COLOR LASER COPIER
1120/1130/1150

SERVICE
HANDBOOK

REVISION 0

Canon

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CHAPTER 1 MAINTENANCE AND INSPECTION

A. Scheduled Servicing List

1. Copier

> **Caution:**
> Do not use solvents or oils other than those listed.

△ Clean　● Replace　× Lubricate　□ Adjust　◎ Inspect　　　As of February 1999

Unit	Part	Intervals				Remarks
		every 20,000	every 25,000	every 40,000	every 50,000	
Externals and controls	Copyboard glass		△			Use alcohol.
	Copyboard cover		△			
	Ozone filter		●			Or, 1 yr.
	Air filter		●			Or, 1 yr.
	Toner filter		●			Or, 1 yr.
Original exposure	Original reflecting cover		△			Use blower brush.
	No. 1 through No. 3 mirrors, Lens		△			
	Scanner rail		△×			After cleaning, apply silicone oil.
Pickup/ feeding	Attraction, registration spring clutch				×	Use lubricant.
	Attraction roller		△			Remove unit, and clean.
	Attraction roller cleaner pan		△			Remove unit, and clean.
	Registration roller		△			Remove unit, and clean.
	Pre-registration roller 2		△			Remove unit, and clean.
	Pre-registration roller 1		△			
	Registration path middle guide		△			Clean the guide surface
	Pickup vertical path roller		△			
Transfer drum	Transfer drum cleaner		△		×	Apply lubricant to the busihg of the brush.
	Jam sensor metal plate (resin tape used for No.2 static eliminator mount)	△				
	Jam sensor metal plate (polishing roller motor mounting plate)		△			
Laser exposure	Dust-proofing glass		△			
Charging	Charging wire, shielding plate, block		△			Clean with lint-free paper; then, clean with alcohol. Be sure the part is completely dry before mounting. Do not use water. For low humidity and high temperature/high humidity, Clean every 20,000.
	Separation, external static eliminating wire		△			

Unit	Part	Intervals				Remarks
		every 20,000	every 25,000	every 40,000	every 50,000	
Photosensitive drum area	No.2 cleaner blade	△				Turn over blade.
	Black toner concentration sensor	△				See Note.
	Pre-cleaner sensor	△				Clean with cotton wad; see Note.
	Pre-exposure lamp filter			△		Clean when replacing photosensitive drum.
	Photosensitive drum butting block	△ (front)		△		Clean when replacing photosensitive drum.
	Drum heater slip ring					Dry wipe every 150,000 copeis.
Developing assembly	Photo sensitive drum butting roll	△				Clean when replacing developer.
Fixing assembly	Fixing inlet guide	△				Use solvent.
	Lower roller separation claw		△			
	Oil. applying blade	△				Use lint-free paper.
	Oil applying felt	△				Turn over felt.
	Thermistor	△				Dry wipe.
	Fixing oil			◎×		
Others	Waste toner		◎●			
	Hopper toner pan		△			Remove build up of toner.
	Leakage breaker		◎			

Note: ■━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━

If you have cleaned the sensor, be sure to execute the following in service mode:
·   For the black toner concentration sensor, FUNCTION>INSTALL>INIT-D.
·   For pre-cleaning sensor, FUNCTION>SENS-ADJ>CLN-OFST.

2. Paper Deck

△ Clean   ● Replace   × Lubricate   □ Adjust   ◎ Inspect   As of February 1999

Unit	Part	Intervals			Remarks
		every 25,000	every 40,000	every 250,000	
Pickup assembly	Feed roller, roll			△	

B. Periodically Replaced Parts

As of February 1999

No.	Part name	Part number	Q'ty	Life (copies)	Remarks
1	Ozone filter (FM2, 5, 6)	FB2-4397-000	3	25,000	Or, 1 yr.
2	Air filter (FM1)	FB4-4819-000	1	25,000	Or, 1 yr.
3	Air filter (FM3)	FF5-8405-000	1	25,000	Or, 1 yr.
4	Air filter (FM14, 15)	FB2-0247-040	2	25,000	Or, 1 yr.
5	Toner filter (FM5, 6)	FB4-4442-000	2	25,000	Or, 1 yr.
6	Ozone filter (FM5)	FB4-9641-000	1	25,000	Or, 1 yr.

C. Consumables and Durables

1. Copier

As of February 1999

No.	Part name	Part number	Q'ty	Life (copies)	Remarks
1	Cleaner blade (drum cleaner assembly)	FB4-4677-000	1	20,000	Simultaneously with photosensitive drum.
2	Drum cleaner scoop-up sheet	FF5-3993-000	1	20,000	Simultaneously with cleaning blade.
3	Side seal, front (drum cleaner assembly)	FF5-8392-000	1	20,000	Simultaneously with cleaning blade.
4	Side seal, rear (drum cleaner assembly)	FF5-8393-000	1	20,000	Simultaneously with cleaning blade.
5	No. 2 scoop-up sheet (pre-cleaning sensor)	FG6-1046-000	1	20,000	Simltaneously with cleaning blade.
6	Grid plate (primary charging assembly)	FB4-5117-000	1	20,000	For high temperature/high humidity, 15,000.
7	Primary charging assembly cleaning pad, upper	FF2-3552-000	1	20,000	For high temperature/high humidity, 15,000.
8	Primary charging assembly cleaning pad, lower	FF2-3551-000	1	20,000	
9	Primary charging wire, 100V	FY3-0030-000	1	20,000	For high temperature/high humidity, 15,000.
	Primary charging wire, 120/230V	FY3-0040-000	1	20,000	
10	Scanning lamp	FH7-3349-000	1	25,000	
11	Manual feeder pickup roller	FF5-4327-000	2	25,000	Manual feeder counter reading.
12	Manual feeder feed roller	FF5-4331-000	1	25,000	Manual feeder counter reading.
13	Manual feeder separation roller	FF2-4710-000	1	25,000	Manual feeder counter reading.
14	Attraction roller scraper	FF5-8427-000	1	25,000	
15	Waste toner case (6 pc/box)	FY9-7006-000	1	25,000	By user.
16	Post-cleaning charging wire	FY3-0030-000	1	25,000	100V
	Post-cleaning charging wire	FY3-0040-000	1	25,000	120/230V
17	Fixing cleaning belt (upper, lower)	FB4-4543-000	1	25,000	
18	Drum cleaner end felt, front	FF5-2246-000	1	40,000	Simultaneously with cleaning blade.
19	Drum cleaner end felt, rear	FF5-2247-000	1	40,000	
20	No. 2 cleaning blade	FB2-0421-000	2	40,000	20,000 per edge.
21	Fixing upper roller	FB4-4484-000	1	40,000	Or, 1 yr.
22	Oil applying felt	FF5-9084-000	1	40,000	20,000 per side.
23	Y starter developer	F42-3132	1	40,000	
		F42-3133	1	40,000	120V UL only.
24	M starter developer	F42-3122	1	40,000	
		F42-3123	1	40,000	120V UL only.
25	C starter developer	F42-3112	1	40,000	
		F42-3113	1	40,000	120V UL only.

No.	Part name	Part number	Q'ty	Life (copies)	Remarks
26	Bk starter developer	F42-3102	1	40,000	
		F42-3103	1	40,000	120V UL only.
27	Separation/internal and external static charging wires	FY3-0030-000	1	50,000	100V
	Separation/internal and external charging wires	FY3-0040-000	1	50,000	120/230V
28	Attraction brush unit	FG6-0798-000	1	50,000	As a unit.
29	Transfer blade unit	FG6-0797-000	1	50,000	As a unit.
30	Transfer drum cleaner	FB4-4953-000	2	50,000	
31	Polishing roller	FB4-5111-000	1	50,000	
32	Transfer drum sheet	FB4-4195-000	1	50,000	
33	Separation push-up roll	FB2-0631-000	1	50,000	Simultaneously with transfer sheet.
34	Transfer side scraper	FF5-2070-000	2	50,000	
35	Fixing lower roller	FB4-4486-000	1	50,000	Or, 1 yr.
36	Re-pickup feed roller, front (re-pickup assembly)	FF5-2101-000	1	100,000	Duplexing counter reading.
37	Re-pickup feed roller, rear (re-pickup assembly)	FF5-2102-000	1	100,000	Duplexing counter reading.
38	Feed roller (re-pickup assembly)	FF5-2103-000	1	100,000	Duplexing counter reading.
39	Separation roller (re-pickup assembly)	FF5-2104-000	1	100,000	Duplexing counter reading.
40	Feed roller, front (duplexing unit)	FF5-8366-000	1	100,000	Duplexing counter reading.
41	Feed roller, rear (duplexing unit)	FF5-8367-000	1	100,000	Duplexing counter reading.
42	Oil applying blade	FB4-4536-000	1	100,000	
43	Fixing heater, upper	FH7-4617-000	1	100,000	100V
		FH7-4618-000	1	100,000	120V
		FH7-4619-000	1	100,000	230V
44	Fixing heater, lower	FH7-4611-000	1	100,000	100V
		FH7-4612-000	1	100,000	120V
		FH7-4613-000	1	100,000	230V
45	Pre-exposure lamp	FG5-3181-000	1	150,000	
46	Primary charging assembly	FG6-0892-000	1	150,000	
47	Separation charging assembly	FG6-0795-000	1	150,000	
48	Internal static eliminator	FG6-0796-000	1	150,000	
49	Eternal static eliminator	FG6-0801-000	1	150,000	
50	Post-cleaning charging assembly	FG6-0888-000	1	150,000	
51	Insulating bush (fixing assembly)	FB4-7807-000	4	150,000	
52	Pickup roller, front (cassette)	FF5-7829-000	1	250,000	Per cassette holder.
53	Pickup roller, rear (cassette)	FF5-7830-000	1	250,000	Per cassette holder.
54	Separation roller (cassette)	FB2-7777-020	1	250,000	Per cassette holder.
55	Feed roller (cassette)	FF5-7837-000	1	250,000	Per cassette holder.
56	Y developing assembly	FG6-0781-000	1	500,000	
57	M developing assembly	FG6-0782-000	1	500,000	
58	C developing assembly	FG6-0783-000	1	500,000	
59	Bk developing assembly	FG6-0784-000	1	500,000	

2. Paper Deck

As of February 1999

No.	Part name	Part number	Q'ty	Life (copies)	Remarks
1	Paper deck pickup roller	FB4-2033-000	2	250,000	Actual number of copies.
2	Paper deck feeding roller	FB4-2034-000	2	250,000	Actual number of copies.
3	Paper deck separation roller	FB2-7777-020	1	250,000	Actual number of copies.

D. Image Adjustment Basic Procedure

Adjusting the Left/Right Density Slope

Correcting Difference in Density

Conditions
- copy density at '5'
- text/photo mode

Make a copy of the Test Sheet. Is the density different between front and rear? —NO→

Select OPTION>BODY>PASCAL=0 in service mode.

YES

Is the density different between front and rear on the sample copy made at PGTYPE= 10 or 5? —NO→

Check the height of each charging wire.

YES

Clean the charging wires.

Is the difference in density different from one color to another? —NO→

YES

Make sample copies using TEST in service mode for the following:

0. normal image using Test Sheet
1. PGTEST=4 using M mono color
2. PGTEST=4 using C mono color
3. PGTEST=4 using Y mono color
4. PGTEST=4 using Bk mono color
5. PGTEST=10
6. PGTEST=5 DENS 48
7. PGTEST=14 photo mode (TXPH:1)

Check the coating of toner on the developing cylinder. Check the developing assembly butting roll and the photosensitive drum butting block. Clean them if soiled with toner.

YES← Is the difference in density gone? →NO

Is the density higher (darker) at the rear? —NO→

YES

Turn the adjusting screw at the front of the primary charging assembly counterclockwise.

Turn the adjusting screw at the front of the primary charging assembly clockwise.

Execute test printing at PGTYPE=10 or 5.

Is the difference in density gone? —NO→
1. Check the transfer charging system.
2. Clean the dust-proofing glass.
3. Clean and check the developing assembly butting roll.

YES

Check to find out if the copyboard glass is riding over something.

Clean the scanning lamp, reflecting plate, mirror, standard white plate, and copyboard glass.

Execute ADJUST>CCD>CCD-ADJ in service mode.

Is the difference in density gone? —YES→

NO

Check the original scanning lamp.

Is the darkest area of the test print made for a 16-gradation check too light? —NO→ To [A] of next page.

YES

Does the density become lower (lighter) gradually in continuous copying mode? —YES→ Check the high-voltage output of the internal/external static eliminator.

NO

Is the density low (light) in all colors? —NO→

YES

Is the value of ADJUST>DENS identical with the value on the label? —YES→ To [B] of next page.

NO

Enter the data once again, and make 50 copies.

Execute FUNCTION>DPC>DPC in service mode.

Is the value of DISPLAY>DPOT>V00-500, V00-700 normal? —NO→ Check the laser shutter and the laser system.

YES

Reference (normal values)
V00-500: 430 to 570
V00-700: 600 to 800

Open the hopper, and insert the door switch actuator. Check the temperature and humidity using DISPLAY>ANALOG>TEMP, HUM in service mode.

Are the temperature and humidity readings normal? —YES→
1. Check the insulating sheet of the transfer blade for scratches and peeling.
2. Check the shaft of the transfer drum for play.
3. Check the cable inside the transfer drum.

NO

Check the environment sensor.

[B]

Check the locked condition of the developing assembly.

Check the value of DISPLAY> DENS>DENS-Y, DENS-M, DENS-C, DENS-K in service mode.

Is the density of black normal? — YES →

Is the value of DENS-K -20 or lower? — YES → Check the supply of toner from the hopper.

NO

Compare the density of a test print made of Bk halftone against one made at time of installation or replacement of the developer.

Is it more or less the same? — YES → Go through the check items for the developing assembly.

NO

Is the surface of the black toner concentration sensor soiled? — YES → Clean the surface of the sensor.

NO

Is the test print of Bk mono halftone uneven? — YES → Replace the photosensitive drum and developer (all colors).

NO

Replace the Bk developer.

Is the value of DENS-Y, DENS-M, DENS-C the specified value ± 20? — YES → Go through the check items for the developing assembly.

NO

Is it -20 or lower? — YES → Check the supply of toner from the hopper.

NO

Remove the toner concentration sensor from inside the developing assembly.

Is the surface of the sensor soiled? — YES → Replace the sensor.

NO

Replace the developer.

Check Items for the Developing Assembly
1. Is the mechanism used to lock the developing assembly to the photosensitive drum normal?
2. Is the position of the developing assembly normal?
3. Are the developing assembly butting roll and butting block free of dirt?
4. Are the developing bias AC and DC outputs normal?
5. Is the developing cylinder coated with an even layer of toner? Further, is the coating thick enough?
6. Is the position of the electrode of the developing cylinder normal?
If a fault is found after making the above checks, perform cleaning or adjustment as necessary.
If fogging or light density still occurs after making all above checks (1 through 6), replace the developing assembly.

Correcting Fogging
[A]

Is fogging noted? — NO → To [D] of next page.

YES

Is fogging noted for all colors? — NO → To [B].

YES

Is the primary charging assembly soiled? — YES → Clean.

NO

Execute FUNCTION>DPC>DPC in service mode.

Is the value of DISPLAY>DPOT>V00-500, V00-700 normal>? — NO → Check the laser shutter, and adjust the laser power.

Reference (normal value):
V00-500: 430 to 570
V00-700: 600 to 800

YES

Check the developing assembly.

Is there a fault? — YES → Correct the fault.

NO

Replace the photosensitive drum and developers (all colors).

Adjusting Transfer

[D]

Check the locked condition of the transfer blade in service mode.

Is a transfer fault noted? — NO →

YES ↓

Are there white spots (transfer fault)? — NO →

YES ↓

Is the fault limited to a specific color? — NO → Check the transfer blade.

YES ↓

Are there white spots in vertical direction? — YES → Check the transfer blade.

NO ↓

Are there vertical lines corresponding to separation claws? — YES → Check the output of the separation charging assembly.

NO ↓

Make several test prints. Does the copy density decrease (become light)? — NO → Check the internal/external static eliminator.

YES ↓

Adjusting the Original Exposure System/Color Balance

[C]

Check the positions of the copyboard glass, standard white plate, original scanning lamp, reflecting plate, and mirrors, and clean them.

Check to see if the No. 1 mirror/No. 2 mirror base is not riding over the rail.

Check to find out if the value of ADJUST>COLOR in service mode is identical with the value recorded on the label.

Check the contact between the CCD and the CCD driver PCB.

Set OPTION>BODY>PASCAL in service mode to '1'.

Execute ADJUST>CCD>CCD-ADJ in service mode.

Is the image better? — YES → End.

NO ↓

Execute auto gradation correction in user mode.

Make a copy of the CA1 Test Sheet.

Is the gray scale (especially light area) of the copy good? — NO → Make adjustments in ADJUST>COLOR>ADJ-Y, ADJ-M, ADJ-C, ADJ-K in service mode. To make copies darker, increase the setting. To make copies lighter, decrease the setting.

YES ↓

End.

E. Points to Note for Scheduled Servicing

Optical System

Part	Tool and others	Work and remarks
Lens, CCD	Blower brush	Cleaning (Note 1)
Copyboard sheet, copyboard glass	Alcohol, lint-free paper	Cleaning
Standard white plate		
Reflecting plate, No. 1 through No. 3 mirrors	Blower brush	Cleaning
Scanner rail	Silicone oil	Cleaning; then, lubricating

Fixing System

Part	Tool and others	Work and remarks
Oil applying felt, oil applying blade	Paper rag	Cleaning
Thermistor	Solvent	Cleaning
Separation claw		
Inlet guide		

Transfer Drum System

Part	Tool and others	Work and remarks
Charging wire, shielding plate, block	Lint-free paper, alcohol	Dry wiping; then, cleaning with alcohol. Do NOT use water. (Note 2)
Transfer drum cleaner assembly	Blower brush	Cleaning

Process System

Part	Tool and others	Work and remarks
Charging wire, shielding plate, block	Lint-free paper, alcohol	Dry wiping; then, cleaning with alcohol Do NOT use water. (Note 2)
Pre-exposure lamp, filter, dust-proofing glass, potential sensor	Lint-free paper, blower brush	Cleaning
Pre-cleaning sensor assembly, No. 2 scoop-up sheet assembly	Cotton wad, lint-free paper Blower brush	Use cotton wad to clean the sensor assembly. (Note 3)
Black toner concentration sensor assembly, No. 2 blade assembly	Lint-free paper, blower brush	Remove the buildup of toner; then, dry wipe. Do NOT use solvent. (Note 4)

Developing System

Part	Tool and others	Work and remarks
Developing assembly butting roll, butting block (photosensitive drum)	Solvent	Cleaning at time of replacing the drum.
Developing roll	Solvent	Cleaning at time of replacing the developer.

Pickup/Feeding System

Part	Tool and others	Work and remarks
Attraction roller, attraction roller cleaner pan	Lint-free paper	Cleaning (Remove the unit.)
Registration roller, pre-registration roller 1/2	Alcohol, lint-free paper	Cleaning
Pickup vertical path roller	Alcohol, lint-free paper	Cleaning
Registration path middle guide	Alcohol, lint-free paper	Clean the guide surface

Note 1: Take care not to touch the mirror and lens. Take care so that the CCD will not be soiled with dust.
Note 2: Be sure that the part is completely dry before insertion.
Note 3: After mounting, execute FUNCTION>SENS-ADJ>CLN-OFST. Thereafter, record the values of ADJUST>SENS-ADJ>CLN-TH, CLN-TMP on the service label.
Note 4: After mounting, execute FUNCTION>INSTALL>INIT-D.

2

CHAPTER 2   STANDARDS AND ADJUSTMENTS

A. Image Adjustment System

| 1 | Image Margin |

The image margin of a copy is normal if it is as follows when made in Direct with original detection OFF.
Leading edge: $8/0 \pm 1.5$ mm (8.0 ± 2.0 mm)
Left/right: 2.0 ± 1.5mm (2.0 ± 1.5 mm)
Trailing edge: 2.5 ± 1.5 mm (4.5 ± 2.0 mm)
The value in parentheses represents double-sided copying.

8 ± 1.5 mm
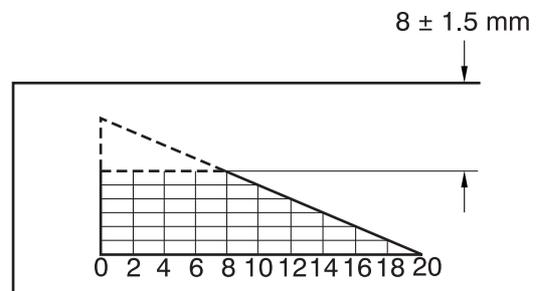
Figure 2-1 Leading Edge Image Margin

2.0 ± 1.5 mm
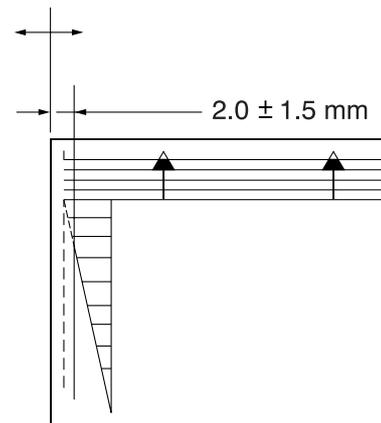
Figure 2-2 Left/Right Image Margin

| 2 | Checking/Adjusting the Image Margin |

When making checks and adjustments, observe the following order:
a. Adjusting the left/right registration
b. Adjusting the attraction position (ATT-T)
c. Adjusting the image margin (RG-XA, RG-XB)
d. Adjusting the transfer delay (TR-DELAY)
e. Adjusting the image read start position (ADJ-XY)
f. Adjust the image trailing edge margin (TR-END-A, TR-END-B)

a. Adjusting the Left/Right Registration
1) Make ten copies each from all cassettes, multifeeder, and duplexing unit, and check the left/right registration A; it is correct if as follows:
   for cassette: 2.0 ± 1.5 mm
   for multifeeder: 2.0 ± 1.5 mm
   for duplexing unit: 2.0 ± 1.5 mm
2) If the registration A is not as indicated, perform the following:
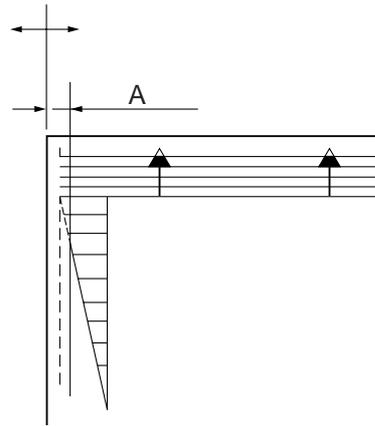
Figure 2-3

■ For the Cassette
1) Remove the cassette from the cassette holder you want to adjust.
2) Turn the adjusting screw [1] to adjust the position of the horizontal registration adjusting plate so that the horizontal registration on an image is 2.0 ± 1.5 mm. (A full turn causes a shift of about 0.7 mm.)
   · To increase the registration along the front, turn the adjusting screw counterclockwise.
   · To increase the registration along the rear, turn the adjusting screw clockwise.
3) After the adjustment, be sure to perform "registering the paper width basic value."
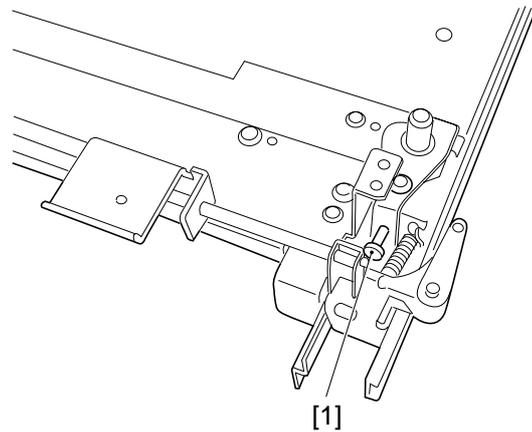
Figure 2-4

■ For the Multifeeder
Turn the screw [1] to move the position of the tray so that the registration is 2.0 ± 1.5 mm in Direct.

[1]
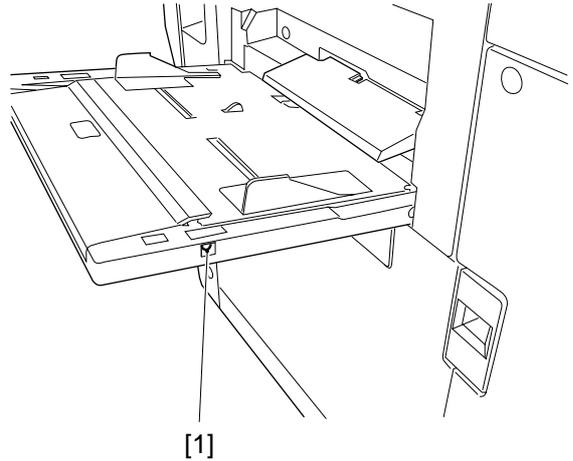
Figure 2-5

■ For the Duplexing Unit
Loosen the screw [1], and move the position of the paper jogging guide so that the registration is 2.0 ± 1.5 mm in Direct.

[1]
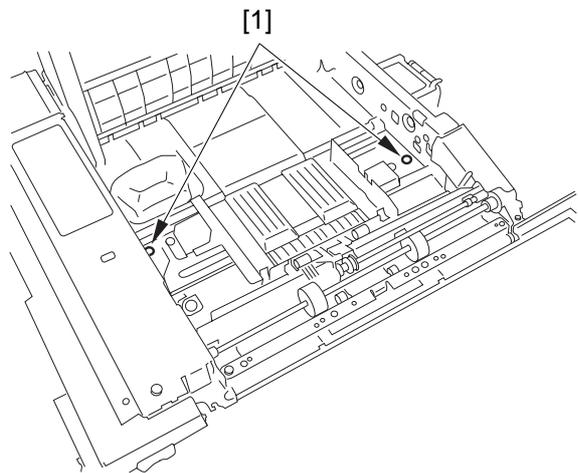
Figure 2-6

b. Adjusting the Attraction Position
    (ATTRACT)
1) Select A4.
2) Select ADJUST>FEED-ADJ>**ATT-CHK**.
3) Set ATT-CHK to '1' (2-sheet retention; sides B and A), and press OK.
4) Select ATT-ON, and press OK.
    ·   Copy paper will be picked up, attracted, and stopped.

5) Slide out the transfer frame.
6) Place a ruler and copy paper against the marking (Figure 13-207) etched to the transfer drum ring (front, rear), and measure the position d of the copy paper in relation to the leading edge of the copy paper. Perform this for both sides A and B.
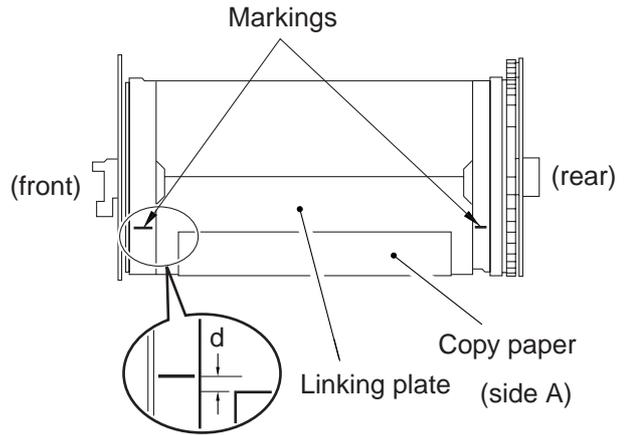
Figure 2-7

7) Make adjustments so that d is 0 ± 0.5 mm in service mode (ADJUST>FEED-ADJ).
   for side A: ATT-T-A
   for side B: ATT-T-B
   · Changing ATT-T-A, ATT-T-B to '1' will shift the point of attraction by about 0.1 mm.
   · A higher setting will delay the start of attraction (in the direction of the black arrow) while a lower setting advances it (in the direction of the white arrow).
8) After adjustment, turn off and then on the power switch.
   · Keep in mind that copies made in normal mode will be black if you forget to turn off and then on the power switch.
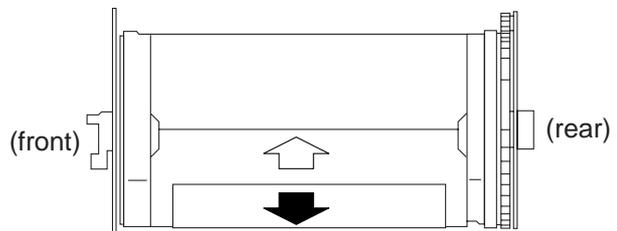
Figure 2-8

c. Adjusting the Image Leading Edge Margin (RG-XA, RG-XB)

1) Select ADJUST>FEED-ADJ>**RGST-CHK** in service mode, and press OK.

2) Set RGST-CHK to '1' (2-sheet retention; sides B and A), and press OK.

3) Select RGST-ON, and press OK.
    ·   A total of two prints (one each shown in the figure) will be generated.
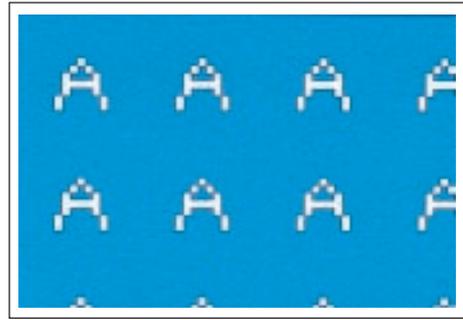
Test print on side A

Test print on side B

Figure 2-9

4) Measure the leading edge margin d on the print. Perform this for both sides A and B.

5) Select the following service modes; then, make adjustments by changing the settings so that the leading edge d is 8 ± 0.5 mm.

    for side A: ADJUST>FEED-ADJ>**RG-XA**

    for side B: ADJUST>FEED-ADJ>**RG-XB**

    ·   Setting it to '1' will shift the leading edge margin by about 0.1 mm.

    ·   A higher setting increases the leading edge margin while a lower setting decreases it.
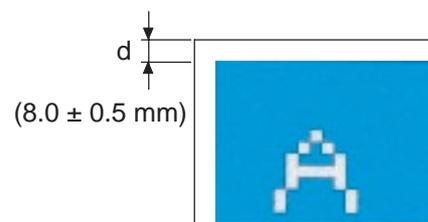
Figure 2-10

d. Adjusting the Transfer Delay (TR-DELAY)

1) Select FUNCTION>ATTRACT>**TR1-CHK** in service mode.
2) Set TR1-CHK to '1' (2-sheet retention; both sides B and A), and press OK.
3) Select TR1-ON, and press OK.
    · A total of two prints (one each shown in the figure) will be generated.
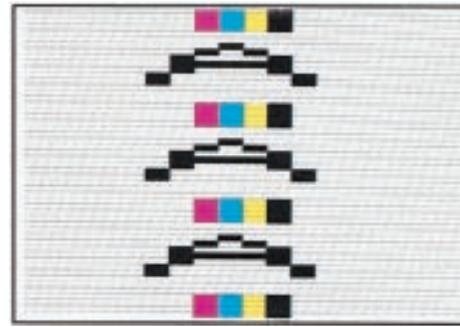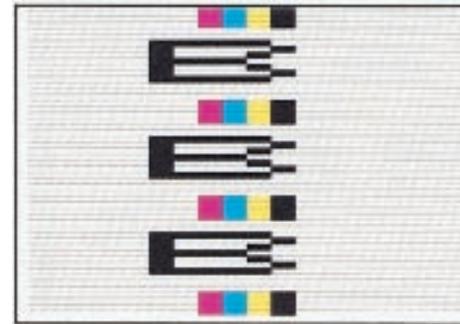
Test print on side A

Test print on side B

Figure 2-11

4) Measure the transfer delay d on side B on the generated print.
5) Select ADJUST>FEED-ADJ>**TR-DELAY -A or B** in service mode, and make adjustments so that the transfer delay is 3 ± 0.5 mm.
    · Changing the setting to '1' will shift the transfer delay by about 0.1 mm.
    · A higher setting will increase the transfer delay while a lower setting will decrease it.
6) Select FUNCTION>ATTRACT>**TR2-CHK** in service mode, and set '1' (2-sheet retention; both sides B and A), and press OK.
7) Select TR2-ON, and press OK.
8) Check the leading edge margin (8 ± 0.5 mm) on the print.
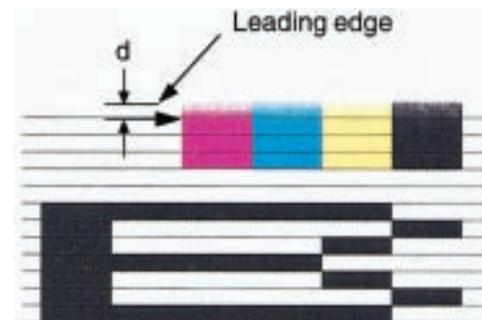
Figure 2-12

e. Adjusting the Image Read Start Position (ADJ-XY)

1) Place the Test Sheet on the copyboard glass.
2) Select ADJUST>ADJ-XY in service mode.
3) on the ADJ-XY screen, press the Copy Start key.
   · The appropriate copying mode will automatically be selected, and a copy is made with a shift of about 50 mm as shown in the figure.
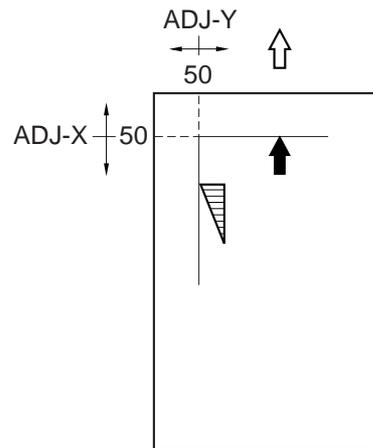
Figure 2-13

4) If part of the image is missing, decrease the setting of **ADJ-X**, **ADJ-Y** in service mode.
5) If part of the image is outside the image area, increase the setting of **ADJ-X**, **ADJ-Y**.
6) Press the Copy Start key once again, and make a check.
7) Press the Reset key.

f. Adjusting the Image Trailing Edge Margin (TR-END-A, B; end of transfer high voltage)

If you have replaced the transfer drum unit in the field, correct the variation in the end of the transfer voltage.

1) Select ADJUST>FEED-ADJ>TR-END-A or B in service mode, and enter '25' (10 mm).
2) Select ADJUST>FEED-ADJ>TR3-ON or -TR4-ON; then, press the OK key.
3) Measure the distance X (mm) between the point at which blurring starts along the trailing edge of the image on the generated test print and the trailing edge of the image.
4) Enter the result of (10 - x)/0.4 as the adjustment value of TR-END-A or -B. (Round the result up to a whole number.)
5) Select ADJUST>FEED-ADJ>TR3-ON or -TR4-ON in service mode once again; then, press the OK key.
6) Check to make sure that the image along the trailing edge of the generated test print is not blurred.
7) Record the value of ADJUST>FEED-ADJ>TR-END-A or -B on the service label.
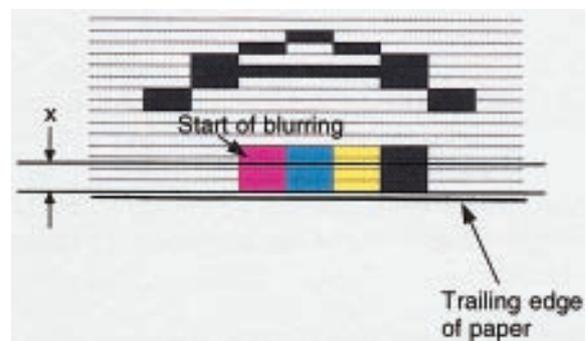
Figure 13-213a

B. Exposure System

1	Routing the Scanner Drive Cable

Route the scanner drive cable as indicated; i.e., [1] through [8]. Then, perform "adjusting the mirror position."
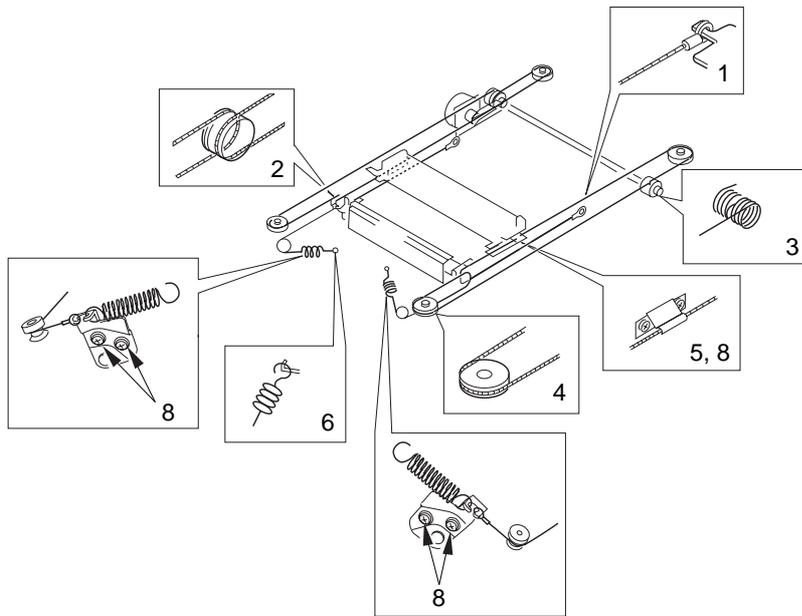
Figure 2-14

2	Adjusting the Mirror Position

Be sure to adjust the position of the mirror when you have routed the scanner drive cable.
1) Extend the arm of the mirror positioning tool (FY9-3040-000) fully.
2) Fit the mirror positioning tool between No. 1 mirror base and No. 2 mirror base.
3) Route the scanner drive cable to the No. 1 mirror mount.
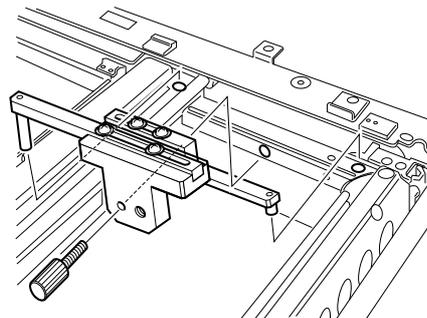
Figure 2-15
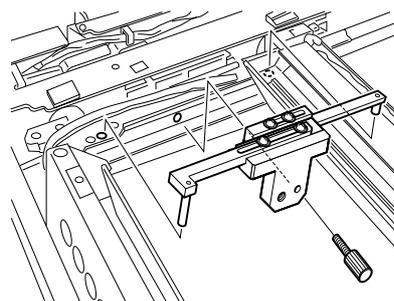
Figure 2-16

C. Image Formation System

1	Adjusting the Height of Charging Wires

The height (position) of the charging wire of each charging assembly may be adjusted by turning the screw found behind the assembly. A full turn of the screw will shift the charging wire by about 0.7 mm.

You cannot, however, change the height of the wire of the internal static eliminator or the post-cleaning charging assembly.

Charging assembly	Height of charging wire (mm)	Range
Primary charging assembly	10.5	4 mm (approx.)
Separation charging assembly	17.0	4 mm (approx.)
External charging assembly	17.0	4 mm (approx.)
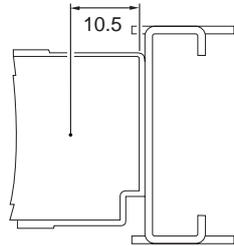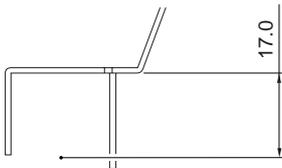
Table 2-17

2	Points to Note about the Photosensitive Drum

a. The photosensitive drum is vulnerable to strong light, and exposure to strong light for an appreciable period of time will lead to white spots or black bands on copies. Whenever you have removed the photosensitive drum from the copier, be sure to wrap the light-blocking sheet (or five to six sheets of fresh copy paper) around it, and keep it in a dark place.

b. If you are installing a new photosensitive drum, be sure to perform the following:

1) Install the new photosensitive drum.

2) Mount the primary charging assembly, pre-cleaning charging assembly, photosensitive drum cleaner assembly, and developing assemblies.

3) Coat the No. 2 blade of the black toner concentration sensor evenly with drum cleaner lubricant (TKN-0480).

4) Coat the blade of the photosensitive drum cleaner assembly with drum cleaner lubricant (TKN-0480).

5) Dry wipe the window of the black toner concentration sensor, and mount it.

6) Dry wipe the window of the pre-cleaning sensor, and mount it.

7) Turn on the power switch, and keep the copier in standby state.

8) Select FUNCTION>INSTALL>**STIR-4** in service mode, and execute it.

9) Select FUNCTION>SENS-ADJ>**CLN-OFST**, and execute it.

10) Record the settings of ADJUST>SENS-ADJ>**CLN-TH**, **CLN-TMP** on the service label attached behind the front right cover.

11) Select FUNCTION>INSTALL>**INIT-D** in service mode, and execute it.

c. If the surface of the photosensitive drum is soiled, wipe it with a flannel cloth coated with toner. (Do NOT use paper, lint-free or otherwise.)

Do not use solvent when cleaning it. Do not touch its surface.

3	**Adjusting the Position of the Photosensitive Drum Fixing Shaft**

Slide the photosensitive drum frame unit about 5 cm out of the copier, and then slide it back in. If the movement is not smooth, adjust the position of the photosensitive drum fixing shaft using the drum shaft positioning tool (FY9-3045-000).

This adjustment, however, need not be made if the images are free of color displacement, blurring, and faults at intervals and, moreover, the discrepancy between the photosensitive drum fixing shaft and the hole of the photosensitive drum flange is about 1 mm.

1) Slide out the photosensitive drum unit from the copier.

2) Remove the six screws [1], and detach the photosensitive drum butting blocks [2] (front, back); then, detach the photosensitive drum [3] from the photosensitive drum frame unit [4].

3) Slide the photosensitive drum frame unit into the copier, and secure it in place with three screws.

4) Secure the drum motor assembly [5] to the copier temporarily with seven screws [6].
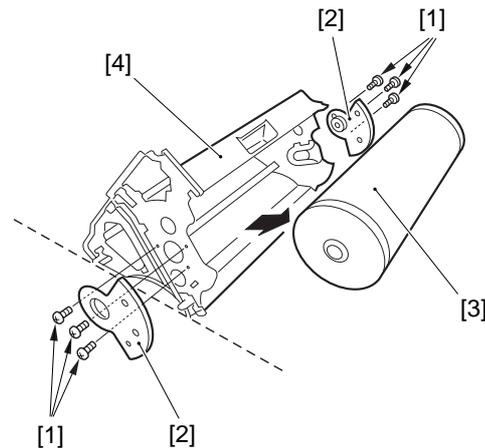
Figure 2-18
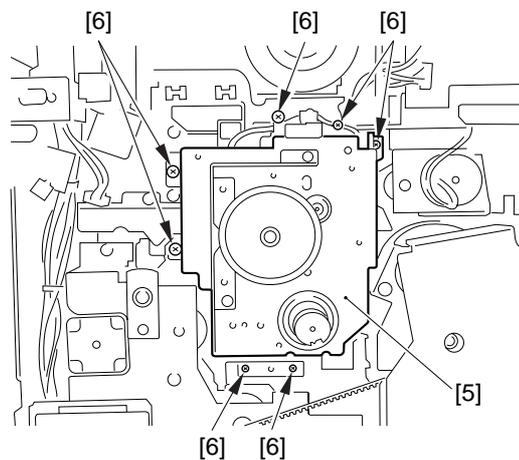
Figure 2-19

5) Secure the drum shaft positioning tool [7] in place to the photosensitive drum frame unit with the two screws [8] removed in step 2).

6) Secure the drum motor assembly in place with seven screws.

7) Detach the drum shaft positioning tool, and slide out the photosensitive drum unit from the copier; then, mount the unit and parts removed in step 1).
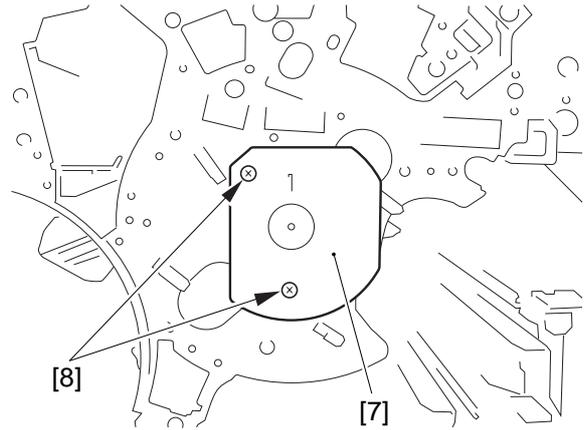

Figure 2-20

| 3 | **Use of Grease** |

Do NOT use grease (conducting or otherwise) to the slip ring for the drum heater.

| 4 | **Adjusting the Developing Assembly S-B Gap** |

If you have replaced the developing blade, adjust the S-B gap of each sleeve using the S-B gap gauge (FY9-3044-000).

Developer	S-B gap
Yellow	0.62 mm
Cyan	0.74 mm
Magenta	0.74 mm
Black	0.48 mm

Table 2-1

| 5 | Replacing the Developer |

1) Open the hopper unit fully.
2) An appreciable amount of developer will fall out in the next step. Keep a plastic bag [1] as shown.
3) Detach the cap [2] from the discharge opening found at the front bottom of the developing assembly whose developer you want to replace.
4) Select FUNCTION>**INSTALL** in service mode.
5) While keeping the plastic bag against the discharge opening, press **RECV-M/C/Y/K**, as appropriate, in service mode.
   · When the developer has stopped pouring, press the Stop key to stop the operation.
6) Fit the cap back on the discharge opening.
7) Remove the screw, and detach the developing assembly; then, detach the cap from the discharge opening.
   In the case of the black developing assembly, disconnect the connector also.
8) While tilting the developing assembly, turn the gear by hand to discharge all remaining developer.
   At this time, tilt the developing assembly farther down while turning the gear so that no toner will remain when it is finally held upright.
9) Fit the cap to the discharge opening.
10) Mount the developing assembly to the copier.
11) At the end of the wait period, select FUNCTION>**INSTALL** in service mode.
12) Press SPLY-M/C/Y/K, as appropriate.
13) See that the developing assembly is locked in place, and the screw inside it rotates (about 10 sec).
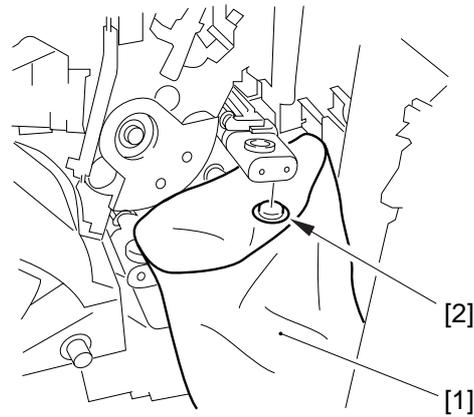
Figure 2-21
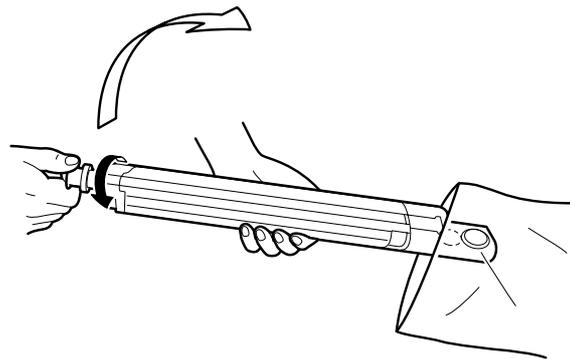
Figure 2-22

14) Fit the developer supply funnel that comes with the copier to the developing assembly upright.
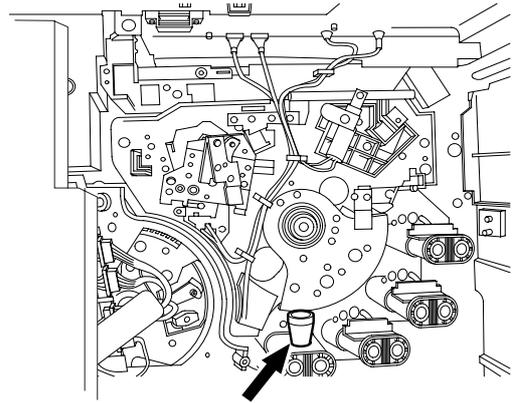
Figure 2-23

15) Put the developer into the developing assembly.
   · Turn the developer container slowly while tilting it to facilitate the work.
16) When done, press the Stop key to stop the operation.
17) Execute **STIR-Y/M/C/K** in service mode (about 10 min).
18) Execute **INIT-Y/M/C/K** in service mode (about 10 min).
19) Select ADJUST>**DENS** in service mode.
20) Record the data of the DENS screen on the service label.
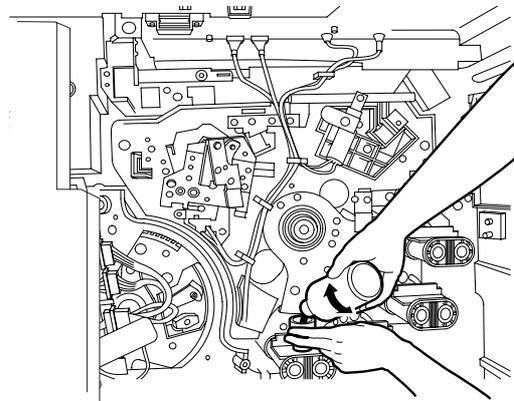
Figure 2-24

6	Points to Note about the Pre-Cleaning Sensor

If you have removed or replaced the pre-cleaning sensor assembly, perform the following:
1) Dry wipe the window of the pre-cleaning sensor, and mount it.
2) Turn on the power switch, and keep the copier in standby state.
3) Select and execute FUNCTION>SENS-ADJ>**CLN-OFST** in service mode.
4) Record the settings of ADJUST>SENS-ADJ>**CLN-TH**, **CLN-TMP** in service mode to the service label behind the front right door.

7	Points to Note about the Black Toner Concentration Sensor

If you have dry wiped the window of the black toner concentration sensor, select and execute FUNCTION>INSTALL>**INIT-D** after mounting it.

2-13

D. Pickup/Feeding System

| 1 | **Orientation of the Cassette Pickup Roller** |

When mounting the pickup roller [1] to the pickup assembly, be sure that the round marking [2] on the rubber portion is at the copier's front. The pickup roller is identified by color as follows:

·   for the front, use the gold-colored roller.
·   for the rear, use the silver-colored roller.
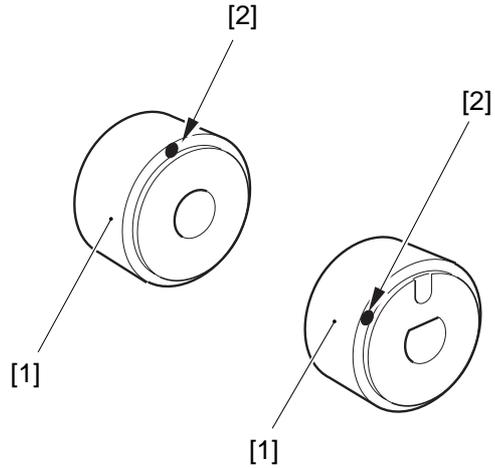
Figure 2-25

| 2 | **Orientation of the Cassette Feed Roller** |

When mounting the feed roller [1] to the pickup assembly, be sure that the gear [2] of the feed roller is at the copier's front.
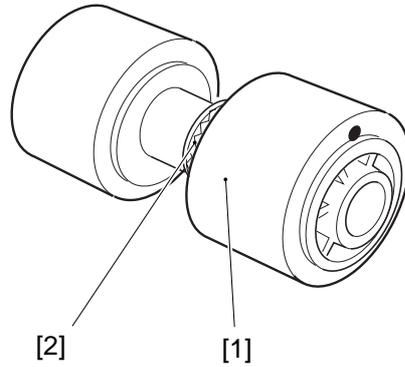
Figure 2-26

| 3 | **Orientation of the Cassette Separation Roller** |

When mounting the separation roller [1] to the pickup assembly, be sure that the round marking [2] is at the copier's front.
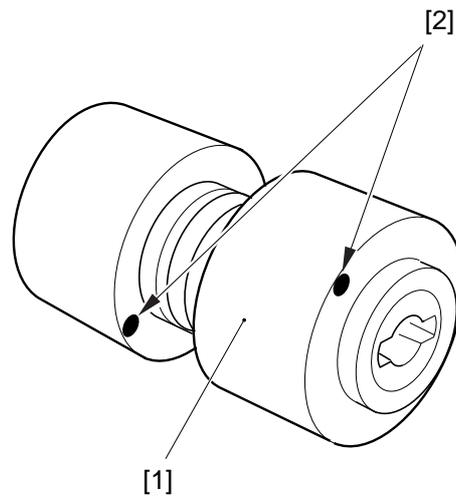
Figure 2-27

4	Adjusting the Pressure of the Separation Roller

If double feeding or pickup failure occurs during pickup, adjust the position of the pressure spring of the separation roller.
a. If double feeding occurs, move the spring in the direction of arrow A.
b. If pickup failure occurs, move the spring in the direction of arrow B.
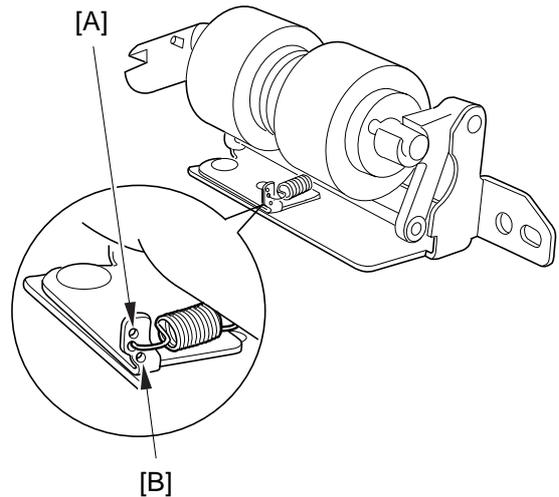
Figure 2-28

5	Orientation of the Duplexing Feed Roller and the Duplexing Separation Roller

When mounting the feed roller [1], be sure that the round marking [2] is at the copier's front.

When mounting the separation roller [3], be sure that the round marking [4] is at the copier's rear.
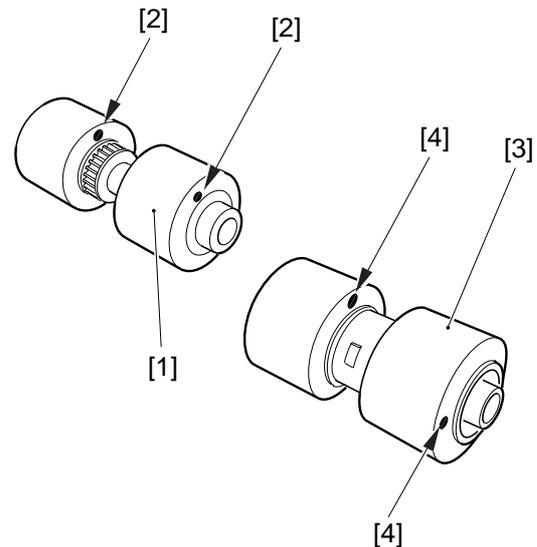

Figure 2-29

6	Orientation of the Manual Pickup, Feed, and Separation Rollers

When mounting each roller, be sure that the round marking [1], [2], [3] is at the copier's rear.
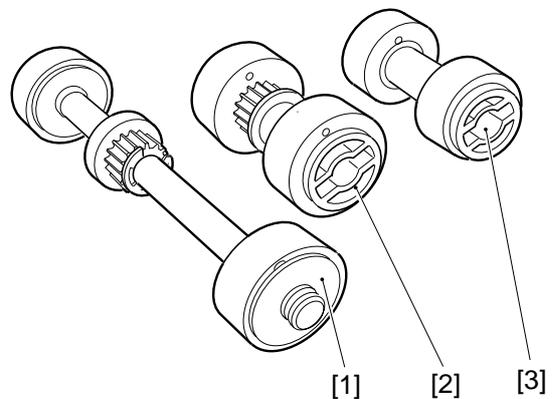
Figure 2-30

7	Attaching the Timing Belt for the Multifeeder Assembly

Keep the rack plate [1] of the multifeeder in closed state.

Move the slide volume [2] in the direction of the arrow, and attach the timing belt [3] to the pulley.
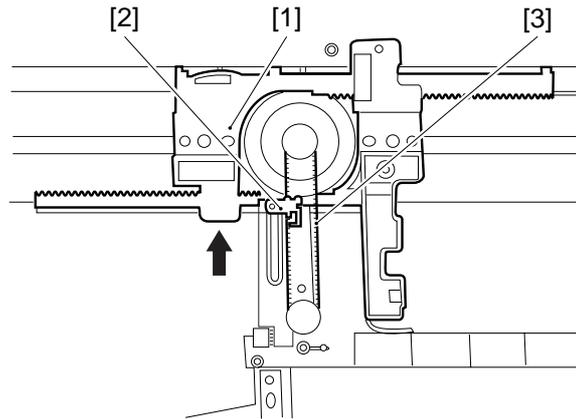

Figure 2-31

8	Adjusting the Position of the Duplexing Unit Paper Jogging Guide Sensor

1) Select A4R or LTRR, and perform copying on the first side of a double-sided copy.
2) Slide out the duplexing unit.
3) Measure the distance L of the paper jogging guide plate [1].

   A4R: L = 210 ± 0.3 mm
   LTRR: L = 216 ± 0.3 mm
4) If the distance is not as indicted, adjust the position of the paper jogging guide sensor.
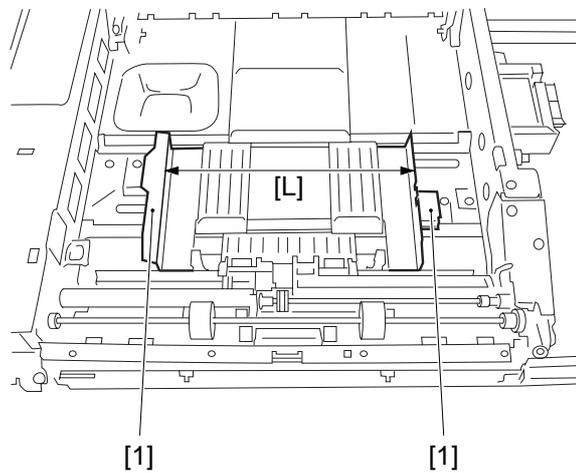

Figure 2-32

9	Position of the Duplexing Unit Stopper Plate Solenoid

1) Keep the steel core [1] of the solenoid drawn to the copier.
2) Rotate the shutter [2], and keep the distance as indicated, i.e., L1 is 1.0 ± 0.2 mm. Then, secure the stopper plate solenoid.
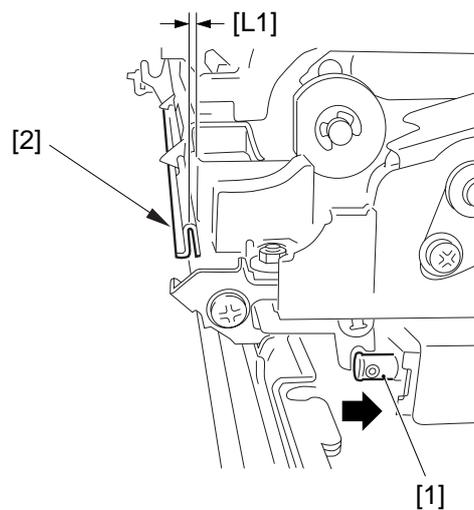
Figure 2-33

10	Position of the Duplexing Feed Roller Solenoid

While the steel core of the solenoid is drawn to the copier, mount the duplexing feed solenoid so that the distance L2 between the top edge of the feed roller and the holding tray is 49 ± 0.5 mm.
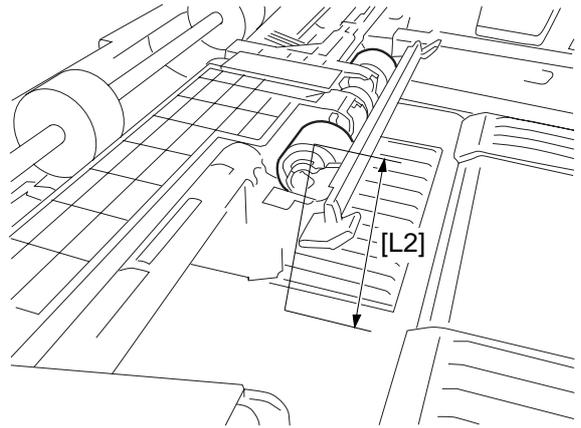
Figure 2-34

11	Replacing the Transfer Drum Sheet

Caution:

The transfer drum frame is equipped with a slip-stop mechanism; as such, keep the following in mind:

· Do not turn the transfer drum clockwise with your fingers inside the opening in the transfer drum while the transfer drum is on the transfer drum frame.

