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# COLOR LASER COPIER 1120/1130/1150

# SERVICE HANDBOOK

REVISION 0

**Canon**

**MAR 1999**

**FY8-23B4-000**

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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.  Or, 1 yr. Or, 1 yr. Or, 1 yr.
	Copyboard cover		△			
	Ozone filter		●			
	Air filter		●			
	Toner filter		●			
Original exposure	Original reflecting cover		△			Use blower brush.  After cleaning, apply silicone oil.
	No. 1 through No. 3 mirrors, Lens		△			
	Scanner rail		△×			
Pickup/feeding	Attraction, registration spring clutch				×	Use lubricant.  Remove unit, and clean. Remove unit, and clean. Remove unit, and clean. Remove unit, and clean.  Clean the guide surface
	Attraction roller		△			
	Attraction roller cleaner pan		△			
	Registration roller		△			
	Pre-registration roller 2		△			
	Pre-registration roller 1		△			
	Registration path middle guide		△			
	Pickup vertical path roller		△			
Transfer drum	Transfer drum cleaner		△		×	Apply lubricant to the bushing 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. See Note.
	Black toner concentration sensor	△				
	Pre-cleaner sensor	△				Clean with cotton wad; see Note. Clean when replacing photosensitive drum. Clean when replacing photosensitive drum.
	Pre-exposure lamp filter			△		
	Photosensitive drum butting block	△ (front)		△		
		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. Turn over felt. Dry wipe.
	Oil applying felt	△				
	Thermistor	△				
	Fixing oil			◎×		
Others	Waste toner		◎●			Remove build up of toner.
	Hopper toner pan		△			
	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.

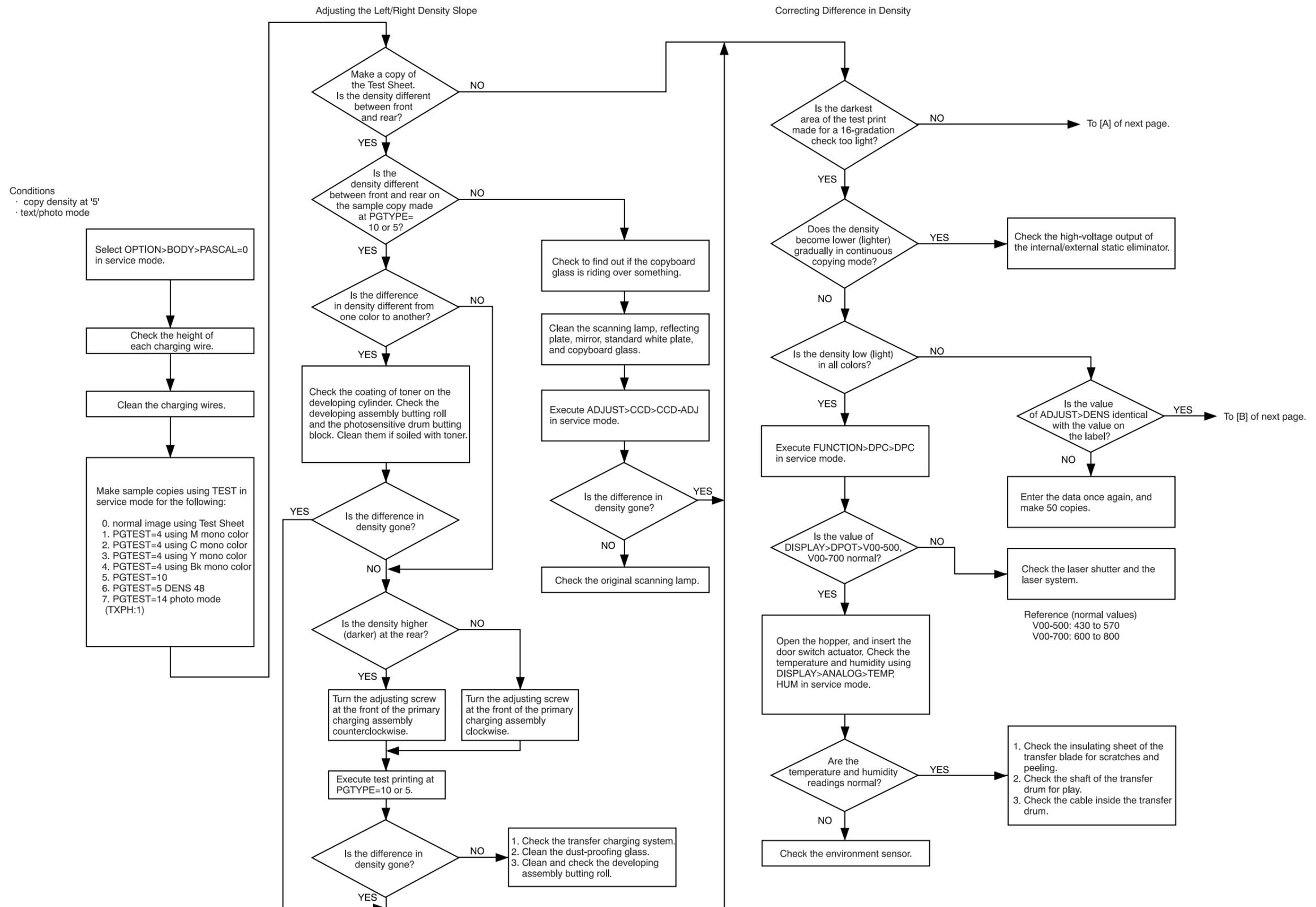
No.	Part name	Part number	Q'ty	Life (copies)	Remarks
26	Bk starter developer	F42-3102	1	40,000	120V UL only.
		F42-3103	1	40,000	
27	Separation/internal and external static charging wires	FY3-0030-000	1	50,000	100V
	Separation/internal and external charging wires	FY3-0040-000	1	50,000	120/230V
28	Attraction 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	

