

MODEL: **COLOR LASER COPIER  
1120/1130/1150**

NO. : F-04-E00008

DATE : **DEC.2000**

- Major quality issues       Quality upgrade/production efficiency  
 Field quality problems     Miscellaneous

*J. Sakai*

## LOCATION SUBJECT

### Revision of Service Handbook

The captioned technical documentation has been revised to reflect the following:

#### Reasons

to update the descriptions in the previous documentation covering modification of functions and correction of typographical mistakes.

The present revision is a full revision. Kindly make arrangements so that the old document may be replaced with the one being released. Further, please make sure the old document is properly disposed of.

**FY8-23B4-02Y**

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# **COLOR LASER COPIER 1120/1130/1150**

# **SERVICE HANDBOOK**

**REVISION 2**

**Canon**

**DEC. 2000**

**FY8-23B4-020**

## **IMPORTANT**

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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 December 2000

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. every 250,000 Remove unit, and clean. Clean every 250,000 Clean the guide surface. every 250,000 Clean every 250,000
	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 (PS6) metal plate (resin tape used for No.2 static eliminator mount)	△				
	Jam sensor (PS5) metal plate (polishing roller motor mounting plate)		△			
Laser exposure	Dust-proofing glass		△			
Charging	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 post-cleaning charging assembly, clean every 20,000 copies.

Unit	Part	Intervals				Remarks
		every 20,000	every 25,000	every 40,000	every 50,000	
Photosensitive drum area	Primary charging wire, Post-cleaning charging wire	● ●				For primary charging assembly, clean every 20,000 copies in low-humidity areas; for high-temperature/humidity areas, clean every 15,000 copies. In high-temperature/-humidity areas, replace every 15,000 copies.
	Separation, Internal/external static eliminator charging wire		△			
	Grid plate, primary charging wire cleaning pad	● ●				For high-temperature/-humidity areas, replace every 15,000 copies.
	No. 2 cleaner blade	△				Turn over blade. See Note .
	Black toner concentration sensor	△				
	Pre-cleaner sensor	△				Clean with cotton wad; see Note.
	Pre-exposure lamp filter				△	Clean when replacing photosensitive drum.
Developing assembly	Photosensitive drum butting block	△ (front)		△		Clean when replacing photosensitive drum.
	Drum heater slip ring					Dry wipe every 150,000 copies.
	Photosensitive drum butting roll Bias electrode	△				Clean when replacing developer. Clean each time developing assembly (each color) is mounted.
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.
Others	Fixing oil			◎		
	Waste toner		◎●			
	Hopper toner pan		△			Remove build up of toner.
	Leakage breaker Image adjustment		◎ □			Includes execution of auto gradation correction.