· When the transfer drum is off the frame, it will tend to rotate in clockwise direction. (If the transfer drum is rotated clockwise, the transfer brush and the attraction brush will become damaged.

a. Removing the Transfer Drum Sheet
1) Open the front cover; then, slide out the hopper, and open it 180°.
2) Slide out the transfer drum frame.
3) Detach the transfer drum from the transfer drum frame.
4) Remove the four TP screws [1], and remove the transfer drum side scraper [2].
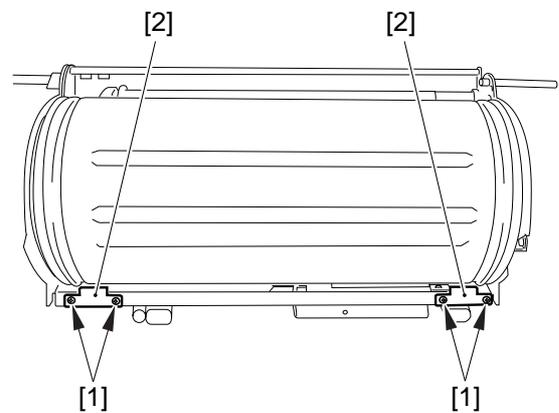
Figure 2-35

5) Peel off the trailing edge of the transfer drum sheet and keep it off the transfer drum.
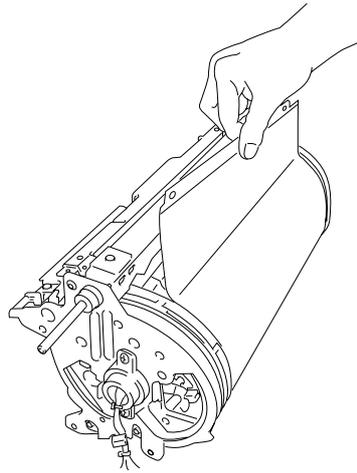

Figure 2-36

6) Peel off the leading edge of the transfer drum sheet.
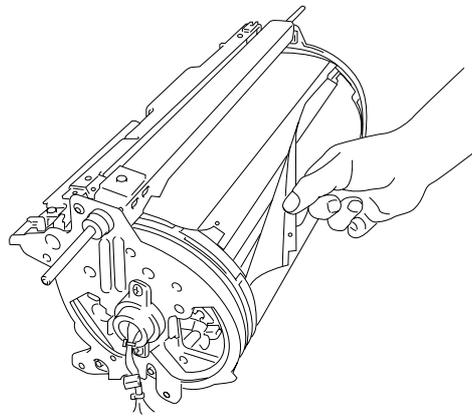
Figure 2-37

7) Peel off the transfer drum sheet while holding it on its leading edge.

Caution:
Remove all traces of adhesive from the transfer drum ring.
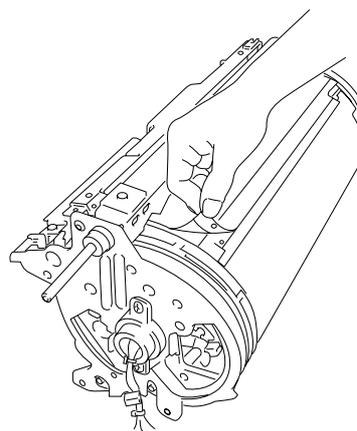
Figure 2-38

b. Attaching the Transfer Drum Sheet

Caution:
Do not touch the area of the transfer drum sheet where copy paper will come into contact.

1) Clean the area of the transfer drum ring for adhesive tape.
2) Turn the ring so that the ring connecting plate [1] is as shown.
3) Peel off the adhesive tape from the leading edge (side with holes) of the transfer drum sheet.
4) Match the holes along the leading edge of the transfer drum sheet with the holes in the ring connecting plate.

[1]
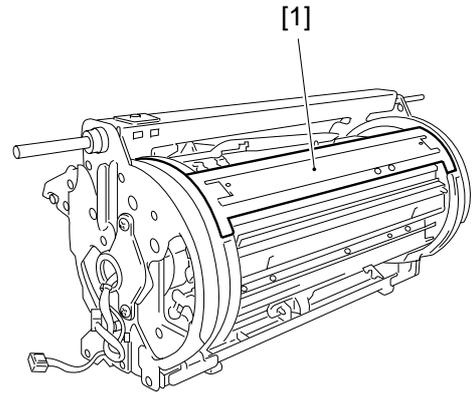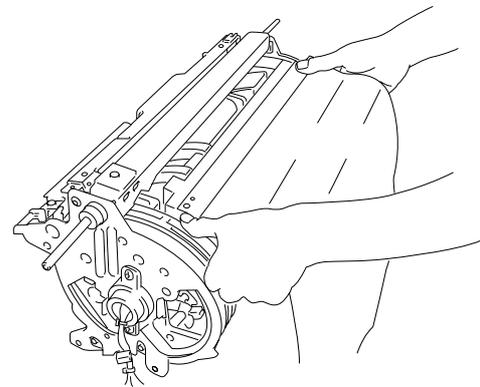
Figure 2-39

Figure 2-40

5) Peel off the adhesive tape of the transfer drum sheet.
6) Holding the trailing edge of the transfer drum sheet with your right hand, let it hang on its own weight. Then, turn the ring on the front of the transfer drum with your left hand to attach the transfer drum sheet.
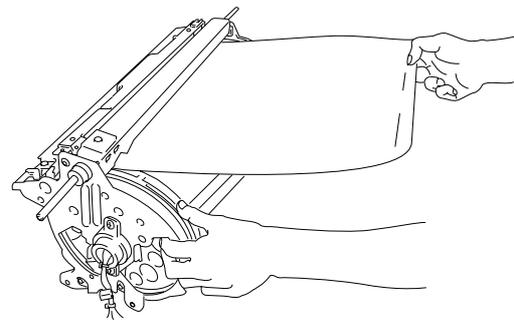
Caution:
Attach the transfer drum sheet so that the gap between the leading edge and the trailing edge is 0 ± 1.5 mm.

Figure 2-41

Leading edge

Trailing edge

0 ± 1.5 mm
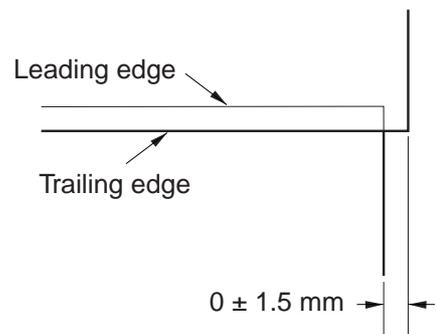
Figure 2-42

7) While keeping the leading edge of the transfer drum sheet against the transfer drum and stroking it as if to push the trailing edge over the leading edge, attach the transfer drum sheet from center to both sides.
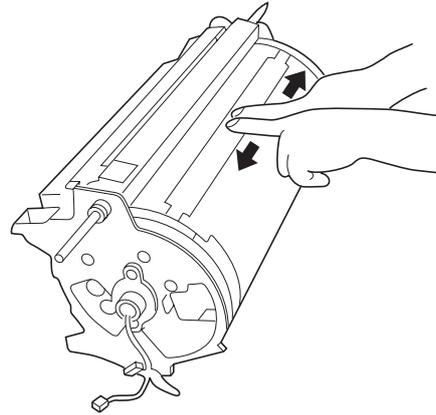
Figure 2-43

Caution:

Be sure that there is no warping or slacking at the center of the transfer drum sheet. Warping, if any, will cause the transfer drum sheet to come into contact with the photosensitive drum, leading to caking of toner on the photosensitive drum and, as a result, photosensitive drum cleaning faults.
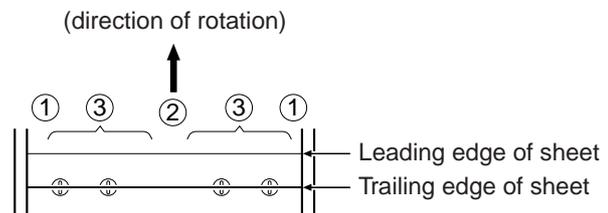
Figure 2-44 Correct Way of Attaching the Transfer Drum Sheet

Figure 2-45 Incorrect Way of Attaching the Sheet

8) Smooth over the adhesive tape of the transfer drum sheet so that the sheet will be in firm contact with the transfer drum.
9) Check the transfer drum sheet for warping and slacking.
10) Slide the transfer drum frame into the copier.
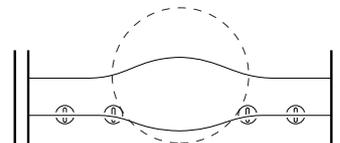
Figure 2-46 Incorrect Way of Attaching the Sheet

| 11 | **When Replacing the Transfer Drum Assembly** |

If you have replaced the transfer drum, perform the following in service mode (ADJUST>**FEED-ADJ**; p. 13-7):
1. Adjusting the attraction position (ATT-T-A, ATT-T-B)
2. Adjusting the image leading edge margin (RG-XA, RG-XB, RG-Y)
3. Transfer delay (TR-DELAY-A, TR-DELAY-B)

| 12 | **Position of the Paper Deflecting Plate Solenoid (SL10; delivery assembly)** |

Loosen the adjusting screw [4] to make adjustments while the paper deflecting plate [2] is butting against the delivery upper guide [3] when the solenoid [1] is on (viewing the delivery assembly from the side at the rear).
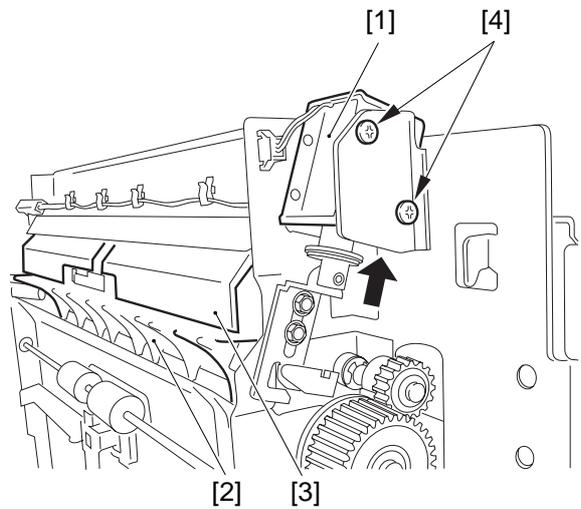
Figure 2-47

| 13 | **Applying Lubricant to the Transfer drum Cleaner** |

1) Use a specific lubricant (e.g., FY9-6006).
2) Put a drop of lubricant (one drop each) at points indicated (A).
3) Turn the gear several times by hand so that the lubricant spreads inside the bushing.
4) Put another drop (one each) once again, and repeat step 3.
5) When all amounts of lubricant have spread to the inside of the bushing, wipe the excess lubricant with lint-free paper (indicated by dashed lines).

Figure 2-47a

2-21
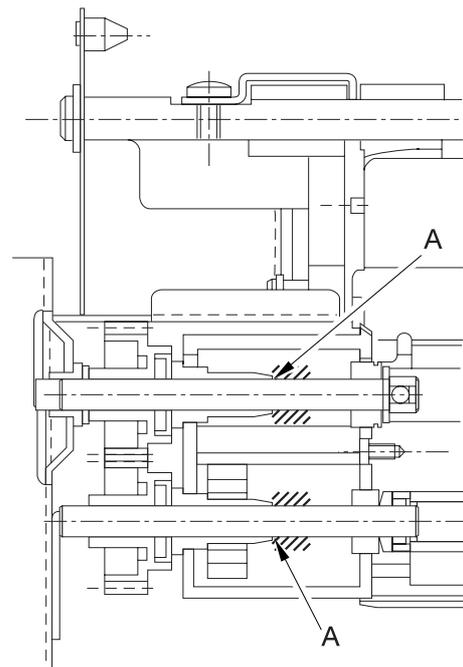
E. Fixing System

1	When Replacing the Fixing Heater

Do not touch the surface of the heater.

Reference: ▬▬▬▬▬▬▬▬
You need not orient the copier's fixing heater (front, rear) in a specific orientation.

▬▬▬▬▬▬▬▬▬▬▬▬

2	Adjusting the Nip (nut for locking the fixing assembly)

a. Measuring the Nip Width
    If you are taking measurements while the roller is not hot, let the copier complete its standby period, wait 15 min, and make 20 copies.

b. Taking Measurements
1) Start service mode.
2) Select   FUNCTION>FIXING>**NIP-CHK**, and press OK.
    The nip width is correct if as indicated; otherwise, use the adjusting nut [1] to make adjustments.

┌─ **Caution:** ─────────────
  b and c are points 10 to 15 mm from
  paper ends.
└──────────────────────────────
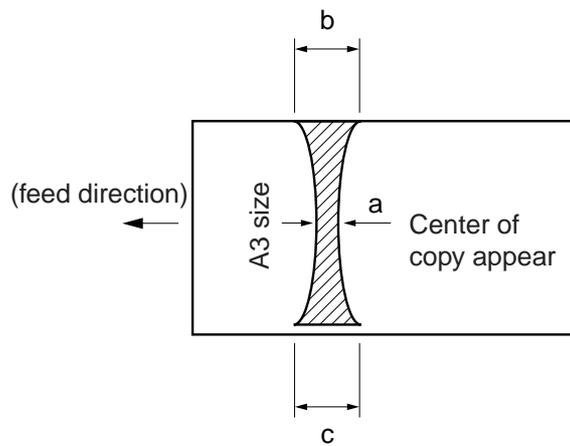
Dimension	Measurements*
a	7.3 ±0.3 mm
|b-c|	0.5 mm or less
b-a c-a	0.5 mm or less

 * Be sure both upper and lower rollers are
   sufficiently heated.

Figure 2-48

3	Orientation of the Cleaning Belt

Mount the fixing cleaning belt as shown .
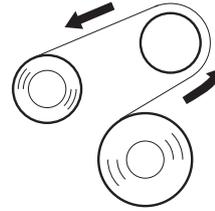
Figure 2-49 Fixing Upper Cleaning Belt (rear view)
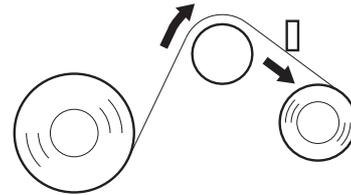
Figure 2-50 Fixing Lower Cleaning Belt (rear view)

4	Orientation of the fixing Upper/ Lower Solenoid

Adjust the position so that the stroke [A] is 5 ± 0.2 mm for the fixing paper solenoid and 4 ± 0.2 mm for the lower fixing solenoid.
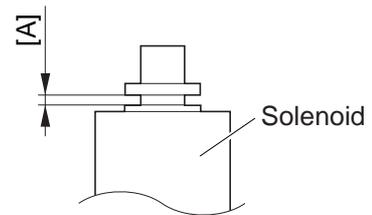
Figure 2-51

5	**Points to Note When Replacing the Oil Coating Assembly**

Caution:

1. The oil coating unit is adjusted and assembled at the factory, and must not be removed. Do not touch the screws [1] shown in the figure.
2. If you have replaced the oil felt, be sure to execute COPIER>OPTION> FIXING>**PUMP-ON** in service mode to impregnate it with fixing oil. Be sure to press the Stop key in about 10 min.
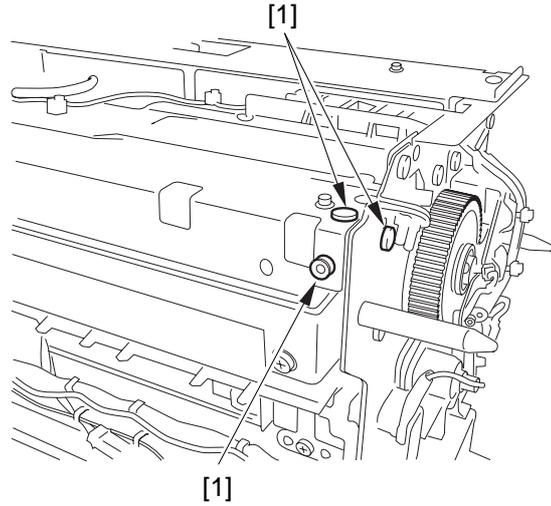
Figure 2-52 (rear)
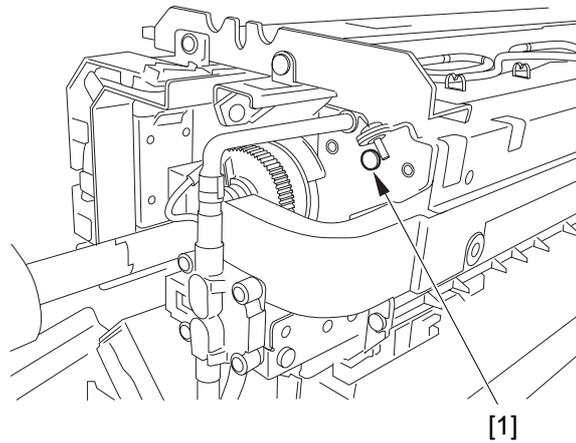
Figure 2-53 (front)

F. Externals/Controls

| 1 | Handling the Flywheel |

The copier's flywheel [1] weighs 8 kg in total. Take extra care not to drop it during work. When holding it, be sure to support it on its left and right as shown.
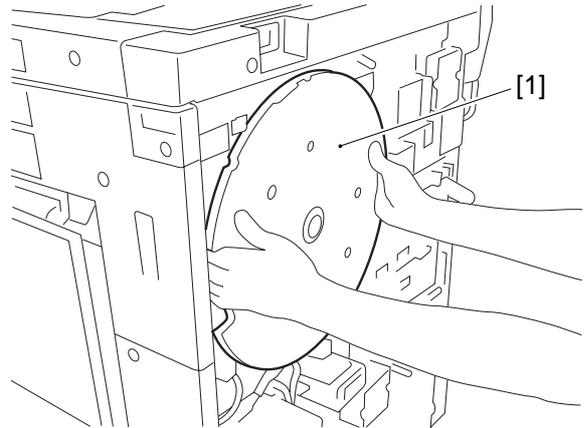
Figure 2-54

G. Paper Deck

1	**Mounting the Paper Level Indicator**

If you have moved the paper level indicator drive belt behind the front cover or the deck lifter when removing the front cover, perform the following to correct its position:

1) Move down the deck lifter to the lower limit.
2) Move the drive belt [1] behind the front cover by hand lightly in the direction of the arrow until it stops (so that the white area in the window [2] increases).
3) Mount the front cover [3].
   If you operate the deck without matching the paper level indicator and the deck lifter, you can damage the drive system of the paper level indicator. Exercise care.

2	**Adjusting the Left/Right Registration of the Deck**

If the left/right registration is 0 ± 2.0 mm, adjust the position of the latch plate [1] with two screws [2]. (At this time, use the graduation [3] on the latch plate as a guide.)

Figure 2-55

Figure 2-56

(rear left of compartment)
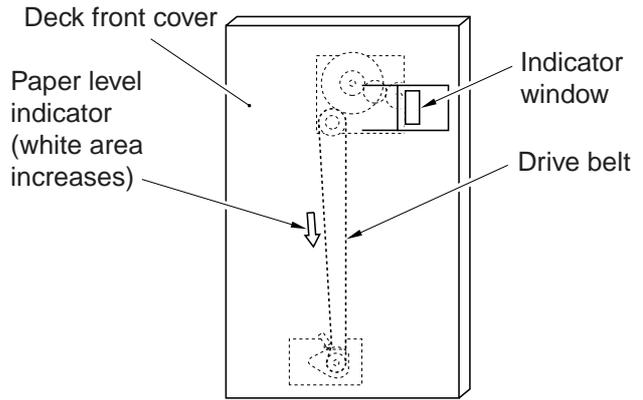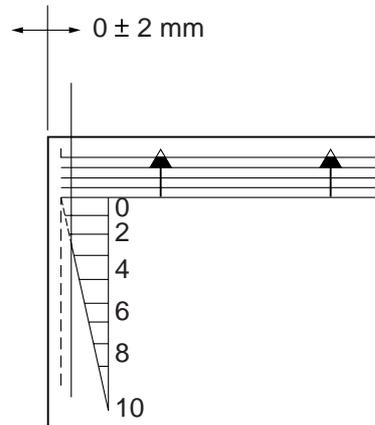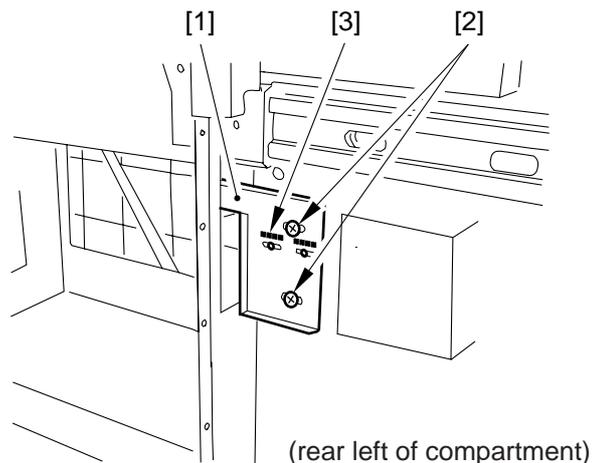
Figure 2-57

<table>
<tr><td>3</td><td>**Adjusting the Position of the Roll**</td></tr>
</table>

Make adjustments using the four mounting screws [4] of the roll support plate [3] so that the roll [1] is about 3 mm from the floor [2] when the compartment is fully slid out.

(At this time, use the graduation [5] on the front side plate as a reference.)
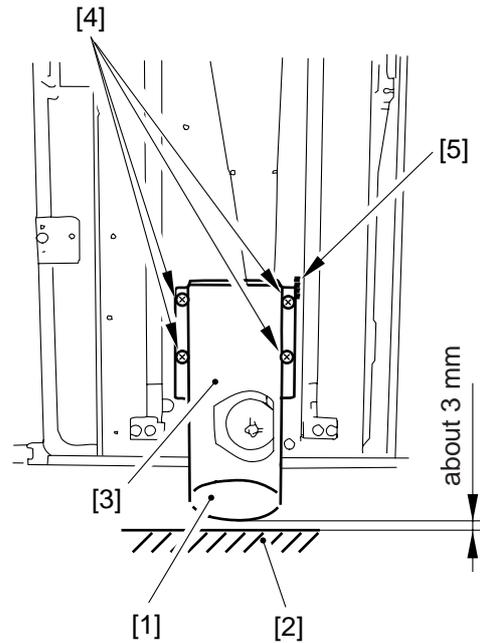
Figure 2-58

<table>
<tr><td>4</td><td>**Routing the Lifter Cable**</td></tr>
</table>

1) Fix the lifter drive shaft and the lifter in place with a hex wrench [1] and a long screwdriver [2]
2) Fix the cable fixing plate [3] in place to the lifter with two screws.
3) Hook the lifter cable on the pulley [4].
4) Hook the ball of the lifter cable on the pulley [5] of the lifter drive shaft, and wind the cable along the groove about 1.5 turns. At this time, be sure that the lifter cable is taut until the long screwdriver used to keep it in position is lightly lifted.
5) In this condition, secure the pulley in place to the lifter drive shaft with two set screws [6].
6) Secure all pulleys to the lifter drive shaft; then, measure the distance from the base plate of the compartment to the top surface of the lifter to make sure that the lifter is level.
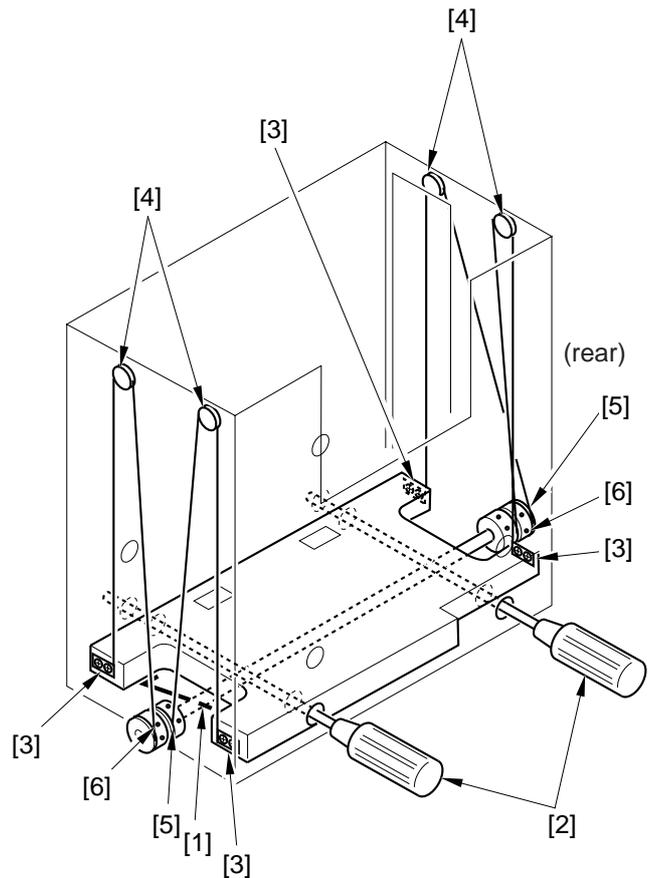
Figure 2-59

5	Orientation of the Deck Pickup Roller

When mounting the deck pickup roller [1] at the front, be sure that the marking [2] on the collar (silver-colored) is at the copier's front and the marking [3] on the side of the roller is at the copier's rear.

(direction of rotation)

[3]

[2]

[1] Collar (silver-colored) (front of copier)
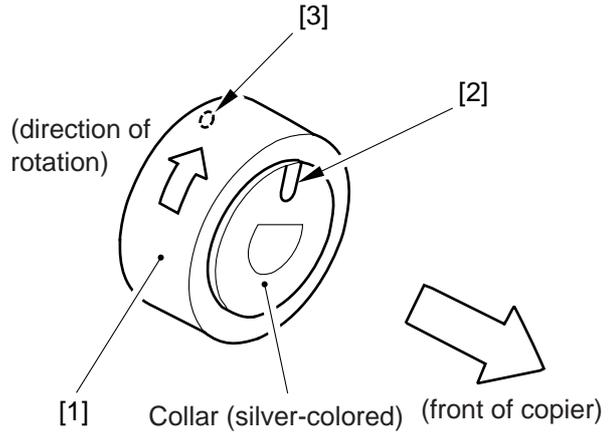
Figure 2-60

When mounting the deck pickup roller [4], be sure that the marking [5] on its inside and the marking [6] on its collar (gold-colored) are at the copier's rear.

(direction of rotation)

[5]

[6]

[4] Collar (gold-colored) (rear of copier)
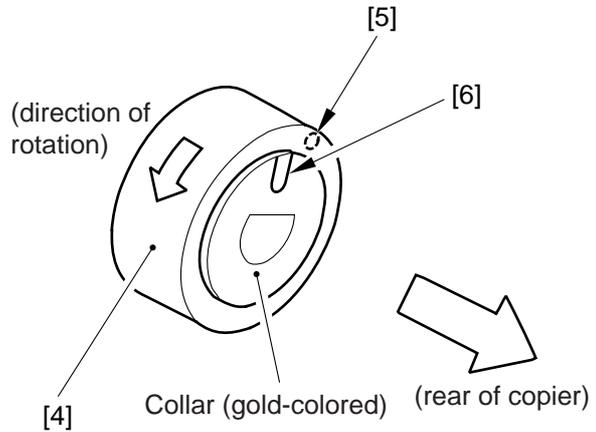
Figure 2-61

6	Orientation of the Deck Pickup/ Feed Roller

When mounting the deck pickup/feed roller [1], be sure that the belt pulley [2] is at the copier's front.

When mounting the pickup/feed roller rubber to the pickup/feed roller shaft, be sure that the marking [3] is at the copier's rear.

[3]

[2]

[1]

(front)
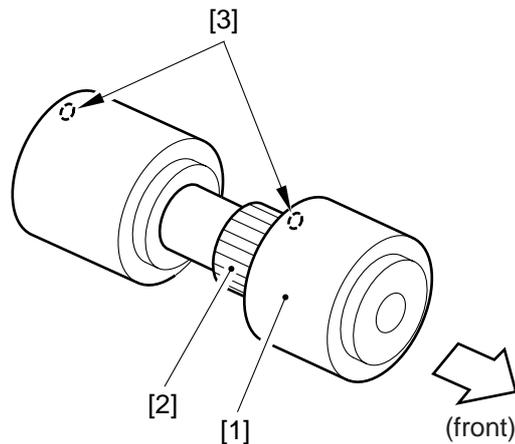
Figure 2-62

7	**Adjusting the Deck Separation Roller Pressure**

If double feeding or pickup failure occurs when pickup is from the side paper deck, adjust the position of pressure spring of the deck separation roller.

·   If pickup failure occurs, move the position of the spring in the direction of arrow A.

·   If double feeding occurs, move the position of the spring in the direction of arrow B.
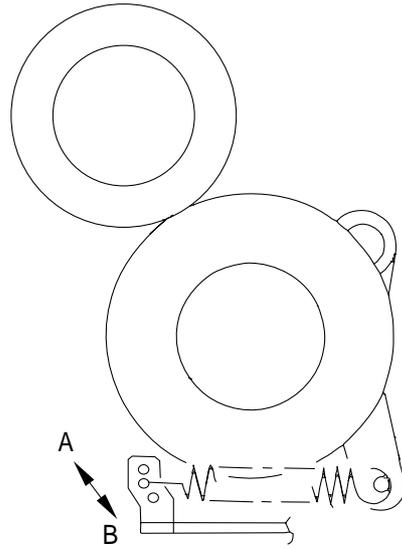
Figure 2-63

H. Electrical System

The copier's service mode is used to adjust its electrical mechanisms. Most of them are adjusted at the factory, and require high precision. As a rule, do not make those adjustments that are not discussed herein.

1	When Replacing the CPU PCB

1) Check the data of ADJUST and OPTION in service mode before replacement, and take notes. Or, back up the data using the downloading tool.
2) Remove the CPU PCB.
3) Mount the new CPU PCB.
4) Remove the three flash memories and the memory PCB from the old CPU PCB, and mount them to the new CPU PCB.
5) Turn on the power switch.
6) Select FUNCTION>CLEAR>**DC-CON** and **R-CON** in service mode, and set them to '1'.
7) Enter the data you took notes of in step 1).
8) Execute FUNCTION>CCD>**CCD-ADJ** in service mode.

2	When Replacing the Flash Memory on the CPU PCB

1) Check the data of ADJUST and OPTION in service mode before replacement, and take notes. Or, back up the data using the downloading tool.
2) Detach the old flash memory from the CPU PCB.
3) Mount the new flash memory to the CPU PCB.
4) Turn on the power switch.
5) Select FUNCTION>CLEAR>DC-CON and R-CON, and set them to '1'.
6) Enter the data you took notes of in step 1).
7) Execute FUNCTION>CCD>**CCD-ADJ** in service mode.

| 3 | Adjusting the Laser Power |

If you replaced the laser scanner unit, laser driver PCB, or laser controller PCB, enter the values attached to the PCB in service mode (ADJUST>LASER). Attach the label behind the right front cover for future reference.

If the output of the laser decreases, be sure to adjust the laser power.
·   Laser power checker (FY9-4013)
·   Digital multimeter (CK-0436)

Caution:
Check the values recorded on the label attached to the right front door.
---

1) Turn off the power switch.
2) Remove the copyboard glass; then, remove the lens base cover and the laser scanner cover.
3) Turn on the power switch.
4) Open the front left cover. Make sure the front left cover will not close.
5) Remove the left inside cover.
6) Remove the laser power checker inlet cover.
7) Set the laser power checker switch to '2'.
8) Holding the laser power checker [1] so that its light-receiving face is on the right, fit it into the slot [2].
9) Insert the probe of the laser power checker into the digital multimeter, and set the range to 200 mV.
10) Select FUNCTION>ADJUST>**POWER** in service mode, and press OK. (laser output)
11) Check the reading of the digital multimeter.
12) Compare the reading (Pmax) indicated on the label and the measurement. If different, turn VR2 [3] on the laser driver PCB.
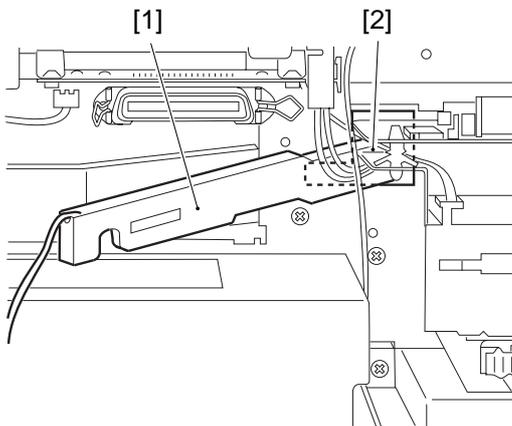
Figure 2-64
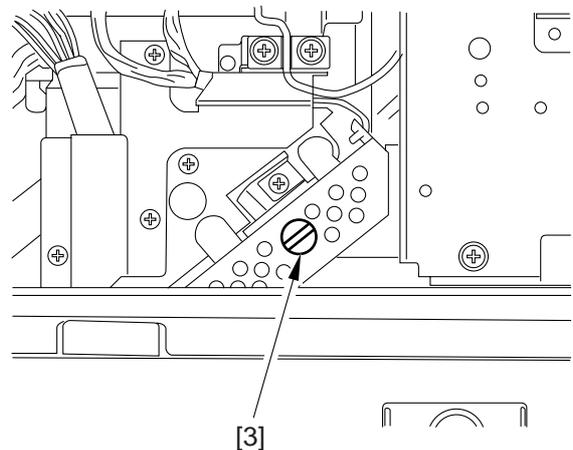
Figure 2-65

> **Caution:**
> 1. Turn VR2 slowly while monitoring the output of the laser power checker so as to avoid increasing the laser power excessively. Turning VR2 counterclockwise will decrease the laser output.
> 2. Be sure not to exceed the value recorded on the label. Otherwise, the laser diode may become damaged.
> 3. Do NOT press the Copy Start key while making adjustments using VR2.

13) Press the Stop key to stop the laser output.
14) Adjust the laser.

| 4 | Adjusting the Laser |

> **Caution:**
> Be sure to adjust the laser power before starting the following work:

1) Select ADJUST>LASER in service mode.
2) Select T-V00 and enter '255'; then, press OK.
3) Select T-V00-ON, and press OK. (The laser will turn on.) Take notes of the reading (offset). To stop the laser output, press the Stop key.
4) Select T-V00, and adjust T-V00 so that the following is true: offset value + (0.15 to 0.20 mV)
5) Likewise, adjust T-VFF, PE-V00, P3-VFF-1, P3-VFF-2, P3-VFF-3, and P3-VFF-4. To stop the laser output, press the Stop key. Study the following table for an idea of optimum output.

Item	Standard (mV)	Laser ON key
T-V00	Offset value + (0.15 to 0.2)	T-V00-ON
T-VFF	Pmax ×70%	T-VFF-ON
P3-V00	Offset value + (0.1 to 0.15)	P3V00-ON
P3-VFF-1	Pmax ×45%	P3-V1-ON
P3-VFF-2	Pmax ×55%	P3-V2-ON
P3-VFF-3	Pmax ×65%	P3-V3-ON
P3-VFF-4	Value on label ×70%	P3-V4-ON

6) Press the Reset key to end service mode.
7) Turn off the power switch.

8) Detach the laser power checker, and secure the slot cover in place.
9) Mount the left inside cover.

5	When Replacing the Scanning Lamp, Standard White Plate, Lamp Regulator, Lamp Reflecting Plate, Analog Processor PCB, No. 1 Mirror Base Unit, No. 1 Mirror, No. 2 Mirror Base Unit, No. 2 Mirror, No. 3 Mirror, and CCD Unit

1) Close the front cover, and wait until the copier enters standby state. (Do not open the front cover while CCD-ADJ is being executed.)
2) Replace the part, and execute FUNCTION>CCD>**CCD-ADJ** in service mode.
   When 'END' appears, end the operation. If 'ERR' appears, start over.

6	When Replacing the BD Unit

If you have replaced the BD unit, adjust the position as follows:
1) Set the meter range to VAC.
2) Connect the + probe to the check pin (TP301) and the - probe to the check pin GND on the BD PCB.
3) Execute FUNCTION>LASER>**POWER** in service mode.
4) Loosen the screw used to secure the BD unit in place, and tighten it when the output reading of the meter is maximum.

7	Checking the Environment Measurement PCB

The environment measurement PCB and the environment sensor are checked using the environment measurement PCB checker (TKN-0457) and the environment sensor calibrator (TKN-0456).
a. Checking the Environment Measurement PCB
1) Turn off the power.
2) Open the hopper.
3) Remove the environment sensor from the environment measurement PCB, and fit the environment measurement PCB checker (TKN-0457) in its place.
4) Insert the door switch actuator, and turn on the power.
5) Set the meter range to 30 VDC.
   Check to make sure that the voltage between J1-1 (+) and J1-2 (-) on the environment measurement PCB is 24 ± 2.4 V. If not, check the DC power supply PCB(DCP1).
6) Select DISPLAY>**ANALOG** in service mode.
7) Check the temperature and the humidity on the ANALOG screen.
   TEMP: $25 \pm 5°C$
   ABS-HUM: $40 \pm 10\%$
8) Check to make sure that the reading is as indicated.
   If no, go to step 9).
   If yes, go to step 14).

9) Press the Reset key, and turn off the power switch.
10) Disconnect the connector J1 of the environment measurement PCB.
11) Turn on the power switch.
12) Check the temperature and the humidity on the DISPLAY>**ANALOG** screen in service mode.
    TEMP: 25 ±5°C
    ABS-HUM: 36 ±10%
13) Check to see that the reading is as indicated.
    If not, suspect a fault on the DC driver PCB or the CPU PCB.
14) Press the Reset key.
15) Turn off the power switch.
16) Connect the connector J1 to the environment measurement PCB.
17) Detach the environment measurement PCB checker from the environment measurement PCB, and connect the environment sensor in its place.
18) Attach all covers.

b. Checking the Environment Sensor
1) Check the environment measurement PCB.
2) Turn on the power switch, and leave the copier alone for 5 min.
3) Check the temperature and the humidity on the DISPLAY>**ANALOG** screen in service mode, and record the readings. (data A)
    TEMP: °C   data A1
    ABS-HUM: %   data A2
4) Press the Reset key, and turn off the power switch.
5) Detach the environment sensor from the environment measurement PCB, and insert the environment sensor calibration tool (TKN-0456) in its place.
6) Turn on the power switch, and leave the copier alone for 5 min.
7) Check the temperature and the humidity on the DISPLAY>**ANALOG** screen in service mode, and take notes of them.
    TEMP: °C   data B1
    ABS-HUM: %   data B2
8) 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 indicated, replace the environment sensor.
9) Press the Reset key, and turn off the power switch.
10) Detach the environment sensor calibrating tool from the environment measurement PCB, and fit the environment sensor.
11) Mount all covers.

┌─ **Caution:** ───
│ The environment sensor calibration tool (TN-0456) is adjusted at the factory to high
│ precision. Be sure to store it in an airtight container with a drying agent for storage.
└──

8	Registering the Cassette/Multifeeder Paper Width Basic Value

Perform what follows below for the following:
· If you have replaced the copier's paper width detecting VR (including the multifeeder).
· If you have adjusted the front/rear registration of the cassette.
You need to register a paper width basic value of STMTR and A4R for each cassette; for the multifeeder, you must register A6R, A4R, and A4.

a. Cassette
1) Slide out the cassette for which you want to register the basic value, and set the paper width guide inside the cassette to A4R.
2) Set the cassette in the copier.
3) Select FUNCTION>CST in service mode.
4) Select a size (C1-A4R, C2-A4R, C3-A4R) for the cassette in question, and press OK.
5) See that basic value 1 has been registered.
6) Slide out the cassette for which you want to register a basic value, and set the paper width guide plate inside the cassette to STRMTR.
7) Set the cassette in the copier.
8) Select FUNCTION>**CST** in service mode.
9) Select a size (C1-STMTR, C2-STMTR, C3-STMTR) for the cassette in question, and press OK.
10) See that basic value 2 has been registered.
11) Set the cassette to the size desired by the user.

b. Multifeeder
1) Set the width of the multifeeder guide plate to A6R (105 mm).
2) Select service mode FUNCTION>CST.
3) Select MF-A6R for which you want to register a basic value, and press OK.
4) See that basic value 1 has been registered.
5) Set the width of the multifeeder guide plate to A4R (210 mm).
6) Select MF-A4R for which you want to register a basic value, and press OK.
7) See that basic value 2 has been registered.
8) Set the width of the multifeeder guide plate to A4 (297 mm).
9) Select MF-A4 for which you want to register a basic value, and press OK.
10) See that basic value 3 has been registered.

> **Caution:**
> After registering basic values, be sure to record the values on the service label.

| 9 | Checking the Surface Potential System |

If an image fault has occurred, you must be sure if the cause is in the static latent image formation block (including the photosensitive drum and the potential control system) or the developing/transfer system. To that end, the surface potential must be checked as follows:

a. Checking the Surface Potential
1) Select FUNCTION>**DPC**>**DPC** in service mode (for potential control).
2) Check the following using DISPLAY>**DPOT** in service mode.

Screen display	Guide
V00-500	430 to 570
V00-700	600 to 800
VFF-500	50 to 150
VFF-700	100 to 200

3) If the value is not as indicated, make a zero-level check.

b. Zero-Level Check
You can make use of a zero-level check to see whether the surface potential control circuit is good or not, thereby finding out whether the level shift circuit of the DC driver PCB and the potential measurement unit is good or not.

Reference: ■━━━━━━━━━━━━━━━━━━━━━━━━━━
A zero-level check is designed to find out whether the CPU reads the surface potential of the drum as '0' when it is 0 V.
━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━

A zero-level check may be either of the following two:
Method 1: to find out whether the level shift circuit on the DC driver PCB is good or not
Method 2: to find out whether the potential measurement circuit is good or not

Method 1
1) Remove the rear cover.
2) Turn on the power switch, and wait until the copier is in standby state.
3) Disconnect the connector J4 (J440) of the potential measurement PCB.
4) Short the check pins J1040-1 and -2 on the DC driver PCB with a jumper wire.
5) Check to make sure that the reading of DISPLAY>DPOT>**DPOT** is 80 ± 30 V in service mode.
   If yes, the part is normal. Go to step 8).
6) Measure the voltage between GND CP and CP4 of the DC driver PCB to see if it is 0.49 ± 0.1 V.
   If no, suspect a fault in the level shift circuit on the DC driver PCB. If yes, suspect a fault in the A/D converter on the CPU PCB.
7) Turn off the power switch, and disconnect the jumper wire; then, connect the connector.
8) Mount the rear cover, and turn on the power switch.

Method 2
1) Turn off the power switch.
2) Remove the photosensitive drum unit.
3) Fit the potential sensor electrode (TKN-0197) to the potential sensor.

Caution:

When fitting the potential sensor electrode to the potential sensor, make sure that magenta of the electrode will not come into contact with the potential sensor base.

---

4) Attach the clip of the jumper line to the potential sensor electrode.

Caution:

Be sure NOT to let the clip come into contact with the sensor cover. Further, be sure to allow enough distance from the sensor window.

---

5) Connect one end of the jumper wire to the copier's chassis metal plate (GND) of the copier.
6) Insert the door switch actuator into the door switch assembly.
7) Turn on the power switch.
   After turning on the power switch, do NOT touch the potential sensor assembly.
8) Check to make sure that DISPLAY>DPOT>**DPOT** is 0 ± 30 V in service mode.

Reference:

If the reading is as indicated in method 1 but not as indicated in method 2, suspect dirt on the sensor or a fault in the potential measurement unit.
If the reading is not as indicated in method 1 and method 2, you may assume that the signal path from the potential sensor unit to the CPU on the CPU PCB is normal.

9) Turn off the power switch.
10) Detach the potential sensor electrode.
11) Mount the photosensitive drum unit.
12) Turn on the power switch.

| 10 | When Replacing the CCD Driver PCB |

Check the setting of the DIP switch on the old DC driver PCB, and set the DIP switch on the new DC driver PCB.

| 11 | Checking the Photointerrupter |

The copier allows the use of its service mode when checking its photointerrupers in addition to the use of a conventional meter.

1. Using a Meter
1) Set the meter range to 30 VDC.
2) Connect the - probe of the meter to J101-7 (GND) on the DC driver PCB or J3-3 (GND) on the deck driver PCB.
3) Connect the (+) probe of the meter to the terminals (on the driver PCB) indicated on the pages that follow.
4) Make checks as shown.

2. Using Service Mode
1) Select I/O DISPLAY in service mode.
2) Bring up the I/O address to check, and make checks as shown.

Sensor	Connector No. I/O address	Checks		I/O display	Voltage reading
PS1 Original scanner HP sensor	J602-2 ---------	Move the scanner by hand while in standby.	When the light-blocking plate is at PS1,	--	5V
			While the light-blocking plate is not at PS1,	--	0V
PS2 Side A sensor	J1014-B8 P009-8	Move the transfer drum by hand while in standby.	When the light-blocking plate is at PS2,	1	5V
			When the light-blocking plate is not at PS2,	0	0V
PS3 Side B sensor	J1014-B7 P009-9	Move the transfer drum by hand while in standby.	When the light-blocking plate is at PS3,	1	0V
			When the light-blocking plate is not at PS3,	0	5V
PS4 C sensor	J1014-B5 P009-10	Move the transfer drum by hand while in standby.	When the light-blocking-plate is at PS4,	1	5V
			When the light-blocking plate is not at PS4,	0	0V
PS5 Pre-transfer sensor	J1014-B3 P001-9	Put paper on the transfer drum and move it by hand while in standby.	When paper is present over PS5,	1	5V
			When paper is absent over PS5,	0	0V
PS6 Post-transfer sensor	J1014-B2 P001-10	Put paper over PS6 while in standby.	When paper is present over PS6,	1	5V
			When paper is absent over PS6,	0	0V
PS7 Separation sensor	J10013-B4 P001-11	Put paper over PS7 while in standby.	When paper is present over PS7,	1	5V
			When paper is absent over PS7,	0	0V
PS8 Attraction/ transfer locking cam HP sensor	J1014-B1 P009-3	Take measurements during copying operation.	When cam is not at HP,	1	5V
			When cam is at HP,	0	0V
PS9 Multifeeder pickup sensor	J1017-B10 P001-5	Put paper over PS9 while in standby.	When paper is present over PS9,	1	5V
			When paper is absent over PS9,	0	0V
PS10 Fixing oil level sensor	J1004-B5 P006-4	Remove PS10 while in standby.	When oil is present,	1	5V
			When oil is absent,	0	0V

Sensor	Connector No. I/O address	Checks		I/O display	Voltage reading
PS11 Fixing upper cleaning belt length sensor	J1004-B2 P006-3	Put paper over PS11 while in standby.	When paper is present over PS11, When paper is absent over PS11,	1 0	5V 0V
PS12 Internal delivery sensor	J1004-B3 P001-13	Put paper over PS12 while in standby.	When paper is present over PS12, When paper is absent over PS12	1 0	5V 0V
PS15 Multi feeder paper sensor	J1017-B16 P002-13	Put paper over PS15 while in standby.	When paper is present over PS15, When paper is absent over PS15,	1 0	5V 0V
PS17 Multifeeder lifter H sensor	J1017-B13 P007-15	Move up the lifter while in standby.	When the lifter is up, When the lifter is down,	1 0	5V 0V
PS18 Multifeeder lifter L sensor	J1017-B12 P007-14	Move up the lifter while in standby.	When the lifter is up, When the lifter is down,	1 0	5V 0V
PS19 (CLC1120/ 1130) Cassette 1 lifter sensor	J1020-B3 P007-10	Put paper over PS19 while in standby.	When paper is present over PS19, When paper is absent over PS19	1 0	5V 0V
PS20 (CLC1120/ 1130) Cassette 1 paper sensor	J1020-B5 P002-10	Put paper over PS20 while in standby.	When paper is present over PS20, When paper is absent over PS20,	1 0	5V 0V
PS21 (CLC1120/ 1130) Pickup vertical path 1 sensor	J1019-A2 P001-2	Put paper over PS21 while in standby.	When paper is present over PS21, When paper is absent over PS21,	1 0	5V 0V
PS22/DPS22 Cassette 2/1 lifter sensor	J1017-A5 P007-1	Push the light-blocking plate while in standby.	When the light-blocking plate is pushed, When the light-blocking plate is not pushed,	1 0	5V 0V
PS23/DPS23 Cassette 3/2 lifter sensor	J1018-A3 P007-8	Push the light-blocking plate while in standby.	When the light-blocking plate is pushed, When the light-blocking plate is not pushed,	1 0	5V 0V
PS24/DPS24 Cassette 2/1 paper sensor	J1017-A7 P002-9	Put paper over PS24 while in standby.	When paper is present over PS24, While paper is not present over PS24,	1 0	5V 0V

Sensor	Connector No. I/O address	Checks		I/O display	Voltage reading
PS25/DPS25 Cassette 3/2 paper sensor	J1018-A5 P002-8	Put paper over PS25 while in standby.	When paper is present over PS25, When paper is absent over PS25,	1 0	5V 0V
PS26 Pickup vertical path 2/1 sensor	J1017-A4 P001-1	Put paper over PS26 while in standby.	When paper is present over PS26, When paper is absent over PS26,	1 0	5V 0V
PS27 Pickup vertical path 3/2 sensor	J1018-A2 P001-2	Put paper over PS27 while in standby.	When paper is present over PS27, When paper is absent over PS27,	1 0	5V 0V
PS28 (CLC1150) Re-pickup vertical path sensor	J1019-A2 P001-3	Put paper over PS28 while in standby.	When paper is present over PS28, When paper is absent over PS28,	1 0	5V 0V
PS30 Pre-registration sensor	J1013-B6 P002-15	Put paper over PS30 while in standby.	When paper is present over PS30, When paper is absent over PS30,	1 0	5V 0V
PS31 External delivery sensor	J1008-B2 P001-12	Put paper over PS31 while in standby.	When paper is present over PS31. When paper is absent over PS31,	1 0	5V 0V
PS32 (CLC1150) Delivery vertical path 1 sensor	J1029-6 P002-0	Put paper over PS32 while in standby.	Paper is present over PS32, Paper is absent over PS32,	1 0	5V 0V
PS33 (CLC1150) Delivery vertical path 2 sensor	J1029-11 P002-1	Put paper over PS33 while in standby.	When paper is present over PS33, When paper is absent over PS33,	1 0	5V 0V
PS34 (CLC1150) Duplexing path paper sensor	J1022-B7 P002-3	Put paper over PS34 while in standby.	When paper is present over PS34, When paper is absent over PS34,	1 0	5V 0V
PS35 (CLC1150) Duplexing reversal paper sensor	J1022-B8 P002-4	Put paper over PS35 while in standby.	When paper is present over PS35, When paper is absent over PS35,	1 0	5V 0V
PS36 (CLC1150) Duplexing tray paper sensor	J1022-B6 P002-11	Put paper over PS36 while in standby.	When paper is present over PS36, When paper is absent over PS36,	0 1	0V 5V

Sensor	Connector No. I/O address	Checks		I/O display	Voltage reading
PS37 (CLC1150) Duplexing inlet paper sensor	J1022-A3 P002-2	Put paper over PS37 while in standby.	When paper is present over PS37, When paper is absent over PS37,	1 0	5V 0V
PS40 (CLC1150) Paper jogging guide HP sensor	J1022-A4 P009-4	Move the guide while in standby.	While the guide is present over PS40, While the guide is absent over PS40,	1 0	5V 0V
PS41 Right front cover sensor	J1027-B8 P004-1	Open and close the cover while in standby.	When the cover is closed, When the cover is open,	1 0	5V 0V
PS42 Left front cover sensor	J1027-A8 P004-2	Open and then close the cover while in standby.	When the cover is closed, When the cover is open,	1 0	5V 0V
PS43 Delivery cover sensor	J1027-B2 P004-0	Open and then close the cover while in standby.	When the cover is closed, When the cover is open,	1 0	5V 0V
PS44 Pickup cover sensor	J1007-B5 P004-3	Open and close the cover while in standby.	When the cover is closed, When the cover is open,	1 0	5V 0V
PS46 (CLC120/ 1130) Cassette 1 open/closed sensor	J1020-B2 P008-3	Open and close the cassette while in standby.	When the cassette is closed, When the cassette is open,	1 0	5V 0V
PS47/DPS47 Cassette 2/1 open/closed sensor	J1017-A3 P008-2	Open and close the cassette while in standby.	When the cassette is closed, When the cassette is open,	1 0	5V 0V
PS48/DPS48 Cassette 3/1 open/closed sensor	J1018-A1 P008-1	Open and close the cassette while in standby.	When the cassette is closed, When the cassette is open,	1 0	5V 0V
PS49 M developing assembly HP sensor	J1016-B2 P00A-8	Take measurements during copying operation.	When at HP, When not at HP,	1 0	5V 0V
PS51 C developing assembly HP sensor	J1015-A3 P00A-9	Take measurements during copying operation.	When at HP, When not at HP,	1 0	5V 0V

Sensor	Connector No. I/O address	Checks		I/O display	Voltage reading
PS53 Y developing assembly HP sensor	J1016-A2 P00A-10	Take measurements during copying.	When at HP, When not at HP,	1 0	5V 0V
PS55 Bk developing assembly HP sensor	J1015-B3 P00A-11	Take measurements during copying operation.	When at HP, When not at HP,	1 0	5V 0V
PS57 Transfer drum HP sensor	J1002-A2 P009-1	Take measurements during copying.	When at HP, When not at HP,	1 0	5V 0V
PS59 Transfer drum cleaner HP sensor	J1002-B2 P009-2	Take measurements during copying operation.	When at HP, When not at HP,	1 0	5V 0V
PS62 Multifeeder tray open/ closed sensor	J1017-B9 P004-6	Open and close the tray during standby.	When the tray is closed, When the tray is open,	1 0	0V 4V
PS67 Fixing lower cleaning belt length sensor	J1004-B1 P006-2	Put paper over PS67 while in standby.	When paper is present over PS67, When paper is absent over PS67,	1 0	5V 0V
PS68 Waste toner case full sensor	J1027-B4 P006-6	Put paper over PS68 while in standby.	When paper is present over PS68, When paper is absent over PS68,	1 0	0V 5V
PS69 Transparency sensor	J1013-B9 P001-6	Take measurements during copying operation.	When pepper is absent over PS69, When paper is present over PS69,	1 0	5V 0V
PS70 Registration sensor	J1013-B8 P001-8	Take measurements during copying operation.	When paper is absent over PS70, When paper is present over PS70,	1 0	5V 0V
PS71 Pre-cleaning paper sensor	J1007-B14 P00B-1	Take measurements during copying operation.	When paper is absent over PS71, When paper is present over PS71,	1 0	several V 0V
PS101 Deck pickup sensor	J5-B4 P001-4	Put paper over PS101 while in standby.	When paper is present over PS101, When paper is absent over PS101,	1 0	5V 0V
PS102 Deck paper absent sensor	J5-A4 P002-12	Put paper over PS102 while in standby.	When paper is present over PS102, When paper is absent over PS102,	1 0	5V 0V

2-43

Sensor	Connector No. I/O address	Checks		I/O display	Voltage reading
PS103 Deck lifter upper limit sensor	J5-A7 P007-13	Put the light-blocking plate while in standby.	When the light-blocking plate is pushed,	0	5V
			When the light-blocking plate is not pushed,	1	0V
PS104 Deck lifter position sensor 18	J5-A10 ---------	Push the light-blocking plate while in standby.	When the light-blocking plate is pushed,	-	5V
			When the light-blocking plate is not pushed,	-	0V
PS105 Deck set sensor	J6-4 P016-14	Push the light-blocking plate while in standby.	When the light-blocking plate is pushed,	0	5V
			When the light-blocking plate is not pushed,	1	0V
PS107 Deck paper level upper sensor	J4-5 P016-12	Push the light-blocking plate while in standby.	When the light-blocking plate is pushed,	0	5V
			When the light-blocking plate is not pushed,	1	0V
PS108 Deck paper level lower sensor	J4-2 P016-11	Push the light-blocking plate while in standby.	When the light-blocking plate is pushed,	0	5V
			When the light-blocking plate is not pushed,	1	0V
PS109 Deck open sensor	J6-7 P016-15	Release the deck assembly while in standby.	When the deck assembly is open,	1	0V
			When the deck assembly is closed,	0	5V

CHAPTER 3   ARRANGEMENT AND FUNCTIONS OF ELECTRICAL PARTS

A. Sensors

1. CLC1120/1130

PS1	Original scanner home position sensor
PS2	Side A sensor
PS3	Side B sensor
PS4	C sensor
PS5	Pre-transfer paper sensor
PS6	Post-transfer paper sensor
PS7	Separation sensor
PS8	Attraction/transfer locking cam HP sensor
PS9	Multifeeder pickup sensor
PS10	Fixing oil level sensor
PS11	Fixing upper cleaning belt level sensor
PS12	Internal delivery sensor
PS15	Multifeeder paper sensor
PS17	Multifeeder lifter H sensor
PS18	Multifeeder lifter L sensor
PS19	Cassette 1 lifter position sensor
PS20	Cassette 1 paper sensor
PS21	Pickup vertical path 1 sensor
PS22	Cassette 2 lifter position sensor
PS23	Cassette 3 lifter position sensor (CLC1130 only)
PS24	Cassette 2 paper sensor
PS25	Cassette 3 paper sensor (CLC1130 only)
PS26	Pickup vertical path 2 sensor
PS27	Pickup vertical path 3 sensor (CLC1130 only)
PS30	Pre-registration sensor
PS31	External delivery sensor

Table 3-1a (CLC1120/1130)
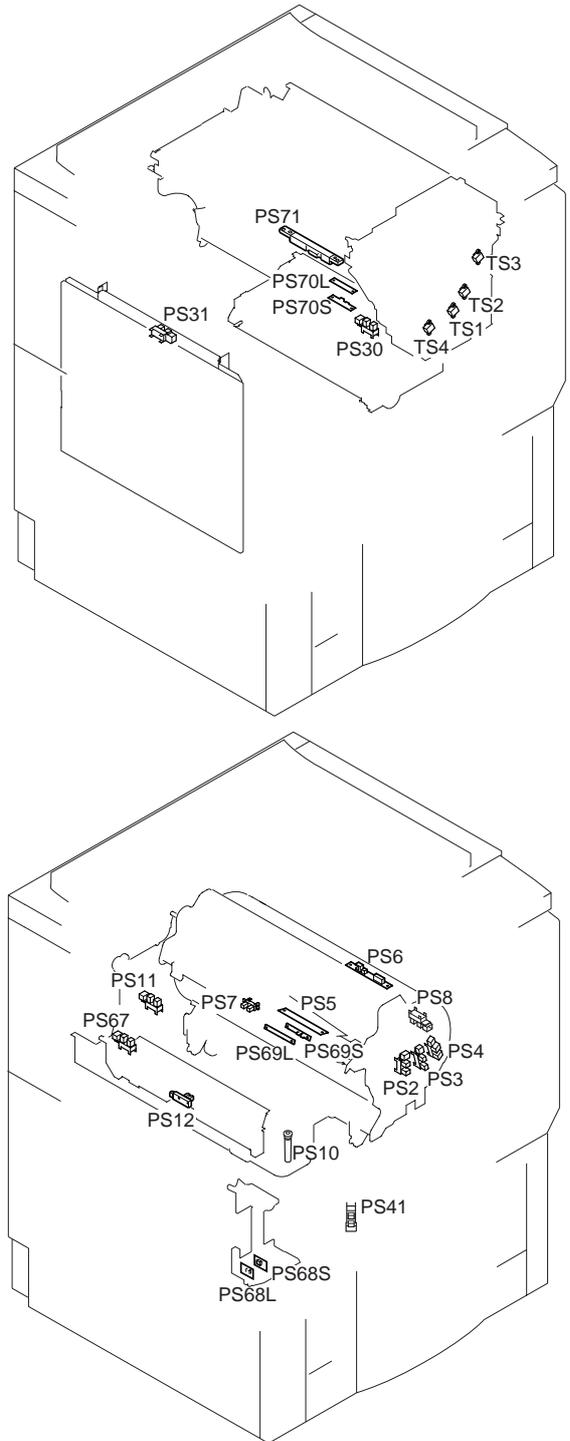
Figure 3-1a (CLC1120/1130)