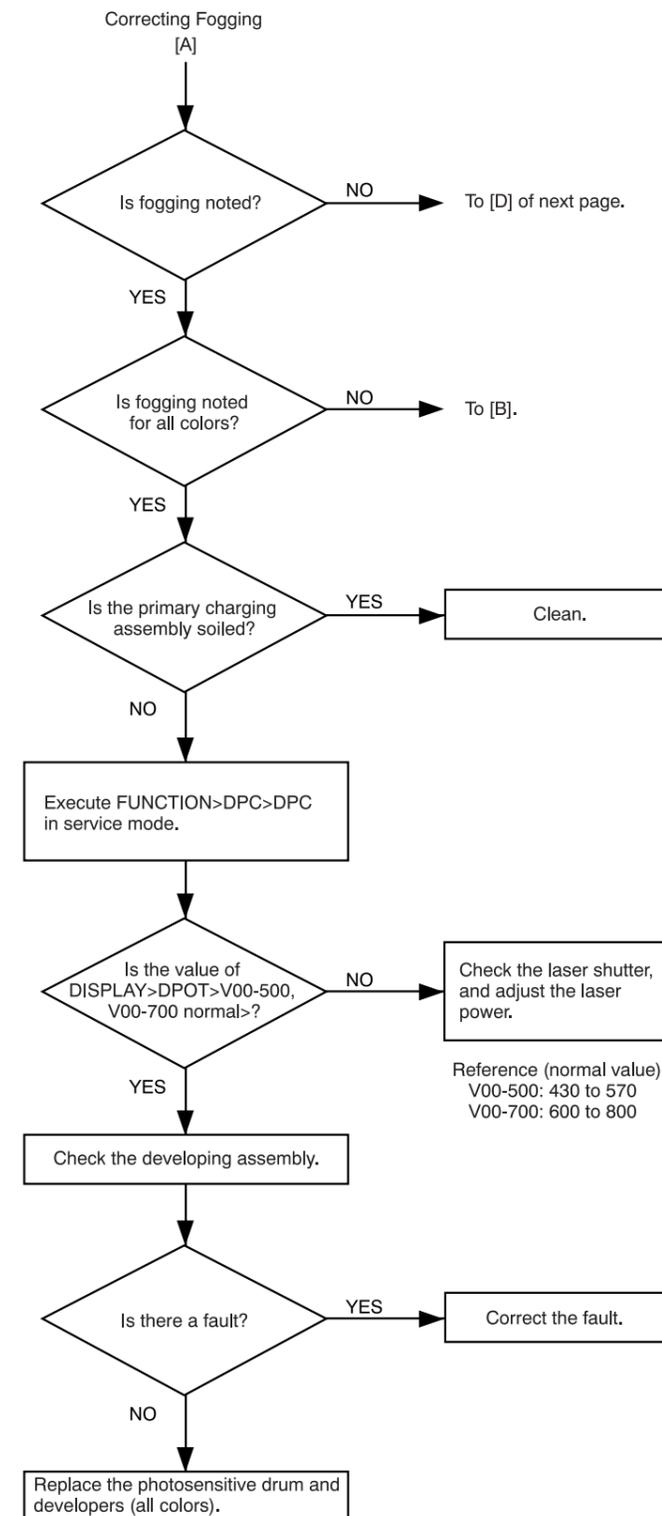
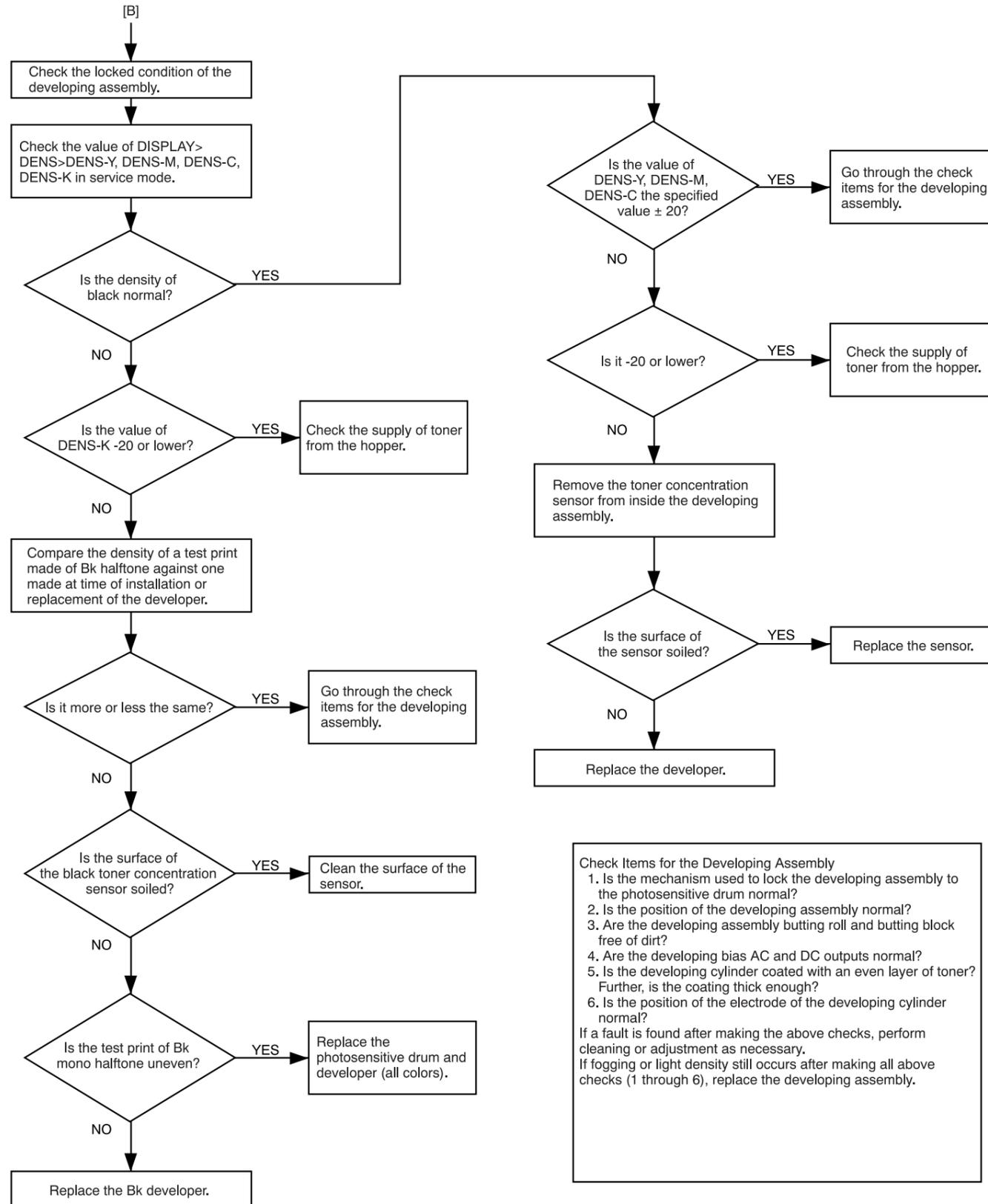
**2. Paper Deck**

