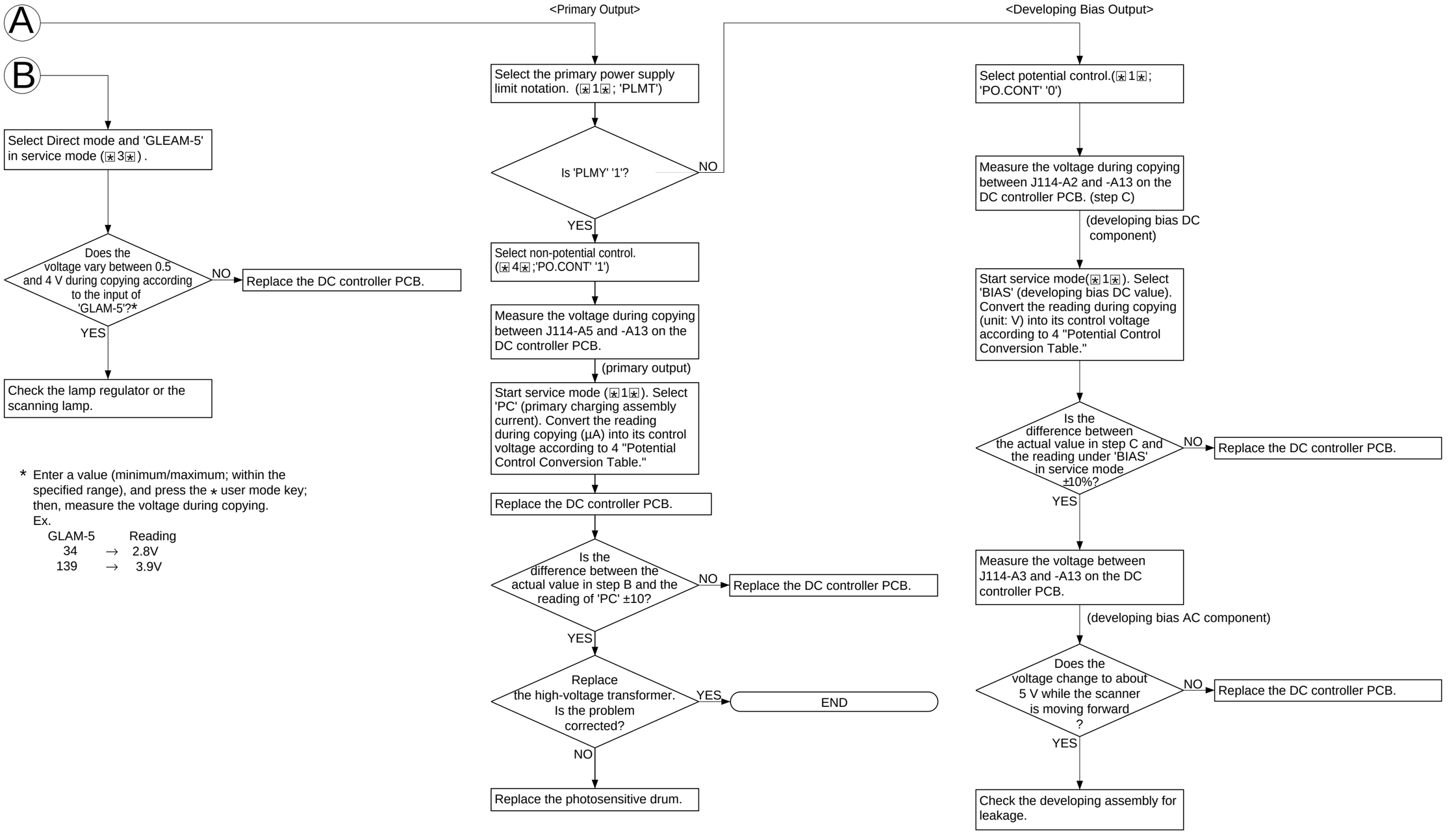
8) Start service mode (✻2✻), and check to make sure that address P023 during initial rotation (hexadecimal analog value) is between '0003' and '0001B'.

Reference:
1. If the indication is as specified under method 1 and not as specified under method 2.
   Suspect dirt on the sensor or a fault in the potential measurement unit.
2. If the indication is as specified under both method 1 and method 2,
   You may assume that the operation and signal path from the potential sensor unit and the microprocessor on the DC controller PCB are normal.

9) Turn off the power switch.
10) Remove the potential sensor checking electrode.
11) Install the blanking exposure lamp assembly.
12) Turn on the power switch.

3. Checking the Potential System




A
B
Select Direct mode and 'GLEAM-5' in service mode (⊠3⊠).
Does the voltage vary between 0.5 and 4 V during copying according to the input of 'GLAM-5'?*
NO
Replace the DC controller PCB.
YES
Check the lamp regulator or the scanning lamp.
* Enter a value (minimum/maximum; within the specified range), and press the ⋆ user mode key; then, measure the voltage during copying.
Ex.
GLAM-5 Reading
34 → 2.8V
139 → 3.9V
<Primary Output>
Select the primary power supply limit notation. (⊠1⊠; 'PLMT')
Is 'PLMY' '1'?
NO
YES
Select non-potential control. (⊠4⊠;'PO.CONT' '1')
Measure the voltage during copying between J114-A5 and -A13 on the DC controller PCB.
(primary output)
Start service mode (⊠1⊠). Select 'PC' (primary charging assembly current). Convert the reading during copying (µA) into its control voltage according to 4 "Potential Control Conversion Table."
Replace the DC controller PCB.
Is the difference between the actual value in step B and the reading of 'PC' ±10?
NO
Replace the DC controller PCB.
YES
Replace the high-voltage transformer. Is the problem corrected?
YES
END
NO
Replace the photosensitive drum.
<Developing Bias Output>
Select potential control.(⊠1⊠; 'PO.CONT' '0')
Measure the voltage during copying between J114-A2 and -A13 on the DC controller PCB. (step C)
(developing bias DC component)
Start service mode(⊠1⊠). Select 'BIAS' (developing bias DC value). Convert the reading during copying (unit: V) into its control voltage according to 4 "Potential Control Conversion Table."
Is the difference between the actual value in step C and the reading under 'BIAS' in service mode ±10%?
NO
Replace the DC controller PCB.
YES
Measure the voltage between J114-A3 and -A13 on the DC controller PCB.
(developing bias AC component)
Does the voltage change to about 5 V while the scanner is moving forward ?
NO
Replace the DC controller PCB.
YES
Check the developing assembly for leakage.

4. Potential Control System Conversion Table

Control (V)	Primary (µA)	Developing bias (V)	Pre-transfer (µA)	Transfer (µA)	Separation (µA)
3.00	1,400	0	0	440	100
3.05	1,391	3	–2	437	96
3.10	1,382	7	–4	434	92
3.15	1,373	11	–6	431	88
3.20	1,365	15	–8	429	85
3.25	1,356	18	–10	426	81
3.30	1,347	22	–12	426	77
3.35	1,338	26	–14	420	73
3.40	1,330	30	–16	418	70
3.45	1,321	33	–18	415	66
3.50	1,312	37	–20	412	62
3.55	1,303	41	–22	409	58
3.60	1,295	45	–24	407	55
3.65	1,286	48	–26	404	51
3.70	1,277	52	–28	401	47
3.75	1,268	56	–30	398	43
3.80	1,260	60	–33	396	40
3.85	1,251	63	–35	393	36
3.90	1,242	67	–37	390	32
3.95	1,233	71	–39	387	28
4.00	1,225	75	–41	385	25
4.05	1,216	78	–43	382	21
4.10	1,207	82	–45	379	17
4.15	1,198	86	–47	376	13
4.20	1,190	90	–49	374	10
4.25	1,181	93	–51	371	6
4.30	1,172	97	–53	368	2
4.35	1,163	101	–55	365	–1
4.40	1,155	105	–57	363	–5
4.45	1,146	108	–59	360	–8
4.50	1,137	112	–61	357	–12
4.55	1,128	116	–63	354	–16
4.60	1,120	120	–66	352	–20

Control (V)	Primary (µA)	Developing bias (V)	Pre-transfer (µA)	Transfer (µA)	Separation (µA)
4.65	1,111	123	–68	349	–23
4.70	1,102	127	–70	346	–27
4.75	1,093	131	–72	343	–31
4.80	1,085	135	–74	341	–35
4.85	1,076	138	–76	338	–38
4.90	1,067	142	–78	335	–42
4.95	1,058	146	–80	332	–46
5.00	1,050	150	–82	330	–50
5.05	1,041	153	–84	327	–53
5.10	1,032	157	–86	324	–57
5.15	1,023	161	–88	321	–61
5.20	1,015	165	–90	319	–65
5.25	1,006	168	–92	316	–68
5.30	997	172	–94	313	–72
5.35	938	176	–96	310	–76
5.40	980	180	–99	308	–80
5.45	971	183	–101	305	–83
5.50	962	187	–103	302	–87
5.55	953	191	–105	299	–91
5.60	945	195	–107	297	–95
5.65	936	198	–109	294	–98
5.70	927	202	–111	291	–102
5.75	918	206	–113	288	–106
5.80	910	210	–115	286	–110
5.85	901	213	–117	283	–113
5.90	892	217	–119	280	–117
5.95	883	221	–121	277	–121
6.00	875	225	–123	275	–125
6.05	866	228	–125	272	–128
6.10	857	232	–127	269	–132
6.15	848	236	–129	266	–136
6.20	840	240	–132	264	–140
6.25	831	243	–134	261	–143
6.30	822	247	–136	258	–147

Control (V)	Primary (µA)	Developing bias (V)	Pre-transfer (µA)	Transfer (µA)	Separation (µA)
6.35	813	251	–138	255	–151
6.40	805	255	–140	253	–155
6.45	796	258	–142	250	–158
6.50	787	262	–144	247	–162
6.55	778	266	–146	244	–166
6.60	770	270	–148	242	–170
6.65	761	273	–150	239	–173
6.70	752	277	–152	236	–177
6.75	743	281	–154	233	–181
6.80	735	285	–156	231	–185
6.85	726	288	–158	228	–188
6.90	717	292	–160	225	–192
6.95	708	296	–162	222	–196
7.00	700	300	–165	220	–200
7.05	691	303	–167	217	–203
7.10	682	307	–169	214	–207
7.15	673	311	–171	211	–211
7.20	665	315	–173	209	–215
7.25	656	318	–175	204	–218
7.30	647	322	–177	203	–222
7.35	638	326	–179	200	–226
7.40	630	330	–181	198	–230
7.45	621	333	–183	195	–233
7.50	612	337	–185	192	–237
7.55	603	341	–187	189	–241
7.60	595	345	–189	187	–245
7.65	586	348	–191	184	–248
7.70	577	352	–193	181	–252
7.75	568	356	–195	178	–256
7.80	560	360	–198	176	–260
7.85	551	363	–200	173	–263
7.90	542	367	–202	170	–267
7.95	533	371	–204	167	–271
8.00	525	375	–206	165	–275

Control (V)	Primary (µA)	Developing bias (V)	Pre-transfer (µA)	Transfer (µA)	Separation (µA)
8.05	516	378	–208	162	–278
8.10	507	382	–210	159	–282
8.15	498	386	–212	156	–286
8.20	490	390	–214	154	–290
8.25	481	393	–216	151	–293
8.30	472	397	–218	148	–297
8.35	463	401	–220	145	–301
8.40	455	405	–222	143	–305
8.45	446	408	–224	140	–308
8.50	437	412	–226	137	–312
8.55	428	416	–228	134	–316
8.60	420	420	–231	132	–320
8.65	411	423	–233	129	–323
8.70	402	427	–235	126	–327
8.75	393	431	–237	123	–331
8.80	385	435	–239	121	–335
8.85	376	438	–241	118	–338
8.90	367	442	–243	115	–342
8.95	358	446	–245	112	–346
9.00	350	450	–247	110	–350
9.05	341	453	–249	107	–353
9.10	332	457	–251	104	–357
9.15	323	461	–253	101	–361
9.20	315	465	–255	99	–365
9.25	306	468	–257	96	–368
9.30	297	472	–259	93	–372
9.35	288	476	–261	90	–376
9.40	280	480	–264	88	–380
9.45	271	483	–266	85	–383
9.50	262	487	–268	82	–387
9.55	253	491	–270	79	–391
9.60	245	495	–272	77	–395
9.65	236	498	–274	74	–398
9.70	227	502	–276	71	–402

Control (V)	Primary (µA)	Developing bias (V)	Pre-transfer (µA)	Transfer (µA)	Separation (µA)
9.75	218	506	–278	68	–406
9.80	210	510	–280	66	–410
9.85	201	513	–282	63	–413
9.90	192	517	–284	60	–417
9.95	183	521	–286	57	–421
10.00	175	525	–288	55	–425
10.05	166	528	–290	52	–428
10.10	157	532	–292	49	–432
10.15	148	536	–294	46	–436
10.20	140	540	–297	44	–440
10.25	131	543	–299	41	–443
10.30	122	547	–301	38	–447
10.35	113	551	–303	35	–451
10.40	105	555	–305	33	–455
10.45	96	558	–307	30	–458
10.50	87	562	–309	27	–462
10.55	78	566	–311	24	–466
10.60	70	570	–313	22	–470
10.65	61	573	–315	19	–473
10.70	52	577	–317	16	–477
10.75	43	581	–319	13	–481
10.80	35	585	–321	11	–485
10.85	26	588	–323	8	–488
10.90	17	592	–325	5	–492
10.95	8	596	–327	2	–496
11.00	0	600	–330	0	–500

5. Checking the Environment Sensor

1) Start service mode (✻ 1 ✻), and take notes of the readings of temperature and humidity on the control panel display.
   Data A
   'RTMP' °C .....Data A1
   'RHUM' % .....Data A2
2) Press the Reset key twice, and turn off the power switch.
3) Remove the environment sensor, and insert the environment sensor jig (FY9-3014) in its place.
4) Turn on the power switch, and leave the machine alone for 5 min.
5) Start service mode (✻ 1 ✻), and take notes of the readings of temperature and humidity on the control panel display.
   Data B
   'RTMP' °C .....Data B1
   'RHUM' % .....Data B2
6) Compare data A and data B.
   • difference between data A1 and data B1 is 0 ±5
   • difference between data A2 and data B2 is 0 ±20
   If the difference between data A and data B is not as specified, replace the environment sensor.
7) Press the Reset key twice, and turn off the power switch.
8) Remove the environment sensor jig, and insert the environment sensor.
9) Install all covers.

Caution:
The environment sensor jig (FY9-3014) is adjusted to high precision at the factory. Be sure to keep it in an air-tight case with a drying agent for storage.

6. Checking the Photointerrupters

You can check the machine's photointerrupters either with a conventional meter or the machine's service mode.

a. Using a Tester

1) Set the meter to the 30VDC range.
2) Connect the – probe of the meter to GND on the DC controller PCB.
3) Connect the + probe to the terminals (DC controller PCB) shown in the table.
4) Make checks as instructed.

b. Using Service Mode

1) Open the front door, and insert the door switch actuator into the door switch assembly.
2) Press the service switch with a clip over the cover.
3) Press ✻, 2, and ✻ in sequence on the control panel.
4) Using the keypad on the control panel, enter the address of each photointerrupter; then, check the reading.

Caution:

The machine's motors may start to operate when you turn on or off the sensors; exercise extra caution.

Sensor	Connector No. *2* address	Checks		*2* notation	Voltage
PS1 Scanner HP sensor	J111-A2 P007-03	Move the scanner by hand while in standby.	When the light-blocking plate is at PS1.	1	5V
			When the light-blocking plate is not at PS1.	0	0V
PS3 Scanner original leading edge 2 sensor	J111-A5 P107-6	Move the scanner by hand while in standby.	When the light-blocking plate is at PS3.	0	5V
			When the light-blocking plate is not at PS3.	1	0V
PS4 Scanner original leading edge 2 sensor	J111-A8 P002-04	Move the scanner by hand while in standby.	When the light-blocking plate is at PS4.	0	0V
			When the light-blocking plate is not at PS4.	1	1V
PS5 Copyboard cover open/closed sensor	J112-A4 P007-02	Move the copyboard cover by hand while in standby.	When the cover is closed.	1	5V
			When the cover is opened.	0	0V
PS6 Lens XHP sensor	J110-A8 P102-02	Put paper over PS6 while in standby.	When paper is not over PS6.	0	0V
			When paper is over PS6.	1	5V
PS7 Lens YHP sensor	J110-B2 P102-03	Put paper over PS7 while in standby.	When paper is not over PS7.	0	0V
			When paper is over PS7.	1	5V
PS8 Holding tray feeding assembly 1 paper sensor	J119-A4 P002-04	Insert paper in the detecting lever assembly of PS8 while in standby.	When paper is inserted.	1	5V
			When paper is removed.	0	0V
PS9 Holding tray feeding assembly 2 paper sensor	J113-B12 P002-03	Insert paper in the detecting lever assembly of PS9 while in standby.	When paper is inserted.	1	5V
			When paper is removed.	0	0V

Sensor	Connector No. *2* address	Checks		*2* notation	Voltage
PS10 External delivery sensor	J108-B7 P005-04	Insert paper in the detecting lever assembly of PS10 while in standby.	When paper is inserted.	1	5V
			When paper is removed.	0	0V
PS11 Fixing cleaning belt length sensor	J108-A13 P005-05	Insert paper in the detecting lever assembly of PS11 while in standby.	When paper is inserted.	1	5V
			When paper is removed.	0	0V
PS12 Internal delivery sensor	J108-B12 P005-02	Insert paper in the detecting lever assembly of PS12 while in standby.	When paper is inserted.	0	0V
			When paper is removed.	1	5V
PS14 Holding tray registration paper sensor	113-A3 P005-07	Insert paper in the detecting lever assembly of PS14 while in standby.	When paper is inserted.	1	5V
			When paper is removed.	0	0V
PS15 Holding tray inlet paper sensor	J113-B10 P005-06	Insert paper in the detecting lever assembly of PS15 while in standby.	When paper is inserted.	1	5V
			When paper is not inserted.	0	0V
PS17 Holding tray pick-up sensor	J113-B11 P005-09	Insert paper in the detecting lever assembly of PS17 while in standby.	When paper is inserted.	1	5V
			When paper is not inserted.	0	0V

Sensor	Connector No. *2* address	Checks		*2* notation	Voltage
PS19 Holding tray re-circulating bar HP sensor	J113-B6 P005-10	Insert paper in the detecting lever assembly of PS19 while in standby.	When paper is inserted.	1	5V
			When paper is not inserted.	0	0V
PS20 Holding tray YHP sensor	J113-A10 P100-03	Move the rear partition plate by hand while in standby.	When the light-blocking plate is at PS20.	1	5V
			When the light-blocking plate is not at PS20.	0	0V
PS21 Holding tray XHP sensor	J113-B1 P100-02	Move the side guide by hand while in standby.	When the light-blocking plate is at PS21.	1	5V
			When the light-blocking plate is not at PS21.	0	0V
PS22 Multifeeder paper sensor	J115-B7 P002-05	Insert paper in the detecting lever assembly of PS22 while in standby.	When paper is inserted.	1	5V
			When paper is removed.	0	0V
PS23 Registration paper sensor	J108-A7 P002-02	Move the detecting lever by hand while in standby.	When the light-blocking plate is at PS23.	1	5V
			When the light-blocking plate is not at PS23.	0	0V
PS24 Pick-up vertical path 0 sensor	J116-B7 P002-00	Move the detecting lever by hand while in standby.	When the light-blocking plate is at PS24.	1	5V
			When the light-blocking plate is not at PS24.	0	0

Sensor	Connector No. *2* address	Checks		*2* notation	Voltage
PS25 Cassette 3 lifter position sensor	J117-A4 P008-08	Move the detecting lever by hand while in standby.	When the light-blocking plate is at PS25.	1	5V
			When the light-blocking plate is not at PS25.	0	0V
PS26 Cassette 3 paper sensor	J117-A7 P008-06	Move the detecting lever by hand while in standby.	When the light-blocking plate is at PS26.	1	5V
			When the light-blocking plate is not at PS26.	0	0V
PS27 Pick-up vertical path 3 paper sensor	J117-B4 P008-04	Move the detecting lever by hand while in standby.	When the light-blocking plate is at PS27.	1	5V
			When the light-blocking plate is not at PS27.	0	0V
PS28 Cassette 4 lifter position sensor	J130-A4 P008-09	Move the detecting lever by hand while in standby.	When the light-blocking plate is at PS28.	1	5V
			When the light-blocking plate is not at PS28.	0	0V
PS29 Cassette 4 paper sensor	J130-A7 P008-07	Move the detecting lever by hand while in standby.	When the light-blocking plate is at PS29.	1	5V
			When the light-blocking plate is not at PS29.	0	0V
PS30 Pick-up vertical path 4 sensor	J130-B4 P008-05	Move the detecting lever by hand while in standby.	When the light-blocking plate is at PS30.	1	5V
			When the light-blocking plate is not at PS30.	0	0V
PS31 Right deck lifter position sensor	J116-A4 P005-08	Move the detecting lever by hand while in standby.	When the light-blocking plate is at PS31.	1	5V
			When the light-blocking plate is not at PS31.	0	0V

Sensor	Connector No. / *2* address	Checks		*2* notation	Voltage
PS32 Right deck paper sensor	J116-A7 P007-10	Move the detecting lever by hand while in standby.	When the light-blocking plate is at PS32.	1	5V
			When the light-blocking plate is not at PS32.	0	0V
PS33 Pick-up vertical path 1 sensor	J119-A7 P007-12	Move the detecting lever by hand while in standby.	When the light-blocking plate is at PS33.	1	5V
			When the light-blocking plate is not at PS33.	0	0V
PS34 Left deck lifter position sensor	J121-A7 P007-15	Move the detecting lever by hand while in standby.	When the light-blocking plate is at PS34.	1	5V
			When the light-blocking plate is not at PS34.	0	0V
PS35 Left deck paper sensor	J121-A10 P007-11	Move the detecting lever by hand while in standby.	When the light-blocking plate is at PS35.	1	5V
			When the light-blocking plate is not at PS35.	0	0V
PS36 Pick-up vertical path 2 sensor	J121-B10 P007-13	Move the detecting lever by hand while in standby.	When the light-blocking plate is at PS36.	1	5V
			When the light-blocking plate is not at PS36.	0	0V
PS37 Right deck limiter sensor	J116-B13 ————	Move the detecting lever by hand while in standby.	When the light-blocking plate is at PS37.	—	5V
			When the light-blocking plate is not at PS37.	—	0V
PS38 Right deck open/closed sensor	J116-B10 P007-04	Move the detecting lever by hand while in standby.	When the light-blocking plate is at PS38.	1	5V
			When the light-blocking plate is not at PS38.	0	0V

Sensor	Connector No. *2* address	Checks		*2* notation	Voltage
PS39 Left deck limit sensor	J121-B2 ———	Move the detecting lever by hand while in standby.	When the light-blocking plate is at PS39.	—	5V
			When the light-blocking plate is not at PS39.	—	0V
PS40 Left deck open/closed sensor	J121-A2 P007-04	Move the detecting lever by hand while in standby.	When the light-blocking plate is at PS40.	1	5V
			When the light-blocking plate is not at PS40.	0	0V
PS41 Upper right door sensor	J119-B4 P007-00	Move the detecting lever by hand while in standby.	When the light-blocking plate is at PS41.	1	5V
			When the light-blocking plate is not at PS41.	0	0V
PS42 Upper right door sensor	J119-B7 P007-01	Move the detecting lever by hand while in standby.	When the light-blocking plate is at PS42.	1	5V
			When the light-blocking plate is not at PS42.	0	0V
PS46 Multifeeder door sensor	J105-A9 P005-03	Move the detecting lever by hand while in standby.	When the light-blocking plate is at PS46.	1	5V
			When the light-blocking plate is not at PS46.	0	0V
PS47 Fixing assembly outlet paper sensor	J108-B4 P005-08	Move the detecting lever by hand while in standby.	When the light-blocking plate is at PS47.	1	5V
			When the light-blocking plate is not at PS47.	0	0V
PS48 Scanner locked sensor	J114-A14 P009-03	Move the detecting lever by hand while in standby.	When the light-blocking plate is at PS48.	1	5V
			When the light-blocking plate is not at PS48.	0	0V

Sensor	Connector No. *2* address	Checks		*2* notation	Voltage
PS49 Left deck outlet paper sensor	J121-B5 P009-04	Move the detecting lever by hand while in standby.	When the light-blocking plate is at PS49.	1	5V
			When the light-blocking plate is not at PS49.	0	0V
PS50 Cassette 3 open/closed sensor	J117-B7 P009-05	Hold the grip and move the cassette 3.	When the light-blocking plate is at PS50.	1	5V
			When the light-blocking plate is not at PS50.	0	0V
PS51 Cassette 4 open/closed sensor	J130-B7 P009-06	Hold the grip and move the cassette 4.	When the light-blocking plate is at PS51.	1	5V
			When the light-blocking plate is not at PS51.	0	0V
PS52 Claw jam sensor	J108-A19 P009-01	Move the detecting lever while in standby.*	When the light-blocking plate is at PS52.	1	5V
			When the light-blocking plate is not at PS52.	0	0V
PS53 Fixing/feeding assembly unit sensor	J108-A2 P005-01	Move the releasing lever of the fixing/feeding assembly by hand while in standby.	When the light-blocking plate is at PS53.	0	0V
			When the light-blocking plate is not at PS53. (unit set)	1	5V

* Or, tape the detecting lever in place, and push in the fixing/feeding unit, holding tray, or holding tray feeding assembly into the machine.

** Or, put copy paper over the sensor to keep the light-receiving area from light.

7. Registering the Paper Width Basic Value (✻4✻; cassette/multifeeder)

Perform the steps that follow whenever you have

- replaced the machine's paper width detecting VR (including the multifeeder); or
- adjusted the front/rear registration of the cassette.

For cassette, 4, you must work on 'STMTR' and 'A4R'; for the multifeeder, you must work on 'A6R', 'A4R', and 'A4'.

a. Cassettes 4

In the case of the cassette 4,

1) Start service mode (✻4✻), and select the 8th screen.
2) Slide out the cassette 4, and set the paper width guide plate inside to STMTR; then, slide the cassette into the machine.
3) Press 'C4_STMTR' on the screen on the control panel.
4) Press the ✻ key.
   - Check to make sure that the value XXXX indicated under 'C4_STMTR: XXX' is the same as '(XXX)'.
5) Slide out the cassette 4, and set the paper width guide plate inside the cassette to A4R; then, slide the cassette into the machine.
6) Press 'C4_A4R' on the screen on the control panel.
7) Press the ✻ key.
   - Check to make sure that the value YYY indicated under 'C4_A4R: YYY' is the same as '(YYY)'.

b. Multifeeder

Perform the steps shown for the cassette 4; however, you must perform them for A6R, A4R, and A4.