PS41	Right front cover sensor
PS42	Left front cover sensor
PS43	Delivery cover sensor
PS44	Pickup cover sensor
PS46	Cassette 1 open/closed sensor
PS47	Cassette 2 open/closed sensor
PS48	Cassette 3 open/closed sensor (CLC1130 only)
PS49	M developing assembly HP sensor
PS51	C developing assembly HP sensor
PS53	Y developing assembly HP sensor
PS55	Bk developing assembly HP sensor
PS57	Transfer drum HP sensor
PS59	Transfer drum cleaner HP sensor
PS62	Multifeeder tray open/closes sensor
PS67	Fixing lower cleaning belt length sensor
PS68L/S	Waste toner case full sensor
PS69L/S	Transparency sensor
PS70L/S	Registration sensor
PS71	Pre-cleaning paper sensor
PSU2	Cassette 2 paper length sensor (CLC1120 only)
PSU3	Cassette 3 paper length sensor (CLC1130 only)
VR2	Cassette 1 paper level detecting VR
VR3	Cassette 2 paper width detecting VR (CLC1120 only)
VR4	Cassette 2 paper level detecting VR
VR5	Cassette 3 paper width detecting VR (CLC1130 only)
VR6	Cassette 3 paper level detecting VR (CLC1130 only)
VR7	Multifeeder paper width detecting VR
TS1	M toner level sensor
TS2	C toner level sensor
TS3	Y toner level sensor
TS4	Bk toner level sensor
UN10	Environment sensor
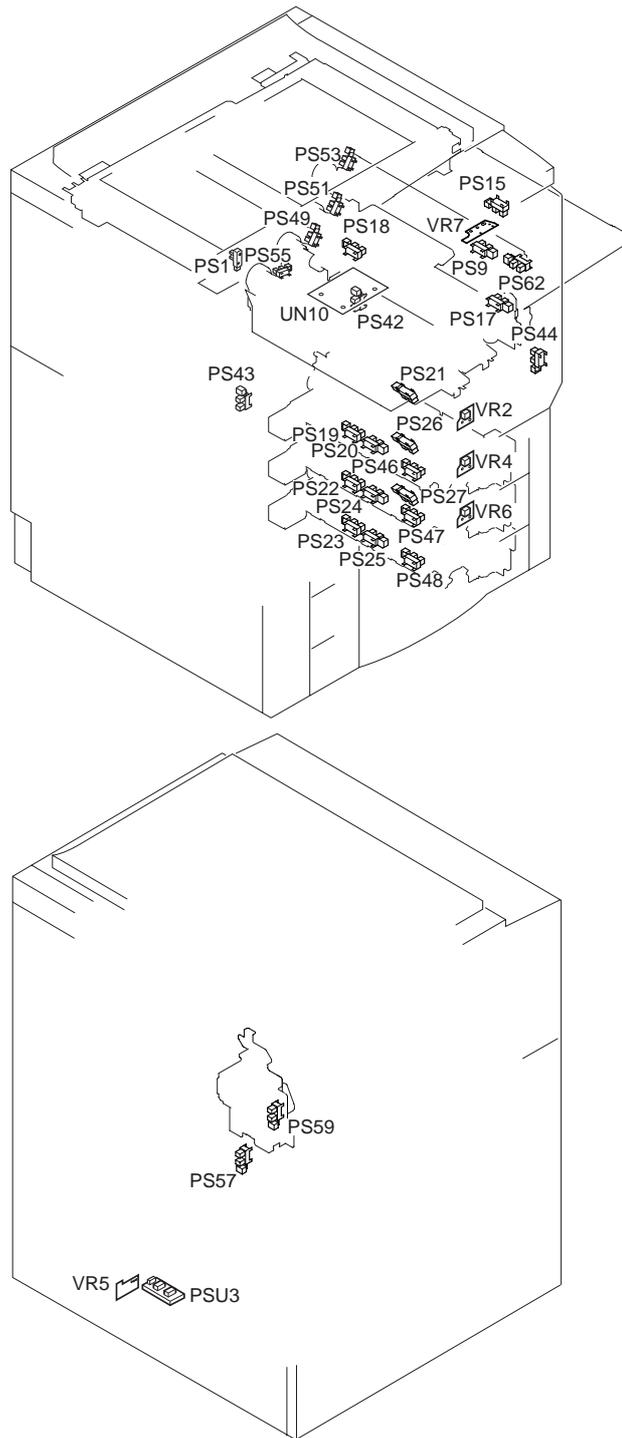
Table 3-1b (CLC1120/1130)

Table 3-1b (CLC1120/1130)

2. CLC1150

PS1	Original scanner home position sensor
PS2	Side A sensor
PS3	Side B sensor
PS4	C sensor
PS5	Pre-transfer paper sensor
PS6	Post-transfer paper sensor
PS7	Separation sensor
PS8	Attraction/transfer locking cam HP sensor
PS9	Multifeeder pickup sensor
PS10	Fixing oil level sensor
PS11	Fixing upper cleaning belt length sensor
PS12	Internal delivery sensor
PS15	Multifeeder paper sensor
PS17	Multifeeder lifter H sensor
PS18	Multifeeder lifter L sensor
DPS22	Cassette 1 lifter position sensor
DPS23	Cassette 2 lifter position sensor
DPS24	Cassette 1 paper sensor
DPS25	Cassette 2 paper sensor
PS26	Pickup vertical path 1 sensor
PS27	Pickup vertical path 2 sensor
PS28	Re-picup vertical path sensor
PS30	Pre-registration sensor
PS31	External delivery paper sensor
PS32	Delivery vertical path 1 sensor
PS33	Delivery vertical path 2 sensor
PS34	Duplexing path paper sensor
PS35	Duplexing reversal paper sensor
PS36	Duplexing tray paper sensor

Table 3-2a (CLC1150)
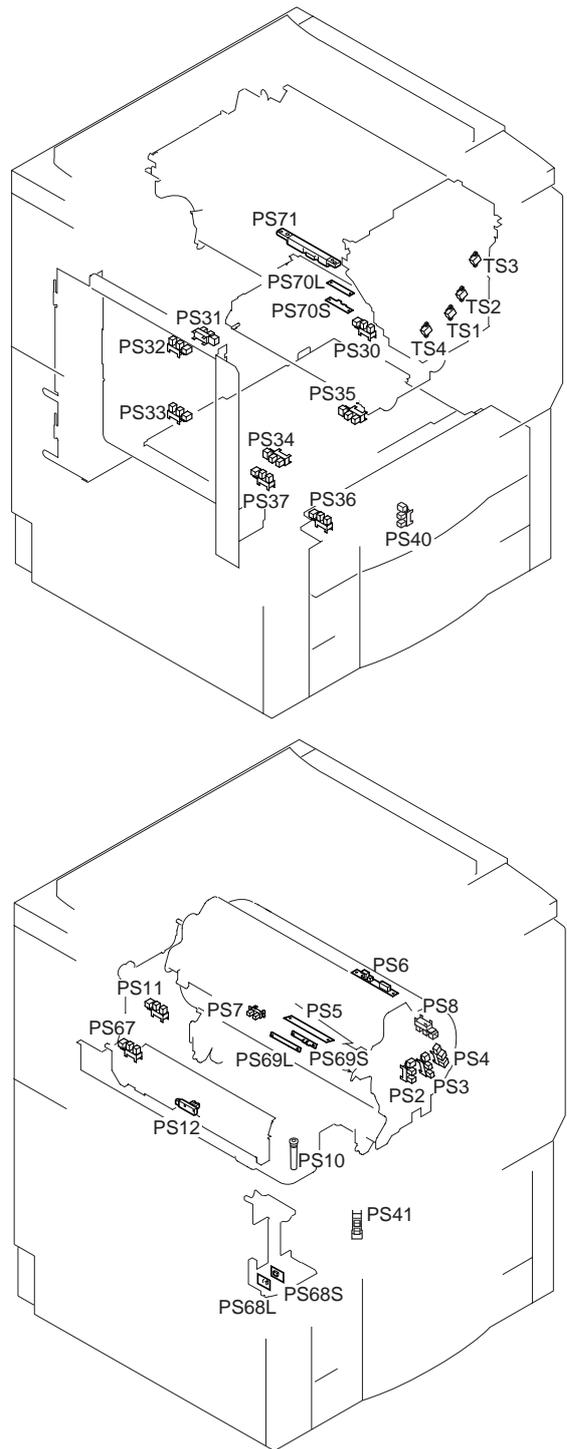
Figure 3-2a (CLC1150)

PS37	Duplexing inlet paper sensor
PS40	Paper jogging guide HP sensor
PS41	Right front cover sensor
PS42	Left front cover sensor
PS43	Delivery cover sensor
PS44	Pickup cover sensor
DPS47	Cassette 1 open/closed sensor
DPS48	Cassette 2 open/closed sensor
PS49	M developing assembly HP sensor
PS51	C developing assembly HP sensor
PS53	Y developing assembly HP sensor
PS55	Bk developing assembly HP sensor
PS57	Transfer drum HP sensor
PS59	Transfer drum cleaner HP sensor
PS62	Multifeeder tray open/closed sensor
PS67	Fixing lower cleaning belt length sensor
PS68L/S	Waste toner case full sensor
PS69L/S	Transparency sensor
PS70L/S	Registration sensor
PS71	Pre-cleaning paper sensor
DPSU3	Cassette 2 paper length sensor
DVR4	Cassette 1 paper level detecting VR
DVR5	Cassette 2 paper width detecting VR
DVR6	Cassette 2 paper level detecting VR
VR7	Multifeeder paper width detecting VR
TS1	M toner level sensor
TS2	C toner level sensor
TS3	Y toner level sensor
TS4	Bk toner level sensor
UN10	Environment sensor

Table 3-2b (CLC1150)
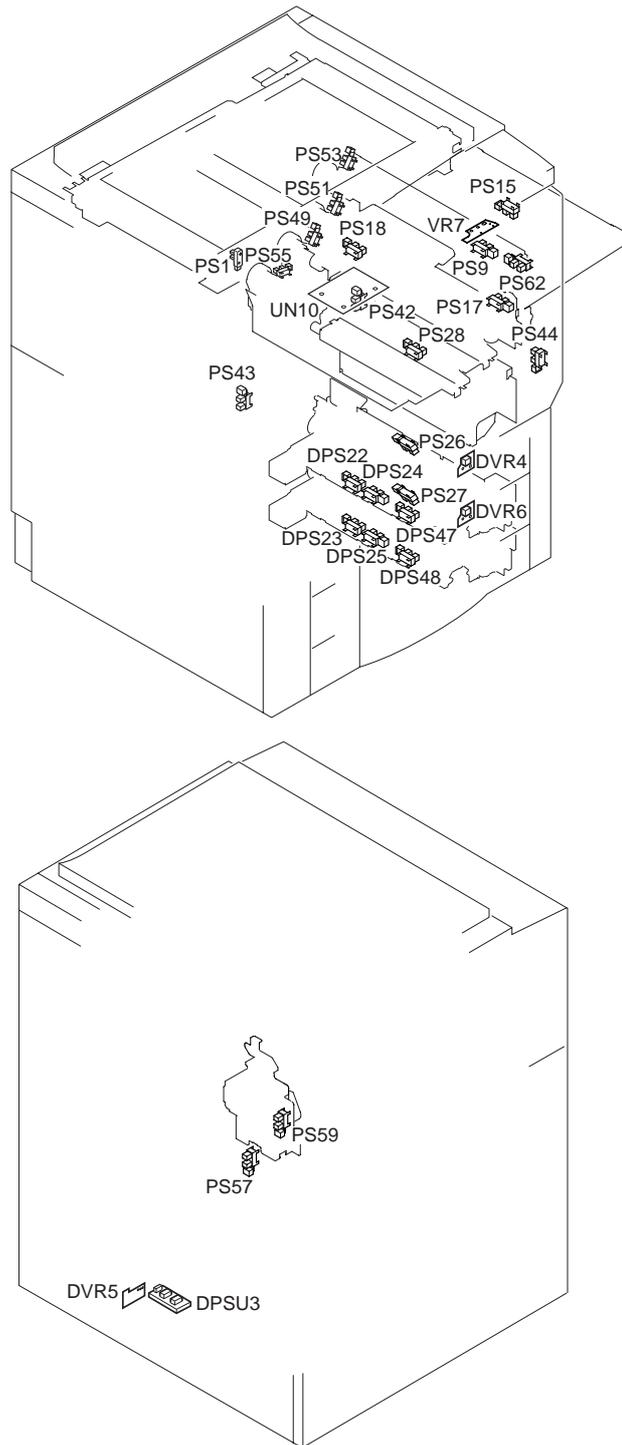
Figure 3-2b (CLC1150)

B. Thermistors, Lamps, and Heaters

THM1	Fixing upper thermistor 1
THM2	Fixing upper thermistor 2
THM3	Fixing lower thermsitor 3
THM4	Fixing lower thermistor 4
TP1	Scanner thermal switch 1
TP2	Fixing upper thermal switch
TP3	Fixing lower thermal switch
TP6	Scanner thermal switch 2
LA1	Pre-exposure lamp
LA2	Scanning lamp
H1	Fixing upper heater
H2	Fixing lower heater
H3	Drum heater
H4	Cassette heater 1
H5	Cassette heater 2
ELB	Leakage breaker
LF1	Noise filer
SSR1	Fixing heater SSR
SSR2	Drum, cassette, deck heater SSR
RL1	AC power cut relay
RL3	DC power cut relay
P1	Power cord
SW1	Power switch
SW2	Control switch
SW3	Transfer unit lever switch
SW4	Left front door switch
SW5	Delivery door switch
SW6	Environment switch
SW7	Waste toner feedscrew locked detecting switch
SW8	Cassette heater switch

Table 3-3
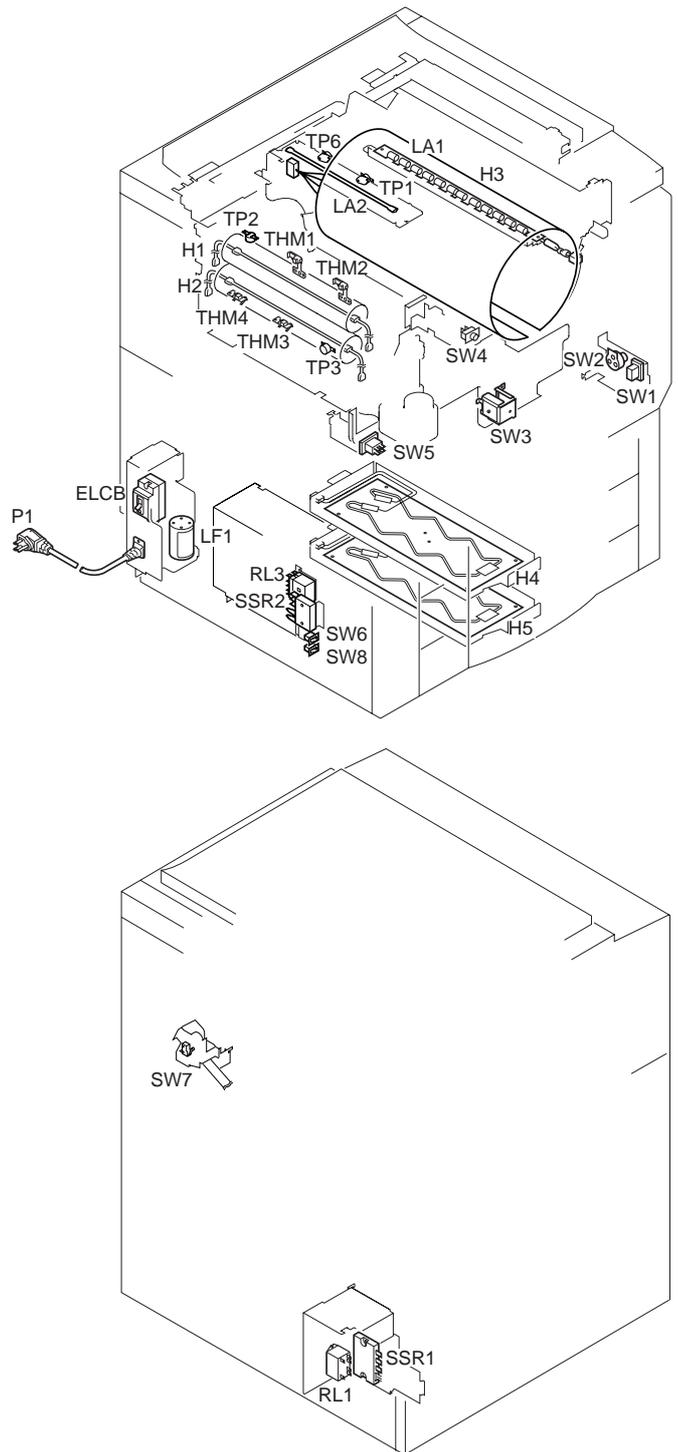
Figure 3-3

C. Clutches

1. CLC1120/1130

CL1	M developing cylinder clutch
CL2	C developing cylinder clutch
CL3	Y developing cylinder clutch
CL4	Bk developing cylinder clutch
CL5	M toner supply clutch
CL6	C toner supply clutch
CL7	Y toner supply clutch
CL8	Bk toner supply clutch
CL9	Registration clutch
CL10	Multifeeder feeding clutch
CL11	Cassette 1 pickup clutch
CL12	Cassette 2 pickup clutch
CL13	Cassette 3 pickup clutch (CLC1130 only)
CL16	Multifeeder pickup clutch
CL18	Postcard feeding clutch (100-V model only)

Table 3-4 (CLC1120/1130)
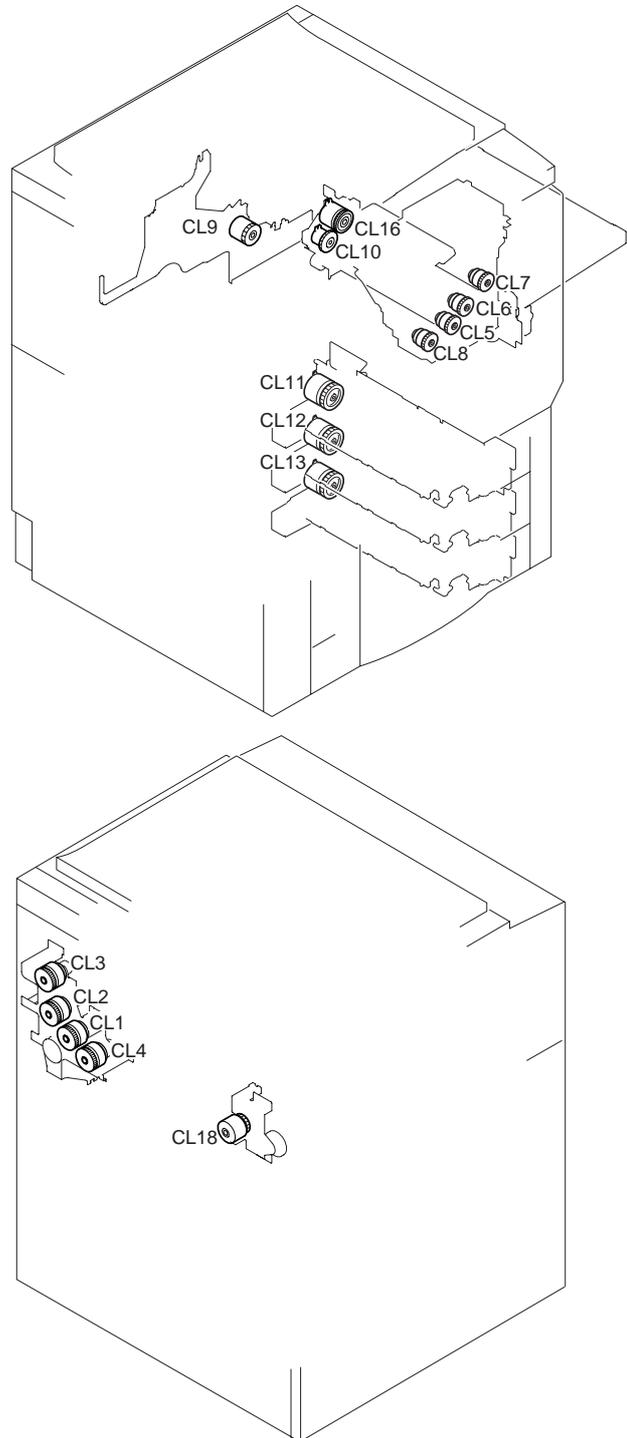
Figure 3-4 (CLC1120/1130)

2. CLC1150

CL1	M developing cylinder clutch
CL2	C developing cylinder clutch
CL3	Y developing cylinder clutch
CL4	Bk developing cylinder clutch
CL5	M toner supply clutch
CL6	C toner supply clutch
CL7	Y toner supply clutch
CL8	Bk toner supply clutch
CL9	Registration clutch
CL10	Multifeeder feeding clutch
DCL12	Cassette 1 pickup clutch
DCL13	Cassette 2 pickup clutch
CL14	Duplexing feeding clutch
CL15	Re-pickup clutch
CL16	Multifeeder pickup clutch
CL18	Postcard feeding clutch ((100-V model only)
CL19	Delivery vertical path roller clutch

Table 3-5 (CLC1150)
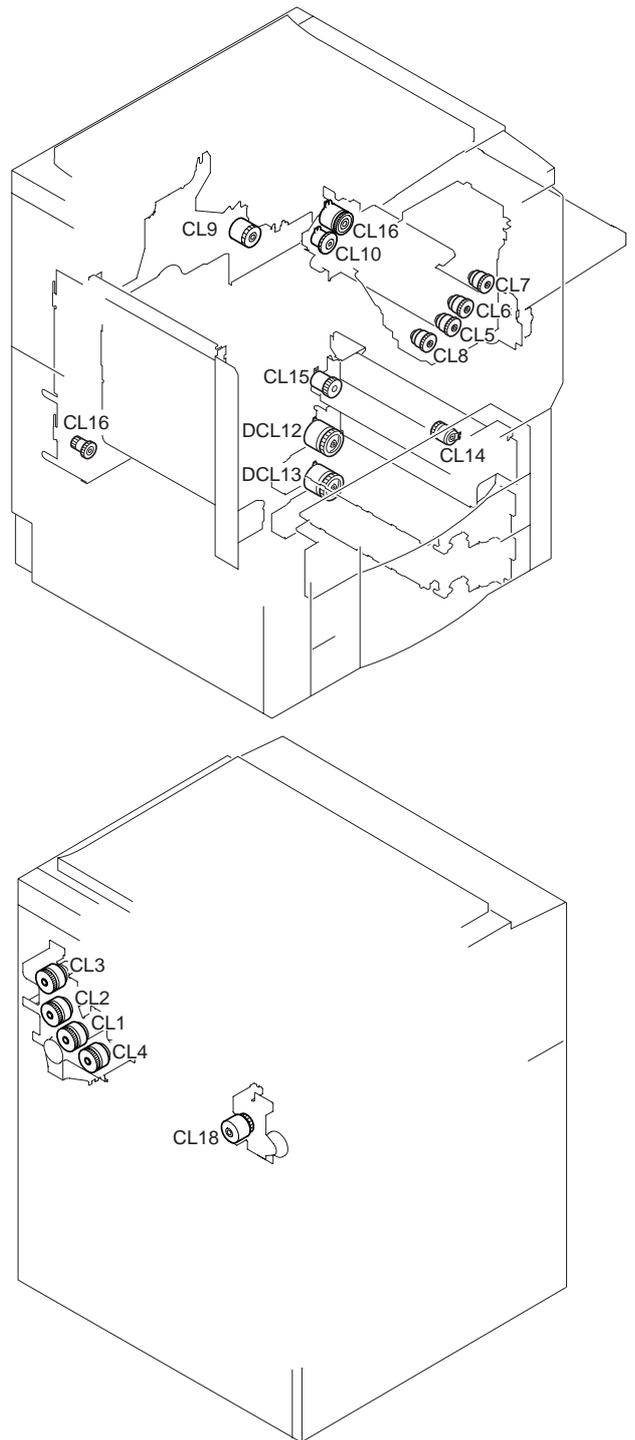
Figure 3-5 (CLC1150)

D. Solenoids

1. CLC1120/1130

SL1	Fixing upper cleaning belt solenoid
SL2	Fixing lower cleaning belt solenoid
SL3	Separation push-up solenoid
SL4	Separation claw solenoid
SL5	Registration roller releasing solenoid
SL6	Attraction roller solenoid
SL7	Pickup roller 1 solenoid
SL8	Pickup roller 2 solenoid
SL9	Pickup roller 3 solenoid (CLC1130 only)
SL14	Multifeeder pickup solenoid

Table 3-6 (CLC1120/1130)
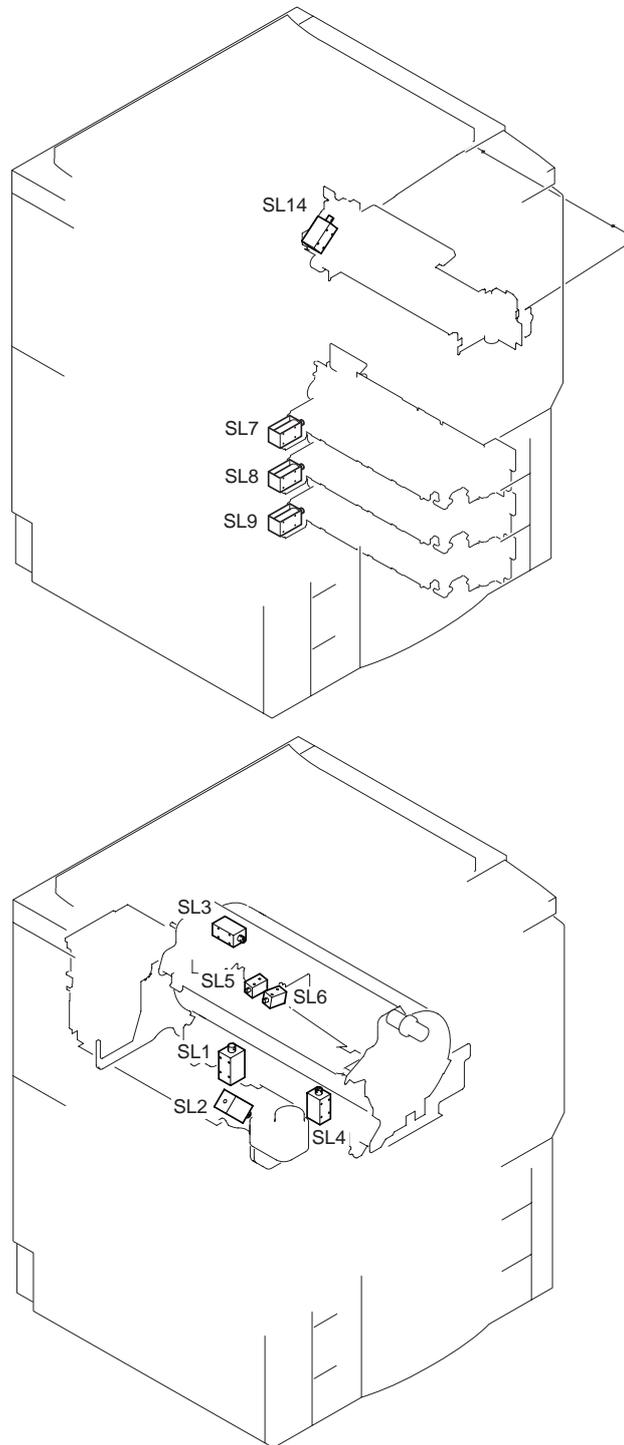
Figure 3-6 (CLC1120/1130)

2. CLC1150

SL1	Fixing upper cleaning belt solenoid
SL2	Fixing lower cleaning belt solenoid
SL3	Separation push-up solenoid
SL4	Separation claw solenoid
SL5	Registration roller releasing solenoid
SL6	Attraction roller solenoid
DSL8	Pickup roller 1 solenoid
DSL9	Pickup roller 2 solenoid
SL10	Delivery paper deflecting plate solenoid
SL12	Stopper plate solenoid
SL13	Duplexing paper feed roller solenoid
SL14	Multifeeder pickup solenoid
SL15	Stacking guide plate solenoid

Table 3-7 (CLC1150)
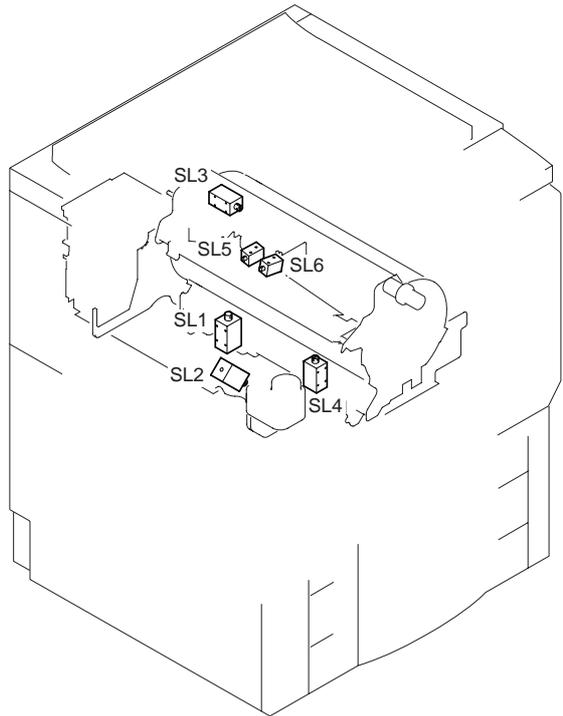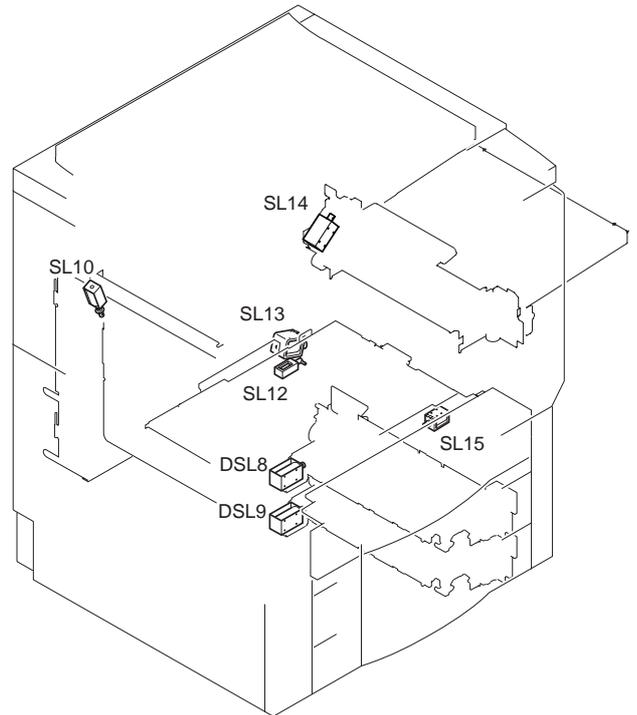
Figure 3-7 (CLC1150)

E. Fans

FM1	Original exposure system cooling fan 1
FM2	Exhaust discharge fan
FM3	Primary charging assembly fan
FM4	Laser scanner motor cooling fan
FM5	Ozone suction fan
FM6	Toner suction fan
FM7	IP cooling an
FM8	Electrical unit cooling fan
FM9	Power supply cooling fan 1
FM11	Delivery cooling fan
FM13	Power supply cooling fan 2
FM14	Original exposure system cooling fan 2
FM15	Original exposure system cooling fan 3
FM16	Back suction fan
FM17	Power cord mount cooling fan

Table 3-8
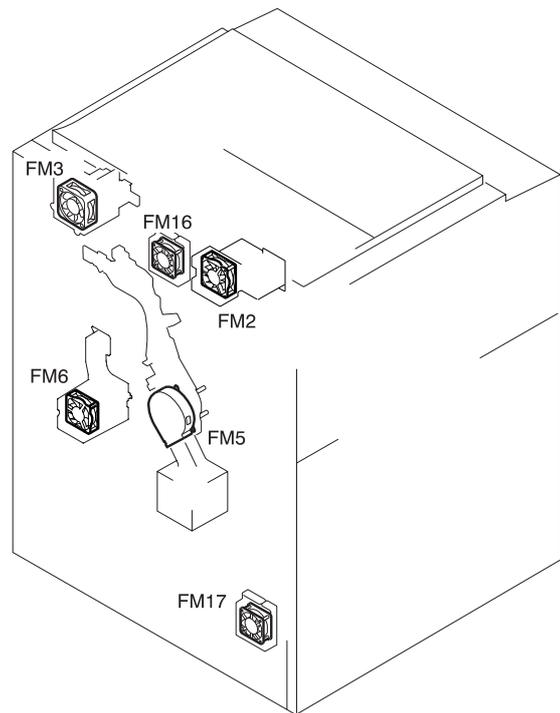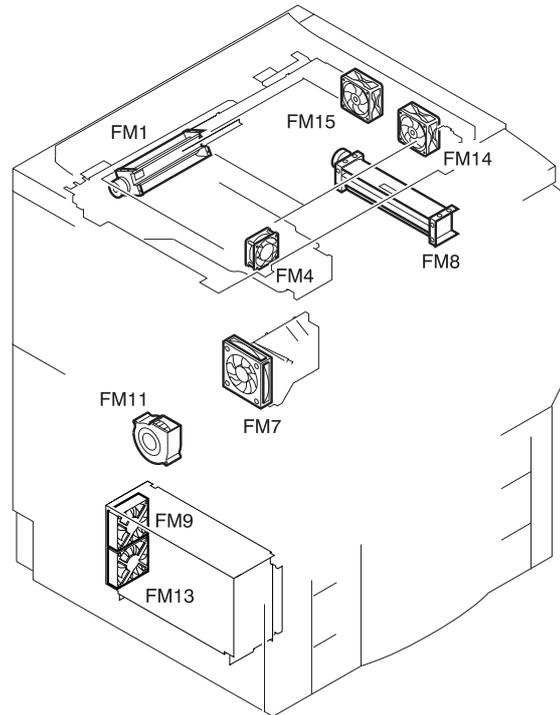
Figure 3-8

F. Motors

M2	Drum motor
M3	Laser scanner motor
M4	Main motor
M5	Fixing motor
M6	Primary charging wire cleaning motor
M7	Cleaning blade reciprocating motor
M8	Transfer drum cleaning brush motor
M9	Polishing roller motor
M10	Hopper motor
M11	Cassette 1 lifter motor
M12	Cassette 2 lifter motor
M13	Cassette 3 lifter motor (CLC1130 only)
M15	Multifeeder lifter motor
PM1	M developing assembly locking motor
PM2	C developing assembly locking motor
PM3	Y developing assembly locking motor
PM4	Bk developing assembly locking motor
PM5	Transfer drum locking motor
PM6	Transfer drum cleaner locking motor
PM7	Attraction/transfer locking cam motor
PM8	Pre-registration motor 2
PM9	Pre-registration motor 1
PM10	Cassette 1 pickup motor
PM11	Cassette 2 pickup motor
PM12	Cassette 3 pickup motor (CLC130 only)
PM15	Original scanner motor

Table 3-9 (CLC1120/1130)
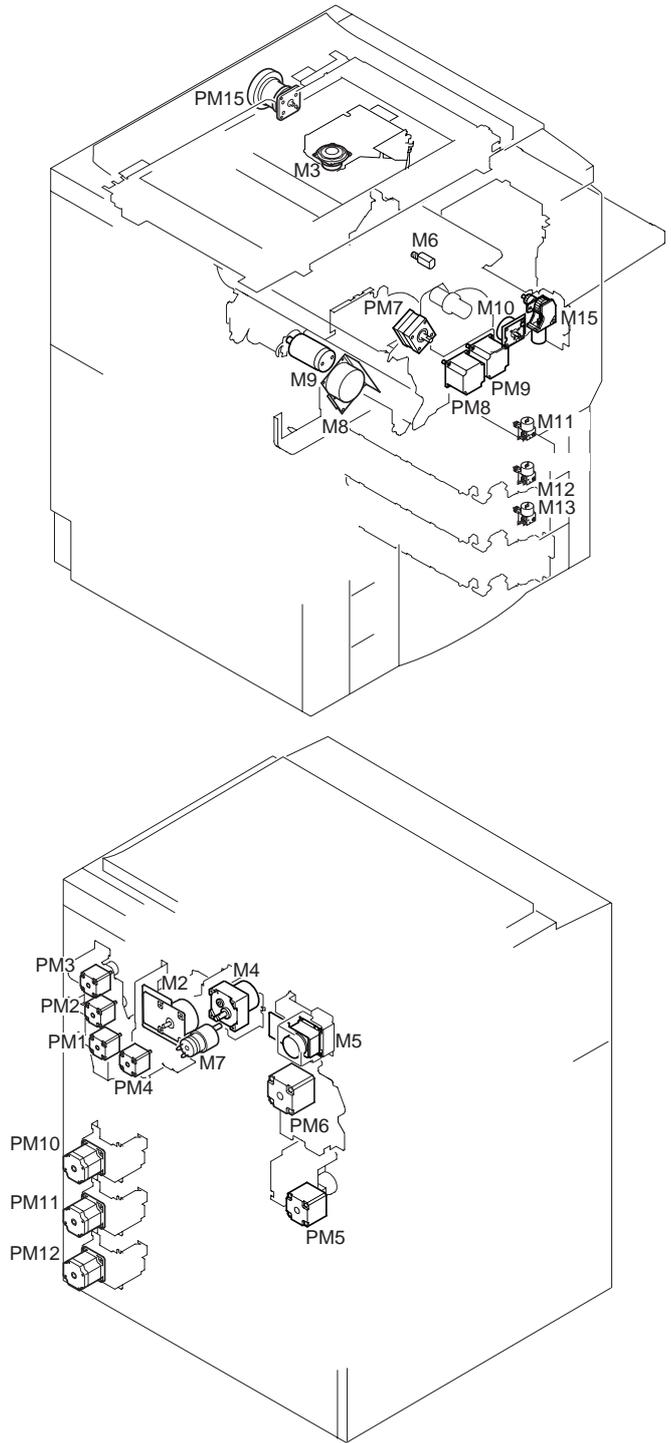
Figure 3-9 (CLC1120/1130)

3-11

M2	Drum motor
M3	Laser scanner motor
M4	Main motor
M5	Fixing motor
M6	Primary charging wire cleaning motor
M7	Cleaning blade reciprocating motor
M8	Transfer drum leaner brush motor
M9	Polishing roller motor
M10	Hopper motor
DM12	Cassette 1 lifter motor
DM13	Cassette 2 lifter motor
M14	Duplexing motor
M15	Multifeeder lifter motor
PM1	M developing assembly locking motor
PM2	C developing assembly locking motor
PM3	Y developing assembly locking motor
PM4	Bk developing assembly locking motor
PM6	Transfer drum cleaner locking motor
PM7	Attraction/transfer locking cam motor
PM8	Pre-registration motor 2
PM9	Pre-registration motor 1
DPM11	Cassette 1 pickup motor
DPM12	Cassette 2 pickup motor
PM13	Re-pickup motor
PM14	Duplexing paper jogging motor
PM15	Original scanner motor

Table 3-10 (CLC1150)
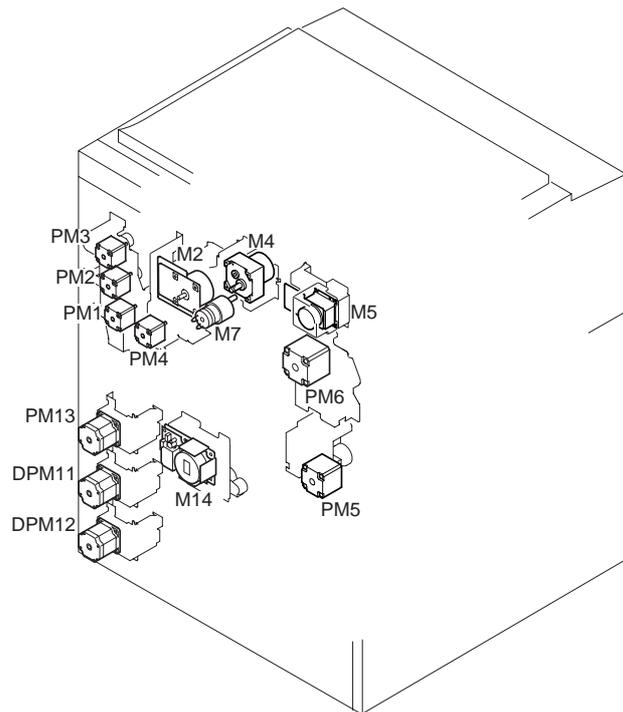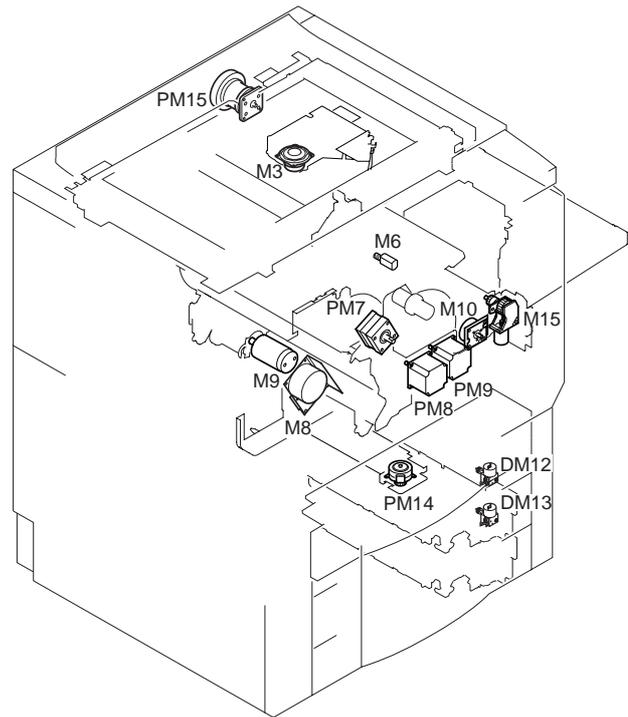
Figure 3-10 (CLC150)

G. PCBs

1	CPU PCB
2	CCD/CCD driver PCB
3	Analog processor PCB
4	Image processor motherboard
5	Image processor main PCB
6	Image processor ECO PCB
7	ECO relay PCB
8	Laser controller PCB
9	Laser drive PCB
10	BD PCB
11	Original scanner motor driver PCB
12	Control panel PCB
13	Inverter PCB
14	Contrast VR PCB
15	Keypad PCB
16	ECO PCB
17	Memory PCB
8	Bi-Centronics I/F PCB
19	DC driver PCB
20	DC power supply PCB
21	AC fuse PCB
22	DC fuse PCB
23	Drum heater controller PCB
24	Oil pump driver PCB
25	Transfer driver PCB
26	Registration path driver PCB
27	Pickup driver PCB
28	Duplexing driver PCB (CLC1150 only)
29	Developing assembly locking driver PCB
30	Transfer assembly locking driver PCB

Table 3-11a
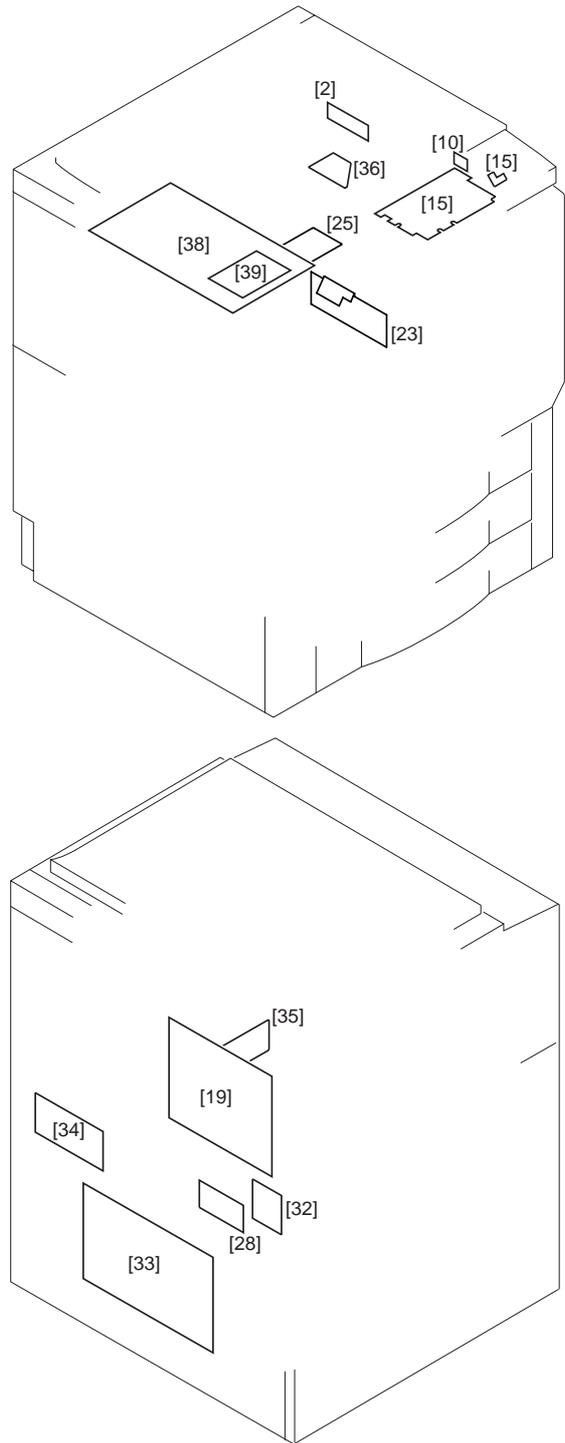
Figure 3-11a

31	Developing bias PCB
32	HVT-AC PCB
33	HVT-DC PCB
34	Potential measurement PCB
35	Main motor driver PCB
36	Laser scanner motor PCB
37	Hopper motor PCB
38	IP-ED/IF PCB (accessory)
39	IP-PRJ PCB (accessory)
40	Flicker controller PCB (230-V model only)
41	Transformer PCB

Table 3-11b
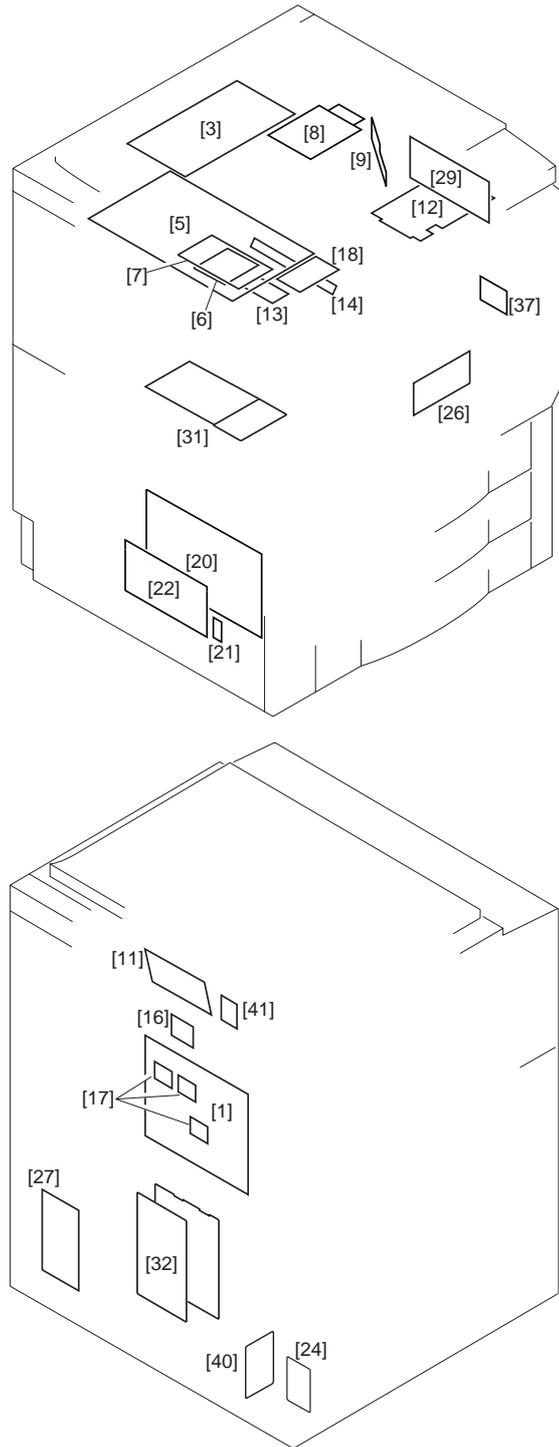
Figure 3-11b

H. Paper Deck

1. Sensors and Switches

PS101	Deck pickup sensor
PS102	Deck paper absent sensor
PS103	Deck lifter upper limit sensor
PS104	Deck position sensor
PS105	Deck set sensor
PS107	Deck paper level upper sensor
PS108	Deck paper level lower sensor
PS109	Deck open sensor
SW100	Deck open switch
SW101	Deck open detecting switch
SW102	Deck lifter lower limit detecting switch

Table 3-12
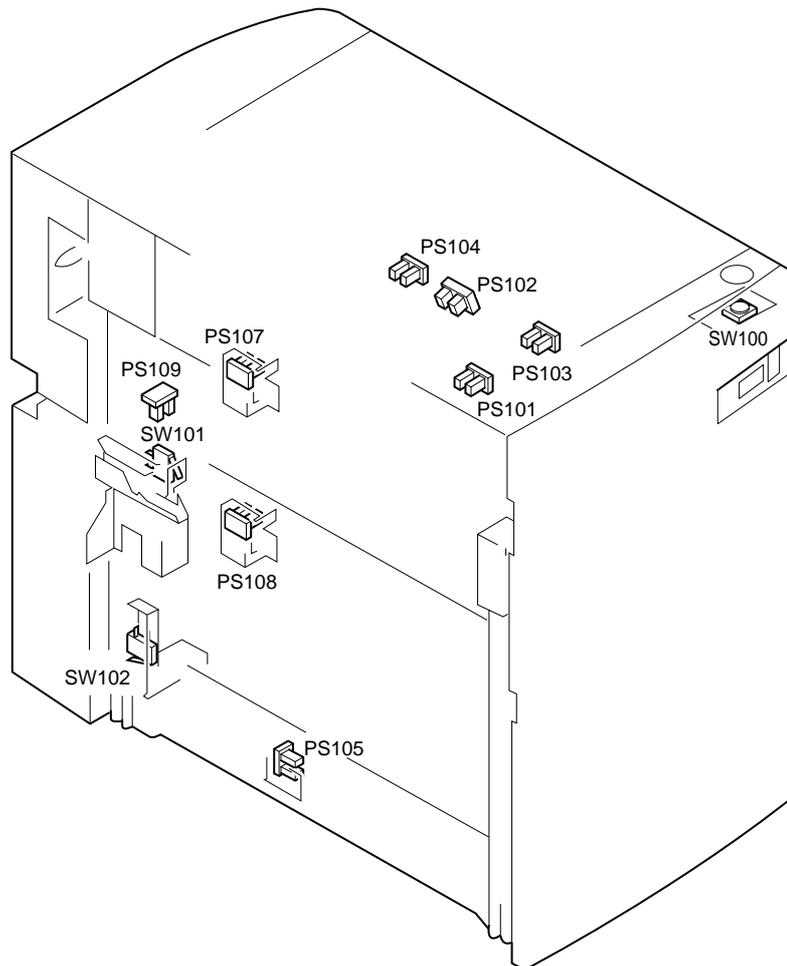
Figure 3-12

2. Motors, Clutches, Solenoids, and PCBs

PM101	Deck pickup motor
M101	Deck lifter motor
CL102	Deck pickup clutch
SL101	Deck pickup solenoid
SL102	Deck open solenoid
[1]	Deck driver PCB
[2]	Deck open switch PCB

Table 3-13
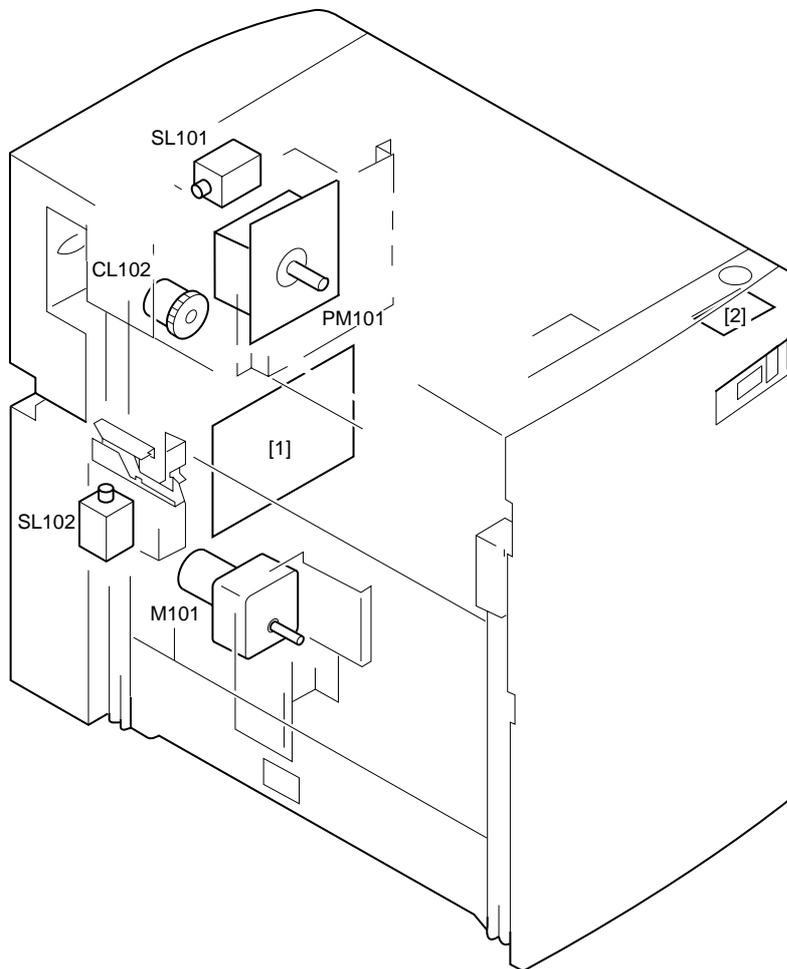
Figure 3-13

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

Of the variable resistors (VR), light-emitting diodes (LED), and check pins used in the copier, those that may be used in the field are discussed.

> **Caution:**
> 1. Some LEDs emit light even when off because of leakage current. It is a normal condition, and must be kept in mind.
> 2. VRs that may be used in the field: ⊘
>   VRs that must not be used it the field: ⊘
> 3. The VRs and check pins that are not found in the tables are for the factory only, and require special tools and high accuracy. Do NOT touch them in the field.

1. DC Driver PCB
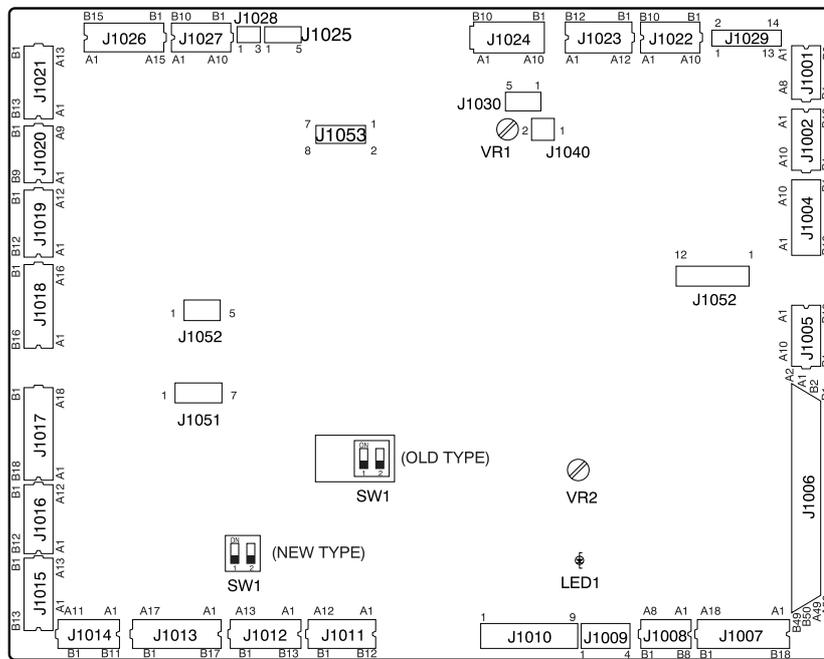
Figure 3-14

LED: turns on when +24 V is supplied, and turns off when the front cover is opened.

SW1-1	SW1-2	OUT	Remarks
OFF	OFF	Normal	Normal area
ON	OFF	Case 1	Highland 1
OFF	ON	Case 2	Highland 2
ON	ON	Not used	

Table 3-14

Caution:

If the copier is used in highlands (low atmospheric pressure), images may suffer from transfer faults. Try changing the setting of the DIP switch (SW1) to highland 1, and see if the problem is corrected; if the problem still occurs, switch SW1 to highland 2.

If the problem still remains thereafter, shift SW1 back to its normal setting, and try to check other possible causes.

2. CPU PCB
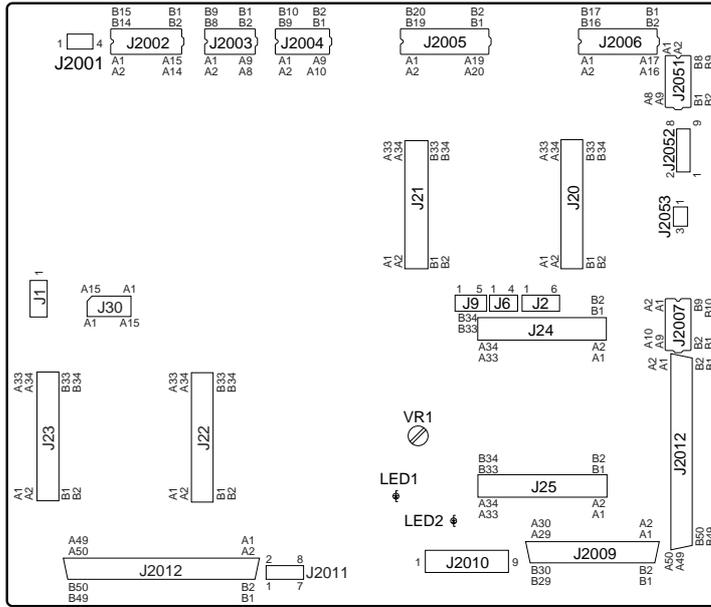
Figure 3-15

LED1: turns on when +5 V is supplied.
LED2: turns on when +24 V is supplied.

3. IP main PCB
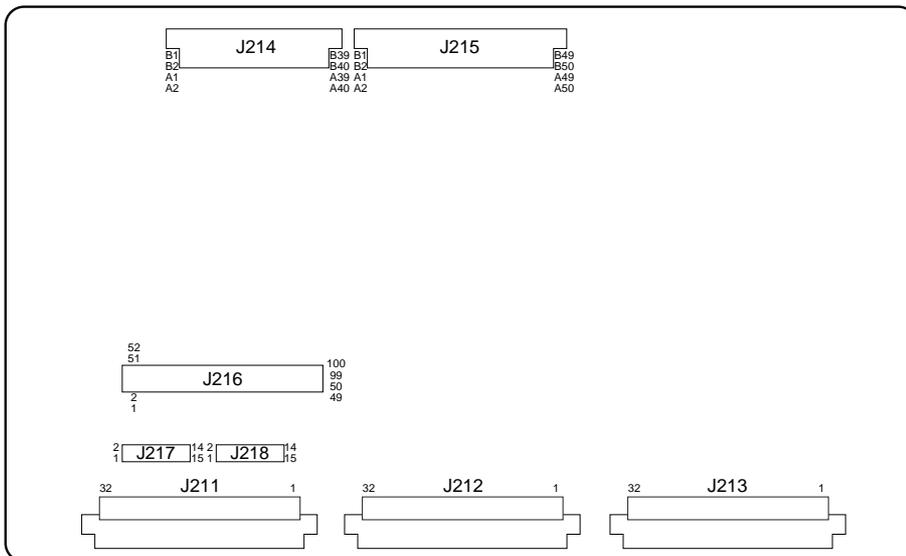
Figure 3-16

4. Analog Processor PCB
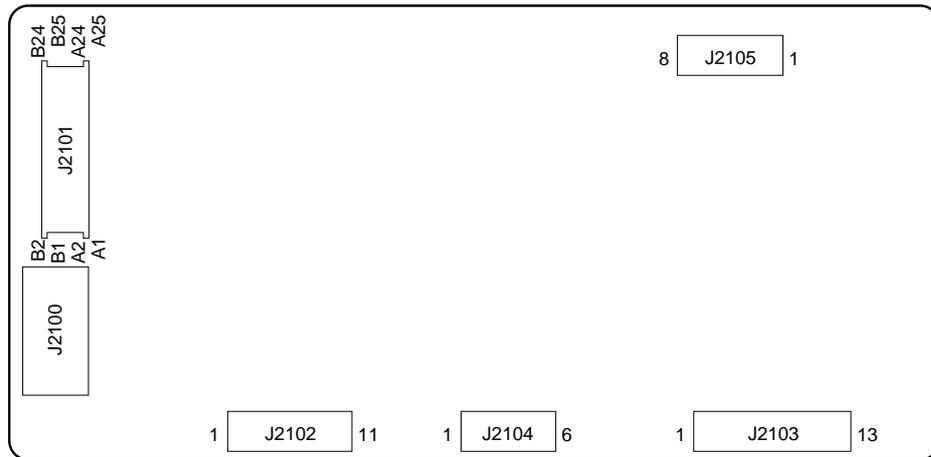
Figure 3-17

5. Laser Driver PCB
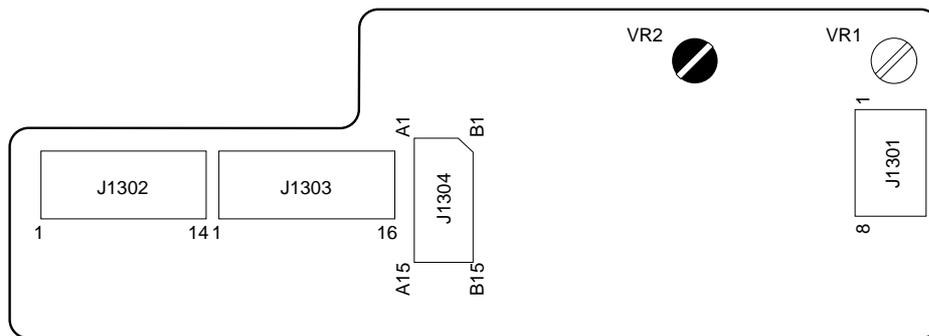
Figure 3-18

VR2: for Pmax adjustment of the laser.