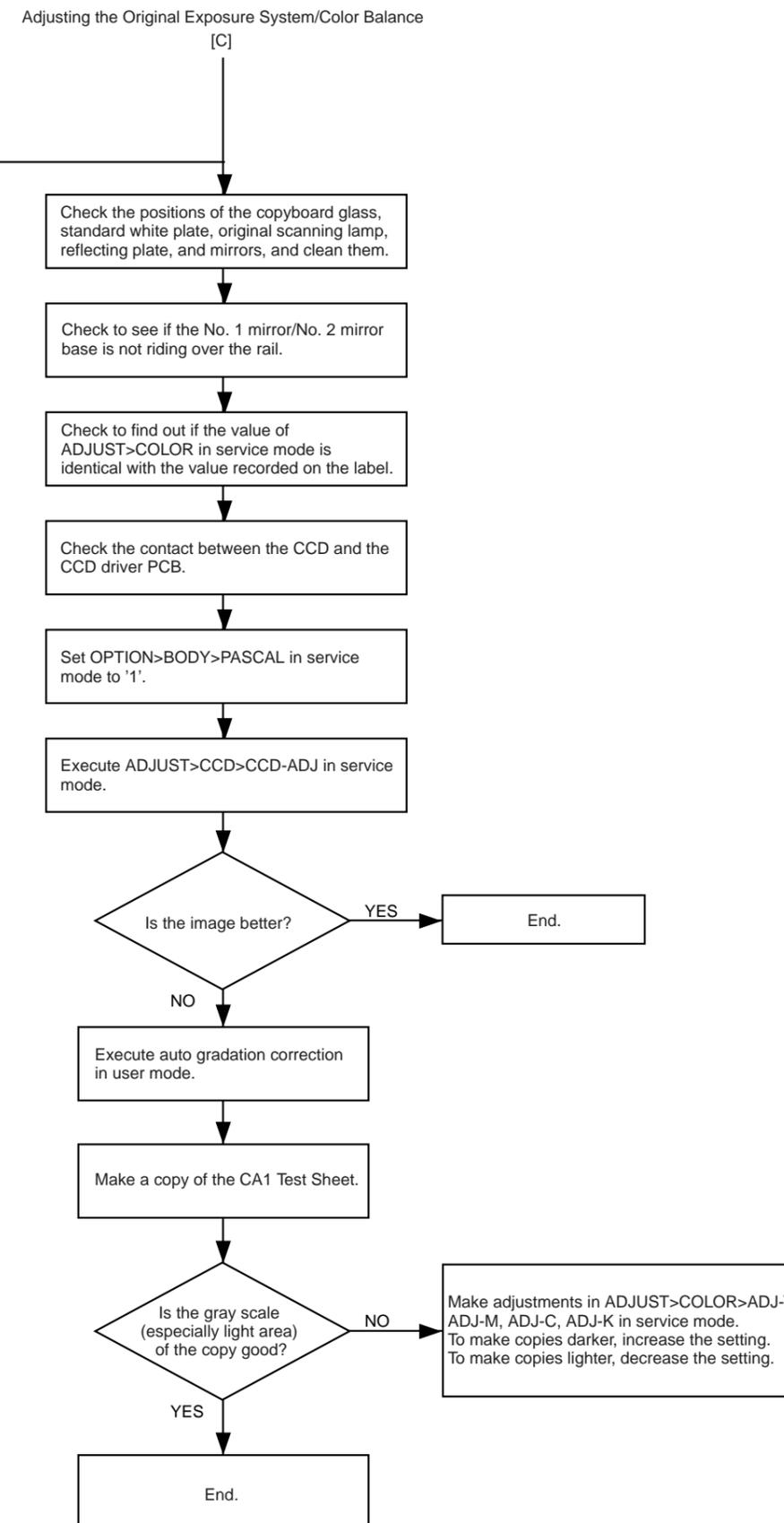
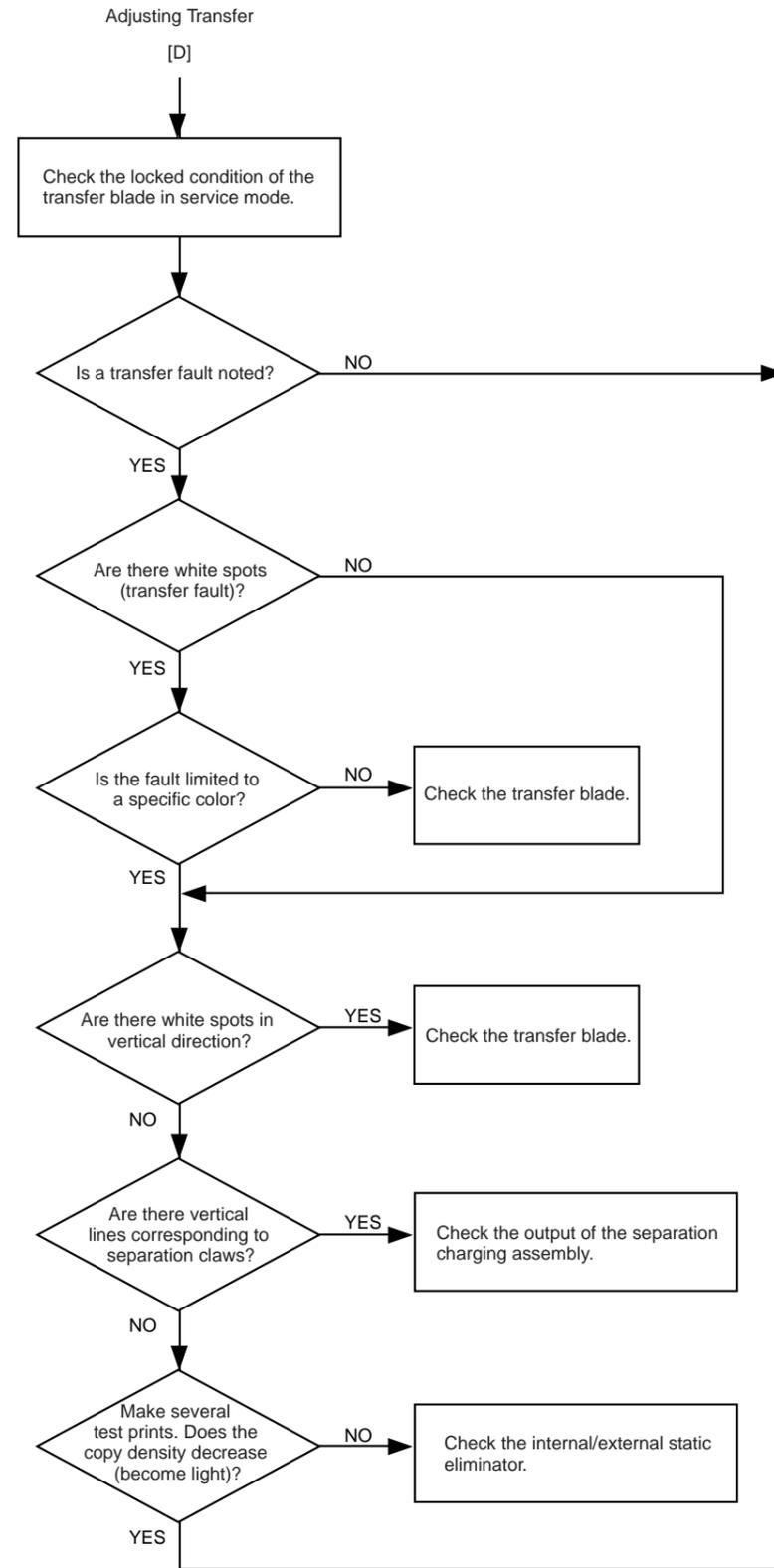
As of February 1999