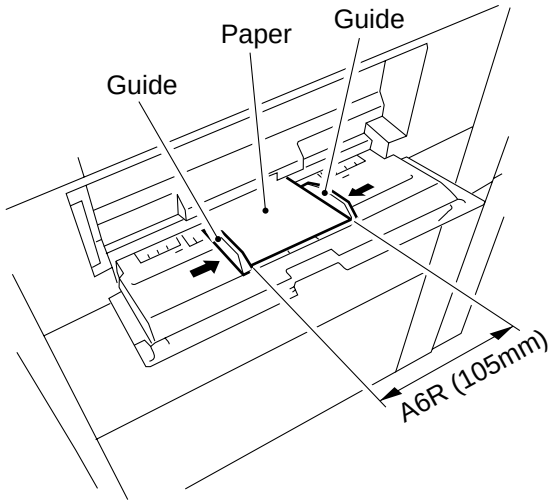


Figure 2-50

CHAPTER 3 ARRANGEMENT AND FUNCTIONS OF ELECTRICAL PARTS

A. Sensors

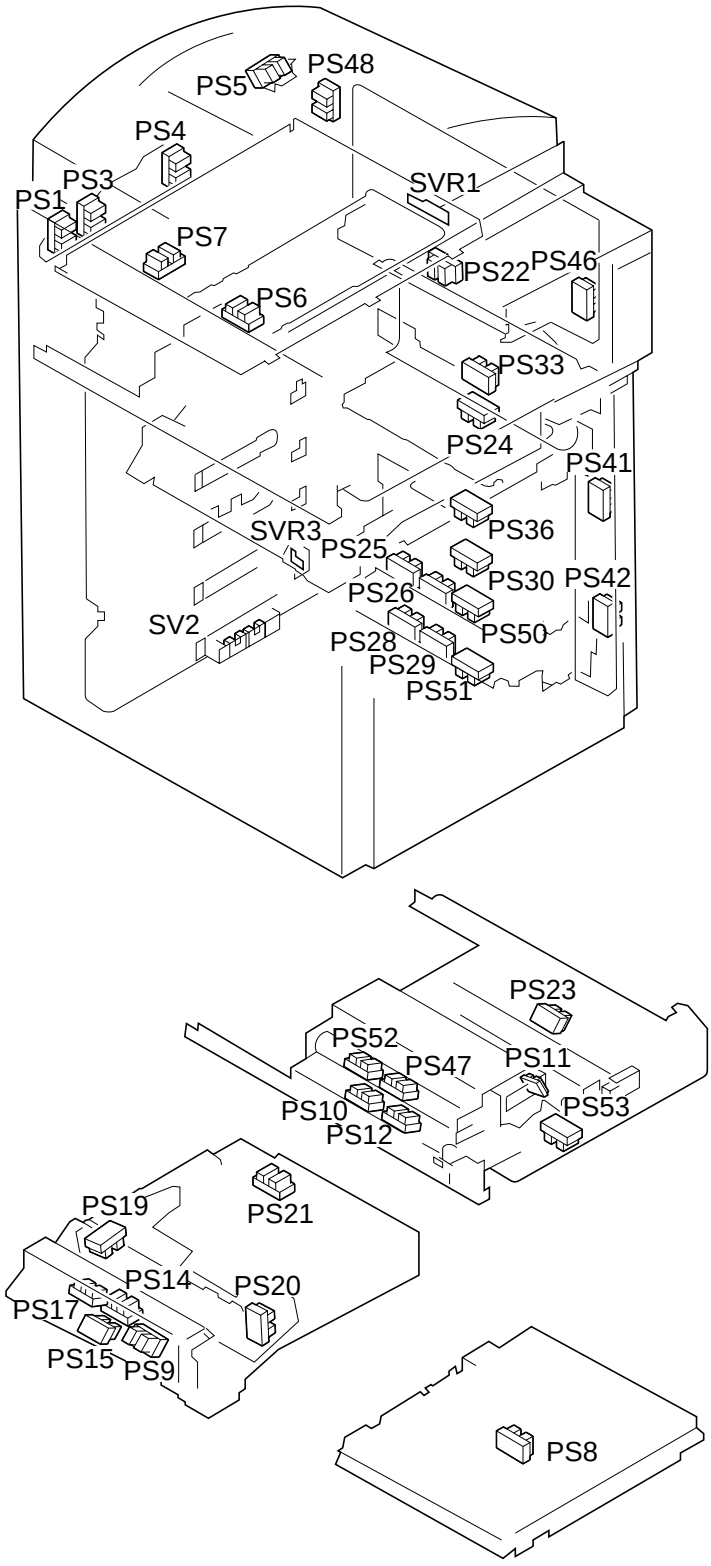


Figure 3-1

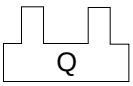
Symbol	Name	Notation	Function
	Photointerrupter	PS1	Scanner home position detection
		PS3	Scanner original leading edge 1 detection
		PS4	Scanner original leading edge 2 detection
		PS5	Copyboard cover open/closed detection
		PS6	Lens X home position detection
		PS7	Lens Y home position detection
		PS8	Holding tray feeding assembly 1 paper detection
		PS9	Holding tray feeding assembly 2 paper detection
		PS10	External delivery detection
		PS11	Fixing cleaning belt length detection
		PS12	Internal delivery detection
		PS14	Holding tray registration paper detection
		PS15	Holding tray inlet paper detection
		PS17	Holding tray pick-up detection
		PS19	Holding tray re-circulating bar home position detection
		PS20	Holding tray Y home position detection
		PS21	Holding tray X home position detection
		PS22	Multifeeder pick-up detection
		PS23	Registration paper detection
		PS24	Pick-up vertical path 0 paper detection
		PS25	Cassette 3 lifter detection
		PS26	Cassette 3 paper detection
		PS27	Pick-up vertical path 3 paper detection
		PS28	Cassette 4 lifter detection
		PS29	Cassette 4 paper detection
		PS30	Pick-up vertical path 4 paper detection
		PS33	Pick-up vertical path 1 paper detection
		PS36	Pick-up vertical path 2 paper detection
		PS41	Upper right door open detection
		PS42	Lower right door open detection
		PS46	Multifeeder door open detection
		PS47	Fixing assembly outlet paper detection
		PS48	Scanner locked detection
		PS50	Cassette 3 open/closed detection
		PS51	Cassette 4 open/closed detection
		PS52	Claw jam detection
		PS53	Fixing/feeding unit detection
	Variable resistor	SV2	Cassette 4 paper length detection
		SVR1	Multifeeder paper width detection
		SVR3	Cassette 4 paper width detection

Table 3-1

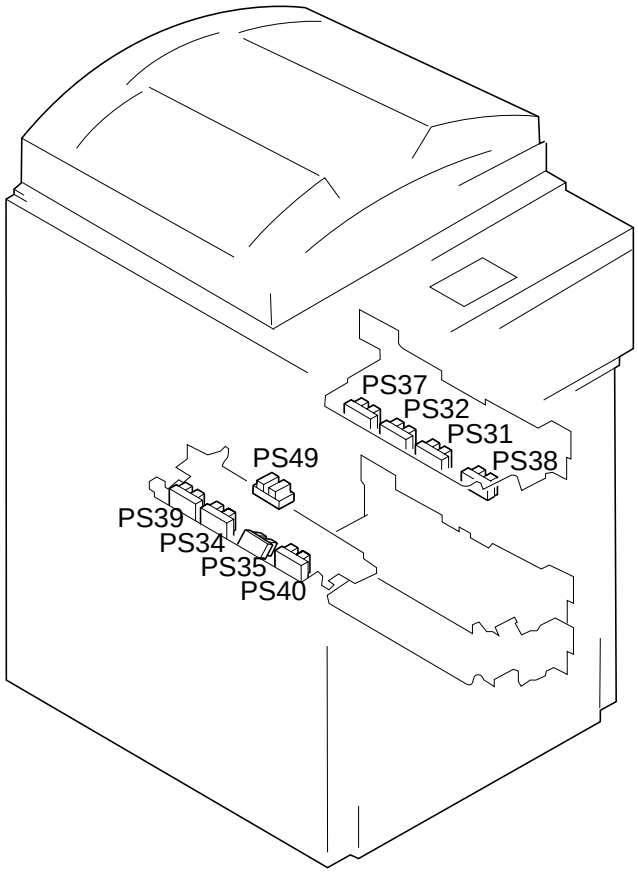


Figure 3-2

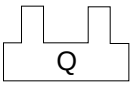
Symbol	Name	Notation	Function
	Photointerrupter	PS31	Right deck lifter position detection
		PS32	Right deck paper detection
		PS34	Left deck lifter position detection
		PS35	Left deck paper detection
		PS37	Right deck lifter limit detection
		PS38	Right deck open/closed detection
		PS39	Left deck lifter limit detection
		PS40	Left deck open/closed detection
		PS49	Left deck pick-up assembly outlet paper detection

Table 3-2

B. Swithes and Solenoids

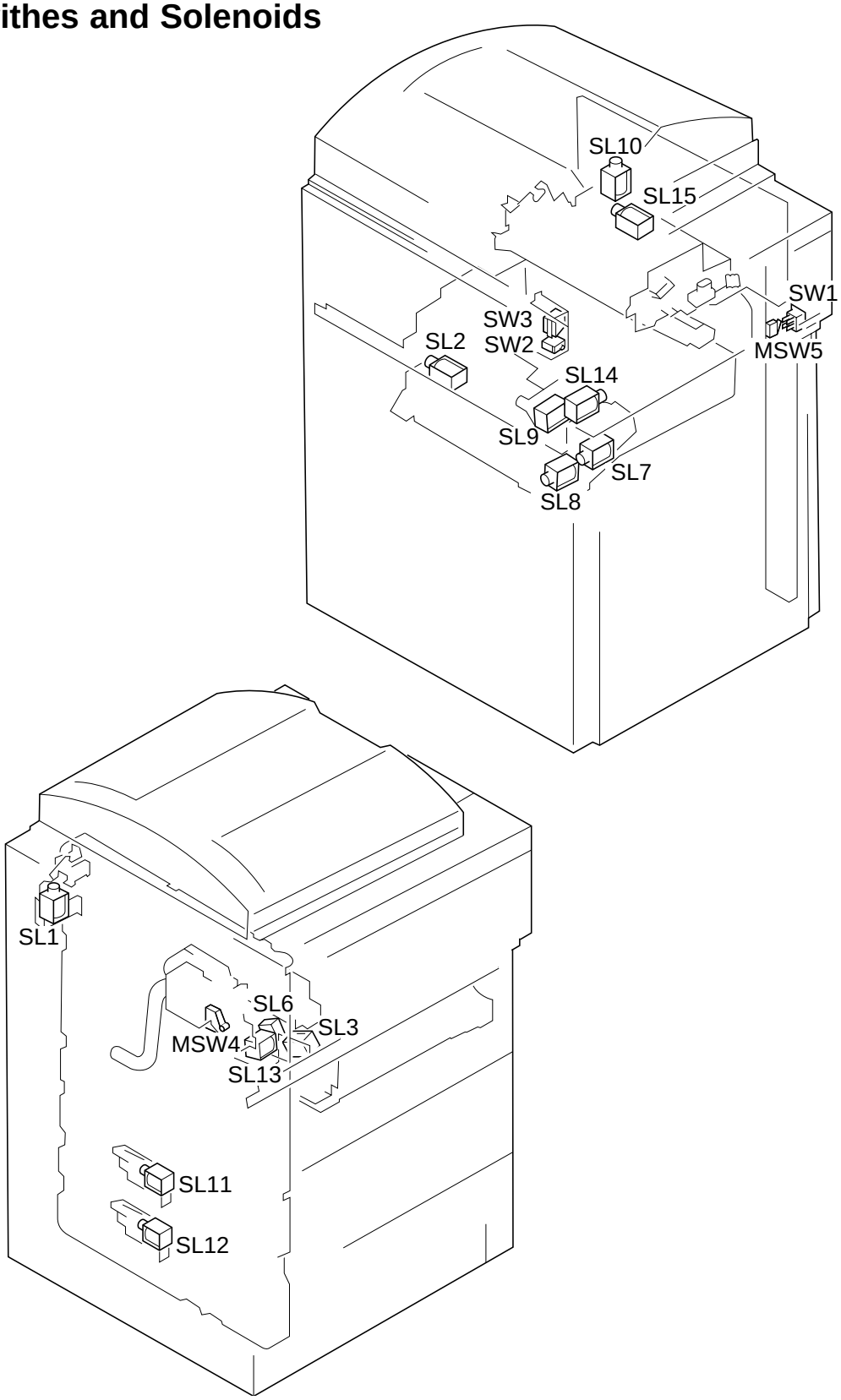


Figure 3-3

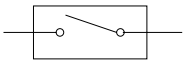
Symbol	Name	Notation	Function
S L	Solenoid	SL1	Scanner locking
		SL2	Delivery paper deflecting plate drive
		SL3	Fixing drive
		SL6	Holding tray re-pick up roller (D-cut roller) drive
		SL7	Holding tray weight drive
		SL8	Holding tray paper deflecting plate drive
		SL9	Holding tray swinging
		SL10	Multifeeder pick-up
		SL11	Cassette 3 pick-up roller release
		SL12	Cassette 4 pick-up roller release
		SL13	Fixing/feeding unit locking
		SL14	Fixing cleaning belt drive
		SL15	Multifeeder pick-up relay
		SL16	Fixing assembly inlet guide drive
	Microswitch/switch	MSW4	Waste toner feeding screw locked detection
		MSW5	Multifeeder door switch
		SW1	Power switch
		SW2	Door switch
		SW3	Drum heater switch

Table 3-3

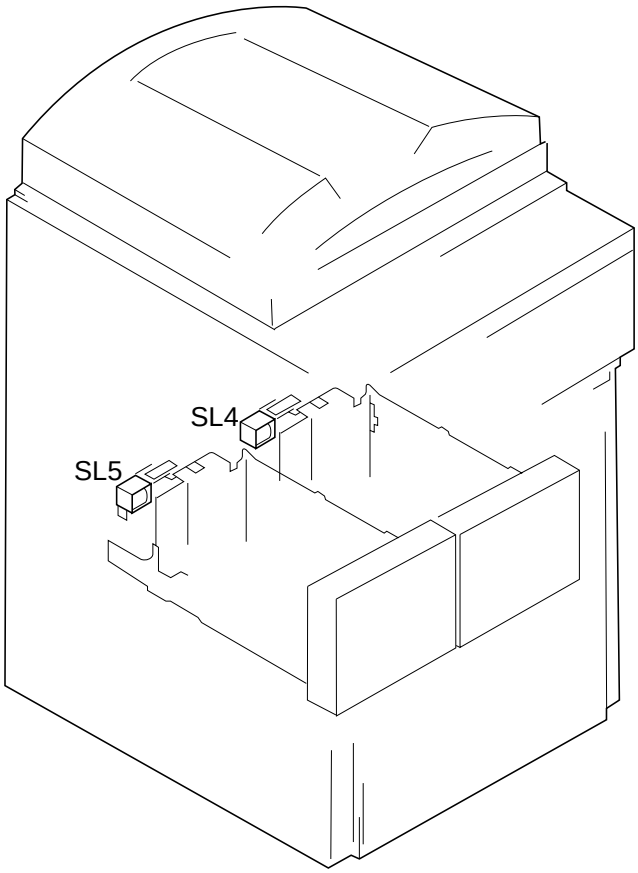


Figure 3-4

Symbol	Name	Notation	Function
S L	Solenoid	SL4	Right deck pick-up roller release
		SL5	Left deck pick-up roller release

Table 3-4

C. Motors and Fans

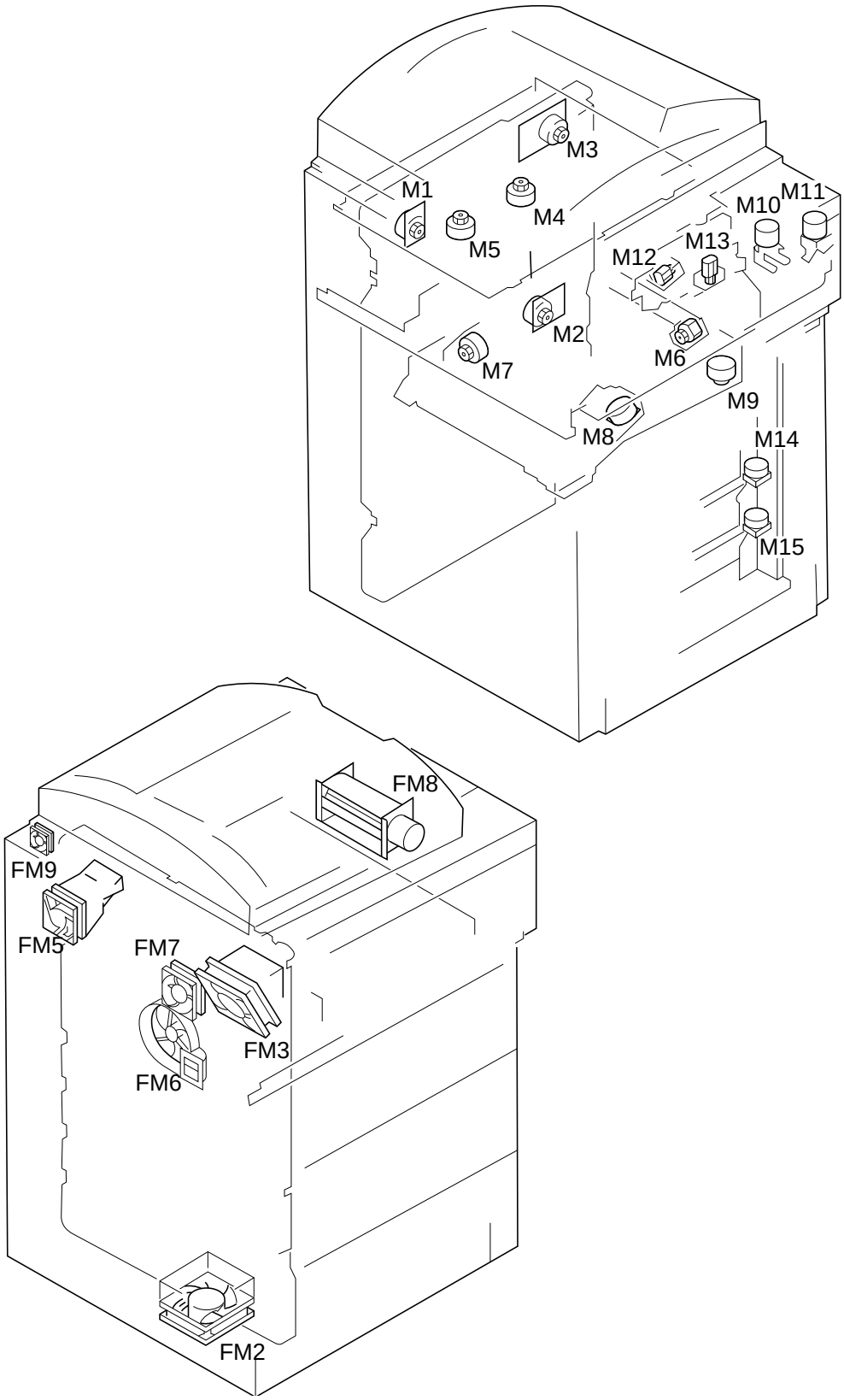


Figure 3-5

Symbol	Name	Notation	Function
	Fan	FM2	Exhaust fan
		FM3	Fixing heat discharge fan
		FM5	Developing fan
		FM6	Feeding fan
		FM7	Cleaner fan
		FM8	Scanner cooling fan
		FM9	Scanner motor cooling fan
	Motor	M1	Main motor
		M2	Pick-up motor
		M3	Scanner motor
		M4	Lens X motor
		M5	Lens Y motor
		M6	Transfer/separation charging wire cleaning motor
		M7	Holding tray re-circulating bar motor
		M8	Holding ray X motor
		M9	Holding tray Y motor
		M10	Hopper motor (toner supply)
		M11	Hopper motor (toner stirring)
		M12	Primary charging wire cleaning motor
		M13	Pre-transfer charging wire cleaning motor
		M14	Cassette 3 lifter motor
		M15	Cassette 4 lifter motor

Table 3-5

D. Clutches

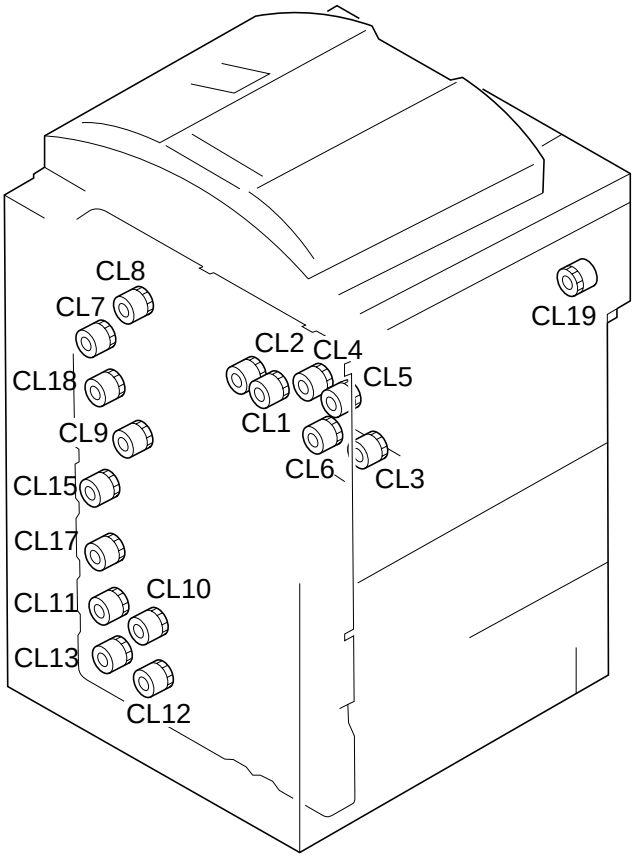


Figure 3-6

Symbol	Name	Notation	Function
CL	Clutch	CL1	Holding tray feeding 1
		CL2	Holding tray feeding 2
		CL3	Holding tray registration
		CL4	Holding tray reversal
		CL5	Holding tray forward
		CL6	Holding tray separation
		CL7	Multifeeder pick-up
		CL8	Developing
		CL9	Regist roller drive
		CL10	Cassette 3 pick-up
		CL11	Vertical path roller 3 drive
		CL12	Cassette 4 pick-up
		CL13	Vertical path roller 4 drive
		CL15	Vertical path roller 1 drive
		CL17	Vertical path roller 2 drive
		CL18	Vertical path roller 0 drive
		CL19	Fixing brake

Table 3-6

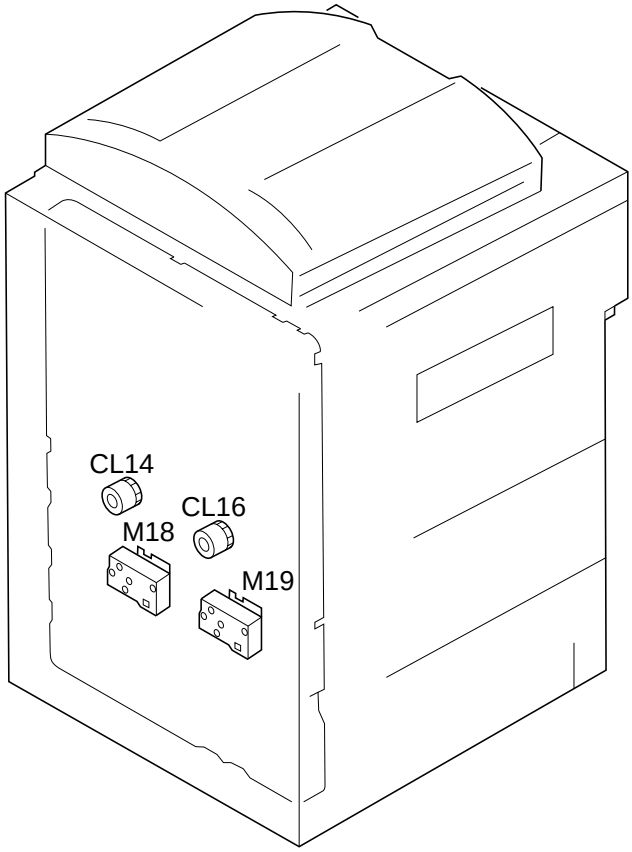


Figure 3-7

Symbol	Name	Notation	Function
M	Motor	M18	Right deck lifter drive
		M19	Left deck lifter drive
CL	Clutch	CL14	Right deck pick-up
		CL16	Left deck pick-up

Table 3-7

E. Lamps, Heaters, and Photosensors

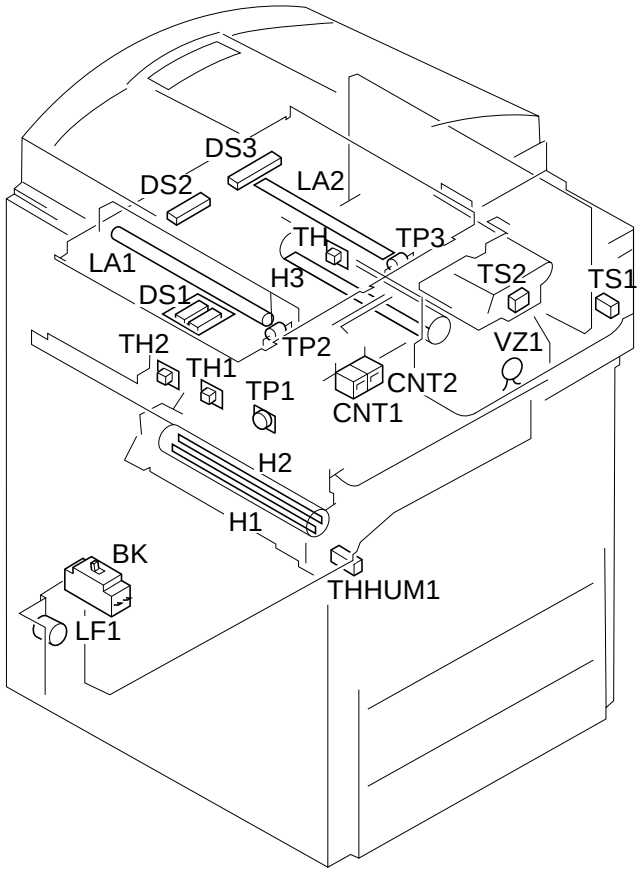


Figure 3-8

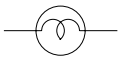
Symbol	Name	Notation	Function
B K	Leakage current circuit breaker	BK	Leakage/over-current circuit breaker
CNT	Counter	CNT1	Total copy counter
		CNT2	Accessories copy counter
	Photosensor	DS1	Original size 1 detection
		DS2	Original size 2 detection
		DS2	Original size 3 detection
	Heater	H1	Fixing main heater
		H2	Fixing sub heater
		H3	Drum heater
	Lamp	LA1	Scanning lamp
		LA2	Pre-exposure lamp
L F	Line filter	LF1	Noise filter
	Thermistor	TH1	Fixing heater main thermistor
		TH2	Fixing heater sub thermistor
		TH	Drum heater thermistor
	Environment sensor	THHUM1	Temperature humidity sensor (internal temperature sensor)
	Toner sensor	TS1	Hopper toner sensor
		TS2	Developing assembly toner sensor
	Varistor	VZ1	Varistor
	Thermal switch	TP1	Fixing heater thermal switch
	Thermal fuse	TP2	Scanning lamp thermal fuse
		TP3	Drum heater thermal fuse

Table 3-8

F. PCBs

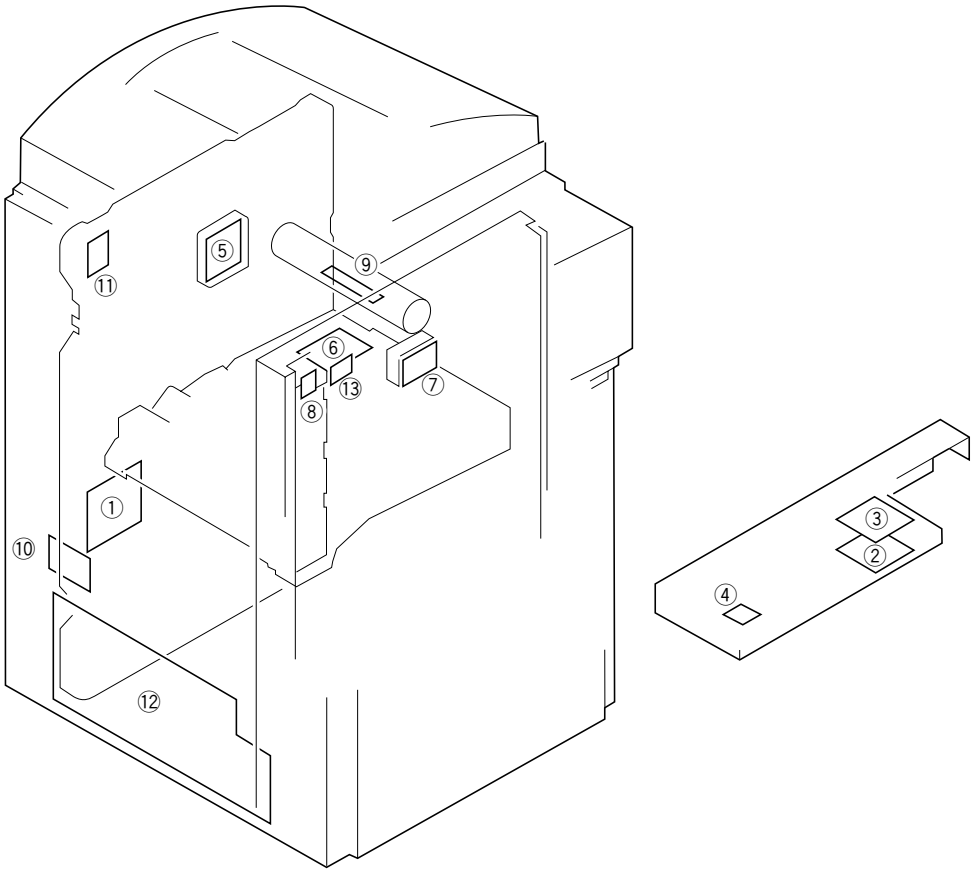


Figure 3-9

Ref.	Name	Function
①	DC controller PCB	Sequence control
②	Control panel CPU PCB	Control panel control
③	Control panel key PCB	Control panel key input, LED indication
④	FL inverter PCB	Control panel back-light lamp power supply
⑤	HVT PCB	High-voltage output
⑥	Holding tray control PC	Holding tray sensor, solenoid, clutch control
⑦	Potential control PCB	Photosensitive drum surface potential control
⑧	Accessories copy counter PCB	Accessories copy counter signal relay
⑨	Drum heater controller PCB	Drum heater control
⑩	AC driver PCB	AC circuit control
⑪	Lamp regulator PCB	Scanning lamp control
⑫	DC power supply PCB	DC power supply
⑬	Service switch PCB	Service mode switching

Table 3-9

G. Paper Deck-A1

1. Sensors and Switches

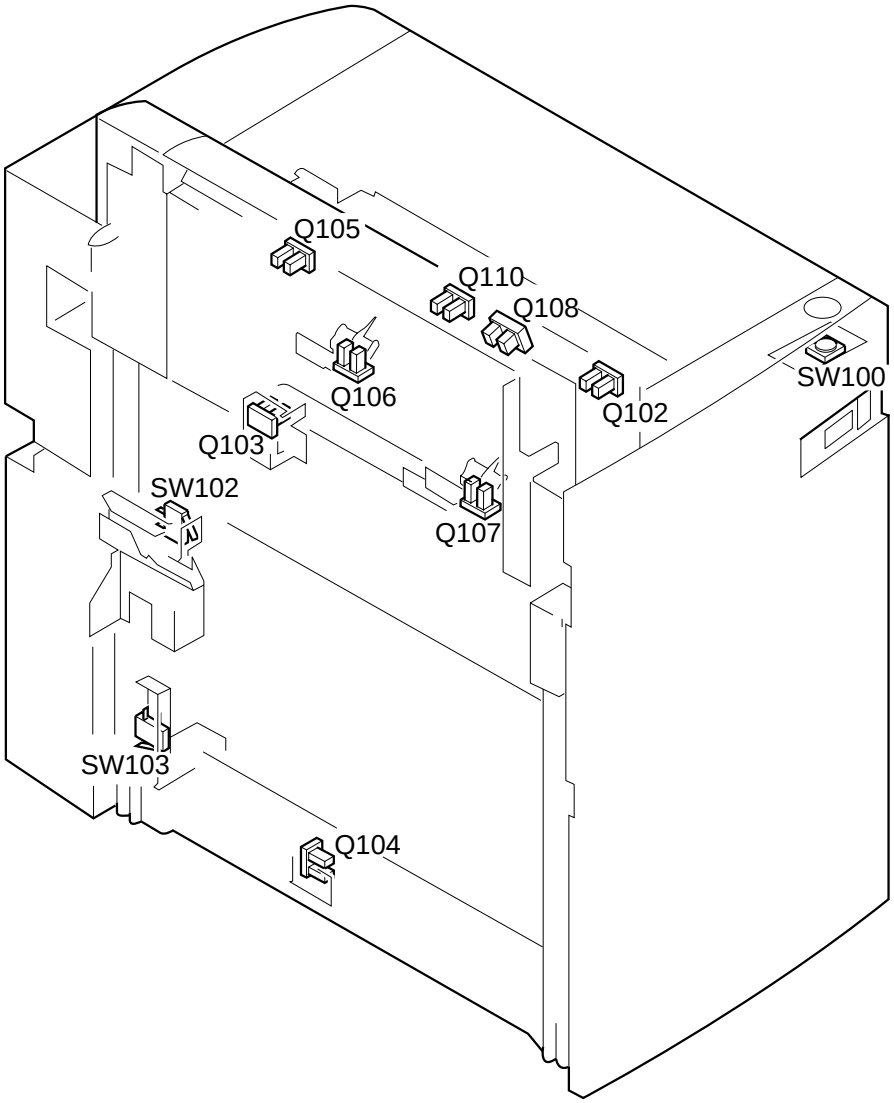


Figure 3-10a (paper deck-A1)

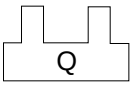
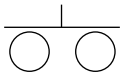
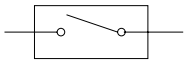
Symbol	Name	Notation	Function
	Photointerrupter	Q102	Deck lifter upper limit detection
		Q103	Deck paper supply position detection
		Q104	Deck set detection
		Q105	Deck pick-up guide open detection
		Q106	Deck vertical path paper detection
		Q107	Deck pick-up paper detection
		Q108	Deck paper absent detection
		Q110	Deck lifter position detection
	Switches	SW100	Deck open switch
	Microswitch	SW102	Deck open detecting switch
		SW103	Deck lifter lower limit detecting switch

Table 3-10a (paper deck-A1)

2. Motors, Clutches, Solenoids, and PCBs

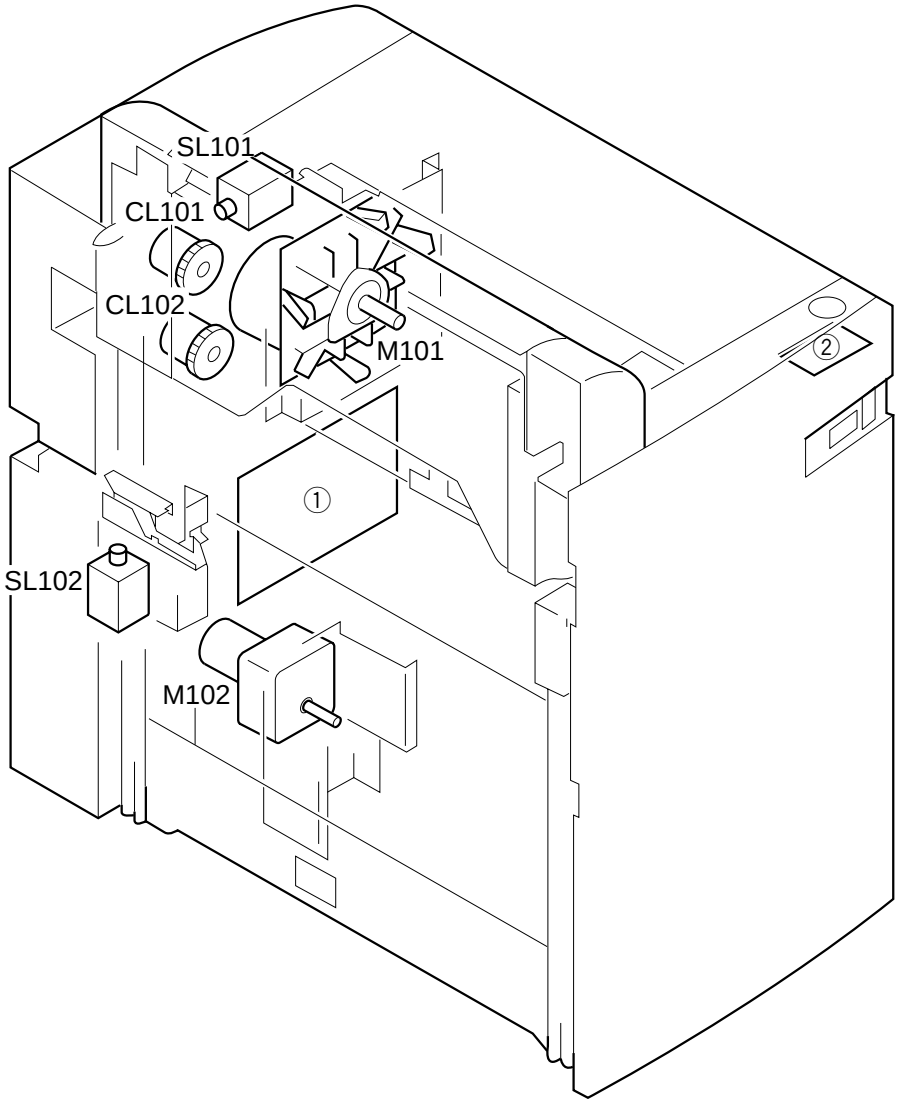


Figure 3-10b (paper deck-A1)

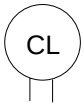
Symbol	Name	Notation	Function
	Motor	M101 M102	Deck main motor Deck lifter motor
	Clutch	CL101 CL102	Deck vertical path clutch Deck pick-up clutch
	Solenoid	SL101 SL102	Deck pick-up roller releasing solenoid Deck open solenoid
	PCB	① ②	Side deck driver PCB Open switch PCB

Table 3-10b (paper deck-A1)

H. Variable Resistors (VR), Light-Emitting Diodes (LED), and Check Pins by PCB

Of the VRs, LEDs, and check pins used in the machine, those needed to service the machine in the field are discussed.