6. Lamp Regulator PCB
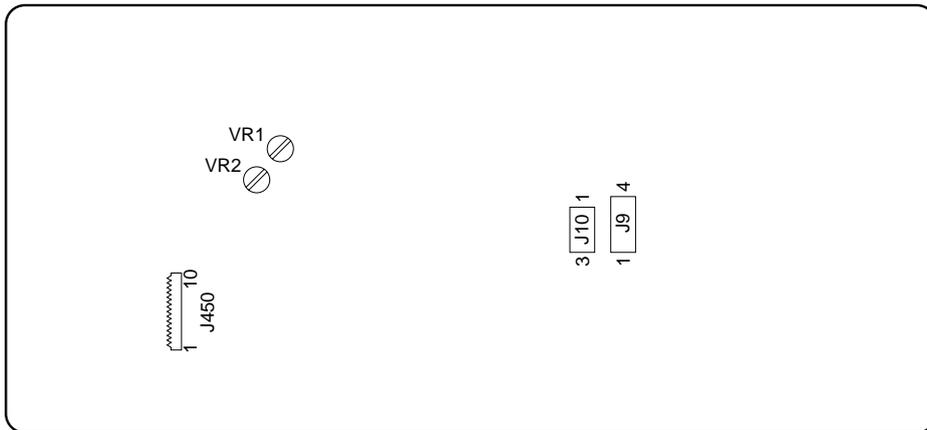
Figure 3-19

7. DC Fuse PCB
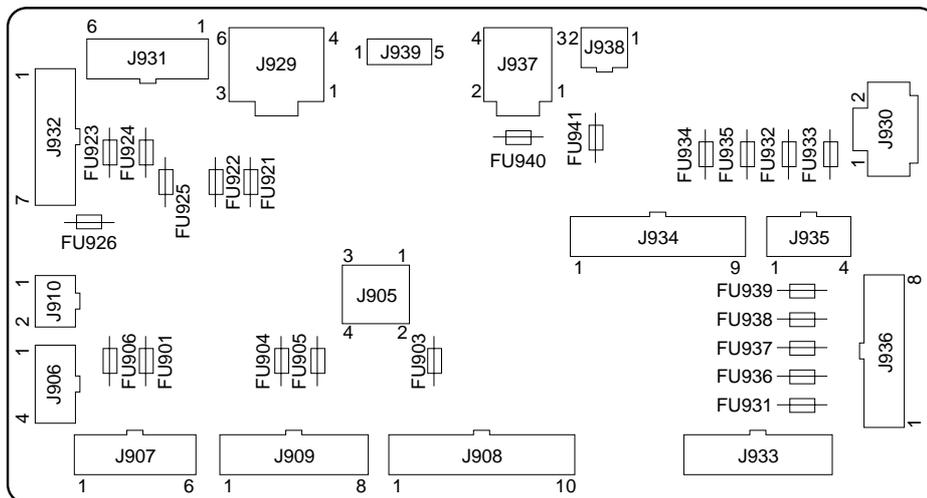
Figure 3-20

8. AC Fuse PCB
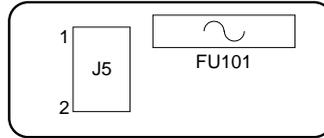
Figure 3-21

9. Developing Bias PCB
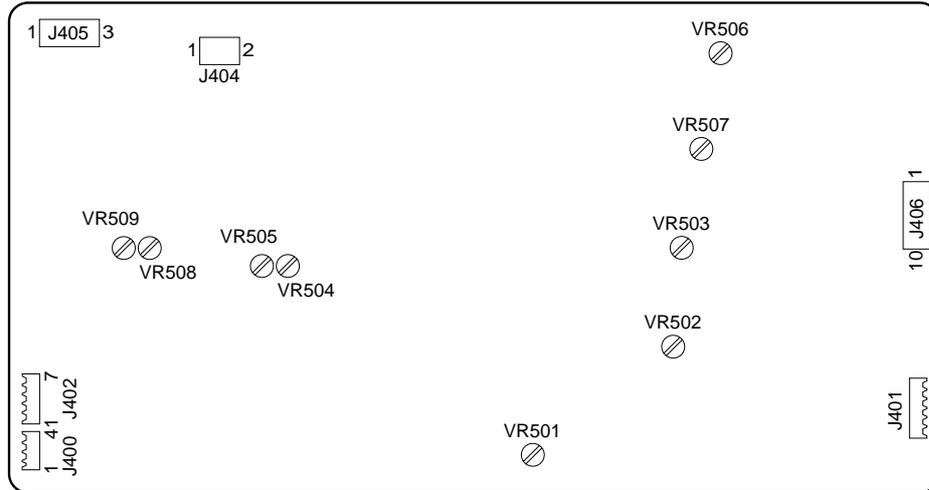
Figure 3-22

10. HVT-AC PCB
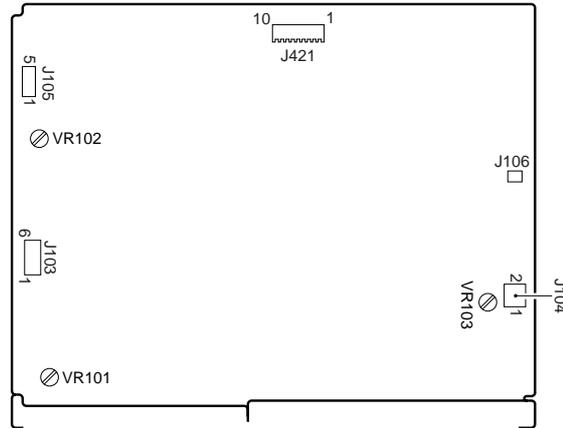
Figure 3-23

11. Potential Measurement PCB
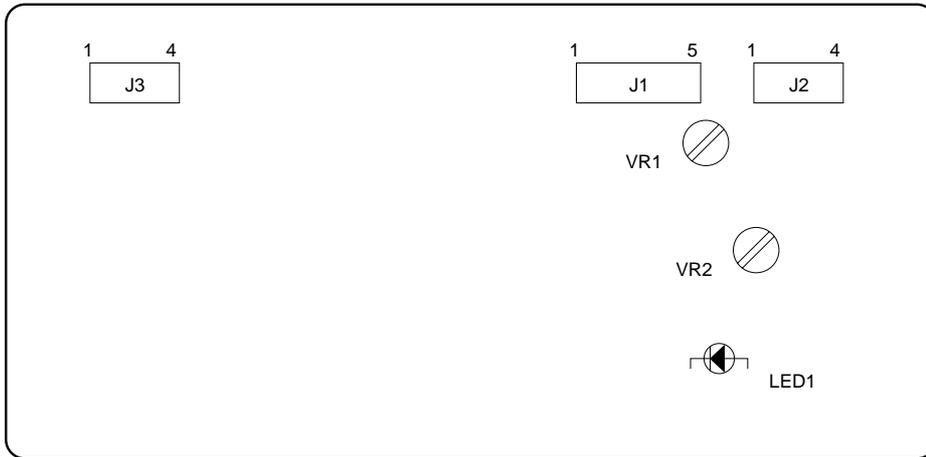
Figure 3-24

LED1: remains on while the surface potential of the drum is being measured.

CHAPTER 4 SERVICE MODE

A. Outline

The copier's service mode consists of three levels, each using its own screen: Initial screen, Level 1/Level 2 item Screen, and Level 3 item screen.
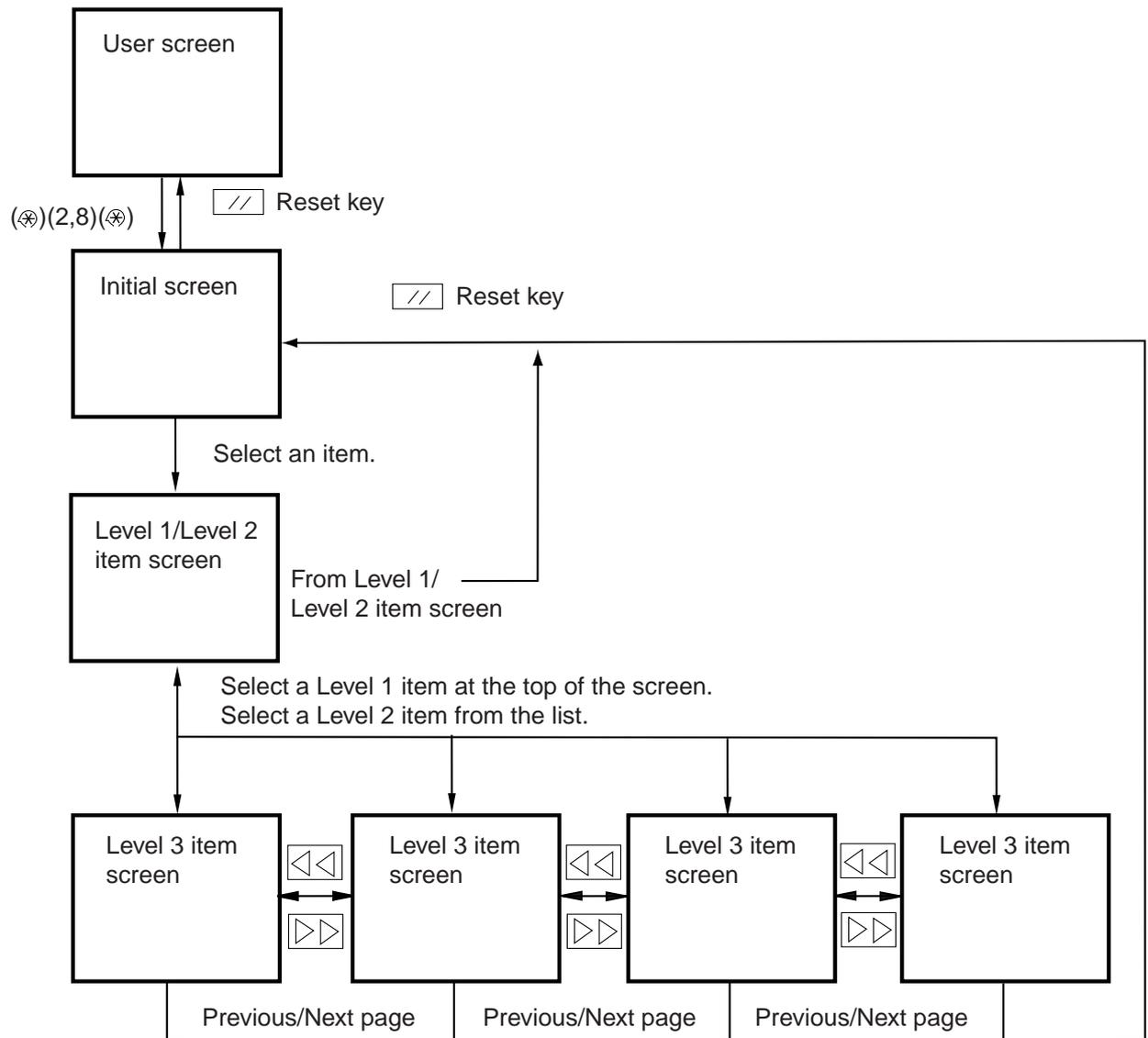
Figure 4-1 Organization of Screens

The copier's service mode consists of the following seven:
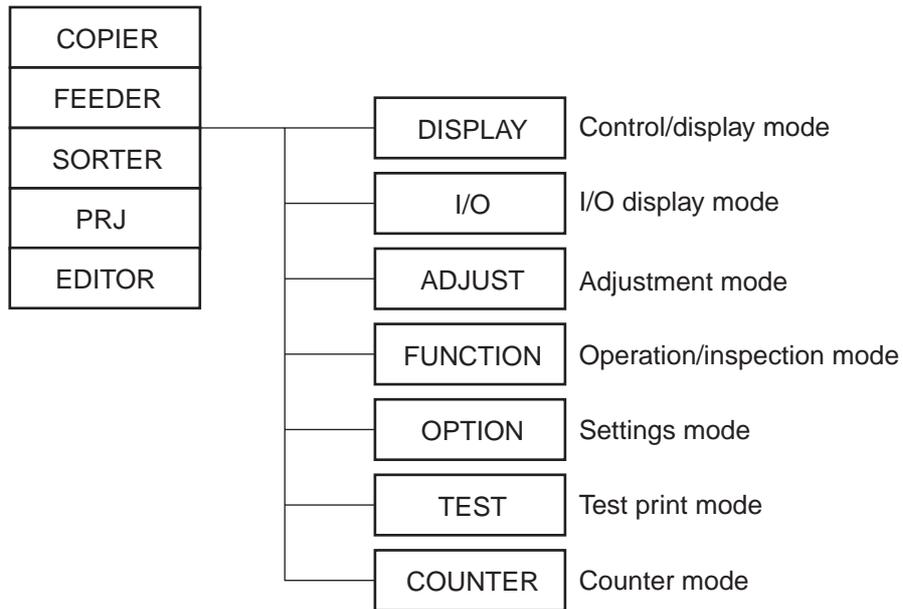
Figure 4-2 Division of Service Mode

1. Starting Service Mode and Making Selections
1) Press the asterisk key ✷ on the control panel.
2) Press '2' and '8' on the keypad at the same time.
3) Press the asterisk key ✷ on the control key.
·   The above operations will bring up the following Initial screen:

*Only if installed.
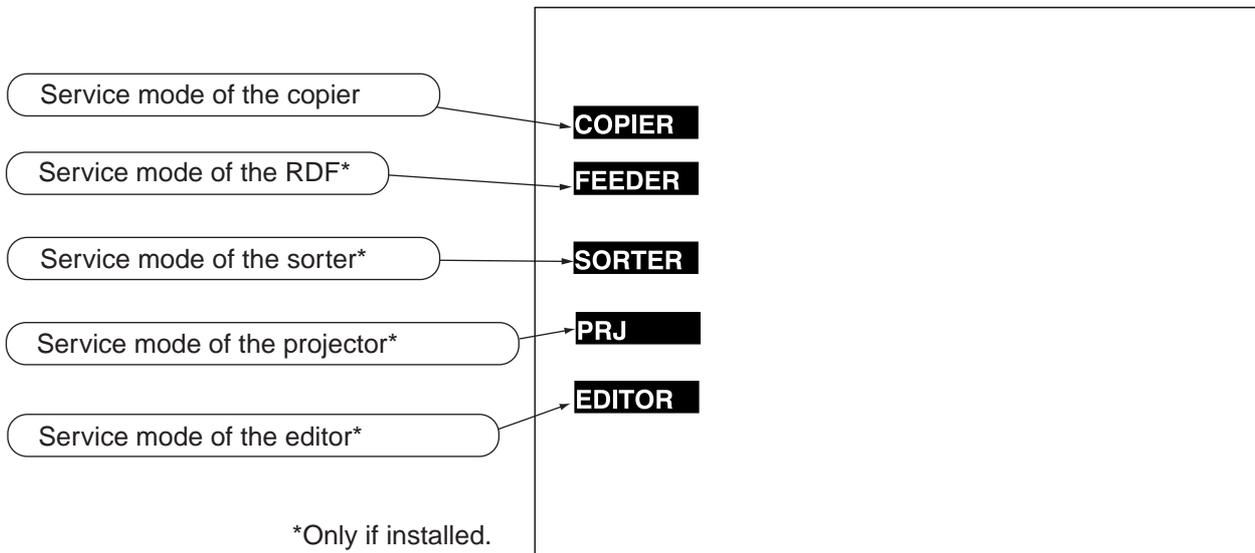
Figure 4-3 Initial Screen

2. Ending Service Mode

· Press the Reset key once to bring back the service mode Initial screen (Figure 13-703).
· Press the Reset key twice to end service mode and to bring back the User screen (standard screen).

3. Backing Up the RAM

At time of shipment from the factory, each machine is adjusted individually and its adjustment values are recorded on the service label (one of the two labels attached to the service data sheet cover behind the front cover).

If you have replaced the CPU PCB or initialized the RAM, be sure to record all service mode values (ADJUST/OPTION) of the service label. (The values will return to default values upon replacement or initialization.)

If you cannot find an appropriate heading on service label 1, make use of the blanks of service label 2.
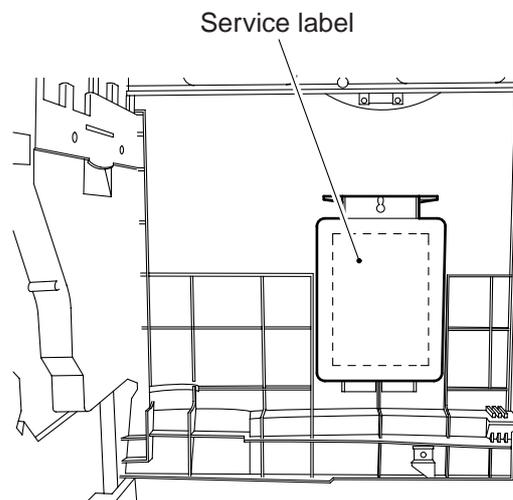
Service label

Figure 4-4 Service Label

Back-Up Data Items

Adjust				
ADJ-XY	ADJ-X			
	ADJ-Y			
	ADJ-S			
	ADJ-J			
LASER	T-V00			
	T-VFF			
	P3-V00			
	P3-VFF-1			
	P3-VFF-2			
	P3-VFF-3			
	P3-VFF-4			
DENS	SGNL-Y			
	SGNL-M			
	SGNL-C			
	REF-Y			
	REF-M			
	REF-C			
	SIGG-Y			
	SIGG-M			
	SIGG-C			
	RGAIN-K			
	D-Y-TRGT			
	D-M-TRGT			
	D-C-TRGT			
	PTOFST-Y			
	PTOFST-M			
	PTOFST-C			
	PTOFST-K			
	D-REF-Y			
	D-REF-M			
	D-REF-C			
	D-REF-K			
	D-REF-4			
	D-SGNL-Y			
	D-SGNL-M			
	D-SGNL-C			
	D-SGNL-K			
	D-SGNL-4			

	Adjust			
DENS	P-REF-Y			
	P-REF-M			
	P-REF-C			
	P-REF-K			
	P-SGNL-Y			
	P-SGNL-M			
	P-SGNL-C			
	P-SGNL-K			
	SIGG-K			
	SIGG-P-M			
	SIGG-P-C			
	SIGG-P-Y			
	SIGG-P-K			
	RGAN-P-M			
	RGAN-P-C			
	RGAN-P-Y			
	RGAN-P-K			
V-CONT	VBACK-Y			
	VBACK-M			
	VBACK-C			
	VBACK-K			
	EPOTOFST			
	PF-CRT-Y			
	PF-CRT-M			
	PF-CRT-C			
	PF-CRT-K			
PASCAL	OFST-P-Y			
	OFST-P-M			
	OFST-P-C			
	OFST-P-K			
COLOR	ADJ-Y			
	ADJ-M			
	ADJ-C			
	ADJ-K			
	OFST-Y			
	OFST-M			
	OFST-C			
	OFST-K			
	P-ADJ-Y			

Adjust				
COLOR	P-ADJ-M			
	P-ADJ-C			
	P-ADJ-K			
	P-OFST-Y			
	P-OFST-M			
	P-OFST-C			
	P-OFST-K			
HV-TR	TR-TR			
	TR-L1			
	HV-L2			
	TR-N1			
	TR-N2			
	TR-T1			
	TR-T2			
	TR-UT1			
	TR-UT2			
	TR-S1-1			
	TR-S2-1			
	TR-OHP			
	TR-POST			
HV-SP	HV-SP			
	SP-L1			
	SP-L2			
	SP-N1			
	SP-N2			
	SP-T1			
	SP-T2			
	SP-UT1			
	SP-UT2			
	SP-S1-1			
	SP-S2-1			
	SP-OHP			
	SP-POST			
	SP-ON-N1			
	SP-ON-N2			
	SP-ON-L1			
	SP-ON-L2			
	SP-ON-T1			
	SP-ON-T2			
	SP-ONUT1			

Adjust				
HV-SP	SP-ONUT2			
	SP-ON-S1			
	SP-ON-S2			
	SP-ONOHP			
	SP-ON-PT			
HV-IEL	HV-IEL			
	IEL-L1			
	IEL-L2			
	IEL-N1			
	IEL-N2			
	IEL-T1			
	IEL-T2			
	IEL-UT1			
	IEL-UT2			
	IEL-S1-1			
	IEL-S2-1			
	IEL-OHP			
	IEL-POST			
HV-ATT	HV-ATT			
	ATT-L1			
	ATT-L2			
	ATT-N1			
	ATT-N2			
	ATT-T1			
	ATT-T2			
	ATT-S1			
	ATT-S2			
	ATT-OHP			
	ATT-UT1			
	ATT-UT2			
	ATT-POST			
DOC-REC	DA-XS			
	DA-XE			
	DA-YS			
	DA-YE			
	DS-DOC			

Adjust				
FEED-ADJ	ATT-T-A			
	ATT-T-B			
	RG-XA			
	RG-XB			
	RG-Y			
	TR-DLY-A			
	TR-DLY-B			
	TR-END-A			
	TR-END-B			
CST-ADJ	C2-STMTR			
	C2-A4R			
	C3-STMTR			
	C3-A4R			
	MF-A4R			
	MF-A6R			
	MF-A4			
	C1-LVOL			
	C1-HVOL			
	C2-LVOL			
	C2-HVOL			
	C3-LVOL			
	C3-HVOL			
MISC	SEG-ADJ			
	K-ADJ			
	ATT-RTN1			
	ATT-RTN2			
	ATT-RTN3			
	ATT-RTN4			
	BC-ADJ			
	ACS-ADJ			
SENS-ADJ	CLN-TH			
	CLN-TMP			

Adjust				
HV-SP-AC	HV-SP			
	SP-L1			
	SP-L2			
	SP-N1			
	SP-N2			
	SP-T1			
	SP-T2			
	SP-UT1			
	SP-UT2			
	SP-S1-1			
	SP-S2-1			
	SP-OHP			
	SP-POST			
HV-PSTCL	HV-PSTCL			
FEEDER	ADJ-RX			
	ADJ-RY			
	ADJ-DX			
	ADJ-DY			
PRJ	DS-PRJ			
	DS-OHP			
	RD-XS			
	RD-XE			
	RD-YS			
	RD-YE			
	DA-XS			
	DA-XE			
	DA-YS			
	DA-YE			
	NEGA-B			
	NEGA-G			
	NEGA-R			
	POSI-B			
	POSI-G			
	POSI-R			
	N-LMT			
	N-G-LMT			
	P-LMT			
	P-G-LMT			

Adjust				
PRJ	OHP-LMT			
	P-DA-XS			
	P-DA-XE			
	P-DA-YS			
	P-DA-YE			
	N-DA-XS			
	N-DA-XE			
	N-DA-YS			
	N-DA-YE			
	O-DA-XS			
	O-DA-XE			
	O-DA-YS			
	O-DA-YE			
	CHNGR-X			
	CHNGR-Y			
EDITOR	ED-X			
	ED-Y			
	LOOP-MB			
	LOOP-TH			
	MRK-MB			
	MRK-TH			

Option				
BODY	CCD-DISP			
	CVR-TYPE			
	MODEL-SZ			
	F-WEB			
	PASCAL			
	PSCL-MD			
	EC-GLASS			
	PSTCL-ON			
USER	METAL			
	OHP-MODE			
	COPY-LIM			
	COUNTER1			
	COUNTER2			
	COUNTER3			
	COUNTER4			
	COUNTER5			
	COUNTER6			
	CONTROL			
	PRJ-L-SP			
	BKL-L-SP			
CST	P-SZ-C1			
	P-SZ-C2			
ACC	COIN			
	DK-P			
INT-FACE	REMOTE			
	B-CLR			
	P-PRT-MF			

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4. Basic Operation
a. Initial Screen
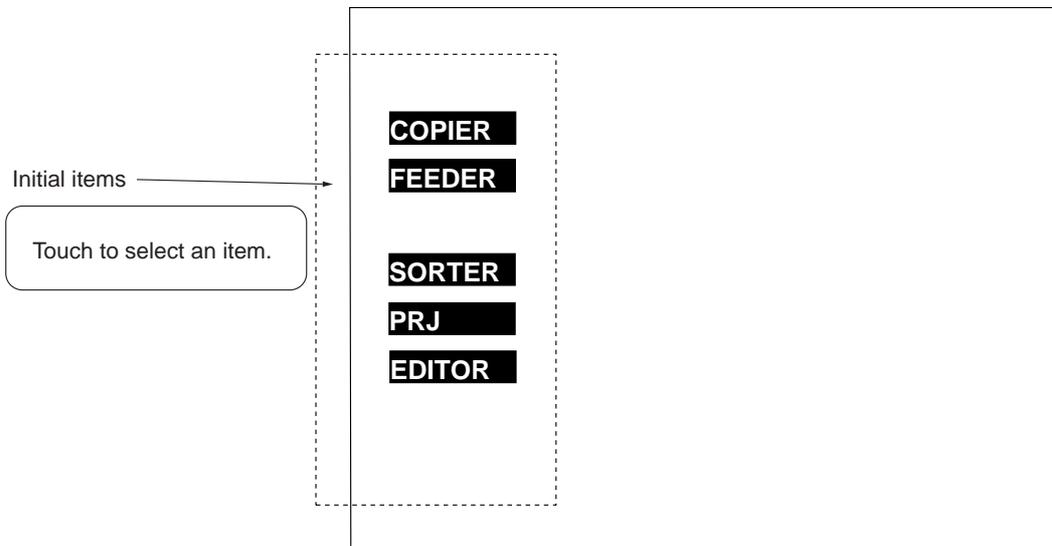
Figure 4-5

b. Level 1/Level 2 Item Screen
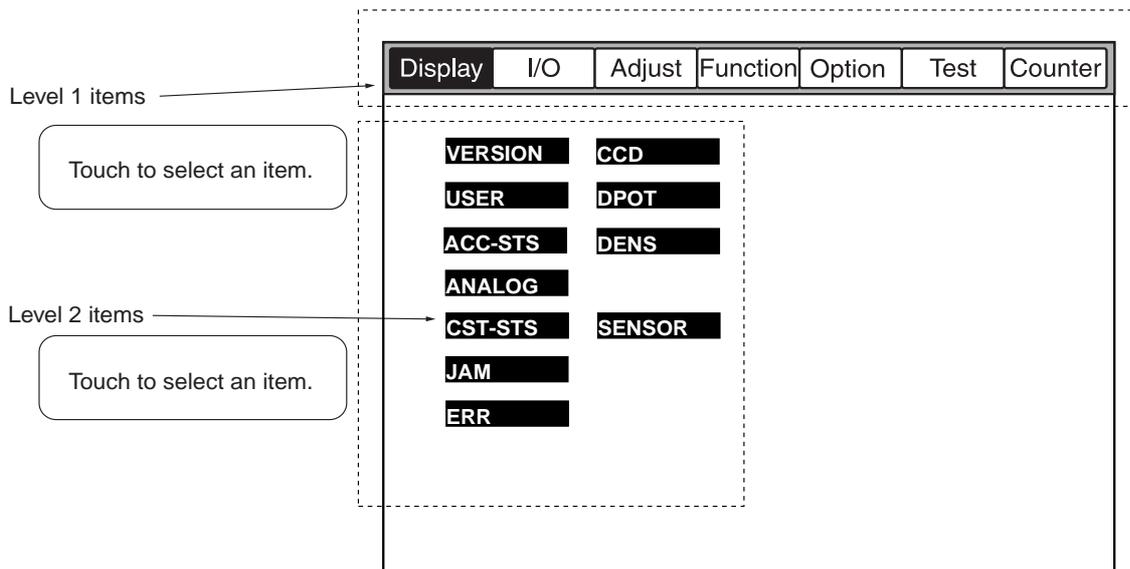
Figure 4-6

c. Level 3 Item Screen
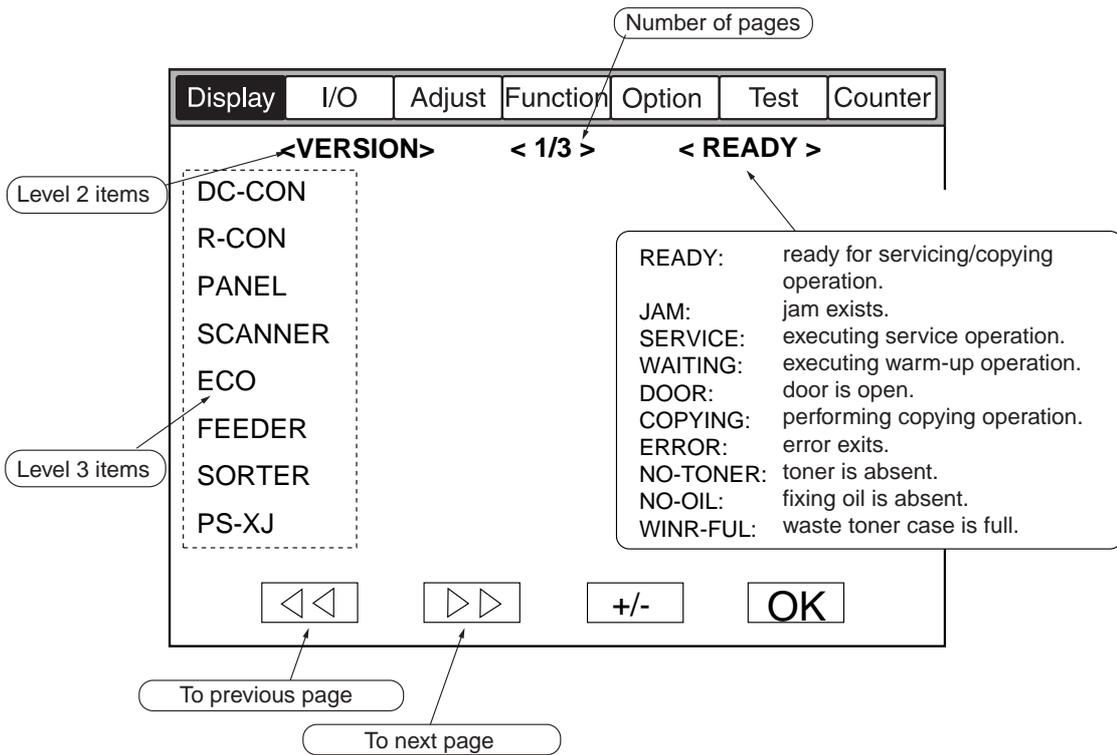
Figure 4-7
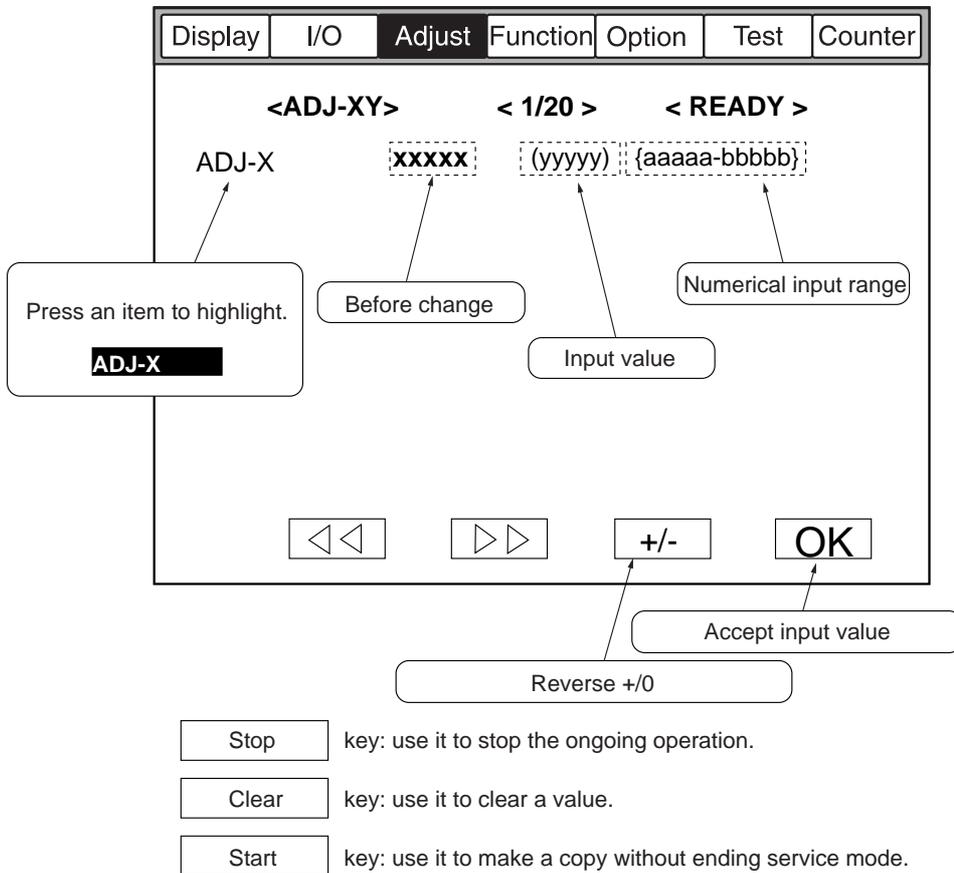
Figure 4-8

B. DISPLAY (control display mode)

COPIER>DISPLAY Items

Level 1 item	Level 2 item	Level 3 item	Description
DISPLAY	VERSION	DC-CON	ROM version of the DC controller
		R-CON	ROM version of the reader controller
		PANEL	ROM version of the control panel controller
		SCANNER	ROM version of the scanner motor
		ECO	ROM version of the ECO PCB
		FEEDER	ROM version of the feeder controller
		SORTER	ROM version of the sorter controller
		IMG-CNT	ROM version of the external image controller
	USER	LANGUAGE	language used
	ACC-STS	FEEDER	state of connection of the feeder
		SORTER	state of connection of the sorter
		DECK	state of connection of the paper deck
		PRJ	state of connection of the projector
		EDITOR	state of connection of the editor
		PS-XJ	state of connection of the PS-XJ
		CARD	state of insertion of the control card
		DATA-CON	state of connection of the copy data controller
	ANALOG	TEMP	machine internal temperature (environment sensor)
		HUM	machine internal humidity (environment sensor)
		ABS-HUM	machine internal absolute humidity
		FIX-UC	temperature (THM1) of the middle of the fixing upper roller
		FIX-LC	temperature (THM3) of the middle of the fixing lower roller
		FIX-UE	temperature (THM2) of the ends of the fixing upper roller
		FIX-LE	temperature (THM4) of the ends of the fixing lower roller
	CST-STS	WIDTH-C2	paper width of cassette 2
		WIDTH-C3	paper width of cassette 3 (if CLC1150, cassette 2)
		WIDTH-MF	paper width of the multifeeder
	JAM		history of jams
	ERR		history of errors
	CCD	BAR-CODE	bar code value of the standard white PLATE
		TARGET-B	shading target value for BLUE
		TARGET-G	shading target value for GREEN
		TARGET-R	shading target value for RED
		GAIN-U-B	gain increase of BLUE
		GAIN-U-G	gain increase of GREEN
		GAIN-U-R	gain increase of RED
		OFST-OB	offset adjustment value of BLUE-ODD
		OFST-OG	offset adjustment value of GREEN-ODD
		OFST-OR	offset adjustment value of RED-ODD
		OFST-EB	offset adjustment value of BLUE-EVEN
		OFST-EG	offset adjustment value of GREEN-EVEN
		OFST-ER	offset adjustment value of RED-EVEN

	GAIN-OB	gain adjustment value of LUE-ODD
	GAIN-OG	gain adjustment value of GREEN-ODD
	GAIN-OR	gain adjustment value of RED-ODD
	CCD-TYPE	indicates type (CCD/analog processor)
	METAL	indicates the result of automatic adjustment (normal mode/precious metal mode)
	GAIN-EB	gain adjustment value for BLUE-EVEN
	GAIN-EG	gain adjustment value for GREEN-EVEN
	GAIN-ER	gain adjustment value for RED-EVEN
	BOF-OB	black offset value for BLUE-ODD
	BOFF-OG	black offset value for GREEN-ODD
	BOF-OR	black offset value for RED-ODD
	BOF-EB	black offset value for BLUE-EVEN
	BOF-EG	black offset value for GREEN-EVEN
	BOF-ER	black offset value for RED-EVEN
	LAMP-DAT	data value of activation voltage for the scanning lamp
DPOT	DPOT	surface potential (V) of the photosensitive drum
	V00-Y	setting (V) of Y at laser output 00
	V00-M	setting (V) of M at laser output 00
	V00-C	setting (V) of C at laser output 00
	V00-K	setting (V) of Bk at laser output 00
	VFF-Y	setting (V) of Y at laser output FF
	VFF-M	setting (V) of M at laser output FF
	VFF-C	setting (V) of C at laser output FF
	VFF-K	setting (V) of Bk at laser output FF
	VDC-Y	setting (V) of Y for developing bias DC component
	VDC-M	setting (V) of M for developing bias DC component
	VDC-C	setting (V) of C for developing bias DC component
	VDC-K	setting (V) of Bk for developing bias DC component
	VG-Y	setting (V) of Y for grid bias
	VG-M	setting (V) of M for grid bias
	VG-C	setting (V) of C for grid bias
	VG-K	setting (V) of Bk for grid bias
	VCONT-Y	setting (V) of Y for target contrast potential
	VCONT-M	setting (V) of M for target contrast potential
	VCONT-C	setting (V) of C for target contrast potential
	VCONT-K	setting (V) of Bk for target contrast potential
	VBACK-Y	setting (V) of Y for de-fogging potential
	VBACK-M	setting (V) of M for de-fogging potential
	VBACK-C	setting (V) of C for de-fogging potential
	VBACK-K	setting (V) of for de-fogging potential
	V00-500	setting of drum surface potential at laser V00 while the primary charging assembly is at -500 V
	V00-700	setting of drum surface potential at laser VFF while the primary charging assembly is at -700 V
	VFF-500	setting of drum surface potential at laser V00 while the primary charging assembly is at -500 V
	VFF-700	setting of drum surface potential at laser VFF while the primary charging assembly is at -700 V
	DV00-500	dark area potential attenuation ($\triangle$V) at laser V00 while the drum surface potential is at 500 V
	DVFF-500	dark area potential attenuation ($\triangle$V) at laser VFF while the drum surface potential is at 500 V
	DV00-700	dark area potential attenuation ($\triangle$V) at laser V00 while the drum surface potential is at 700 V

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	— DVFF-700	dark area potential attenuation (△V) at laser VFF while the drum surface potential is at 700 V
	— PFF-Y	setting of laser pulse width for Y
	— PFF-M	setting of laser pulse width for M
	— PFF-C	setting of laser pulse width for C
	— PFF-K	setting of laser pulse width for Bk
— DENS	— DENS-Y	result of computation of the developer concentration inside the Y developing assembly
	— DENS-M	result of computation of the developer concentration inside the M developing assembly
	— DENS-C	result of computation of the developer concentration inside the C developing assembly
	— DENS-K	result of computation of the developer concentration inside the Bk developing assembly
	— WINDOW-Y	window soiling coefficient of Y
	— WINDOW-M	window soiling coefficient of M
	— WINDOW-C	window soiling coefficient of C
	— WINDOW-K	window soiling coefficient of Bk
	— DMAX-Y	solid density of Y at time of auto gradation correction
	— DMAX-M	solid density of M at time of auto gradation correction
	— DMAX-C	solid density of C at time of auto gradation correction
	— DMAX-K	solid density of Bk at time of auto gradation correction
	— VRATE-Y	control value for Y used to determine contrast potential
	— VRATE-M	control value for M used to determine contrast potential
	— VRATE-C	control value for C used to determine contrast potential
	— VRATE-K	control value for Bk used to determine contrast potential
	— PTOFST-Y	offset value of laser strength for Y patch image density correction
	— PTOFST-M	offset value of laser strength for M patch image density correction
	— PTOFST-C	offset value of laser strength for C patch image density correction
	— PTOFST-K	offset value of laser strength for Bk patch image density correction
	— D-Y-TRGT	target value for Y developer concentration
	— D-M-TRGT	target value for M developer concentration
	— D-C-TRGT	target value for C developer concentration
	— REF-Y	measurement of the concentration reference signal inside the Y developing assembly (present value; direct light from LED)
	— REF-M	measurement of the concentration reference signal inside the M developing assembly (present value; direct light from LED)
	— REF-C	measurement of the concentration reference signal inside the C developing assembly (present value; direct light from LED)
	— SGNL-Y	measurement of the present Y developer concentration (present value)

─	SGNL-M	measurement of the present M developer concentration (present value)
─	SGNL-C	measurement of the present C developer concentration (present value)
─	PT-REF-Y	concentration reference signal for Y toner on the photosensitive drum
─	PT-REF-M	concentration reference signal for M toner on the photosensitive drum
─	PT-REF-C	concentration reference signal for C toner on the photosensitive drum
─	PT-REF-K	concentration reference signal for Bk toner on the photosensitive drum
─	PT-SIG-Y	concentration signal of Y toner on the photosensitive drum (present value)
─	PT-SIG-M	concentration signal of M toner on the photosensitive drum (present value)
─	PT-SIG-C	concentration signal of C toner on the photosensitive drum (present value)
─	PT-SIG-K	concentration signal of Bk toner on the photosensitive drum (present value)
─	PT-SIG-D	reflection intensity signal of the photosensitive drum surface (present value)
─	PT-REF-D	reflection intensity reference signal of the photosensitive drum surface
─	DMAX70-Y	solid concentration of Y at laser pulse width 70% during auto gradation correction
─	DMAX70-M	solid concentration of M at laser pulse width 70% during auto gradation correction
─	DMAX70-C	solid concentration of C at laser pulse width 70% during auto gradation correction
└	DMAX70-K	solid concentration of Bk at laser pulse width 70% during auto gradation correction

─ SENSOR	─ SC-HP	output of the original scanner HP sensor (PS1)
	─ ITOP-A	output of the side A sensor (PS2)
	─ ITOP-B	output of the side B sensor (PS3)
	─ WEB	fixing cleaning belt is absent
	└ W-TONER	waste toner case is full

PRJ>DISPLAY Items

Level 1 item	Level 2 item	Level 3 item	Description
DISPLAY		CHANGER	auto changer (0: absent, 1: present)
		TRAY	slide tray (0: absent, 1: present)
		T-KIND	tray type (0: 80, 1: 40)
		T-SET	slide (0: absent, 1: present)
		T-MOVE	tray (0: stationary, 1: moving)
		T-M-ERR	tray movement error (0: normal, 1: error)
		T-HP-ERR	tray HP error (0: normal, 1: error)
		T-L-MOVE	tray local movement (0: stationary, 1: moving)
		T-POS	tray position (0: HP, 1: not HP)
		L-MOVE	lens movement (0: stationary, 1: moving)
		M-EXCT	motor excitation (0: normal, 1: excited)
		L-POS	lens position (0: HP, 1: not HP)
		LAMP-ERR	lamp open circuit detection (0: normal, 1: short circuit)
		INITIAL	initialization (0: normal, 1: initializing)
		LOCAL	local operation (0: normal, 1: operating)
		R/L	0: remote, 1: local

EDITOR>DISPLAY Items

Level 1 item	Level 2 item	Level 3 item	Description
DISPLAY		ED-X	input coordinates in editor sub scanning (X) direction
		ED-Y	input coordinates in editor main scanning (Y) direction

VERSION
Indicates the ROM version of the PCBs of the copier and its accessories.

Level 3	Description	Remarks
DC-CON	Indicates the version of the flash memory of the DC-CPU.	Display <XX. YY>
R-CON	Indicates the version of the flash memory on the R-CPU.	R&D number
PANEL	Indicates the version of the flash memory on the PANEL-CPU.	Version number
SCANNER	Indicates the version of the CPU (IC8) on the original scanner motor driver PCB.	
ECO	Indicates the version of the ROM (IC2) on the ECO PCB.	
FEEDER	Indicates the version of the ROM on the feeder controller.	
SORTER	Indicates the version of the ROM on the sorter controller.	
IMG-CNT	Indicates the version of the ROM on the external image controller.	

USER   **COPIER>DISPLAY**

Indicates items related to the User screen and the user.

Level 1	Description	Remarks
LANGUAGE	Indicates the language used/paper size configuration. xx (first 2 digits): country code yy (last 2 digits): language code zz: destination code (00: CANON, 01: OEM) aa: paper size configuration code <table><tr><td>Code</td><td>Configuration</td></tr><tr><td>00</td><td>AB</td></tr><tr><td>01</td><td>Inch</td></tr><tr><td>02</td><td>A</td></tr><tr><td>03</td><td>All sizes</td></tr></table>	

ACC-STS

Indicates the state of connection of accessories.

Level 3	Description	Remarks
FEEDER	Indicates the sate of connection of the feeder.	
SORTER	Indicates the state of connection of the sorter.	
DECK	Indicates the state of connection of the paper deck.	
PRJ	Indicates the state of connection of the projector.	
EDITOR	Indicates the state of connection of the editor.	
PS-XJ	Indicates the state of connection of the PS-XJ.	
CARD	Indicates the state of insertion of a control card.	
DATA-CON	Indicates the state of connection of the copy data controller.	

ANALOG   **COPIER>DISPLAY**

Indicates the measurements taken by the analog sensor.

Level 1	Description	Remarks
TEMP	Indicates the machine internal temperature (environment sensor).	Unit: °C
HUM	Indicates the machine internal humidity (movement sensor).	Unit: %RH
ABS-HUM	Indicates the machine internal absolute humidity.	Unit: g
FIX-UC	Indicates the temperature (THM1) of the middle of the fixing upper roller.	Unit: °C
FIX-LC	Indicates the temperature (THM3) of the middle of the fixing lower roller.	Unit: °C
FIX-UE	Indicates the temperature (THM2) of the ends of the fixing upper roller.	Unit: °C
FIX-LE	Indicates the temperature (THM4) of the ends of the fixing lower roller.	Unit: °C

CST-STS

Indicates the paper size of the cassette/multifeeder.

Level 1	Description	Remarks
WIDTH-C2	Indicates the paper switch of the cassette 2.	Unit: mm (decimal places are omitted)
WIDTH-C3	Indicates the paper width of the cassette 3 (for CLC1150, cassette 2).	
WIDTH-MF	Indicates the paper width of the multifeeder.	

JAM   **COPIER>DISPLAY**

Indicates jam data.

```
┌──────────────────────────────────────────────────┐
│ Display │ I/O │ Adjust │Function│ Option │ Test │Counter│
├──────────────────────────────────────────────────┤
│      < JAM >        < 1/8 >      < READY >         │
│   AAA  BBBB  CCCC  DDDD  E  FFff  G  HHHHHH  IIIII │
│   AAA  BBBB  CCCC  DDDD  E  FFff  G  HHHHHH  IIIII │
│   AAA  BBBB  CCCC  DDDD  E  FFff  G  HHHHHH  IIIII │
│   AAA  BBBB  CCCC  DDDD  E  FFff  G  HHHHHH  IIIII │
│   AAA  BBBB  CCCC  DDDD  E  FFff  G  HHHHHH  IIIII │
│   AAA  BBBB  CCCC  DDDD  E  FFff  G  HHHHHH  IIIII │
│   AAA  BBBB  CCCC  DDDD  E  FFff  G  HHHHHH  IIIII │
│   AAA  BBBB  CCCC  DDDD  E  FFff  G  HHHHHH  IIIII │
│                                                    │
│     ◁◁        ▷▷        +/-         OK             │
└──────────────────────────────────────────────────┘
```

Figure 4-9

Item	Description	Remarks
AAA	Indicates the order of jams (higher the number, older the jam).	1 to 64 (64 jams max.)
BBBB	----	
CCCC	----	
DDDD	----	
E	Indicates the location of the jam.	0: copier 1: feeder 2: sorter
FFff	Jam code	FF: type of jam (Table 4-1) ff: sensor (Table 4-2)
G	Indicates the source of paper.	See Table 4-3.
HHHHHH	Indicates the soft counter for the source of paper.	
IIIII	Indicates the size of paper.	

FF: Type of Jam   COPIER>DISPLAY

Code	Type	Code	Type
01xx	delay	05xx	sorter
02xx	stationary	EExx	service call
03xx	remaining	FFxx	door open
04xx	service mode		

Table 4-1

ff: Jam Sensor

	Jam sensor	Code	Jam sensor
xx01*	pickup vertical path sensor (PS27)	xx50	post-transfer paper sensor (PS6)
xx02*	pickup vertical path sensor (PS26)	xx51	pre-transfer paper sensor (PS5)
xx03*	pickup vertical path sensor 1 (PS21)	xx52	pre-cleaning paper sensor (PS71)
xx04*	re-pickup vertical path sensor (PS28)	xx60	separation sensor (PS7)
xx05	deck pickup sensor (PS101)	xx61	internal delivery paper sensor (PS12)
xx06	multifeeder pickup sensor (PS9)	xx70	external delivery sensor (PS31)
xx09	pickup vertical path sensor (PS27)	xx80	delivery vertical path sensor 1 (PS32)
xx10	pickup vertical path sensor 2 (PS26)	xx81	delivery vertical path sensor 1 (PS33)
xx11	pickup vertical path sensor 1 (PS21)	xx82	duplexing inlet paper sensor (PS37)
xx12	re-pickup vertical path sensor (PS28)	xx83	duplexing path paper sensor (PS34)
xx20	transparency sensor (PS69)	xx84	duplexing path reversal paper sensor (PS35)
xx30	pre-registration sensor (PS30)		
xx40	registration sensor(PS70)	xx90	buffer path unit sensor assembly

*   Detection at time of pickup.

Table 4-2a

ff: Detail of Sorter Jam   **COPIER>DISPLAY**

Code	Type		Code	Type of jam
xx03	feeding delay		xx08	door open jam (paper present)
xx04	feeding stationary		xx09	door open jam (paper absent)
xx06	staple jam		xx0A	bin outside jam
xx07	power-on jam			

Table 4-2b

G: Source of Paper

Code	Description		Code	Description
1	cassette 1		6	not used
2	cassette 2		7	paper deck
3	cassette 3		8	multifeeder
4	not used		9	duplexing unit
5	not used			

Table 4-3

ERR   **COPIER>DISPLAY**
   Indicates error codes.

Display	I/O	Adjust	Function	Option	Test	Counter

```
        < JAM >           < 1/8 >        < READY >
   AAA  BBBB  CCCC  DDDD  E  FFff  G  HHHHHH  IIIII
   AAA  BBBB  CCCC  DDDD  E  FFff  G  HHHHHH  IIIII
   AAA  BBBB  CCCC  DDDD  E  FFff  G  HHHHHH  IIIII
   AAA  BBBB  CCCC  DDDD  E  FFff  G  HHHHHH  IIIII
   AAA  BBBB  CCCC  DDDD  E  FFff  G  HHHHHH  IIIII
   AAA  BBBB  CCCC  DDDD  E  FFff  G  HHHHHH  IIIII
   AAA  BBBB  CCCC  DDDD  E  FFff  G  HHHHHH  IIIII
   AAA  BBBB  CCCC  DDDD  E  FFff  G  HHHHHH  IIIII

        ◁◁          ▷▷          +/-          OK
```

Figure 4-10

Level 3	Description	Remarks
AAA	Indicates the order of errors (the higher the number, the older the error).	1 to 32 (32 max.)
BBBB	----	
CCCC	----	
DDDD	----	
EEEE	Indicates the error code.	See "Self Diagnosis."
FFff	Indicates the detail code.	If none, '0000'.
G	Indicates the location of the error.	0: copier 1: feeder 2: sorter

CCD
COPIER>DISPLAY

Indicates the measurements related to the CCD.

Level 3	Description	Remarks
BAR-CODE	bar code value of the standard white plate	Indicated only when FUNCTION>CCD>AUTO-ADJ has been executed.
TARGET-B	shading target value of BLUE	
TARGET-G	shading target value of GREEN	
TARGET-R	shading target value of RED	
GAIN-U-B	gain increase value of BLUE	
GAIN-U-G	gain increase value of GREEN	
GAIN-U-R	gain increase value of RED	
OFST-OB	offset adjustment value of BLUE-OD	
OFST-OG	offset adjustment value of GREEN-ODD	
OFST-OR	offset adjustment value of RED-ODD	
OFST-EB	offset adjustment value of BLUE-EVEN	
OFST-EG	offset adjustment value of GREEN-EVEN	
OFST-ER	offset adjustment value of RED-EVEN	
GAIN-OB	gain adjustment value of BLUE-ODD	
GAIN-OG	gain adjustment value of GREEN-ODD	
GAIN-OR	gain adjustment value of RED-ODD	
CCD-TYPE	type (CCD/analog processor)	(3: CLC1100 only)
METAL	result of automatic adjustment (normal mode/ precious metal mode)	0: normal mode 1: precious metal mode
GAIN-EB	gain adjustment value of BLUE-EVEN	
GAIN-EG	gain adjustment value of GREEN-EVEN	
GAIN-ER	gain adjustment value of RED-EVEN	
BOF-OB	black offset value of BLUE-ODD	
BOF-OG	black offset value of GREEN-ODD	
BOF-OR	black offset value of RED-ODD	
BOF-EB	black offset value of BLUE-EVEN	
BOF-EG	black offset value of GREEN-EVEN	
BOF-ER	black offset value of RED-EVEN	
LAMP-DAT	original scanning lamp activation voltage for CVR	0 to 999

DPOT   **COPIER>DISPLAY**

Indicates the control data for the surface potential of the photosensitive drum.

Level 3	Description	Remarks
DPOT	surface potential (V) of the photosensitive drum	Indicated in round numbers, omitting decimal places.
V00-Y	setting (V) of Y at laser output 00	
V00-M	setting (V) of M at laser output 00	
V00-C	setting (V) of C at laser output 00	
V00-K	setting (V) of Bk at laser output FF	
VFF-Y	setting (V) of Y at laser output FF	
VFF-M	setting (V) of M at laser output FF	
VFF-C	setting (V) of C at laser output FF	
VFF-K	setting (V) of Bk at laser output FF	
VDC-Y	setting (V) of Y for developing bias DC component	
VDC-M	setting (V) of M for developing bias DC component	
VDC-C	setting (V) of C for developing bias DC component	
VDC-K	setting (V) of Bk for developing bias DC component	
VG-Y	setting (V) of Y for grid bias	
VG-M	setting (V) of M for grid bias	
VG-C	setting (V) of C for grid bias	
VG-K	setting (V) of Bk for grid bias	

COPIER>DISPLAY

Level 3	Description	Remarks
VCONT-Y	setting (V) of Y for target contrast potential	Indicated in round numbers, omitting decimal places.
VCONT-M	setting (V) of M for target contrast potential	
VCONT-C	setting (V) of C for target contrast potential	
VCONT-K	setting (V) of Bk for target contrast potential	
VBACK-Y	setting (V) of de-fogging potential for Y	
VBACK-M	setting (V) of de-fogging potential for M	
VBACK-C	setting (V) of de-fogging potential for C	
VBACK-K	setting (V) of de-fogging potential for Bk	
V00-500	measurement of drum surface potential at laser V00 with the primary charging assembly at -500 V	
V00-700	measurement of drum surface potential at laser V00 with the primary charging assembly at -700 V	
VFF-500	measurement of drum surface potential at laser VFF with the primary charging assembly at -500 V	
VFF-700	measurement of drum surface potential at laser VFF with the primary charging assembly at -700 V	
DV00-500	dark area potential attenuation ($\triangle$V) at laser V00 with the drum surface potential at 500 V	
DVFF-500	dark area potential attenuation ($\triangle$V) at laser VFF with the drum surfaced potential at 500 V	
DV00-700	dark area potential attenuation ($\triangle$V) at laser V00 with the drum surfaced potential at 700 V	
DVFF-700	dark area potential attenuation ($\triangle$V) at laser VFF with the drum surfaced potential at 700 V	
PFF-Y	setting of laser pulse width for Y	
PFF-M	setting of laser pulse width for M	
PFF-C	setting of laser pulse width for C	
PFF-K	setting of laser pulse width for Bk	

DENS   **COPIER>DISPLAY**

Indicates the concentration of developer.

Level 3	Description	Remarks
DENS-Y	computed value (%) of the developer inside the Y developing assembly	Indicates to the second decimal place.
DENS-M	computed value (%) of the developer inside the M developing assembly	
DENS-C	computed value (%) of the developer inside the C developing assembly	
DENS-K	computed value (%) of the developer inside the Bk developing assembly	
WINDOW-Y	window soiling correction coefficient for Y	Error if lower than 70%
WINDOW-M	window soiling correction coefficient for M	
WINDOW-C	window soiling correction coefficient for C	
WINDOW-K	window soiling correction coefficient for Bk	
DMAX-Y	solid density (%) of Y during auto gradation correction	Compares against the design value, and omits decimal places.
DMAX-M	solid density (%) of M during auto gradation correction	
DMAX-C	solid density (%) of C during auto gradation correction	
DMAX-K	solid density (%) of Bk during auto gradation correction	
VRATE-Y	control value of Y used to determine contrast potential	Uses whole numbers, omitting decimal places
VRATE-M	control value of M used to determine contrast potential	
VRATE-C	control value of C used to determine contrast potential	
VRATE-K	control value of Bk used to determine contrast potential	
PTOFST-Y	offset value of laser strength for Y patch image density adjustment	
PTOFST-M	offset value of laser strength for M patch image density adjustment	
PTOFST-C	offset value of laser strength for C patch image density adjustment	
PTOFST-K	offset value of laser strength for Bk patch image density adjustment	

COPIER>DISPLAY

Level 3	Description	Remarks
D-Y-TRGT	target value of Y developer concentration	Indicated in round numbers, omitting decimal places
D-M-TRGT	target value of M developer concentration	
D-C-TRGT	target value of C developer concentration	
REF-Y	present value of the density reference signal for the Y developing assembly (direct light form (LED)	
REF-M	present value of the density reference signal for the M developing assembly (direct light form (LED)	
REF-C	present value of the density reference signal for the C developing assembly (direct light from LED)	
SGNL-Y	measurement of the present Y developer concentration	
SGNL-M	measurement of the present M developer concentration	
SGNL-C	measurement of the present C developer concentration	
PT-REF-Y	concentration reference signal for the Y toner on the photosensitive drum	
PT-REF-M	concentration reference signal for the M toner on the photosensitive drum	
PT-REF-C	concentration reference signal for the C toner on the photosensitive drum	
PT-REF-K	concentration reference signal for the Bk toner on the photosensitive drum	
PT-SIG-Y	concentration signal for the Y toner on the photosensitive drum (present value)	
PT-SIG-M	concentration signal for the M toner on the photosensitive drum (present value)	
PT-SIG-C	concentration signal for the C toner on the photosensitive drum (present value)	
PT-SIG-K	concentration signal for the Bk toner on the photosensitive drum (present value)	
PT-SIG-D	reflection intensity signal for the photosensitive drum surface (present value)	
PT-REF-D	reflection intensity reference signal for the photosensitive drum surface	
DMAX70-Y	solid density of Y at laser pulse width 70% during auto gradation correction	Indicated in round numbers, omitting decimal places.
DMAX70-M	solid density of M at laser pulse width 70% during auto gradation correction	
DMAX70-C	solid density of C at laser pulse width 70% during auto gradation correction	
DMAX70-K	solid density of Bk at laser pulse width 70% during auto gradation correction	

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SENSOR   **COPIER>DISPLAY**

Indicates the state of sensors of particular importance for servicing work.