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







## 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.

## 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 ( $8.0 \pm 2.0$  mm)

Left/right:  $2.0 \pm 1.5$  mm ( $2.0 \pm 1.5$  mm)

Trailing edge:  $2.5 \pm 1.5$  mm ( $4.5 \pm 2.0$  mm)

The value in parentheses represents double-sided copying.

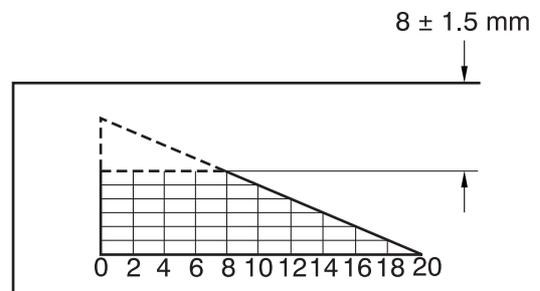


Figure 2-1 Leading Edge Image Margin

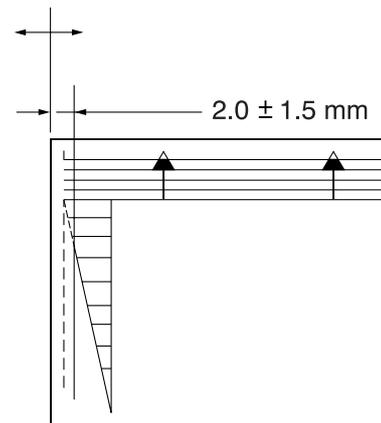


Figure 2-2 Left/Right Image Margin

#### 2 Checking/Adjusting the Image Margin

When making checks and adjustments, observe the following order:

- Adjusting the left/right registration
- Adjusting the attraction position (ATT-T)
- Adjusting the image margin (RG-XA, RG-XB)
- Adjusting the transfer delay (TR-DELAY)
- Adjusting the image read start position (ADJ-XY)
- 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, multifeder, and duplexing unit, and check the left/right registration A; it is correct if as follows:
  - for cassette:  $2.0 \pm 1.5$  mm
  - for multifeder:  $2.0 \pm 1.5$  mm
  - for duplexing unit:  $2.0 \pm 1.5$  mm
- 2) If the registration A is not as indicated, perform the following:

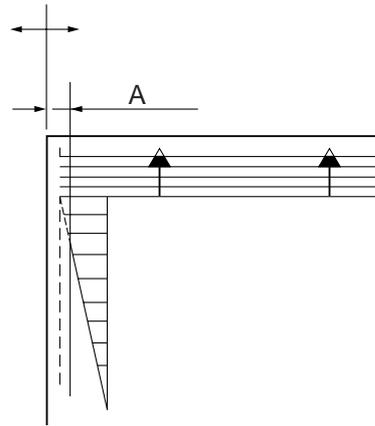


Figure 2-3

▪ 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  $2.0 \pm 1.5$  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."

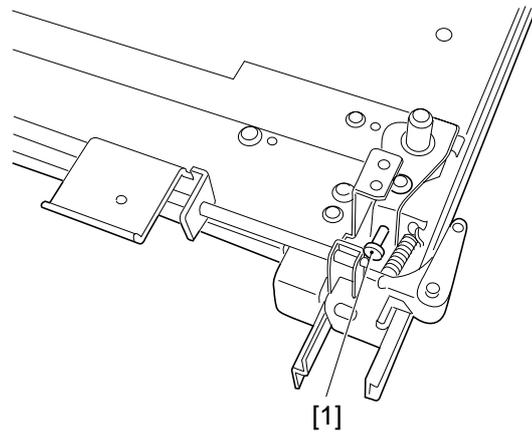


Figure 2-4

- For the Multif feeder  
Turn the screw [1] to move the position of the tray so that the registration is  $2.0 \pm 1.5$  mm in Direct.

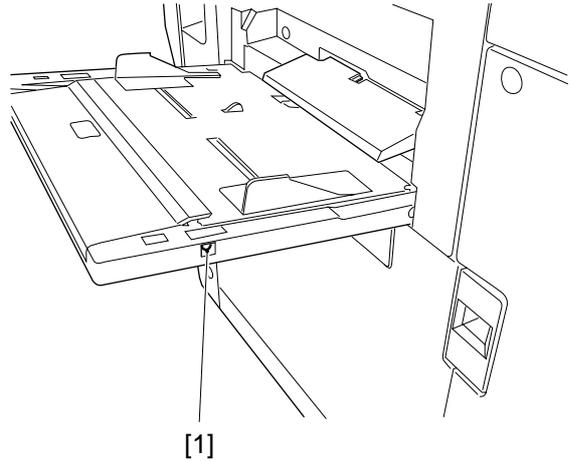


Figure 2-5

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

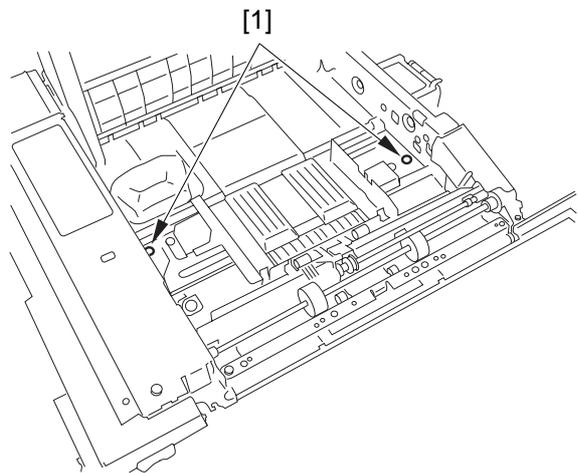


Figure 2-6

- 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.