Caution:

1. Some LEDs are dimly lit because of leakage current even when off; this is a normal condition and should be kept in mind.
2. VRs that may be used in the field.....
   VRs that must not be used in the field.....

Caution:

Those VRs and check pins not discussed herein are for use at the factory, requiring special tools and high precision. Do not touch them in the field.

1. DC Controller PCB

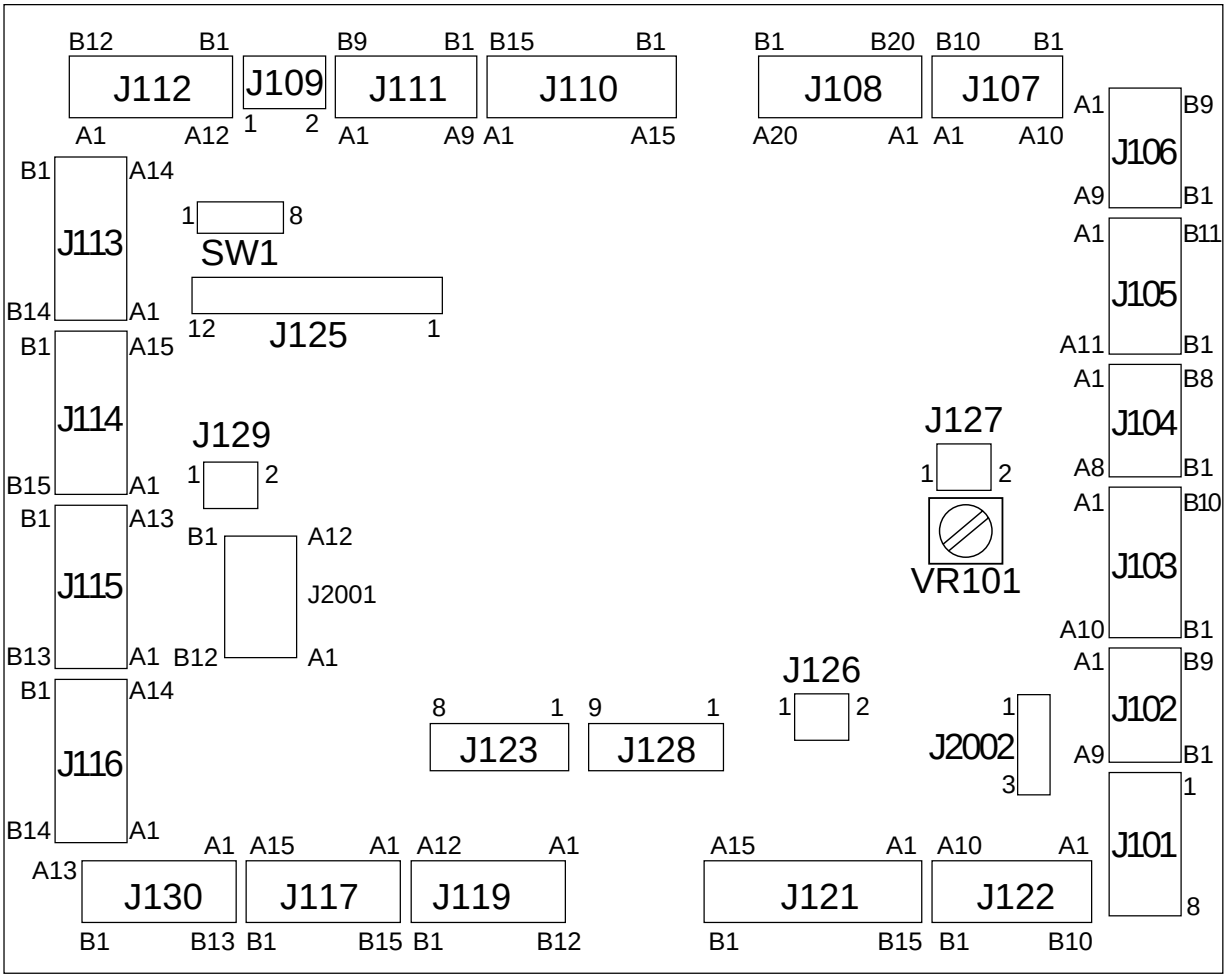


Figure 3-11

SW1-2	SW1-2	SW1-3	SW1-4	SW1-5	SW1-6	SW1-7	SW1-8	Voltage	Size (vertical)
OFF	OFF	OFF	—	—	ON/OFF	—	ON	100V	AB
OFF	ON	OFF	—	—	ON	—	ON/OFF	230V	AB/Inch
ON	OFF	OFF	—	—	ON	—	OFF	230V	A
ON	ON	OFF	—	—	ON	—	ON	120V	Inch

Table 3-11

Caution:
DIP SW 1-3 to 8 on the DC controller is for use at the factory only; do not touch it. Otherwise, the machine may malfunction.

AB (4R4E)	Ratio
200%	200.0%
A4→A3, B5→B4	141.1%
A4→B4	122.4%
B4→A3, B5→A4	115.4%
100%	100.0%
A3→B4, A4→B5	86.5%
B4→A4	81.6%
A3→A4, B4→B5	70.7%
50%	50.0%

Table 3-12

Inch (4R3E)	Ratio
200%	200.0%
LTR→11"×17"	129.4%
LGL→11"×17"	121.4%
100%	100.0%
LGL→LTR	78.6%
LGL→11"×17"	73.3%
11"×17"→LTR	64.7%
50%	50.0%

Table 3-13

A (2R2E)	Ratio
200%	200.0%
A4→A3	141.4%
100%	100.0%
A3→A4	70.7%
50%	50.0%

Table 3-14

AB/Inch (4R4E)	Ratio
200%	200.0%
A4/LTR→A3, B5→B4	141.4%
A4/LTR→B4	122.4%
B4→A3, B5→A4/LTR	115.4%
100%	100.0%
A3→B4, A4/LTR→B5	86.5%
B4→A4/LTR	81.6%
A3→A4/LTR, B4→B5	70.7%
50%	50.0%

Table 3-15

Connector	Description
J123	For factory
J125	For factory
J126	For factory
J129	For factory

Table 3-16

2. AC Driver PCB

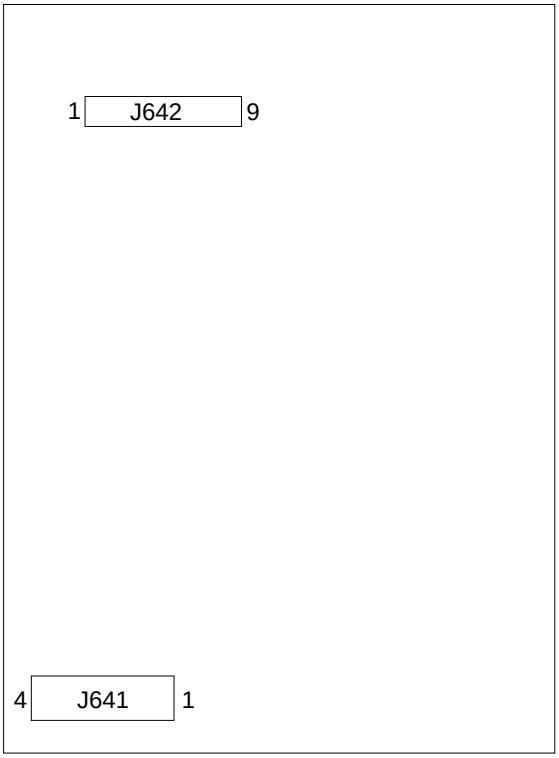


Figure 3-12

3. DC Power Supply PCB

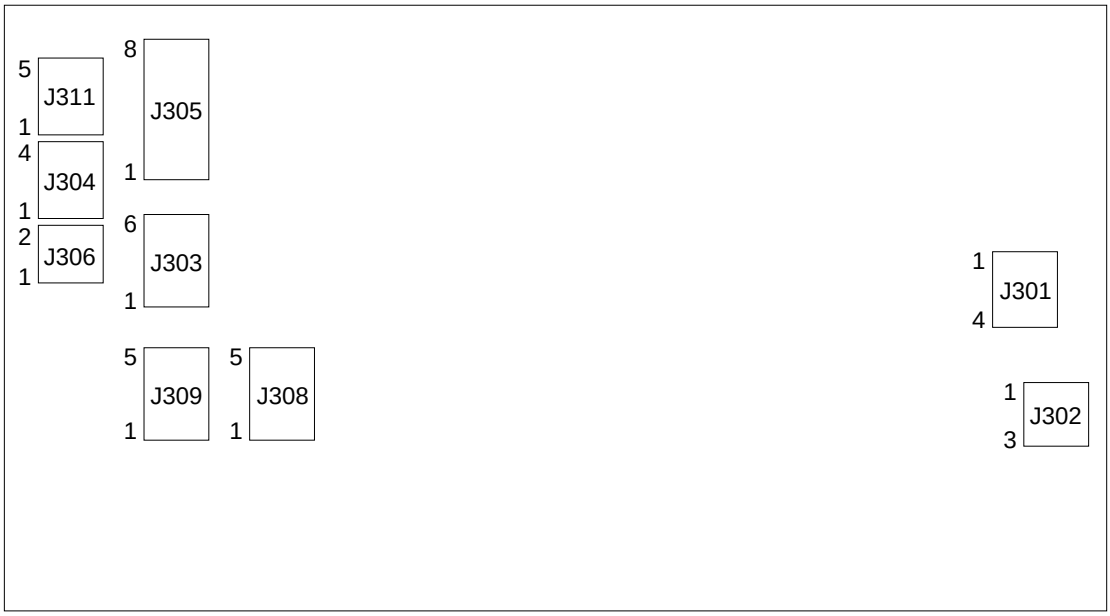


Figure 3-13

4. Control CPU PCB

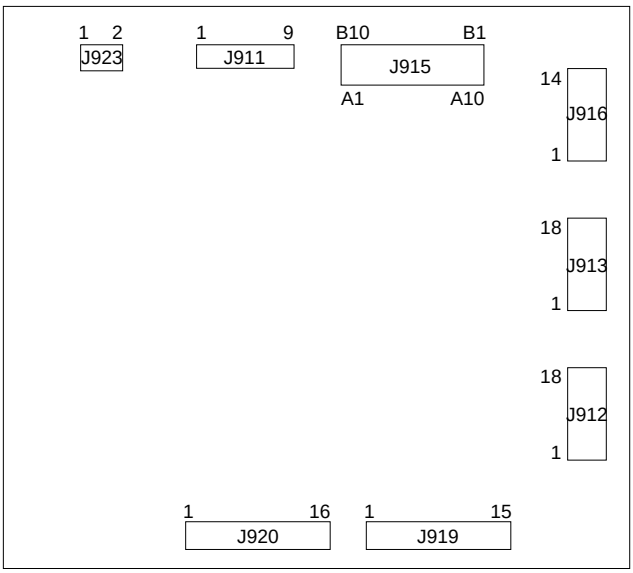


Figure 3-14

5. Holding Tray Driver PCB

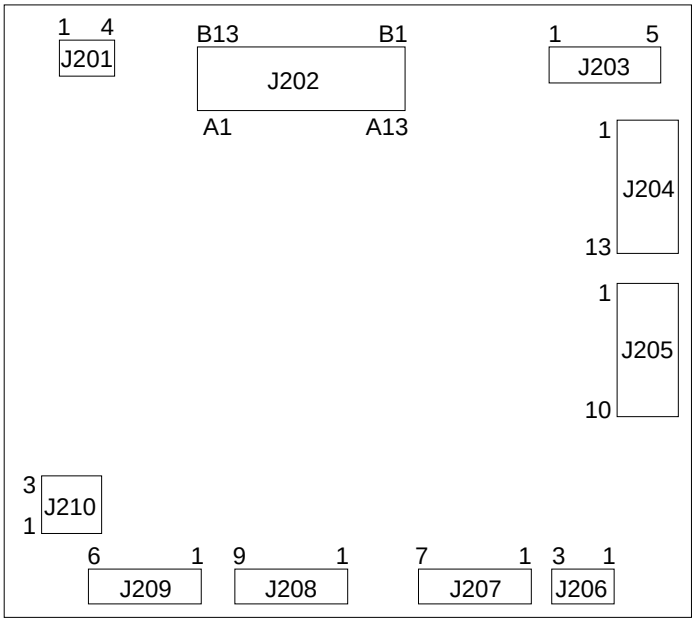


Figure 3-15

6. Potential Measurement PCB

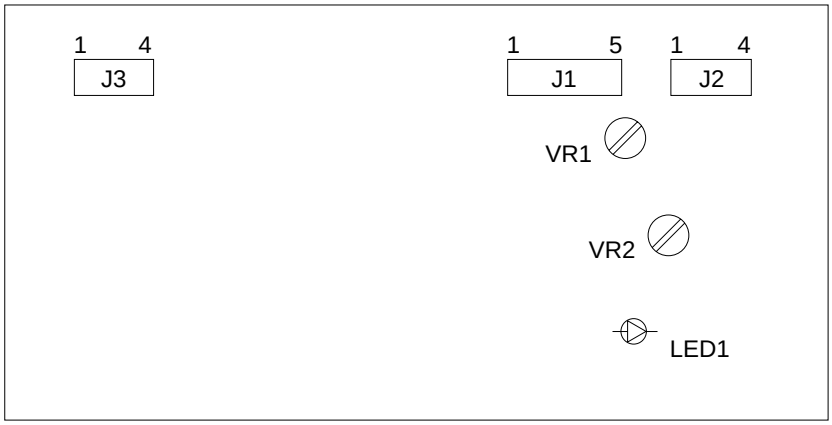


Figure 3-16

VR	Description
VR1	For factory
VR2	For factory

Table 3-17

LED	Description
LED1	ON while drum surface potential is being measured.

Table 3-18

7. HVT1 PCB

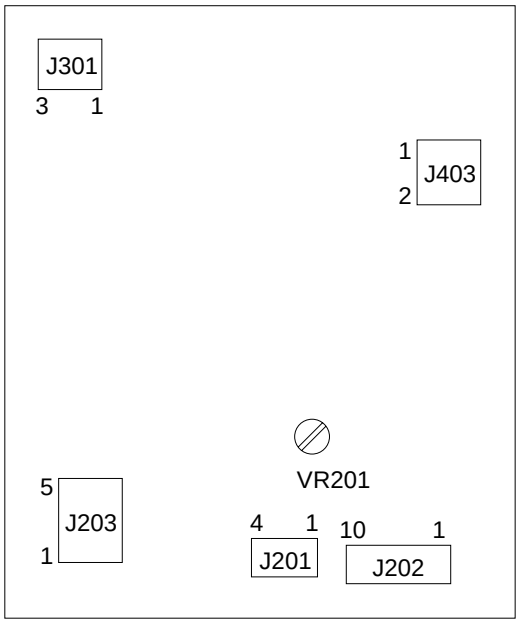


Figure 3-17

VR	Description
VR201	For factory

Table 3-19

8. HVT2 PCB

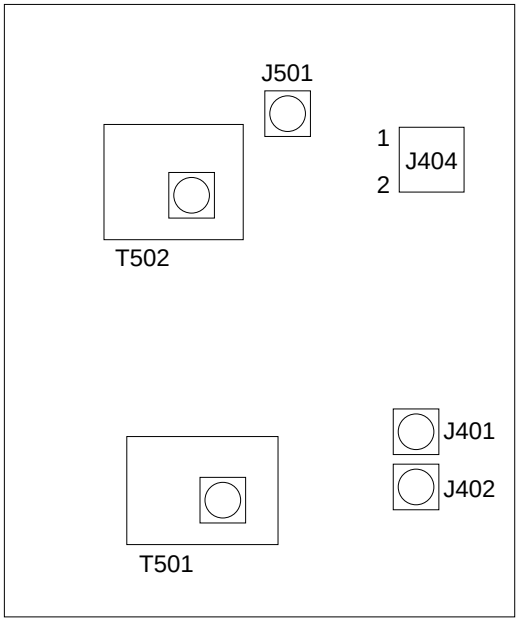


Figure 3-18

9. Inverter PCB

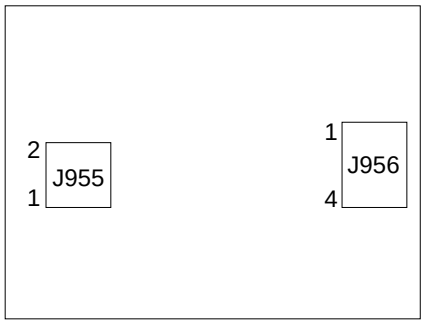


Figure 3-19

10. Lamp Regulator PCB

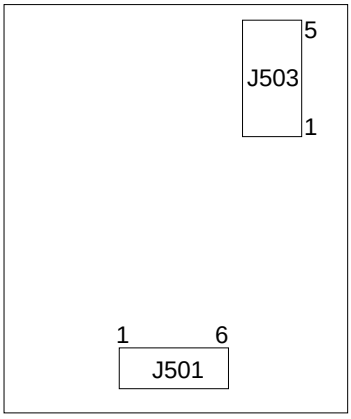


Figure 3-20

11. Counter PCB

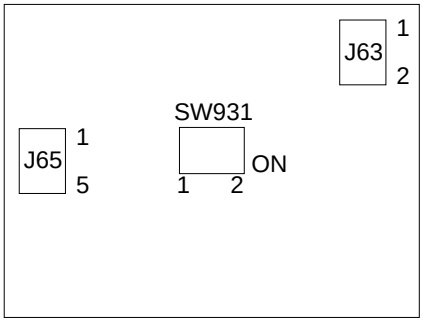


Figure 3-21

SW931-1	SW931-2	Description
0	0	Assumes that the sub counter is not connected.
1	0	Assumes that the sub counter is a small-size copy counter.
0	1	Assumes that the sub counter is a two-sided copy counter.
1	1	Assumes that the sub counter is a large-size copy counter.

Table 3-20

12. Side Deck Driver (paper deck-A1)

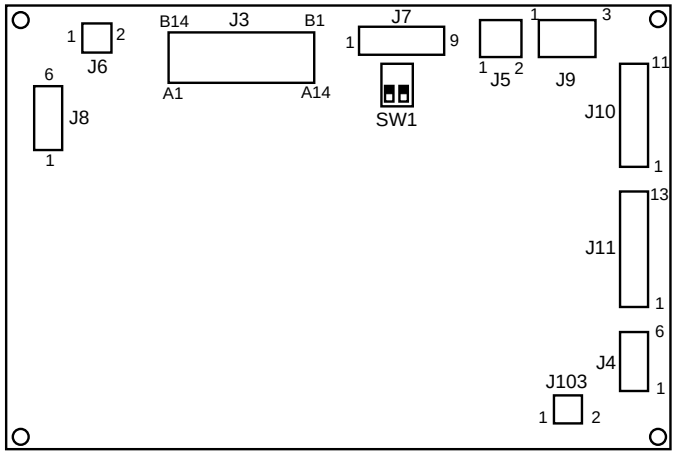


Figure 3-22

SW1-1	SW1-2	Mode
OFF	OFF	Deck main motor high-speed*
ON	ON	Deck main motor low-speed.

*This model only.

Table 3-21

CHAPTER 4 SERVICE MODE

A. Outline

The machine's service mode is divided into the following six:

Item	Display	Mode
∗1∗	DISPLAY	Display mode
∗2∗	I/O DISPLAY	I/O mode
∗3∗	ADJUST	Adjustment mode
∗4∗	FUNCTION	Function mode
∗5∗	OPTION	Options mode
∗6∗	COUNTER	Counter mode

Table 4-1

Each mode has sub menus as explained on the pages that follow, and may be checked on the message display.

Reference:

When you have selected a mode, you will find a specific page reference number in the upper right corner of the display.

B. Using Service Mode

1) Open the front door, and insert the door switch actuator. If you want to make checks while making copies (I/O display mode), set the appropriate copying mode.
2) Press the service mode switch with a hex key.
   • The machine starts service mode and indicates '$' in the upper right corner of the message display.
3) Enter the number of the mode (See table 4-1.) you want for checks or adjustments using the ✻ key and the keypad; for example, ✻, 3, and ✻.
4) Using the ◀◀ or ▶▶ key, select the appropriate screen.
5) Make checks or adjustments.
   • To store any input data, press the user mode key (✻).
6) End service mode.
   • Press the Reset key ( ) once to leave the current mode.
   • Press the Reset key twice to end service mode.
   • Service mode ends when you turn off the power switch or disconnect the power plug. (It will not end, however, when you open the front door or the pick-up door.)

C. Using Adjustment Mode and Options Mode

In adjustment mode and options mode, the options made on the control panel are stored in the RAM on the control PCB so that they drive the machine as if they were made on the variable resistor and switches.

Table 4-2 is the label attached behind the machine's front door.

Each machine is adjusted at the factory, and the adjustment values are recorded on this label.

If you replaced the DC controller PCB or initialized the RAM, you must enter the values recorded on the label in the RAM on the control PCB. By the same token, you must record any new values you entered in the field on this label.

	TYP				TYP		
LIGHT_5				MF_A6R			
LIGHT_5P				MF_A4R			
AE_SLOP				MF_A4			
GLEAM_5				BOOK_ERA			
BRAKE_SC				ATM			
REGIST				DOC_ST			
LE_BLANK				P_INT_RVL			
F_BLANK				RFAE_F5L			
R_BLANK				REAE_F9L			
TE_BLANK				RFAE_F5R			
PRIMARY				RFAE_F9R			
BIAS				LA_LCKPS			
PRETRANS				LA_SPEED			
TRN_1				RF_LENSY			
TRN_DUP				11∞17PSZ			
TRN_OVL				LGL_PSZ			
SEP_1				LTR_PSZ			
SEP_DUP				LTRR_PSZ			
SEP_OVL				STMT_PSZ			
C1_STMTR				A3_PSZ			
C1_A4R				A4_PSZ			
C2_STMTR				A4R_PSZ			
C2_A4R				A5_PSZ			
C3_STMTR				B4_PSZ			
C3_A4R				B5_PSZ			
C4_STMTR				B5R_PSZ			
C4_A4R							

Table 4-2

D. Display Mode (✻1✻)

Using the ◄◄ or ►► key, select the appropriate screen.

<Screen 1-1>

Item	Description	Remarks
FTMP	Indicates the surface temperature (output of thermistor TH1) of the fixing roller.	Unit:°C
RTMP	Indicates the machine internal temperature (output of temperature sensor on DC controller PCB).	
RHUM	Indicates the machine internal humidity (output of humidity sensor on DC controller PCB).	
LMP1	Indicates the activation voltage of the scanning lamp (100/120V model).	Unit: V
LMP2	Indicates the activation voltage of the scanning lamp (230V model).	Unit: V
WIRE	Indicates a value other than '0' if the primary, pre-transfer, or transfer/separation charging wire cleaner stops at a point other than home position. The cleaner can at times return to home position when wire cleaning is executed in user mode.	
PLMT	Indicates '1' during current control of the primary charging assembly or when the current has reached the upper or the lower limit.	1: error 0: normal
LLMT	Indicates '1' when the activation voltage of the scanning lamp has reached the upper limit; '2' when it has reached the lower limit.	0: normal 1: error 2: error
LIFT	Indicates '1' if the lifter position sensor does not turn on within 13 sec after the UP command for the lifter (paper deck/cassette) has been issued. Order of Indication • Paper Deck Type right deck, left deck, cassette 3, cassette 4, side paper deck (if installed)	Resetting is by turning OFF and ON the power switch.

- For LMP1 and LMP2, the activation control voltage value is indicated even when the scanning lamp is off.

Caution:

If a value other than '0' is indicated for 'WIRE' because of an error in the charging cleaner, be sure to execute 'wire cleaning' in user mode.
If the wire cleaner motor and the wire cleaner unit are normal, executing wire cleaning turns on the cleaner unit and stops it at home position, clearing the indication to '0'.
(Unless you execute wire cleaning, the associated operation is prohibited and the machine will not be reset even when the machine is turned off and on.)

<Screen 1-2>

Item	Description	Remarks
DPOT	Indicates the surface potential of the drum.	Unit: V
VAE	Indicates the average surface potential during AE measurement.	Unit: V
VL1T	Indicates the VL1 (light area potential) target value.	Unit: V
VL1M	Indicates the VL1 (light area potential) measured value.	Unit: V
VL2M	Indicates the VL2 (developing bias light area potential) measured value.	Unit: V
VDT	Indicates the VD (dark area potential) target value.	Unit: V
VDM	Indicates the VD (dark area potential) measured value.	Unit: V

<Screen 1-3>

Item	Description	Remarks
PC	Indicates the current value of the primary charging assembly.	
GRID	Indicates the grid current value of the primary charging assembly.	
PTC	Indicates the current value of the pre-transfer charging assembly.	
TC	Indicates the current value of the transfer charging assembly.	
SC	Indicates the current value of the separation charging assembly.	
BIAS	Indicates the DC value of the developing bias.	

• Indicates ‘0’ when the HVT unit turns off.

<Screen 1-4>

Item	Description	Remarks
DCMET-1	Indicates the output of the original size sensor 1.	
DCMET-2	Indicates the output of the original size sensor 2.	
DCMET-3	Indicates the output of the original size sensor 3.	
DCMET-4	Indicates the output of the original size sensor 4.	

<Screen 1-5>

Item	Description	Remarks
B-JAM0	Indicates the locations of the most recent and the second most recent jams that occurred in the machine.	See Table 4-3. *3
B-JAM3	Indicates the locations of the third, fourth, and fifth most recent jams that occurred in the machine.	See Table 4-3.
B-JAM6	Indicates the sixth, seventh, and eighth most recent jams that occurred in the machine.	See Table 4-3.
B-ALRM *1	Not used.	
B-ER1 *2	Indicates the most recent self diagnosis code for the machine (excluding RDF).	
B-ER2 *2	Indicates the second most recent self diagnosis code for the machine (excluding RDF).	
B-ER3 *2	Indicates the third most recent self diagnosis code for the machine (excluding RDF).	
A	Indicates a type of E002 (temperature of fixing roller fails to reach specific value within specific time).	1: 70° to 100°C 2: 100° to 150°C
B	Indicates the type of thermistor that detected E001 (temperature of fixing roller exceeded specific value).	1: main thermistor (TH1) 2: sub thermistor (TH2)

*1: No data is used to represent alarm in the machine.
*2: For ‘B-ER’, the four bits to the right of 1–3 remain ‘0000’, and no E code is indicated.
*3: For ‘B-JAM’, JAM associated with the RDF is limited to ‘0700’. For details, see the next screen (DF-JAM).