**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 **December** 2000

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

## B. Periodically Replaced Parts

As of **December** 2000

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

## C. Consumables and Durables

### 1. Copier

As of December 2000

No.	Part name	Part number	Q'ty	Life (copies)	Remarks
1	Cleaner blade (drum cleaner assembly)	FB4-4677	1	20,000	Simultaneously with photosensitive drum.
2	Drum cleaner scoop-up sheet	FF5-3993	1	20,000	Simultaneously with cleaning blade.
3	Side seal, front (drum cleaner assembly)	FF5-8392	1	20,000	Simultaneously with cleaning blade.
4	Side seal, rear (drum cleaner assembly)	FF5-8393	1	20,000	Simultaneously with cleaning blade.
5	No. 2 scoop-up sheet (pre-cleaning sensor)	FG6-1046	1	20,000	Simltaneously with cleaning blade.
6	Grid plate (primary charging assembly)	FB4-5117	1	20,000	For high temperature/high humidity, 15,000.
7	Primary charging assembly cleaning pad, upper	FF2-3552	1	20,000	For high temperature/high humidity, 15,000.
8	Primary charging assembly cleaning pad, lower	FF2-3551	1	20,000	
9	Primary charging wire, 100V	FY3-0030	1	20,000	For high temperature/high humidity, 15,000.
	Primary charging wire, 120/230V	FY3-0040	1	20,000	
10	Scanning lamp	FH7-3349	1	25,000	
11	Manual feeder pickup roller	FF5-4327	2	25,000	Manual feeder counter reading.
12	Manual feeder feed roller	FF5-4331	1	25,000	Manual feeder counter reading.
13	Manual feeder separation roller	FF2-4710	1	25,000	Manual feeder counter reading.
14	Attraction roller scraper	FF5-8427	1	25,000	
15	Waste toner case (6 pc/box)	FY9-7006	1	25,000	By user.
16	Post-cleaning charging wire	FY3-0030	1	20,000	100V
	Post-cleaning charging wire	FY3-0040	1	20,000	120/230V
17	Fixing cleaning belt (upper, lower)	FB4-4543	1	25,000	
18	Drum cleaner end felt, front	FF5-2246	1	40,000	Simultaneously with cleaning blade.
19	Drum cleaner end felt, rear	FF5-2247	1	40,000	
20	No. 2 cleaning blade	FB2-0421	2	40,000	20,000 per edge.
21	Fixing upper roller	FB4-4484	1	40,000	Or, 1 yr.
22	Oil applying felt	FF5-9084	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	1	50,000	100V
	Separation/internal and external charging wires	FY3-0040	1	50,000	120/230V
28	Attraction brush unit	FG6-0798	1	50,000	As a unit.
29	Transfer blade unit	FG6-0797	1	50,000	As a unit.
30	Transfer drum cleaner	FB4-4953	2	50,000	
31	Polishing roller	FB4-5111	1	50,000	
32	Transfer drum sheet	FB4-4195	1	50,000	
33	Separation push-up roll	FB2-0631	1	50,000	Simultaneously with transfer sheet.
34	Transfer side scraper	FF5-2070	2	50,000	
35	Fixing lower roller	FB4-4486	1	50,000	Or, 1 yr.
36	Re-pickup feed roller, front (re-pickup assembly)	FF5-2101	1	100,000	Duplexing counter reading.
37	Re-pickup feed roller, rear (re-pickup assembly)	FF5-2102	1	100,000	Duplexing counter reading.
38	Feed roller (re-pickup assembly)	FF5-2103	1	100,000	Duplexing counter reading.
39	Separation roller (re-pickup assembly)	FF5-2104	1	100,000	Duplexing counter reading.
40	Feed roller, front (duplexing unit)	FF5-8366	1	100,000	Duplexing counter reading.
41	Feed roller, rear (duplexing unit)	FF5-8367	1	100,000	Duplexing counter reading.
42	Oil applying blade	FB4-4536	1	100,000	
43	Fixing heater, upper	FH7-4617	1	100,000	100V
		FH7-4618	1	100,000	120V
		FH7-4619	1	100,000	230V
44	Fixing heater, lower	FH7-4611	1	100,000	100V
		FH7-4612	1	100,000	120V
		FH7-4613	1	100,000	230V
45	Pre-exposure lamp	FG5-3181	1	150,000	
46	Primary charging assembly	FG6-0892	1	150,000	
47	Separation charging assembly	FG6-0795	1	150,000	
48	Internal static eliminator	FG6-0796	1	150,000	
49	Eternal static eliminator	FG6-0801	1	150,000	
50	Post-cleaning charging assembly	FG6-0888	1	150,000	
51	Insulating bush (fixing assembly)	FB4-7807	4	150,000	
52	Pickup roller, front (cassette)	FF5-7829	1	250,000	Per cassette holder.
53	Pickup roller, rear (cassette)	FF5-7830	1	250,000	Per cassette holder.
54	Separation roller (cassette)	FB2-7777	1	250,000	Per cassette holder.
55	Feed roller (cassette)	FF5-7837	1	250,000	Per cassette holder.
56	Y developing assembly	FG6-0781	1	500,000	
57	M developing assembly	FG6-0782	1	500,000	
58	C developing assembly	FG6-0783	1	500,000	
59	Bk developing assembly	FG6-0784	1	500,000	