Level 3	Description	Remarks
SC-HP	output of the original scanner HP sensor (PS1)	0: HP 1: not HP
ITOP-A	output of the side A sensor (PS2)	0: sensor not detecting signal plate
ITOP-B	output of side B sensor (PS3)	1: sensor detecting signal plate
WEB	cleaning belt is out	0: present 1: absent
W-TONER	case full	0: case not full 1: case is full

Projector   **PRJ>DISPLAY**

Level 3	Description	Remarks
CHANGER	presence/absence of the auto changer	0: absent, 1: present
TRAY	presence/absence of the slide tray	0: absent, 1: present
T-KIND	type of tray	0: 80, 1: 140
T-SET	presence/absence of slides	0: absent, 1: present
T-MOVE	state of the tray	0: stationary, 1: moving
T-M-ERR	tray movement error	0: normal, 1: error
T-HP-ERR	tray HP error	0: normal, 1: error
T-L-MOVE	tray local movement	0: stationary, 1: moving
T-POS	position of the tray	0: HP, 1: not HP
L-MOVE	lens movement	1: stationary, 1: moving
M-EXCT	state of motor excitation	0: normal, 1: excited
L-POS	position of the lens	0: HP, 1: not HP
LAMP-ERR	open circuit in the lamp	0: normal, 1: open circuit
INITIAL	initialization	0: normal, 1: being initialized
LOCAL	local movement	0: normal, 1: moving
R/L	remote/local	0: remote, 1: local

Editor   **EDITOR>DISPLAY**

Level 3	Description	Remarks
ED-X	input coordinates in editor sub scanning direction (X)	Not indicated if EDITOR>OPTION> ED-MODE is set to '0'.
ED-Y	input coordinates in editor main scanning direction (Y)	

C. I/O (I/O display mode)

1. DC-CPU   I/O>DC-CON

Address	bit	Description	Remarks
P001	15	buffer path unit jam detection	1: paper present
	14	not used	
	13	internal delivery sensor (PS12) signal	1: paper present
	12	external delivery sensor (PS31) signal	1: paper present
	11	separation sensor (PS7) signal	1: paper present
	10	post-transfer paper sensor (PS6) signal	1: paper present
	9	pre-transfer paper sensor (PS5) signal	1: paper present
	8	registration sensor (PS70) signal	1: paper present
	7	pre-registration sensor (PS30) signal	1: paper present
	6	transparency sensor (PS69) signal	1: paper present (plain paper)
	5	multifeeder pickup sensor (PS9) signal	1: paper present
	4	deck pickup sensor (PS101) signal	1: paper present
	3	re-pickup vertical path sensor (PS28) signal	1: paper present
	2	pickup vertical path 1 sensor (PS28) signal	1: paper present
	1	pickup vertical path 2 sensor (PS26) signal	1: paper present
	0	pickup vertical path 3 sensor (PS27) signal	1: paper present
P002	15	pre-registration sensor (PS30) signal	1: paper present
	14	not used	
	13	multifeeder paper sensor (PS15) signal	1: paper present
	12	deck paper absent sensor (PS102) signal	1: paper present
	11	duplexing tray paper sensor (PS36) signal	1: paper present
	10	cassette 1 paper sensor (PS20) signal	1: paper present
	9	cassette 2 paper sensor (PS24/DPS24) signal	1: paper present
	8	cassette 3 paper sensor (PS25/DPS25)	1: paper present
	7	not used	
	6	not used	
	5	not used	
	4	duplexing reversal paper sensor (PS35) signal	1: paper present
	3	duplexing path paper sensor (PS34) signal	1: paper present
	2	duplexing inlet paper sensor (PS37) signal	1: paper present
	1	delivery vertical path 2 sensor (PS33) signal	1: paper present
	0	delivery vertical path 1 sensor (PS32) signal	1: paper present

I/O>DC-CON

Address	bit	Description	Remarks
P003	15	hopper motor (M10) ready signal	0: READY
	14	transfer drum cleaner brush motor (M8) ready signal	0: READY
	13	not used	
	12	duplexing motor (M14) ready signal	0: READY
	11	laser scanner motor (M3) ready signal	0: READY
	10	fixing motor (M5) ready signal	0: READY
	9	drum motor (M2) ready signal	0: READY
	8	main motor (M4) ready signal	0: READY
	7	not used	
	6	not used	
	5	not used	
	4	not used	
	3	not used	
	2	not used	
	1	not used	
	0	not used	
P004	15	not used	
	14	paper deck connect signal	1: connect
	13	duplexing unit connect	0: connect
	12	buffer path unit connect signal	1: buffer path is present
	11	transfer drawer connector connect signal	0: transfer unit is present
	10	registration path driver drawer connect signal	0: connected
	9	transfer drawer connector signal	0: lever is set
	8	fixing drawer connector signal	0: connected
	7	control switch (SW2) off detection	1: OFF
	6	multifeeder tray open/closed sensor (PS62) signal	1: open
	5	not used	
	4	buffer door switch signal	1: open
	3	pickup cover sensor (PS44) signal	1: open
	2	left front cover sensor (PS42) signal	0: open
	1	right front cover sensor (PS41) signal	0: open
	0	delivery cover sensor (PS43) signal	0: open

Address	bit	Description	Remarks
P005	15	not used	
	14	not used	
	13	not used	
	12	not used	
	11	pickup holder model code 3 signal	
	10	pickup holder model code 2 signal	
	9	pickup holder model code 1 signal	
	8	pickup holder model code 0 signal	
	7	not used	
	6	not used	
	5	not used	
	4	not used	
	3	cassette 2 paper length sensor 1 (PSU2) signal	1: ON
	2	cassette 2 paper length sensor 0 (PSU2) signal	1: ON
	1	cassette 3 paper length sensor 1 (PSU3/DPSU3) signal	1: ON
	0	cassette 3 paper length sensor (PSU3/DPSU3) signal	1: ON
P006	15	not used	
	14	Bk toner level sensor (TS4) signal not used	0: lower than specified
	13	not used	
	12	Y toner level sensor (TS3) signal	0: lower than specified
	11	not used	
	10	C toner level sensor (TS2)	0: lower than specified
	9	not used	
	8	M toner level sensor (TS1) signal	0: lower than specified
	7	waste toner feedscrew locked detecting switch (SW7) signal	0: locked
	6	waste toner case full sensor (PS68) signal	1: full
	5	not used	
	4	fixing oil level sensor (PS10) signal	0: lower than specified
	3	fixing upper cleaning belt length sensor (PS11) signal	0: belt absent
	2	fixing lower cleaning belt length sensor (PS67) signal	0: belt absent
	1	not used	
	0	not used	

I/O>DC-CON

Address	bit	Description	Remarks
P007	15	multifeeder lifter H sensor (PS17) signal	1: ON
	14	multifeeder lifter L sensor (PS18) signal	1: ON
	13	deck lifter upper limit sensor (PS103) signal	1: upper limit
	12	not used	
	11	not used	
	10	cassette 1 lifter sensor (PS19) signal	1: ON
	9	cassette 2 lifter sensor (PS22/DPS22) signal	1: ON
	8	cassette 3 lifter sensor (PS23/DPS23) signal	1: ON
	7	not used	
	6	not used	
	5	not used	
	4	not used	
	3	shutoff (SHUTOFF) error detection	0: error
	2	SSR2 error detection	0: error
	1	not used	
	0	not used	
P008	15	not used	
	14	not used	
	13	counter mode 5 signal	
	12	counter mode 4 signal	
	11	counter mode 3 signal	
	10	counter mode 2 signal	
	9	counter mode 1 signal	
	8	counter mode 0 signal	
	7	not used	
	6	not used	
	5	not used	
	4	not used	
	3	not used	
	2	cassette 1 sensor (PS46) signal	1: cassette is present
	1	cassette 2 sensor (PS47/DPS47) signal	1: cassette is present
	0	cassette 3 sensor (PS48/DPS48) signal	1: cassette is present

I/O>DC-CON

Address	bit	Description	Remarks
P009	15	not used	
	14	not used	
	13	not used	
	12	not used	
	11	not used	
	10	C sensor (PS4) signal	1: ON
	9	side B sensor (PS3) image leading edge signal	1: ON (light-blocking plate present)
	8	side A sensor (PS2) image leading edge signal	1: ON (light-blocking plate present)
	7	not used	
	6	not used	
	5	not used	
	4	paper jogging guide HP sensor (PS40) signal	1: HP
	3	attraction/transfer locking cam home position sensor (PS8) signal	1: HP
	2	transfer drum cleaner HP sensor (PS59) signal	1: HP
	1	transfer drum HP sensor (PS57) signal	1: HP
	0	not used	
P00A	15	not used	
	14	not used	
	13	not used	
	12	not used	
	11	Bk developing assembly HP sensor (PS55) signal	1: HP
	10	Y developing assembly HP sensor (PS53) signal	1: HP
	9	C developing assembly HP sensor (PS51) signal	1: HP
	8	M developing assembly HP sensor (PS49) signal	1: HP
	7	not used	
	6	polishing roller motor (M9) error detection	1: error
	5	multifeeder lifter motor (M15) error detection	1: error
	4	deck lifter motor (M101) error detection	1: error
	3	not used	
	2	cassette 1 lifter motor (M11) error detection	1: error
	1	cassette 2 lifter motor (M12/DM2) error detection	1: error
	0	cassette 3 lifter motor (M13/DM13) error detection	1: error

I/O>DC-CON

Address	bit	Description	Remarks
P00B	15	power supply cooling fan (FM9) error detection	1: error
	14	not used	
	13	not used	
	12	24 V off detection (linked to door)	0: OFF
	11	not used	
	10	internal static eliminator high voltage error	1: error
	9	HVT AC error detection	1: error
	8	cleaning blade reciprocating motor (M7) error detection	1: error
	7	buffer path unit locking cam sensor signal	1: HP
	6	not used	
	5	not used	
	4	not used	
	3	not used	
	2	not used	
	1	pre-cleaning paper sensor (PS71) signal	1: paper present
	0	not used	
P00C	15	not used	
	14	not used	
	13	not used	
	12	not used	
	11	not used	
	10	not used	
	9	internal/external static eliminator high voltage switch signal 1	
	8	internal/external static eliminator high voltage switch signal 0	
	7	not used	
	6	not used	
	5	not used	
	4	not used	
	3	fixing motor (M5) CLK signal	Alternates between 0 and 1.
	2	not used	
	1	drum motor (M2) CLK signal (divided by 1/2)	Alternates between 0 and 1.
	0	drum motor (M2) CLK signal	Alternates between 0 and 1.

I/O>DC-CON

Address	bit	Description	Remarks
P00D	15	not used	1: HP
	14	not used	
	13	not used	
	12	not used	
	11	not used	
	10	not used	
	9	not used	
	8	not used	
	7	fixing oil pump driver error detection	0: error if pump is in operation. 1: error if pump is at rest.
	6	not used	
	5	fixing upper thermistor open circuit detection	1: open circuit
	4	fixing lower thermistor open circuit detection	1: open circuit
	3	fixing upper heater error detection	1 error
	2	fixing lower heater error detection	1 error
	1	SSR1 (fixing upper heater side) error detection	1 error
	0	SSR1 (fixing lower heater side) error detection	1 error
P00E	15	not used	
	14	not used	
	13	not used	
	12	not used	
	11	not used	
	10	not used	
	9	not used	
	8	not used	
	7	not used	
	6	toner suction fan (FM6) error detection	1: error
	5	not used	
	7	not used	
	3	not used	
	2	not used	
	1	not used	
	0	delivery cooling fan (FM11) error detection	1: error

I/O>DC-CON

Address	bit	Description	Remarks
P00F	15-0	not used	
P010	15-0	not used	
P011	15	hard check output	
	14	hard check output	
	13	har d check output	
	12	hard check output	
	11	hard check output	
	10	hard check output	
	9	hard check output	
	8	hard check output	
	7	not used	
	6	not used	
	5	not used	
	4	not used	
	3	not used	
	2	not used	
	1	not used	
	0	pre-exposure lamp (LA1) activation signal	1: ON
P012	15	laser scanner motor (M3) clock switch signal	
	14	transfer drum cleaner brush motor (M8) drive signal	0: ON
	13	duplexing motor (M14)	0: ON
	12	not used	
	11	not used	
	10	not used	
	9	cleaning blade reciprocating motor (M7) drive signal	1: ON
	8	laser sensor motor (M3) drive signal	0: ON
	7	Bk toner supply clutch (CL8) drive signal	1: ON
	6	Y toner supply clutch (CL7) drive signal	1: ON
	5	C toner supply clutch (CL6) drive signal	1: ON
	4	M toner supply clutch (CL5) drive signal	1: ON
	3	Bk developing cylinder clutch (CL4) drive signal	1: ON
	2	Y developing cylinder clutch (CL3) drive signal	1: ON
	1	C developing cylinder clutch (CL2) drive signal	1: ON
	0	M developing cylinder clutch (CL1) drive signal	1: ON

I/O>DC-CON

Address	bit	Description	Remarks
P013	15	state of the fixing heater	0: during WMUP/COPY 1: during temperature control/STBY
	14	not used	
	13	transparency sensor LED (PS69L) ON signal	1: ON
	12	pre-cleaning paper sensor LED (PS71L) ON signal	1: ON
	11	fixing upper heater drive signal	1: ON
	10	fixing lower heater drive signal	1: ON
	9	fixing oil pump (PSP1) drive signal	0: ON
	8	SSR2	1: ON
	7	not used	
	6	not used	
	5	stopper plate solenoid (SL12) drive signal	0: open, 1: closed
	4	stopper plate solenoid (SL12) drive signal	0: closed, 1: open
	3	not used	
	2	not used	
	1	not used	
	0	duplexing feeding clutch (CL14) drive signal	1: ON
P014	15	not used	
	14	not used	
	13	not used	
	12	not used	
	11	Bk toner concentration measurement LED ON signal	1: ON
	10	Y toner concentration measurement LED ON signal	1: ON
	9	C toner concentration measurement LED ON signal	1: ON
	8	M toner concentration measurement LED ON signal	1: ON
	7	not used	
	6	not used	
	5	primary charging wire cleaning motor (M6) forward signal	0: forward, 1: reverse
	4	primary charging wire cleaning motor (M6) reverse signal	1: forward, 0: reverse
	3	not used	1: ON
	2	not used	1: ON
	1	polishing roller motor (M9) reverse rotation signal	1: reverse, 0: normal direction
	0	polishing roller motor (M9) normal rotation signal	0: reverse, 1: normal (roller contact)

I/O>DC-CON

Address	bit	Description	Remarks
P015	15	not used	
	14	not used	
	13	not used	
	12	not used	
	11	counter 3 (CNT4) signal	
	10	counter 2 (CNT3) signal	
	9	counter 1 (CNT2) signal	
	8	counter 0 (CNT1) signal	
	7	registration jam timing signal	
	6	deck sensor select signal 2	
	5	deck sensor select signal 1	
	4	deck sensor select signal 0	
	3	pre-registration jam timing signal	
	2	pickup sensor select signal 2	
	1	pickup sensor select signal 1	
	0	pickup sensor select signal 0	
P016	15	not used	
	14	not used	
	13	not used	
	12	not used	
	11	not used	
	10	A/D multiplex select signal 2	
	9	A/D multiplex select signal 1	
	8	A/D multiplex select signal 0	
	7	not used	
	6	not used	
	5	fixing upper cleaning belt solenoid (SL1)	1: ON
	4	fixing lower cleaning belt solenoid (SL2)	1: ON
	3	delivery vertical path clutch (CL19)	1: ON
	2	delivery paper deflecting plate solenoid (SL10)	1: ON
	1	separation claw solenoid (SL4)	1: ON
	0	shutoff signal	1: shutoff

I/O>DC-CON

Address	bit	Description	Remarks
P017	15	not used	
	14	not used	
	13	not used	
	12	not used	
	11	not used	
	10	not used	
	9	not used	
	8	not used	
	7	registration clutch (CL9) drive signal	1: ON
	6	multifeeder feed clutch (CL10) drive signal	1: ON
	5	multifeeder pickup clutch (CL16) drive signal	1: ON
	4	deck pickup clutch (CL102) drive signal	1: ON
	3	duplexing feed clutch (CL14) drive signal	1: ON
	2	cassette 1 pickup clutch (CL1) drive signal	1: ON
	1	cassette 2 pickup clutch (CL12/DCL12) drive signal	1: ON
	0	cassette 3 pickup clutch (CL13/DCL13) drive signal	1: ON
P018	15	electrical unit cooling fan (FM8) drive signal 1	0: full speed, 1: half speed
	14	electrical unit cooling fan (FM8) drive signal 0	1: full speed, 0: half speed
	13	IP cooling fan (FM7) drive signal 1	0: full speed, 1: half speed
	12	IP cooling fan (FM7) drive signal 0	1: full speed, 0: half peed
	11	exhaust fan (FM2) drive signal 1	0: full speed, 1: half speed
	10	exhaust fan (FM2) drive signal 0	1: full speed, 0: half speed
	9	ozone suction fan (FM5) drive signal 1	1: ON
	8	ozone suction fan (FM5) drive signal 0	1: ON
	7	toner suction fan (FM6) drive signal 1	1: ON
	6	toner suction fan (FM6) drive signal 0	1: ON
	5	laser scanner motor cooling fan (FM4) drive signal	1: ON
	4	not used	
	3	primary charging assembly fan (FM3) drive signal 1	0: full speed, 1: half speed
	2	primary charging assembly fan (FM3) drive signal 0	1: full speed, 0: half speed
	1	delivery cooling fan (FM11) drive signal 1	1: ON
	0	delivery cooling fan (FM11) drive signal 0	1: ON

I/O>DC-CON

Address	bit	Description	Remarks
P019	15	No. 3/No. 4 DC remote signal	0: remote
	14	No. 3/No. 4 WBP remote signal	0: remote
	13	No. 1/No. 2 DC remote signal	0: remote
	12	No. 1/No. 2 WBP remote signal	0: remote
	11	DC output select 4 signal	0: select
	10	DC output select 3 signal	0: select
	9	DC output select 2 signal	0: select
	8	DC output select 1 signal	0: select
	7	transfer acceleration remote signal	1: accelerate, 0: 0 μ
	6	trainer 0 μ remote signal	0: accelerate, 1: 0 μ
	5	transfer DC remote signal	0: remote
	4	attraction acceleration remote signal	1: accelerate, 0: 0 μ
	3	attraction 0 μ remote signal	0: accelerate, 1: 0 μ
	2	attraction DC remote signal	0: remote
	1	grid remote signal	0: remote
	0	primary DC remote signal	0: remote
P01A	15	HV-DEV-ENABLE signal	0: ENABLE
	14	HV-DC-ENABLE signal	0: ENABLE
	13	HV-AC-ENABLE signal	0: ENABLE
	12	pre-transfer DC remote signal	0: remote
	11	separation DC remote signal	0: remote
	10	separation AC remote signal	0: remote
	9	internal static eliminator DC remote signal	0: remote
	8	internal static eliminator AC remote signal	0: remote
	7	not used	
	6	multifeeder lifter motor (M15) reverse drive signal	1: down
	5	multifeeder lifter motor (M15) normal rotation drive signal	1: up
	4	deck lifter motor (M101) drive signal	0: ON
	3	deck lifter down signal	1: down
	2	cassette 1 lifter motor (M11) drive signal	1: ON
	1	cassette 2 lifter motor (M12/DM12) drive signal	1: ON
	0	cassette 3 lifter motor (M13/DM13) drive signal	1: ON

I/O>DC-CON

Address	bit	Description	Remarks
P01B	15	deck open sensor (PS109) signal	0: open
	14	deck set sensor (PS105) signal	0: set
	13	deck open switch (SW101) signal	1: open
	12	deck stack level upper sensor (PS107) signal	0: paper present
	11	deck paper level lower sensor (PS108) signal	0: paper present
	10	deck detection signal	0: deck present
	9	deck lifter lower limit detecting switch (SW102) signal	0: lower limit
	8	not used	
	7	not used	
	6	not used	
	5	hopper motor (M10) reverse rotation drive signal	1: reverse (stirring)
	4	hopper motor (M10) drive signal	0: ON
	3	fixing motor (M5) speed signal 1	1: low speed
	2	fixing motor (M5) speed signal 0	0: normal
	1	not used	
	0	fixing motor (M5) driver signal	0: ON
P01C	15	not used	
	14	not used	
	13	main motor reversal signal	
	12	main motor (M4) drive signal	0 : ON
	11	drum motor (M2) speed signal 1	1: low speed
	10	drum motor (M2) speed signal 0	0: low speed, 1: BD sync
	9	drum motor (M2) reversal signal	1: normal rotation
	8	drum motor (M2) drive signal	0: ON
	7	deck open indication (LED100) ON signal	1: ON
	6	deck open solenoid (SL102) drive signal	1: ON
	5	not used	
	4	not used	
	3	not used	
	2	not used	
	1	postcard feeding clutch (CL18) drive signal	1: ON
	0	registration roller releasing solenoid (SL5) drive signal	1: ON

I/O>DC-CON

Address	bit	Description	Remarks
P01D	15	not used	
	14	not used	
	13	multifeeder pickup solenoid (SL14) drive signal	1: ON
	12	deck pickup roller releasing solenoid (SL101) drive signal	1: ON
	11	duplexing paper feed roller solenoid (SL13) drive signal	1: ON
	10	pickup roller 1 solenoid (SL7)	1: ON
	9	pickup roller 2 solenoid (SL8/DSL8)	1: ON
	8	pickup roller 3 solenoid (SL9/DSL9)	1: ON
	7	buffer path unit solenoid (SL1) drive signal	1: ON
	6	buffer path unit clutch (CL1) drive signal	1: ON
	5	buffer path unit solenoid (SL2) drive signal	-
	4	buffer path unit cam HP select signal	0: left side when viewed from rear
	3	duplexing stacking guide plate solenoid (SL15) drive signal	1: ON
	2	not used	
	1	attraction roller solenoid (SL6) drive signal	1: ON
	0	separation push-up solenoid (SL3) drive signal	0: ON
P01E	15	not used	
	14	not used	
	13	not used	
	12	not used	
	11	not used	
	10	not used	
	9	not used	
	8	not used	
	7	not used	
	6	not used	
	5	back suction fan (FM16) drive signal 1	1: ON
	4	back suction fan (FM16) drive signal 0	1: ON
	3	exhaust fan (FM2) full speed drive signal	0: full speed, 1: half speed
	2	exhaust fan (FM2) half speed drive signal	1: full speed, 0: half speed
	1	IP cooling fan (FM7) full speed drive signal	0: full speed, 1: half speed
	0	IP cooling fan (FM7) half speed drive signal	1: full speed, 0: half speed

I/O>DC-CON

Address	bit	Description	Remarks
P01F	15	not used	
	14	not used	
	13	not used	
	12	not used	
	11	not used	
	10	not used	
	9	not used	
	8	not used	
	7	ozone suction fan (FM5) drive signal	1: ON
	6	not used	
	5	primary charging assembly fan (FM3) full speed drive signal	1: full speed
	4	primary charging assembly fan (FM3) half speed drive signal	1: half speed
	3	laser scanner motor cooling fan (FM4) drive signal	1: ON
	2	not used	
	1	electrical unit cooling fan (FM8) full speed drive signal	1: full speed
	0	electrical unit cooling fan (FM8) half speed drive signal	half speed
P020	15	not used	
	14	not used	
	13	not used	
	12	not used	
	11	not used	
	10	not used	
	9	not used	
	8	not used	
	7	ozone suction fan (FM5) error detection	1: error
	6	primary charging assembly fan (FM3) error detection	1: error
	5	laser scanner motor cooling fan (FM4) error detection	1: error
	4	electrical unit cooling fan (FM8) error detection	1: error
	3	not used	
	2	back suction fan (FM16) error direction	1: error
	1	exhaust fan (FM2) error detection	1: error
	0	IP cooling fan (FM7) error detection	1: error

I/O>DC-CON

Address	bit	Description	Remarks
P021	15	not used	
	14	not used	
	13	not used	
	12	not used	
	11	not used	
	10	not used	
	9	not used	
	8	not used	
	7	not used	
	6	not used	
	5	not used	
	4	not used	
	3	not used	
	2	not used	
	1	LD-J2DCON	1: download mode
	0	power switch off signal	1: OFF
P022	15-0	not used	
P023	15-0	not used	
P024	15-0	not used	
P025	15-0	not used	
P026	15-0	not used	
P027	15-0	not used	
P028	15-0	not used	

2. R-CPU

I/O>R-CON

Address	bit	Description	Remarks
P001	15-8	not used	
	7	not used	
	6	not used	
	5	WATCH DOG pulse signal	
	4	ECO PCB internal signal	
	3	ECO PCB internal signal	
	2	ECO PCB internal signal	
	1	R-CON to DC-CON power ready signal	
	0	R-CON to PANEL-CON power ready signal	
P002	15-8	not used	
	7	digitizer request signal	1: request
	6	CVR time rest signal	1: RESET
	5	scanning lamp (LA2) ON signal	1: ON
	4	not used	
	3	original exposure system cooling fan 1 (FM1) half speed drive signal	1: half speed, 0: full speed
	2	original exposure system cooling fan 1 (FM1) full speed drive signal	1: full speed, 0: half speed
	1	original scanner motor driver RESET signal	1: RESET
	0	projector SSR-ON signal	1: ON
P003	15-8	not used	
	7	digitizer ACK signal	1: ACK
	6	digitizer connect signal	0: connect
	5	original exposure system cooling fan (FM1) error detected	1: error
	4	READER-ITOP-B input signal	0: side B image leading edge
	3	READER-ITOP-A input signal	0: side B image leading edge
	2	CC-V connect signal	0: connect
	1	DC-CON to R-CON power ready signal	
	0	PANEL-CON to R-CON power ready signal	

I/O>R-CON

Address	bit	Description	Remarks
P004	15-8	not used	
	7	internal signal	
	6	internal signal	
	5	internal signal	
	4	internal signal	
	3	internal signal	
	2	internal signal	
	1	internal signal	
	0	internal signal	
P005	15-8	not used	
	7	RS-232C input signal	
	6	scanner IPC error 3	1: error
	5	scanner IPC error 2	1: error
	4	scanner IPC error 1	1: error
	3	scanning lamp (LA2) ON detection signal	1: ON
	2	CVR error detection	0: error
	1	internal signal	
	0	internal signal	
P006	15-8	not used	
	7	RS-232C output signal	
	6	internal signal	
	5	not used	
	4	not used	
	3	not used	
	2	internal signal	
	1	internal signal	
	0	internal signal	

I/O>R-CON

Address	bit	Description	Remarks
P007	15-8	not used	
	7	not used	
	6	not used	
	5	not used	
	4	not used	
	3	original exposure system cooling fan 2 (FM14) half speed drive signal	1: half speed
	2	original exposure system cooling fan 2 (FM14) full speed signal	1: full speed
	1	CC-X count signal	1: count increase
	0	CC-V count signal	1: count increase
P008	15-8	not used	
	7	internal signal	
	6	internal signal	
	5	internal signal	
	4	internal signal	
	3	control switch (SW2) detection signal	0: ON
	2	not used	
	1	internal signal	
	0	download mode signal	download mode
P009	15-8	not used	
	7	for factory adjustment	
	6	not used	
	5	not used	
	4	for factory adjustment	
	3	original exposure system cooling fan 3 (FM15) error detection	1: error
	2	original exposure system cooling fan 2 (FM14) error detection	1: error
	1	PCB check mode 1	
	0	PCB check mode 0	

D. ADJUST (adjustment mode)

COPIER>ADJUST Items

Level 1	Level 2	Level 3	Settings	Description
ADJUST	ADJ-XY	ADJ-X	-200 to +200	adjusts the image read start position (X direction; units of 0.1 mm)
		ADJ-Y	-100 to +100	adjusts the image read start position (Y direction; in units of 0.1 mm)
		ADJ-S	0 to 32	adjusts measurement position for shading correction from the standard white plate (in units of 0.1 mm)
		ADJ-J	0 to 500	adjusts the period of acceleration for the original scanner motor
	LASER	T-V00	0 to 255	enters the laser control initial value at V00 for text mode (800 lines) as for laser unit replacement
		T-VFF	0 to 255	enters the laser control initial value at VFF for text mode (800 lines) as for laser unit replacement
		P3-V00	0 to 255	enters the laser control initial value at V00 for photo mode (400 lines) as for laser unit replacement
		P3-VFF-1	0 to 255	enters the laser control initial value at VFF (45%) for photo mode (400 lines) as for laser unit replacement
		P3-VFF-2	0 to 255	enters the laser control initial value at VFF (55 %) for photo mode (400 lines) as for laser unit replacement
		P3-VFF-3	0 to 255	enters the laser control initial value at VFF (65%) for photo mode (400 lines) as for laser unit replacement
		P3-VFF-4	0 to 255	enters the laser control initial value at VFF (70%) for photo mode (400 lines) as for laser unit replacement
		POWER	---	turns on the laser output for laser power adjustment (OK key to start, Stop key to stop)
		T-V00-ON	---	turns on the laser output for a check on T-V00 (OK key to start, Stop key to stop)
		T-VFF-ON	---	turns on the laser output for a check on T-VFF (OK key to start, Stop key to stop)
		P3V00-ON	---	turns on the laser output for a check on P3-V00 (OK key to start, Stop key to stop)
		P3-V1-ON	---	turns on the laser output for a check on P3-VFF-1 (OK key to start, Stop key to stop)
		P3-V2-ON	---	turns on the laser output for a check on P3-VFF-2 (OK key to start, Stop key to stop)
		P3-V3-ON	---	turns on the laser output for a check on P3-VFF-3 (OK key to start, Stop key to stop)
		P3-V4-ON	---	turns on the laser output for a check on P3-VFF-4 (OK key to start, Stop key to stop)

DENS	SGNL-Y	0 to 1023	concentration signal of Y toner during INIT for ATR control
	SGNL-M	0 to 1023	concentration signal of M toner during INIT for ATR control
	SGNL-C	0 to 1023	concentration signal of C toner during INIT for ATR control
	REF-Y	0 to 1023	concentration reference signal of Y toner during INIT for ATR control
	REF-M	0 to 1023	concentration reference signal of M toner during INIT for ATR control
	REF-C	0 to 1023	concentration reference signal of C toner during INIT for ATR control
	SIGG-Y	0 to 255	gain for concentration reference signal of Y toner during ATR control
	SIGG-M	0 to 255	gain for concentration reference signal of M toner during ATR control
	SIGG-C	0 to 255	gain for concentration reference signal of C toner during ATR control
	RGAIN-K	0 to 255	gain for concentration reference signal of Bk toner during toner concentration control
	D-Y-TRGT	0 to 1023	initial value of the concentration target of Y toner during ART control
	D-M-TRGT	0 to 1023	initial value of the concentration target of M toner during ART control
	D-C-TRGT	0 to 1023	initial value of the concentration target of C toner during ART control
	PTOFST-Y	-127 to +128	correction value (%) for the laser output of Y toner during ART control
	PTOFST-M	-127 to +128	correction value (%) for the laser output of M toner during ART control
	PTOFST-C	-127 to +128	correction value (%) for the laser output of C toner during ART control
	PTOFST-K	-127 to +128	correction value (%) for the laser output of Bk toner during ART control
	D-REF-Y	0 to 1023	reference signal value for the concentration sensor of Y toner in relation to the reflection intensity of light from the photosensitive drum (upon initialization)
	D-REF-M	0 to 1023	reference signal value for the concentration sensor of M toner in relation to the reflection intensity of light from the photosensitive drum (upon initialization)
	D-REF-C	0 to 1023	reference signal value for the concentration sensor of C toner in relation to the reflection intensity of light from the photosensitive drum (upon initialization)
	D-REF-K	0 to 1023	reference signal value for the concentration sensor of Bk toner in relation to the reflection intensity of light from the photosensitive drum (upon initialization)
	D-REF-4	0 to 1023	reference signal value for the concentration sensor of all toners in relation to the reflection intensity of light from the photosensitive drum (upon initialization)

─ D-SGNL-Y	0 to 1023	reference signal value for the concentration sensor of Y toner in relation to the reflection intensity of light from the photosensitive drum (upon initialization)
─ D-SGNL-M	0 to 1023	reference signal value for the concentration sensor of M toner in relation to the reflection intensity of light from the photosensitive drum (upon initialization)
─ D-SGNL-C	0 to 1023	reference signal value for the concentration sensor of C toner in relation to the reflection intensity of light from the photosensitive drum (upon initialization)
─ D-SGNL-K	0 to 1023	reference signal value for the concentration sensor of Bk toner in relation to the reflection intensity of light from the photosensitive drum (upon initialization)
─ D-SGNL-4	0 to 1023	reference signal value for the concentration sensor of all toners in relation to the reflection intensity of light from the photosensitive drum (upon initialization)
─ P-REF-Y	0 to 1023	reference signal value of Y toner on the photosensitive drum during INIT for ATR control
─ P-REF-M	0 to 1023	reference signal value of M toner on the photosensitive drum during INIT for ATR control
─ P-REF-C	0 to 1023	reference signal value of C toner on the photosensitive drum during INIT for ATR control
─ P-REF-K	0 to 1023	reference signal value of Bk toner on the photosensitive drum during INIT for ATR control
─ P-SGNL-Y	0 to 1023	signal value of Y toner on the photosensitive drum during INIT for ATR control
─ P-SGNL-M	0 to 1023	signal value of M toner on the photosensitive drum during INIT for ATR control
─ P-SGNL-C	0 to 1023	signal value of C toner on the photosensitive drum during INIT for ATR control
─ P-SGNL-K	0 to 1023	signal value of Bk toner on the photosensitive drum during INIT for ATR control
─ SIGG-K	0 to 255	gain for concentration reference signal of Bk toner during ATR control
─ SIGG-P-M	0 to 255	correction of the patch data gain for ATR control when INIT-M is executed
─ SIGG-P-C	0 to 255	correction of the patch data gain for ATR control when INIT-C is executed
─ SIGG-P-Y	0 to 255	correction of the patch data gain for ATR control when INIT-Y is executed
─ SIGG-P-K	0 to 255	correction of the patch data gain for ATR control when INIT-K is executed
─ RGAN-P-M	0 to 255	correction of the patch gain for toner density control when INIT-M is executed
─ RGAN-P-C	0 to 255	correction of the patch gain for toner density control when INIT-C is executed
─ RGAN-P-Y	0 to 255	correction of the patch gain for toner density control when INIT-Y is executed

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└	RGAN-P-K	0 to 255	correction of the patch gain for toner density control when INIT-K is executed
V-CONT ┬	VBACK-Y	-4 to +4	Y color adjustment for de-fogging potential (reference: 0)
├	VBACK-M	-4 to +4	M color adjustment for de-fogging potential (reference: 0)
├	VBACK-C	-4 to +4	C color adjustment for de-fogging potential (reference: 0)
├	VBACK-K	-4 to +4	Bk color adjustment for de-fogging potential (reference: 0)
├	EPOTOFST	0 to 1023	potential offset value (reference: 0)
├	RF-CRT-Y	-25 to +25	offset value adjustment (%) for Y laser strength
├	PF-CRT-M	-25 to +25	offset value adjustment (%) for M laser strength
├	PF-CRT-C	-25 to +25	offset value adjustment (%) for C laser strength
└	PF-CRT-K	-25 to +25	offset value adjustment (%) for Bk laser strength
PASCAL ┬	OFST-P-Y	-127 to +128	target value setting of Y for high-density areas during auto gradation correction
├	OFST-P-M	-127 to +128	target value setting of M for high-density areas during auto gradation correction
├	OFST-P-C	-127 to +128	target value setting of C for high-density areas during auto gradation correction
└	OFST-P-K	-127 to +128	target value setting of Bk for high-density areas during auto gradation correction
COLOR ┬	ADJ-Y	-8 to +8	color balance adjustment of Y for the user (reference: 0)
├	ADJ-M	-8 to +8	color balance adjustment of M for the user (reference: 0)
├	ADJ-C	-8 to +8	color balance adjustment of C for the user (reference: 0)
├	ADJ-K	-8 to +8	color balance adjustment of Bk for the user (reference: 0)
├	OFST-Y	-16 to +16	color balance adjustment and density of Y light areas
├	OFST-M	-16 to +16	color balance adjustment and density of M light areas
├	OFST-C	-16 to +16	color balance adjustment and density of C light areas
├	OFST-K	-16 to +16	color balance adjustment and density of Bk light areas
├	P-ADJ-Y	-8 to +8	color balance adjustment of Y for output from an external image controller
├	P-ADJ-M	-8 to +8	color balance adjustment of M for output from an external image controller
├	P-ADJ-C	-8 to +8	color balance adjustment of C for output from an external image controller
├	P-ADJ-K	-8 to +8	color balance adjustment of Bk for output from an external image controller
├	P-OFST-Y	-16 to +16	color balance adjustment of Y light areas for output from an external image controller

	├─ P-OFST-M	-16 to +16	color balance adjustment of M light areas for output from an external image controller
	├─ P-OFST-C	-16 to +16	color balance adjustment of C light areas for output from an external image controller
	└─ P-OFST-K	-16 to +16	color balance adjustment of Bk light areas for output from an external image controller
├─ HV-TR	┬─ HV-TR	-4 to +4	adjustment of transfer high-voltage output
			Environment A (A-ZONE)
	├─ TR-L1	-4 to +4	for thin paper, transfer charging bias adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of μA)
	├─ TR-L2	-4 to +4	for thin paper, transfer charging bias adjustment for copying on the 2nd side of a double-sided copy (in units of μA)
	├─ TR-N1	-4 to +4	for plain paper, transfer charging bias adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of μA)
	├─ TR-N2	-4 to +4	for plain paper, transfer charging bias adjustment for copying on the 2nd side of a double-sided copy (in units of μA)
	├─ TR-T1	-4 to +4	for thick paper, transfer charging bias adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of μA)
	├─ TR-T2	-4 to +4	for thick paper, transfer charging bias adjustment for copying on the 2nd side of a double-sided copy (in units of μA)
	├─ TR-UT1	-4 to +4	for extra thick paper, transfer charging bias adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of μA)
	├─ TR-UT2	-4 to +4	for extra thick paper, transfer charging bias adjustment for copying on the 2nd side of a double-sided copy (in units of μA)
	├─ TR-S1-1	-4 to +4	for special paper 1, transfer charging bias adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of μA)
	├─ TR-S2-1	-4 to +4	for special paper 2, transfer charging bias adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of μA)
	├─ TR-OHP	-4 to +4	for transparencies, transfer charging bias adjustment (in units of μA)
	└─ TR-POST	-4 to +4	for postcards, transfer charging bias adjustment (in units of μA)

Cont'd   Cont'd

Environment B (B-ZONE)

— TR-L1	-4 to +4	for thin paper, transfer charging bias adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of μA)
— TR-L2	-4 to +4	for thin paper, transfer charging bias adjustment for copying on the 2nd side of a double-sided copy (in units of μA)
— TR-N1	-4 to +4	for plain paper, transfer charging bias adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of μA)
— TR-N2	-4 to +4	for plain paper, transfer charging bias adjustment for copying on the 2nd side of a double-sided copy (in units of μA)
— TR-T1	-4 to +4	for thick paper, transfer charging bias adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of μA)
— TR-T2	-4 to +4	for thick paper, transfer charging bias adjustment for copying on the 2nd side of a double-sided copy (in units of μA)
— TR-UT1	-4 to +4	for extra thick paper, transfer charging bias adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of μA)
— TR-UT2	-4 to +4	for extra thick paper, transfer charging bias adjustment for copying on the 2nd side of a double-sided copy (in units of μA)
— TR-S1-1	-4 to +4	for special paper 1, transfer charging bias adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of μA)
— TR-S2-1	-4 to +4	for special paper 2, transfer charging bias adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of μA)
— TR-OHP	-4 to +4	for transparencies, transfer charging bias adjustment (in units of μA)
— TR-POST	-4 to +4	for postcards, transfer charging bias adjustment (in units of μA)

Cont'd   Cont'd

Environment C (C-ZONE)

— TR-L1	-4 to +4	for thin paper, transfer charging bias adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of μA)
— TR-L2	-4 to +4	for thin paper, transfer charging bias adjustment for copying on the 2nd side of a double-sided copy (in units of 50 μA)
— TR-N1	-4 to +4	for plain paper, transfer charging bias adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of μA)
— TR-N2	-4 to +4	for plain paper, transfer charging bias adjustment for copying on the 2nd side of a double-sided copy (in units of μA)
— TR-T1	-4 to +4	for thick paper, transfer charging bias adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of μA)
— TR-T2	-4 to +4	for thick paper, transfer charging bias adjustment for copying on the 2nd side of a double-sided copy (in units of μA)
— TR-UT1	-4 to +4	for extra thick paper, transfer charging bias adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of μA)
— TR-UT2	-4 to +4	for extra thick paper, transfer charging bias adjustment for copying on the 2nd side of a double-sided copy (in units of μA)
— TR-S1-1	-4 to +4	for special paper 1, transfer charging bias adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of μA)
— TR-S2-1	-4 to +4	for special paper 2, transfer charging bias adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of μA)
— TR-OHP	-4 to +4	for transparencies, transfer charging bias adjustment (in units of μA)
└─ TR-POST	-4 to +4	for postcards, transfer charging bias adjustment (in units of μA)

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├─ HV-SP	┬─ HV-SP	-6 to 0	adjustment of separation DC high-voltage output (in units of 50 µA)
	├─ SP-L1	-6 to 0	Environment A (A-ZONE) for thin paper, separation charging bias adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of 50 µA)
	├─ SP-L2	-6 to 0	for thin paper, separation charging bias adjustment for copying on the 2nd side of a double-sided copy (in units of 50 µA)
	├─ SP-N1	-6 to 0	for plain paper, transfer charging bias adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of 50 µA)
	├─ SP-N2	-6 to 0	for plain paper, transfer charging bias adjustment for copying on the 2nd side of a double-sided copy (in units of 50 µA)
	├─ SP-T1	-6 to 0	for thick paper, transfer charging bias adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of 50 µA)
	├─ SP-T2	-6 to 0	for thick paper, transfer charging bias adjustment for copying on the 2nd side of a double-sided copy (in units of 50 µA)
	├─ SP-UT1	-6 to 0	for extra thick paper, separation charging bias adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of 50 µA)
	├─ SP-UT2	-6 to 0	for extra thick paper, separation charging bias adjustment for copying on the 2nd side of a double-sided copy (in units of 50 µA)
	├─ SP-S1-1	-6 to 0	for special paper 1, separation charging bias adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of 50 µA)
	├─ SP-S2-1	-6 to 0	for special paper 2, separation charging bias adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of 50 µA)
	├─ SP-OHP	-6 to 0	for transparencies, separation charging bias adjustment (in units of 50 µA)
	└─ SP-POST	-6 to 0	for postcards, separation charging bias adjustment (in units of 50 µA)

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		Environment A (A-ZONE)
— SP-L1	-6 to 0	for thin paper, separation charging bias adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of 50 µA)
— SP-L2	-6 to 0	for thin paper, separation charging bias adjustment for copying on the 2nd side of a double-sided copy (in units of 50 µA)
— SP-N1	-6 to 0	for plain paper, transfer charging bias adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of 50 µA)
— SP-N2	-6 to 0	for plain paper, transfer charging bias adjustment for copying on the 2nd side of a double-sided copy (in units of 50 µA)
— SP-T1	-6 to 0	for thick paper, transfer charging bias adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of 50 µA)
— SP-T2	-6 to 0	for thick paper, transfer charging bias adjustment for copying on the 2nd side of a double-sided copy (in units of 50 µA)
— SP-UT1	-6 to 0	for extra thick paper, separation charging bias adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of 50 µA)
— SP-UT2	-6 to 0	for extra thick paper, separation charging bias adjustment for copying on the 2nd side of a double-sided copy (in units of 50 µA)
— SP-S1-1	-6 to 0	for special paper 1, separation charging bias adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of 50 µA)
— SP-S2-1	-6 to 0	for special paper 2, separation charging bias adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of 50 µA)
— SP-OHP	-6 to 0	for transparencies, separation charging bias adjustment (in units of 50 µA)
— SP-POST	-6 to 0	for postcards, separation charging bias adjustment (in units of 50 µA)

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Environment C (C-ZONE)

— SP-L1   -6 to 0   for thin paper, separation charging bias adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of 50 μA)

— SP-L2   -6 to 0   for thin paper, separation charging bias adjustment for copying on the 2nd side of a double-sided copy (in units of 50 μA)

— SP-N1   -6 to 0   for plain paper, transfer charging bias adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of 50 μA)

— SP-N2   -6 to 0   for plain paper, transfer charging bias adjustment for copying on the 2nd side of a double-sided copy (in units of 50 μA)

— SP-T1   -6 to 0   for thick paper, transfer charging bias adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of 50 μA)

— SP-T2   -6 to 0   for thick paper, transfer charging bias adjustment for copying on the 2nd side of a double-sided copy (in units of 50 μA)

— SP-UT1   -6 to 0   for extra thick paper, separation charging bias adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of 50 μA)

— SP-UT2   -6 to 0   for extra thick paper, separation charging bias adjustment for copying on the 2nd side of a double-sided copy (in units of 50 μA)

— SP-S1-1   -6 to 0   for special paper 1, separation charging bias adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of 50 μA)

— SP-S2-1   -6 to 0   for special paper 2, separation charging bias adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of 50 μA)

— SP-OHP   -6 to 0   for transparencies, separation charging bias adjustment (in units of 50 μA)

— SP-POST   -6 to 0   for postcards, separation charging bias adjustment (in units of 50 μA)

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— SP-ON-N1	1 to 32	for plain paper, separation re-charging ON environment adjustment value for single-sided copying or copying on the 1st side of a double-sided copy (in units of 50 μA)
— SP-ON-N2	1 to 32	for plain paper, separation re-charging ON environment adjustment value for copying on the 2nd side of a double-sided copy
— SP-ON-L1	1 to 32	for thin paper, separation re-charging ON environment adjustment value for single-sided copying or copying on the 1st side of a double-sided copy)
— SP-ON-L2	1 to 32	for thin paper, separation re-charging ON environment adjustment value for copying on the 2nd side of a double-sided copy
— SP-ON-T1	1 to 32	for thick paper, separation re-charging ON environment adjustment value for single-sided copying or copying on the 1st side of a double-sided copy
— SP-ON-T2	1 to 32	for thick paper, separation re-charging ON environment adjustment value for copying on the 2nd side of a double-sided copy
— SP-ONUT1	1 to 32	for extra thick paper, separation re-charging ON environment adjustment value for single-sided copying or copying on the 1st side of a double-sided copy
— SP-ONUT2	1 to 32	for extra thick paper, separation re-charging ON environment adjustment value for copying on the 2nd side of a double-sided copy
— SP-ON-S1	1 to 32	for special paper 1, separation re-charging ON environment adjustment value for single-sided copying or copying on the 1st side of a double-sided copy
— SP-ON-S2	1 to 32	for special paper 2, separation re-charging ON environment adjustment value for single-sided copying or copying on the 1st side of a double-sided copy
— SP-ONOHP	1 to 32	for transparencies, separation re-charging ON environment adjustment value
— SP-ON-PT	1 to 32	for postcards, separation re-charging ON environment adjustment value

─ HV-IEL	─┬─ HV-IEL	-8 to 0	internal static eliminator high-voltage output adjustment (in units of 0.5 kV)
	─ IEL-L1	-8 to 0	Environment A (A-ZONE) for thin paper, internal static eliminator bias adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of 0.5 kV)
	─ IEL-L2	-8 to 0	for thin paper, internal static eliminator bias adjustment for copying on the 2nd side of a double-sided copy (in units of 0.5 kV)
	─ IEL-N1	-8 to 0	for plain paper, internal static eliminator bias adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of 0.5 kV)
	─ IEL-N2	-8 to 0	for plain paper, internal static eliminator bias adjustment for copying on the 2nd side of a double-sided copy (in units of 0.5 kV)
	─ IEL-T1	-8 to 0	for thick paper, internal static eliminator bias adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of 0.5 kV)
	─ IEL-T2	-8 to 0	for thick paper, internal static eliminator bias adjustment for copying on the 2nd side of a double-sided copy (in units of 0.5 kV)
	─ IEL-UT1	-8 to 0	for extra thick paper, internal static eliminator bias adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of 0.5 kV)
	─ IEL-UT2	-8 to 0	for extra thick paper, internal static eliminator bias adjustment for copying on the 2nd side of a double-sided copy (in units of 0.5 kV)
	─ IEL-S1-1	-8 to 0	for special paper 1, internal static eliminator bias adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of 0.5 kV)
	─ IEL-S2-1	-8 to 0	for special paper 2, internal static eliminator bias adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of 0.5 kV)
	─ IEL-OHP	-8 to 0	for transparencies, internal static eliminator bias adjustment (in units of 0.5 kV)
	─ IEL-POST	-8 to 0	for postcards, internal static eliminator bias adjustment (in units of 0.5 kV)

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		Environment B (B-ZONE)
IEL-L1	-8 to 0	for thin paper, internal static eliminator bias adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of 0.5 kV)
IEL-L2	-8 to 0	for thin paper, internal static eliminator bias adjustment for copying on the 2nd side of a double-sided copy (in units of 0.5 kV)
IEL-N1	-8 to 0	for plain paper, internal static eliminator bias adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of 0.5 kV)
IEL-N2	-8 to 0	for plain paper, internal static eliminator bias adjustment for copying on the 2nd side of a double-sided copy (in units of 0.5 kV)
IEL-T1	-8 to 0	for thick paper, internal static eliminator bias adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of 0.5 kV)
IEL-T2	-8 to 0	for thick paper, internal static eliminator bias adjustment for copying on the 2nd side of a double-sided copy (in units of 0.5 kV)
IEL-UT1	-8 to 0	for extra thick paper, internal static eliminator bias adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of 0.5 kV)
IEL-UT2	-8 to 0	for extra thick paper, internal static eliminator bias adjustment for copying on the 2nd side of a double-sided copy (in units of 0.5 kV)
IEL-S1-1	-8 to 0	for special paper 1, internal static eliminator bias adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of 0.5 kV)
IEL-S2-1	-8 to 0	for special paper 2, internal static eliminator bias adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of 0.5 kV)
IEL-OHP	-8 to 0	for transparencies, internal static eliminator bias adjustment (in units of 0.5 kV)
IEL-POST	-8 to 0	for postcards, internal static eliminator bias adjustment (in units of 0.5 kV)

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		Environment C (C-ZONE)
— IEL-L1	-8 to 0	for thin paper, internal static eliminator bias adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of 0.5 kV)
— IEL-L2	-8 to 0	for thin paper, internal static eliminator bias adjustment for copying on the 2nd side of a double-sided copy (in units of 0.5 kV)
— IEL-N1	-8 to 0	for plain paper, internal static eliminator bias adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of 0.5 kV)
— IEL-N2	-8 to 0	for plain paper, internal static eliminator bias adjustment for copying on the 2nd side of a double-sided copy (in units of 0.5 kV)
— IEL-T1	-8 to 0	for thick paper, internal static eliminator bias adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of 0.5 kV)
— IEL-T2	-8 to 0	for thick paper, internal static eliminator bias adjustment for copying on the 2nd side of a double-sided copy (in units of 0.5 kV)
— IEL-UT1	-8 to 0	for extra thick paper, internal static eliminator bias adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of 0.5 kV)
— IEL-UT2	-8 to 0	for extra thick paper, internal static eliminator bias adjustment for copying on the 2nd side of a double-sided copy (in units of 0.5 kV)
— IEL-S1-1	-8 to 0	for special paper 1, internal static eliminator bias adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of 0.5 kV)
— IEL-S2-1	-8 to 0	for special paper 2, internal static eliminator bias adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of 0.5 kV)
— IEL-OHP	-8 to 0	for transparencies, internal static eliminator bias adjustment (in units of 0.5 kV)
└ IEL-POST	-8 to 0	for postcards, internal static eliminator bias adjustment (in units of 0.5 kV)

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HV-ATT	HV-ATT	-5 to +5	attraction high-voltage output adjustment (in units of 2 μA)
			Environment A (A-ZONE)
	ATT-L1	-5 to +5	for thin paper, attraction high-voltage output adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of 2 μA)
	ATT-L2	-5 to +5	for thin paper, attraction high-voltage output adjustment for copying on the 2nd side of a double-sided copy (in units of 2 μA)
	ATT-N1	-5 to +5	for plain paper, attraction high-voltage output adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of 2 μA)
	ATT-N2	-5 to +5	for plain paper, attraction high-voltage output adjustment for copying on the 2nd side of a double-sided copy (in units of 2 μA)
	ATT-T1	-5 to +5	for thick paper, attraction high-voltage output adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of 2 μA)
	ATT-T2	-5 to +5	for thick paper, attraction high-voltage output adjustment for copying on the 2nd side of a double-sided copy (in units of 2 μA)
	ATT-S1	-5 to +5	for special paper 1, attraction high-voltage output adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of 2 μA)
	ATT-S2	-5 to +5	for special paper 2, attraction high-voltage output adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of 2 μA)
	ATT-OHP	-5 to +5	for transparencies, attraction high-voltage output adjustment (in units of 2 μA)
	ATT-UT1	-5 to +5	for extra thick paper, attraction high-voltage output adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of 2 μA)
	ATT-UT2	-5 to +5	for extra thick paper, attraction high-voltage output adjustment for copying on the 2nd side of a double-sided copy (in units of 2 μA)
	ATT-POST	-5 to +5	for postcards, attraction high-voltage output adjustment (in units of 2 μA)

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			Environment B (B-ZONE)
─	ATT-L1	-5 to +5	for thin paper, attraction high-voltage output adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of 2 μA)
─	ATT-L2	-5 to +5	for thin paper, attraction high-voltage output adjustment for copying on the 2nd side of a double-sided copy (in units of 2 μA)
─	ATT-N1	-5 to +5	for plain paper, attraction high-voltage output adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of 2 μA)
─	ATT-N2	-5 to +5	for plain paper, attraction high-voltage output adjustment for copying on the 2nd side of a double-sided copy (in units of 2 μA)
─	ATT-T1	-5 to +5	for thick paper, attraction high-voltage output adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of 2 μA)
─	ATT-T2	-5 to +5	for thick paper, attraction high-voltage output adjustment for copying on the 2nd side of a double-sided copy (in units of 2 μA)
─	ATT-S1	-5 to +5	for special paper 1, attraction high-voltage output adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of 2 μA)
─	ATT-S2	-5 to +5	for special paper 2, attraction high-voltage output adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of 2 μA)
─	ATT-OHP	-5 to +5	for transparencies, attraction high-voltage output adjustment (in units of 2 μA)
─	ATT-UT1	-5 to +5	for extra thick paper, attraction high-voltage output adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of 2 μA)
─	ATT-UT2	-5 to +5	for extra thick paper, attraction high-voltage output adjustment for copying on the 2nd side of a double-sided copy (in units of 2 μA)
─	ATT-POST	-5 to +5	for postcards, attraction high-voltage output adjustment (in units of 2 μA)

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			Environment C (C-ZONE)
— ATT-L1	-5 to +5		for thin paper, attraction high-voltage output adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of 2 μA)
— ATT-L2	-5 to +5		for thin paper, attraction high-voltage output adjustment for copying on the 2nd side of a double-sided copy (in units of 2 μA)
— ATT-N1	-5 to +5		for plain paper, attraction high-voltage output adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of 2 μA)
— ATT-N2	-5 to +5		for plain paper, attraction high-voltage output adjustment for copying on the 2nd side of a double-sided copy (in units of 2 μA)
— ATT-T1	-5 to +5		for thick paper, attraction high-voltage output adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of 2 μA)
— ATT-T2	-5 to +5		for thick paper, attraction high-voltage output adjustment for copying on the 2nd side of a double-sided copy (in units of 2 μA)
— ATT-S1	-5 to +5		for special paper 1, attraction high-voltage output adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of 2 μA)
— ATT-S2	-5 to +5		for special paper 2, attraction high-voltage output adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of 2 μA)
— ATT-OHP	-5 to +5		for transparencies, attraction high-voltage output adjustment (in units of 2 μA)
— ATT-UT1	-5 to +5		for extra thick paper, attraction high-voltage output adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of 2 μA)
— ATT-UT2	-5 to +5		for extra thick paper, attraction high-voltage output adjustment for copying on the 2nd side of a double-sided copy (in units of 2 μA)
— ATT-POST	-5 to +5		for postcards, attraction high-voltage output adjustment (in units of 2 μA)

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─ DOC-REC	─ DX-XS	-99 to +99	fine-adjustment of the original detection area
	─ DA-XE	-99 to +99	fine-adjustment of the original detection area
	─ DA-YS	-99 to +99	fine-adjustment of the original detection area
	─ DA-YE	-99 to +99	fine-adjustment of the original detection area
	└ DS-DOC	0 to 31	adjustment of the slice level for original detection
─ FEED-ADJ	─ ATT-T-A	-10 to +10	adjustment of side A attraction timing for the transfer drum
	─ ATT-T-B	-10 to +10	adjustment of side B attraction timing for the transfer drum
	─ RG-XA	-47 to +47	adjustment of registration in sub scanning direction of side A on the transfer drum
	─ RG-XB	-47 to +47	adjustment of registration in sub scanning direction of side B on the transfer drum
	─ RG-Y	-70 to +70	adjustment of registration in main scanning direction on the transfer drum
	─ TR-DLY-A	-10 to +10	adjustment of position of attraction of side A on the transfer drum
	─ TR-DLY-B	-10 to +10	adjustment of position of attraction of side B on the transfer drum
	─ ATT-CHK	1 to 3	specification of position of attraction on the transfer drum during ATT-ON (1: 2-sheet retention of sides B and A; 2: retention on side A, 3: retention on side B)
	─ ATT-ON	---	executes attraction of copy paper to the transfer drum according to ATTCHK (OK key to start; auto stop)
	─ RGST-CHK	1 to 3	specifies position of attraction on the transfer drum during RGST-ON (1: 2-sheet retention on sides B and A, 2: retention on side A, 3: retention on side B)
	─ RGST-ON	---	executes printing for checking registration (retention side) using C according to RGST-CHK (OK key to start; auto stop)
	─ TR1-CHK	1 to 3	specifies position of attraction on the transfer drum during TR1-ON (1: 2-sheet retention of sides B and A, 2: retention on side A, 3: retention on side B)
	─ TR2-CHK	1 to 3	specifies position of attraction on the transfer drum during TR2-ON (1: 2-sheet retention of sides B and A, 2: retention on side A, 3: retention on side B)
	─ TR1-ON	---	executes printing for checking the leading edge margin (1 mm) according to TR1-CHK (OK key to start; auto stop)
	─ TR2-ON	---	executes printing for checking the leading edge margin (8 mm) according to TR2-CHK (OK key to start; auto stop)
	─ TR3-ON	---	executes printing for checking a training edge margin according to TR-END-A (OK key to start; auto stop)
	─ TR4-ON	---	executes printing for checking a training edge margin according to TR-END-B (OK key to start; auto stop)

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	TR-END-A	0 to 25	adjusts the falling edge (trailing edge margin) of transfer high voltage for side A retention
	TR-END-B	0 to 25	adjusts the falling edge (trailing edge margin) of transfer high voltage for side B retention
CST-ADJ	C2-STMTR	0 to 1023	paper width basic value adjustment for STMTR in cassette 2
	C2-A4R	0 to 1023	paper width basic value adjustment for A4R in cassette 2
	C3-STMTR	0 to 1023	paper width basic value adjustment for STMTR in cassette 3
	C3-A4R	0 to 1023	paper width basic value adjustment for A4R in cassette 3
	MF-A4R	0 to 1023	paper width basic value adjustment for A4R in the multifeeder
	MF-A6R	0 to 1023	paper width basic value adjustment for A6R in the multifeeder
	MF-A4	0 to 1023	paper width basic value adjustment for A4 in the multifeeder
	C1-LVOL	0 to 1023	slice level input for the paper level detecting VR for cassette 1 (for 50 sheets)
	C1-HVOL	0 to 1023	slice level input for the paper level detecting VR for cassette 1 (for 275 sheets)
	C2-LVOL	0 to 1023	slice level input for the paper level detecting VR for cassette 2 (for 50 sheets)
	C2-HVOL	0 to 1023	slice level input for the paper level detecting VR for cassette 2 (for 275 sheets)
	C3-LVOL	0 to 1023	slice level input for the paper level detecting VR for cassette 3 (for 50 sheets)
	C3-HVOL	0 to 1023	slice level input for the paper level detecting VR for cassette 3 (for 275 sheets)
MISC	SEG-ADJ	-3 to +3	separation level adjustment between text and photo in text/photo mode or text/silver halide mode
	K-ADJ	-3 to +3	
	ATT-RTN1	0 to 1	for plain paper, addition of a rotation for attraction rotation for signal-sided copying and copying on the 1st side of a double-sided copy (full color)
	ATT-RTN2	0 to 1	for plain paper, addition of a rotation for attraction rotation for copying on the 2nd side of a double-sided copy (full color)
	ATT-RTN3	0 to 1	for thin paper, addition of a rotation for attraction rotation for signal-sided copying and copying on the 1st side of a double-sided copy (full color)
	ATT-RTN4	0 to 1	for thin paper, addition of a rotation for attraction rotation for copying on the 2nd side of a double-sided copy (full color)
	BC-ADJ	-3 to +3	adjustment of color identification range for non-pattern processing
	ACS-ADJ	0 to 1	adjustment of color recognition sensitivity for ACS

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— SENS-ADJ	— CLN-TH	2300 to 5500	input of thermal correction for the pre-cleaning paper sensor (PS71; in units of mV)
	└ CLN-TMP	0 to 60	input of a thermal correction value for the pre-cleaning paper sensor (PS71; in units of °C)
— HV-SP-AC	— HV-SP	-4 to +4	separation AC high-voltage output (in units of 0.5 kV)

Environment A (A-ZONE)

	— SP-L1	-4 to +4	for thin paper, separation charging AC bias adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of 0.5 kV)
	— SP-L2	-4 to +4	for thin paper, separation charging AC bias adjustment for copying on the 2nd side of a double-sided copy (in units of 0.5 kV)
	— SP-N1	-4 to +4	for plain paper, separation charging bias adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of 0.5 kV)
	— SP-N2	-4 to +4	for plain paper, separation charging bias adjustment for copying on the 2nd side of a double-sided copy (in units of 0.5 kV)
	— SP-T1	-4 to +4	for thick paper, separation charging bias adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units 0.5 kV)
	— SP-T2	-4 to +4	for thick paper, separation charging bias adjustment for copying on the 2nd side of a double-sided copy (in units of 0.5 kV)
	— SP-UT1	-4 to +4	for extra thick paper, separation charging bias adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of 0.5 kV)
	— SP-UT2	-4 to +4	for extra thick paper, separation charging bias adjustment for copying on the 2nd side of a double-sided copy (in units of 0.5 kV)
	— SP-S1-1	-4 to +4	for special paper 1, separation charging bias adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of 0.5 kV)
	— SP-S2-1	-4 to +4	for special paper 2, separation charging bias adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of 0.5 kV)
	— SP-OHP	-4 to +4	for transparencies, separation charging AC bias adjustment (in units of 0.5 kV)
	— SP-POST	-4 to +4	for postcards, separation charging AC bias adjustment (in units of 0.5 kV)