<Screen 1-6>

Item	Description	Remarks
DF-JAM	Indicates the location of the jam (in RDF).	See Tables 4-8 through -10.
S-JAM	Indicates the location of the jam (sorter).	See Table 4-4.
DF-ERR *1	Indicates the results of self diagnosis (RDF). *2	
S-ERR *1	Indicates the result of self diagnosis (sorter). *3	
DF-ALM	Indicates the nature of the alarm (RDF).	See Table 4-7.
S-ALM	Indicates the nature of the alarm (sorter).	See Tables 4-5 and -6.

*1: The four bits to the right of 'DF-ERR' and 'S-ERR' remain '0000' (no change).
*2: For example, if 'E480' is detected,
DF-ERR: 8000 0000
The '4' of 'E480' represents the RDF, and is omitted in DF-ERR notation.
'E400' cannot be indicated.
*3: For example, if 'E530' is detected,
S-ERR: 3000 0000
'5' of 'E530' represents the sorter, and is omitted in S-ERR notation.
'E500' cannot be indicated.

Higher-Order 2 Digits / Lower-Order 2 Digits

Code	Jam type
01	Delay jam
02	Stationary jam
03	Power-on jam
04 *1	Double feeding jam
05	Timing jam
06	Sorter jam
07 *2	RDF jam

Code	Sensor	Notation
01	Pick-up vertical path 0	PS24
02	Pick-up vertical path 1	PS33
03	Pick-up vertical path 2	PS36
04	Pick-up vertical path 3	PS27
05	Pick-up vertical path 4	PS30
06	Holding tray pick-up	PS17
07	Holding tray registration	PS14
08	Holding tray feeding assembly 1	PS8
09	Holding tray feeding assembly 2	PS9
0A	Registration	PS23
0B	Holding tray inlet	PS15
0C	Fixing assembly outlet	PS47
0D	External delivery	PS10
0E	Left deck pick-up assembly	PS49
0F	Internal delivery	PS12 (*3)
10	Fixing claw jam	PS52 (*4)
11	Side paper deck pick-up assembly	Q107
12	Side paper deck vertical path	Q106

To Reset, Open the front door, remove the jam, and close the front door.

*1: The location of a double feeding jam (lower-order 2 digits) is indicated as '00' only (01, 02, and so on are not used).
*2: Indicates a jam in RDF stream reading; for a jam in left pick-up, check under 'RF-JAM'.
*3: Applicable only to power-on jam.
*4: Applicable only to power-on and initial rotation jams.

Table 4-3

Sorter Jam Code

Code	Description
03	Feeding delay jam
04	Feeding stationary jam
07	Power-on jam
08	Door open jam (copy paper being fed)
09	Door open jam (during stapling)
0A	Bin outside sensor jam

Table 4-4

Sorter Alarm Code

Tray

Code	Type	Resetting
02	Overstacking	Remove all sheets from the bins.

Table 4-5

Stapler

Code	Type	Resetting
01	Stapling down	Run a self check.
02	Staple jam	Open the front door, remove all staple jams, and close the front door.
03	Stapler safety mechanism ON	Open the front door, remove all jams, and close the front door.
05	Stapler over capacity	Remove all sheets from the bins.
06	Stapler capacity full	Remove all sheets from the bins.
07	Paper size mixed	Remove all sheets from the bins.
09	Bin inside paper	Remove all sheets from the bins.
0A	Staple absent	Set a new cartridge.

Table 4-6

RDF Alarm Code

Code	Type	RDF	Resetting
01	Re-circulating lever idle swing	Stops	Turn on and off the original sensor (S1).
03	Pick-up/separation failure	Stops	Turn on and off the original sensor (S1).
05	Original overriding paper stopper plate	Stops	Turn on and off the original sensor (S1), and open and close the RDF.
11	Change in number of originals after jam recovery	Stops	Turning on and off the original sensor (S1).
12	Wrong number of originals	Counts up to 100 sheets, and stops	Turns on and off the original sensor (S1), and open and close the RDF.
13	Original pulled out	Stops	Turn on and off the original sensor (S1), and open and close the RDF.
14	Wrong original size	Stops	Turn on and off the original sensor (S1), and open and close the RDF.
15	Mixed original size detected in image composition mode	Stops	Turn on and off the original sensor (S1), and open and close the RDF.
21	Operation mode error	Stops	Turns on and off the original sensor (S1).

Table 4-7

RDF Jam Code
RDF-D1

	Type	Sensor	Chronological sequence	Code
Right/left pick-up	Original left behind	S5	The belt motor (M3) rotates in reverse. S5 detects an original.	19
	Original pulled out	S1, S2	Pick-up motor (M1) turns on. S2 does not detect an original for a specific period of time. S1 does not detect an original.	21
	Original pulled out	S15, S27	The pick-up motor (M1) and the pick-up clutch (CL1) turn on. S15 does not detect an original for a specific period of time. S27 does not detect an original.	66
	Lever idle rotation	S29, S30	The re-circulating bar swings idly without coming into contact with an original.	03
Left pick-up	Left pick-up trailing edge skew	S3, S4	Left pick-up is executed. The original left S3 and S4 with a discrepancy of 8 mm in timing.	11
	Left pick-up fault	S3	Edge feeding is executed. The entire original leaves S3.	13
	Left pick-up delay	S3	The pick-up motor (M1) turns on. The original is fed for an equivalent of 500 mm. S3 does not detect the original.	22
	Registration delay	S2, S3	S2 detects an original. The original is fed for an equivalent of 60 mm. S3 does not detect the original.	23
	Left pick-up skew	S3, S4	Left pick-up is executed. TS3 and S4 detect the original with a discrepancy of 10 mm in timing.	24
	Left pick-up stationary	S3	S3 detects an original for an equivalent of 660 mm or more.	31
Right pick-up	Right pick-up delay	S15	The pick-up motor (M1) turns on. The original is fed for an equivalent of 500 mm. S15 does not detect the original.	61
	Right registration delay	S16, S17	S16 detects an original. The original is fed for an equivalent of 160 mm. S17 does not detect the original.	62
	Right registration delay	S17, S20	S17 detects an original. The original is fed for an equivalent of 130 mm. S20 does not detect an original.	63
	Right pick-up stationary	S17	S17 detects an original for an equivalent of 266 mm or more.	64
	Right pick-up leading edge skew	S15, S16	Right pick-up is executed. S15 and S16 detect the original with a discrepancy of 15 mm or more in timing.	65
	Right pick-up trailing edge skew	S15, S16	Right pick-up is executed. The original leaves S15 and S16 with a discrepancy of 15 mm or more in timing.	71

Table 4-8

RDF-D1

	Type	Sensor	Chronological sequence	Code
Manual feed	Manual feed pick-up stationary	S32	The feeding motor (M8) turns on. The original does not leave S32 after it has been fed an equivalent of 1000 mm.	91
	Manual feed pick-up delay	S20	The feeding motor (M8) turns on. The original is fed an equivalent of 1000 mm. S20 does not detect the original.	92
	Manual feed pick-up stationary	S20	S20 detects an original for an equivalent of 750 mm or more.	A1
	Manual feed delivery stationary	S20	The belt motor (M3) turns on. The original is fed for an equivalent of 532 mm or more. S20 does not detect an original.	A2
	Manual feed delivery stationary	S19, S20	S20 detects an original. The original is fed for an equivalent of "length in feeding direction × 1.5" mm or more. The original does not leave S19.	A3
	Manual feed original left behind	S5	The belt motor (M3) rotates in reverse. S5 detects an original.	A4
Reversal	Reversal leading edge skew	S3, S4	Reversal starts. S3 and S4 detect an original with a discrepancy of 10 mm or more in timing.	15
	Reversal original left behind	S3	Reversal starts. S3 detects paper.	51
	Reversal pick-up delay	S3, S5	Reversal starts. The paper is fed for an equivalent of 163 mm from S5. S3 does not detect paper.	52
	Reversal pick-up leading edge skew	S3, S4	Reversal starts. S3 and S4 detect an original with a discrepancy of 10 mm or more.	53
	Reversal pick-up stationary	S3	Reversal starts. The original is fed for an equivalent of "length in feeding direction × 1.5" mm. The original does not leave S3.	54
	Reversal delay	S5	The belt motor (M3) turns on. The original is fed for an equivalent of 115 mm. S5 does not detect the original.	14
	Reversal stationary	S5	S3 detects an original for an equivalent of "length in feeding direction × 1.5" mm or more.	41
	Stream reading	S20	• In stream reading, the speed of the belt motor (M3) when the leading edge of the original is at image exposure start position is below a specific value. • In stream reading, the copier sends a command for an outside control speed for the belt motor (M3).	F4H
		S17	• In stream reading, the point of edge feeding from the pre-registration sensor is within a specific range.	FEH
	Error detection		Any of the conditions for E402, E403, E406, or E408 is detected. Note: For each code, the first and the second faults are treated as a jam; the third and the subsequent faults are treated as errors. This is to prevent issuing an error in response to the wrong placement of an original. The count returns to '0' when the power is turned off and then on again.	

If E402, E43, E406, and E408 are detected in sequence, an error will not be identified, as each has merely been detected no more than once.

Table 4-9

RDF-D1

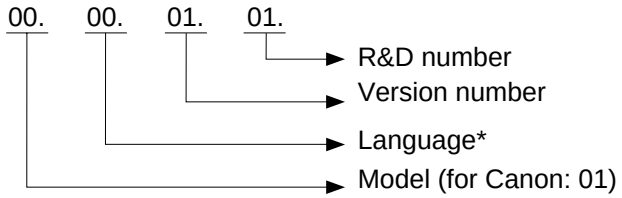
	Type	Sensor	Chronological sequence	Code
Delivery	Delivery delay	S5, S6	S5 detects an original. The original is fed for an equivalent of 218 mm or more. S6 does not detect an original.	25
	Delivery stationary	S6	S6 detects an original for an equivalent of “length in feeding direction × 1.5” mm or more.	26
Others	RDF open	S31	The RDF is identified as being open.	E2
	Pick-up signal error	S13, S14, S23, S24,	The right or left cover is identified as being opened during operation.	E3
	Initial original left behind		The copier sends a command for pick-up when the RDF is not ready.	E4
	Size error		A large-size original is detected in reduced page composition mode.	E6
	Stream reading error	S20 S17	• In stream reading, the speed of the belt motor (M3) when the leading edge of the original is at image exposure start position is below a specific value. • In stream reading, the copier sends a command for an outside control speed for the belt motor (M3). • In stream reading, the edge feeding stop position from the pre-registration sensor is outside a specific range.	F4H
	Error detection		Any of the conditions for E402, E403, E406, or E408 is detected. Note: For each code, from the first to the third faults are treated as a jam; the fourth and the subsequent faults are treated as errors. This is to prevent issuing an error in response to the wrong placement of an original. The count returns to ‘0’ when the power is turned off and then on again.	FEH

Table 4-10

<Screen 1-7>

Item	Description	Remarks
Q161	Indicates the version of the ROM (Q161) on the controller PCB.	See “Guide to Version.”
Q160	Indicates the version of the ROM (Q160) on the controller PCB.	See “Guide to Version.”
Q156	Indicates the version of the ROM (Q156) on the controller PCB.	See “Guide to Version.”
Q140	Indicates the version of the ROM (Q140) on the DC controller PCB.	See “Guide to Version.”
Q937	Indicates the version of the ROM (Q937) on the control panel PCB.	See “Guide to Version.”
DF	Indicates the version of the ROM (IC2) on the RDF controller PCB.	See “Guide to Version.”
SORT	Indicates the version of the ROM (Q937) on the sorter controller PCB.	See “Guide to Version.”

■ Guide to Version



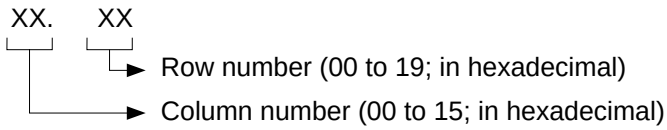
*Language

10:Japanese	70:Finnish
20:English	80:Italian
(20:North America; 21:UK)	90:Norwegian
30:French	A0:Portuguese
40:German	B0:Spanish
50:Danish	C0:Swedish

<Screen 1-8>

Item	Description	Remarks
KEY-CHK	Indicates the code of the key pressed on the control panel. *1	See Table 4-11.
DF-SIZE	Indicates the size of the original detected by the RDF.	
DOC-SIZE	Indicates the size of the original detected by the original size sensor of the copier.	
DOC-STS1	Indicates the output (0/1) of the original size sensor of the copier. *2	
DOC-STS2	Indicates the output (0/1) of the original size sensor of the copier. *2	

*1: On the touch panel,



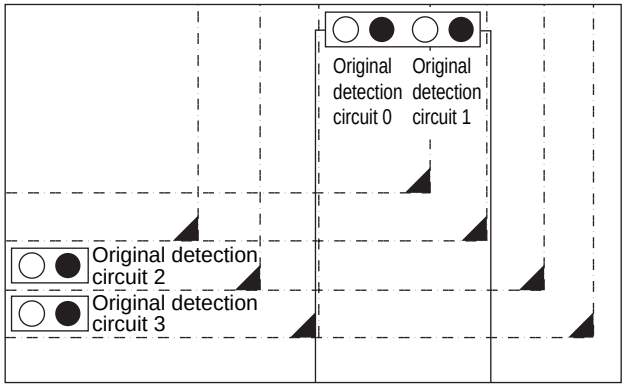
Notation	Key	Notation	Key	Notation	Key	Notation	Key
00. 0F	Reset	05. 0F	7	0A. 0F	0	0F. 0F	Energy Saver (Pre-heat)
01. 0F	Stop	06. 0F	Clear	0B. 0F	3	10. 0F	Interrupt
02. 0F	Start	07. 0F	2	0C. 0F	6	11. 0F	Additional Functions (User Mode)
03. 0F	1	08. 0F	5	0D. 0F	9	12. 0F	Guide
04. 0F	4	09. 0F	8	0E. 0F	ID		

Table 4-11

*2: Corresponding original size sensor.

DOC,STSI: X X X X

1 0 3 2

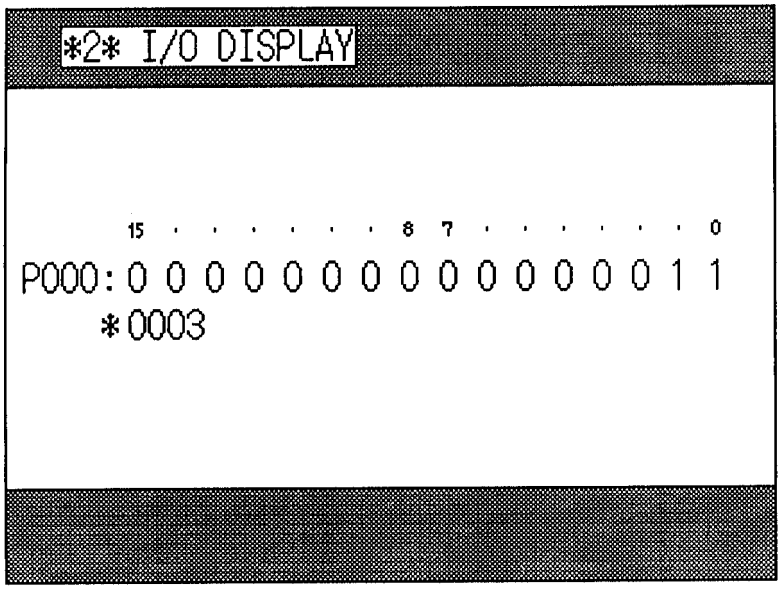


<Screen 1-9>

Item	Description	Remarks
MULTI	Indicates the paper size sensor output and the width of the copy paper set in the multifeeder. WIDE : paper width sensor output (analog) SW : paper length sensor output (0/1) SIZE : paper width (mm)	
CST-1 (Not used)	Indicates the paper size sensor output and the width of the copy paper set in the cassette 1. WIDE : paper width sensor output (analog) SW : paper length sensor output (0/1) SIZE : paper width (mm)	
CST-2 (Not used)	Indicates the paper size sensor output and the width of the copy paper set in the cassette 2. WIDE : paper width sensor output (analog) SW : paper sensor output (0/1) SIZE : paper width (mm)	
CST-3 (Not used)	Indicates the paper size sensor output and the width of the copy paper set in the cassette 3. WIDE : paper width sensor output (analog) SW : paper width sensor output (0/1) SIZE : paper width (mm)	
CST-4	Indicates the paper width size sensor output and the width of the copy paper set in cassette 4. WIDE : paper width sensor output (analog) SW : paper length sensor output (0/1) SIZE : paper width (mm)	

E. I/O Display Mode (✻2✻)

Using the keypad, select the appropriate screen.
The display indicates the state of the input and output ports.



Screen 2-1

Convert the bit data into hexadecimal data when making in terms of analog data (for example, address P023 photosensitive drum potential signal).

Address	Description	Notation	Signal	Jack	Remarks
P000-00	Pick-up motor drive signal	M02	M2ON	J114-B8	0: ON
P000-01	Drum motor drive signal	M01	M1ON	J111-B4	0: ON
P000-02	Developing fan drive signal	FM05	FM5D	J115-A1	1: ON
P000-03	Developing clutch drive signal	CL08	DEVCD	J112-A2	1: ON
P000-04	Holding tray feeding 1 clutch drive signal	CL01	HTF1CD	J112-A7	1: ON
P000-05	Scanner locking solenoid drive signal	SL01	SLCKSD	J114-A12	1: ON
P000-06	Multifeeder pick-up roller clutch drive signal	CL07	MFPCD	J115-B2	1: ON
P000-07	Multifeeder pick-up solenoid drive signal	SL10	SL10BD SL10FD	J115-B12	1: ON
P000-08	Vertical path roller 0 drive clutch drive signal	CL18	CL18D	J115-A4	1: ON
P000-09	Right deck pick-up clutch drive signal	CL14	RDPUCD	J116-A2	1: ON
P000-10	Left deck pick-up clutch drive signal	CL16	LDPUCD	J121-A2	1: ON
P000-11	Right deck lifter drive motor drive signal (paper deck type only)	M18	RDLMD	J119-B11	1: ON
P000-12	Left deck lifter drive motor drive signal (paper deck type only)	M19	LDLMD	J119-B9	1: ON
P000-13	Vertical path roller 1 drive clutch drive signal	CL15	CL15D	J117-A15	1: ON
P000-14	Vertical path roller 2 drive clutch rive signal	CL17	CL17D	J121-B8	1: ON
P000-15	Right deck pick-up roller releasing solenoid drive signal	SL04	RDPURR	J116-A10	1: ON

Address	Description	Notation	Signal	Jack	Remarks
P001-00	Holding tray paper deflecting solenoid drive signal	SL08	HTPDD	J113-B9	1: ON
P001-01	Holding tray weight solenoid drive signal	SL07	HTWSD	J113-A4	1: ON
P001-02	Holding tray D-cut (pick-up) roller solenoid drive signal	SL06	HTDSD	J113-A5	1: ON
P001-03	Fixing assembly inlet guide drive signal	SL16	FXGDSD	J108-B15	1: ON
P001-04	Holding tray swing solenoid drive signal	SL09	HTJSD	J113-B5	1: ON
P001-05	Cassette 3 lifter motor drive signal	M14	C3LMD	J119-A9	1: ON
P001-06	Cassette 4 lifter motor drive signal	M15	C4LMD	J119-A11	1: ON
P001-07	Cassette 3 pick-up clutch drive signal	CL10	C3PUCD	J117-A2	1: ON
P001-08	Cassette 4 pick-up clutch drive signal	CL12	C4PUCD	J130-A2	1: ON
P001-09	Pick-up vertical path roller 3 drive clutch	CL11	CL11D	J117-B2	1: ON
P001-10	Pick-up vertical path roller 4 drive clutch drive signal	CL13	CL13D	J130-B2	1: ON
P001-11	Cassette 3 pick-up roller releasing solenoid drive signal	SL11	C3PURR	J122-A6	1: ON
P001-12	Cassette 4 pick-up roller releasing solenoid drive signal	SL12	C4PURR	J130-A10	1: ON
P001-13	Fixing assembly inlet guide drive signal	SL16	FXGUSD	J108-B14	1: ON
P001-14	Wire cleaning motor HP signal			—	
P001-15	Size detection drive			J110-B4/ -B7/-B10	

Address	Description	Notation	Signal	Jack	Remarks
P002-00	Pick-up vertical path 0 paper detection signal	PS24	PS24D	J116-B7	1: paper present
P002-01	Stream reading home position detection signal	PS04	SCDP2	J111-A8	0: home position
P002-02	Registration paper detection signal	PS23	RGPD	J108-A7	1: paper present
P002-03	Holding tray feeding assembly 2 paper detection signal	PS09	PS9D	J113-B12	1: paper present
P002-04	Holding tray feeding assembly 1 paper detection signal	PS08	PS8D	J119-A4	1: paper present
P002-05	Multifeeder paper detection signal	PS22	MFS	J115-B7	1: paper present
P002-06	Fixing sub heater ON detection signal	H2	SHOND	J102-B4	1: ON
P002-07	Fixing main heater ON detection signal	H1	MHOND	J102-B6	1: ON
P002-08	Waste toner feeding screw locked detection signal	MSW4	WTFL	J114-B1	1: ON
P002-09	Developing assembly toner level signal	TS2	DTEP	J106-B8	0: toner absent
P002-10	Hopper toner level signal	TS1	TEP	J105-A6	0: toner absent
P002-11	Original size 1 detection signal	DS1	DSZ1	J110-B5	0: original present
P002-12	Original size 2 detection signal	DS2	DSZ2	J110-B8	0: original present
P002-13	Original size 3 A detection signal	DS3	DSZ3A	J110-B12	0: original present
P002-14	Original size 3 B detection signal	DS3	DSZ3B	J110-B11	0: original present
P002-15	Not used				

Address	Description	Notation	Signal	Jack	Remarks
P003-00	Left deck pick-up roll releasing solenoid drive signal	SL05	LDPURR	J121-A13	1: ON
P003-01	CC-X count signal	CCX10	CCXNTD	J123-6	1: count up
P003-02	High-voltage output enable signal	HVT	HVTRMT	J114-A10	0: ON
P003-03	Control card V drive signal	CCV	CCNTD	J106-B1	1: count up
P003-04	Feeding fan/cleaner fan drive signal (half speed)	FM06/07	FM6D	J109-1/ J114-B3	1: half speed
P003-05	Feeding fan/cleaner fan drive signal (full speed)	FM06/07	FM6D	J109-1/ J114-B3	1: full speed
P003-06	Fixing heat delivery/ discharge drive signal (half speed)	FM02 FM03	FM2D FM3D	J118-B7 J104-A1	1: half speed
P003-07	Discharge/drive signal (full speed)	FM02	FM2D	J118-B7	1: full speed
P003-08	Potential sensor power-on signal	POT	POT-S-ON	J103-B8	1: ON
P003-09	Multifeeder pick-up relay solenoid drive signal	SL15	MFRLSD	J115-B10	1: ON
P003-10	Developing bias AC output signal	HVT	BIASAC	J114-A3	0: ON
P003-11	Roller electrode bias output signal	HVT	PSTBIAS	J114-A1	0: ON
P003-12	Pre-transfer/separation AC output signal	HVT	PSTAC SPAC	J114-A7	0: ON
P003-13	Scanning lamp ON signal	LA1	LAON	J114-A8	0: ON
P003-14	Fixing main heater drive signal	H1	MHRD	J102-B5	0: ON
P003-15	Fixing sub heater drive signal	H2	SHRD	J102-B3	0: ON

Address	Description	Notation	Signal	Jack	Remarks
P004-00	Scanner motor brake signal	M03	M03BK	J112-B5	1: ON
P004-01	Scanner motor forward signal	M03	M03FW	J112-B7	0: forward 1: reverse
P004-02	Scanner motor drive signal	M03	M03ON	J112-B6	0: ON
P004-03	Scanner motor (current control) current limiter	M03	M03CL	J112-B4	1: ON
P004-04	Scanner motor mode 1 signal	M03	M03MD0	J112-B10	
P004-05	Scanner motor mode 2 signal	M03	M03MD1	J112-B9	
P004-06	Scanner motor mode 3 signal	M03	M03MD2	J112-B8	
P004-07	Blanking exposure power supply (0 V) signal	LED2	B0V	J103-A8	0: ON
P004-08	Control panel LCD back-light signal	LCD	LCDGHT	J105-B11	1: ON
P004-09	Control panel CPU reset signal	OPEPANE	OPRST	J105-B5	0: reset
P004-10	Internal signal (watch dog)				
P004-11	Power switch OFF signal	SW01	PWOFF	J104-A8	1: ON
P004-12	FT prohibit signal	M3	PWOFF	J112-B1	1: ON
P004-13	Not used				
P004-14	Internal signal (tray X shift start)				
P004-15	Internal signal (tray Y shift start)				

Address	Description	Notation	Signal	Jack	Remarks
P005-00	Front door open detection signal	SW03	FDOD	J104-A3	1: open
P005-01	Fixing/feeding unit detection signal	PS53	FFUCNT	J108-A2	0: connected
P005-02	Internal delivery signal	PS12	IDPD	J108-B12	0: paper present
P005-03	Multifeeder door open detection signal	PS46	MFDC	J105-A9	1: closed 0: open
P005-04	External delivery signal	PS10	EXDPD	J108-B7	1: paper present
P005-05	Fixing cleaning belt length detection signal	PS11	CBOP	J108-A13	1: belt absent
P005-06	Holding tray inlet paper detection signal	PS15	PS15D	J113-B10	1: paper present
P005-07	Holding tray registration paper detection signal	PS14	PS14D	J113-A3	1: paper present
P005-08	Fixing assembly outlet paper detection signal	PS47	FXDEL	J108-B4	1: paper present
P005-09	Holding tray pick-up paper detection signal	PS17	PS17D	J113-B11	1: paper present
P005-10	Holding tray re-circulating bar home position signal	PS19	HTLPD	J113-B6	0: home position
P005-11	Hopper connector detection			J105-A4	0: disconnect-ed
P005-12	Holding tray unit detection signal	HT	HTCNT	J113-A14	0: connected
P005-13	Power switch ON detection signal	SW1	SW1ON	J102-A6	0: ON
P005-14	Control card detection signal	CCV	CCNNT	J106-B2	1: card present
P005-15	Internal signal (encoder error detection)				1: error

Address	Description	Notation	Signal	Jack	Remarks
P006-00	Hopper motor (toner stirring) drive signal	M11	M10ON	J105-A3 J105-A4	1: ON
P006-01	Pre-exposure LED ON signal	LED1	PEXP	J103-B2	1: ON
P006-02	Hopper motor (toner supply) drive signal	M10	M11ON	J105-A1 J105-A2	1: ON
P006-03	Drum heater full-wave/half-wave switching signal	H3	DHRD	J102-B2	1: half wave 0: full wave
P006-04	Total copy counter drive signal	CNT1	TCNTD	J104-B2	1: count up
P006-05	Accessory copy counter drive signal	CNT2	OPCNTD	J104-B6	1: count up
P006-06	Scanner cooling fan drive signal (half speed)	FM08	FM8D	J104-A5	1: half speed
P006-07	Scanner cooling fan drive signal (full speed)	FM08	FM8D	J104-A5	1: full speed
P006-08	Fixing drive solenoid drive signal	SL03	FXDSD	J108-B18	1: ON
P006-09	Fixing cleaning belt drive signal	SL14	SL14	J108-A11	1: ON
P006-10	Delivery paper deflecting plate solenoid drive signal	SL02	DPDSD	J108-B10	1: ON
P006-11	Holding tray re-circulating lever motor drive signal	M07	M7ON	J113-A9	1: ON
P006-12	Holding tray registration clutch drive signal	CL03	HTRGCD	J113-B7	1: ON
P006-13	Holding tray separation clutch drive signal	CL06	HTSPCD	J113-B8	1: ON
P006-14	Holding tray forward clutch drive signal	CL05	HTFWCD	J113-A7	1: ON
P006-15	Holding tray reversing clutch drive signal	CL04	HTRVCD	J113-A6	1: ON

Address	Description	Notation	Signal	Jack	Remarks
P007-00	Upper right door open detection signal	PS41	RUPDOP	J119-B4	1: closed 0: open
P007-01	Lower right door open detection signal	PS42	RLWDOP	J119-B7	1: closed 0: open
P007-02	Copyboard cover closed signal	PS05	CBCC	J112-A4	1: closed 0: open
P007-03	Scanner home position signal	PS01	SCHP	J111-A2	1: home position
P007-04	Right deck open/closed detection signal	PS38	RDEOP	J116-B10	1: closed 0: open
P007-05	Left deck open/closed detection signal	PS40	LDEOP	J121-A2	1: closed 0: open
P007-06	Cassette 1 paper length 0 signal	SV3	C1PL0	J122-A5	
P007-07	Cassette 1 paper length 1 signal	SV3	C1PL1	J122-A6	
P007-08	Cassette 2 paper length 0 signal	SV4	C2PL0	J122-B5	
P007-09	Cassette 2 paper length 1 signal	SV4	C2PL1	J122-B6	
P007-10	Right deck paper detection signal	PS32	RDPD	J116-A7	1: paper present
P007-11	Left deck paper detection signal	PS35	LDPD	J121-A10	1: paper present
P007-12	Pick-up vertical path 1 paper detection signal	PS33	PS33D	J119-A7	1: paper present
P007-13	Pick-up vertical path 2 paper detection signal	PS36	PS36D	J121-B10	1: paper present
P007-14	Right deck lifter position sensor signal	PS31	RDLTP	J116-A4	1: pick-up position
P007-15	Left deck lifter position sensor signal	PS34	LDLTP	J121-A7	1: pick-up position

Address	Description	Notation	Signal	Jack	Remarks
P008-00	Cassette 3 paper length 0 signal	SV1	C3PL0	J122-A1	
P008-01	Cassette 3 paper length 1 signal	SV1	C3PL1	J122-A2	
P008-02	Cassette 4 paper length 0 signal	SV2	C4PL0	J122-B1	
P008-03	Cassette 4 paper length 1 signal	SV2	C4PL1	J122-B2	
P008-04	Pick-up vertical path 3 paper detection signal	PS27	PS27D	J117-B4	1: paper present
P008-05	Pick-up vertical path 4 paper detection signal	PS30	PS30D	J130-B4	1: paper present
P008-06	Cassette 3 paper detection signal	PS26	C3PD	J117-A7	1: paper present
P008-07	Cassette 4 paper detection signal	PS29	C4PD	J130-A7	1: paper present
P008-08	Cassette 3 lifter position sensor signal	PS25	C3LTP	J117-A4	1: pick-up position
P008-09	Cassette 4 lifter position sensor signal	PS28	C4LTP	J130-A4	1: pick-up position
P008-10	Internal signal (fixing assembly temperature error detection)				
P008-11	Internal signal (CVR error detection)				
P008-12	Internal signal (SSR error detection)				
P008-13	Internal signal (power supply switch open circuit detection)				
P008-14	Internal signal (total copy counter open circuit detection)				
P008-15	Internal signal (accessory counter open circuit detection)				