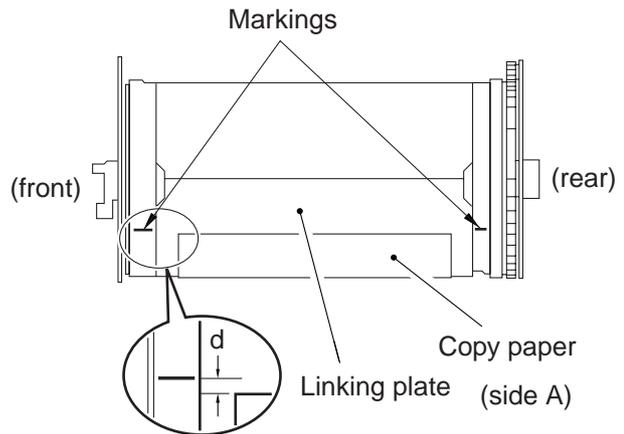


Figure 2-7

- 7) Make adjustments so that  $d$  is  $0 \pm 0.5$  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.

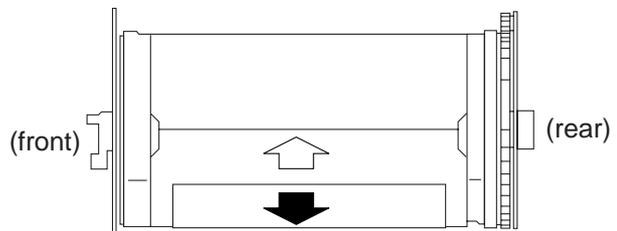
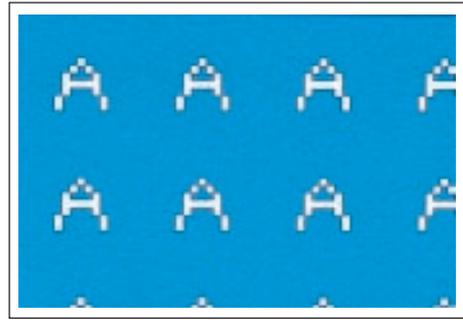


Figure 2-8

- 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.



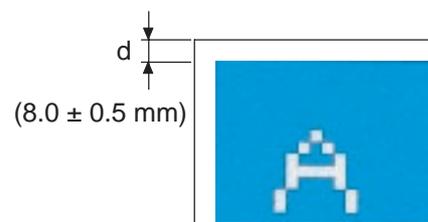
Test print on side A



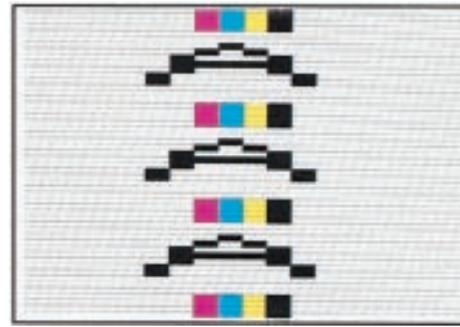
Test print on side B

**Figure 2-9**

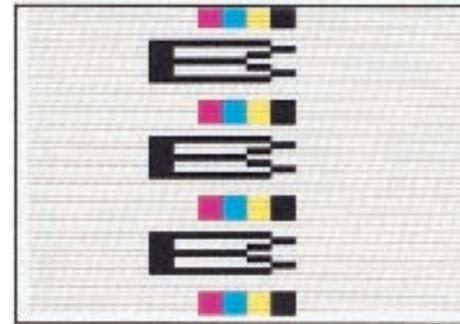
- 4) Measure the leading edge margin  $d$  on the print. Perform this for both sides A and B.
  - 5) Select the following service modes; then, make adjustments by changing the settings so that the leading edge  $d$  is  $8 \pm 0.5$  mm.
    - for side A: **ADJUST>FEED-ADJ>RG-XA**
    - for side B: **ADJUST>FEED-ADJ>RG-XB**
- 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.



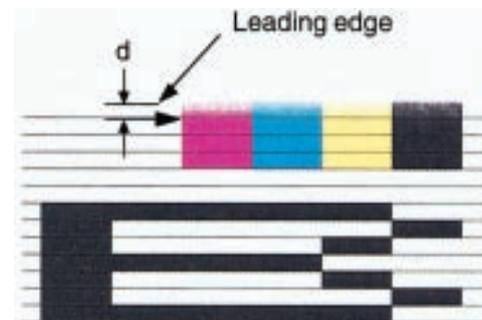
Test print on side A



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  $3 \pm 0.5$  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 ( $8 \pm 0.5$  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.

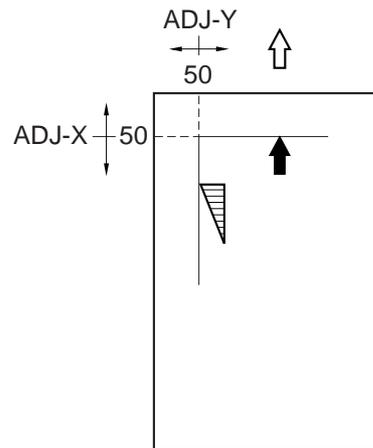


Figure 2-13

- 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.