			Environment B (B-ZONE)
— SP-L1	4 to +4		for thin paper, separation charging AC bias adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of 0.5 kV)
— SP-L2	-4 to +4		for thin paper, separation charging AC bias adjustment for copying on the 2nd side of a double-sided copy (in units of 0.5 kV)
— SP-N1	-4 to +4		for plain paper, separation charging bias adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of 0.5 kV)
— SP-N2	-4 to +4		for plain paper, separation charging bias adjustment for copying on the 2nd side of a double-sided copy (in units of 0.5 kV)
— SP-T1	-4 to +4		for thick paper, separation charging bias adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units 0.5 kV)
— SP-T2	-4 to +4		for thick paper, separation charging bias adjustment for copying on the 2nd side of a double-sided copy (in units of 0.5 kV)
— SP-UT1	-4 to +4		for extra thick paper, separation charging bias adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of 0.5 kV)
— SP-UT2	-4 to +4		for extra thick paper, separation charging bias adjustment for copying on the 2nd side of a double-sided copy (in units of 0.5 kV)
— SP-S1-1	-4 to +4		for special paper 1, separation charging bias adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of 0.5 kV)
— SP-S2-1	-4 to +4		for special paper 2, separation charging bias adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of 0.5 kV)
— SP-OHP	-4 to +4		for transparencies, separation charging AC bias adjustment (in units of 0.5 kV)
— SP-POST	-4 to +4		for postcards, separation charging AC bias adjustment (in units of 0.5 kV)

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			Environment C (C-ZONE)
— SP-L1	-4 to +4		for thin paper, separation charging AC bias adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of 0.5 kV)
— SP-L2	-4 to +4		for thin paper, separation charging AC bias adjustment for copying on the 2nd side of a double-sided copy (in units of 0.5 kV)
— SP-N1	-4 to +4		for plain paper, separation charging bias adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of 0.5 kV)
— SP-N2	-4 to +4		for plain paper, separation charging bias adjustment for copying on the 2nd side of a double-sided copy (in units of 0.5kV)
— SP-T1	-4 to +4		for thick paper, separation charging bias adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units 0.5 kV)
— SP-T2	-4 to +4		for thick paper, separation charging bias adjustment for copying on the 2nd side of a double-sided copy (in units of 0.5 kV)
— SP-UT1	-4 to +4		for extra thick paper, separation charging bias adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of 0.5 kV)
— SP-UT2	-4 to +4		for extra thick paper, separation charging bias adjustment for copying on the 2nd side of a double-sided copy (in units of 0.5 kV)
— SP-S1-1	-4 to +4		for special paper 1, separation charging bias adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of 0.5 kV)
— SP-S2-1	-4 to +4		for special paper 2, separation charging bias adjustment for single-sided copying or copying on the 1st side of a double-sided copy (in units of 0.5 kV)
— SP-OHP	-4 to +4		for transparencies, separation charging AC bias adjustment (in units of 0.5 kV)
— SP-POST	-4 to +4		for postcards, separation charging AC bias adjustment (in units of 0.5 kV)
— HV-PSTCL — HV-PSTCL	-6 to +6		adjusting the post-cleaning high-voltage output (in units of 20 µA)

FEEDER>ADJUST Items

Level 1	Level 2	Level 3	Settings	Description
ADJUST		ADJ-RX	0 to 255	adjustment of registration in sub scanning direction with the multifeeder in use (in units of 0.1 mm)
		ADJ-RY	0 to 255	adjustment of registration in main scanning direction with the multifeeder in use (in units of 0.1 mm)
		ADJ-DX	0 to 255	adjustment of registration in sub scanning direction with the multifeeder in use in manual feed mode (in units of 0.1 mm)
		ADJ-DY	0 to 255	adjustment of registration in main scanning direction with the multifeeder in use in manual feed mode (in units of 0.1 mm)

PRJ>ADJUST Items

Level 1	Level 2	Level 3	Settings	Description
ADJUST		DS-PRJ	0 to 31	adjustment of the slice level for the projection area with the projector in use
		DS-OHP	0 to 31	adjustment of the slice level for original detection from the reference sheet position of film with the projector in use
		RD-XS	-300 to +300	adjustment of the read area with original detection OFF and with the projector in use (in units of 0.06 mm; standard: 0)
		RD-XE	-300 to +300	adjustment of the read area with original detection OFF and with the projector in use (in units of 0.06 mm; standard: 0)
		RD-YS	-300 to +300	adjustment of the read area with original detection OFF and with the projector in use (in units of 0.06 mm; standard: 0)
		RD-YE	-300 to +300	adjustment of the read area with original detection OFF and with the projector in use (in units of 0.06 mm; standard: 0)
		DA-XS	-99 to +99	adjustment of the read area with original detection ON and with the projector in use (in units of 0.11 mm; standard: 0)
		DA-XE	-99 to +99	adjustment of the read area with original detection ON and with the projector in use (in units of 0.11 mm; standard: 0)
		DA-YS	-99 to +99	adjustment of the read area with original detection ON and with the projector in use (in units of 0.06 mm; standard: 0)
		DA-YE	-99 to +99	adjustment of the read area with original detection ON and with the projector in use (in units of 0.06 mm; standard: 0)

─ NEGA-B	-100 to +100	adjustment of the target value for shading correction when copying negative film with the projector in use (a higher setting darkens Y area)
─ NAGA-G	-100 to +100	adjustment of the target value for shading correction when copying negative film with the projector in use (a higher setting darkens M area)
─ NEGA-R	-100 to +100	adjustment of the target value for shading correction when copying negative film with the projector in use (a higher setting darkens C area)
─ POSI-B	-100 to +100	adjustment of the target value for shading correction when copying positive film with the projector in use (a higher setting darkens Y area)
─ POSI-G	-100 to +100	adjustment of the target value for shading correction when copying positive film with the projector in use (a higher setting darkens M area)
─ POSI-R	-100 to +100	adjustment of the target value for shading correction when copying positive film with the projector in use (a higher setting darkens C area)
─ N-LMT	0 to 255	change of the limit for the projector lamp in negative normal mode with the projector in use
─ N-G-LMT	0 to 255	change of the limit for the projector lamp in negative normal mode with the projector in use
─ P-LMT	0 to 255	change of the limit for the projector lamp in positive normal mode with the projector in use
─ P-G-LMT	0 to 255	change of the limit for the projector lamp in positive normal mode with the projector in use
─ OHP-LMT	0 to 255	change of the limit for the projector lamp in transparency mode with the projector in use
─ P-DA-XS	-99 to +99	adjustment of frame erasing width for positive film with the projector in use (in units of 0.6 mm; standard: 24)
─ P-DA-XE	-99 to +99	adjustment of frame erasing width for positive film with the projector in use (in units of 0.6 mm; standard: 8)
─ P-DA-YS	-99 to +99	adjustment of frame erasing width for positive film with the projector in use (in units of 0.6 mm; standard: 32)
─ P-DA-YE	-99 to +99	adjustment of frame erasing width for positive film with the projector in use (in units of 0.6 mm; standard: 24)
─ N-DA-XS	-99 to +99	adjustment of frame erasing width for negative film with the projector in use (in units of 0.6 mm; standard: 50)

N-DA-XE	-99 to +99	adjustment of frame erasing width for negative film with the projector in use (in units of 0.6 mm; standard: 50)	
N-DA-YS	-99 to +99	adjustment of frame erasing width for negative film with the projector in use (in units of 0.6 mm; standard: 50)	
N-DA-YE	-99 to +99	adjustment of frame erasing width for negative film with the projector in use (in units of 0.6 mm; standard: 50)	
O-DA-XS	-99 to +99	adjustment of frame erasing width for transparencies with the projector in use (in units of 0.6 mm; standard: 24)	
O-DA-XE	-99 to +99	adjustment of frame erasing width for transparencies with the projector in use (in units of 0.6 mm; standard: 8)	
O-DA-YS	-99 to +99	adjustment of frame erasing width for transparencies with the projector in use (in units of 0.6 mm; standard: 32)	
O-DA-YE	-99 to +99	adjustment of frame erasing width for transparencies with the projector in use (in units of 0.6 mm; standard: 24)	
CHNGR-X	-99 to +99	adjustment of position in main scanning direction with the rotary changer of the projector in use (in units of 0.6 mm; standard: 0)	
CHNGR-Y	-99 to +99	adjustment of position in sub scanning direction with the rotary changer of the projector in use (in units of 0.6 mm; standard: 0)	

EDITOR>ADJUST Items

Level 1	Level 2	Level 3	Settings	Description
ADJUST		ED-X	-99 to +99	adjustment of input coordinates in editor sub scanning (X) direction (in units of about 0.13 mm; standard: 0)
		ED-Y	-99 to +99	adjustment of input coordinates in editor main scanning (Y) direction (in units of about 0.13 mm; standard: 0)
		LOOP-MB	0 to 3	adjustment of processing used when reading images into memory for coloring in area select/color create mode (standard: 0; a higher setting makes filling of gaps easier)
		LOOP-TH	0 to 255	adjustment of the binary slice level used when reading images into memory for coloring in area select/color create mode (standard: 192; a higher setting enables reading of fine lines)
		MRK-MB	0 to 3	adjustment of processing used when reading images into memory for marking/pointing (standard: 0; a higher setting makes filling of gaps easier)
		MRK-TH	0 to 255	adjustment of the binary slice level used when reading images into memory for marking/pointing (standard: 128; a higher setting enables reading of fine lines)

ADJ-XY   **COPIER>ADJUST**

Indicates the image read start position.

Level 3	Description	Remarks
ADJ-X (Note 1)	Use it to make adjustments so that the image read position matches the reference point on the copyboard glass. Fine-adjusts the distance between the original scanner HP sensor to the read start position. · Unit: number of steps from the stepping motor · Make adjustments as shown in the next page.	-200 to +200 (-3.9 to +3.9 mm) Unit: about 0.107 mm
ADJ-Y (Note 1)	Fine-adjusts the CCD reading start position. · Unit: pixels · Make adjustments as shown in the next page.	-100 to +100 (-2.5 to +2.5 mm) Unit: about 0.06 mm
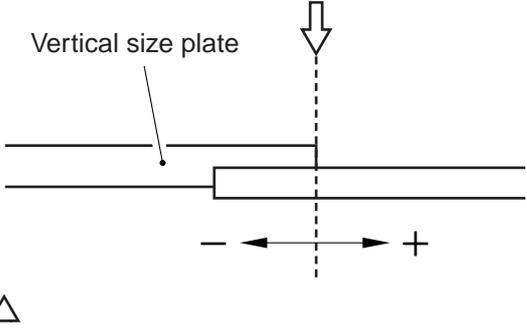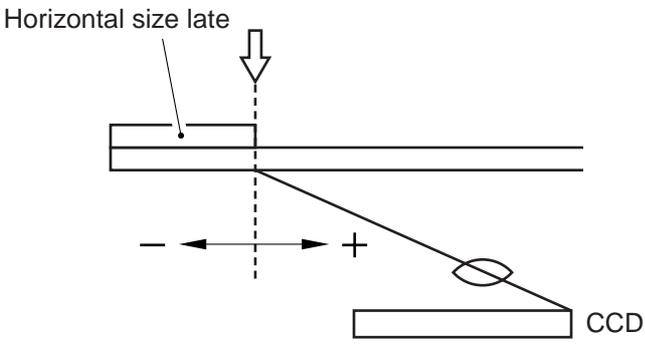
Level 3	Description	Remarks
ADJ-S (Note 1)	Use it to fine-adjust the position at which data is collected for shading correction from the standard white plate. · Unit: number of steps from the stepping motor · Scratches or dirt on the standard plate can cause vertical white lines on copies. To correct the problem, shift the point of measurement using this item. 	0 to 45 (0 to 4.8 mm) Unit: about 0.107 mm
ADJ-J (Note 1)	Use it to adjust the period of acceleration for the original scanner motor.	0 to +190 Unit: about 0.1 msec
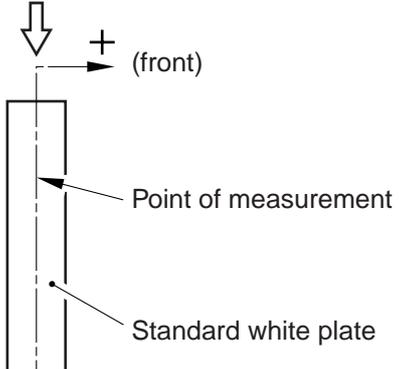
Note: Execute this mode upon replacement of a PCB or initialization of the RAM. The settings will be returned to standard settings, requiring you to enter the appropriate settings. Be sure to record any new settings on the service label.

Adjusting the Image Read Start Position

Be sure to check the present point of attraction before starting the work.
1) Turn off the original detection mechanism before starting service mode.
2) Bring up the ADJ-XY screen, and press the Copy Start key.
   · Appropriate copying mode will automatically be set, and a copy is made with a shift of about 50 mm as shown.
3) If any part of the image is missing, decrease the setting of ADJ-X, ADJ-Y.
4) If an area outside the image is copied, increase the setting of ADJ-X, ADJ-Y.
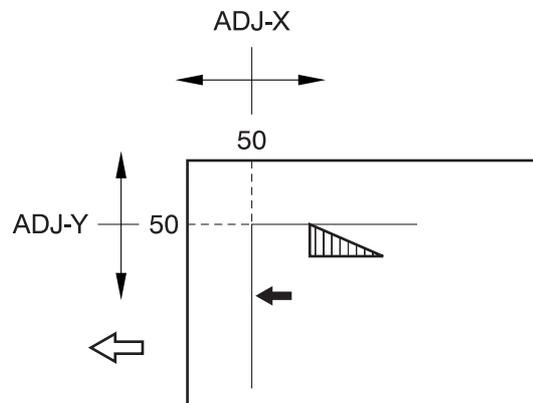
Figure 4-11

LASER   **COPIER>ADJUST**

Adjusts the laser system.

Level 3	Description	Remarks
T-V00	Use it to enter the laser control initial value at V00 for text mode (800 lines) as upon replacement of the laser unit.	0 to 255
T-VFF	Use it to enter the laser control initial value at VFF for text mode (800 lines) as upon replacement of the laser unit.	
P3-V00	Use it to enter the laser control initial value at V00 for photo mode (400 lines) as upon replacement of the laser unit.	
P3-VFF-1	Use it to enter the laser control initial value at VFF (45%) for photo mode (400 lines) as upon replacement of the laser unit.	
P3-VFF-2	Use it to enter the laser control initial value at VFF (55%) for photo mode (400 lines) as upon replacement of the laser unit.	
P3-VFF-3	Use it to enter the laser control initial value at VFF (65%) for photo mode (400 lines) as upon replacement of the laser unit.	
P3-VFF-4	Use it to enter the laser control initial value at VFF (70%) for photo mode (400 lines) as upon replacement of the laser unit.	
POWER	Use it to turn on the laser output when adjusting the laser power.	Press the OK key to start and the Stop key to stop.
T-V00-ON	Use it to turn on the laser output when checking T-V00.	
T-VFF-ON	Use it to turn on the laser output when checking T-VFF.	
P3V00-ON	Use it to turn on the laser output when checking P3-V00.	
P3-V1-ON	Use it to turn on the laser output when checking P3-VFF-1.	
P3-V2-ON	Use it to turn on the laser output when checking P3-VFF-2.	
P3-V3-ON	Use it to turn on the laser output when checking P3-VFF-3.	
P3-V4-ON	Use it to turn on the laser output when checking P3-VFF-4.	

Note 1: Execute this mode upon replacement of a CPU PCB or initialization of the RAM. The settings will be returned to standard settings, requiring you to enter the appropriate settings. Be sure to record any new settings on the service label.

DENS   **COPIER>ADJUST**

Adjusts items related to developer concentration.

Level 3	Description	Remarks
SGNL-Y SGNL-M SGNL-C (Note 1)	Use it to adjust the toner concentration signal value of each color during INIT for ATR control.	0 to 1023
REF-Y REF-M REF-C (Note 1)	Use it to adjust the toner concentration reference signal value for each color during INIT for ATR control.	0 to 1023
SIGG-Y SIGG-M SIGG-C (Note 1)	Use it to adjust the toner concentration reference signal gain value for each color during ATR control.	0 to 255
RGAIN-K (Note 1)	Use it to adjust the toner concentration reference signal gain value for Bk during toner concentration control.	0 to 255
D-Y-TRGT D-M-TRGT D-C-TRGT (Note 1)	Use it to adjust the toner concentration target initial value of each color during ATR control.	0 to 1023
PTOFST-Y PTOFST-M PTOFST-C PTOFST-K (Note 1)	Use it to adjust the correction value (%) of the laser output of each color during ATR control.	-127 to +128
D-REF-Y D-REF-M D-REF-C D-REF-K D-REF-4 (Not 1)	Use it to adjust the reference signal value (during initialization) of each toner concentration sensor in relation to light reflected by the photosensitive drum. Use it to adjust the reference signal value (during initialization) of the toner concentration sensor for all colors in relation to light reflected by the photosensitive drum.	0 to 1023

Note 1: Execute this mode upon replacement of a CPU PCB or initialization of the RAM. The settings will be returned to standard settings, requiring you to enter the appropriate settings. Be sure to record any new settings on the service label.

Level 3	Description	Remarks
D-SGNL-Y D-SGNL-M D-SGNL-C D-SGNL-K	Use it to adjust the signal value (during initialization) for the toner concentration sensor of each color in relation to light reflected by the photosensitive drum.	0 to 1023
D-SGNL-4 (Note 1)	Use it to adjust the signal value (during initialization) for the toner concentration sensor of all colors in relation to light reflected by the photosensitive drum.	
P-REF-Y P-REF-M P-REF-C P-REF-K (Note 1)	Use it to adjust the toner concentration reference signal value for each color on the photosensitive drum during INIT for ATR control.	0 to 1023
P-SGNL-Y P-SGNL-M P-SGNL-C P-SGNL-K (Note 1)	Use it to adjust the toner concentration reference signal value for each color on the photosensitive drum during INIT for ATR control.	0 to 1023
SIGG-K (Note 1)	Use it to adjust the gain for the Bk toner concentration reference signal during ATR control.	0 to 255
SIGG-P-M SIGG-P-C SIGG-P-Y SIGG-P-K (Note 1)	correction of the patch gain for ATR control when INIT-x (mono INIT) is executed	0 to 255
RGAN-P-M RGAN-P-C RGAN-P-Y RGAN-P-K (Note 1)	correction of the patch gain for toner density control when INIT-x (mono INIT) is executed	0 to 255

Note 1: Execute this mode upon replacement of a CPU PCB or initialization of the RAM. The settings will be returned to standard settings, requiring you to enter the appropriate settings. Be sure to record any new settings on the service label.

V-CONT
COPIER>ADJUST

Adjusts the photosensitive drum surface potential contrast.

Level 3	Description	Remarks
VBACK-Y VBACK-M VBACK-C VBACK-K	Use it to adjust the de-fogging potential for each color.	-4 to +4 Standard: 0 + side: darkens - side: lightens
EPOTOFST	Use it to adjust the potential offset value.	0 to 1023 Standard: 0
PF-CRT-Y PF-CRT-M PF-CRT-C PF-CRT-K	Use it to adjust the offset value (%) of laser strength for each color.	-25 to +25

PASCAL

Adjusts automatic gradation correction.

Level 3	Description	Remarks
OFST-P-Y OFST-P-M OFST-P-C OFST-P-K	Use it to adjust the target value of each color in high-density areas during auto gradation correction.	-127 to +128

COLOR   **COPIER>ADJUST**

Adjusts the color balance.

Level 3	Description	Remarks
ADJ-Y ADJ-M ADJ-C ADJ-K (Note 1)	Use it to correct the color balance of each color selected by the user. · Be sure to set the user color balance to '0' before using this item. · Be sure to follow the Image Adjustment Basic Procedure.	-8 to +8 Standard: M=0, C=0, Y=0, K=0 + side: darkens - side: lightens
OFST-Y OFST-M OFST-C OFST-K (Note 1)	Use it to adjust the color balance and density of light areas of each color. · Be sure to follow the Image Adjustment Basic Procedure. · To increase the degree of reproduction of extremely light areas, decrease the setting.	-16 to +16 Standard: M=0, C=0, Y=0, K=0
P-ADJ-Y P-ADJ-M P-ADJ-C P-ADJ-K (Note 1)	Use it to correct the color balance of each color when output is from an external image controller. · Be sure to set the user color balance to '0' before using this mode. · Be sure to follow the Image Adjustment Basic Procedure.	-8 to +8 Standard: M=0, C=0, Y=0, K=0 + side: darkens - side: lightens
P-OFST-Y P-OFST-M P-OFST-C P-OFST-K (Note 1)	Use it to adjust the color balance and the density of light areas of each color when the output is from an external image controller. · Be sure to follow the Image Adjustment Basic Procedure. · If fogging is noted, increase the value. · To increase the degree of reproduction of extremely light areas, decrease the setting.	-16 to +16 Standard M=0, C=0, Y=0, K=0

Note 1: Execute this mode upon replacement of a CPU PCB or initialization of the RAM. The settings will be returned to standard settings, requiring you to enter the appropriate settings. Be sure to record any new settings on the service label.

HV-TR   **COPIER>ADJUST**

Adjusts the transfer high-voltage output by condition.

Level 3	Description	Remarks
HV-TR	Use it to adjust the transfer high-voltage output.	-4 to +4 Unit: 1.0 µA
TR-L1	Use it to adjust the transfer charging bias for single-sided copying and when copying on the 1st side of a double-sided copy using thin paper.	-4 to +4 Unit: 1.0 µA The copier may be adapted to the site of installation (temperature, humidity) by changing its various settings. For this mode, you will find settings grouped into three zones (A, B, C). On the Level 3 item screen (page 1), be sure to adjust Level 3 items of the appropriate zones (TEMP, ABS-HUM). Division by Moisture Content Zone A: 0 to 6.17 g Zone B: 6.18 to 18.40 g Zone C: 18.41 g or more
TR-L2	Use it to adjust the transfer charging bias when copying on the 2nd side of a double-sided copy using thin paper.	
TR-N1	Use it to adjust the transfer charging bias for single-sided copying and copying on the 1st side of a double-sided copy using plain paper.	
TR-N2	Use it to adjust the transfer charging bias for copying on the 2nd side of a double-sided copy using plain paper.	
TR-T1	Use it to adjust the transfer charging bias for one-sided copying and when copying on the 1st side of a double-sided copy using thick paper.	
TR-T2	Use it to adjust the transfer charging bias when copying on the 2nd side of a double-sided copy using thick paper.	
TR-UT1	Use it to adjust the transfer charging bias for single-sided copying and when copying on the 1st side of a double-sided copying using extra thick paper.	
TR-UT2	Use it to adjust the transfer charging bias when copying on the 2nd side of a double-sided copy using extra thick paper.	
TR-S1-1	Use it to adjust the transfer charging bias for single-sided copying and copying on the 1st side of a double-sided copy using special paper 1.	
TR-S2-1	Use it to adjust the transfer charging bias for single-sided copying and copying on the 1st side of a double-sided copy using special paper 2.	
TR-OHP	Use it to adjust the transfer charging bias when using transparencies.	
TR-POST	Use it to adjust the transfer charging bias when using postcards.	

Note 1: Execute this mode upon replacement of a CPU PCB or initialization of the RAM. The settings will be returned to standard settings, requiring you to enter the appropriate settings. Be sure to record any new settings on the service label.

HV-SP   **COPIER>ADJUST**

Adjusts the separation charging high-voltage output by condition.

Level 3	Description	Remarks
HV-SP	Use it to adjust the separation DC high-voltage output.	-6 to 0 Unit: 50 µA
SP-L1	Use it to adjust the separation charging bias for single-sided copying and when copying on the 1st side of a double-sided copy using thin paper.	-6 to 0 Unit: 50 µA The copier may be adapted to the site of installation (temperature, humidity) by changing its various settings. For this mode, you will find settings grouped into three zones (A, B, C). On the Level 3 item screen (page 1), be sure to adjust Level 3 items of the appropriate zones (TEMP, ABS-HUM). Division by Moisture Content Zone A: 0 to 6.17 g Zone B: 6.18 to 18.40 g Zone C: 18.41 g or more
SP-L2	Use it to adjust the separation charging bias when copying on the 2nd side of a double-sided copy using thin paper.	
SP-N1	Use it to adjust the separation charging bias for single-sided copying and copying on the 1st side of a double-sided copy using plain paper.	
SP-N2	Use it to adjust the separation charging bias for copying on the 2nd side of a double-sided copy using plain paper.	
SP-T1	Use it to adjust the separation charging bias for one-sided copying and when copying on the 1st side of a double-sided copy using thick paper.	
SP-T2	Use it to adjust the separation charging bias when copying on the 2nd side of a double-sided copy using thick paper.	
SP-UT1	Use it to adjust the separation charging bias for single-sided copying and when copying on the 1st side of a double-sided copying using extra thick paper.	
SP-UT2	Use it to adjust the separation charging bias when copying on the 2nd side of a double-sided copy using extra thick paper.	
SP-S1-1	Use it to adjust the separation charging bias for single-sided copying and copying on the 1st side of a double-sided copy using special paper 1.	
SP-S2-1	Use it to adjust the separation charging bias for single-sided copying and copying on the 1st side of a double-sided copy using special paper 2.	
SP-OHP	Use it to adjust the separation charging bias when using transparencies.	
SP-POST	Use it to adjust the separation charging bias when using postcards.	

Note 1: Execute this mode upon replacement of a CPU PCB or initialization of the RAM. The settings will be returned to standard settings, requiring you to enter the appropriate settings. Be sure to record any new settings on the service label.

COPIER>ADJUST

Level 3	Description	Remarks
SP-ON-N1	Use it to adjust the separation re-charging ON environment adjustment value for single-sided copying and copying on the 1st side of a double-sided copy.	1 to 32 In this mode, the blue offset is decreased; check the setting of COPIER>ANALOG-ABS-HUM, and enter the appropriate value (1 through 32) from below.
SP-ON-N2	Use it to adjust the separation re-charging ON environment adjustment value for copying on the 2nd side of a double-sided copy using plain paper.	1: all environment OFF 2: 3.03 g or less 3: 3.42 g or less 4: 3.81 g or less
SP-ON-L1	Use it to adjust the separation re-charging on environment adjustment value for single-sided copying or copying on the 1st side of a double-sided copy using thin paper.	5: 4.21 g or less 6: 4.60 g or less 7: 4.99 g or less
SP-CN-L2	Use it to adjust the separation re-charging on environment adjustment value for copying on the 2nd side of a double-sided copy using thin paper.	8: 5.38 g or less 9: 5.77 g or less 10: 6.17 g or less
SP-ON-T1	Use it to adjust the separation re-charging on environment adjustment value for single-sided copying and copying on the 1st side of a double-sided copy using thick paper.	11: 6.65 g or less 12: 7.13 g or less 13: 7.61 g or less 14: 8.09 g or less
SP-ON-T2	Use it to adjust the separation re-charging on environment adjustment value for copying on the 2nd side of a double-sided copy using thick paper.	15: 8.57 g or less 16: 9.05 g or less 17: 9.53 g or less
SP-ONUT1	Use it to adjust the separation re-charging on environment adjustment value for single-sided copying and copying on the 1st side of a double-sided copy using extra thick paper.	18: 10.01 g or less 19: 10.50 g or less 20: 11.44 g or less
SP-ONUT2	Use it to adjust the separation re-charging on environment adjustment value for copying on the 2nd side of a double-sided copy using extra thick paper.	21: 12.38 g or less 22: 13.32 g or less 23: 14.26 g or less 24: 15.20 g or less
SP-ON-S1	Use it to adjust the separation re-charging on environment adjustment value for single-sided copying and copying on the 1st side of a double-sided copy using special paper 1.	25: 16.00 g or less 26: 16.80 g or less 27: 17.60 g or less 28: 18.40 g or less 29: 19.20 g or less
SP-ON-S2	Use it to adjust the separation re-charging on environment adjustment value for single-sided copying and copying on the 1st side of a double-sided copy using special paper 2.	30: 20.00 g or less 31: 20.80 g or less 32: 21.60 g or less
SP-ONOHP	Use it to adjust the separation re-charging on environment adjustment value using transparencies.	For instance, in the case of 5 g, enter '8' for the paper type in question so that the
SP-ON-PT	Use it to adjust the separation re-charging on environment adjustment value using postcards.	separation re-charging mechanism will turn on when the moisture content is 0 to 5.38 g.

Note 1: Execute this mode upon replacement of a CPU PCB or initialization of the RAM. The settings will be returned to standard settings, requiring you to enter the appropriate settings. Be sure to record any new settings on the service label.

HV-IEL   **COPIER>ADJUST**

Adjusts the internal static eliminating high-voltage output by condition.

Level 3	Description	Remarks
HV-IEL	Use it to adjust the internal static eliminating high-voltage output.	-8 to 0 Unit: 0.5 kV
IEL-L1	Use it to adjust the internal static eliminating bias for single-sided copying and when copying on the 1st side of a double-sided copy using thin paper.	-8 to 0 Unit: 0.5 kV The copier may be adapted to the site of installation (temperature, humidity) by changing its various settings.
IEL-L2	Use it to adjust the internal static eliminating bias when copying on the 2nd side of a double-sided copy using thin paper.	For this mode, you will find settings grouped into three zones (A, B, C). On the Level 3 item screen (page 1), be sure to adjust Level 3 items of the appropriate zones (TEMP, ABS-HUM).
IEL-N1	Use it to adjust the internal static eliminating bias for single-sided copying and copying on the 1st side of a double-sided copy using plain paper.	
IEL-N2	Use it to adjust the internal static eliminating bias for copying on the 2nd side of a double-sided copy using plain paper.	Division by Moisture Content Zone A: 0 to 6.17 g Zone B: 6.18 to 18.40 g
IEL-T1	Use it to adjust the internal static eliminating bias for one-sided copying and when copying on the 1st side of a double-sided copy using thick paper.	Zone C: 18.41 g or more
IEL-T2	Use it to adjust the internal static eliminating bias when copying on the 2nd side of a double-sided copy using thick paper.	
IEL-UT1	Use it to adjust the internal static eliminating bias for single-sided copying and when copying on the 1st side of a double-sided copy using extra thick paper.	
IEL-UT2	Use it to adjust the internal static eliminating bias when copying on the 2nd side of a double-sided copy using extra thick paper.	
IEL-S1-1	Use it to adjust the internal static eliminating bias for single-sided copying and copying on the 1st side of a double-sided copy using special paper 1.	
IEL-S2-1	Use it to adjust the internal static eliminating bias for single-sided copying and copying on the 1st side of a double-sided copy using special paper 2.	
IEL-OHP	Use it to adjust the internal static eliminating bias when using transparencies.	
IEL-POST	Use it to adjust the internal static eliminating bias when using postcards.	

Note 1: Execute this mode upon replacement of a CPU PCB or initialization of the RAM. The settings will be returned to standard settings, requiring you to enter the appropriate settings. Be sure to record any new settings on the service label.

HV-ATT   **COPIER>ADJUST**

Adjusts the attraction charging high-voltage output by condition.

Level 3	Description	Remarks
HV-ATT	Use it to adjust the attraction high-voltage output.	-5 to +5 Unit: 2 µA
ATT-L1	Use it to adjust the attraction charging bias for single-sided copying and when copying on the 1st side of a double-sided copy using thin paper.	-5 to +5 Unit: 2 µA The copier may be adapted to the site of installation (temperature, humidity) by changing its various settings. For this mode, you will find settings grouped into three zones (A, B, C). On the Level 3 item screen (page 1), be sure to adjust Level 3 items of the appropriate zones (TEMP, ABS-HUM). Division by Moisture Content Zone A: 0 to 6.17 g Zone B: 6.18 to 18.40 g Zone C: 18.41 g or more
ATT-L2	Use it to adjust the attraction charging bias when copying on the 2nd side of a double-sided copy using thin paper.	
ATT-N1	Use it to adjust the attraction charging bias for single-sided copying and copying on the 1st side of a double-sided copy using plain paper.	
ATT-N2	Use it to adjust the attraction charging bias for copying on the 2nd side of a double-sided copy using plain paper.	
ATT-T1	Use it to adjust the attraction charging bias for one-sided copying and when copying on the 1st side of a double-sided copy using thick paper.	
ATT-T2	Use it to adjust the attraction charging bias when copying on the 2nd side of a double-sided copy using thick paper.	
ATT-S1	Use it to adjust the attraction charging bias for single-sided copying and copying on the 1st side of a double-sided copy using special paper 1.	
ATT-S2	Use it to adjust the attraction charging bias for single-sided copying and copying on the 1st side of a double-sided copy using special paper 2.	
ATT-OHP	Use it to adjust the attraction charging bias when using transparencies.	
ATT-UT1	Use it to adjust the attraction charging bias for single-sided copying and when copying on the 1st side of a double-sided copy using extra thick paper.	
ATT-UT2	Use it to adjust the attraction charging bias when copying on the 2nd side of a double-sided copy using extra thick paper.	
ATT-POST	Use it to adjust the attraction charging bias when using postcards.	

Note 1: Execute this mode upon replacement of a CPU PCB or initialization of the RAM. The settings will be returned to standard settings, requiring you to enter the appropriate settings. Be sure to record any new settings on the service label.

DOC-REC   **COPIER>ADJUST**

Adjusts the original detection area/slice level.

Level 3	Description	Remarks
DA-XS DA-XE DA-YS DA-YE (Note 1)	Fine-Adjusting the Original Detection Area If an original is placed on the copyboard glass at an angle, its copy will be framed in black by the work of original detection mode. Use this item to make settings so as to remove such frames. Keep in mind that a change in the settings will affect the frame width in original detection mode while the projector is in use.	-99 to +99 (0 to 6.3 mm) Standard: SX=24 XE=8 YS=32 YE=24 Unit: 0.06 mm (approx.)
DS-DOC (Note 1)	Adjusting the Slice Level for Original Detection You may set a slice level of your choice for original detection. A higher slice level will increase the degree of detection of an original, but at the same time will lead to wrong detection.	0 to 31 (density level of 0 to 248) Standard: 21
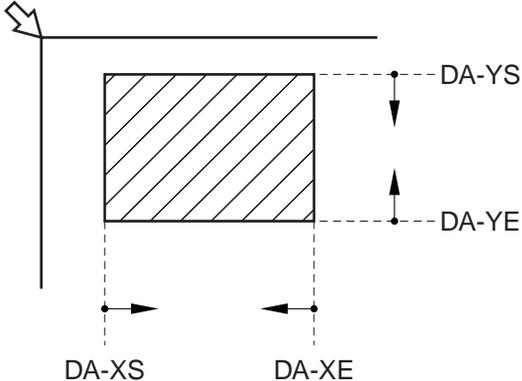
Note 1: Execute this mode upon replacement of a CPU PCB or initialization of the RAM. The settings will be returned to standard settings, requiring you to enter the appropriate settings. Be sure to record any new settings on the service label.

FEED-ADJ   **COPIER>ADJUST**

Level 3	Description	Remarks
ATT-T-A	Use it to enter a transfer drum side A attraction timing adjustment value.	-10 to +10 Unit: 0.1 mm
ATT-T-B	Use it to enter a transfer drum side B attraction timing adjustment value.	
RG-XA	Use it to enter a registration (point of attraction) fine-adjustment value for transfer drum side A sub scanning direction (feeding direction).	-47 to +47 Unit: 0.1 mm
RG-XB	Use it to enter a registration (point of attraction) fine-adjustment value for transfer drum side B sub scanning direction (feeding direction).	
RG-Y	Use it to enter a registration (point of attraction) fine-adjustment value for transfer drum main scanning direction (drum axial).	-70 to +70
TR-DLY-A	Use it to enter a fine-adjustment value for the point of attraction for transfer drum side A.	-10 to +10
TR-DLY-B	Use it to enter a fine-adjustment value for the point of attraction for transfer drum side B.	
ATT-CHK	Use it to select a point of attraction on the transfer drum during ATT-ON.	1: 2-sheet retention (sides B and A) 2: side A retention 3: side B retention
ATT-ON	Use it to execute attraction of copy paper to the transfer drum according to ATT-CHK settings.	OK key to start; auto stop
RGST-CHK	Use it to select a point of attraction on the transfer drum during RGST-ON.	1: 2-sheet retention (sides B and A) 2: side A retention 3: side B retention
RGST-ON	Use it to execute printing for checking registration (side of retention) using C according to RGST-CHK settings.	OK key to start; auto stop
TR1-CHK	Use it to select a point of attraction on the transfer drum during TR1-ON.	1: 2-sheet retention (sides B and A) 2: side A retention 3: side B retention
TR2-CHK	Use it to select a point of attraction on the transfer drum during TR2-ON.	
TR1-ON	Use it to execute printing for checking a 1-mm leading edge margin according to TR1-CHK settings.	OK key to start; auto stop
TR2-ON	Use it to execute printing for checking an 8-mm leading edge margin according to TR2-CHK settings.	
TR3-ON	Use it to execute printing for checking a trailing edge margin according to TR-END-A settings.	
TR4-ON	Use it to execute printing for checking a training edge margin according to TR-END-B.	

4-89

COPIER>ADJUST

Level 3	Description	Remarks
TR-END-A	Use it to adjust the falling edge (trailing edge margin) of transfer high voltage for side A retention.	0 to 25 Unit: 0.4 mm
TR-END-B	Use it to adjust the falling edge (training edge margin) of transfer high voltage for side B retention. · Be sure to make adjustments whenever you have replaced the transfer drum unit. · A lower setting will shift the point at which blurring starts toward the trailing edge.	

CST-ADJ

Adjusts cassette-/manual feed-related items.

Level 3	Description	Remarks
C2-STMTR	Use it to adjust the paper width basic value for STMTR in cassette 2.	0 to 1023 When you have replaced the CPU PCB or initialized the RAM of the DC-CPU, enter the values recorded on the service label. If you have replaced the paper width sensor, execute COPIER>FUNCTION>CST.
C2-A4R	Use it to adjust the paper width basic value for A4R in cassette 2.	
C3-STMTR	Use it to adjust the paper width basic value for STMTR in cassette 3 (for CLC1150, cassette 2).	
C3-A4R	Use it to adjust the paper width basic value for A4R in cassette 3 (for CLC1150, cassette 2).	
MF-A4R	Use it to adjust the paper width basic value for A4R in the multifeeder.	
MF-A6R	Use it to adjust the paper width basic value for A6R in the multifeeder.	
MF-A4	Use it to adjust the paper width basic value for A4 in the multifeeder.	
C1-LVOL	Use it to enter a slice level for the cassette 1 paper level detecting VR (for 50 sheets).	0 to 1023 When you have replaced the CPU PCB or initialized the RAM of the DC -CPU, enter the values recorded on the service label.
C1-HVOL	Use it to enter a slice level for the cassette 1 paper level detecting VR (for 275 sheets).	
C2-LVOL	Use it to enter a slice level for the cassette 2 (for CLC1150, cassette 1) paper level detecting VR (for 50 sheets).	
C2-HVOL	Use it to enter a slice level for the cassette 2 (for CLC1150, cassette 1), paper level detecting VR (for 275 sheets).	
C3-LVOL	Use it to enter a slice level for the cassette 3 (for CLC1150, cassette 2) paper level detecting VR (for 50 sheets).	
C3-HVOL	Use it to enter a slice level for the cassette 3 (for CLC1150, cassette 2) paper level detecting VR (for 275 sheets).	

MISC   **COPIER>ADJUST**

Level 3	Description	Remarks
SEG-ADJ	Use it to adjust the separation level between text and photo in text/photo mode or text/silver halide mode.	-3 to +3
K-ADJ	Use it to correct the black text mechanism.	-3 to +3
ATT-RTN1	Use it to add a single rotation to attraction rotation for single-sided copying and copying on the 1st side of double-sided copying using plain paper (full color).	0 to 1
ATT-RTN2	Use it to add a single rotation to attraction rotation for copying on the 2nd side of a double-sided copy using plain paper (full color).	
ATT-RTN3	Use it to add a single attraction rotation for single-sided copying and copying on the 1st side of a double-sided copy using thin paper (full color).	
ATT-RTN4	Use it to add a single rotation to attraction rotation for copying on the 2nd side of a double-sided copy using thin paper (full color).	
BC-ADJ	Use it to adjust the color recognition range when pattern processing is not performed.	-3 to +3 A higher setting will decrease the recognition range (i.e., a light color or a dark color will be identified as white or black, respectively).
ACS-ADJ	Use it to adjust the color recognition sensitivity for ACS.	-6 to +6

SENS-ADJ

Adjusts sensor-related items.

Level 3	Description	Remarks
CLN-TH	Use it to enter a thermal correction value for the pre-cleaning paper sensor (PS71).	2300 to 5500 Unit: mV
CLN-TMP	Use it to enter a thermal correction value for the pre-cleaning paper sensor (PS71).	0 to 60 Unit: °C When you have replaced the CPU PCB or initialized the RAM of the DC-CPU, be sure to enter the values recorded on the service label. If you have replaced the pre-cleaning paper sensor or the photosensitive drum, or removed the sensor unit, be sure to execute COPIER>FUNCTION>SENS-ADJ>CLN-OFST after cleaning the sensor unit.

HV-SP-AC   **COPIER>ADJUST**

Adjusts the separation charging AC high-voltage output by condition.

Level 3	Description	Remarks
HV-SP (Note 1)	Use it to adjust the separation AC high-voltage output.	-4 to +4 Unit: 0.5 kV
SP-N1	Use it to adjust the separation charging bias for single-sided copying and copying on the 1st side of a double-sided copy using plain paper.	-4 to +4 Unit: 0.5 kV The copier may be adapted to the site of installation (temperature, humidity) by changing its various settings. For this mode, you will find settings grouped into three zones (A, B, C). On the Level 3 item screen (page 1), be sure to adjust Level 3 items of the appropriate zones (TEMP, ABS-HUM).
SP-N2	Use it to adjust the separation charging bias for copying on the 2nd side of a double-sided copy using plain paper.	
SP-T1	Use it to adjust the separation charging bias for one-sided copying and when copying on the 1st side of a double-sided copy using thick paper.	
SP-T2	Use it to adjust the separation charging bias when copying on the 2nd side of a double-sided copy using thick paper.	
SP-UT1	Use it to adjust the separation charging bias for single-sided copying and when copying on the 1st side of a double-sided copying using extra thick paper.	Division by Moisture Content Zone A: 0 to 6.17 g Zone B: 6.18 to 18.40 g Zone C: 18.41 g or more
SP-UT2	Use it to adjust the separation charging bias when copying on the 2nd side of a double-sided copy using extra thick paper.	
SP-S1-1	Use it to adjust the separation charging bias for single-sided copying and copying on the 1st side of a double-sided copy using special paper 1.	
SP-S2-1	Use it to adjust the separation charging bias for single-sided copying and copying on the 1st side of a double-sided copy using special paper 2.	
SP-OHP	Use it to adjust the separation charging bias when using transparencies.	
SP-POST	Use it to adjust the separation charging bias when using postcards.	
SP-L1	Use it to adjust the separation charging bias for single-sided copying and when copying on the 1st side of a double-sided copy using thin paper.	
SP-L2 (Note 1)	Use it to adjust the separation charging bias when copying on the 2nd side of a double-sided copy using thin paper.	

Note 1: Execute this mode upon replacement of a CPU PCB or initialization of the RAM. The settings will be returned to standard settings, requiring you to enter the appropriate settings. Be sure to record any new settings on the service label.

HV-PSTCL   COPIER>ADJUST

Adjusts the post-cleaning high-voltage output.

Level 1	Description	Remarks
HV-PSTCL (Note 1)	Adjusting the Post-Cleaning High Voltage · Increase the setting if a width of about 5 cm along the leading edge of paper is dark when making halftone copies.	-6 to +6 Unit: 20 μA

Note 1: Execute this mode upon replacement of a CPU PCB or initialization of the RAM. The settings will be returned to standard settings, requiring you to enter the appropriate settings. Be sure to record any new settings on the service label.

Feeder-Related Items   FEEDER>ADJUST

Level 3	Description	Remarks
ADJ-RX	Use it to adjust the registration in sub scanning direction with the feeder in use.	-50 to +50 Unit: 0.1 mm
ADJ-RY	Use it to adjust the registration in main scanning direction with the feeder in use.	
ADJ-DX	Use it to adjust the registration in sub scanning direction with the feeder in use in manual mode.	
ADJ-DY	Use it to adjust the registration in main scanning direction with the feeder in use in manual feed mode.	

Projector-Related Items   PRJ>ADJUST

| Level 3	Description	Remarks
DS-PRJ	Use it to adjust the slice level for projection area detection with the projector in use.	0 to 31 Standard: 28
DS-OHP	Use it to adjust the slice level for original detection in reference to the reference sheet of film (e.g., 6x6, 8x10) placed on the copyboard glass with the projector in use.	0 to 31 Standard: 22
RD-XS RD-XE RD-YS RD-YE	Use it to adjust the read area when the original detection mechanism is off or when original detection fails even when the original detection mechanism is on with the projector in use.	-300 to +300 Unit: 0.06 mm Standard: 0
DA-XS DA-XE DA-YS DA-YE	Use it to adjust the read area when the original detection mechanism is on with the projector in use. · This is also used for the read area when the original detection mechanism is off in copyboard mode.	-99 to +99 Standard: 0 XS, XE Unit: 0.11 mm YS, YE Unit: 0.06 mm
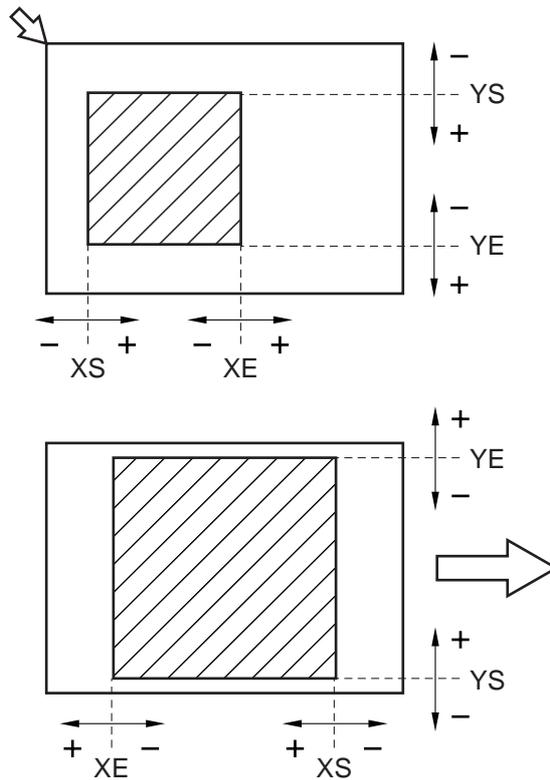
Figure 4-12

PRJ>ADJUST

Level 3	Description	Remarks
NEGA-B NEGA-G NEGA-R	Use it to adjust the target value for shading correction when copying negative film with the projector in use.	-100 to +100 A higher value darkens the color. B → Y G → M R → C
POSI-B POSI-G POSI-R	Use it to adjust the target value for shading correction when copying positive film with the projector in use.	
N-LMT	Use it to change the limit for the projector lamp in negative normal mode with the projector in use	0 to 255
N-G-LMT	Use it to change the limit for the projector lamp in negative copyboard mode with the projector in use.	
P-LMT	Use it to change the limit for the projector in positive normal mode with the projector in use.	
P-G-LMT	Use it to change the limit for the projector in positive copyboard mode with the projector in use.	
OHP-LMT	Use it to change the limit for the projector in transparency mode with the projector in use.	
P-DA-XS P-DA-XE P-DA-YS P-DA-YE	Use it to adjust the degree of the positive film original frame erasing mechanism with the projector in use.	-99 to +99 Unit: 0.6 mm (approx.) Standard: XS=24 XE=8 YS=32 YE=24
N-DA-XS N-DA-XE N-DA-YS N-DA-YE	Use it to adjust the degree of negative film original frame erasing mechanism with the projector in use.	-99 to +99 Unit: 0.6 mm (approx.) Standard: 50
O-DA-XS O-DA-XE O-DA-YS ODAS-YE	Use it to adjust the degree of transparency film original erasing mechanism with the projector in use.	-99 to +99 Unit: 0.6 mm (approx.) Standard: XS=24 XE=8 YS=32 YE=24
CHNGR-X	Use it to adjust the position in main scanning direction with the projector rotary changer in use.	-99 to +99 Unit: 0.6 mm (approx.) Standard: 0
CHNGR-Y	Use it to adjust the position in sub scanning direction with the projector rotary changer in use.	

Editor-Related Items   **EDITOR>ADJUST**

Level 3	Description	Remarks
ED-X ED-Y (Note 1)	Use it to adjust the input coordinates in editor sub scanning (X) direction. Use it to adjust the input coordinates in editor main scanning (Y) direction.	-99 to +99 Unit: 0.13 mm (approx.) Standard: 0
LOOP-MB (Note 1)	Use it to adjust processing for reading images into memory when coloring in area select/color create mode. · A higher setting makes filling of gaps easier, but too high a setting can lead to bleeding.	0 to 3 Standard: 0
LOOP-TH (Note 1)	Use it to adjust the binary slice level for reading images into memory when coloring in area select/ color create mode. · A higher setting enables reading fine lines.	0 to 255 Standard: 192
MRK-MB	Use it to adjust processing for reading images into memory in marker select/point select mode. · A higher setting makes filling of gaps easier.	0 to 3 Standard: 0
MRK-TH	Use it to adjust the binary slice level for reading images into memory in marker select/point select mode. · A higher setting enable reading fine lines.	0 to 255 Standard: 128

Note 1: Execute this mode upon replacement of a CPU PCB or initialization of the RAM. The settings will be returned to standard settings, requiring you to enter the appropriate settings. Be sure to record any new settings on the service label.

E. FUNCTION (operation check mode)

COPIER>FUNCTION Items

Level 1	Level 2	Level 3	Description
FUNCTION	INSTALL	SPLY-Y	rotates the cylinder to supply Y developer to the developing assembly (OK key to start, Stop key to stop)
		SPLY-M	rotates the cylinder to supply M developer to the developing assembly (OK key to start, Stop key to stop)
		SPLY-C	rotates the cylinder to supply C developer to the developing assembly (OK key to start, Stop key to stop)
		SPLY-K	rotates the cylinder to supply Bk developer to the developing assembly (OK key to start, Stop key to stop)
		STIR-Y	stirs the developer inside the Y developing assembly (OK key to start; auto stop in about 2 min)
		STIR-M	stirs the developer inside the M developing assembly (OK key to start; auto stop in about 2 min)
		STIR-C	stirs the developer inside the C developing assembly (OK key to start; auto stop in about 2 min)
		STIR-K	stirs the developer inside the Bk developing assembly (OK key to start; auto stop in about 2 min)
		STIR-4	stirs the developer inside the four color developing assemblies in sequence (OK key to start; auto stop in about 9 min)
		INIT-Y	reads the initial value of the Y toner concentration signal SGNL, REF (OK key to start; auto stop)
		INIT-M	reads the initial value of the M toner concentration signal SGNL, REF (OK key to start; auto stop)
		INIT-C	reads the initial value of the C toner concentration signal SGNL, REF (OK key to start; auto stop)
		INIT-K	reads the initial value of the Bk toner concentration signal SGNL, REF (OK key to start; auto stop)
		INIT-4	reads the initial values of the 4 color toner concentration signals SGNL, REF in sequence (OK key to start; auto stop)
		RECV-Y	rotates the cylinder to draw the developer from the Y developing assembly (OK key to start; Stop key to stop)
		RECV-M	rotates the cylinder to draw the developer from the M developing assembly (OK key to start; Stop key to stop)
		RECV-C	rotates the cylinder to draw the developer from the C developing assembly (OK key to start; Stop key to stop)
		RECV-K	rotates the cylinder to draw the developer from the Bk developing assembly (OK key to start; Stop key to stop)
		HP-STR-Y	stirs the toner inside the Y hopper at time of installation (OK key to start; auto stop)

Cont'd

		HP-STR-M	stirs the toner inside the M hopper at time of installation (OK key to start; auto stop)
		HP-STR-C	stirs the toner inside the C hopper at time of installation (OK key to start; auto stop)
		HP-STR-K	stirs the toner inside the Bk hopper at time of installation (OK key to start; auto stop)
		HP-STR-4	stirs the toner inside the four color hoppers at time of installation (OK key to start; auto stop)
		INIT-D	reads black toner concentration sensor output data once again (OK key to start; auto stop)
		INIT-P	for R&D
CCD	CCD-ADJ		executes shading correction using the standard white plate (OK key to start; auto stop, indicating END for normal and ERR for error)
LASER	POWER	---	turns on the laser output for laser power adjustment (OK key to start; Stop key to stop)
	T-V00-ON	---	turns on the laser for checking T-V00 (OK key to start; Stop key to stop)
	T-VFF-ON	---	turns on the laser for checking T-VFF (OK key to start; Stop key to stop)
	P3V00-ON	---	turns on the laser for checking P3-V00 (OK key to start; Stop key to stop)
	P3-V1-ON	---	turns on the laser for checking P3-VFF-1 (OK key to start; Stop key to stop)
	P3-V2-ON	---	turns on the laser for checking P3-VFF-2 (OK key to start; Stop key to stop)
	P3-V3-ON	---	turns on the laser for checking P3-VFF-3 (OK key to start; Stop key to stop)
	P3-V4-ON	---	turns on the laser for checking P3-VFF-4 (OK key to start; Stop key to stop)
ATTRACT	ATT-CHK		selects a point of attraction on the transfer during ATT-ON (1: 2-sheet retention of sides B and A; 2: side A retention; 3: side B retention)
	ATT-ON		executes attraction of copy paper to the transfer drum according to ATT-CHK settings (OK key to start; auto stop)
	RGST-CHK		selects a point of attraction on the transfer during RGST-ON (1: 2-sheet retention of sides B and A; 2: side A retention; 3: side B retention)
	RGST-ON		executes printing for checking the point of registration (side of attraction) using C according to RGST-CHK settings (OK key to start; auto stop)
	TR1-CHK		selects a point of attraction on the transfer drum during TR1-ON (1: 2-sheet retention of sides B and A; 2: side A retention; 3: side B retention)
	TR1-ON		executes printing for checking a 1-mm leading edge margin according to TR1-CHK settings (1: 2-sheet retention of sides B and A; 2: side A retention; 3: side B retention)
	TR2-CHK		selects a point of attraction on the transfer drum during TR2-ON (1: 2-sheet retention of sides B and A; 2: side A retention; 3: side B retention)

		TR2-ON	executes printing for checking an 8-mm leading edge margin according to TR2-CHK settings (OK key to start; auto stop)
DPC	DPC		executes measurement of potential on the photosensitive drum (OK key to start; auto stop)
	OFST		executes offset adjustment of the potential measurement circuit of the photosensitive drum (OK key to start; auto stop)
	INIT		executes initialization of the photosensitive drum potential measurement data (OK key to start; auto stop)
CST	C2-STMTR		stores paper width detection reference point 1 for STMTR paper in cassette 2 (OK key to start; auto stop)
	C2-A4R		stores paper width detection reference point 2 for A4R paper in cassette 2 (OK key to start; auto stop)
	C3-STMTR		stores paper width detection reference point 1 for STMTR paper in cassette 3 (OK key to start; auto stop)
	C3-A4R		stores paper width detection reference point 2 for A4R paper in cassette 3 (OK key to start; auto stop)
	MF-A4R		stores paper width detection reference point 1 for A4R paper in multifeeder (OK key to start; auto stop)
	MF-A6R		stores paper width detection reference point 2 for A6R paper in multifeeder (OK key to start; auto stop)
	MF-A4		stores paper width detection reference point 3 for A4 paper in multifeeder (OK key to start; auto stop)
CLEANING	KCLN		rotates the polishing roller while rotating the transfer drum (OK key to start and rotate for about 3 min; auto stop)
FIXING	NIP-CHK		generates output for measuring the fixing nip with (OK key to start; cyan image output generated and delivered automatically)
	PUMP-ON		turns on the fixing oil pump (OK key to start; Stop key to stop)
PANEL	LCD-CHK		checks the LCD for missing dots (OK key to start; all dots turned on, and changed to blue; Stop key to stop)
	LED-CHK		starts a check on the LEDs on the control panel (OK key to start; LEDs turned on in sequence)
	LED-OFF		ends a check on the LEDs on the control panel
	KEY-CHK		starts a check on key inputs from the control panel (press on highlighted item to end)
	TOUCHCHK		checks the touch panel of the control panel (+ indicated on LCD pressed repeatedly to move through highlighted items)
PART-CHK	CL		selects each clutch (enter parts No., and press OK key to select)
	CL-ON		starts the operation of the clutch selected by 'CL' (OK key to start; Stop key to stop)
	FAN		selects each key (enter part No., and press OK key to select)
	FAN-ON		starts the operation of the fan selected by 'FAN' (OK key to start; stop key to stop)

Cont'd   Cont'd

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	MTR	selects each motor (enter the part No., and press the OK key to select)
	MTR-ON	starts the operation of the motor selected in 'MTR' (OK key to start; auto stop in 20 sec)
	SL	selects each solenoid (enter part No., and press OK key to select)
	SL-ON	starts the operation of the solenoid selected in 'SL' (OK key to start; Stop key to stop)
	SHV	selects each high-voltage output (enter high-voltage No., and press OK to select)
	SHV-ON	starts operation of the high-voltage output selected in 'SHV' (OK key to start; auto stop)
CLEAR	ERR	clears an error code (E000, E004, E005, E008, E020, E717; OK key to start; turn off and then on power switch)
	DC-CON	initializes the RAM of the DC-CPU (OK key to start)
	R-CON	initializes the RAM of the R-CPU (OK key to start)
	MMI-COPY	initializes the RAM of the PANEL-CPU (OK key to start)
	SERVICE	initializes the backup data of service mode (OK key to start)
	JAM-HIST	clears the jam history (OK key to start)
	ERR-HIST	clears the error history (OK key to start)
	E354-CLR	-
	E355-CLR	-
MISC-R	SCANLAMP	turns on the scanning lamp (OK key to start; auto stop after several sec)
	SC-MOVE	starts scanner movement (OK key to start; 1: HP to A, 2: HP to B, 3: HP to C, 4: HP)
	RESERVE1	for R&D
	RESERVE2	for R&D
	RESERVE3	for R&D
	RESERVE4	for R&D
MISC-P	DRUM-ROT	rotates the photosensitive drum to rotate idly for a specific period of time (OK key to start; auto stop)
	POWEROFF	executes a check on the operation of auto power-off (OK key to start)
	B-HP	rotates the attraction/transfer locking cam motor to move the cam to HP (OK key to start; auto stop)
	B-ATT-TR	rotates the attraction/transfer locking cam motor to move the cam to the attraction/transfer position (OK key to start; auto stop)
	B-TR	rotates the attraction/transfer locking cam motor to move the cam to the transfer position (OK key to start; auto stop)
	B-CLN	rotates the attraction/transfer locking cam motor to move the cam to the transfer drum cleaning position (OK key to start; auto stop)
SENS-ADJ	CLN-OFST	starts thermal correction operation of the pre-cleaning paper sensor (PS72; OK key to start; auto stop)

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PRJ>FUNCTION Items

Level 1	Level 2	Level 3	Description
FUNCTION		LAMP	drives the projector lamp for a specific period of time (OK key to start; auto stop)
		CCD	reads in data and executes gain adjustment at time of projector installation (OK key to start; auto stop)

INSTALL   **COPIER>FUNCTION**

Used at time of installation.

Level 3	Description	Remarks
SPLY-Y SPLY-M SPLY-C SPLY-K	Use it to rotate the developing cylinder to supply a specific color developer to the developing assembly. Using the Item 1) Select an item (to highlight), and press the OK key. 2) To stop, press the Stop key.	
STIR-Y STIR-M STIR-C STIR-K	Use it to stir the developer inside a specific color developing assembly. Using the Item 1) Select an item (to highlight), and press the OK key. 2) The operation will stop automatically in about 2 min.	
STIR-4	Use it to stir the developer in the four developing assemblies in sequence. 1) Select the item (to highlight), and press the OK key. 2) The operation will stop automatically in about 9 min.	
INIT-Y INIT-M INIT-C INIT-K	Use it to read the initial value of a specific toner concentration signal SGNL, REF. · The screen (COPIER>ADJUST>DENS) will show the reading. Be sure to record it on the service label. Using the Item 1) Select the item (to highlight), and press the OK key. 2) The operation will stop automatically in about 2 min.	
INIT-4	Use it to read the initial value of the four color toner concentration signals SGNL, REF in sequence. · The screen (COPIER>ADJUST>DENS) will show the readings. Be sure to record them on the service label. Using the Item 1) Select the item (to highlight), and press the OK key. 2) The operation will stop automatically in about 9 min.	
RECV-Y RECV-M RECV-C RECV-K	Use it to rotate the developing cylinder, thereby drawing the developer from a specific color developing assembly. Using the Item 1) Select an item (to highlight), and press the OK key. 2) To stop, press the stop key. **Note:** You will use this mode during installation.	