Address	Description	Notation	Signal	Jack	Remarks
P009-00	Holding tray feeding unit detection signal	HT	HTFCNT	J119-A2	0: connected
P009-01	Fixing claw jam detection signal	PS52	FXCJS	J108-A19	1: paper present
P009-02	Service switch detection signal	SSW1	SSWON	J106-B5	1: ON
P009-03	Scanner locked detection signal	PS48	SCLK	J114-A14	1: locked
P009-04	Left deck pick-up outlet paper detection signal	PS49	LEXTPD	J121-B5	1: paper present
P009-05	Cassette 3 open/closed detection	PS50	C3SS	J117-B7	1: open 0: closed
P009-06	Cassette 4 open/closed detection	PS51	C4SS	J130-B7	1: open 0: closed
P009-07	Sub thermistor error detection signal	TH2		J108-A9	1: error

Address	Description	Notation	Signal	Jack	Remarks
P010-00	Not used				
P010-01	Holding tray feeding 2 clutch drive signal	CL02	HTF2CD	J112-A9	1: ON
P010-02	Fixing/feeding unit locking solenoid drive signal	SL13	FFULSD	J108-B2	1: ON
P010-03	Power supply unit internal relay drive signal	RL401	RL401D	J102-A5	1: ON
P010-04	Not used				
P010-05	Not used				
P010-06	Not used				
P010-07	Not used				

Address	Description	Notation	Signal	Jack	Remarks
P011-00	Not used				
P011-01	Not used				
P011-02	Not used				
P011-03	Not used				
P011-04	Multifeeder pick-up solenoid drive signal	SL10	SL10D	J115-B13	1: ON
P011-05	Internal signal (clock)				
P011-06	Not used				
P011-07	Pick-up motor brake signal	M02	M02BLK	J114-B5	1: brake ON

Address	Description	Notation	Signal	Jack	Remarks
P012-00	Internal signal (digit)			J125-1	
P012-01	Internal signal (digit)			J125-2	
P012-02	Internal signal (digit)			J125-3	
P012-03	Internal signal (digit)			J125-4	
P012-04	Not used				
P012-05	Not used				
P012-06	Not used				
P012-07	Not used				

Address	Description	Notation	Signal	Jack	Remarks
P017-00	Internal signal (key return)			J125-5	
P017-01	Internal signal (key return)			J125-6	
P017-02	Internal signal (key return)			J125-7	
P017-03	Internal signal (key return)			J125-8	
P017-04	Internal signal (key return)			J125-9	
P017-05	Internal signal (key return)			J125-10	
P017-06	Internal signal (key return)			J125-11	
P017-07	Internal signal (key return)			J125-12	

Address	Description	Notation	Signal	Jack	Remarks
P020	Multifeeder paper width signal (analog)	SVR1		J115-B4	
P021	Cassette 1 paper width signal	SVR4	C1PW	J130-B10	
P022	Cassette 2 paper width signal	SVR5	C2PW	J130-A12	
P023	Photosensitive drum potential signal (analog)		POT	J103-B9	
P024	Cassette 3 paper width signal	SVR2	C3PW	J117-B10	
P025	Cassette 4 paper width signal	SVR3	C4PW	J117-A12	
P026	Not used				

RDF-D1 (1/6)

Address	Description	Notation	Signal	Jack	Remarks
P027-00	Solenoid 2 drive signal		SL2D		0: ON
P027-01	Clutch 1 drive signal		CL1D		0: ON
P027-02	Solenoid 4 drive signal		SL4D		0: ON
P027-03	Solenoid 6 drive signal		SL6D		0: ON
P027-04	Solenoid 5 drive signal		SL5D		0: ON
P027-05	Solenoid 1 drive signal (released)		SL1RD		0: OFF
P027-06	Solenoid 1 drive signal		SL1AD		0: ON
P027-07	Solenoid over drive signal				0: ON
P028-00	Not used				
P028-01	Not used				
P028-02	Not used				
P028-03	Not used				
P028-04	Stopper motor (M7) excitation A signal				0: ON
P028-05	Stopper motor (M7) excitation B signal				0: ON
P028-06	Stopper motor (M7) drive signal				0: ON
P028-07	AE sensor discharging signal				0: ON
P029-00	Edge detection signal		EDGO		1: ON
P029-01	Cooling fan (M9) drive signal		M9D		0: ON
P029-02	Re-circulating motor (M4) drive signal		RCMD		0: ON
P029-03	Not used				
P029-04	Not used				
P029-05	Not used				
P029-06	Not used				
P029-07	Not used				

RDF-D1 (2/6)

Address	Description	Notation	Signal	Jack	Remarks
P030-00	Edge detection signal (S20)		EDG		0: paper present
P030-01	Registration detection signal (S3)		RG1		0: paper detection
P030-02	Belt motor clock detection signal (S11)		BTLK		Alternates between 0 and 1.
P030-03	Pick-up motor clock detection signal (S9)		PCLK		Alternates between 0 and 1.
P030-04	Pre-registration detection signal (S17)		RGF		0: paper detection
P030-05	Not used				
P030-06	Not used				
P030-07	Not used				
P031-00	D/A converter serial signal				
P031-01	D/A converter load signal				
P031-02	Reversing motor (M2) mode 0 signal				
P031-03	Reversing motor (M2) mode 1 signal				
P031-04	D/A converter serial communication clock signal				
P031-05	Delivery motor clock detection signal (S12)		DLCLK		Alternates between 0 and 1.
P031-06	Not used				
P031-07	Not used				
P032-00	Internal signal (sensor sensitivity switch signal 2)				
P032-01	Internal signal (sensor sensitivity switch signal 1)				
P032-02	Reversing motor (M2) drive signal				0: ON
P032-03	Belt motor clock detection signal (S11)		BTLK		Alternates between 0 and 1.
P032-04	Feeding motor clock detecting signal (S22)		FDCLK		Alternates between 0 and 1.
P032-05	Pick-up motor (M1) CW rotation signal				1: CW rotation
P032-06	Pick-up motor (M1) rotation speed control signal				1: ON
P032-07	Pick-up motor (M1) CCW rotation signal				1: CCW rotation

RDF-D1 (3/6)

Address	Description	Notation	Signal	Jack	Remarks
P036-00	Not used				
P036-01	Not used				
P036-02	Not used				
P036-03	Not used				
P036-04	DIP switch 1–5 detection signal				1: ON
P036-05	DIP switch 1–6 detection signal				1: ON
P036-06	DIP switch 1–7 detection signal				1: ON
P036-07	Right cover open/closed detection signal (S23/S24)		RCVF		1: closed
P037-00	Not used				
P037-01	Not used				
P037-02	Not used				
P037-03	Not used				
P037-04	Push switch 1 detection signal				1: ON
P037-05	Push switch 2 detection signal				1: ON
P037-06	Push switch 3 detection signal				1: ON
P037-07	Left cover open/closed detection signal (S13/S14)		LCVF		1: closed
P038-00	Not used				
P038-01	Not used				
P038-02	Not used				
P038-03	Not used				
P038-04	Re-circulating lever hold detection signal				0: hold
P038-05	RDF open detection signal (S31)		RFOS		1: closed
P038-06	Manual feed et detection signal (S32)		MFST		1: paper detection
P038-07	Sub try detection signal (S28)		TYP		1: closed

RDF-D1 (4/6)

Address	Description	Notation	Signal	Jack	Remarks
P039-00	Re-circulating lever detection signal 2 (S30)		RSC2		0: flag absent
P039-01	Re-circulating lever detection signal (S29)		RSC1		0: flag absent
P039-02	Pick-up roller home position detection signal 1 (S8)		PRHP1		1: home present
P039-03	Skew detection signal 2 (S16)		SKW2		1: paper detection
P039-04	Paper pick-up signal 2 (S15)		PDP2		1: paper detection
P039-05	Power drop monitor signal				1: low
P039-06	Stopper home position sensor (S26)		SPHP		1: home position
P039-07	Tray position detection signal (S25)		TRY		1: down
P040-00	Not used				
P040-01	Original set LED ON signal				0: ON
P040-02	LED1 ON signal				0: ON
P040-03	LED2 ON signal				0: ON
P040-04	LED3 ON signal				0: ON
P040-05	Not used				
P040-06	Not used				
P040-07	Not used				
P041-00	Matrix digit 0 signal				
P041-01	Matrix digit 1 signal				
P041-02	Matrix digit 2 signal				
P041-03	Matrix digit 3 signal				
P041-04	Matrix common 0 signal				
P041-05	Matrix common 1 signal				
P041-06	Matrix common 2 signal				
P041-07	Matrix common 3 signal				

RDF-D1 (5/6)

Address	Description	Notation	Signal	Jack	Remarks
P042-00	A/D demultiplexer select signal 1				
P042-01	A/D demultiplexer select signal 2				
P042-02	A/D demultiplexer select signal 3				
P042-03	Encoder FV conversion adjustment signal				
P042-04	Feeding motor (M8) drive signal				0: ON
P042-05	Feeding motor (CW) rotation signal				1: CW rotation
P042-06	Feeding motor mode 1 signal				
P042-07	Feeding motor mode 2 signal				
P043-00	Skew detection signal 1 (S4)		SKW1		0: paper detection
P043-01	Manual feed registration detection signal (S19)		MFRG		0: paper detection
P043-02	Original detection signal 1 (S1)		DOD1		1: paper detection
P043-03	Original detection signal 2 (S27)		DOD2		1: paper detection
P043-04	Pick-up detection signal 1 (S2)		PDP1		1: paper detection
P043-05	Reversal detection signal (S5)		TRS		1: paper detection
P043-06	Delivery detection signal (S6)		DER		1: paper present
P043-07	Power drop monitor signal (internal)				1: down
P048	Belt motor current control DA signal				Hexadecimal (4 digits)
P049	Reversing motor current control DA signal				
P050	AE sensor LED (O) DA signal				
P051	AE sensor LED (G) DA signal				
P052	AE sensor LED offset DA signal				
P053	Original sensor (S1) DA signal				
P054	Registration sensor (S3) DA signal				
P055	Skew sensor (S4) DA signal				

RDF-D1 (6/6)

Address	Description	Notation	Signal	Jack	Remarks
P056	Image leading edge sensor (S20) DA signal				Hexadecimal (4 digits)
P057	Manual feed set sensor (S32) DA signal				
P058	Original sensor 2 (S27) DA signal				
P059	Not used				
P060	Original detection VA resistance (VR1)				Hexadecimal (4 digits)

Stapler Sorter-E2 (1/8)

Address	Description	Notation	Signal	Jack	Remarks
P062-00	Feeding motor (M1) control signal		FDPWM		1: ON
P062-01	Push bar drive motor (M7) rotation control signal				1: UP
P062-02	Not used				
P062-03	Push bar drive motor (M7) drive signal				1: ON
P062-04	Guide bar motor (M8) pulse signal 1		GBMA		1: ON
P062-05	Guide bar motor (M8) pulse signal 2		GBMB		1: ON
P062-06	Guide bar motor (M8) pulse signal 3		GBMA		1: ON
P062-07	Guide bar motor (M8) pulse signal 4		GBMB		1: ON
P063-00	Reference wall drive motor (M6) control signal 1		GWMA		1: ON
P063-01	Reference wall drive motor (M6) control signal 2		GWMB		1: ON
P063-02	Non-sort paper detection signal (PI3)		NSPEXT		1: paper detection
P063-03	Reference wall home position signal (PI13)		GWHP		1: home position
P063-04	Sort paper detection signal (PI4)		SPEXT		1: paper present
P063-05	Guide bar home position signal (PI16)		GBHP		1: home position
P063-06	Multi guide drive motor control signal 1 (M5)		MGMA		1: ON
P063-07	Multi guide drive motor control signal 1 (M5)		MGMB		1: ON

Stapler Sorter-E2 (2/8)

Address	Description	Notation	Signal	Jack	Remarks
P064-00	D/A converter serial signal				
P064-01	Not used				
P064-02	Feeding motor (M1) speed control signal		FDMVC		1: speed control
P064-03	D/A converter load signal				0: load
P064-04	D/A converter serial communication clock signal				
P064-05	Not used				
P064-06	Not used				
P064-07	Not used				
P065-00	Feeding motor (M1) CW rotation		FDMCCW		1: ON
P065-01	Feeding motor (M1) CCW rotation		FDMCCW		1: ON
P065-02	Stapler unit claw releasing solenoid (SL5) drive signal		MHRSLD		1: ON
P065-03	Paper path switching solenoid (SL1) drive signal		PSLD		1: ON
P065-04	Paper retaining solenoid (SL3) drive signal		PHSLD		1: ON
P065-05	Stapler unit position claw releasing solenoid (SL5) drive signal		HDRSLD		1: ON
P065-06	Stapler motor (M2) CCW rotation signal		SPMCCW		1: ON
P065-07	Stapler motor (M2) CW rotation signal		SPMCW		1: ON

Stapler Sorter-E2 (3/8)

Address	Description	Notation	Signal	Jack	Remarks
P066-00	Bin shift motor (M9) drive signal				1: UP
P066-01	Stapler until swing motor (M4) rotation signal				1: ON
P066-02	Stapler unit swing motor (M4) drive signal				1: ON
P066-03	Not used				
P066-04	Not used				
P066-05	Not used				
P066-06	Not used				
P066-07	Not used				
P067-00	Stapler unit shift home position signal (S2)		MVHP		1: home position
P067-01	Logic voltage monitor signal				0: down
P067-02	Not used				
P067-03	Bin paper sensor 2 analog input signal (S7)				At input, alternates between 1 and 0.
P067-04	Stapler paper sensor analog input signal				At input, alternates between 1 and 0.
P067-05	Bin paper sensor analog input signal (S4)				At input, alternates between 1 and 0.
P067-06	Feeding motor current analog input signal				At input, alternates between 1 and 0.
P067-07	Feeding motor speed control analog input signal				At input, alternates between 1 and 0.
P071-00	Matrix digit output signal 0				
P071-01	Matrix digit output signal 1				
P071-02	Matrix digit output signal 2				
P071-03	Matrix digit output signal 3				
P071-04	Matrix digit output signal 4				
P071-05	Matrix SEG output signal 0				
P071-06	Matrix SEG output signal 1				
P071-07	Matrix SEG output signal 2				

Stapler Sorter-E2 (4/8)

Address	Description	Notation	Signal	Jack	Remarks
P072-00	Matrix COM input signal 0				
P072-01	Matrix COM input signal 1				
P072-02	Matrix COM input signal 2				
P072-03	Matrix COM input signal 3				
P072-04	Matrix COM input signal 4				
P072-05	Gear switching solenoid (SL4) drive signal		GCSLD		1: ON
P072-06	Not used				
P072-07	All solenoids drive signal				1: all ON
P073-00	Stapling home position signal (Q1)		SPL-HP		1: home position
P073-01	Reference wall HP detection signal (PI13)		GWHP		1: home position
P073-02	Stapler unit swing HP detection signal (PI9)		SWHP		1: home position
P073-03	Multi guide HP detection signal (PI12)		MGHP		1: home position
P073-04	Stapler unit swing prohibit position signal (MSW2)		SGSTPP		1: staple enabled
P073-05	Stapler unit orientation position 2 signal (S1)		HLD2		1: front signal
P073-06	Stapler unit orientation position 1 signal (S1)		HLD1		1: 2, rear 1 staple
P073-07	Paper retaining signal (PI11)		PHS		1: retaining position
P074-00	Not used				
P074-01	Multi guide drive motor/reference wall drive motor drive signal				1: ON
P074-02	Not used				
P074-03	Not used				
P074-04	Not used				
P074-05	Not used				
P074-06	Not used				
P074-07	Not used				

Stapler Sorter-E2 (5/8)

Address	Description	Notation	Signal	Jack	Remarks
P075-00	Stapling position LED4 ON signal				1: ON
P075-01	Stapling position LED1 ON signal				1: ON
P075-02	Add Staple LED ON signal				1: ON
P075-03	Stapling position LED5 ON signal				1: ON
P075-04	Stapling position LED2 ON signal				1: ON
P075-05	Front access key LED ON signal				1: ON
P075-06	Stapling position LED3 ON signal				1: ON
P075-07	Staple key LED ON signal				1: ON
P076-00	DIP switch 1-4 detection signal				1: ON
P076-01	DIP switch 1-3 detection signal				1: ON
P076-02	DIP switch 1-2 detection signal				1: ON
P076-03	DIP switch 1-1 detection signal				1: ON
P076-04	Joint signal (PI1)		JNTS		1: connected to copier
P076-05	Not used				
P076-06	Not used				
P076-07	Not used				

Stapler Sorter-E2 (6/8)

Address	Description	Notation	Signal	Jack	Remarks
P077-00	DIP switch 1-8 detection signal				1: ON
P077-01	DIP switch 1-7 detection signal				1: ON
P077-02	DIP switch 1-6 detection signal				1: ON
P077-03	DIP switch 1-5 detection signal				1: ON
P077-04	Front door open signal (MSW3)		DROPN		1: closed
P077-05	Not used				
P077-06	Not used				
P077-07	Not used				
P078-00	Staple mode key check signal				1: ON
P078-01	Stapler unit set detection signal				1: stapler unit present
P078-02	Staple absent (SW1) signal		HKEPN		1: staple absent
P078-03	Stapler safety detection signal (MSW1)		SFTYSW		1: ON
P078-04	Stapler unit swing position signal (PI10)		SWGP		1: ON
P078-05	Not used				
P078-06	Not used				
P078-07	Not used				
P079-00	Front access key check signal				1: ON
P079-01	Shift down key check signal				1: ON
P079-02	Bin home position signal (PI18)		BHP		1: home position
P079-03	PCB check signal				0: S-order PCB
P079-04	Front door open internal signal		DROPN		1: door closed
P079-05	Not used				
P079-06	Not used				
P079-07	Not used				

Stapler Sorter-E2 (7/8)

Address	Description	Notation	Signal	Jack	Remarks
P080-00	Staple Start key check signal				1: ON
P080-01	Shift up key check signal				1: ON
P080-02	Feeding guide home position detection signal (PI6)				1: ON
P080-03	Bin paper detection signal (PI7)				1: paper present
P080-04	Feeding guide UP signal (PI2)				1: UP
P080-05	Not used				
P080-06	Not used				
P080-07	Not used				
P081-00	Not used				
P081-01	Not used				
P081-02	Not used				
P081-03	Not used				
P081-04	Not used				
P081-05	Controller PCB LED1 ON signal				1: ON
P081-06	Controller PCB LED2 ON signal				1: ON
P081-07	Not used				
P083-00~07	Bin paper sensor 2 (S7) A/D input				Hexadecimal (4 digits)
P084-00~07	Stapler internal paper sensor (S5) A/D input				
P085-00~07	Bin internal sensor (S4) A/D input				
P086-00~07	Feeding motor current (M1) A/D input				
P087-00~07	Feeding motor speed control (M1) A/D input				
P088-00~07	Stapler internal paper sensor (S5) D/A output				
P089-00~07	Swing motor current (M4) D/A output				
P090-00~07	Staple unit shift motor current (M3) D/A output				

Stapler Sorter-E2 (8/8)

Address	Description	Notation	Signal	Jack	Remarks
P091-00~07	Bin shift motor current (M9) D/A output				Hexadecimal (4 digits)
P092-00~07	Guide bar drive motor current (M8) D/A output				
P093-00~07	Bin paper light adjustment (S4) D/A output				
P094-00~07	Push bar drive motor current (M7)				
P095-00~07	Bin paper sensor 2 light adjustment (S7) D/A output				

Sorter-G1 (1/3)

Address	Description	Notation	Signal	Jack	Remarks
P062-00	Joint signal (MS1)	MS1	SOP		1: open
P062-01	Not used				
P062-02	Not used				
P062-03	Not used				
P062-04	Not used				
P062-05	Not used				
P062-06	Bin paper sensor				0: paper present
P062-07	Not used				
P063-00	Not used				
P063-01	Not used				
P063-02	Not used				
P063-03	Not used				
P063-04	Not used				
P063-05	Not sued				
P063-06	Not used				
P063-07	Not used				
P064-00	Bin paper sensor	PT1	BPD		1: paper present
P064-01	24V detection				1: power down
P064-02	Bin HP sensor connector detection				0: connector off
P064-03	Lead cam sensor connector detection				0: connector off
P064-04	Bin shift clock sensor connector detection				0: connector off
P064-05	Guide bar HP sensor connector detection				0: connector off
P064-06	Not used				
P064-07	Not used				

Sorter-G1 (2/3)

Address	Description	Notation	Signal	Jack	Remarks
P065-00	Feeding motor clock sensor	PI6	FMCLK		
P065-01	Bin shift motor clock sensor	PI9	BMCLK		
P065-02	Lead cam sensor	PI2	LCHP		1: HP
P065-03	Bin HP sensor	PI3	BHP		1: HP
P065-04	Guide bar HP sensor	PI7	SGBHP		1: HP
P065-05	Not used				
P065-06	Not used				
P065-07	Not used				
P066-00	Not sued				
P066-01	Not used				
P066-02	Guide bar swing motor pulse signal 0	M3	GBMA		
P066-03	Guide bar swing motor pulse signal 1	M3	GBMB		
P066-04	Feeding motor clock sensor	PI6	FMCLK		
P066-05	Not used				
P066-06	Bin shift motor clock sensor	PI9	BMCLK		
P066-07	Guide bar swing motor control signal		GBMON		1: ON
P067-00	Feeding motor PWM signal	M1	FMD		0: ON
P067-01	Feeding motor brake signal	M1			1: brake
P067-02	Bin shift motor PWM signal	M2			1: ON
P067-03	Bin shift motor drive singal	M2			1: ON
P067-04	Paper path switching sole-noid drive signal	SL2	PSLD		1: ON
P067-05	Not used				
P067-06	Paper retaining plate solenoid drive signal	SL3	PHSLD		1: ON
P067-07	Bin shift motor UP signal	M2	BMUP		0: UP

Sorter-G1 (3/3)

Address	Description	Notation	Signal	Jack	Remarks
P068-00	DIP switch SW1				0: ON
P068-01	DIP switch SW2				0: ON
P068-02	DIP switch SW3				0: ON
P068-03	DIP switch SW4				0: ON
P068-04	Push switch SW2				0: ON
P068-05	Push switch SW3				0: ON
P068-06	Not used				
P068-07	Not used				
P069-00	Bin paper sensor D/A output 0				
P069-01	Bin paper sensor D/A output 1				
P069-02	Bin paper sensor D/A output 2				
P069-03	Bin paper sensor D/A output 3				
P069-04	Bin paper sensor D/A output 4				
P069-05	Bin paper sensor D/A output 5				
P069-06	Bin paper sensor D/A output 6				
P069-07	Bin paper sensor D/A output 7				
P070-00	Joint sensor				0: open
P070-01	Door sensor				0: open
P070-02	Not used				
P070-03	Not used				
P070-04	Sort sensor				1: paper present
P070-05	Non sort sensor				1: paper present
P070-06	Not used				
P070-07	Not used				
Hereafter	Not used				

Address	Description	Notation	Signal	Jack	Remarks
P097-00 P097-01	Primary charging wire cleaning motor drive signal	M12	PCLM	J103-B3 J103-B4	1/0: CW rotation 0/1: CCW rotation
P097-02 P097-03	Pre-transfer charging wire cleaning motor drive signal	M13	PTRCLM	J103-A1 J103-A2	1/0: CW rotation 0/1: CCW rotation
P097-04 P097-05	Transfer/separation charging wire cleaning motor drive signal	M06	TSCLM	J108-B19 J108-A1	1/0: CW rotation 0/1: CCW rotation
P097-06	Primary charging wire cleaner HP signal		PCLHP		1: HP
P097-07	Not used				

Address	Description	Notation	Signal	Jack	Remarks
P098-00	Not used				
P098-01	Pre-transfer charging wire cleaner home position signal		PTCLHP		1: HP
P098-02	Transfer/separation charging wire cleaner home position signal		TSCLHP		1: HP
P098-03	Not used				
P098-04	Holding tray Y motor hold signal	M08	M08HLD	J113-A12	
P098-05	Holding tray Y motor (phase A) signal	M08	M08A	J113-A13	
P098-06	Holding tray Y motor (phase B) signal	M08	M08B	J113-A11	
P098-07	Holding tray X motor hold signal	M09	M09HLD	J113-B3	

Address	Description	Notation	Signal	Jack	Remarks
P100-00	Holding tray X motor (phase A) signal	M09	M09A	J113-B2	
P100-01	Holding tray X motor (phase B) signal	M09	M09B	J113-B4	
P100-02	Holding tray Y home position signal	PS20	HTXHP	J113-A10	
P100-03	Holding tray X home position signal	PS21	HTYHP	J113-B1	1: HP
P100-04	Lens X motor hold signal	M04	M04ACM M04BCM	J110-A3 J110-A6	
P100-05	Lens X motor (phase A) signal	M04	M04A	J110-A1 J110-A2	
P100-06	CVR PWM signal			J111-B7	
P100-07	Not used				

Address	Description	Notation	Signal	Jack	Remarks
P101-00	Lens X motor (phase B) signal	M04	M04B	J110-A4 J110-A5	
P101-01	Lens Y motor hold signal	M05	M05ACM M05BCM	J110-A12 J110-A15	
P101-02	Not used				
P101-03	Not used				
P101-04	Not used				
P101-05	Not used				
P101-06	Not used				
P101-07	Not used				

Address	Description	Notation	Signal	Jack	Remarks
P102-00	Lens Y motor (phase A) signal	M05	M05A	J110-A10 J110-A11	
P102-01	Lens Y motor (phase B) signal	M05	M05B	J110-A13 J110-A14	
P102-02	Lens X home position signal	PS06	LXHP	J110-A8	1: HP
P102-03	Lens Y home position signal	PS07	LYHP	J110-B2	1: HP
P102-04	Internal signal (lens X operation complete)				
P102-05	Internal signal (lens Y operation complete)				
P102-06	Internal signal (holding tray X operation complete)				
P102-07	Internal signal (holding tray Y operation complete)				

Address	Description	Notation	Signal	Jack	Remarks
P104-00	Not used				
P104-01	Not used				
P104-02	Internal signal (holding tray X shift start)				
P104-03	Not used				
P104-04	Not used				
P104-05	Not used				
P104-06	Not used				
P104-07	Not used				

Address	Description	Notation	Signal	Jack	Remarks
P105-00	Internal signal (Holding tray Y shift start)				
P105-01	Not used				
P105-02	Not used				
P105-03	Not used				
P105-04	Not used				
P105-05	Not used				
P105-06	Not used				
P105-07	Not used				

Address	Description	Notation	Signal	Jack	Remarks
P118-00	Digit 0 input				
P118-01	Digit 0 input				
P118-02	Digit 0 input				
P118-03	Digit 0 input				
P118-04	Digit 0 input				
P118-05	Digit 0 input				
P118-06	Digit 0 input				
P118-07	Digit 0 input				

Address	Description	Notation	Signal	Jack	Remarks
P119-00	Digit 1 input				
P119-01	Digit 1 input				
P119-02	Digit 1 input				
P119-03	Digit 1 input				
P119-04	Digit 1 input				
P119-05	Digit 1 input				
P119-06	Digit 1 input				
P119-07	Digit 1 input				

Address	Description	Notation	Signal	Jack	Remarks
P120-00	Digit 2 input				
P120-01	Digit 2 input				
P120-02	Digit 2 input				
P120-03	Digit 2 input				
P120-04	Digit 2 input				
P120-05	Digit 2 input				
P120-06	Digit 2 input				
P120-07	Digit 2 input				

Address	Description	Notation	Signal	Jack	Remarks
P121-00	Digit 3 input				
P121-01	Digit 3 input				
P121-02	Digit 3 input				
P121-03	Digit 3 input				
P121-04	Digit 3 input				
P121-05	Digit 3 input				
P121-06	Digit 3 input				
P121-07	Digit 3 input				

Note: P122 through P124 are ports in the paper deck-A1.

Address	Description	Notation	Signal	Jack	Remarks
P122-00	Deck lifter UP signal	M102	DLUP	J2001-A5	1: UP
P122-01	Deck lifter motor drive signal	M102	DLMON	J2001-A6	1: ON
P122-02	Deck open LED ON signal	LED100	DOLON	J2001-A7	1: ON
P122-03	Deck pick-up roller releasing solenoid drive signal	SL101	DPRSD	J2001-A8	0: ON
P122-04	Deck pick-up clutch drive signal	CL102	DPUCD	J2001-A9	0: ON
P122-05	Deck vertical path clutch drive signal	CL101	DVPCD	J2001-A10	0: ON
P122-06	Deck main motor drive signal	M101	DMON	J2001-A11	0: ON
P122-07	Deck main motor double-speed signal	M101	DMDS	J2001-A12	0: double speed

Address	Description	Notation	Signal	Jack	Remarks
P123-00	Deck pick-up guide open detection signal	Q105	DPUGO	J2001-B7	0: open
P123-01	Deck set detection	Q104	DSET	J2001-B8	0: open
P123-02	Deck main motor drive detection signal	M101	DMDT	N.C	0: ON
P123-03	Deck pick-up clutch open circuit detection	CL102	DPCDT	N.C	1: open circuit
P123-04	Deck lifter lower limit detection signal	SW103	DLLD	J2001-A1	1: lower limit
P123-05	Deck open signal	SW100	DOPN	J2001-A2	0: ON
P123-06	Deck open detection signal	SW102	DOPD	J2001-A3	0: open
P123-07	Deck lifter position detection signal	Q110	DLPD	J2001-A4	1: pick-up position

Address	Description	Notation	Signal	Jack	Remarks
P124-00	Deck paper supply position detection signal	Q103	DPSP	J2001-B1	1→0: paper supply position
P124-01	Deck paper absent detection signal	Q108	DPE	J2001-B2	1: paper present
P124-02	Deck pick-up paper detection signal	Q107	DPPD	J2001-B3	1: paper detection
P124-03	Deck vertical path paper detection signal	Q106	DVPD	J2001-B4	1: paper detection
P124-04	Deck main motor brake signal	M101	DMBRK	J2001-B5	1: brake
P124-05	Not used				
P124-06	Deck open solenoid drive signal	SL102	DOPSD	J2001-B6	0: ON
P124-07	Not used				

Address	Description	Notation	Signal	Jack	Remarks
P125-00	Scanner motor cooling fan rotation detection signal	FM9	FM9ROT	J2001-B11	0: rotation
P125-01	Not used				
P125-02	Not used				
P125-03	Not used				
P125-04	Not used				
P125-05	Not used				
P125-06	Not used				
P125-07	Not used				

F. Adjustment Mode (✻3✻)

Using the ◄◄ or ►► key, select the appropriate screen.
Press the appropriate item to select. (The selected item is highlighted.)
Enter a value, and press the OK key to store. Make a check by pressing the user mode key.