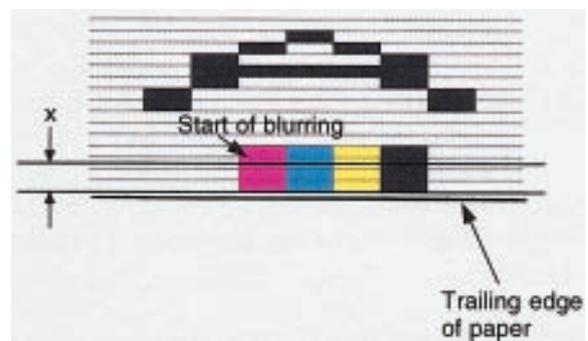


Figure 13-213a

## 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."

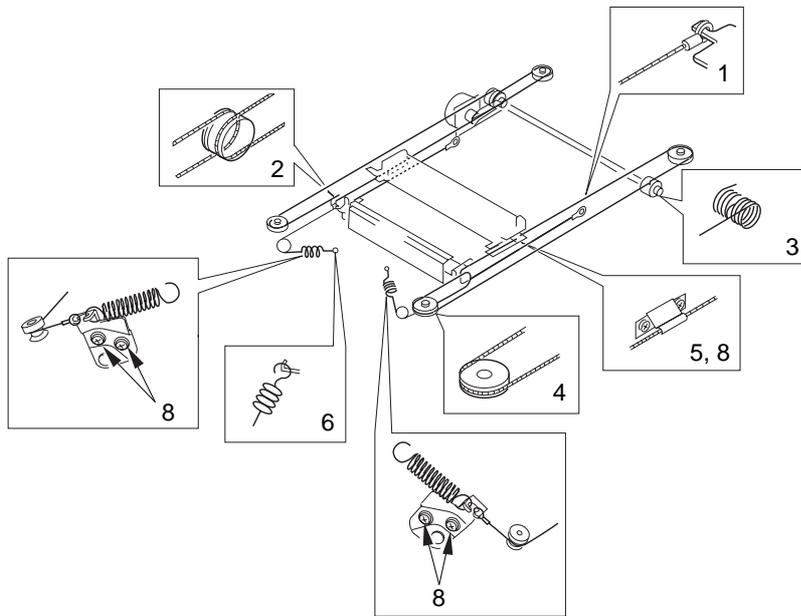


Figure 2-14

### 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.

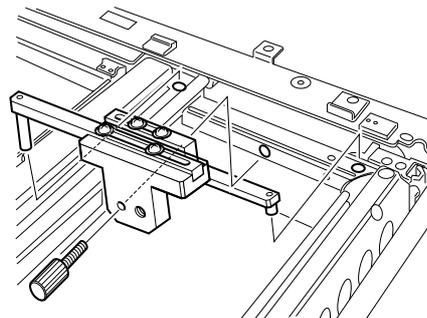


Figure 2-15

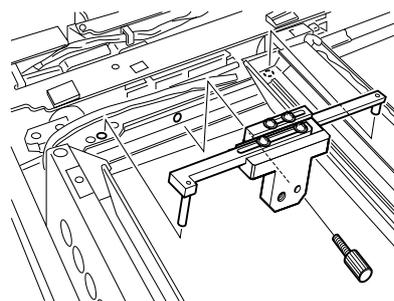


Figure 2-16

### C. Image Formation System

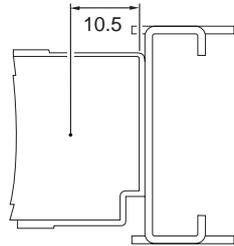
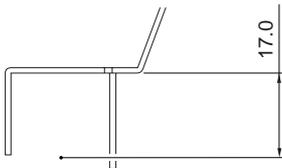
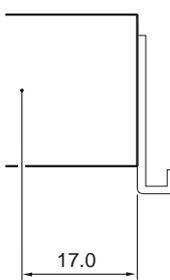
<b>1</b>	<b>Adjusting the Height of Charging Wires</b>
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The height (position) of the charging wire of each charging assembly may be adjusted by turning the screw found behind the assembly. A full turn of the screw will shift the charging wire by about 0.7 mm.

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

<b>2</b>	<b>Points to Note about the Photosensitive Drum</b>
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- 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.

Charging assembly	Height of charging wire (mm)	Range
Primary charging assembly		4 mm (approx.)
Separation charging assembly		4 mm (approx.)
External charging assembly		4 mm (approx.)

**Table 2-17**

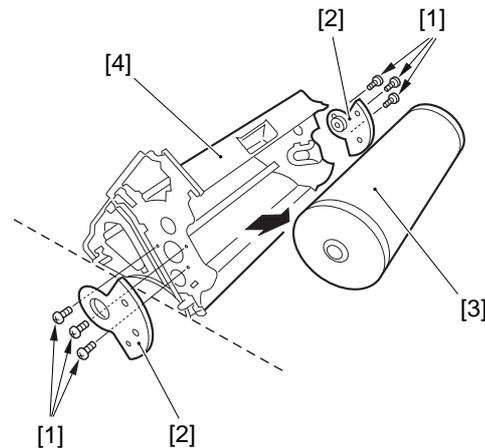
- 6) Dry wipe the window of the pre-cleaning sensor, and mount it.
  - 7) Turn on the power switch, and keep the copier in standby state.
  - 8) Select FUNCTION>INSTALL>**STIR-4** in service mode, and execute it.
  - 9) Select FUNCTION>SENS-ADJ>**CLN-OFST**, and execute it.
  - 10) Record the settings 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.

<b>3</b>	<b>Adjusting the Position of the Photosensitive Drum Fixing Shaft</b>
----------	---

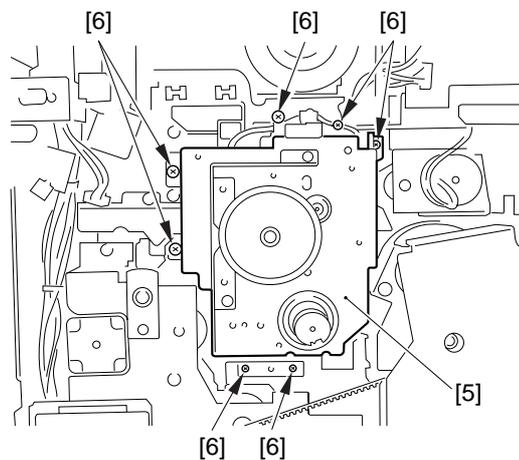
Slide the photosensitive drum frame unit about 5 cm out of the copier, and then slide it back in. If the movement is not smooth, adjust the position of the photosensitive drum fixing shaft using the drum shaft positioning tool (FY9-3045-000).

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].