Level 3	Description	Remarks
HP-STR-Y HP-STR-M HP-STR-C HP-STR-K	Use it to stir the toner inside a specific color hopper to prevent blocking at time of installation and hopper unit replacement. Using the Item 1) Select an item (to highlight), and press the OK key. 2) The operation will stop automatically in about 30 sec. **Note:** This item is designed to prevent blocking of toner supplied to an empty hopper at high speed, as occurring at time of installation or hopper unit replacement.	
HP-STR-4	Use it to stir the toner inside the four color hoppers to prevent blocking at time of installation or hopper unit replacement. Using the Item 1) Select the item (to highlight), and press the OK key. 2) The operation will stop automatically in about 2 min. **Caution:** This item is designed to prevent blocking of toner supplied to empty hoppers at high speed, as occurring at time of installation or hopper unit replacement.	
INIT-D	Use it to read the concentration sensor output data once again after cleaning the black toner concentration sensor to suit the light reflected by the photosensitive drum. Using the Item 1) Select the item (to highlight), and press the OK key. 2) The operation will stop automatically.	
INIT-P	for R&D	

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CCD   COPIER>FUNCTION

Executes automatic adjustment of CCD-/shading-related items.

Level 3	Description	Remarks
CCD-ADJ	Use it to execute shading correction using the standard white plate. Using the Item 1) Select the item (to highlight), and press the OK key. 2) The operation will stop automatically, and the result will be indicated. **Caution:** Do not open the front cover while executing this mode. Otherwise, the CCD adjustment may fail.	END: normal ERR: error* *Try executing the item once again. Execute this item if you have replaced the CCD unit, scanning lamp, image processor, or the standard white plate.

LASER

Adjusts laser-related items.

Level 3	Description	Remarks
POWER	Use it to turn on the laser output for adjusting the laser power.	OK key to start; Stop key to stop
T-V00-ON	Use it to turn on the laser output when checking T-V00.	
T-VFF-ON	Use it to turn on the laser output when checking T-VFF.	
P3V00-ON	Use it to turn on the laser output when checking P3-V00.	
P3-V1-ON	Use it to turn on the laser output when checking P3-VFF-1.	
P3-V2-ON	Use it to turn on the laser output when checking P3-VFF-2.	
P3-V3-ON	Use it to turn on the laser output when checking P3-VFF-3.	
P3-V4-ON	Use it to turn on the laser output when checking P3-VFF-4.	

ATTRACT   **COPIER>FUNCTION**

Executes attraction point auto adjustment.

Level 3	Description	Remarks
ATT-CHK	Use it to select a point of attraction on the transfer drum during ATT-ON. 1: 2-sheet retention (sides B and A) 2: side A retention 3: side B retention	
ATT-ON	Use it to execute attraction of copy paper to the transfer drum according to ATT-CHK settings. This item uses the source of paper selected before starting service mode. Using the Item 1) Select an item (to highlight), and press the OK key. 2) The operation will stop automatically.	
RGST-CHK	Use it to select the point of attraction on the transfer drum during RGST-ON. 1: 2-sheet retention (sides B and A) 2: side A detecting 3: side B retention	
RGST-ON	Use it to execute printing for checking the point of registration (side of attraction) using C according to RGST-CHK settings. This mode uses the source of paper selected before starting service mode. Using the Item 1) Select the item (to highlight), and press the OK key. 2) The operation will stop automatically.	
TRI-CHK	Use it to select a point of attraction on the transfer drum during TR1-ON. 1: 2-sheet retention (sides B and A) 2: side A detecting 3: side B retention	
TRI-ON	Use it to execute printing for checking a 1-mm leading edge margin according to TR1-CHK settings. This mode uses the source of paper selected before starting service mode. Using the Item 1) Select the item (to highlight), and press the OK key. 2) The operation will stop automatically.	

COPIER>FUNCTION

Level 3	Description	Remarks
TR2-CHK	Use it to select a point of attraction on the transfer drum during TR2-ON. 1: 2-sheet retention (sides B and A) 2: side A detecting 3: side B retention	
TR2-ON	Use it to execute printing for checking an 8-mm leading edge margin according to TR2-CHK settings. This mode uses the source of paper selected before starting service mode. Using the Item 1) Select an item (to highlight), and press the OK key. 2) The operation will stop automatically.	

DPC

Measures the potential of the photosensitive drum.

Level 3	Description	Remarks
DPC	Use it to execute measurement of the potential of the photosensitive drum. Using the Item 1) Select the item (to highlight), and press the OK key. 2) The operation will stop automatically.	
OFST	Use it to execute offset adjustment of the potential measurement circuit of the photosensitive drum. Using the Item 1) Select the item (to highlight), and press the OK key. 2) The operation will stop automatically.	
INIT	Use it to execute initialization of the measurement data on the potential of the photosensitive drum if DPC cannot be executed normally. Using the Item 1) Select the item (to highlight), and press the OK key. 2) The operation will stop automatically.	

CST   COPIER>FUNCTION

Executes cassette/multifeeder size auto adjustment.

Level 3	Description	Remarks
C2-STMTR C2-A4R C3-STMTR C3-A4R	Use it to store the paper width detection reference point for cassette 2/3 (for CLC1150, cassette 3). Using ht Item 1) Adjust the side guide pal of the bottommost cassette to STMTR. 2) Select C2-STMTR or C3-STMTR (to highlight), and press the OK key. 3) Likewise, store a reference point for A4R size.	STMTR width: 139.5 mm A4R width: 210 mm For fine adjustment after storing a reference point, use paper width basic value adjustment in ADJUST>CST-ADJ.
MF-A4R MF-A6R MF-A4	Use it to store the paper width detecting reference point for the multifeeder. Using the Item 1) Place A4R paper in the multifeeder, and adjust the side guide to A4R. 2) Select MF-A4R (to highlight), and press the OK key. 3) Likewise, store the reference point for A6R and A4.	A4R width: 210 mm A6R width: 105 mm A4 width: 297 mm For fine adjustment after storing a reference point, use paper width basic value adjustment in ADJUST>CST-ADJ.

CLEANING

Checks cleaning operation.

Level 3	Description	Remarks
KCLN	Use it to rotate the transfer drum while keeping the polishing roller in contact. Using the Item 1) Select the item (to highlight), and press the OK key. 2) The operation will stop automatically in about 5 min.	You cannot stop this mode before the ongoing job ends.

FIXING   **COPIER>FUNCTION**

Executes automatic adjustment of fixing assembly-related items.

Level 3	Description	Remarks
NIP-CHK	Use it to generate an output for measuring the fixing nip width. This mode uses the source of paper selected before service mode is started. Using the Item 1) Make about 20 copies of the Test Sheet in A4. 2) Select the item (to highlight), and press the OK key. 3) A cyan image will automatically be prepared and discharged. 4) Measure the width of the area indicated in the figure. Note: b and c are points 10 to 15 mm from the sides of paper.	
PUMP-ON	Use it to impregnate the felt with oil by running the fixing oil pump for about 10 min when replacing the oil applying felt. Using the Item 1) Select the item (to highlight), and press the OK key. · The fixing motor will rotate, and the fixing oil pump will turn on. 2) Press the Stop key to stop.	
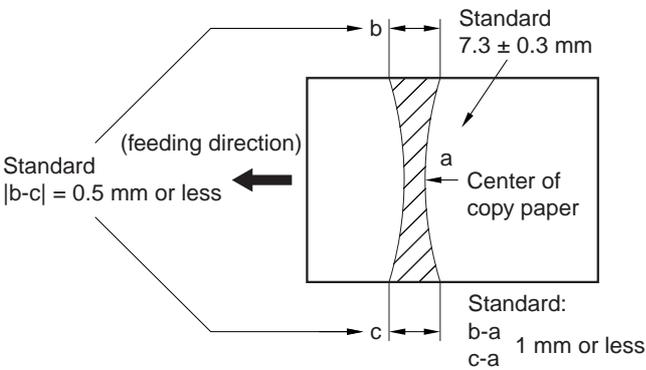
PANEL   COPIER>FUNCTION

Checks the activation of the indicators on the control panel.

Level 3	Description	Remarks
LCD-CHK	Use it to check the LCD for missing dots. Using the Item 1) Select the item (to highlight), and press the OK key. · The entire LCD will alternately turn on white, and then blue. 2) To stop, press the Stop key.	
LED-CHK	Use it to start a check on the LEDs on the control panel. Using the Item 1) Select the item (to highlight), and press the OK key. · The LEDs on the control panel will turn on in sequence. 2) To stop, press LED-OFF.	
LED-OFF	Use it to end a check on the LEDs on the control panel. 1) Press the item (highlighted) to end the operation.	
KEY-CHK	Use it to start a check on the key inputs from the control panel. Using the Item 1) Select the item (to highlight). 2) Press any key to check. If normal, the corresponding character will appear on the LCD. 3) To stop, press KEY-CHK (to highlight) once again.	See Table 4-4.
TOUCHCHK	Use it to adjust the coordinates of the touch panel on the control panel. Using the Item 1) Select an item (to highlight), and press the OK key. 2) Press the nine +s appearing on the touch panel in sequence. 3) To stop, press TOUCH-CHK (to highlight) once again.	This is to match the coordinates representing a point on the touch panel and the LCD. Execute this mode if you have replaced the LCD.

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Input Keys and Indications   COPIER>FUNCTION

Key	Indication	Key	Indication
Counter Check	BILL	Start	START
ACS	ACS	Clear	CLEAR
Full Color	F-COLOR	0 to 9	0 to 9
Black	BLACK	ID	ID
Original Recognition	SIZE	Interrupt	INTERRUPT
Center Shift	C-SHIFT	Additional Function	USER
Energy Saver	STAND BY	Guide	?
Stop	STOP	Reset	RESET

Table 4-4

PART-CHK

Checks the operation of various loads.

Level 3	Description	Remarks
CL	Use it to select the clutch to check. Using the Item 1) Select the item (to highlight). 2) Enter the code of the clutch using the keypad. 3) Press the OK key.	See Table 4-5. Codes 13 through 20 are not used.
CL-ON	Use it to check the operation of the clutch selected using CL. 1) Select the item (to highlight), and press the OK key. · The clutch will tun on. 2) To stop, press the Stop key.	
FAN	Use it to select the fan to check. Using the Item 1) Select the item (to highlight). 2) Enter the code of the fan using the keypad. 3) Press the OK key.	See Table 4-6. Codes 12 through 20 are not used.
FAN-ON	Use it to check the operation of the fan selected using FAN. Using the Item 1) Select the item to select (to highlight), and press the OK key. · The fan will turn on. 2) To stop, press the Stop key.	
MTR	Use it to select the motor to check. Using the Item 1) Select the item (to highlight). 2) Enter the code of the motor. 3) Press the OK key.	See Table 4-7. Codes 8 through 20 are not used.

Level 3	Description	Remarks
MTR-ON	Use it to check the operation of the motor selected using MTR. Using the Item 1) Select the item (to highlight), and press the OK key. · The motor will turn on. 2) In about 20 sec, the operation will stop automatically.	
SL	Use it to select the solenoid to check. Using the Item 1) Select the item (to highlight). 2) Enter the code of the solenoid using the keypad. 3) Press the OK key.	See Table 4-8. Codes 10 through 20 are not used.
SL-ON	Use it to check the operation of the solenoid selected using SL. Using the Item 1) Select the item (to highlight), and press the OK key. · The solenoid will turn on. 2) To stop, press the Stop key.	
SHV	Use it to select the high-voltage output to check. Using the Item 1) Select the item (to highlight). 2) Enter the code of the high-voltage output using the keypad. 3) Press the OK key.	See Table 4-9. Codes 6 through 20 are not used.
SHV-ON	Use it to check the operation of the high-voltage output selected using SHV. Using the Item 1) Select the item (to highlight), and press the OK key. · The high-voltage output will turn on. 2) The operation will stop automatically after generating a specific high-voltage output.	

Codes and Clutches

Code	Name	Code	Name
0	duplexing feed clutch (CL14)	7	cassette 1 pickup clutch (CL11)
1	---	8	cassette 2 pickup clutch (CL12/DCL12)
2	registration clutch (CL9)	9	cassette 3 pickup clutch (CL13/DCL13)
3	multifeeder feed clutch (CL10)	10	not used
4	multifeeder pickup clutch (CL16)	11	postcard feed clutch (CL18)
5	deck pickup clutch (CL102)	12	buffer path clutch (CL1)
6	re-pickup clutch (CL15)	-	-

Table 4-5

Codes and Fans   COPIER>FUNCTION

Code	Name	Code	Name
0	electrical unit cooling fan (FM8)	6	not used
1	IP cooling fan (FM7)	7	primary charging assembly fan (FM3)
2	exhaust fan (FM2)	8	delivery cooling fan (FM11)
3	ozone suction fan (FM5)	9	original exposure cooling fan 1 (FM1)
4	toner suction fan (FM6)	10	not used
5	laser scanner motor cooling fan (FM4)	11	original exposure system cooling fan 2/3 (FM14/15)

Table 4-6

Codes and Motors

Code	Name	Code	Name
0	hopper motor (M10)	4	laser scanner motor (M3)
1	transfer drum cleaner brush motor (M8)	5	fixing motor (M5)
2	not used	6	drum motor (M2)
3	duplexing motor (M14)	7	main motor (M4)

Table 4-7

Codes and Solenoids

Code	Name	Code	Name
0	multifeeder pickup solenoid (SL14)	5	pickup roller 3 solenoid (SL9/DSL9)
1	deck pickup solenoid (SL101)	6	buffer path solenoid 1 (SL1)
2	duplexing paper feed roller solenoid (SL13)	7	buffer path solenoid 2 (SL2)
3	pickup roller 1 solenoid (SL7)	8	attraction roller solenoid (SL6)
4	pickup roller 2 solenoid (SL8/DLS8)	9	separation claw solenoid (SL4)

Table 4-8

Codes and High-Voltage Outputs   COPIER>FUNCTION

Code	High-voltage output	Description
0	---	Absence of high-voltage output
1	primary output, grid output	drum motor ON pre-exposure lamp ON photosensitive drum 1 rotation primary output, grid output (500 V) ON (wait for stop command; equivalent of photosensitive drum 10 rotations) primary output, grid output OFF photosensitive drum 1 rotation pre-exposure lamp OFF drum motor OFF
2	primary output, grid output, M color developing bias output	drum motor ON pre-exposure lamp ON photosensitive drum 1 rotation primary output, grid output (500 V) ON M color developing assembly locked, developing bias (AC/DC) ON (wait for stop command; equivalent of photosensitive drum 10 rotations) M developing assembly unlocked, developing bias (AC/DC) OFF primary output, grid output OFF photosensitive drum 1 rotation pre-exposure lamp OFF drum motor OFF
3	primary output, grid output, C developing bias output	drum motor ON pre-exposure lamp ON photosensitive drum 1 rotation primary output, grid output (500 V) ON C developing assembly locked, developing bias (AC/DC) ON (wait for stop command; equivalent of photosensitive drum 10 rotations) C developing assembly unlocked; equivalent of 10 rotations) primary output, grid output OFF photosensitive rum 1 rotation pre-exposure lap OFF drum motor OFF

Table 4-9a

Code	High-voltage output	Description
4	primary output, grid output, Y developing assembly bias output	drum motor ON pr-exposure lamp ON photosensitive drum 1 rotation primary output, grid output (500 V) ON Y developing assembly locked, developing bias (AC/DC) ON (wait for stop command; equivalent of photosensitive drum 10 rotations) Y developing assembly unlocked, developing bias (AC/DC) OFF primary output, grid output OFF photosensitive drum 1 rotation pre-exposure lamp OFF drum motor OFF
5	primary output, grid output, Bk color developing bias output	drum motor ON pre-exposure lamp ON photosensitive drum 1 rotation primary output, grid output (500 V) ON Bk color developing assembly locked, developing bias (AC/DC) ON (wait for stop command; equivalent of photosensitive drum 10 rotations) Bk developing assembly unlocked, developing bias (AC/DC) OFF primary output, grid output OFF photosensitive drum 1 rotation pre-exposure lamp OFF drum motor OFF

Table 4-9b

CLEAR   **COPIER>FUNCTION**

Initializes the RAM, and resets the jam/ error history.

Level 3	Description	Remarks
ERR	Use it to reset an error code (E000, E004, E005, E008, E020, E717). Using the Item 1) Select the item (to highlight), and press the OK key. 2) Turn off and then on the power switch.	Be sure to turn off and then on the power switch. Note: 'E020' is indicated only when the detail code is 'xxE0'.
DC-CON	Use it to initialize the RAM of the DC-CPU on the CPU PCB. Using the Item 1) Select the item (to highlight), and press the OK key. 2) Turn off and then on the power switch.	Be sure to turn off and then on the power switch.
R-CON	Use it to initialize the RAM of the R-CPU on the CPU PCB. 1) Select the item (to highlight), and press OK key. 2) Turn off and then on the power switch.	Be sure to turn off and then on the power switch.
MMI-COPY	Use it to initialize the RAM of the PANEL-CPU on the CPU PCB. Using the Item 1) Select the item (to highlight), and press the OK key. 2) Turn off and then on the power switch.	Be sure to turn off and then on the power switch.
SERVICE	Use it to reset the backup data of service mode. Using the Item 1) Select the item (to highlight), and press the OK key. 2) Turn off and then on the power switch.	Be sure to turn off and then on the power switch.
JAM-HIST	Use it to reset the jam history. Using the Item 1) Select the item (to highlight), and press the OK key. · The jam history will be reset.	
ERR-HIST	Use it to reset the error history. Using the Item 1) Select the item (to highlight), and press the OK key. · The error history will be reset.	
E354-CLR	---	
E355-CLR	---	

MISC-R   COPIER>FUNCTION

Checks the operation of the reader unit.

Level 3	Description	Remarks
SCANLAMP	Use it t check the activation of the scanning lamp. Using the Item 1) Select the item (to highlight), and press the OK key. 2) The scanning lamp will remain on for several seconds, and then will turn off automatically.	
SC-MOVE	Use it to check the operation of the scanner. Using the Item 1) Select the item (to highlight), and press the OK key. 2) The scanner moves to point A, and '1' is indicated on the display. 3) Each press on the OK key causes the scanner to move as follows: HP → B → HP → C → HP. 4) The operation ends when the scanner moves to 4 (HP) in response to a press on the OK key. 1: HP → A → HP 2: HP → B → HP 1: HP → C 4: HP	
RESERVE 1 to 4	For R&D	

MISC-P

Checks the operation of the printer unit.

Level 3	Description	Remarks
DRUM-ROT	Use it to rotate the photosensitive drum idly for a specific period of time. Using the Item 1) Select the item (to highlight), and press the OK key. 2) The photosensitive drum rotates idly for 30 sec, and will stop automatically.	
POWEROFF	Use it to check the operation of the auto power-off mechanism. 1) Select the item (to highlight), and press the OK key. · The power switch will turn off automatically.	

COPIER>FUNCTION

Level 3	Description	Remarks
B-HP	Use it to rotate the attraction/transfer locking cam motor, thereby moving the cam to the home position (HP). Using the Item 1) Select the item (to highlight), and press the OK key. 2) The attraction/transfer locking cam will stop at HP.	
B-ATT-TR	Use it to rotate the attraction/transfer locking cam motor, thereby moving the cam to the point of attraction/transfer. Using the Item 1) Select the item (to highlight), and press the OK key. 2) The cam will move to the point of attraction/ transfer, and will stop automatically.	
B-TR	Use it to rotate the attraction/transfer locking cam motor, thereby moving the cam to the point of transfer. Using the Item 1) Select the item (to highlight), and press the OK key. 2) The cam will move to the point of transfer, and will stop automatically.	
B-CLN	Use it to rotate the attraction/transfer locking cam motor, thereby moving the cam to the transfer drum cleaning position. Using the Item 1) Select the item (to highlight), and press the OK key. 2) The cam will move to the transfer drum cleaning position, and will stop automatically.	

SENS-ADJ

Checks sensor-related operations.

Level 3	Description	Remarks
CLN-OFST	Use it to execute temperature correction for the pre-cleaning paper sensor (PS72). Using the Item 1) Select the item (to highlight), and press the OK key. 2) The operation will stop automatically. · The screen (COPIER>ADJUST>SENS-ADJ) will show the readings. Be sure to record them on the service label.	Execute this item when you have replaced the pre-cleaning paper sensor (PS72) or removed it for cleaning.

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Projector-Related Items   PRJ>FUNCTION

Level 3	Description	Remarks
LAMP	Use it to keep the lamp of the projector on for a specific period of time. Using the Item 1) Select the item (to highlight), and press the OK key. 2) The lamp of the projector will remain on for about 1 min, and will turn off automatically.	
CCD	Use it to read CCD gain adjustment and data at time of installing a projector. Using the Item 1) Select the item (to highlight), and press the OK key. 2) The operation will stop automatically.	Note: Do not execute this mode while the copier is warming up.

F. OPTION (settings mode)

COPIER>OPTION Items

Level 1	Level 2	Level 3	Description
OPTION	BODY	CCD-DISP	use it to switch data display on the DISPLAY>CCD screen (0: normal mode, 1: precious metal mode)
		CVR-TYPE	use it to enter a CVR version (0: normal, 1: new type)
		MODEL-SZ	use it to switch destination (0: AB (6R, 5E), 1: Inch (5R, 4E), 2: A (3R, 3E), 3: AB/Inch (6R, 5E)
		F-WEB	use it to change the frequency of turning on the fixing cleaning belt (1 through 255; default=1)
		PASCAL	use it to switch gradation correction data, contrast potential obtained by auto gradation correction (0: disable, 1: enable)
		PSCL-MD	use it to smooth out the gradations on an image from an external image controller (0: as before, 1: disable, 2: enable)
		EC-GLASS	use it to select the presence/absence of EC coating on the copyboard glass (0: absent, 1: present)
		LPSTCL-ON	use it to switch the post-cleaning charging mechanism (0: normal, 1: all environments)
	USER	METAL	use it to turn on/off precious metal mode (0: off, 1: on, default=0)
		OHP-MODE	use it to select the copy image maximum density when copying on transparencies (0: Dmax=1.3, 1: Dmax=1.6, default=0)
		COPY-LIM	use it to change the upper limit on the copy count (1 to 100)
		COUNTER1	use it to select a counter type (soft counter 1 on the control panel of a 120/230-V model) to suit the user or dealer (0: no counter; 1 through 95)
		COUNTER2	use it to select a counter type (soft counter 2 on the control panel of a 120/230-V model) to suit the user or dealer (0: no counter; 1 through 95)
		COUNTER3	use it to select a counter type (soft counter 3 on the control panel of a 120/2300V model) to suit the user or dealer (0: no counter; 1 through 95)
		COUNTER4	use it to select a counter type (soft counter 4 on the control panel of a 20/230-V model) to suit the user or dealer (0: no counter; 1 through 95)
		COUNTER5	use it to select a counter type (soft counter 5 on the control panel) to suit the user or dealer (0: no counter; 1 through 95)
		COUNTER6	use it to select a counter type (soft counter 6 on the control panel) to suit the user or dealer (0: no counter; 1 to 95)
		CONTROL	use it to enable copying, printing, and scanning without the control key, control card, or ID No. input.
		COLDOFST	for R&D
		MONO-SPD	for R&D
		PRJ-L-SP	use it to prohibit 2-side retention in color copying mode (other than black mono) with the projector in use (0: normal, 1: prohibit)

Cont'd   Cont'd

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		BKL-L-SP	use it to prohibit 2-side retention in color copying mode (other than black mono) with back light mode selected (0: normal, 1: prohibit)
CST		P-SZ-C1	use it to select a paper size for cassette (Table 13-708)
		P-SZ-C2	use it to select a paper size for cassette 2 (for CLC1150, cassette 1; Table 13-708)
ACC		DK-P	use it to select a paper size for the paper deck (0: A4, 1: B5, 2: LTR)
		COIN	use it to turn on/off the coin vender notation
INT-FACE		REMOTE	use it to make settings for connecting an external controller (0 to 7)
		B-CLR	use it to specify the presence/absence of a copy data controller (0: not connected, 1: connected)
		P-PRT-MF	Use it to set priority on manual settings data (paper size, paper type, duplexing) when manual feed is selected with an external image controller in use (0: priority on local, 1: priority on controller; 2: priority on controller; default=2)

PRJ>OPTION Items

Level 1	Level 2	Level 3	Description
OPTION ————————————		BK-LIGHT	not used

EDITOR>OPTION Items

Level 1	Level 2	Level 3	Description
OPTION ————————————		ED-MODE	use it to switch editor operation mode (0: prohibit input, 1: 1-point input, 2: continuous input)

BODY   **COPIER>OPTION**

Level 3	Description	Remarks
CCD-DISP	Use it to switch data display within the DISPLAY>CCD screen.	0: normal mode 1: precious metal mode
CVR-TYPE	Use it to enter a CVR version.	0: normal 1: new type
MODEL-SZ	Use it to switch the destination.	0: AB (6R, 5E) 1: Inch (5R, 4E) 2: A (3R, 3E) 3: AB/Inch (6R, 5E)
F-WEB	Use it to change the frequency of turning on the fixing cleaning belt.	1 to 255 default: 1
PASCAL	Use it to switch the gradation correction data, contrast potential obtained by auto gradation correction	0: use 1: do not use
PSCL-MD	Use it to smooth out the gradation of an image from an external image controller.	0: as before 1: do not use 2: smooth
EC-GLASS	Use it to specify the presence/absence of EC coating on the copyboard glass. · After specifying, be sure to turn off and then on the power switch.	0: coating provided 1: coating not provided
PSTCL-ON	Use it to switch the post-cleaning charging mechanism. · Take advantage of the item if memory or cyan/black dots appear on the edges of paper in a low humidity environment.	0: normal 1: ON in all environments

USER   **COPIER>OPTION**

Selects user-related settings.

Level 3	Description	Remarks
METAL	Use it to turn on and off precious mode.	0: off 1: on default: 0
OHP-MODE	Use it to select the copy image maximum density or copying on transparencies.	0: Dmax=1.3 1: Dmax=1.6 Default: 0
COPY-LIM	Use it to change the upper limit on the copy count.	1 through 100
COUNTER1 COUNTER2 COUNTER3 COUNTER4	Use it to select a counter type to suit the user or dealer (soft counter 1 through 4 on the control panel of a 120/230-V model).	0: do not indicate 1 to 95 See Table 4-10.
COUNTER5 COUNTER6	Use it to select a counter type to suit the use or dealer (soft counter 5/6 on the control panel).	0: do not indicate 1 to 95 See Table 4-10.
CONTROL	In the absence of a control key, control card, or ID No. input, copying, remote printing, or remote scanning is permitted with conditions by changing the last three digits of CONTROL. · Disabling Control Key with Conditions Note: See the Reference Table. · Disabling Control Card with Conditions Note: See the Reference Table.	Settings of each digit: 0 to 4 Standard for each digit: 0 CONTROL xxx →1st digit →2nd digit →3rd digit

Disabling Control Key with Conditions:

1st digit of CONTROL	Black-and-white copying	Remote printing	Remote scanning
0	NO	NO	NO
1	NO	NO	YES
2	NO	YES	YES
3	YES	YES	YES
4	YES	YES	YES

Disabling Control Card with Conditions:

2nd digit of CONTROL	Black-and-white copying	Remote printing	Remote scanning
0	NO	NO	NO
1	NO	NO	YES
2	NO	YES	YES
3	YES	YES	YES
4	YES	YES	YES

Level 3	Description	Remarks
CONTROL	· Disabling ID Number Input with Conditions	

3rd digit of CONTROL	Black-and-white copying	Remote printing	Remote scanning
0	NO	NO	NO
1	NO	NO	YES
2	NO	YES	YES
3	YES	YES	YES
4	YES	YES	YES

Note: See the Reference Table.

Reference Table

Counter type		Disabling control key with conditions	Disabling control card with conditions	Disabling ID No. input with conditions
Counter check screen counter		YES	YES	YES
CC-V	Card counter	YES	NO	YES
CC-X	Card counter	YES	NO	YES
-	Device* total	YES	YES	YES
ID No. counter		YES	YES	NO

Yes: increment the count.
No: do not increment the count.

Guide to the Reference Table
The counter on the Counter Check screen is incremented under all conditions; i.e., disabling control key, control card, or ID No. input with conditions.
1 For CC-V
In the case of '3' or '4' for black-and-white copying without a card, the CC-V card counter will not be incremented.
In the case of '2', '3', or '4' for remote printing without a card, the CC-V card counter will not be incremented.
In the case of '2' or '4' for remote printing, the CC-V card counter will not be incremented regardless of the presence/absence of a CC-V card.

*   Copy data controller or remote diagnostic device.

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Level 3	Description	Remarks
CONTROL	2 For CC-X The device* total counter is incremented under all conditions; i.e., disabling control key, control card, or ID No. input with conditions. In the case of '3' or '4' for black-and-white copying without a card, the CC-V card counter will not be incremented. In the case of '2', '3', or '4' for remote printing without a card, the CC-X card counter will not be incremented. In the case of '2' or '4' for remote printing, the CC-X card counter will be incremented regardless of the presence/absence of a CC-X card. 3 With ID No. Registration in Use For '3' or '4' for black-and-white copying without an ID No. input, the counter for the group in question for the ID. No. will not be incremented. For '2', '3', or '4' for remote printing without an ID No. input, the counter for the group in question for the ID No. will not be incremented. For '2' or '4' for remote printing, the counter for the group in question for the ID No. will not be incremented regardless of the presence/absence of an ID No. or password input. Example · When CONTROL is set to '2', In the absence of a control key, remote printing and remote scanning are possible. In the absence of a control card, no job is possible. In the absence of an ID No. input, no job is possible. · When CONTROL is set to '421', In the absence of a control key, only remote scanning is possible. In the absence of a control card, remote printing and remote scanning are possible. In the absence of an ID No. input, black-and-white copying, remote printing, are remote scanning are possible.	* copy data controller or remote diagnostic device.
COLDOFST	for R&D	
MONO-SPD	for R&D	

CST

Selects cassette-related settings.

Level 3	Description	Remarks
P-SZ-C1	Use it to select a paper size for cassette 1.	See Table 4-11.
P-SZ-C2	Use it to select a paper size for cassette 2 (for CLC1150, cassette 1).	

ACC

Selects accessory-related settings.

Level 3	Description	Remarks
COIN	Use it to turn on/off the coin vendor notation.	
DK-P	Use it to select a paper size for the paper deck.	0: A4 1: B5 2: LTR

INT-FACE

Selects interface-related settings.

Level 3	Description	Remarks
REMOTE	Use it to make settings when an external controller is connected. 0: local; priority on the settings selected on the copier. 1: remote 1; uses parameters selected on the controller, with the remaining settings from the copier 2: remote 2; uses parameters selected on the controller, with the remaining settings from the factory defaults of the copier ┌ **Note:** ───── If you selected '0' for this item, be sure to set all color balance settings under 'print color' of user mode (adjust/cleaning) to '+5'.	default: 2 Controller Parameters · original type (photo, auto, text) · sharpness · color balance Copier Parameters · density · background level adjustment · hue, saturation, etc.
B-CLR	Use it to specify the presence/absence of a copy data controller.	0: not connected (detached) 1: connected
P-PRT-MF	Use it to select priority on settings data for manual pickup with an external image controller in use (local or controller). 0: local; priority on the settings of the copier 1: remote 1; uses parameters selected on the controller, with the remaining settings from the copier 2: remote 2; uses parameters selected on the controller, with the remaining settings from the factory defaults of the copier	Controller Parameters · paper size · paper type · duplexing

Soft Counter Specifications

No.	Counter	Function	Color	Paper size	Count for double-sided sheet	Increment for large-size sheet
0	no indication	-	-	-	-	-
1	total 1	C+P	All	M	-	1
2	total 2	C+P	All	M	-	2
3	total (full color 1)	C+P	4C	M	-	1
4	total (full color 2)	C+P	4C	M	-	2
5	total (mono color)	C+P	Mono	M	-	1
6	total (black-and-white1)	C+P	Bk	M	-	1
7	total (black-and-white2)	C+P	Bk	M	-	2
8	total (large)	C+P	All	L	-	1
9	total (small)	C+P	All	S	-	-
10	copy 1	C	All	M	-	1
11	copy 2	C	All	M	-	2
12	copy (full color 1)	C	4C	M	-	1
13	copy (full color 2)	C	4C	M	-	2
14	copy (mono color 1)	C	Mono	M	-	1
15	copy (mono color 2)	C	Mono	M	-	2
16	copy (black-and-white 1)	C	Bk	M	-	1
17	copy (black-and-white 2)	C	Bk	M	-	2
18	copy (full color, large)	C	4C	L	-	1
19	copy (full color, small)	C	4C	S	-	-
20	copy (mono color, large)	C	Mono	L	-	1
21	copy (mono color, small)	C	Mono	S	-	-
22	copy (black-and-white, large)	C	Bk	L	-	1
23	copy (black-and-white, small)	C	Bk	S	-	-
24	copy (full color, large, double-sided)	C	4C	L	O	1
25	copy (mono color, small, double-sided)	C	4C	S	O	-
26	copy (mono color, large, double-sided)	C	Mono	L	O	1
27	copy (mono color, small, double-sided)	C	Mono	S	O	-
28	copy (black-and-white, large, double-sided)	C	Bk	L	O	1
29	copy (black-and-white, small, double-sided)	C	Bk	S	O	-

Table 4-10a

No.	Counter	Function	Color	Paper size	Count for double-sided sheet	Increment for large-size sheet
30	print 1	P	All	M	-	1
31	print 2	P	All	M	-	2
32	print (full color 1)	P	4C	M	-	1
33	print (full color 2)	P	4C	M	-	2
34	print (mono color 1)	P	Mono	M	-	1
35	print (mono color 2)	P	Mono	M	-	2
36	print (black-and-white 1)	P	Bk	M	-	1
37	print (black-and-white 2)	P	Bk	M	-	2

Table 4-10b

No.	Counter	Function	Color	Paper size	Count for double-sided sheet	Increment for large-size sheet
38	print (full color, large)	P	4C	L	-	1
39	point (full color, small)	P	4C	S	-	-
40	print (mono color, large)	P	Mono	L	-	1
41	print (mono color, small)	P	Mono	S	-	-
42	print (black-and-white, large)	P	Bk	L	-	1
43	print (black-and-white, small)	P	Bk	S	-	-
44	print (full color, large, double-sided)	P	4C	L	○	1
45	print (full color, small, double-sided)	P	4C	S	○	-
46	print (mono color, large, double-sided)	P	Mono	L	○	1
47	print (mono color, small, double-sided)	P	Mono	S	○	-
48	print (black-and-white, large, double-sided)	P	Bk	L	○	1
49	print (black-and-white, small, double-sided)	P	Bk	S	○	-
54	copy scan (full color, large)	S	4C	L	-	1
55	copy scan (full color, small)	S	4C	S	-	-
56	copy scan (black-and-white, large)	S	Bk	L	-	1
57	copy scan (black-and-white, small)	S	Bk	S	-	-
58	copy + print (full color, large)	C+P	4C	L	-	1
59	copy + print (full color, small)	C+P	4C	S	-	-
60	copy + print (black-and-white, large)	C+P	Bk	L	-	1
61	copy + print (black-and-white, small)	C+P	Bk	S	-	-
62	copy + print (black-and-white 2)	C+P	Bk	M	-	2
63	copy + print (black-and-white 1)	C+P	Bk	M	-	1
64	copy + print (full color + mono color, large)	C+P	4C+Mono	L	-	1
65	copy + print (full color + mono color, small)	C+P	4C+Mono	S	-	-
66	copy + print (full color + mono color , 2)	C+P	4C+Mono	M	-	2
67	copy + print (full color + mono color, 1)	C+P	4C+Mono	M	-	1
68	copy (full color + mono color, large)	C	4C+Mono	L	-	1
69	copy (full color + mono color, small)	C	4C+Mono	S	-	-

Table 4-10c

No.	Counter	Function	Color	Paper size	Count for double-sided sheet	Increment for large-size sheet
70	copy (full color + mono color, 2)	C	4C+Mono	M	-	2
71	copy (full color + mono color, 1)	C	4C+Mono	M	-	1
72	print (full color + mono color, large)	P	4C+Mono	L	-	1
73	print (full color + mono color, small)	P	4C+Mono	S	-	-
74	print (full color + mono color, 2)	P	4C+Mono	M	-	2
75	print (full color + mono color, 1)	P	4C+Mono	M	-	1
76	copy + print (large)	C+P	All	L	-	1
77	copy + print (small)	C+P	All	S	-	-
78	copy + print (2)	C+P	All	M	-	2
79	cop + ring (1)	C+P	All	M	-	1

Table 4-10d

No.	Counter	Function	Color	Paper size	Count for double-sided sheet	Increment for large-size sheet
80	copy (large)	C	All	L	-	1
81	copy (small)	C	All	S	-	-
82	print (large)	P	All	L	-	1
83	print (small-size)	P	All	S	-	-
84	total (mono-color, large)	C+P	Mono	L	-	1
85	total (mono-color, small)	C+P	Mono	S	-	-
86	total (black-and-white, large)	C+P	Bk	L	-	1
87	total (black-and-white, small)	C+P	Bk	S	-	-
88	copy scan (full-color)	S	4C	M	-	-
89	copy scan (black-and-white)	S	Bk	M	-	-
90	copy scan (large)	S	All	L	-	-
91	copy scan (small)	S	All	S	-	-
92	copy scan (total)	S	All	M	-	-
93	copy scan (large-size; 4)	S	All	L	-	-
94	copy scan (small-size; 4)	S	All	S	-	-
95	copy scan (total; 4)	S	All	M	-	-

Table 4-10e

Guide to the table
- Function
    C: copy, P: print, S: scan
- Color
    4C: 4-color full
    MONO: yellow, magenta, cyan
    Bk: black
    ALL: 4C, MONO, and Bk
- Paper Size
    L: large-size (larger than B4)
    S: small-size (B4 and smaller)
    M: both large and small
- Count at Duplexing
    ○: incremented by 1
    -: same as normal copying
- Count Increment for Large-Size Paper
    1: incremented by 1
    2: incremented by 2

Codes and Cassette Paper Sizes

Code	Notation	Paper	Code	Notation	Paper
01	A1	A1	21	LGL	Legal
02	A2	A2	22	K-LGL	Korean Government
03	A3R	A3R	23	K-LGLR	Korean Government R
04	A3	A3	24	FLSC	Foolscap
05	A4R	A4R	25	A-FLS	Australian
06	A4	A4	26	OFI	Foolscap
07	A5	A5	27	E-OFI	Oficio
08	A5R	A5R	28	B-OFI	Ecuadorian Officio
09	B1	B1	29	A-LTR	Bolivian Officio
10	B2	B2	30	A-LTRR	Argentine Letter
11	B3	B3	31	G-LTR	Argentine Letter-R
12	B4R	B4R	32	G-LTRR	Government Letter
13	B4	B4	33	A-LGL	Government Letter-R
14	B5R	B5R	34	G-LGL	Argentine Legal
15	B5	B5	35	FGLI	Government Legal
16	11x17	11x17	36	A-OFI	Folio
17	LTRR	Letter-R	37		Argentine Officio
18	LTR	Letter	38		
19	STMT	Statement	39		
20	STMTR	Statement-R	40	ALL	

Table 4-11

Projector-Related Items   PRJ>OPTION

Level 3	Description	Remarks
BK-LIGHT (not used)	Use it to enable or disable indication of a mode on the User screen when copying positive film with a protective sheet using back light BOX.	0: do not indicate 1: indicate default: 0

Editor-Related Items   EDITOR>OPTION

Level 3	Description	Remarks
ED-MODE	Use it to switch editor operation mode.	0: prohibit input 1: 1-point input 2: continuous input

G. PG (test print)

COPIER>TEST Items

Level 1	Level 2	Level 3	Description
TEST ———	PG ————	TYPE	use it to enter the type number of a test print, and press the Copy Start key to start printing (00: normal copying)
		TXPH	use it to switch the number of lines for test printing (0: 200 lines, 1: 400 lines, 2: 800 lines)
		THRU	use it to switch LUT for test printing (0: LUT present, 1: LUT absent)
		DENS-Y	use it to adjust the Y density for TYPE=05 during test printing (0 to 255; a higher setting darkens the image)
		DENS-M	use it to adjust the M density for TYPE=05 during test printing (0 to 255; a higher setting darkens the image)
		DENS-C	use it to adjust the C density for TYPE=05 during test printing (0 to 255; a higher setting darkens the image)
		DENS-K	use it to adjust the Bk density for TYPE=05 during test printing (0 to 255; a higher setting darkens the image)
		COLOR-Y	use it to set the Y output for each TYPE (0: no output, 1: output)
		COLOR-M	use it to set the M output for each TYPE (0: no output, 1: output)
		COLOR-C	use it to set the C output for each TYPE (0: no output, 1: output)
		COLOR-K	use it to set the Bk output for each TYPE (0: no output, 1: output)

PG   **COPIER>TEST**

Generates test prints.

Level 3	Description	Remarks
TYPE	Use it to enter the type No. of a test print, and press the Copy Start key to start printing.	00: normal copying See Table 4-12. Be sure to set it back to '00' at the end of test printing.
TXPH	Use it to switch the number of lines used for test printing.	0: 200 lines 1: 400 lines 2: 800 lines
THRU	Use it to switch LUT used for test printing.	0: LUT present 1: LUT absent
DENS-Y DENS-M DENS-C DENS-K		0 to 255
COLOR-Y COLOR-M COLOR-C COLOR-K	Use it to set the output (each color) for each TYPE. · For example, to generate on M mono test print, set COLOR-M to '1', and others to '0'.	0: do not generate 1: generate You can generate no more than one color.

Input Numbers and Test Prints

Input No.	Description	Input No.	Description
00	image from CCD (normal copying)	10	MCYK horizontal stripes (laser FF activation)
01	for R&D	11	for R&D
02	256 colors	12	MCYK 64 gradations
03	256 gradations	13	BGR64 gradations
04	16 gradations (17 gradations)	14	full color 16 gradations (17 gradations)
05	100% halftone	15	full color light area 16 gradations (17 gradations)
06	grid		
07	image position correction control pattern	16	MCYK horizontal stripes (laser A0 activation)
08	for R&D		
09	for R&D	-	-

Table 4-12

H. COUNTER (counter mode)

· You can check the number of times each mechanism has operated.

Resetting a Counter Reading
1) Select an item to highlight.
2) Press the Clear key on the control panel.
   The counter will be reset to '00000000'.
· Here, the notations "large-size" and "small-size" are used as follows:
   large size covers B4 or larger sheets
   small size covers sheets smaller than B4.

COPIER>COUNTER Items

Level 1	Level 2	Level 3	Description
COUNTER	TOTAL	SERVICE1	total counter 1 for service
		SERVICE2	total counter 2 for service
		TTL	total counter (copy + printer + synthesis)
		L-TTL	large-size copy total counter (copy+ printer + synthesis)
		S-TTL	small-size copy total counter (copy + printer + image synthesis)
		C-L-TTL	color large-size copy total counter (copy + print + synthesis)
		C-S-TTL	color small-size copy total counter (cop + print + synthesis)
		K-L-TTL	black large-size copy total counter (copy + print + synthesis)
		K-S-TTL	black small-size copy total counter (copy + print + synthesis)
		COPY	total copy counter
		L-COPY	large-size copy total counter
		S-COPY	small-size copy total counter
		C-L-COPY	color large-size copy total counter
		C-S-COPY	color small-size coy total counter
		K-L-COPY	black large-size copy total counter
		K-S-COPY	black small-size copy total counter
		PRINT	total print counter
		L-PRINT	large-size print total counter
		S-PRINT	small-size print total counter
		C-L-PRINT	color large-size print total counter
		C-S-PRINT	color small-size print total counter
		K-L-PRINT	black large-size print total counter
		K-S-PRINT	black small-size print total counter
		MIX	synthesis total counter
		L-MIX	large-size synthesis total counter
		S-MIX	small-size synthesis total counter
		4C-TTL	full color (4 colors) copy total counter
		Y-COPY	Y mono copy counter
		M-COPY	M mono copy counter
		C-COPY	C mono copy counter
		K-COPY	Bk mono copy counter
		PRJ	projector copy counter
		PS-XJ	PS-XJ total print count
		L-PS-XJ	PS-XJ large-size print total counter
		S-PS-XJ	PS-XJ small-size print total counter

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├─ SCANNER ──┬─ SC-TTL          scanner total scan counter
│            ├─ SC-COPY         scan counter during copying
│            ├─ SC-PRINT        scan counter during printing
│            └─ SC-PSXJ         PS-XJ scan counter
│
├─ PICK-UP ──┬─ C1              cassette 1 copy total counter
│            ├─ L-C1            cassette 1 large size copy total counter
│            ├─ S-C1            cassette 1 small-size copy total counter
│            ├─ C2              cassette 2 copy total counter
│            ├─ L-C2            cassette 2 large-size copy total counter
│            ├─ S-C2            cassette 2 small-size copy total counter
│            ├─ C3              cassette 3 copy total counter
│            ├─ L-C3            cassette 3 large-size copy total counter
│            ├─ S-C3            cassette 3 small-size copy total count
│            ├─ MF              multifeeder copy total counter
│            ├─ L-MF            multifeeder large-size cop total counter
│            ├─ S-MF            multifeeder small-size copy total counter
│            ├─ DK              paper deck coy total counter
│            ├─ 2-SIDE          2nd side pickup total counter
│            ├─ L-2-SIDE        large-size 2nd side pickup total counter
│            └─ S-2-SIDE        2nd side small-size pickup total counter
│
├─ COLOR ────┬─ Y-DEV           number of locking operations (Y developing
│            │                  assembly)
│            ├─ M-DEV           number of locking operations (M developing
│            │                  assembly)
│            ├─ C-DEV           number of locking operations (C developing
│            │                  assembly)
│            └─ K-DEV           number of locking operations (Bk developing
│                               assembly)
│
├─ FEEDER ───┬─ FEED            feeder copy total count
│            ├─ L-FEED          feeder large-size copy total counter
│            ├─ S-FEED          feeder small-size copy total counter
│            └─ PICKUP-L        feeder left pickup copy total counter
│
├─ JAM ──────┬─ TOTAL           copier copy jam total counter
│            ├─ PRINT           copier print jam total counter
│            ├─ FEEDER          feeder print jam total counter
│            └─ SORTER          sorter print jam total counter
│
├─ MISC ─────┬─ TOTALPWE        length of power supply time
│            ├─ FIX-WEB         fixing cleaning belt counter (initially, 200; -1 for
│            │                  each operation after a warning is issued)
│            ├─ PRI-CLN         primary charge wire auto cleaning counter (initially,
│            │                  2000; -4 per full color copy, -1 per mono color copy)
│            ├─ P-ROLLER        polishing roller cleaning counter (initially, 1000; -1
│            │                  per copy)
│            └─ STR-STPL        stapling counter for the stapler sorter
│
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─ PERIODEC ─┬─ OZ-FIL2      ozone filter fan (FM2) drive period (in sec)
            ├─ OZ-FIL5      ozone filter fan (FM5) drive period (in sec)
            ├─ OZ-FIL6      ozone filter fan (FM6) drive period (in sec)
            ├─ AR-FIL1      air filter fan (FM1) drive period (in sec)
            ├─ AR-FIL3      air filter fan (FM3) drive period (in sec)
            ├─ AR-FIL14     air filter fan (FM4) drive period (in sec)
            ├─ AR-FIL15     air filter fan (FM15) drive period (in sec)
            ├─ TN-FIL5      toner filter fan FM5) drive period (in sec)
            └─ TN-FIL6      toner filter fan (FM6) drive period (in sec)

─ DURABLE ─┬─ CLN-BLD       cleaning blade use period (in sec)
           ├─ CL-SUPS       cleaner scoop-up sheet use period (in sec)
           ├─ BS-SL-F       side seal front use period (in sec)
           ├─ BS-SL-R       side seal rear use period (in sec)
           ├─ CL-SUPS2      No. 2 scoop-up sheet use period (in sec)
           ├─ SCN-LMP       scanning lamp activation period (in sec)
           ├─ PRM-GRID      grid plate high voltage activation period (in sec)
           ├─ PR-CLN-U      primary charging wire cleaning pad (upper)
           │                execution (number of operations)
           ├─ PR-CLN-L      primary charging wire cleaning pad (lower)
           │                execution (number of operations)
           ├─ M-PU-RL       manual feed pickup roller paper passage (number of
           │                sheets)
           ├─ M-FD-RL       manual feed feed roller paper passage (number of
           │                sheet)
           ├─ M-SP-RL       manual feed separation roller paper passage (number
           │                of sheets)
           ├─ ATT-SCRP      attraction roller scraper paper passage (number of
           │                sheets)
           ├─ WST-TNR       waste toner case paper passage (number of sheets)
           ├─ CL-SFL-F      drum cleaner end felt (front) paper passage (number
           │                of sheets)
           ├─ CL-SFL-R      drum cleaner end felt (rear) paper passage (number
           │                of sheets)
           ├─ FX-WEB-U      fixing cleaning belt (upper) take-up (number of
           │                operations)
           ├─ FX-WEB-L      fixing cleaning belt (lower) take-up (number of
           │                operations)
           ├─ PRM-WIRE      primary charging wire high voltage activation period
           │                (in sec)
           ├─ TR-WIRE       transfer charging wire high voltage activation period
           │                (in sec)
           ├─ SP-WIRE       separation charging wire high voltage activation
           │                period (in sec)
           ├─ ITL-WIRE      internal static eliminator charging wire high voltage
           │                activation period (in sec)
           ├─ EXL-WIRE      external static eliminator charging wire high voltage
           │                activation period (in sec)
           ├─ CL-WRE        post-cleaning charging wire high voltage activation
           │                period (in sec)
           ├─ CLN-BLD2      No. 2 cleaning blade use period (in sec)
           ├─ ATT-BRU       attraction brush unit use period (in sec)
           ├─ TR-BRU        transfer blade unit use period (in sec)
           ├─ TRD-CLN       transfer drum cleaner use period (in sec)
           └─ K-ROLL        polishing roller use period (in sec)

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—	TR-SHEET	transfer drum sheet paper passage (number of sheets)
—	SP-PU-RL	separation push-up roll paper passage (number of sheets)
—	FX-UP-RL	fixing upper roller paper passage (number of sheets)
—	FX-LW-RL	fixing lower roller paper passage (number of sheets)
—	OIL-APF	oil applying felt use period (in sec)
—	DP-PU-RL	duplexing pickup roller paper passage (number of sheets)
—	DP-FD-RL	duplexing feed roller paper passage (number of sheets)
—	DP-SP-RL	duplexing separation roller paper passage (number of sheets)
—	D-PFRL-F	duplexing paper feed roller (front) paper passage (number of sheets)
—	D-PFRL-R	duplexing paper feed roller (rear) paper passage (number of sheets)
—	OIL-APBL	oil applying blade use period (in sec)
—	FHTR-U	fixing heater (upper) drive period (in sec)
—	FHTR-L	fixing heater (lower) drive period (in sec)
—	PRE-LMP	pre-exposure lamp activation period (in sec)
—	PRM-UNIT	primary charging assembly high voltage activation period (in sec)
—	SP-UNIT	separation charging assembly high voltage activation period (in sec)
—	INT-UNIT	internal static eliminator high voltage activation period (in sec)
—	EXT-UNIT	external static eliminator high voltage activation period (in sec)
—	CLR-UNIT	post-cleaning charging assembly high voltage period (in sec)
—	C1-PU-RL	cassette 1 pickup roller paper passage (number of sheets)
—	C2-PU-RL	cassette 2 pickup roller paper passage (number of sheets)
—	C3-PU-RL	cassette 3 pickup roller paper passage (number of sheets)
—	C1-SP-RL	cassette 1 separation roller paper passage (number of sheets)
—	C2-SP-RL	cassette 2 separation roller paper passage (number of sheets)
—	C3-SP-RL	cassette 3 separation roller paper passage (number of sheets)
—	C1-FD-RL	cassette 1 feed roller paper passage (number of sheets)
—	C2-FD-RL	cassette 2 feed roller paper passage (number of sheets)
—	C3-FD-RL	cassette 3 feed roller paper passage (number of sheets)
—	DV-UNT-Y	Y developing assembly rotation period (in sec)
—	DV-UNT-M	M developing assembly rotation period (in sec)
—	DV-UNT-C	C developing assembly rotation period (in sec)
—	DV-UNT-K	Bk developing assembly rotation period (in sec)
—	PD-PU-RL	paper deck pickup roller paper passage (number of sheets)
—	PD-FD-RL	paper deck feed roller paper passage (number of sheets)

Cont'd

PD-SP-RL   paper deck separation roller paper passage (number of sheets)

FX-IN-BS   fixing insulating bush paper passage (number of sheets)

CHAPTER 5 SELF DIAGNOSIS

A. Copier

The R-CPU and the DC-CPU of the copier's CPU PCB are equipped with a self diagnostic mechanism to check the state of the machine (particularly, the condition of sensors). The mechanism runs checks as needed, and indicates a code on the control panel when it finds a fault.

The tables that follow show codes and timing of detection, the latter with discussions of detail codes indicated in service mode (COPIER>DISPLAY>JAM/ERR).

Code	Cause	Timing of detection
E000	The discussions that follow are compiled according to detail code.	xx indicates a heater. xx=01: upper heater xx=02: lower heater
	· The fixing thermistor is faulty. · The SSR is faulty. · The DC driver PCB is faulty. · The CPU PCB is faulty.	xx01 The high temperature detection circuit on the DC driver PCB has detected overheating (220°C or more) in the middle of the heater.
		xx02 The thermistor (THM1/ THM3) has detected 210°C.
		xx03 The difference between the middle and ends in respect of the thermistor readings is about 50°C or more.
		xx04 The high temperature detection circuit on the DC driver PCB has detected overheating on the ends of the heater (220°C or more).
	· The fixing thermistor is faulty. · The fixing heater (H1, H2) has an open circuit. · The thermal switch (TP2, TP3) has an open circuit. · The SSR is faulty.	xx05 The open circuit detection circuit on the DC driver PCB has detected an open circuit in the heater.
		xx21 The temperature does not increase by 3°C or more in 4 min at power-on (i.e., the temperature of the fixing assembly is 100°C or less).
		xx31 The temperature does not increase by 1°C or more in 2 min at power-on (i.e., the temperature of the fixing assembly is 100°C or more, or 130°C or more).
		xx40 A temperature of 50°C or less has been detected for 1 sec or more during standby.
		xx50 A temperature of 50°C or less has been detected for 1 sec or more during copying.

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Code	Cause	Timing of detection
E004	· The SSR1 has a short circuit. · The CPU PCB is faulty.	xx indicates a heater. xx=01: upper heater xx=02: lower heater xx01 The SSR1 is on while the DC-CPU is trying to keep it off.
E005	· The cleaning belt inside the fixing assembly has been taken up for a specific length. · The fixing cleaning belt length sensor (PS11/PS67) is faulty. · The DC driver PCB is faulty. · The CPU PCB is faulty.	0001 As many as 200 copies have been made after the fixing upper cleaning belt length sensor detected the sensor lever and indicated a warning on the control panel. 0002 As many as 200 copies have been made after the fixing lower cleaning belt length sensor detected the sensor lever and indicated a warning on the control panel.
E008	· The fixing oil pump driver PCB is faulty. · The DC driver PCB is faulty. · The CPU PCB is faulty.	0000 The fixing oil pump driver PCB does not generate a drive signal even when the fixing oil pump drive signal is turned on. 0001 The fixing oil pump driver PCB generates a drive signal even when the fixing oil pump drive signal is turned off.
E010	· The main motor (M4) is faulty. · The main motor drive system is subjected to an overload. · The main motor driver PCB is faulty. · The DC driver PCB is faulty. · The CPU PCB is faulty.	The main motor ready signal (MNMRDY) is '0' for 1 sec or more while the main motor is rotating.
E012	· The drum motor (M2) is faulty. · The drum motor drive system is subjected to an overload. · The DC driver PCB is faulty. · The CPU PCB is faulty.	0001 Not used. 0002 The drum motor ready signal (DRMRDY) is '0' for 1 sec (4 sec during deceleration) while the drum motor is rotating.
E013	· The waste toner feedscrew lock detecting switch (SW7) is faulty. · The waste toner feedscrew is faulty. · The DC driver PCB is faulty. · The CPU PCB is faulty.	The waste toner feedscrew cannot rotate, and the waste toner feedscrew lock detecting switch has been pressed.
E014	· The fixing motor (M5) is faulty. · The fixing motor drive system is subjected to an overload. · The DC driver PCB is faulty. · The CPU PCB is faulty.	0000 The motor lock signal (FXMLK) is '0' for 1 sec or more while the fixing motor is rotating.

Code	Cause	Timing of detection
E016	· The cleaning blade reciprocating motor (M7) is faulty. · The DC driver PCB is faulty. · The CPU PCB is faulty.	The cleaning blade reciprocating motor driver circuit on the DC driver PCB has detected an overcurrent for 0.1 sec or more.
E017	· The duplexing motor (M14) is faulty. · The DC driver PCB is faulty. · The CPU PCB is faulty.	The duplexing motor clock signal (DUPMLK) is '0' for 1 sec or more while the duplexing motor is rotating.
E020	The discussions that follow are compiled according to detail code.	Toner Concentration Fault xx indicates the color of a developing assembly. xx=00: MCYBk in common xx=01: M xx=02; C xx=03: Y xx=04: Bk
		The notations used herein means the following: SGNL: toner concentration signal REF: concentration signal DENS: developer concentration inside developing assembly SIGG: gain value for concentration reference signal PT-REF: concentration reference signal for photosensitive drum surface PT-STG-D: reflection light intensity signal for photosensitive drum surface
	· The toner concentration sensor is faulty. · The developer inside the developing assembly is not stirred properly. · The sensor is subjected to stray light (no cover, front cover open). · The photosensitive drum has deteriorated.	xx00 The connector is disconnected or there is an open circuit; the REF or SGNL level is '50' or less
		xx10 At time of setting initial data (as during installation), the variation of SGNL-M/C/Y levels for one concentration data sampling is '35' or more.
		xx11 At time of setting initial data (as during installation), the variation of REF-M/C/Y levels for one concentration data sampling is '35' or more.
		xx12 At time of setting initial data (as during installation), the variation of SGNL-M/C/Y levels for ten concentration data samplings is '70' or more.

Code	Cause	Timing of detection
E020	· The toner concentration sensor is faulty. · The developer inside the developing assembly is not stirred properly. · The sensor is subjected to stray light (no cover, front cover open). · The photosensitive drum has deteriorated. · The toner concentration sensor is faulty/soiled. · The developer inside the developing assembly is not stirred properly. · The sensor is subjected to stray light (no cover, front cover open). · The photosensitive drum has deteriorated.	xx13 At time of setting initial data (as during installation), the variation of REF-M/C/Y levels for ten concentration data samplings is '70' or more. xx14 At time of setting initial data (as during installation), the variation of PT-SIG-M/C/Y levels for one concentration data sampling is '51' or more. xx15 At time of setting initial data (as during installation), the variation of PT-REF-M/C/Y levels for one concentration data sampling is '35' or more. xx16 At time of setting initial data (as during installation), the variation of PT-SIG-M/C/Y levels for 16 concentration data samplings is '102' or more. xx17 At time of setting initial data (as during installation), the variation of PT-REF-M/C/Y levels for 16 concentration data samplings is '70' or more. xx20 At time of setting initial data (as during installation), the result of averaging samplings of SGNL-M/C/Y levels is '777' or less. xx21 At time of setting initial data (as during installation), the result of averaging samplings of REF-M/C/Y levels is '200' or less. xx22 At time of setting initial data (as during installation), the result of averaging the first sampling of PT-SIG-M/C/Y levels is '650' or less or that of PT-SIG-K levels is '100' or less. xx23 At time of setting initial data (as during installation), the result of averaging samplings of PT-REF-M/C/Y levels is '777' or less.

Code	Cause	Timing of detection
E020	· The toner concentration sensor is faulty/ soiled. · The developer inside the developing assembly is not stirred properly. · The sensor is subjected to stray light (no cover, front cover open). · The photosensitive drum has deteriorated.	xx24 At time of setting initial data (as during installation), the result of averaging five retry samplings of PT-SIG-M/ C/Y levels is '683' or less or that of PT-SIG-K levels is '305' or less.
		xx30 At time of setting initial data (as during installation), the result of averaging samplings of SGNL-M/C/Y levels is '859' or more.
		xx31 At time of setting initial data (as during installation), the result of averaging samplings of REF-M/C/Y levels is '930' or more.
	· The toner concentration sensor is faulty. · The developer inside the developing assembly is not stirred properly. · The sensor is subjected to stray light (no cover, front cover open). · The photosensitive drum has deteriorated. · The window of the toner concentration sensor is soiled or scratched, or the protective sheet is soiled. · The photosensitive drum is soiled (e.g., cleaning fault).	xx32 At time of setting initial data (as during installation), the result of averaging the first sampling of PT-SIG-M/ C/Y levels is '930' or more or that of PT-SIG-K levels is '550' or more.
		xx33 At time of setting initial data (as during installation), the result of averaging samplings of PT-REF-M/C/Y levels is '859' or more.
		xx34 At time of setting initial data (as during installation), the result of averaging five retry samplings of PT-SIG-M/ C/Y levels is '749' or more or that of PT-SIG-K levels is '371' or more.