<Screen 3-1>

Item	Description	Settings	Remarks
LIGHT-5	Use it to adjust the reference activation voltage for the scanning lamp used during copying.	–35~35	A higher setting decreases the copy density.
LIGHT-5P	Use it to adjust the reference activation voltage for the scanning lamp used during copying in photo mode.	–35~35	A higher setting decreases the copy density.
AE-SLOP	Use it to adjust the intensity used when copying a newspaper original in AE mode.	0~1023	A higher setting increases the density of the copies of a newspaper original.
GLEAM-5	Use it to adjust the degree of optimum exposure.	53~139	A higher setting decreases the copy density.

<Screen 3-2>

Item	Description	Settings	Remarks
BRAKE-SC	Not used		
REGIST	Use it to adjust the leading edge margin used during copying (registration).	–100~100	A higher setting delays the timing at which the registration roller turns on (decreasing the leading edge margin). Unit: 0.1 mm

<Screen 3-3>

Item	Description	Settings	Remarks
LE-BLANK	Use it to adjust the leading edge non-image width (blanking exposure activation period).	–100~100	A higher setting increases the leading edge non-image width.
F-BLANK	Use it to adjust the front margin (blank exposure lamp activation period).	–100~100	A higher setting increases the front margin.
R-BLANK	Use it to increase the rear margin (blank exposure lamp activation period).	–100~100	A higher setting decreases the rear margin.
TE-BLANK	Use it to adjust the trailing edge non-image width (blank exposure activation period).	–100~100	A higher setting decreases the trailing edge non-image width.

<Screen 3-4>

Item	Description	Settings	Remarks
PRIMARY	Use it to adjust the application voltage correction value for the primary charging assembly. (It is pre-adjusted at the factory; enter the value recorded on the service label if you have replaced the DC controller PCB.)	0~1023	
BIAS	Use it to adjust the developing assembly bias. (It is pre-adjusted at the factory; enter the value recorded on the service label if you have replaced the DC controller PCB.)	Label value ±34	
PRE-TRANS	Use it to adjust the current for the pre-transfer charging assembly. (It is pre-adjusted at the factory; enter the value recorded on the label if you have replaced the DC controller PCB.)	Label value ±200	

<Screen 3-5>

Item	Description	Settings	Remarks
TRN-1	Use it to adjust the current (1st side) for the transfer charging assembly. (It is pre-adjusted at the factory; enter the value recorded on the service label if you have replaced the DC controller PCB.)	Label value ±100	
TRN-DUP	Use it to adjust the current (2nd side of two-sided) for the transfer charging assembly. (It is pre-adjusted at the factory; enter the value recorded on the service label if you have replaced the DC controller PCB.)	Label value ±100	
TRN-OVL	Use it to adjust the current (2nd side of overlay) for the transfer charging assembly. (It is pre-adjusted at the factory; enter the value recorded on the service label if you have replaced the DC controller PCB.)	Label value ±100	

<Screen 3-6>

Item	Description	Settings	Remarks
SEP-1	Use it to adjust the current (1st side) for the separation charging assembly. (It is pre-adjusted at the factory; enter the value recorded on the service label if you have replaced the DC controller PCB.)	Label value ±200	
SEP-DUP	Use it to adjust the current (2nd side of two-sided) for the separation charging assembly. (It is pre-adjusted at the factory; enter the value recorded on the service label if you have replaced the DC controller PCB.)	Label value ±200	
SEP-OVL	Use it to adjust the current (2nd side of overlay) for the separation charging assembly. (It is pre-adjusted at the factory; enter the value on the service label if you have replaced the DC controller PCB.)	Label value ±200	

<Screen 3-7>

Item	Description	Settings	Remarks
C1-STMTR (Not used)	Use it to fine-adjust or enter the paper width basic value (STMTR) for the cassette 1.	000~255	
C1-A4R (Not used)	Use it to fine-adjust or enter the paper width basic value (A4R) for the cassette 1.	000~255	
C2-STMTR (Not used)	Use it to fine-adjust or enter the paper width basic value (STMTR) for the cassette 3.	000~255	
C2-A4R (Not used)	Use it to fine adjust or enter the paper width basic value (A4R) for the cassette 2.	000~255	

<Screen 3-8>

Item	Description	Settings	Remarks
C3-STMTR (Not used)	Use it to fine-adjust or enter the paper width basic value (STMR) for the cassette 3.	000~255	
C3-A4R (Not used)	Use it to fine-adjust or enter the paper width basic value (A4R) for the cassette 3.	000~255	
C4-STMTR	Use it to fine-adjust or enter the paper width basic value (STMTR) for the cassette 4.	000~255	
C4-A4R	Use it to fine-adjust or enter the paper width basic value (A4R) for the cassette 4.	000~255	

<Screen 3-9>

Item	Description	Settings	Remarks
MF-A6R	Use it to fine-adjust or enter the paper width basic value (A6R) for the multifeeder.	000~255	
MF-A4R	Use it to fine-adjust or enter the paper width basic value (A4R) for the multifeeder.	000~255	
MF-A4	Use it to fine-adjust or enter the paper width basic value (A4) for the multifeeder.	000~255	

<Screen 3-10>

Item	Description	Settings	Remarks
BOOK-ERA	Use it to adjust the width for book frame erasing.	10~30	Unit:1 mm A higher setting increases the margin.
ATM	Use it to select an operating environment in relation to atmospheric pressure. 0: 1 to 0.75 atm (up to altitude of 2500 m) 1: 0.75 to 0.70 atm (up to altitude of 2500 to 3000 m) 2: 0.70 to 0.65 atm (up to altitude of from 3000 to 3500 m)	0~2	A low atmospheric pressure tends to cause leakage; lower the target potential for potential control.

<Screen 3-11>

Item	Description	Settings	Remarks
DOC-ST	Us it to adjust the original stop position for the RDF. The RDF will switch position for left, right, and manual feed pick-up mechanisms.	–1023~ 1023	Unit: 0.5 mm The effective range is between –10 and +10, beyond which no change occurs.
P-INTRVL *	Use it to adjust the original-to-original distance for the RDF (2-on-1 mode). The RDF will switch position for left and right pick-up mechanisms.	–1023~ 1023	Unit: 0.5 mm The effective range is between –10 and +10, beyond which no change occurs.

* Used to adjust sheet-to-sheet distance for reduced image composition using the RDF (pp. 5-32 to -35 of the RDF-D1 Service Manual). The adjustments that may be made on the RDF may be made using the copier: a press on the DIP switch for the RDF corresponds to a change in the settings in service mode.

<Screen 3-12>

Item	Description	Settings	Remarks
RFAE-F5L	Use it to adjust the RDF scanning lamp reference activation voltage (left pick-up in AE mode).	–1023~ 1023	A higher setting makes the slope gentle.
RFAE-F9L	Use it to adjust the RDF newspaper original intensity (left pick-up in AE mode).	–1023~ 1023	A higher setting makes the slope steep.
RFAE-F5R	Use it to adjust the RDF scanning lamp reference activation voltage (right pick-up in AE mode).	–1023~ 1023	A higher setting makes the slope gentle.
RFAE-F9R	Use it to adjust the RDF newspaper original intensity (right pick-up in AE mode).	–1023~ 1023	A higher setting makes the slope steep.

Caution:

Keep the following in mind when using 'DOC-ST', 'P-INTRVL', and 'LA-SPEED':

1. These items operate on the memory settings of the RDF controller PCB. You need not enter the settings if you merely initialized the copier's RAM, since they are retained by the RDF.
2. The items are used to change the memory settings of the RDF controller PCB, and will not directly feed settings to the memory on the RDF controller PCB; the operation will be as follows:

   <Operation 1>

   If you enter '5'^{NEW} for 'DOC-ST' in place of the existing '2'^{OLD}, 5 – 2 = +3, shifting the original stop position by +3.

   <Operation 2>

   If you enter '7' for 'P-INTRVL' in place of the existing '5', –7 – (–5) = –2, changing the sheet-to-sheet distance by –2.

3. These items relate to SW1 on the RDF controller PCB; pick-up and delivery settings will be by the user mode key (*) on the copier's control panel.

<Screen 3-13>

Item	Description	Settings	Remarks
LA-LCKPS	Use it to adjust the image leading edge for the RDF-D1 (stream reading mode).	2300~ 2500	A higher setting advances the timing at which registration turns on, thereby increasing the margin.
LA-SPEED	Use it to adjust the original feeding speed in stream reading mode.	–1023~ 1023	A higher setting increases the speed, thereby contracting the image. about ±3 mm (total of 6 mm)
RF-LENSY	Use it to adjust the offset in the lens Y direction in right pick-up mode of the RDF-D1 (adjusting the displacement of the lens reference position in right pick-up mode in relation to left pick-up mode).	–50~50	A higher setting increases the margin in stream reading mode (shifting the copy image to the rear). Unit:0.1 mm

<Screen 3-14>

Item	Description	Settings	Remarks
11 × 17PSZ LGL_PSZ LTR_PSZ	Use it to fine-adjust the paper jogging guide plate swing (duplexing unit) for each paper size. Use the item if pick-up faults occur or paper moves askew when pick-up is from the duplexing unit or in two-sided/overlay copying.	–10~+10	1 step = 0.183 mm × 2 For each step, the change will affect both front and rear paper jogging plates so that a single step results in a change of 0.367 mm. (A negative value decreases the swing distance.) See p. 2-6.

<Screen 3-15>

Item	Description	Settings	Remarks
LTRR_PSZ STMT_PSZ	Use it to fine-adjust the paper jogging guide plate swing (duplexing unit) for each paper size. Use the item if pick-up faults occur or paper moves askew when pick-up is from the duplexing unit or in two-sided/overlay copying.	–10~+10	1 step = 0.183 mm × 2 For each step, the change will affect both front and rear paper jogging plates so that a single step results in a change of 0.367 mm. (A negative value decreases the swing distance.) See p. 2-6.

<Screen 3-16>

Item	Description	Settings	Remarks
A3_PSZ A4_PSZ A4R_PSZ A5_PSZ	Use it to fine-adjust the paper jogging guide plate swing (duplexing unit) for each paper size. Use the item if pick-up faults occur or paper moves askew when pick-up is from the duplexing unit or in two-sided/overlay copying.	–10~+10	1 step = 0.183 mm × 2 For each step, the change will affect both front and rear paper jogging plates so that a single step results in a change of 0.367 mm. (A negative value decreases the swing distance.) See p. 2-6.

<Screen 3-17>

Item	Description	Settings	Remarks
B4_PSZ B5_PSZ B5R_PSZ	Use it to fine-adjust the paper jogging guide plate swing (duplexing unit) for each paper size. Use the item if pick-up faults occur or paper moves askew when pick-up is from the duplexing unit or in two-sided/overlay copying.	–10~+10	1 step = 0.183 mm × 2 For each step, the change will affect both front and rear paper jogging plates so that a single step results in a change of 0.367 mm. (A negative value decreases the swing distance.) See p. 2-6.

G. Function Mode (✻4✻)

Using the ◄◄ or ►► key, select the appropriate item.
Press the appropriate item to select. (The selected item is highlighted.)
A press on the user mode key (*) will execute the selected item.
Check to make sure that the machine is in standby before executing any item.

<Screen 4-1>

Item	Description	Remarks
TONER-S	Use it to supply toner during machine installation. The duration of supply will be indicated in seconds; normally, it takes 7 to 9 min (420 sec to 540 sec). Check that the developing assembly is set correctly and locked in position before pressing OK to start.	The operation will stop automatically.

The display will indicate the message “Check the Developer” in response to a press on the * key. If the developing assembly has been installed, press the OK key on the touch panel, and then press the * key.

<Screen 4-2>

Item	Description	Remarks
ERROR	Use it to initialize E000, E001, E002, E003, E005, E013, E020, jam history, error history, sorter jam, RDF jam, or alarm history. However, initializing E000 or the like will not initialize the jam history.	

<Screen 4-3>

Item	Description	Remarks
DISP-LED	Use it to turn on the LEDs on the control panel.*	
LCD-CHK	Use it to turn on the LCD on the control panel. (The LCD back-light will turn off for 3 sec and then will turn on.)	
SCANLAMP	Use it to turn on the scanning lamp. (At this time, the scanner cooling fan will also operate.)	The lamp remains on for 3 sec.

* The Start key (red),
Start key (green),
Energy Saver (Pre-Heat) key,
Interrupt key,
Additonal Functions (User Mode) key,
Guide key
and pilot lamp will turn on and off in sequence.

<Screen 4-4>

Item	Description	Remarks
BLANK	Use it to turn on the blanking exposure lamp.	The lamp will remain on for 3 sec.
PRE-EXP	Use it to turn on the pre-exposure LED.	The LED will remain on for 3 sec.
HPPR-MTR	Use it to turn on the hopper motor. (M10 and M11 rotate at the same time.)	The motor operates for 3 sec.
BK-ROT	Use it to turn on the developing cylinder.	The cylinder operates for about 2 min.

<Screen 4-5>

Item	Description	Remarks
AE-ADJ	Use it to execute density measurement level automatic adjustment for AE mode. If '0' is indicated, set an F5 original. If '1' is indicated, set an F9 original.	

<Screen 4-6>

Item	Description	Remarks
NIP	Use it to execute nip automatic measurement for the fixing roller. A solid black image will automatically be made and stopped at the fixing roller; it will automatically be discharged in 20 sec.	See p. 2-35.
PO-CONT	Use it to turn on and off potential control.	1: OFF 0: ON

<Screen 4-7>

Item	Description	Remarks
C1-STMTR (Not used)	Use it to execute automatic adjustment of paper width reference point 1 (STMTR) for the cassette 1.	
C1-A4R (Not used)	Use it to execute automatic adjustment of paper width reference point 2 (A4R) for the cassette 2.	
C2-STMTR (Not used)	Use it to execute automatic adjustment of paper width reference point 1 (STMTR) for the cassette 2.	
C2-A4R (Not used)	Use it to execute automatic adjustment of paper width reference point 2 (A4R) for the cassette 2.	

* Slide out each cassette, and adjust the paper width guide plate inside the cassette to the appropriate size; then, slide in the cassette. Thereafter, select the item on the screen to execute.

<Screen 4-8>

Item	Description	Remarks
C3-STMTR (Not used)	Use it to execute automatic adjustment of paper width reference point 1 (STMTR) for the cassette 3.	
C3-A4R (Not used)	Use it to execute automatic adjustment of paper width reference point 2 (A4R) for the cassette 3.	
C4-STMTR	Use it to execute automatic adjustment of paper width reference point 1 (STMTR) for the cassette 4.	
C4-A4R	Use it to execute automatic adjustment of paper width reference point 2 (A4R) for the cassette 4.	

* Slide out each cassette, and adjust the paper width guide plate inside the cassette to the appropriate size; then, slide in the cassette. Thereafter, select the item on the screen to execute.

<Screen 4-9>

Item	Description	Remarks
MF-A6R	Use it to execute automatic adjustment of paper width reference point 1 (A6R) for the multifeeder.	
MF-A4R	Use it to execute automatic adjustment of paper width reference point 2 (A4R) for the multifeeder.	
MF-A4	Use it to execute automatic adjustment of paper width reference point 3 (A4) for the multifeeder.	

* Slide out each cassette, and adjust the paper width guide plate inside the cassette to the appropriate size; then, slide in the cassette. Thereafter, select the item on the screen to execute.

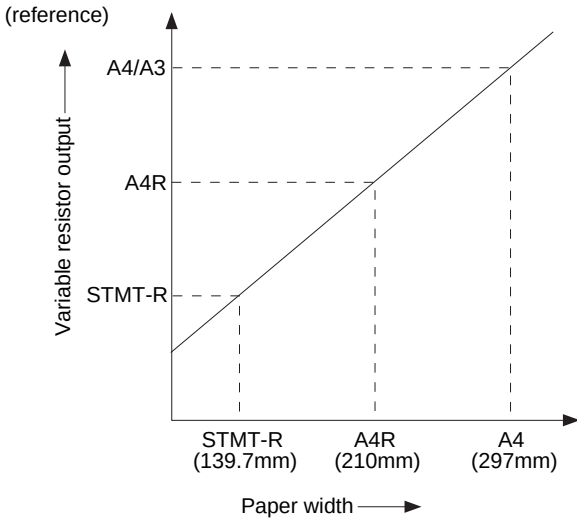


Figure 4-1

Caution:
The “A6R” width is one of the basic values to be used when the paper width detecting VR is replaced for the multifeeder; however, note that the size label does not have a notation indicating “A6R”, and you will not feel a click on the width guide. Keep in mind that A6R is A4 paper folded in fourths, and its width is 105 mm.

<Screen 4-10>

Item	Description	Remarks
RFSKEW	Use it to execute skew adjustment of the RDF.	
RF-AE	Use it to execute automatic adjustment of the AE sensor for the RDF.	
RFSE-INT	Use it to initialize the sensor of the RDF.	*
S-BCLN	Use it to clean the separation belt of the RDF.	

* The screen continues to indicate ‘0’ even after you have executed ‘START’. To find out whether the item is being executed or not, refer to LEDs 1, 2, and 3 on the RDF controller PCB (flashing in sequence or simultaneously).

<Screen 4-11>

Item	Description	Remarks
RAM-INIT	Use it to initialize the RAM on the DC controller PCB.	After initialization, the screen changes to the Copying Standard screen.

H. Options Mode (✻5✻)

Using the ◄◄ or ►► key, select the appropriate screen.
Press the appropriate item to select. (The selected item will be highlighted.)
Enter the appropriate value using the keypad.
Use user mode to set/cancel each mode.

<Screen 5-1>

Item	Description	Remarks
SHUT-OFF	Use it to turn on or off the auto shut-off function.	1: OFF 0: ON
DENS-ID	Use it to change the copy density notation.	0: 9 steps 1: 17 steps
SIZE-DET	Use it to turn on or off the size detection function.	1: OFF 0: ON
COIN-SET	Use it to change the notation for the control card indicated on the control panel between coin or copy card.	0: control card 1: coin 2: copy card

<Screen 5-2>

Item	Description	Remarks
DK-SZ-R	Use it to change the paper size for the right deck.	0: A4 1: LTR 2: B5
DK-SZ-L	Use it to change the paper size for the left deck.	0: A4 1: LTR 2: B5
SDK-SZ	Use it to change the paper size for the paper deck-A1.	0: A4 1: LTR 2: B5
COPY-LIM	Use it to change the upper limit (number of copies; between 1 and 999).	
CALL-SW	1. You may select any available space in the current mode. 2. Use 'CALL SW' under 'OPTION' in service mode (*5*); initially, '0'. 0 : Do not use for call function (all for mode memory). 1–9 : Use for call function as selected (copy mode storage). 3. A mode may be "called" back as in mode memory. (No storage occurs in a jam, alarm, interrupt, or start after interruption state.) <If the setting is '3',> 7 of mode memory: copying mode used initially. 8 of mode memory: copying mode used immediately thereafter. 9 of mode memory: copying mode used second immediately thereafter. 1–6 of mode memory: used as regular mode memory functions.	

<Screen 5-3>

Item	Description	Remarks
M-NOTATI	Use it to change the paper size choices for the multifeeder.	

Screen 5-4

Item	Description	Remarks
U-NOTATI	Use it to change the notation for the universal cassette. 0: U1, U2, U3, U5 1: paper size selected by CST-GRP	
AE-SW	Use it to select the RDF's AE or the copier's AE. (Normally, the RDF's AE is used when the RDF is in use; select the copier's AE if the RDF's AE fails for some reason.) Note: Stream reading is not executed if the RDF's AE is disabled.	1: Copier 0: RDF
DOC-F-SW	Use it to turn on and off stream reading.	0: stream reading on 1: stream reading off
DF-SIZE	Use it to enable or disable detection for auto paper selection for a mix of AB and Inch originals (detection for a AB/Inch mix; e.g., A4 and LTR originals).	0: disable 1: enable

<Screen 5-5>

Item	Description	Remarks
CST-GRP1	Use it to select the paper notation if universal cassette notation (U-NOTARI) is set to '1'. 0: G LTR (indicated as LTR) 1: K LGL (indicated as U)	
CST-GRP2	Use it to select the paper notation if universal cassette notation (U-NOTARI) is set to '1'. 0: FLSC (indicated as FLSC) 1: OFI (indicated as OFI) 2: E-OFI (indicated as OFI) 3: A-LGL (indicated as LGL) 4: S-OFI (indicated as OFI)	
CST-GRP3	Use it to select the paper notation if universal cassette notation (U-NOTARI) is set to '1'. 0: G LGL (indicated as LGL) 1: FOLI (indicated as FOLI) 2: A FLS (indicated as FLSC)	
CST-GRP4	Use it to select the paper notation if universal cassette notation (U-NOTGARI) is set to '1'. 0: LTR (indicated as LTR) 1: A LTR (indicated as LTR)	

<Screen 5-6>

Item	Description	Remarks
FUZZY	Use it to control (fuzzy) the current applied to the pre-transfer, transfer, and separation charging assembly to suit the ambient temperature; or, to prohibit it and select one of three environment settings.	0: fuzzy control ON 1: if image is light because of high humidity 2: if average humidity 3: if cleaner separation claw and copy paper come into contact because of low humidity press '0', '1', '2', or '3' on the keypad, and press the " * " key.
VDT-SW	Use it to switch the dark area target potential (VDT) if the solid black on copies is too light.	–2: make lighter –1: make somewhat lighter 0: default +1: make somewhat darker +2: make darker
CPMKP-SW	Use it to turn on or off the sequence used to lower the copying speed to maintain fixing in low-temperature conditions.	0: ON 1: OFF
OHP_TEMP	Use it to lower the fixing temperature. (Setting this mode invalidates 'WARM_UP' settings selected (p. 4-71).	0: normal control 1: normal control –5°C 2: normal control –10°C 3: normal control –15°C 4: normal control –20°C

<Screen 5-7>

Item	Description	Remarks
IDL-SW	Use it to enable or disable idle rotation mode to prevent distorted images in high humidity conditions or if the images are too light, say in the morning.	0: OFF (no idle rotation) 1: ON (control at IDL-MODE setting)
IDL-MODE	Use it to switch idle rotation mode when the power is turned on while the surface temperature of the fixing roller is 75°C or less. Even under normal operating conditions, set it to '1' or '2' if the humidity increases at night to cause image faults.	0: auto control by data of humidity sensor 1: 2-min idle rotation 2: 5-min idle rotation
TSPLY-SW	Use it to switch the toner supply sequence by the humidity sensor.	0: toner supply motor control by humidity data Medium to low humidity: 2 sec ON 1 sec OFF High humidity: 4 sec ON 2 sec OFF 1: 2 sec ON, 1 sec OFF
AL_DISP	Use it to enable or disable messages (always or only when in service mode; Add Fixing Cleaning Belt and Waste Toner Full).	0: only in service mode 1: always

<Screen 5-8>

Item	Description	Remarks
F-POT-SW	Enter '1' if transfer/separation faults occur because of a fault in the sensor. Use it as a temporary remedy until replacement of the potential sensor.	
F-POT-D	Use it together with 'F-POT-SW' (0 changed to 1). 0: if image ratio of originals (text) is low 1: if image ratio of originals (photo) is high 2: not used usually, but re-transfer (white spot at 50 mm along leading edge) occurs. The degree of separation current is highest at '0' and lowest at '2'.	
F-HUM-SW	Enter '1' if the environment sensor is faulty. (Control is with reference to the input in 'F-HUM-D' instead of the output of the humidity sensor.) Use it as a temporary remedy until replacement of the environment sensor.	
F-HUM-D	Enter an approximate humidity of the site (between 30% and 99%).	Factory default : 35

<Screen 5-9>

Item	Description	Remarks
SCAN_SEL	Use it to enable or disable the original size detection function for the RDF. ON: If the selected mode does not require detection of original size (APS, AMS, frame erasing, etc.), correction is made when assuming an original size considering the paper size and the selected ratio.	0: OFF 1: ON
2SIDE_SL	Use it to specify two-sided mode as the standard mode (one-sided to two-sided). If '0' is selected, the notation "two-sided" will not be indicated unless 'initialize standard mode' is selected in user mode.	0: OFF 1: ON
M-LENGTH	Use it to register a non-default size for the multifeeder. **Note:** Copies may be made only when the sorter is not installed. (Otherwise, a sorter jam will occur because of a paper length not suited to the sorter.)	432 to 600 mm
PO-CNTMD	Use it to enable or disable potential control for the first copying operation at power-on, after 10 min, and after 60 min.	0: ON 1: OFF

<Screen 5-10>

Item	Description	Remarks
CST-SZ-1	Use it to change the paper size for the 1st cassette.	
CST-SZ-2	Use it to change the paper size for the 2nd cassette.	
CST-SZ-3	Use it to change the paper size of the 3rd cassette.	

Note: The notations G1, G2, and G3 indicate the paper sizes selected under 'CST_GRP' (p. 4-67).

<Screen 5-11>

Item	Description	Remarks
SPCL-PPR	Use it to select the cassette to use when making copies in thick paper mode.	

Note 1: When thick mode is selected, copying does not start for a maximum of 30 sec until the fixing temperature reaches 202°C (211°C for the first run in the morning) so as to ensure stable fixing.

Note 2: When thick paper mode is selected, the setting made under 'OHP_TEMP' (p. 4-68) will be invalid.

<Screen 5-12>

<table>
<tr><th>Item</th><th>Description</th><th>Remarks</th></tr>
<tr><td>FIX-TEMP</td><td>Use it to change the fixing temperature for copy down sequence.
0: standard
1: standard +10°C (priority on fixing)
2: standard -5°C (priority on productivity)</td><td></td></tr>
<tr><td>HI-HUME</td><td>Use it to change the developing bias frequency to suit the humidity condition.
0: 2700 Hz (default)
1: 2700 Hz for 1st side of overlay copy
2000 Hz for 2nd side of overlay copy
2: 2000 Hz</td><td></td></tr>
<tr><td>WARM-UP</td><td>Use it to reduce sequence when the power switch is turned on for the first time in the morning (temperature of the fixing assembly 75°C or less).
0 standard (default)
1: shorter (see table below)
<table><tr><th>Sequence</th><th>Temperature</th></tr><tr><td>INTR start</td><td>180°C</td></tr><tr><td>STBY</td><td>185°C</td></tr><tr><td>Copying start</td><td>185°C</td></tr></table></td><td></td></tr>
<tr><td>FC-SPEED</td><td>For factory</td><td>0: default</td></tr>
<tr><td>COTDPC_D</td><td>Use it to select the target potential for the “lower” dark area potential (V_D)
0: standard (default)
1: V_D lower by about 20 V
2: V_D lower by about 40 V
3: V_D lower by about 60 V
NOTE:
Selecting 1, 2, or 3, moreover, can lead to a lower-than-standard image quality.
A reduction of V_D also affects the target potential after changes have been made to ‘ATM’ (*3*), but it does not affect photo mode (user mode).
The setting selected under ‘VDT_SW’ is added to or taken from the setting being made in this mode.</td><td>The degree of toner consumption may be reduced by selecting 1, 2, or 3. For instance, selecting 1, 2, or 3 will result in a reduction of about 5%, 10%, or 15%, respectively. (These, however, all depend on the environmental conditions and the machine in question.)</td></tr>
</table>

I. Counter Mode (✻6✻)

Using the ◄◄ or ►► key, select the appropriate screen.

Press the appropriate counter mode (to highlight), and press the C key on the control panel while holding down the service switch, the counter will return to '00000000'.

<Screen 6-1>

Item	Description	Remarks
L-TOTAL	Large size copy total copy counter (300 mm long or more; or, non-default size)	After '99999999', returns to '00000000'.
L-MULTI	Large size copy copy counter for multifeeder (300 mm long or more; or, non-default size)	After '99999999', returns to '00000000'.
L-CST1	Large size copy copy counter for cassette 1 (no counting if front paper deck type; 300 mm long or more; or, non-default size)	After '99999999', returns to '00000000'.
L-CST2	Large size copy copy counter for cassette 2 (not counting front paper deck type; 300 mm long or more; or, non-default size)	After '99999999', returns to '00000000'.
L-CST3	Large size copy copy counter for cassette 3 (300 mm long or more; or, non-default size)	After '99999999', returns to '00000000'.
L-CST4	Large size copy counter for cassette 4 (300 mm long or more; or, non-default size)	After '99999999', returns to '00000000'.

<Screen 6-2>

Item	Description	Remarks
L-OVERLAY	Large size copy copy counter (2nd side of overlay; 300 mm long or more; or, non-default size)	After '99999999', returns to '00000000'.
L-2-SIDE	Large size copy copy counter (2nd size of two-sided; 300 mm long or more; or, non-default size)	After '99999999', returns to '00000000'.
L-DF	Large size original feed counter (300 mm long or more; or, non-default size)	After '99999999', returns to '00000000'.

<Screen 6-3>

Item	Description	Remarks
S-TOTAL	Small size copy total copy counter (less than 300 mm long; or, non-default size)	After '99999999', returns to '00000000'.
S-MULTI	Small size copy copy counter for multifeeder (less than 300 mm long; or, non-default size)	After '99999999', returns to '00000000'.
S-CST1	Small size copy copy counter for cassette 1/ right deck (no counting if front paper deck type; less than 300 mm long; or, non-default size)	After '99999999', returns to '00000000'.
S-CST2	Small size copy copy counter for cassette 2/left deck (not counting front paper deck type; less than 300 mm long; or, non-default size)	After '99999999', returns to '00000000'.
S-CST3	Small size copy copy counter for cassette 3 (less than 300 mm long; or, non-default size)	After '99999999', returns to '00000000'.
S-CST4	Small size copy counter for cassette 4 (less than 300 mm long; or, non-default size)	After '99999999', returns to '00000000'.
S-SDK	Copy counter for paper deck-A1 (less than 300 mm long)	After '99999999', returns to '00000000'.