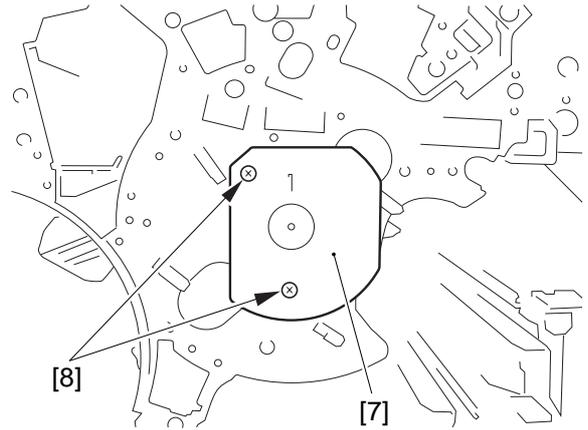


**Figure 2-18**



**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**

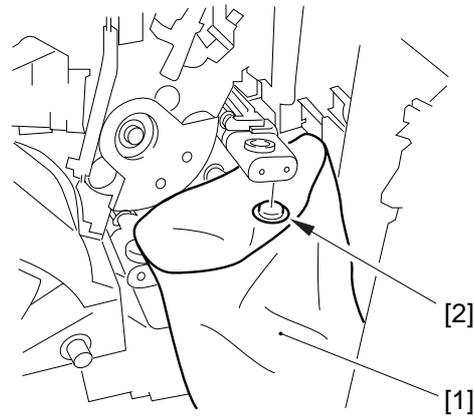
If you have replaced the developing blade, adjust the S-B gap of each sleeve using the S-B gap gauge (FY9-3044-000).

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

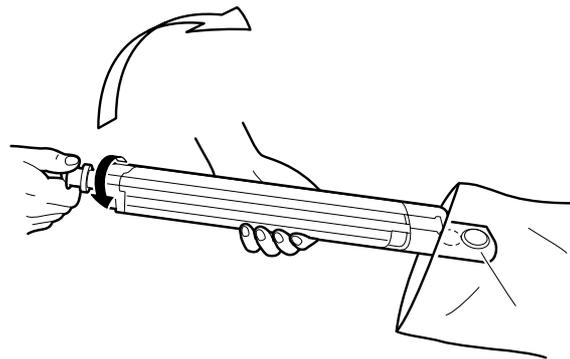
**Table 2-1**

**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.

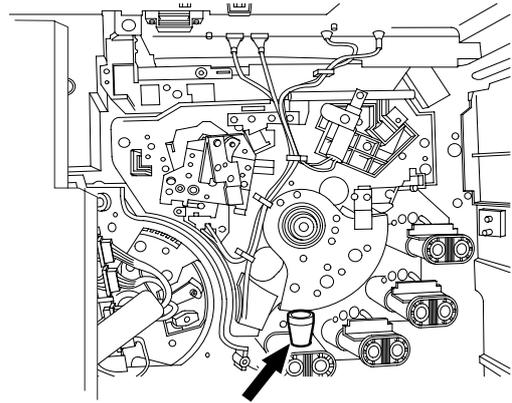


Figure 2-23

- 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.

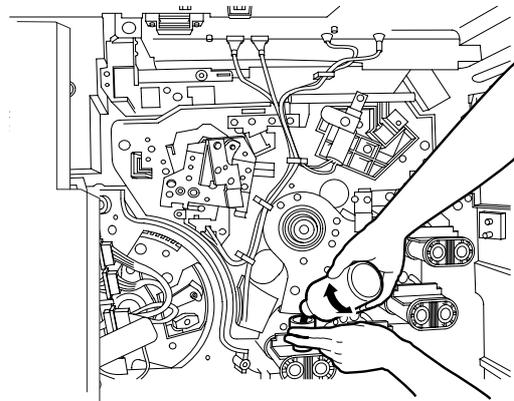


Figure 2-24

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

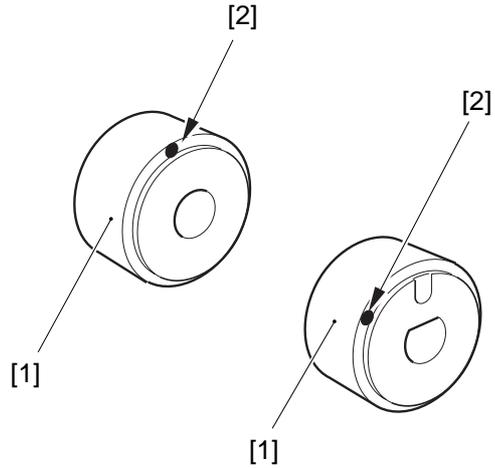
If you have dry wiped the window of the black toner concentration sensor, select and execute **FUNCTION>INSTALL>INIT-D** after mounting it.

## D. Pickup/Feeding System

<b>1</b>	<b>Orientation of the Cassette Pickup Roller</b>
----------	--

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:

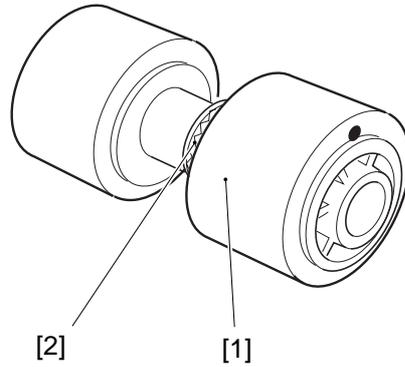
- for the front, use the gold-colored roller.
- for the rear, use the silver-colored roller.



**Figure 2-25**

<b>2</b>	<b>Orientation of the Cassette Feed Roller</b>
----------	--

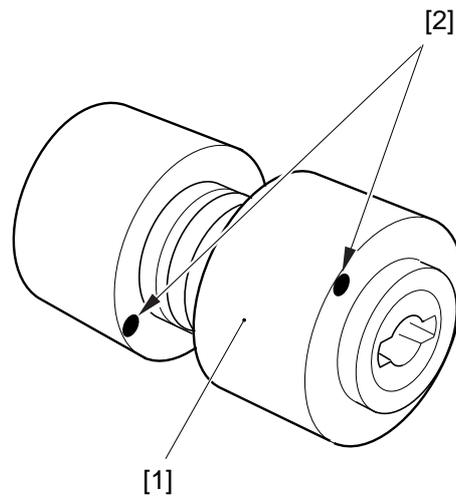
When mounting the feed roller [1] to the pickup assembly, be sure that the gear [2] of the feed roller is at the copier's front.