Code	Cause	Timing of detection
E020	· The toner concentration sensor is faulty. · The developer inside the developing assembly is not stirred properly. · The sensor is subjected to stray light (no cover, front cover open). · The photosensitive drum has deteriorated. · The window of the toner concentration sensor is soiled or scratched, or the protective sheet is soiled. · The photosensitive drum is soiled (e.g., cleaning fault). The backup data on the CPU PCB is faulty* or the initial settings have not been made. *Be sure to initialize the RAM of the DC-CPU and enter the values recorded on the service label.	xx40 At time of setting initial data (as during installation), gain setting cannot be performed (the level of SIGG-M/C/Y is 'E0' or more or '20H' or less). 0441 At time of setting initial data (as during installation), gain setting cannot be performed (the level of RGAIN-K is 'E0' or more or '20H' or less). xx50 During copying sequence, gain setting cannot be performed because of an error in the memory backup data (the level of SIGG-M/C/Y is 'E0' or more or '20H' or less). 0451 During copying sequence, gain setting cannot be performed because of an error in the memory backup data (the level of RGAIN-K is 'E0' or more or '20H' or less). xx60 During copying sequence, the level of SGNL-M/C/Y set initially is '777' or less because of an error in the memory backup data. xx61 During copying sequence, the level of REF-M/C/Y set initially is '200' or less because of an error in the memory backup data. xx62 During copying sequence, the level of PT-REF-M/C/Y set initially is '777' or less because of an error in the memory backup data.

Code	Cause	Timing of detection
E020	The backup data on the CPU PCB is faulty* or the initial settings have not been made. *Be sure to initialize the RAM of the DC-CPU and enter the values recorded on the service label.	xx63 During copying sequence, the level of PT-SIG-M/C/Y is '683' or less or that of PT-SIG-K is '305' or less because of an error in the memory backup data.
		xx64 During copying sequence, the level of PT-REF-D is '777' or less because of an error in the memory backup data.
		xx65 During copying sequence, the level of PT-SIG-D is '573' or less because of an error in the memory backup data.
		xx66 During copying sequence, the level of D-M-TRGT/D-C-TRGT/D-Y-TRGT (developer target value) is '700' or less because of an error in the memory backup data.
		xx70 During copying sequence, the level of SGNL-M/C/Y set initially is '859' or more because of an error in the memory backup data.
		xx71 During copying sequence, the level of REF-M/C/Y set initially is '930' or more because of an error in the memory backup data.
		xx72 During copying sequence, the level of PT-REF-M/C/Y/K set initially is '859' or more because of an error in the memory backup data.
		xx73 During copying sequence, the level of PT-SIG-M/C/Y set initially is '749' or more or that of PT-SIG-K is '371' or more because of an error in the memory backup data.
		xx74 During copying sequence, the level of PT-REF-D set initially is '859' or more because of an error in the memory backup data.
		xx75 During copying sequence, the level of PT-SIG-D set initially is '655' or more because of an error in the memory backup data.

Code	Cause	Timing of detection
E020	The backup data on the CPU PCB is faulty* or the initial settings have not been made. *Be sure to initialize the RAM of the DC-CPU and enter the values recorded on the service label.	xx76 During copying sequence, the level of D-M-TRGT/D-C-TRGT/D-Y-TRGT (developer target value) is '930' or more because of an error in the memory backup data.
	The developer has deteriorated. · The developing cylinder fails to rotate. · The developing assembly is not locked. · The toner concentration (patch detection) sensor is faulty. · The developer inside the developing assembly is faulty. · The toner level sensor is faulty. · The concentration sensor is subjected to stray light (no cover, front cover open). · The photosensitive drum has deteriorated.	xx80 When samplings are taken during copying sequence, the level of WINDOW-M/C/Y/K (window soiling correction coefficient) is '130' or more.
		xx81 When samplings are taken during copying sequence, the level of WINDOW-M/C/Y/K (window soiling correction coefficient) is '70' or less.
		xx90 When samplings are taken during copying sequence, the variation of SGNL-M/C/Y levels is '102' or more.
		xx91 When samplings are taken during copying sequence, the variation of REF-M/C/Y levels is '102' or more.
		xxA0 When samplings are taken during copying sequence, the level of SGNL-M/C/Y is '306' or less.
		xxA1 When samplings are taken during copying sequence, the level of REF-M/C/Y set initially decreases (intensity) by 30% or more.
		xxA2 When samplings are taken during copying sequence, the level of PT-SIG-K is '51' or less.
		xxB0 When samplings are taken during copying sequence, the level of SGNL-M/C/Y is '1020' or more (when feeding 10 sheets or more continuously).
		xxB1 When samplings are taken during copying sequence, the level of REF-M/C/Y set initially increases (intensity) by '30%' or more.

Code	Cause	Timing of detection
E020	The developer has deteriorated. · The developing cylinder fails to rotate. · The developing assembly is not locked. · The toner concentration (patch detection) sensor is faulty. · The developer inside the developing assembly is faulty. · The toner level sensor is faulty. · The concentration sensor is subjected to stray light (no cover, front cover open). · The photosensitive drum has deteriorated.	xxB2 When samplings are taken during copying sequence, the level of PT-SIG-M/C/Y is '1020' or more and that of PT-SIG-K is '550' or more. xxC0 When samplings are taken during copying sequence, the level of DENS-M/C/Y/K is '+3%' (when feeding 20 sheets continuously). xxD0 When samplings are taken during copying sequence, the level of DENS-M/C/Y/K is '+3%' (when feeding 20 sheets or more continuously). xxE0 When samplings are taken during copying sequence, the level of DENS-M/C/Y/K has exceeded '-5%'.
	· The developer has deteriorated. · The developing cylinder fails to rotate. · The developer is not locked. · The toner concentration sensor is faulty. · The developer inside the developing assembly is not stirred properly. · The toner level sensor is faulty. · The sensor is subjected to stray light (no cover, front cover open). · The photosensitive drum has deteriorated, or the toner level sensor is faulty.	
	· The hopper motor is faulty. · The hopper motor has an open circuit.	00FF After the hopper motor has turned on, the hopper motor lock signal (HOPMLK) is '0' for 0.1 sec or more. xxFF After the hopper motor has turned on, the hopper motor lock signal (HOPMLK) is '0' for 0.1 sec or more (the toner supply clutch is on).

Code	Cause	Timing of detection
E021	· The developing locking motor (PM1, PM2, PM3, PM4) is faulty. · The developing assembly HP sensor (PS49, PS51, PS53, PS55) is faulty. · The developing locking driver PCB is faulty. · The DC driver PCB is faulty. · The CPU PCB is faulty.	0100 When the power switch is on, the M developing assembly HP sensor is '0'. 0200 When the power switch is on, the C developing assembly HP sensor is '0'. 0300 When the power switch is on, the Y developing assembly HP sensor is '0'. 0400 When the power switch is on, the Bk developing assembly HP sensor is '0'. 0101 When the developing assembly is locked, the M developing assembly HP sensor is '1'. 0201 When the developing assembly is locked, the C developing assembly HP sensor is '1'. 0301 When the developing assembly is locked, the Y developing assembly HP sensor is '1'. 0401 When the developing assembly is locked, the Bk developing assembly HP sensor is '1'.
E040	· The lifter motor drive system is subjected to an overload. · The lifter motor (M11, M12/ DM12, M13/DM13, M15) is faulty. · The CPU PCB is faulty.	0001 When the cassette 1 lifter motor is on, an overcurrent is detected in the motor. 0002 When the cassette 2 (for CLC1150, cassette 1) lifter motor is on, an overcurrent is detected in the motor. 0003 When the cassette 3 (for CLC1150, cassette 2) lifter motor is on, an overcurrent is detected in the motor. 0004 When the multifeeder lifter motor is on (lifter is moving up), an overcurrent is detected in the motor. 0005 When the multifeeder lifter motor is on (lifter is moving down), an overcurrent is detected in the motor.

Code	Cause	Timing of detection
E041	· The deck lifter motor (M101) is faulty. · The deck lifter position sensor (PS104) is faulty. · The deck lifter cable is broken. · The deck driver PCB is faulty.	The deck lifter position sensor cannot detect the deck lifter even when the deck lifter UP signal has been kept on for a specific period of time.
E051	· The duplexing paper jogging guide motor (PM14) is faulty. · The duplexing paper jogging guide HP sensor (PS40) is faulty. · The duplexing driver PCB is faulty. · The CPU PCB is faulty.	0000 The paper jogging guide HP sensor does not go '0' when the paper jogging motor has been kept on for a specific period of time. 0001 The paper jogging guide HP sensor does not go '1' when the paper jogging guide motor has been kept on for a specific period of time.
E061		Potential Control-Related Error VDI: potential during initial rotation Vd3: post-cleaning charging area during dark area attenuation potential measurement offset value: value determined in service mode (FUNCTION>DPC>OFST) xx indicates the color of a developing assembly. xx=01: M xx=02: C xx=03: Y xx=04: Bk
	· The potential sensor is faulty.	0000 All Vd/VL is 10 V or less. 0001 The offset value is not 100 ± 50.
	· The pre-exposure lamp is faulty. · The primary high-voltage output is faulty. · The grid bias is absent. · The grid bias is not controlled properly. · The grid bias output is faulty.	0010 VL3 is 200 V or less. 0020 Vd1/Vd2/VdI is 30V or less. 0030 Vd1/Vd2/VdI is 100 V or less. 0031 VdI/Vd2/VdI is 900 V or more. 0032 The difference between Vd1 and Vd2 is 100 V or less.
	· The post-cleaning charging output is faulty.	0040 Vd3 is 100 V or less.
	· The laser emission is faulty. · The bending mirror is faulty. · The laser shutter is faulty.	0050 The difference between Vd1 and VL1 is 30 V or less and, in addition, Vd1 is 350 V or more; or, the difference between Vd2 and VL2 is 30 V or less and, in addition, Vd2 is 550 V or more.

Code	Cause	Timing of detection
E061	· The laser is faulty.	0051 Vd1 is 300 V or less and, in addition, Vd2 is 500 V or less.
	· The laser light is inadequate. · The bending mirror is faulty. · The laser shutter is faulty.	0052 VL1 is 200 V or more and, in addition, VL2 is 250 V or more.
	· The laser is faulty.	0053 Vd1 is 100 V or less and, in addition, is 150 V or less.
	· The dark area potential attenuation is at the upper control limit.	0060 The dark are potential attenuation value is 150 V or more.
	· The grid bias is at the upper control limit.	0070 The grid bias output value is 900 V or more.
	· The grid bias is at the lower control limit.	0071 The grid bias output value is 100 V or less.
	· The developing bias is at the upper control limit.	xx80 The developing bias output value is 700 V or more.
	· The developing bias is at the lower control limit.	xx81 The developing bias output value is 200 V or less.
	· Vd1 is at the upper measurement limit. · The photosensitive drum has deteriorated.	0090 Vd1 is 700 V or more.
	· Vd1 is at the lower measurement limit.	0091 Vd1 is 400 V or less.
	· VL1 is at the upper measurement limit.	0092 VL1 is 200 V or more.
	· VL1 is at the lower measurement limit.	0093 VL1 is 10 V or less.
	· Vd2 is at the upper measurement limit.	0094 Vd2 is 900 V or more.
	· Vd1 is at the lower measurement limit.	0095 Vd1 is 550 V or less.
	· VL1 is at the upper measurement limit.	0096 VL2 is 250 V or more.
	· VL2 is at the lower measurement limit.	0097 VL2 is 50 V or less.

Code	Cause	Timing of detection
E062	· SSR2 has a short circuit. · The CPU PCB is faulty.	While the DC-CPU keeps the cassette heater/drum heater SSR2 off, SSR2 is on.
E067	· The separation charging assembly is faulty. · The internal/external static eliminator is faulty. · The HVT-AC PCB is faulty. · The DC driver PCB is faulty. · The CPU PCB is faulty.	An error signal (AC-ERR*=0) has been generated by the HVT-PCB.
E071	· The side A sensor (PS2) is faulty. · The side B sensor (PS3) is faulty. · The C sensor (PS4) is faulty. · The signal plate is faulty. · The drum motor drive system is subjected to an overload. · The transfer drum is not locked properly. · The DC driver PC is faulty. · The CPU PCB is faulty.	F000 The side A sensor, side B sensor, or C sensor does not detect the signal plate within 10 sec after the operation to lock the transfer drum has started. 0001 There is an error in the falling edge timing of the signal plate detected by the side B sensor. 0002 There is an error in the rising edge timing of the signal plate detected by the side B sensor. 0003 There is an error in the rising edge timing of the signal plate detected by the C sensor. 0004 There is an error in the falling edge timing of the single plate C detected by the C sensor. 0005 There is an error in the rising edge timing of the signal plate detected by the side A sensor. 0006 There is an error in the falling edge timing of the signal plate detected by the side A sensor. 0007 There is an error in the rising edge timing of the signal plate D detected by the C sensor. 0008 There is an error in the falling edge timing of the signal plate D detected by the C sensor. 1001 The falling edge signal of the signal plate to be detected by the side B sensor is not generated after the falling edge signal of the signal plate D detected by the C sensor has been generated.

5-13

Code	Cause	Timing of detection
E071	· The side A sensor (PS2) is faulty. · The side B sensor (PS3) is faulty. · The C sensor (PS4) is faulty. · The signal plate is faulty. · The drum motor drive system is subjected to an overload. · The transfer drum locking mechanism is faulty. · The DC driver PCB is faulty. · The CPU PCB is faulty.	1002 The rising edge signal of the signal plate to be detected by the side B sensor is not generated after the rising edge signal of the signal plate C detected by the C sensor has been generated. 1003 The rising edge signal of the signal plate C to be detected by the C sensor is not generated after the falling edge of the signal plate detected by the side B sensor has been generated. 1004 The falling edge signal of the signal plate C to be detected by the C sensor is not detected after the rising edge of the signal plate detected by the side B sensor has been generated. 1005 The rising edge signal of the signal plate to be detected by the side A sensor is not generated after the falling edge of the signal plate C detected by the C sensor has been generated. 1006 The falling edge signal of the signal plate to be detected by the side A sensor is not generated after the rising edge of the signal plate D detected by the C sensor has been generated. 1007 The rising edge signal of the signal plate D to be detected by the C sensor is not generated after the rising edge signal of the signal plate detected by the side A sensor has been generated. 1008 The rising edge signal of the signal plate D to be detected by the C sensor is not generated after the falling edge signal of the signal plate detected by the side A sensor has been generated.

Code	Cause	Timing of detection
E071	· The side A sensor (PS2) is faulty. · The side B sensor (PS3) is faulty. · The C sensor (PS4) is faulty. · The signal plate is faulty. · The drum motor drive system is subjected to an overload. · The transfer drum locking mechanism is faulty. · The DC driver PCB is faulty. · The CPU PCB is faulty.	1101 The falling edge signal of the signal plate to be detected by the side B sensor is generated 0.3 sec earlier after the falling edge signal of the signal plate D detected by the C sensor has been generated. 1102 The rising edge signal of the signal plate to be detected by the side B sensor is generated 0.3 sec earlier after the rising edge signal of the signal plate C detected by the C sensor has been generated.
	· Side A sensor (PS2) is faulty. · Side B sensor (PS3) is faulty. · The C sensor (PS4) is faulty. · The signal plate is faulty. · The drum motor drive system is subjected to an overload. · The transfer drum is not locked properly. · The DC driver PCB is faulty. · The CPU PCB is faulty.	1103 The rising edge signal of the signal plate C to be detected by the C sensor is generated 0.3 sec earlier after the falling edge signal of the signal plate detected by the side B sensor has been generated. 1104 The falling edge signal of the signal plate C to be detected by the C sensor is generated 0.3 sec earlier after the rising edge signal of the signal plate detected by the side B sensor has been generated. 1105 The rising edge of the signal plate to be detected by the side A sensor is generated 0.3 sec earlier after the falling edge signal of the signal plate C detected by the C sensor has been generated. 1106 The falling edge signal of the signal plate to be detected by the side A sensor is generated 0.3 sec earlier after the rising edge signal of the signal plate D detected by the C sensor has been generated. 1107 The rising edge signal of the signal plate D to be detected by the C sensor is generated 0.3 sec earlier after the rising edge of the signal 1 plate to be detected by the side A sensor has been generated.

5-15

Code	Cause	Timing of detection
E071	· Side A sensor (PS2) is faulty. · Side B sensor (PS3) is faulty. · The C sensor (PS4) is faulty. · The signal plate is faulty. · The drum motor drive system is subjected to an overload. · The transfer drum is not locked properly. · The DC driver PCB is faulty. · The CPU PCB is faulty.	1108 The rising edge signal of the signal plate D to be detected by the C sensor is generated 0.3 sec earlier after the falling edge signal of the signal plate detected by the side A sensor has been generated. 1201 The falling edge signal of the signal plate to be detected by the side B sensor is generated 0.3 sec later after the falling edge signal of the signal plate D detected by the C sensor has been generated. 1202 The rising edge signal of the signal plate to be detected by the side B sensor is generated 0.3 sec later after the rising edge signal of the signal plate C detected by the C sensor has been generated. 1203 The rising edge signal of the signal plate C to be detected by the C sensor is generated 0.3 sec later after the falling edge signal of the signal plate detected by the side by side B sensor has been generated.
	· The side A sensor (PS2) is faulty. · The side B sensor (PS3) is faulty. · The C sensor (PS4) is faulty. · The signal plate is faulty. · The drum motor drive system is subjected to an overload. · The transfer drum is not locked properly. · The DC driver PCB is faulty. · The CPU PCB is faulty.	1204 The falling edge signal of the signal plate C to be detected by the C sensor is generated 0.3 sec later after the rising edge signal of the signal plate detected by the side B sensor has been generated. 1205 The rising edge signal of the signal plate to be detected by the side A sensor is generated 0.3 sec later after the falling edge signal of the signal plate C detected by the C sensor has been generated. 1206 The falling edge signal of the signal plate to be detected by the side A senor is generated 0.3 sec later after the rising edge signal of the single plate D detected by the C sensor has been generated.

Code	Cause	Timing of detection
E071	· The side A sensor (PS2) is faulty. · The side B sensor (PS3) is faulty. · The C sensor (PS4) is faulty. · The signal plate is faulty. · The drum motor drive system is subjected to an overload. · The transfer drum is not locked properly. · The DC driver PCB is faulty. · The CPU PCB is faulty.	1207　The rising edge signal of the signal plate D to be detected by the C sensor is generated 0.3 sec later after the rising edge signal of the signal plate detected by the side A sensor has been detected. 1208　The rising edge signal of the signal plate to be detected by the C sensor is generated 0.3 sec later after the falling edge signal of the signal plate detected by the side A sensor has been generated.
E072	· The transfer drum cleaner brush motor (M8) is faulty. · The polishing roller motor (M9) is faulty. · The motor drive system is subjected to an overload. · The attraction/transfer locking cam motor (PM7) is faulty. · The attraction/transfer locking cam HP sensor (PS8) is faulty. · The registration path driver PCB is faulty. · The DC driver PCB is faulty. · The CPU PCB is faulty.	0002　The motor lock signal (TRCMLK) is '0' for 1 sec or more while the transfer drum cleaner brush motor is rotating. 0003　An overcurrent is detected for 1 sec or more while the polishing roller motor is rotating. 0202　The attraction/transfer looking cam HP sensor does not go '1' within 4 sec after the attraction/transfer locking cam motor has started to rotate.

Code	Cause	Timing of detection
E073	· The transfer unit drawer connector is faulty. · The DC driver PCB is faulty. · The CPU PCB is faulty.	0001 During copying operation, the connection signal (CONNECT) of the transfer unit lever goes '0'. 0002 During copying operation, the connection signal (CONNECT) of the drawer connector of the transfer unit is '0'.
E074	· The transfer drum locking motor (PM5) is faulty. · The transfer drum HP sensor (PS57) is faulty. · The transfer locking driver PCB is faulty. · The DC driver PCB is faulty. · The CPU PCB is faulty.	0000 The transfer drum HP sensor does not go '1' when the transfer drum locking motor has been kept on for a specific period of time. 0001 The transfer drum HP sensor does not go '0' when the transfer drum locking motor has been kept on for a specific period of time.
E079	· The transfer drum cleaner HP sensor (PS59) is faulty. · The transfer locking driver PCB is faulty. · The DC driver PCB is faulty. · The CPU PCB is faulty.	0000 The transfer drum cleaner HP sensor does not go '1' when the transfer drum cleaner locking motor has been kept on for a specific period of time. 0001 The transfer drum cleaner HP sensor does not go '0' when the transfer drum cleaner locking motor has been kept on for a specific period of time.
E100	· The laser unit is faulty. · The laser driver PCB is faulty. · The laser controller PCB is faulty. · The CPU PCB is faulty.	The BD signal cannot be detected for 1 sec or more when potential control operation starts.
E110	· The laser scanner motor (M3) is faulty. · The DC driver PCB is faulty. · The CPU PCB is faulty.	0000 The laser scanner motor ready signal (LSMRDY) is '1' for 0.5 sec or more while the laser scanner motor is rotating.
E120	· The laser controller unit (laser thermistor, laser heater, laser controller PCB) is faulty. · The CPU PCB is faulty.	0001 The laser heater temperature has exceeded 60°C. 0002 When the machine internal temperature is 20°C or more, the laser heater does not reach a specific temperature within 20 min.
E190	· The laser controller PCB is faulty. · The CPU PCB is faulty.	An error has occurred while wiring data to the laser controller PCB from the CPU PCB at power-on.

Code	Cause	Timing of detection
(E202) No code indication; keys are disabled.	· The original scanner HP sensor (PS1) is faulty. · The original scanner motor (PM15) is faulty. · The original scanner motor driver PCB is faulty. · The CPU PCB is faulty.	The original scanner home position signal (SCHP) is not generated within 10 sec after the power switch has been turned on or the Copy Start key has been pressed.
E208	· The DC power supply to the original scanner motor driver PCB is faulty. · The wiring or connectors are faulty. · The original scanner motor driver PC is faulty. · The CPU PCB is faulty.	The communication between the original scanner driver PCB and the CPU PCB is interrupted or 5 sec or more.
E220	· The scanning is faulty. · The lamp regulator PCB is faulty.	During standby, the scanning lamp turns on even though the R-CPU keeps the scanning lamp ON signal off. During copying, the scanning lamp turns off even though the R-CPU keeps the scanning lamp ON signal on.
E305	· The IP-MAIN PCB is faulty. · The IP-PRJ PCB is faulty. · The IP-ED PCB is faulty.	At power-on, RAM access within the IP-MAIN PCB does not take place normally. RAM access within the IP-PRJ PCB or IP-ED PCB does not take place normally. (For E305, the code is indicated when copying is started in projector mode or area select mode.) 0001 BD error (same as E100) 0002 concentration conversion RAM error 0004 B shading correction RAM error 0008 G shading correction RAM error 0010 R shading correction RAM error 0020 color correction RAM error 0040 original scanner motor error 0100 IP-ED PCB RAM error or disconnection 0400 IP-PRJ PCB RAM error or disconnection 0800 IP-IF PCB RAM error 1000 IP-IF PCB RAM error

Code	Cause	Timing of detection
E351	· The IP-MAIN PCB is faulty. · The IP-ECO PCB is faulty. · The connection between IP-MAIN, IP-ECO PCB, and laser driver PCB is faulty.	The IP-ECO PCB and the IP-MAIN PCB are not connected. The IP-ECO PCB and its ROM are a poor match.
E620	· The IP-ED PCB is faulty. · The IP-MAIN PCB is faulty.	The communication between IP-ED-PCB and IP-MAIN PCB is interrupted for 5 sec or more.
E634	· The projector lamp is faulty. · The projector thermal switch is faulty.	The LAOFF signal remains '0' when the projector controller PCB turns on the LCNT signal.
E700	· The CPU PCB is faulty. · The DC power supply is faulty.	The communication between the DC-CPU and the R-CPU on the CPU PCB is interrupted for 5 sec or more.
E717	· An error has occurred in conjunction with the copy data controller/remote diagnosis device.	The copy data controller or the remote diagnostic device has been physically detached.
E718	· The IP-PRJ PCB is faulty. · The IP-MAIN PCB is faulty. · The projector controller PCB is faulty.	The communication between the projector controller PCB and the IP-MAIN PCB is interrupted for 5 sec or more.
E800	· The power switch is faulty. · The DC harness is faulty. · The DC driver PCB is faulty. · The CPU PCB is faulty.	An open circuit has been detected in the auto shut-off signal.
E804	· The operation of a fan (indicated by detail code) is faulty. · The CPU PCB is faulty. · The DC driver PCB is faulty.	0001 The electrical unit fan (FM8) has stopped to rotate in error. 0002 The IP cooling fan (FM7) has stopped to rotate in error. 0003 The exhaust fan (FM2) has stopped to rotate in error. 0004 The ozone suction fan (FM5) has stopped to rotate in error. 0005 The toner suction fan (FM6) has stopped to rotate in error. 0006 The laser scanner motor cooling fan (FM4) has stopped to rotate in error. 0008 The primary charging assembly fan (FM3) has stopped to rotate in error. 0009 The delivery cooling fan (FM11) has stopped to rotate in error. 000A The back suction fan (FM16) has stopped to rotate in error.

Code	Cause	Timing of detection
E804	· The operation of a fan (indicated by detail code) is faulty. · The CPU PCB is faulty. · The DC driver PCB is faulty.	000B The power supply cooing fan 1/2 (FM9/FM13) has stopped in error. 000C The power supply cord base fan (FM17) has stopped to rotate in error. 0102 The original exposure system cooling fan 2/3 (FM14/FM15) has stopped to rotate in error.

Caution:

1. The copier may be reset by turning its power switch off and then on when its self diagnostic mechanism has turned on. This, however, does not apply to E000, E004, E005, E008, E020 (if xxE0), or E717. This is to prevent possible damage by an overheating fixing roller occurring if these errors were designed to be reset while the thermistor has an open circuit.

2. If E005 (no cleaning belt) is indicated, replace the cleaning belt, and be sure to reset the fixing cleaning belt counter in service mode (COPIER>COUNTER>MISC>FIX-WEB).

Resetting E000, E004, E005, E008, E020, or E717
1) Start service mode, and select COPIER>FUNCTION>CLEAR>ERR (to highlight).
2) Press the OK key.
3) Turn off and then on the power switch.

E717

E717 may be prevented by temporarily disconnecting the communication line using service mode as follows before disconnecting the copy data controller or the remot diagnostic device connected to the copier:
1) Start service mode, and select COPIER>OPTION>IN-FACE>B-CLR (to highlight).
2) Enter '0', and press the OK key.
3) End service mode, and perform appropriate servicing.

B. RDF

> **Note:**
> If the self diagnostic mechanism has turned on, you can reset the machine by turning the copier's power switch off and then on.
> If you want to continue to make copies while the RDF is out of order, place the original on the copyboard glass after lifting the RDF.

Code	Cause	Timing of detection
E400	· The communication of data with the copier is faulty.	The communication is monitored at all times, and it is interrupted for 5 sec or more.
E401	· The pickup motor (M1) is faulty. · The pickup roller home position sensor 1 (S8) is faulty.	The state of the sensor remains unchanged after the pickup motor has been driven for 2 sec or more.
E402	· The belt motor (M3) is faulty. · The belt motor clock sensor (S11) is faulty.	The number of belt motor clock pulses is lower than a specific value for 100 msec.
E403	· The reversal motor (M2) is faulty. · The slip sensor (S10) is faulty.	The number of slip clock pulses is lower than a specific value for 100 msec.
E404	· The delivery motor (M5) is faulty. · The delivery motor clock sensor (S12) is faulty.	The number of delivery motor clock pulses is lower than a specific value for 200 msec.
E405	· The pickup motor (M1) is faulty. · The pickup motor clock sensor (S12) is faulty.	The number of pickup motor clock pulses is lower than a specific value for 200 msec.
E407	· The tray drive motor (M6) is faulty. · The tray position sensor (S25) is faulty.	The state of the sensor remains unchanged after the tray drive motor has been driven for 2 sec or more.
E408	· The feeder motor (M8) is faulty. · The tray position sensor (S25) is faulty.	The number of feed motor clock pulses is lower than a specific value for 100 msec.
E411	· The registration sensor 1 (S3) is faulty. · The skew sensor 1 (S4) is faulty. · The manual feed registration sensor (S19) is faulty. · The image leading edge sensor (S20) is faulty. · The original sensor 1 (S7) is faulty.	The output of each sensor is a specific value or more in the absence of paper.

C. Sorter

| Code	Cause	Timing of detection
E510	· The feed motor (M1) fails to rotate.	The clock signal from the feed motor clock sensor (PI5) is absent for 250 msec.
E516	· The low-speed feed motor (M10) fails to rotate.	The clock signal from the feed motor clock sensor (PI23) is absent for 250 msec or more.
E517	· The home position of the buffer path unit locking cam cannot be detected.	The home position cannot be detected within a specific period of time (varying from copier to copier) after the Copy Start key has been pressed.
E522	· The push bar motor (M7) fails to rotate.	The operation fails to end within 2000 msec after the motor drive signal has been generated.
E523	· The reference wall motor (M6) fails to rotate.	The operation does not end within 2000 msec after the motor drive signal has been generated.
E524	· The multi guide motor (M5) fails to rotate.	The operation does not end within 2000 msec after the motor drive signal has been generated.
E525	· The bin internal paper sensor 1 (S3, S4) auto adjustment mechanism is faulty.	The auto adjustment mechanism of the bin internal paper sensor 1 (S3, S4) fails, or an error occurs in the auto adjustment value.
E526	· The bin internal paper sensor 2 (S6, S7) auto adjustment mechanism is faulty.	The auto adjustment mechanism of the bin internal paper sensor 2 (S6, S7) fails, or an error occurs in the auto adjustment value.
E530	· The guide bar motor (M8) fails to rotate.	The operation does not end within a specific period of time after the motor drive signal has been generated. · for front access, 5000 msec · except front access, 2000 msec
E531	· The stapler unit drive motor (M4) fails to rotate.	The operation does not end within 2000 msec after the motor drive signal output has been generated. The clock signal from the motor clock sensor (PI8) is absent for 250 msec or more. The input signal from the swing home position sensor (PI9) remains unchanged for 1000 msec.

Code	Cause	Timing of detection
E532	· The stapler unit shift motor (M3) fails to rotate.	The operation does not end within 5000 msec after the motor drive signal has been generated.
E533	· The stapler internal paper sensor auto adjustment mechanism is faulty.	The auto adjustment mechanism of the stapler internal paper sensor fails, or an error occurs in the auto adjustment value.
E540	· The bin shift motor (M9) fails to rotate.	The operation fails to end within a specific period of time after the motor drive signal has been generated. · for initialization, 20000 msec · except initialization, 2000 msec The clock plate sensor of the motor does not generate clock signals for 250 msec. The input signal from the lead cam position sensor (PI20) remains unchanged for 2000 msec.
E550	· The DC output from the sorter controller PCB is faulty.	An error has occurred in the DC output (24 VL, 24 VP) from the sorter controller PCB.

APPENDIX

A. General Timing Chart

• A4/LTR, 2 Copies, Full-Color, Direct,
Single-Sided CLC1150, Cassette 1

[1] shading correction. [2] potential control measurement.

A-2

B. Signals and Abbreviations

1. Signals

400*	LASER SELECT command
AC-ERR*	HIGH VOLTAGE TRANSFORMER AC ERROR signal
ACSBY	AC STANDBY command
AITOP	A-SIDE SENSOR signal
APCHOLD	AUTO POWER CONTROL HOLD command
BD	BEAM DETECT signal
BITOP	B-SIDE SENSOR signal
BK-REF	BK-REFERENCE signal
BK-SGNL	BK-TONER DENSITY signal
BKTEP	BK-TONER EMPTY signal
BLRMA	ATTRACTION/TRANSFER PRESSURE CAM MOTOR command
BLRMA*	ATTRACTION/TRANSFER PRESSURE CAM MOTOR command
BLRMB	ATTRACTION/TRANSFER PRESSURE CAM MOTOR command
BLRMB*	ATTRACTION/TRANSFER PRESSURE CAM MOTOR command
BLRMHL	ATTRACTION/TRANSFER PRESSURE CAM MOTOR HOLD command
BLRMHP	ATTRACTION/TRANSFER PRESSURE CAM HOME POSITION SENSOR signal
C-REF	C-REFERENCE signal
C-SGNL	C-TONER DENSITY signal
C1LFD	CASSETTE-1 LIFTER SENSOR signal
C1LFMON	CASSETTE-1 LIFTER MOTOR ON command
C1PAD	CASSETTE-1 PAPER SENSOR signal
C1PLVR	CASSETTE-1 PAPER LEVEL VR signal
C1PUCL	CASSETTE-1 PICK-UP CLUTCH command
C1PUMA	CASSETTE-1 PICK-UP MOTOR command
C1PUMA*	CASSETTE-1 PICK-UP MOTOR command
C1PUMB	CASSETTE-1 PICK-UP MOTOR command
C1PUMB*	CASSETTE-1 PICK-UP MOTOR command
C1PUMHL	CASSETTE-1 PICK-UP MOTOR HOLD command
C2LFD/D1LFD	CASSETTE-2/1 LIFTER SENSOR signal
C2LFMON	CASSETTE-2/1 LIFTER MOTOR ON command
C2PAD/D1PAD	CASSETTE-2/1 PAPER SENSOR signal
C2PLVR/D1PLVR	CASSETTE-2/1 PAPER LEVEL VR signal
C2PUCL/D1PUCL	CASSETTE-2/1 PICK-UP CLUTCH command
C2PUMA/D1PUMA	CASSETTE-2/1 PICK-UP MOTOR command
C2PUMA*/D1PUMA*	CASSETTE-2/1 PICK-UP MOTOR command
C2PUMB/D1PUMB	CASSETTE-2/1 PICK-UP MOTOR command
C2PUMB*/D1PUMB*	CASSETTE-2/1 PICK-UP MOTOR command
C2PUMHL/D1PUMHL	CASSETTE-2/1 PICK-UP MOTOR HOLD command
C2PWVR	CASSETTE-2 PAPER WIDTH VR signal
C2SZ0	CASSETTE-2 PAPER LENGTH SENSOR signal 0
C2SZ1	CASSETTE-2 PAPER LENGTH SENSOR signal 1
C3LFD/D2LFD	CASSETTE-3/2 LIFTER SENSOR signal
C3LFMON	CASSETTE-3/2 LIFTER MOTOR ON command
C3PAD/D2PAD	CASSETTE-3/2 PAPER SENSOR signal
C3PLVR/D2PLVR	CASSETTE-3/2 PAPER LEVEL VR signal

C3PUCL/D1PUCL	CASSETTE-3/2 PICK-UP CLUTCH command
C3PUMA/D2PUMA	CASSETTE-3/2 PICK-UP MOTOR command
C3PUMA*/D2PUMA*	CASSETTE-3/2 PICK-UP MOTOR command
C3PUMB/D2PUMB	CASSETTE-3/2 PICK-UP MOTOR command
C3PUMB*/D2PUMB*	CASSETTE-3/2 PICK-UP MOTOR command
C3PUMHL/D2PUMHL	CASSETTE-3/2 PICK-UP MOTOR HOLD command
C3PWVR/D2PWVR	CASSETTE-3/2 PAPER WIDTH VR signal
C3SZ0/D3SZ0	CASSETTE-3/2 PAPER SENSOR signal 0
C3SZ1/D3SZ1	CASSETTE-3/2 PAPER SENSOR signal 1
CBRCMA	CLEANER BLADE RECIPROCATING MOTOR command A
CBRCMB	CLEANER BLADE RECIPROCATING MOTOR command B
CDEVA	C-DEVELOPING ASSEMBLY ENGAGING
CDEVA*	C-DEVELOPING ASSEMBLY ENGAGING MOTOR command C
CDEVB	C-DEVELOPING ASSEMBLY ENGAGING MOTOR command C
CDEVB*	C-DEVELOPING ASSEMBLY ENGAGING MOTOR command C
CDEVCL	C-DEVELOPING CYLINDER CLUTCH command C
CDEVHL	C-DEVELOPING ASSEMBLY ENGAGING C MOTOR HOLD command
CDEVHP	C-DEVELOPING ASSEMBLY HOME POSITION SENSOR signal C
CITOP	C SENSOR signal
CTEP	C-TONER EMPTY signal
CTNRSUP*	C-TONER SUPPLY CLUTCH command
DCFMERR	POWER SUPPLY COOLING FAN ERROR signal
DELFLSL*	DELIVERY PAPER DEFLECTOR SOLENOID command
DINPD	DUPLEXING UNIT INLET PAPER SENSOR signal
DJGHP	PAPER JOGGING GUIDE HOME POSITION SENSOR signal
DJOGMA	DUPLEXING UNIT PAPER JOGGING GUIDE MOTOR command
DJOGMA*	DUPLEXING UNIT PAPER JOGGING GUIDE MOTOR command
DJOGMB	DUPLEXING UNIT PAPER JOGGING GUIDE MOTOR command
DJOGMB*	DUPLEXING UNIT PAPER JOGGING GUIDE MOTOR command
DLCOVD	DELIVERY COVER OPEN SENSOR signal
DLFMERR	DELIVERY COOLING FAN ERROR signal
DLFMON	DELIVERY COOLING FAN ON command
DLVP1D	DELIVERY VERTICAL PATH-1 SENSOR signal
DLVP2D	DELIVERY VERTICAL PATH-2 SENSOR signal
DREPD	DUPLEXING UNIT REVERSAL PAPER SENSOR signal
DRHERR	DRUM HEATER ERROR signal
DRHOFF	DRUM HEATER OFF command
DRMCLK	DRUM MOTOR CLOCK signal
DRMCW	DRUM MOTOR ROTATIONAL DIRECTION signal
DRMFG	DRUM MOTOR FG signal
DRMON	DRUM MOTOR ON command
DRMRDY	DRUM MOTOR READY signal
DRMSP0	DRUM MOTOR SPEED CONTROL signal 0
DRMSP1	DRUM MOTOR SPEED CONTROL signal 1
DUPFDCL*	DUPLEXING UNIT FEEDER CLUTCH command
DUPMLK	DUPLEXING UNIT MOTOR LOCK signal
DUPMON	DUPLEXING UNIT MOTOR command
DUPPFSL*	DUPLEXING UNIT PAPER FEEDING ROLLER SOLENOID command
DUPPPD	DUPLEXING UNIT PATH PAPER SENSOR signal
DUPSAPD	DUPLEXING UNIT TRAY PAPER SENSOR signal
DUPUMA	DUPLEXING UNIT PICK-UP MOTOR command

DUPUMA*   DUPLEXING UNIT PICK-UP MOTOR command
DUPUMB   DUPLEXING UNIT PICK-UP MOTOR command
DUPUMB*   DUPLEXING UNIT PICK-UP MOTOR command
DUPUMHL   DUPLEXING UNIT PICK-UP MOTOR HOLD command
DVERPCL   DELIVERY VERTICAL PATH CLUTCH command
ENDPLSL*   DUPLEXING UNIT STACK GUIDE SOLENOID command
EXFMERR   EXHAUST FAN ERROR signal
EXFMON   EXHAUST FAN ON command
FDC1D   CASSETTE-1 OPEN SENSOR signal
FDC2D/FDD1D   CASSETTE-2/1 OPEN SENSOR signal
FDC3D/FDD2D   CASSETTE-3/2 OPEN SENSOR signal
FDCOVD   PICK-UP ASSEMBLY COVER OPEN SENSOR signal
FXMLK   FIXING MOTOR LOCK signal
FXMON   FIXING MOTOR ON command
FXMSP0   FIXING MOTOR SPEED CONTROL signal 0
FXMSP1   FIXING MOTOR SPEED CONTROL signal 1
FXOILD   FIXING OIL LEVEL SENSOR signal
GGUIDSL   ATTRACTION ROLLER SOLENOID command
HOPMCW   HOPPER MOTOR ROTATIONAL DIRECTION signal
HOPMLK   HOPPER MOTOR LOCK signal
HOPMON   HOPPER MOTOR ON command
HUM   ENVIRONMENT SENSOR HUMIDITY signal
HVATC   ATTRACTION CORONA CURRENT ON/OFF CONTROL signal
HVATI   ATTRACTION CORONA CURRENT LEVEL CONTROL signal
HVCC   POST-CLEANING CORONA ON/OFF CONTROL signal
HVCI   POST-CLEANING CORONA LEVEL CONTROL signal
HVGI   GRID BIAS LEVEL CONTROL signal
HVGIC   GRID BIAS ON/OFF command
HVIDCC   INTERNAL STATIC ELIMINATOR DC ON/OFF
                 CONTROL signal
HVIDCI   INTERNAL STATIC ELIMINATOR DC LEVEL
                 CONTROL signal
HVIOC   EXTERNAL/INTERNAL STATIC
                 ELIMINATOR AC ON/OFF CONTROL signal
HVPR   PRIMARY CURRENT ON/OFF command
HVTRC   TRANSFER CORONA CURRENT ON/OFF CONTROL signal
HVTRI   TRANSFER CORONA CURRENT LEVEL CONTROL signal
INDELD   INSIDE DELIVERY PAPER SENSOR signal
IPFMERR   IP COOLING FAN ERROR signal
IPFMON   IP COOLING FAN ON command
ITOP   IMAGE LEADING EDGE signal
KDEVA   BK-DEVELOPING ASSEMBLY ENGAGING MOTOR BK command
KDEVA*   BK-DEVELOPING ASSEMBLY ENGAGING MOTOR BK command
KDEVB   BK-DEVELOPING ASSEMBLY ENGAGING MOTOR BK command
KDEVB*   BK-DEVELOPING ASSEMBLY ENGAGING MOTOR BK command
KDEVCL   BK-DEVELOPING CYLINDER CLUTCH command
KDEVHL   BK-DEVELOPING ASSEMBLY ENGAGING MOTOR HOLD command
KDEVHP   BK-DEVELOPING ASSEMBLY HOME POSITION SENSOR signal
KEYSW*   KEY SWITCH signal
KTNRSUP*   BK-TONER SUPPLY CLUTCH command
L-ON   LASER ON command
L-RDY   LASER READY command
LCOVD   LEFT COVER OPEN SENSOR signal

|	
LFRCWD	LOWER FIXING ROLLER CLEANING WEB SENSOR signal
LHON	LOWER FIXING HEATER ON command
LSMCLK	LASER SCANNER MOTOR CLOCK signal
LSMON	LASER SCANNER MOTOR command
LSMRDY	LASER SCANNER MOTOR READY signal
LTHM3	LOWER FIXING ROLLER TEMPERATURE 3 signal
LTHM4	LOWER FIXING ROLLER TEMPERATURE 4 signal
LWEBSL	LOWER CLEANING WEB SOLENOID command
M-REF	M-REFERENCE signal
M-SGNL	M-TONER DENSITY signal
MDEVA	M-DEVELOPING ASSEMBLY ENGAGING MOTOR command
MDEVA*	M-DEVELOPING ASSEMBLY ENGAGING MOTOR command
MDEVB	M-DEVELOPING ASSEMBLY ENGAGING MOTOR command
MDEVB*	M-DEVELOPING ASSEMBLY ENGAGING MOTOR command
MDEVCL	M-DEVELOPING CYLINDER CLUTCH command
MDEVHL	M-DEVELOPING ASSEMBLY ENGAGING MOTOR HOLD command
MDEVHP	M-DEVELOPING ASSEMBLY HOME POSITION SENSOR signal
MFCOVD	MULTIFEEDER OPEN SENSOR signal
MFFDCL	MULTIFEEDER FEED CLUTCH command
MFLFMA	MULTIFEEDER LIFTER MOTOR command A
MFLFMB	MULTIFEEDER LIFTER MOTOR command B
MFLHD	MULTIFEEDER LIFTER-HIGH SENSOR signal
MFLLD	MULTIFEEDER LIFTER-LOW SENSOR signal
MFPAD	MULTIFEEDER PAPER SENSOR signal
MFPUCL	MULTIFEEDER PICK-UP CLUTCH command
MFPUD	MULTIFEEDER PICK-UP SENSOR signal
MFPUSL	MULTIFEED PICK-UP SOLENOID command
MFPWVR	MULTIFEEDER PAPER WIDTH VR signal
MNMON	MAIN MOTOR ON command
MNMRDY	MAIN MOTOR READY signal
MTEP	M-TONER EMPTY signal
MTNRSUP*	M-TONER SUPPLY CLUTCH command
OHPDTC	OHP SENSOR signal
OTDELD*	EXTERNAL DELIVERY PAPER SENSOR signal
OZFMERR	OZONE SUCTION FAN ERROR signal
OZFMON	OZONE SUCTION FAN ON command
PCDTC	PRE-CLEANING PAPER SENSOR signal
PCFDCL	POSTCARD FEEDER CLUTCH command
PCFMERR	PRIMARY CORONA ASSEMBLY FAN ERROR signal
PCFMON	PRIMARY CORONA ASSEMBLY FAN ON command
PCMFMERR	POWER CORD MOUNT FAN ERR signal
PELA1ON	PRE-EXPOSURE LAMP ON command
PH/TX/H200	ORIGINAL TYPE SELECT command
POSTJD	POST-TRANSFER PAPER SENSOR signal
PRDMA	POLISHING ROLLER MOTOR command A
PRDMB	POLISHING ROLLER MOTOR command B
PREJD	PRE-TRANSFER PAPER SENSOR signal
PRERGD	PRE-REGISTRATION SENSOR signal
PRIMFW	PRIMARY CORONA WIRE CLEANING MOTOR NORMAL DRIVE command
PRIMRV	PRIMARY CORONA WIRE CLEANING MOTOR REVERSE DRIVE command

PRM1A	PRE-REGISTRATION MOTOR 1 command
PRM1A*	PRE-REGISTRATION MOTOR 1 command
PRM1B	PRE-REGISTRATION MOTOR 1 command
PRM1B*	PRE-REGISTRATION MOTOR 1 command
PRM1HL	PRE-REGISTRATION MOTOR 1 HOLD command
PRM2A	PRE-REGISTRATION MOTOR 2 command
PRM2A*	PRE-REGISTRATION MOTOR 2 command
PRM2B	PRE-REGISTRATION MOTOR 2 command
PRM2B*	PRE-REGISTRATION MOTOR 2 command
PRM2HL	PRE-REGISTRATION MOTOR 2 HOLD command
PUFMERR	POWER UNIT COOLING FAN ERROR signal
PUFMON	POWER UNIT COOLING FAN ON command
PUP1SL	PICK-UP ROLLER 1 SOLENOID command
PUP2SL/PUPD1SL	PICK-UP ROLLER 2/1 SOLENOID command
PUP3SL/PUPD2SL	PICK-UP ROLLER 3/2 SOLENOID command
PUVP1AD	PICK-UP VERTICAL PATH-1 SENSOR signal
PUVP2AD	PICK-UP VERTICAL PATH-2 SENSOR signal
PUVP3AD	PICK-UP VERTICAL PATH-3 SENSOR signal
PVE	PAGE VERTICAL SYNCHRONOUS command
RCOVD	RIGHT COVER OPEN SENSOR signal
REFMERR	REAR INTAKE FAN ERROR signal
REFMON	REAR INTAKE FAN ON command
REGCL*	REGISTRATION CLUTCH command
REGDTC	REGISTRATION SENSOR signal
REPUCL*	DUPLEXING UNIT PICK-UP CLUTCH command
RGRLSL	REGISTRATION ROLLER RELEASING SOLENOID command
RPUVPD	DUPLEXING UNIT PICK-UP VERTICAL PATH SENSOR signal
SCDSL	SEPARATION CLAW SOLENOID command
SCFMERR	LASER SCANNER MOTOR COOLING FAN ERROR signal
SCFMON	LASER SCANNER MOTOR COOLING FAN ON command
SCHP	SCANNER HOME POSITION signal
SHUTOFF*	SHUT OFF signal
SJAMD	SEPARATION SENSOR signal
SL1FMERR	SCANNING LAMP COOLING FAN 1 ERROR signal
SL1FMON	SCANNING LAMP COOLING FAN 1 ON command
SL2FMERR	SCANNING LAMP COOLING FAN 2 ERROR signal
SL2FMON	SCANNING LAMP COOLING FAN 2 ON command
SL3FMERR	SCANNING LAMP COOLING FAN 3 ERROR signal
SL3FMON	SCANNING LAMP COOLING FAN 3 ON command
SPACC	SEPARATION CORONA AC ON/OFF CONTROL signal
SPACI	SEPARATION CORONA AC VOLTAGE LEVEL CONTROL signal
SPDCC	SEPARATION CORONA DC ON/OFF CONTROL signal
SPDCI	SEPARATION CORONA DC CURRENT LEVEL CONTROL signal
SSPUPSL	SEPARATION PUSH-UP SOLENOID command
STCLOSE*	STOP PLATE SOLENOID CLOSE command
STOPEN*	STOP PLATE SOLENOID OPEN command
TEMP	ENVIRONMENT SENSOR TEMPERATURE signal
TNFMERR	TONER SUCTION FAN ERROR signal
TNFMON	TONER SUCTION FAN ON command
TRCMLK	TRANSFER DRUM CLEANER BRUSH MOTOR LOCK signal
TRCMON	TRANSFER DRUM CLEANER BRUSH MOTOR ON command
TRDCMA	TRANSFER DRUM CLEANER MOTOR command
TRDCMA*	TRANSFER DRUM CLEANER MOTOR command

TRDCMB	TRANSFER DRUM CLEANER MOTOR command
TRDCMB*	TRANSFER DRUM CLEANER MOTOR command
TRDCMHL	TRANSFER DRUM CLEANER MOTOR HOLD command
TRDCPHP	TRANSFER DRUM CLEANER HOME POSITION SENSOR signal
TRDMA	TRANSFER DRUM MOTOR command
TRDMA*	TRANSFER DRUM MOTOR command
TRDMB	TRANSFER DRUM MOTOR command
TRDMB*	TRANSFER DRUM MOTOR command
TRDMHL	TRANSFER DRUM MOTOR HOLD command
TRDPHP	TRANSFER DRUM HOME POSITION SENSOR signal
UFRCWD	UPPER FIXING ROLLER CLEANING WEB SENSOR signal
UHON	UPPER FIXING HEATER ON command
UTHM1	UPPER FIXING ROLLER TEMPERATURE 1 signal
UTHM2	UPPER FIXING ROLLER TEMPERATURE 2 signal
UWEBSL	UPPER CLEANING WEB SOLENOID command
VCLK	VIDEO CLOCK PULSE command
VD0-VD7	VIDEO0-7 command
WTNRBD	WASTE TONER FEEDING SCREW LOCK DETECTING SWITCH signal
WTONER	WASTE TONER FULL SENSOR signal
Y-REF	Y-REFERENCE signal
Y-SGNL	Y-TONER DENSITY signal
YDEVA	Y-DEVELOPING ASSEMBLY ENGAGING MOTOR command
YDEVA*	Y-DEVELOPING ASSEMBLY ENGAGING MOTOR command
YDEVB	Y-DEVELOPING ASSEMBLY ENGAGING MOTOR command
YDEVB*	Y-DEVELOPING ASSEMBLY ENGAGING MOTOR command
YDEVCL	Y-DEVELOPING CYLINDER CLUTCH command
YDEVHL	Y-DEVELOPING ASSEMBLY ENGAGING MOTOR HOLD command
YDEVHP	Y-DEVELOPING ASSEMBLY HOME POSITION SENSOR signal
YTEP	Y-TONER EMPTY signal
YTNRSUP*	Y-TONER SUPPLY CLUTCH command

2. Abbreviations

AINTR	ADDITIONAL INITIAL ROTATION
CNTR	CONTROL ROTATION
COPY	COPY
DSRDY	SCANNER READY
INTR	INITIAL ROTATION
LSTR	LAST ROTATION
STBY	STANDBY
WMPU	WARM UP

Power supply assembly

Developing assembly

Hopper assembly

Developing locking driver PCB

DC driver PCB

Fixing assembly

Power switch assembly

High-voltage transformer

Delivery assembly

120V 230V

100V 120V/USA

SSR1

SSR1

Oil pump driver PCB

Oil pump driver PCB

Power switch

Control key

Potential measurement PCB

HVT-DC PCB

HVT-AC PCB

Developing bias PCB

CLC1120/1130

CLC1150

Primary charging wire cleaning motor

Ozone suction fan

Pre-exposure lamp

Delivery cooling fan

External delivery sensor

(F-2)

(E-3)

A

B

JPN ONLY

Cleaning blade reciprocating motor

Post-feed clutch

Power supply cooling fan 2

Power supply cooling fan 1

SSR2

100/120V ONLY

Delivery cover sensor

Waste toner case full sensor

Right front cover sensor

Left front cover sensor

Environment sensor

Subsortbuffer path socket

Paper deck socket

Laser scanner motor

Fixing motor

Main motor

Drum motor

Motor assembly

E. Specifications

1. Type

Item	Specifications
Body	Console (reader and printer constructed as one)
Copyboard	Fixed
Light source	Halogen lamp
Lens	Arranged in an array
Image reader	Photocell (BRG line CCD; fixed, mirror scanning)
Photosensitive medium	OPC drum (180-mm dia.)

Table A-1

2. System

Item	Specifications
Copying	Laser beam indirect photostatic transfer
Charging	Corona
Exposure	Slit, laser beam
Contrast adjustment	Automatic
Development	Dry toner projection
Toner supply	Manual (345 g/bottle)
Pickup	Cassette x 2 (CLC1120/1150), cassette x 3 (CLC1130), multifeeder tray, duplexing unit (CLC1150)
Attraction	Pre-transfer static attraction
Transfer	Blade transfer
Separation	Separation claw, separation pushup roll (separation charging assembly as auxiliary mechanism)
Cleaning	Cleaning blade
Fixing	Heat roller Upper: 540 W (100/120 V), 700 W (230 V) Lower: 500 W (common for all models)

Note: The CLC1120 is available only as a non-Japanese model.

Table A-2

3. Functions

Item	Specifications
Resolution	Reader: 400 x 400 dpi
	Recorder: 800-equivalent x 400 dpi
Gradation	256 gradations
Original type	Sheet, book, 3-D object (2 kg max.)
Maximum original size	A3 (297 x 420 mm) / 279.4 x 431.8 mm (11 x 17)
Copy size	AB: 6R6E (Japanese)
	Inch/A: 5R4E (North or Central America)
	AB/Inch: 6R5E (Asia, Oceania, South America)
Zoom	25% to 400% (in 1% increments)
Wait time	8 min 30 sec or less (at 20°C) ; 120V
	8 min or less (at 20°C) ; 230V
First copy time (w/o pre-scanning)	Less than 18.1 sec (full color)
	Less than 9.6 sec (mono color)
Continuous copying	1 to 100 sheets
Copying speed	See Table 1-206.
Copy size	Cassette: B5 (257 x 182 mm)/LTR to A3 (297 x 420 mm)/279.4 x 431.8 mm (11 x 17)
	Multifeeder: B5 (257 x 182 mm) to A3 (297 x 420 mm)/279.4 x 431.8 mm (11 x 17) + extra length size (12 x 18)
Copy paper type	Cassette: Plain paper (64 to 105 g/m^2), transparency (A4/LTR)
	Multifeeder: Plain paper (64 to 209 g/m^2), transparency (A4/LTR)
	Auto double-sided: Plain paper only (90 to 105 g/m^2)
	Multifeeder double-sided: Plain paper only (90 to 209 g/m^2)
Cassette	No claw, front loading, 60 mm deep (about 550 sheets of 81.4 g/m^2)
Multifeeder	250 sheets (81.4 g/m^2)
Duplexing unit	50 sheets (105 g/m^2)
Copy tray	100 sheets 981.4 g/m^2)
Image margin	Leading edge: 8.0 ± 1.5 mm (8.0 ± 2.0 mm)
	Trailing edge: 2.5 ± 1.5 mm (4.5 ± 2.0 mm)
	Left/right: 2.0 ± 1.5 mm (2.0 ± 1.5 mm)
	Parentheses represent double-sided copying.
Auto clear	Yes, 2-min standard (may be changed between 0 and 9 min)
Auto power-off	Yes , 1-hr standard (may be changed between 0 and 24hr)
Power Save mode	Yes , (Saving level may be either -10%, -25%, -50%, or non-recovery)
Accessories	RDF-E2/RDF-E2 CLC1100 Series Power Supply Kit
	Stapler Sorter-F1/CLC Buffer Pass Unit 1
	CLC Paper Deck-E1
	CLC Film Projector-D1
	Editor-F1
	CLC IP-ED Board-B1 (hereafter, IP-ED Board)
	CLC Interface Board-D1 (hereafter, IP-IF Board)
	Document Holder-E1
	Cassette Heater Kit-15, Cassette Heater Kit-16 (non-Japanese)
	Control Card-V
	Copy Data Controller-A1
	Remote Diagnostic Device II

Table A-3

4. Others

Item	Specifications
Operating environment	Temperature: 15° to 30°C / 59 to 86 °F Humidity: 5% to 80% Atmospheric pressure: 810 to 1013 hPa (0.8 to 1.0 atm)
Power supply	100V / 50, 60Hz 120V / 60Hz, 230V / 50Hz
Serial No.	CLC1120: NNE ***** NND ***** PNJ ***** RNC ***** SND ***** UND ***** CLC1130: LNC ***** PNM ***** QND ***** RNE ***** SNC ***** TNC ***** UNC ***** PNR ***** CLC1150: LNB ***** NNC ***** PNB ***** QNB ***** RNB ***** SNB ***** TNB ***** UNB ***** PNH *****
Maximum power consumption	1.5 kW or less Copying: 719 Wh or less (reference only) Standby: 338 Wh or less (reference only)
Noise	Copying: 77 dB (power sound level) Standby: 95 dB (power sound level)
Ozone	0.02 ppm or less (average; 0.05 ppm max.)
Dimensions	Width: 768 mm / 30.2 in Depth: 774 mm / 30.5 in Height: 1000 mm / 39.4 in
Weight	291.5 kg / 642.5 lb (approx.; CLC1150) 277.5 kg / 611.6 lb (approx.; CLC1130) 272.5 kg / 600.6 lb (approx.; CLC1120)
Consumables	Copy paper: Keep wrapped, and protect againstmoisture. Toner: Protect against direct sunlight, and keep under 40°C, 85%.

Table A-4

5. Default Ratios

a. Japan Australia, others (6R5E)

Item	Enlargement		Reduction	
Default ratio	I	1 : 1.154	I	1 : 0.250
	II	1 : 1.224	II	1 : 0.500
	III	1 : 1.414	III	1 : 0.611
	IV	1 : 2.000	IV	1 : 0.707
	V	1 : 4.000	V	1 : 0.816
			VI	1 : 0.865

Table A-5a

b. North America (5R4E)

Item	Enlargement	Reduction
Default ratio	I 1 : 1.214 II 1 : 1.294 III 1 : 2.000 IV 1 : 4.000	I 1 : 0.25 II 1 : 0.50 III 1 : 0.647 IV 1 : 0.733 V 1 : 0.785

Table A-5b

c. Europe (3R3E)

Item	Enlargement	Reduction
Default ratio	I 1 : 1.414 II 1 : 2.000 III 1 : 4.000	I 1 : 0.25 II 1 : 0.50 III 1 : 0.707

Table A-5c

6. Copying Speed

Size	Copy paper size	copies/min (full color)	copies/min (mono color)
A3 (297 x 420 mm)	A3	5.5	21
A4 (210 x 297 mm)	A4	11	42
AAR (297 x 210 mm)	A4R	5.5	21
B4 (257 x 364 mm)	B4	5.5	21
B5 (182 x 257 mm)	B5	11	42
279.4 x 431.8 mm (11" x 17")	11 x 17	5.5	21
LTR	LTR	11	42
LTRR	LTRR	5.5	21
LGL	LGL	5.5	21

Table A-6

Specifications are subject to change for product improvement.

7. CLC Paper Deck-E1

Item	Specifications
Pickup	No claw (retard)
Storage	Side tray
Copy paper type	Plain paper (64 to 105 g/m^2)
Copy paper size	A4, B5, LTR
Storage size	2500 sheets (105 g/m^2)
Serial No.	ZRU ****** ZRT ***** ZRS *****
Paper size switch	By size guide plate in steps and in service mode (OPTION>ACC>DK-P)
Dimensions	Width: 323.2 mm / 127 in Depth: 591 mm / 23.3 in Height: 432 mm / 17.0 in
Width	30.6 kg / 67.4 lb
Power supply	DC, from the copier
Operating environment	Same as the copier

Table A-7

Specifications are subject to change for product improvement.

Canon

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