<Screen 6-4>

Item	Description	Remarks
S-OVERLAY	Small size copy copy counter (2nd side of overlay; less than 300 mm long; or, non-default size)	After '99999999', returns to '00000000'.
S-2-SIDE	Small size copy copy counter (2nd side of two-sided; less than 300 mm long; or, non-default size)	After '99999999', returns to '00000000'.
S-DF	Small size original feed counter (less than 300 mm long)	After '99999999', returns to '00000000'.

<Screen 6-5>

Item	Description	Remarks
WEB	Copy counter for after replacing the fixing cleaning belt (alarm is issued when service mode starts after having made 250,000 copies using the data)	After ‘99999999’, returns to '00000000'.
WSTTNR	Copy counter for after disposing of the waste toner from the case (alarm is issued when service mode starts after having made 250,000 copies using the data)	After ‘99999999’, returns to '00000000'.
L_PU*	Counter for RDF left pick-up	After ‘99999999’, returns to ‘00000000’.
R_PU*	Counter for RDF right pick-up	After ‘99999999’, returns to ‘00000000’.
PRINT-JAM	Counter for copier and sorter jams	After ‘99999999’, returns to ‘00000000’.
DH-JAM	Counter for feeder jams	After ‘99999999’, returns to ‘00000000’.

*Like the RDF’s separation pad, some parts need replacement based on the number of copies made according to pick-up direction (left or right).

■ Count Increments

① TOTAL
- 1st side of an overlay/two-sided copy
  when the sheet is stacked on the holding tray
- one-sided copy or 2nd side of an overlay/two-sided copy
  when the sheet is discharged outside the machine (in the bin if a sorter is installed)

② OVERLAY, 2_SIDE
- overlay/two-sided copy
  when the sheet is discharged outside the machine

③ MULTI, CST
- when the sheet is discharged outside the machine.
- 1st side of an overlay/two-sided copy
  when the sheet is stacked on the holding tray

④ RDF
- when the original is pulled in and its size is identified

CHAPTER 5 SELF DIAGNOSIS

The microprocessor on the machine's DC controller PCB is equipped with a mechanism that checks the condition of the machine (of its sensors, in particular), and indicates an error code when it detects a fault.

A. Copier

Code	Cause	Description
E000 (Note 1)	• Main thermistor (TH1; poor contact, open circuit) • Fixing heater (H1, H2; open circuit) • SSR (fault) • DC controller PCB (fault) • Sub thermistor (TH2; poor contact or open circuit; the power will turn off in about 5 sec after indication)	• The temperature of the upper fixing roller does not reach 70°C within 3 min and 30 after power-on.
E001	• Main thermistor (TH1; short circuit) • SSR (fault) • DC controller PCB (fault) • Sub thermistor (TH2; error temperature increase)	• The temperature of the upper fixing roller exceeds 230°C for 2 sec or more.
E002	• Main thermistor (TH1; poor contact, open circuit) • Fixing heater (H1, H2) • Thermal switch (TS1; open circuit) • SSR (fault) • DC controller PCB (fault)	• The temperature of the upper fixing roller does not reach 100°C in 2 min after it has reached 70°C. • The temperature of the upper fixing roller does not reach 150°C in 2 sec or more after it has reached 100°C.
E003	• Main thermistor (TH1; poor contact) • Fixing heater (H1, H2; open circuit) • Thermal switch (TS1; open circuit) • SSR (fault) • DC controller PCB (fault)	• The temperature of the upper fixing roller is 70°C or less for 2 sec or more after it has reached 100°C.
E004	• SSR (fault) • DC controller PCB (fault)	• The SSR used to drive the fixing heater has a short circuit.
E005	• Cleaning belt for the fixing assembly (taken up) • Cleaning belt sensor (PS11; fault) • DC controller PCB (fault)	• The cleaning belt for the fixing assembly has been taken up more than specified.
E006	• Fixing/feeding unit sensor (PS53; fault) • Connector for fixing assembly (fault; rear) • DC controller PCB (fault)	• The fixing feeding assembly became disconnected during copying.

Code	Cause	Description
E010	• Main motor (M1; fault) • DC controller PCB (fault)	• After the main motor drive signal has been generated, 2 or more pulses are not received every 1 sec.
E013	• Waste toner feeding screw (error) • DC controller PCB (fault)	• The waste toner feeding screw cannot rotate, and the switch (MSW4) is pressed several times within a specific period of time.
E015	• Pick-up motor (M2; fault) • DC controller PCB (fault)	• After the pick-up motor drive signal has been generated, 2 or more pulses are not received every 1 sec.
E020	• Hopper motor (M10, M11; fault) • Toner level detection sensor (TS2) inside developing assembly (fault) • Toner level detection sensor (TS1) inside hopper (fault) • DC controller PCB (fault) • Hopper connector (disconnected)	• During copying, the toner supply signal is '0' (toner absent) for 2 min or more. • During installation, the toner supply signal does not go '1' in 10 min or more when executing toner supply sequence.
E030	• Total copy counter (open circuit) • DC controller PCB (fault)	• When the total copy counter is off, an open circuit is detected in the total counter.
E031	• Accessories copy counter (open circuit) • DC controller PCB (fault) • Electromagnetic clutch (CL15) for vertical path drive (harness broken)	• When the accessories counter is off, an open circuit is detected in the accessory counter.
E043	• Deck main motor (M101; fault) • Slide deck drive PCB (fault) • DC controller PCB (fault)	• During initial rotation, clock pulses of the deck main motor are not received for 1.4 sec or more. • During copying, clock pulses of the deck main motor are not received for 2.8 sec or more.
E050	• Holding tray X home position sensor (PS21; fault) • Holding tray X motor (M8; fault) • DC controller PCB (fault)	• While the holding tray X motor (M8) drive signal is being generated, the holding tray X home position signal (HTXHP) is not generated with 4 sec. • While the holding tray X motor (M8) drive signal is being generated, the holding tray X home position signal (HTXHP) is generated for 2 sec or more.

Code	Cause	Description
E051	• Holding tray Y home position sensor (PS20; fault) • Holding tray Y motor (M9; fault) • DC controller PCB (fault)	• While the holding tray Y motor (M9) drive signal is being generated, the holding tray Y home position signal (HTYHP) is not generated within 4 sec. • While the holding tray Y motor (M9) drive signal is being generated, the holding tray Y home position signal (HTYHP) is generated for 2 sec or more.
(E202) No code indication; keys locked.	• Scanner motor (M3; fault) • Scanner home position sensor (PS1; faulty) • DC controller PCB (fault)	• The scanner home position signal (SCHP) is not generated within 10 sec after the power switch or the Copy Start key has been turned ON.
E203	• Scanner motor (M3; fault) • Scanner home position (PS1; fault) • DC controller PCB (fault)	• The scanner motor clock pulse signal (SCMCLK) is not generated even through the scanner motor is rotating. • While the scanner motor (M3) drive signal is being generated, the scanner home position signal (SCHP) is generated for 0.5 sec or more.
(E204) No code indication keys locked	• Scanner motor (M3; fault) • Scanner original leading edge sensor (PS3, PS4; fault) • DC controller PCB (fault)	• The scanner leading edge signal (SCDP1) is not generated within 0.8 sec after the scanner has started to move forward. • The scanner leading edge signal (SCDP2) is not generated within 1.0 sec after the scanner has started to move forward.
E210	• Lens X home position sensor (PS6; fault) • Lens X motor (M4; fault) • DC controller PCB (fault)	• The lens X home position signal (LXHP) is not generated within 9 sec after the power switch or the Copy Start key is turned on. • The lens X home position signal (LXHP) is generated for 2 sec or more.
E212	• Lens Y home position sensor (PS7; fault) • Lens Y motor (M5; fault) • DC controller PCB (fault)	• The lens Y home position signal (LYHP) is not generated within 9 sec after the power-switch or the Copy Start key is turned on. • The lens Y home position signal (LYHP) is generated for 2 sec or more.

Code	Cause	Description
E213	• Scanner locked sensor (PS48; fault) • Scanner locking solenoid (SL1; fault) • DC controller PCB (fault)	• During copying in stream reading mode, the scanner locked sensor signal (SCLK) is not generated within a specific period of time. • The scanner does not stop at the scanner original leading edge 2 sensor (PS4).
E214	• Scanner motor cooling fan (FM9; fault) • DC controller PCB (fault)	• The rotation of the scanner motor cooling fan is not detected for a specific period of time.
E220	• Lamp regulator (fault) • DC controller PCB (fault)	• During standby, the scanning lamp turns on. • During copying, the scanning lamp turns off. • The lamp ON detection signal (CVRON) is generated although the scanning lamp ON signal (LAON) is '0'.
E240	• DC controller PCB (fault)	• There is an error in the communication between the microprocessor master (Q156) and the microprocessor slave (Q140) on the DC controller PCB.
E243	• DC controller PCB (fault) • Control panel PCB (fault)	• An error has occurred in the communication between the master (Q156) on the microprocessor on the DC controller PCB and the microprocessor on the control panel PCB.
E710	• DC controller PCB (fault)	• At power-on, the copier detects an error in communication between copier and external device because of an error in the copier's communication IC (IPC; Q158).
E711	• DC controller PCB (fault)	• After power-on, the copier detects an error in communication between copier and external device because of an error in the copier's communication IC (IPC; Q158).
E712	• RDF controller PCB • Connector (poor contact) • 24V power supply (poor contact)	• The communication control IC (IPC) on the RDF controller PCB goes out of order.
E713	• Sorter controller PCB (fault) • Connector (poor connection) • 24V power supply	• The communication control IC (IPC) on the sorter controller PCB goes out of order.

Code	Cause	Description
E800	• Auto power-off circuit (open circuit) • DC controller PCB (fault)	• The auto power-off has an open circuit. • The auto power-off signal is generated twice or more within 2 sec.
E802	• Auto power-off circuit (fault) • DC controller PCB (fault)	• The relay (RY401) in the power supply unit does not operate in response to the auto power-off signal.

Caution:

1. When the self-diagnosis mechanism has turned on, you reset the machine by turning off its power switch. This, however, does not work for E000, E001, E002, E003, E004, E005, E013, or E020. It is to prevent the user from casually resetting the machine when the thermistor has an open circuit; otherwise, the fixing roller will overheat or the hopper will overflow.
   In most models, the power switch will automatically turn off in about 20 sec for E000 through E003 even if you leave the machine alone. The machine's power-switch, however, will turn off in about 5 sec after indicating 'E000' if the sub thermistor (TH2) has an open circuit.
   For E000, E001, E002, E003, E004, E005, E013, and E020, you must initialize the data in the RAM on the DC controller PCB.

1) Start service mode (✻ 4 ✻).
2) Using the ◀◀ or ▶▶ key, select 'ERROR'.
3) Press ✻ (user mode) to clear the indication.
4) The message panel on the control panel will be refreshed, and the Copy Mode screen will return.

2. For E015, E202, and E204, you can make checks in reference to B-ERR1, B-ERR2, and B-ERR3 in service mode (✻ 1 ✻).

B. RDF-D1

Code	Cause	Description
E400	• Data communication (with copier)	• The communication is monitored at all times. The error occurs when there is an interruption for 5 sec.
E401	• Pick-up roller sensor (S8, S21; fault) • Pick-up motor (M1; fault) • Pick-up clutch (CL1; fault)	• Initialization does not end in 2 sec. (The flat face of the pick-up roller/D-cut roller is at top, and is at home position.)
E402	• Belt motor clock sensor (S11; fault) • Belt motor (M3; fault)	• The number of belt motor clock pulses within 100 msec is less than specified.
E403	• Reversing motor clock sensor (S10; fault) • Reversing motor (M2; fault)	• The number of reversal motor clock pulses within 100 msec is less than specified.
E404	• Delivery motor clock sensor (S12; fault) • Delivery motor (M5; fault)	• The number of delivery motor clock pulses within 200 msec is less than specified.
E405	• Pick-up motor clock sensor (S9; fault) • Pick-up motor (M1; fault)	• The number of pick-up motor clock pulses within 200 msec is less than specified.
E406	• Original stopper motor (M7; fault) • Stopper home position sensor (S26; fault) • Motor (out of order) • Tray trailing edge sensor (low performance)	• The guide shift by the original stopper motor does not end within a specific period of time. • The sensor output does not change when the original stopper motor has been driven for 2 sec or more.
E407	• Original tray ascent motor (M6; fauly) • Tray position sensor (S25; fault)	• The tray shift by the original tray ascent motor does not end within a specific period of time.
E408	• Feeding motor clock sensor (S22; fault) • Feeding motor (M8; fault)	• The number of feeding motor clock pulses within 100 msec is less than specified.
E411	• Registration sensor 1 (S3; fault) • Skew sensor 1 (S4; fault) • Manual feed registration sensor (S19; fault) • Image leading edge sensor 1 (S20; fault) • Original sensor 1 (S1; fault) • Original sensor 2 (S27; fault)	The sensor output is 2.3 V or more in the absence of paper.

Note:

When the self-diagnosis has turned on, you can reset the machine by turning it off once.
If the RDF is out of order, disconnect the lattice connector on the RDF side, open the RDF, and set the original on the copyboard glass to continue to make copies.

C. Sorter

Code	Cause	Description
E500	• The CPU (Q1) or the communications IC (Q3) on the sorter controller PCB is not operating normally.	• An error in the communication between sorter and copier occurred.
E510	• Feeding motor (M1; fails) • Feeding guide (up/down mechanism, interference, etc.)	• The clock signal from the motor remains off for 250 msec.
E522	• Push bar motor (M7; fails)	• After the motor drive signal has been generated, the operation does not end in 2 sec.
E523	• Reference wall motor (M6; fails)	• After the motor drive signal has been generated, the operation does not end in 2 sec.
E524	• Multi guide motor (M5; fails)	• After the motor drive signal has been generated, the operation does not end in 2 sec.
E525	• Bin paper sensor automatic adjustment (fails)	• The bin paper sensor cannot be adjusted automatically, or the automatic adjustment setting has an error.
E526	• Bin paper sensor (S6, S7; auto adjust fault)	• The bin paper sensor (S6, S7) cannot be adjusted automatically, or the automatic adjustment setting has an error.
E530	• Guide bar swing motor (M8; fails)	• After the motor drive signal has been generated, the operation does not end within a specific period of time. for front access, 5 sec for others, 2 sec
E531	• Stapler unit swing motor (M4; fails)	• After the motor drive signal has been generated, the operation does not end in 2 sec. • Clock signals from the motor clock sensor (PI8) are not received for 250 msec. • The input signal from the swing home position sensor (PI9) does not change for 1 sec or more.

■ Sorter

• Error Indication, Error Description, Detection Timing

Code	Cause	Description
E532	• Stapler unit shift motor (M3; fails)	• After the motor drive signal has been generated, the operation does not end in 5000 msec.
E533	• Stapler paper sensor automatic adjustment (fault)	• The stapler automatic adjustment mechanism fails, or the automatic adjustment setting has an error.
E540	• Bin shift motor (M9; fails)	• After the motor drive signal has been generated, the operation does not end within a specific period of time. for initial, 20 sec for others, 2 sec • Clock signals from the motor clock sensor (PI17) are not received for 250 msec or more. • Input signals from the lead cam position sensor (PI20) do not change for 2 sec or more.
E550	• Power supply (fault)	• During initial rotation or when the Copy Start key is pressed, 24 VP is not supplied.

■ Resetting

If the copier is making copies,

① Indicates the message Jam.
② When reset, indicates the message 'Turn On the Power'.
③ When turned off and then on, runs a self check. If the results are good, the machine is reset; otherwise, starts down* state (indicating 'E5XX' on its control panel).

If the copier is not making copies,

① Indicates the message 'Turn On the Power'.
② When turned off and then on, runs a self check. If the results are good, reset; otherwise, starts down* state (indicating 'E5XX' on its control panel).

• Down State and Operation (associated with an E code)

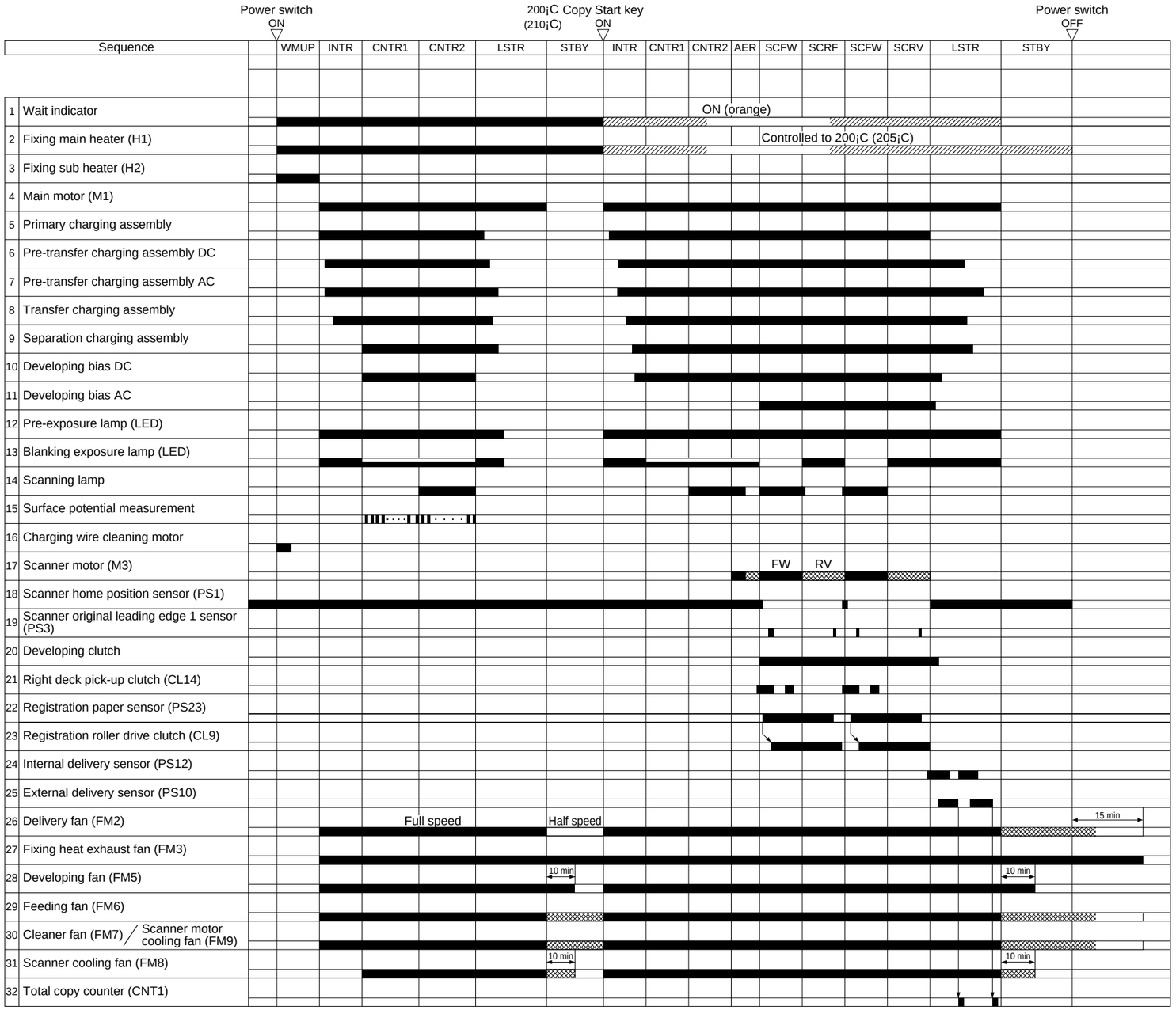
① Indicates 'E5XX'.
② When the sorter is detached, ready for making copies (in modes not requiring the sorter).
③ Indicates the message Mode Not Available if a mode requiring the sorter is selected.

* After the copier started down state, you may turn it off and then on; if the results of the self check it runs in response are good, it will be reset (with the sorter connected).

APPENDIX

A. GENERAL TIMING CHART I

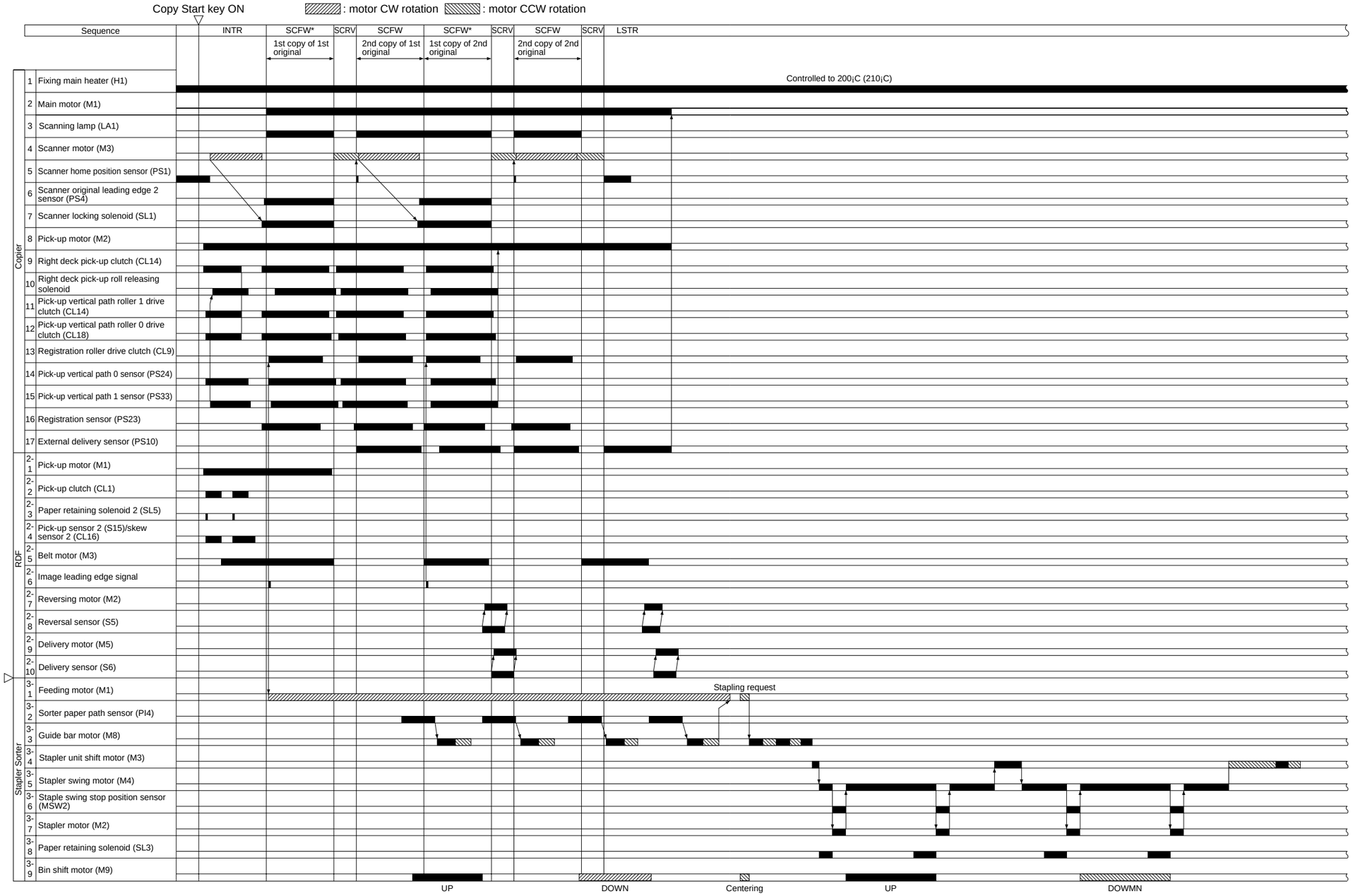
- **A4, 2 Copies Continuous, Right Deck**



GENERAL TIMING CHART II (CONSOLIDATED)

- **Copier + RDF-D1 + Stapler Sorter-E2**
- **A4, 2 Originals, 2 Copies, Right Deck Pick-Up; RDF Right Pick-Up (stream reading); Sorter Double Stapling**

Note:
The notation SCFW with an asterisk (*) is in stream reading mode.



B. SIGNALS AND ABBREVIATIONS

What follow below is a list of signals and abbreviation used in the chapters of the manual and circuit diagrams.
The abbreviations within parentheses represent analog signals, shich cannot be expressed in terms of '1' or '0'.

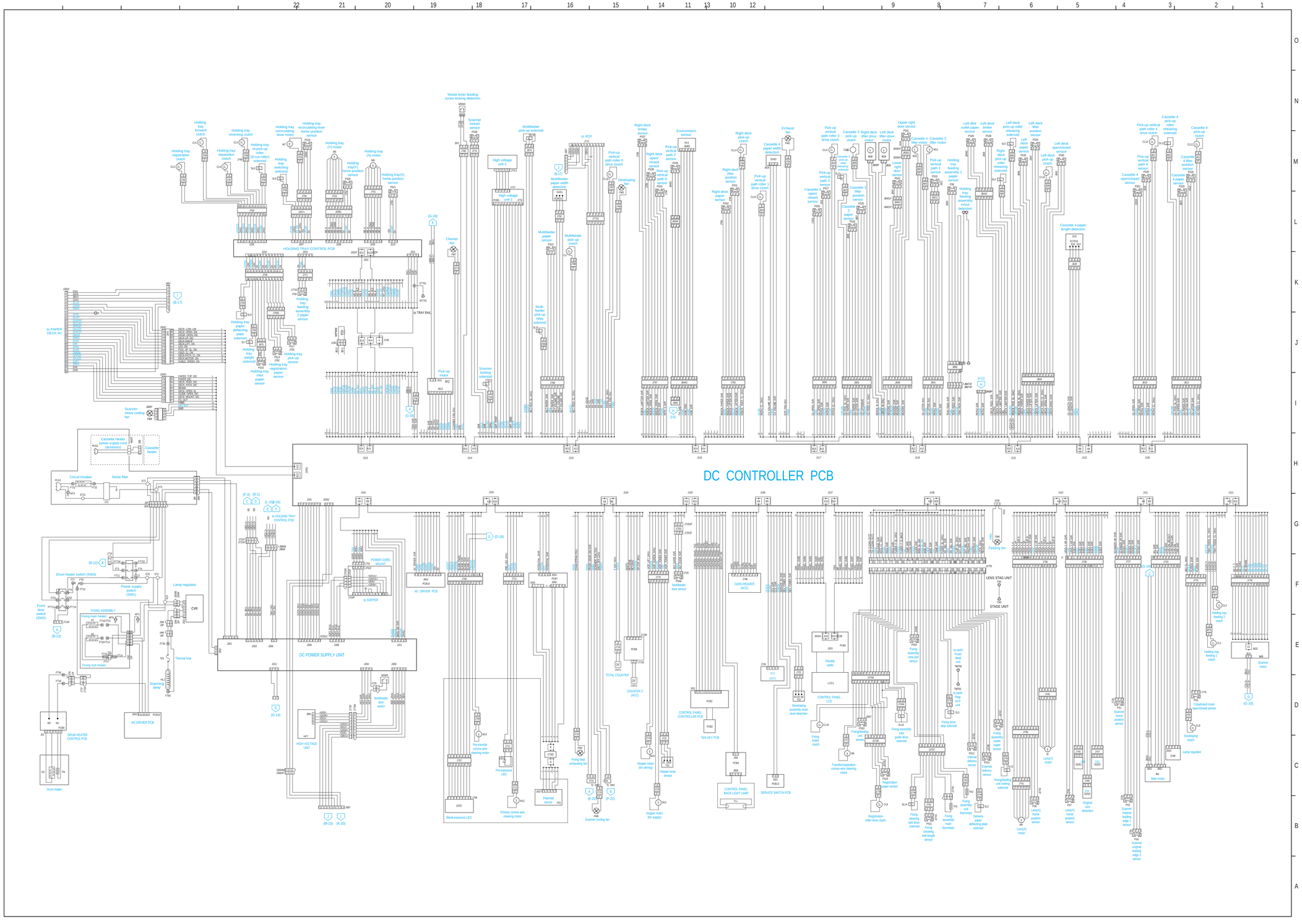
1. Signals

ACBTP	AC BIAS TIMING PULSE command
ACON	AC TRANSFORMER DRIVE command
LED2ON	BLANK EXPOSURE (0V) command
RDLTP	RIGHT DECK LIFTER POSITION signal
C3LMD	CASSETTE 3 LIFTER MOTOR DRIVE command
C3LTP	CASSETTE 3 LIFTER POSITION signal
C3PD	CASSETTE 3 PAPER DETECT signal
C3PL0	CASSETTE 3 PAPER LENGTH signal
C3PL1	CASSETTE 3 PAPER LENGTH signal
C3PUCD	CASSETTE 3 PICK-UP ROLLER CLUTCH DRIVE command
C3PURR	CASSETTE 3 PICK-UP ROLLER RELEASE SOLENOID DRIVE command
C3PW	CASSETTE 3 PAPER WIDTH signal
C3SS	CASSETTE 3 SET UP signal
C4LMD	CASSETTE 4 LIFTER MOTOR DRIVE command
C4LTP	CASSETTE 4 LIFTER POSITION signal
C4PD	CASSETTE 4 PAPER DETECT signal
C4PL0	CASSETTE 4 PAPER LENGTH signal
C4PL1	CASSETTE 4 PAPER LENGTH signal
C4PUCD	CASSETTE 4 PICK-UP ROLLER CLUTCH DRIVE command
C4PURR	CASSETTE 4 PICK-UP ROLLER RELEASE SOLENOID DRIVE command
C4PW	CASSETTE 4 PAPER WIDTH signal
C4SS	CASSETTE 4 SET UP signal
CBCC	COPYBOARD COVER CLOSED signal
CBOP	CLEANING BELT OUT PRECAUTION signal
CCNNT	CONTROL CARD DETECT signal
CCNTD	CONTROL CARD DRIVE command
CL11D	VERTICAL PATH ROLLER 3 CLUTCH DRIVE command
CL13D	VERTICAL PATH ROLLER 4 CLUTCH DRIVE command
CL15D	VERTICAL PATH ROLLER 1 CLUTCH DRIVE command
CL18D	VERTICAL PATH ROLLER 0 CLUTCH DRIVE command
DCBC	DC BIAS CONTROL signal
DCBTP	DC BIAS TIMING PULSE command
DEVCD	DEVELOPING CLUTCH DRIVE command
DHRD	DRUM HEATER DRIVE command
DPDSD	DELIVERY PAPER DEFLECTOR SOLENOID DRIVE command
DSZ1	DOCUMENT SIZE 1 signal
DSZ2	DOCUMENT SIZE 2 signal
DSZ3A	DOCUMENT SIZE 3 signal
DSZ3B	DOCUMENT SIZE 3 signal
DTEP	DEVELOPER TONER signal
EXDPD	EXTERNAL DELIVERY PAPER DETECT signal
FCBSD	FIXING CLEANING BELT DRIVE SOLENOID DRIVE command
FDOD	FRONT DOOR OPEN DETECT signal
FFUCNT	FIXING/FEEDER UNIT CONNECT signal
FFULSD	FIXING/FEEDER UNIT LOCK SOLENOID DRIVE command
FM2D	EXHAUST FAN DRIVE command (HALF SPEED)
FM3D	EXHAUST FAN DRIVE command (HALF SPEED)
FM7D	EXHAUST FAN DRIVE command (HALF SPEED)
FM2D	EXHAUST FAN DRIVE command (FULL SPEED)
FM3D	EXHAUST FAN DRIVE command (FULL SPEED)
FM5D	DEVELOPING UNIT COOLING FAN DRIVE command
FM6D	FEEDER FAN DRIVE command
FM7D	EXHAUST FAN DRIVE command (FULL SPEED)
FM8D	SCANNING LAMP COOLING FAN DRIVE command
FM9ROT	SCANNER MOTOR COOLING FAN ROTATION DETECTION signal
FXCJS	FIXING ASSEMBLY CLAW JAM signal
FXDEL	FIXING UNIT DELIVERY PAPER DETECT signal
FXDSD	FIXING UNIT DRIVE SOLENOID command
FXGDSD	FIXING ASSEMBLY GUIDE DOWN SOLENOID DRIVE command
FXGUSD	FIXING ASSEMBLY GUIDE UP SOLENOID DRIVE command
HTCNT	HOLDING TRAY CONNECT signal
HTDSD	HOLDING TRAY D-CUT SOLENOID DRIVE command
HTF1CD	HOLDING TRAY FEEDER 1 CLUTCH DRIVE command
HTF2CD	HOLDING TRAY FEEDER 2 CLUTCH DRIVE command
HTFCNT	HOLDING TARY FEEDER UNIT CONNECT signal
HTFWCD	HOLDING TRAY FORWARD CLUTCH DRIVE command
HTJSD	HOLDING TRAY JOGGING SOLENOID DRIVE command
HTLPD	HOLDING TRAY LAST PAPER DETECT HOME POSITION signal
HTPDD	HOLDING TRAY PAPER DEFLECTOR SOLENOID DRIVE command
HTRGCD	HOLDING TRAY REGISTRATION ROLLER CLUTCH DRIVE command
HTRVCD	HOLDING TRAY REVERSE CLUTCH DRIVE command
HTSPCD	HOLDING TRAY SEPARATION CLUTCH DRIVE command
HTWSD	HOLDING TRAY WEIGHT SOLENOID DRIVE command
HTXHP	HOLDING TRAY X HOME POSITION signal
HTYHP	HOLDING TRAY Y HOME POSITION signal
HUM1	MACHINE INSIDE HUMIDITY signal 1
HUM2	MACHINE INSIDE HUMIDITY signal 2
HVPCT	PRE-TRANSFER CORONA CURRENT CONTROL command
HVSCT	SEPARATION CORONA CURRENT CONTROL command
HVTCT	TRANSFER CORONA CURRENT CONTROL command
HVTPC	PRIMARY CORONA CURRENT CONTROL command
IDPD	INSIDE DELIVERY PAPER DETECT signal
LAON	SCANNING LAMP DRIVE command
LCDLGHT	LCD BACK-LIGHT ON command
LED2CK	BLANK EXPOSURE command (CLOCK)
LED2DT	BLANK EXPOSURE command (DATA)
LED2LD	BLANK EXPOSURE command (DATA LATCH)
LINT	CVR PWM signal
LXHP	LENS X HOME POSITION signal
LYHP	LENS Y HOME POSITION signal
M1H/L	MAIN MOTOR SPEED CHANGE command
M2BLK	PAPER PICK-UP MOTOR BRAKE command
M2H/L	PAPER PICK-UP MOTOR SPEED CHANGE command
M3BRK	SCANNER MOTOR BRAKE command