**Figure 2-26**

<b>3</b>	<b>Orientation of the Cassette Separation Roller</b>
----------	--

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

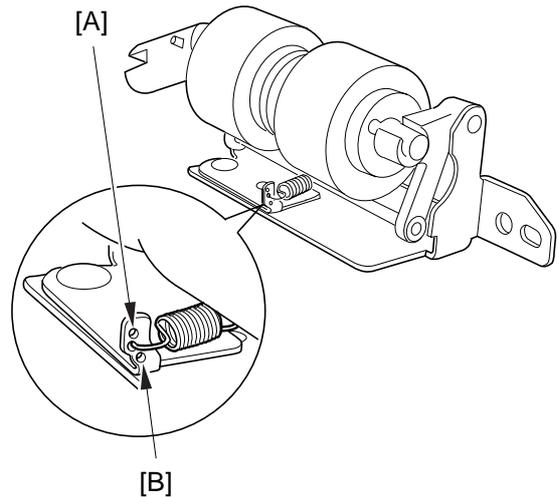


**Figure 2-27**

<b>4</b>	<b>Adjusting the Pressure of the Separation Roller</b>
----------	--

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.

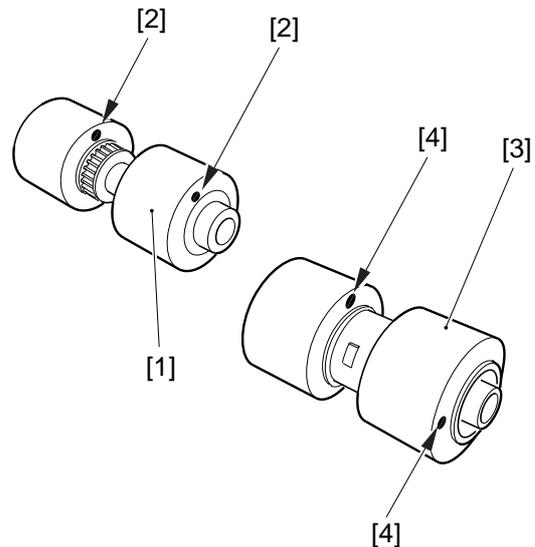


**Figure 2-28**

<b>5</b>	<b>Orientation of the Duplexing Feed Roller and the Duplexing Separation Roller</b>
----------	---

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

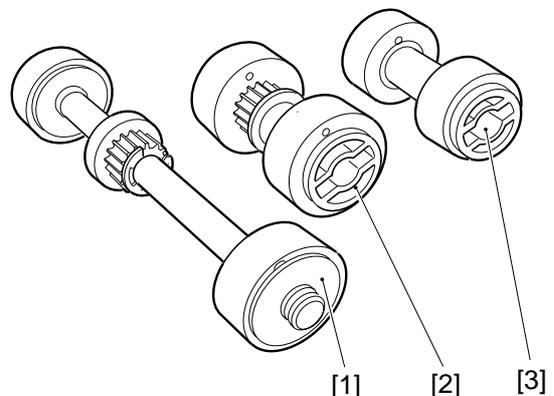
When mounting the separation roller [3], be sure that the round marking [4] is at the copier's rear.



**Figure 2-29**

<b>6</b>	<b>Orientation of the Manual Pickup, Feed, and Separation Rollers</b>
----------	---

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

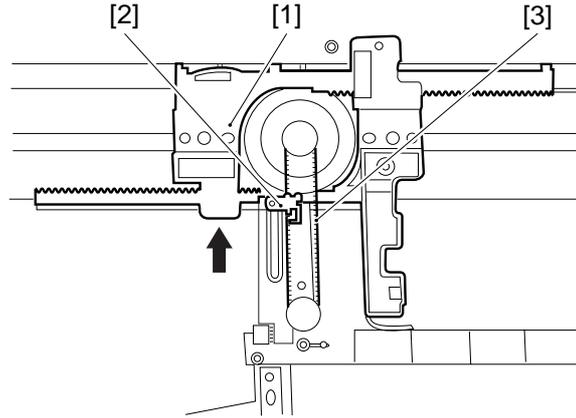


**Figure 2-30**

<b>7</b>	<b>Attaching the Timing Belt for the Mulfefeeder Assembly</b>
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Keep the rack plate [1] of the mulfefeeder in closed state.

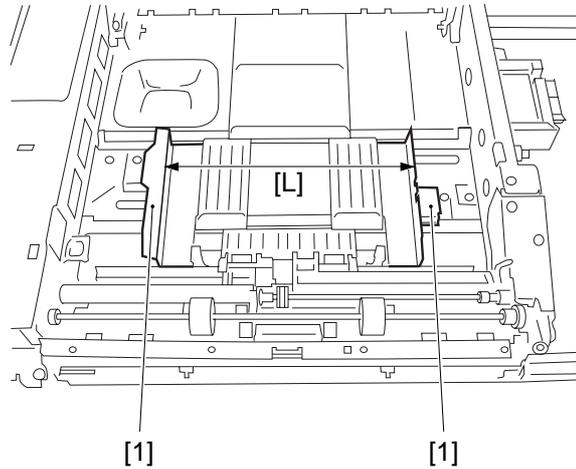
Move the slide volume [2] in the direction of the arrow, and attach the timing belt [3] to the pulley.



**Figure 2-31**

<b>8</b>	<b>Adjusting the Position of the Duplexing Unit Paper Jogging Guide Sensor</b>
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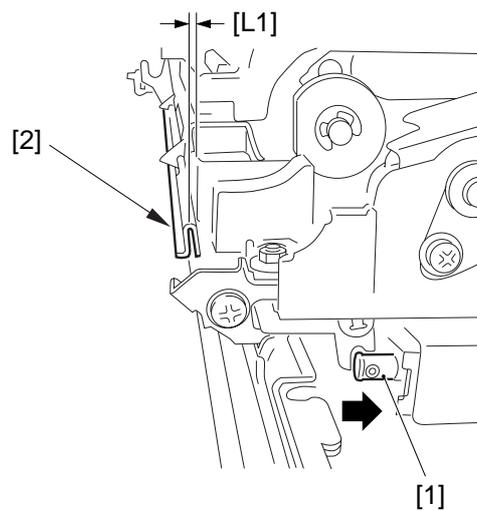
- 1) Select A4R or LTRR, and perform copying on the first side of a double-sided copy.
- 2) Slide out the duplexing unit.
- 3) Measure the distance L of the paper jogging guide plate [1].  
 A4R:  $L = 210 \pm 0.3 \text{ mm}$   
 LTRR:  $L = 216 \pm 0.3 \text{ mm}$
- 4) If the distance is not as indicted, adjust the position of the paper jogging guide sensor.



**Figure 2-32**

<b>9</b>	<b>Position of the Duplexing Unit Stopper Plate Solenoid</b>
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- 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  $1.0 \pm 0.2 \text{ mm}$ . Then, secure the stopper plate solenoid.



**Figure 2-33**