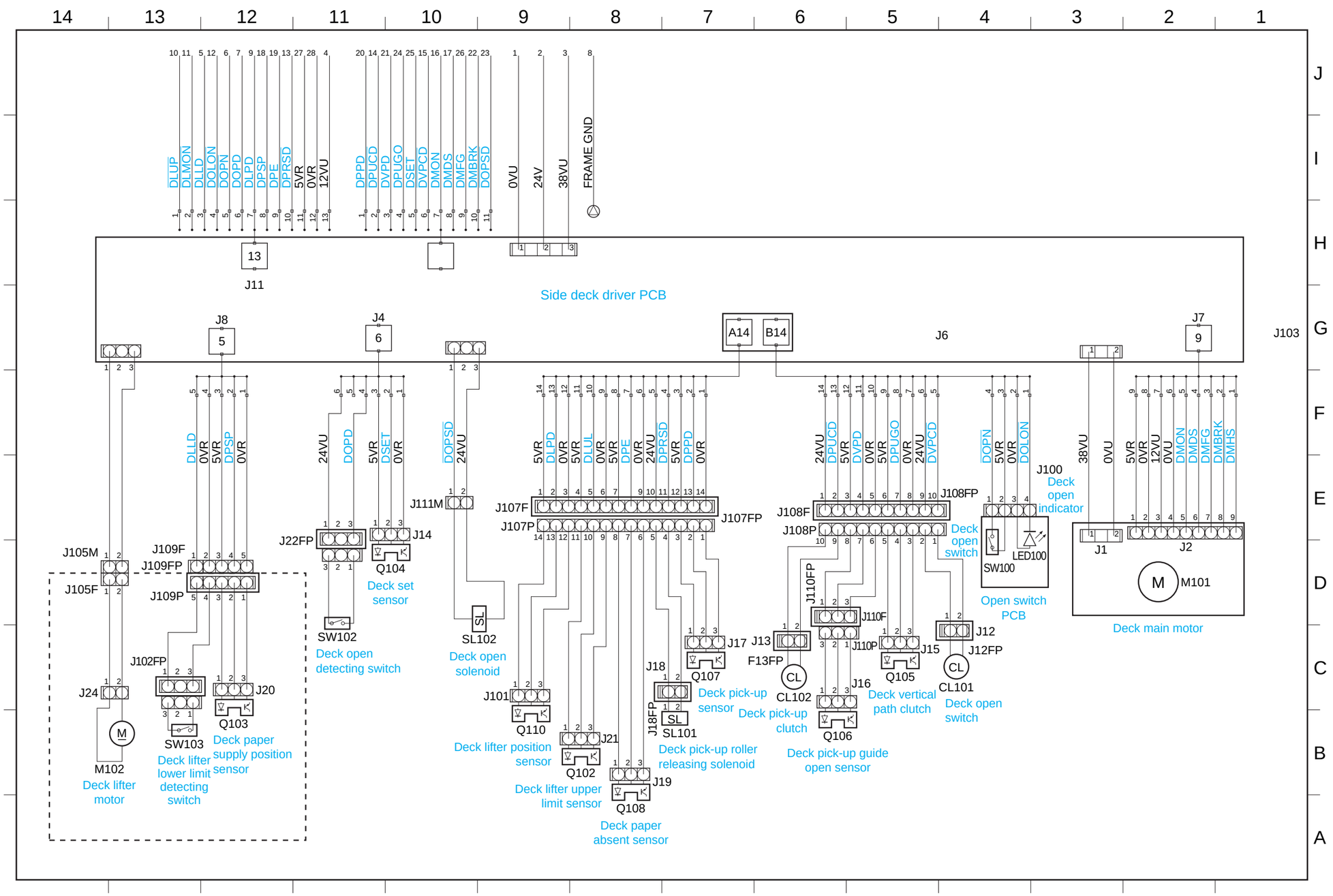
M3F/R	SCANNER MOTOR FORWARD command
M3FS	SCANNER MOTOR SPEED signal
M3MD0	SCANNER MOTOR REPRODUCTION RATIO SELECT (0) command
M3MD1	SCANNER MOTOR REPRODUCTION RATIO SELECT (1) command
M3MD2	SCANNER MOTOR REPRODUCTION RATIO SELECT (2) command
M3ON	SCANNER MOTOR DRIVE command
M3CL	SCANNER MOTOR PLL CONTOL command
M4A	LENS X MOTOR (A) command
X-HOLD	LENS X MOTOR (HOLD) command
M4B	LENS X MOTOR (B) signal
M5A	LENS Y MOTOR (A) signal
Y-HOLD	LENS Y MOTOR (HOLD) signal
M5B	LENS Y MOTOR (B) signal
M8A	HOLDING TRAY X MOTOR (A) command
M8B	HOLDING TRAY X MOTOR (B) command
M8HLD	HOLDING TRAY X MOTOR (HOLD) command
M9A	HOLDING TRAY Y MOTOR (A) command
M9B	HOLDING TRAY Y MOTOR (B) command
M9HLD	HOLDING TRAY Y MOTOR (HOLD) command
M1FG	MAIN MOTOR 1/4 CLOCK PULSE signal
M1ON	MAIN MOTOR DRIVE command
M10ON	HOPPER MOTOR (TONER SUPPLY) DRIVE command
M11ON	HOPPER MOTOR (TONER STIRRING) DRIVE command
M2ON	PAPER FEED MOTOR DRIVE command
M7ON	HOLDING TRAY LAST PAPER DETECT MOTOR DRIVE command
MFDC	MULTIFEEDER DOOR OPEN DETECT signal
MFPCD	MULTIFEEDER PICK-UP CLUTCH ROLLER DRIVE command
MFPW	MULTI FEEDER PAPER WIDTH signal
MFRLSD	MULTIFEEDER PICK-UP RELAY SOLENOID DRIVE command
MFS	MULTIFEEDER PAPER DETECT signal
MHOND	MULTIFEEDER PAPER DETECT signal
MHRD	MAIN HEATER DRIVE command
OPCNTD	OPTION COUNTER DRIVE command
OPRST	OPERATION PANEL CPU RESET command
PCLHP	PRIMARY CORONA WIRE CLEANER HOME POSITION signal
PCLM	PRIMARY CORONA WIRE CLEANER MOTOR DRIVE command
PEXP	PRE-EXPOSURE LED DRIVE command
POT	PHOTOSENSITIVE DRUM SURFACE POTENTIAL signal MOTOR
POT-S-ON	PHOTOSENSITIVE DRUM SURFACE POTENTIAL SENSOR POWER ON command
PS14D	HOLDING TRAY REGISTRATION PAPER DETECT signal
PS15D	HOLDING TRAY ENTRANCE PAPER DETECT signal
PS17D	HOLDING TRAY PAPER DETECT signal
PS24D	PICK-UP VERTICAL PATH-0 PAPER DETECT signal
PS27D	PICK-UP VERTICAL PATH-3 PAPER DETECT signal
PS30D	PICK-UP VERTICAL PATH-4 PAPER DETECT signal
PS33D	PICK-UP VERTICAL PATH-1 PAPER DETECT signal
PS36D	PICK-UP VERTICAL PATH-2 PAPER DETECT signal
PS8D	HOLDING TRAY FEEDER 1 PAPER DETECT signal
PS9D	HOLDING TRAY FEEDER 2 PAPER DETECT signal
PTCLHP	PRE-TRANSFER CORONA WIRE CLEANER HOME POSITION signal
PTRCLM	PRE-TRANSFER CORONA WIRE CLEANER MOTOR DRIVE command
PWOFF	POWER SWITCH OFF command
RDEL	RIGHT DECK LIFTER LIMIT signal
RDEOP	RIGHT DECK OPEN DETECT signal
RDFEDGE	RDF DOCUMENT LEADING EDGE signal
RDLMD	RIGHT DECK LIFTER MOTOR DRIVE command
RDPD	RIGHT DECK PAPER DETECT signal
RDPUCD	RIGHT DECK PICK-UP ROLLER CLUTCH DRIVE command
RDPURR	RIGHT DECK PICK-UP ROLLER RELEASE SOLENOID DRIVE command
RGCD	REGISTRATION ROLLER CLUTCH DRIVE command
RGPD	REGISTRATION PAPER DETECT signal
RL401D	PWU RELAY DRIVE command
RLWDOP	RIGHT LOWER DOOR OPEN DETECT signal
ROED	ROLLER ELECTRO BIAS DRIVE command
RUPDOP	RIGHT UPPER DOOR OPEN DETECT signal
SCDP1	SCANNER DOCUMENT LEADING EDGE 1 signal
SCHP	SCANNER HOME POSITION signal
SHOND	SUB HEATER ON DETECT signal (120V)
SHRD	SUB HEATER DRIVE command (120V)
SL10BD	MULTIFEED ROLLER SOLENOID DRIVE command
SL10FD	MULTIFEED ROLLER SOLENOID DRIVE command
SL10D	MULTI FEEDER PICK-UP SOLENOID DRIVE command
SSWON	SERVICE SWITCH signal
SW1ON	POWER SWITCH ON DETECT signal
TCNTD	TOTAL COUNTER DRIVE command
TEP	HOPPER TONER signal
TH1	FIXING HEATER THERMISTOR signal 1
TH2	FIXING HEATER THERMISTOR signal 2
TH	DRUM HEATER THERMISTOR signal
TSCLHP	TRANSFER/SEPARATION CORONA WIRE CLEANER HOME POSITION signal
TSCLM	TRANSFER/SEPARATION CORONA WIRE CLEANER DRIVE command
WTFL	WASTE TONER FEEDING SCREW LOCK DETECT signal

2. Abbreviations

AER	AE (MEASUREMENT) ROTATION
CNTR1	CONTROL ROTATION 1
CNTR2	CONTROL ROTATION 2
INTR	INITIAL ROTATION
LSTR	LAST ROTATION
SCFW	SCANNER FORWARD
SCRV	SCANNER REVERSE
STBY	STANDBY
WAIT	WAIT
WMUP	WARM UP
WMUPR	WARM UP ROTATION


DC CONTROLLER PCB
DC POWER SUPPLY UNIT
HOLDING TRAY CONTROL PCB
AC DRIVER PCB
DRUM HEATER CONTROL PCB
HIGH VOLTAGE UNIT
CONTROL PANEL CONTROLLER PCB
CONTROL PANEL BACK-LIGHT LAMP
CONTROL PANEL LCD
TEN KEY PCB
SERVICE SWITCH PCB
Holding tray forward clutch
Holding tray registration clutch
Holding tray reversing clutch
Holding tray separation clutch
Holding tray re-pick-up roller (D-cut roller) solenoid
Holding tray recirculating lever motor
Holding tray switching solenoid
Holding tray recirculating lever home position sensor
Holding tray (Y) motor
Holding tray(Y) home position sensor
Holding tray (X) motor
Holding tray(X) home position sensor
Holding tray feeding assembly 2 paper sensor
Holding tray paper deflecting plate solenoid
Holding tray weight solenoid
Holding tray paper sensor
Holding tray registration paper sensor
Holding tray pick-up sensor
Waste toner feeding screw locking detection
Scanner locked sensor
Scanner locking solenoid
Multifeeder pick-up solenoid
Multifeeder paper width detection
Multifeeder paper sensor
Multifeeder pick-up clutch
Multi-feeder pick-up relay solenoid
High voltage unit 2
High voltage unit 1
Pick-up motor
Cleaner fan
Pick-up vertical path roller 0 drive clutch
Pick-up vertical path 0 sensor
Pick-up vertical path 2 sensor
Developing
Right deck limiter position sensor
Right deck open/ closed sensor
Right deck pick-up clutch
Right deck paper sensor
Right deck lifter position sensor
Pick-up vertical path roller 1 drive clutch
Cassette 4 paper width detection
Exhaust fan
Environment sensor
Pick-up vertical path roller 3 drive clutch
Cassette 3 pick-up roller releasing solenoid
Cassette 3 pick-up clutch
Cassette 3 paper sensor
Cassette 3 position sensor
Right deck lifter drive motor
Left deck lifter drive motor
Upper right door sensor
Lower right door sensor
Cassette 4 lifter motor
Cassette 3 lifter motor
Pick-up vertical path 1 sensor
Holding tray feeding assembly 1 sensor
Holding tray feeding assembly in/out detection
Left dick outlet paper sensor
Left deck limiter sensor
Left deck pick-up roller releasing solenoid
Right deck pick-up roller releasing solenoid
Left deck paper sensor
Left deck position sensor
Left deck pick-up clutch
Left deck lifter position sensor
Left deck open/closed sensor
Cassette 4 paper length detection
Pick-up vertical path roller 4 drive clutch
Pick-up vertical path 4 sensor
Cassette 4 open/closed sensor
Cassette 4 pick-up roller releasing solenoid
Cassette 4 pick-up clutch
Cassette 4 paper sensor
Cassette 4 lifter position sensor
Holding tray feeding 2 clutch
Developing clutch
Lamp regulator
Scanner motor
Main motor
Feeding fan
Fixing drive stop solenoid
Fixing assembly inlet guide drive solenoid
Fixing assembly pick-up roller releasing solenoid
Fixing assembly outlet paper sensor
Fixing/feeding unit locking solenoid
Fixing/feeding unit sensor
Transfer/separation corona wire cleaning motor
Registration roller drive clutch
Registration paper sensor
Fixing cleaning belt drive solenoid
Fixing cleaning belt length sensor
Fixing assembly main thermistor
Fixing assembly sub thermistor
Fixing assembly internal delivery sensor
Fixing assembly external delivery sensor
Delivery paper deflecting plate solenoid
Lens(Y) motor
Lens(Y) home position sensor
Lens(X) motor
Lens(X) home position sensor
Original size detection
Scanner engine leading edge 1 sensor
Scanner engine leading edge 2 sensor
Scanner home position sensor
Copyboard cover open/closed sensor
Pre-transfer corona wire cleaning motor
Pre-exposure LED
Primary corona wire cleaning motor
Potential sensor
Blank-exposure LED
Hopper toner sensor
Hopper motor (for stirring)
Hopper motor (for supply)
Fixing heat exhausting fan
Scanner cooling fan
TOTAL COUNTER
COUNTER 2 (ACC)
CARD READER (ACC)
Multifeeder door sensor
Developing assembly toner level detection
Fixing brake clutch
Flexible cable
Fixing heater
Fixing sub heater
Thermal fuse
Power supply switch (SW1)
Drum heater switch (SW3)
Front door switch (SW2)
Scanning lamp
Drum heater
Cassette heater power supply cord (accessory)
Cassette heater
Circuit breaker
Noise filter
Power cord mount
to SORTER
to HOLDING TRAY CONTROL PCB
to PAPER DECK-A1
to TRAY RAIL
to earth
Fixing heater
Fixing thermistor
Fixing film
Pressure roller
Fixing assembly
Stage unit
Lens unit
Lens stag unit
Scanner unit
Cassette 4 paper sensor
Cassette 4 lifter position sensor
Cassette 4 pick-up clutch
Cassette 4 pick-up roller releasing solenoid
Pick-up vertical path roller 4 drive clutch
Pick-up vertical path 4 sensor
Cassette 4 open/closed sensor
Holding tray feeding 2 clutch
Developing clutch
Lamp regulator
Scanner motor
Main motor
Feeding fan
Fixing drive stop solenoid
Fixing assembly inlet guide drive solenoid
Fixing assembly pick-up roller releasing solenoid
Fixing assembly outlet paper sensor
Fixing/feeding unit locking solenoid
Fixing/feeding unit sensor
Transfer/separation corona wire cleaning motor
Registration roller drive clutch
Registration paper sensor
Fixing cleaning belt drive solenoid
Fixing cleaning belt length sensor
Fixing assembly main thermistor
Fixing assembly sub thermistor
Fixing assembly internal delivery sensor
Fixing assembly external delivery sensor
Delivery paper deflecting plate solenoid
Lens(Y) motor
Lens(Y) home position sensor
Lens(X) motor
Lens(X) home position sensor
Original size detection
Scanner engine leading edge 1 sensor
Scanner engine leading edge 2 sensor
Scanner home position sensor
Copyboard cover open/closed sensor
Pre-transfer corona wire cleaning motor
Pre-exposure LED
Primary corona wire cleaning motor
Potential sensor
Blank-exposure LED
Hopper toner sensor
Hopper motor (for stirring)
Hopper motor (for supply)
Fixing heat exhausting fan
Scanner cooling fan
TOTAL COUNTER
COUNTER 2 (ACC)
CARD READER (ACC)
Multifeeder door sensor
Developing assembly toner level detection
Fixing brake clutch
Flexible cable
Fixing heater
Fixing sub heater
Thermal fuse
Power supply switch (SW1)
Drum heater switch (SW3)
Front door switch (SW2)
Scanning lamp
Drum heater
Cassette heater power supply cord (accessory)
Cassette heater
Circuit breaker
Noise filter
Power cord mount
to SORTER
to HOLDING TRAY CONTROL PCB
to PAPER DECK-A1
to TRAY RAIL
to earth
Fixing heater
Fixing thermistor
Fixing film
Pressure roller
Fixing assembly
Stage unit
Lens unit
Lens stag unit
Scanner unit

D. PAPER DECK-A1 GENERAL CIRCUIT DIAGRAM



E. SPECIFICATIONS

A. Copier

1. Type

Body	Console
Copyboard	Fixed
Light source	Halogen lamp (80 V, 272 W; 120 V), (153 V, 290 W; 230 V)
Lens	Zoom
Photosensitive medium	Amorphous silicon (80 mm dia.)

2. Mechanisms

Copying		Indirect electrostatographic
Charging		Corona
Exposure		Slit (moving light source)
Copy density adjustment		Automatic or manual
Development		Dry (toner projection)
Pick-up	Auto	Front cassette (2) Front paper deck (2)
	Manual	Multifeeder (5.5 mm deep, 50 sheets of 80 g/m^2)
Transfer		Corona
Separation		Corona (static)
Cleaning		Blade
Fixing		Heating roller (600 W + 600 W)

3. Performance

Original type		Sheet, book, 3-D object (2 kg max.)
Maximum original size		A3
Repro-duction ratio	Direct	1:1
	Reduce I	1:0.500
	Reduce II	1:0.707
	Reduce III	1:0.816
	Reduce IV	1:0.865
	Enlarge I	1:2.000
	Enlarge II	1:1.414
	Enlarge III	1:1.224
	Enlarge IV	1:1.154
	Zoom	1:0.490 to 2.040 (1% increments)
Wait time		6 min min. (at 20°C)
First copy		2.8 sec min. (A4, non-AE, right deck pick-up)
Continuous copying		999 copies max.
Copying size		One-sided A: A3 (max.), A6 vertical (min.; postcard) Inch: 279.4×431 mm (11"×17", max.) STMT (min.) Two-sided A: A3 (max.), A5 horizontal (min.) Inch: 279.4×431.8 mm (11"×17", max.), STMT horizontal (min.)

Copy paper type	Cassette pick-up		• Plain paper (64 to 90 g/m^2) A3, B4, A4, B5, A4R, B5R, 11" × 17", LGL, LTR, LTR-R, A5, A5R, STMT, STMTR, Foolscap, GLTR, GLTR-R, KLGL, K-LGL-R, OFFICIO, E-OFFICIO, A-OFFICIO, B-OFFICIO, A-LTR, ALTR-R, A-LGL • Tracing paper* (SM-1) A3, B4, A4, B5, A4R, B5R • Colored paper (Canon-recommended) B4, A4
	Front paper deck pick-up		• Plain paper (64 to 90 g/m^2) A4, B5, LTR • Colored paper (Canon-recommended) A4
	Multifeeder pick-up		• Plain paper (64 to 90 g/m^2) A3, B4, A4, B5, A4, B5R, 11" × 17", LGL, LTR, LTR-R, STMT-R*, postcard • Tracing paper* (SM-1) A3, B4, A4, B5, A4R, B5R • Transparency (Canon-recommended) A4, LTR • Colored paper* (Canon-recommended) B4, A4 • Label sheet (Canon-recommended) A4, LTR • Thick paper* (91 to 200 g/m^2)
	Two-sided copying	Automatic	• Plain paper* (64 to 90 g/m^2) A3, B4, A4, B5, A4R, B5R, 11" × 17", LGL, LTR, LTR-R, A5, STMT • Colored paper (Canon-recommended) B4, A4
		Multifeeder	• Plain paper* (64 to 90 g/m^2) A3, B4, A4, B5, A4R, B5R, 11" × 17", LGL, LTR, LTR-R, STMT-R, A5, STMT • Colored paper* (Canon-recommended) B4, A4
	Overlay copying	Automatic	• Plain paper* (64 to 90 g/m^2) A3, B4, A4, B5, A4R, B5R, 11" × 17", LGL, LTR, LTR-R, A5, STMT • Color paper* (Canon-recommended) B4, A4
		Multifeeder	Plain paper* (64 to 90 g/m^2) A3, B4, A4, B5, A4R, B5R, 11" × 17", LGL, LTR, LTR-R, STMT-R, A5, STMT • Colored paper* (Canon-recommended) B4, A4

*May be used, but may not feed properly.

Tray	Claw	None
	Cassette	60 mm deep (approx.) (about 550 sheets each of 80 g/m^2 paper)
	Front paper deck	162 mm deep (about 1500 sheets each of 80 g/m^2)
	Copy tray	250 sheets (approx.; A3, of 80 g/m^2)
Non-image width	Leading edge	For Direct, 4.5 ±1.5 mm (for non-default, overlay, two-sided, 4.5 ±1.5 mm)
	Trailing edge	2.0 ±1.5 mm (non-default, overlay, two-sided, 2.0 ±1.5 mm); if with RDF-D1, 2.0 ±1.5 mm
	Left/right (1st side)	2.75 ±2.5 mm; if with RDF-D1, 2.75 ±2.75 mm
	Left/right (2nd side)	2.75 ±2.5 mm; if with RDF-D1, 2.75 ±2.75 mm
Auto clear		Provided (2 min standard; may be varied between 0 and 1 hr in 10-min increments; may be varied between 1 and 2 hr in 1-hr increments)
Auto power-off		Provided (1 hr standard; may be varied between 0 and 1 hr in 10-min increments; may be varied between 1 and 2 hr in 1-hr increments)
Accessory		• Sorter-G1 • Paper Deck-A1 • Stapler Sorter-E2 • Remote Diagnostic Device II • Control Card-V • Copy Data Controller-A1

4. Others

Operating environment	Temperature	7.5° to 32.5°C/ 45.5°C to 90.5°F		
	Humidity	5% to 80% RH		
	Atmospheric pressure	810.6 to 1013.3 hPa (0.8 to 1.0 atm)		
Power supply		NP6560	NP6360	NP6260
	120V (UL) 120V 220/ 240V 220/ 240V (UK) 220/ 240V (CA) 220/ 240V (FRN) 220/ 240V (GER) 220/ 240V (AMS) 220/ 240V (ITA)	NHW XXXXX – – – – – – – –	– NHV XXXXX PES XXXXX – RBX XXXXX – – – –	– – – QBM XXXXX – SAZ XXXXX PDW XXXXX UDB XXXXX TBB XXXXX
Power consumption	Maximum	2.0 kW or less		
	Standby	0.4 kWh (approx.; reference only)		
	Continuous copying	1.4 kWh (approx.; reference only)		
Noise	Copying	78 dB or less (sound power level by ISO)		
	Standby	55 dB or less (sound power level by ISO)		
Ozone		0.05 ppm or less (avr over 8 hr)		
Dimensions	Width	643mm/25.3 in		
	Depth	725mm/28.5 in		
	Height	1169mm/46.0 in		
Weight		210 kg/ 462.8lb (approx.; w/ RDF)		
Consumables	Copy paper	Keep wrapped to protect against humidity.		
	Toner	Avoid direct sunshine; keep at 40°C, 85% or under.		

Ratio		Size	Copy paper	Copies/min
Direct		A3(297 × 420mm)	A3	30
		A4(210 × 297mm)	A4	60
		B4(257 × 364mm)	B4	39
		B5(182 × 257mm)	B5	60
		A4R(297 × 210mm)	A4R	46
		B5R(257 × 182mm)	B5R	52
Reduce	Ⅰ (50%)	A3 → A5R	A5R	57
	Ⅱ (70%)	A3 → A4R	A4R	46
		B4 → B5R	B5R	52
		A4 → A5	A5	60
	Ⅲ (81%)	B4 → A4R	A4R	46
	Ⅳ (86%)	A3 → B4	B4	39
		A4 → B5	B5	60
Enlarge	Ⅰ (200%)	A5R → A3	A3	29
	Ⅱ (141%)	A4R → A3	A3	30
		B5R → B4	B4	38
		A5 → A4	A4	47
	Ⅲ (122%)	A4R → B4	B4	39
	Ⅳ (115%)	B4 → A3	A3	30
		B5 → A4	A4	60

Table A-1 Copying Speed (copier only)

Ratio		Size	Copy paper	Copies/min
Direct		LTR	LTR	60
		11" × 17"	11" × 17"	30
		LGL	LGL	40
		LTRR	LTRR	49
		STMT/STMTR	STMT/STMTR	60
Reduce	Ⅰ (50%)	11" × 17" → STMTR	STMTR	56
	Ⅱ (64.7%)	11" × 17" → LTRR	LTRR	48
	Ⅲ (73.3%)	11" × 15" → LTRR	LTRR	48
Enlarge	Ⅰ (200%)	STMR → 11" × 17"	11" × 17"	29
	Ⅱ (129.4%)	LTRR → 11" × 17"	11" × 17"	30
	Ⅲ (121.4%)	LGL → 11" × 17"	11" × 17"	30

Table A-2 Copying Speed (copier only)

Specifications subject to change without notice.

B. Paper Deck-A1

Item	Specifications
Pick-up	Clawless (retard)
Paper compartment	Side tray
Copy paper	• Plain paper (64 to 90 g/m^2) A4, B5, LTR • Colored paper (Canon-recommended) A4
Paper volume	385 mm high (stack; about 3,500 sheets of 80 g/m^2 paper)
Serial number	ZHY xxxxx (A/B), ZHZ xxxxx (Inch)
Paper size alteration	By size guide plate (in steps), in service mode (*5*)
Dimensions	329 (W) × 583 (D) × 680 (H) mm/13.0 (W) × 23.0 (D) × 26.8 (H) in
Weight	33.5 kg/73.8 lb
Power supply	DC from copier
Operating environment Temperature Humidity	Same as copier

Specifications subject to change without notice.

Prepared by
OFFICE IMAGING PRODUCTS TECHNICAL SUPPORT DEPARTMENT 1
OFFICE IMAGING PRODUCTS TECHNICAL SUPPORT DIVISION
CANON INC.
Printed in Japan

REVISION 0 (NOV. 1997) [18723]

5-1, Hakusan 7-chome, Toride-shi, Ibaraki 302 Japan

Canon

This publication is printed on
70% reprocessed paper.

PRINTED IN JAPAN (IMPRIME AU JAPON) 1197AB1.21-1