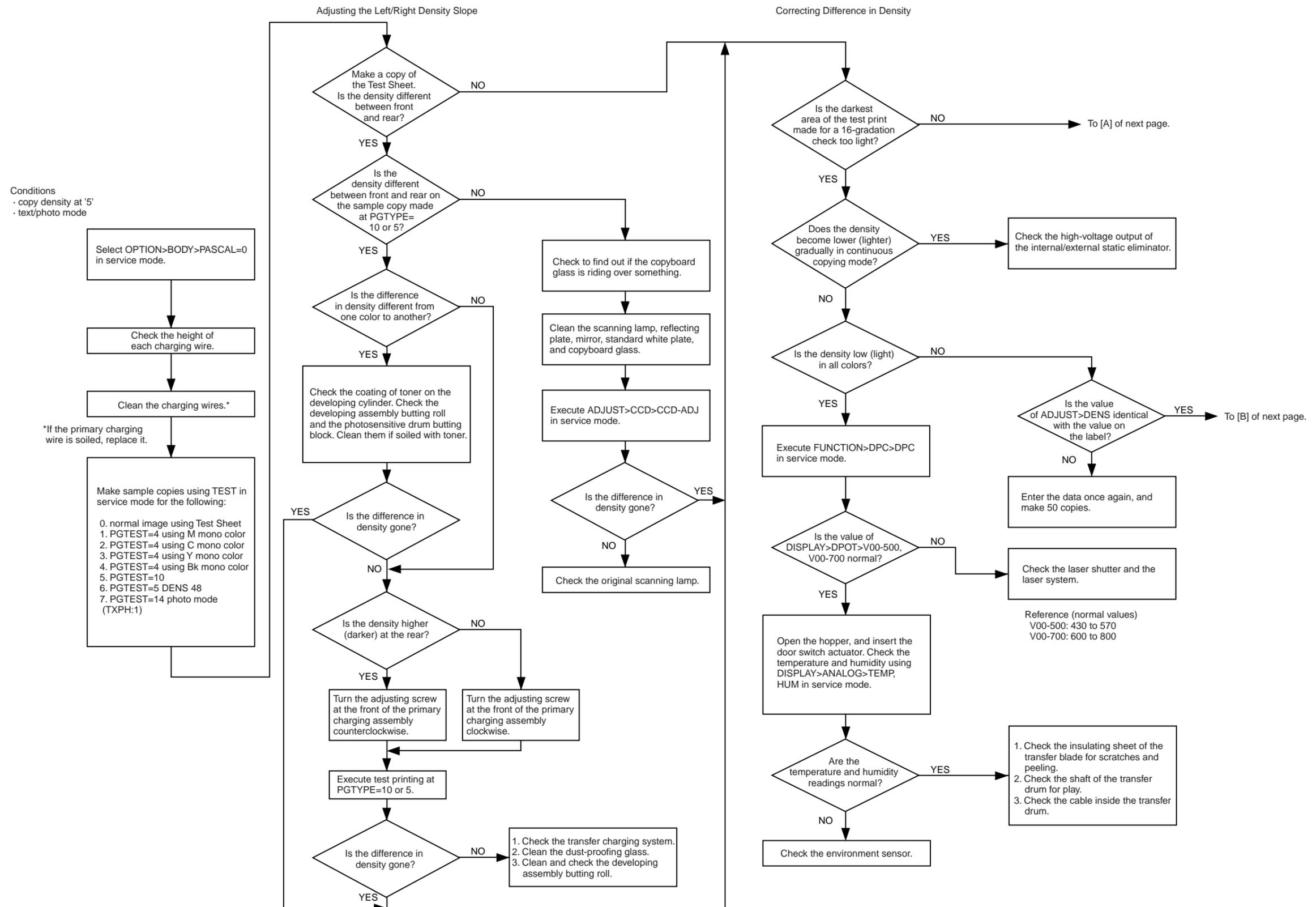
**2. Paper Deck**

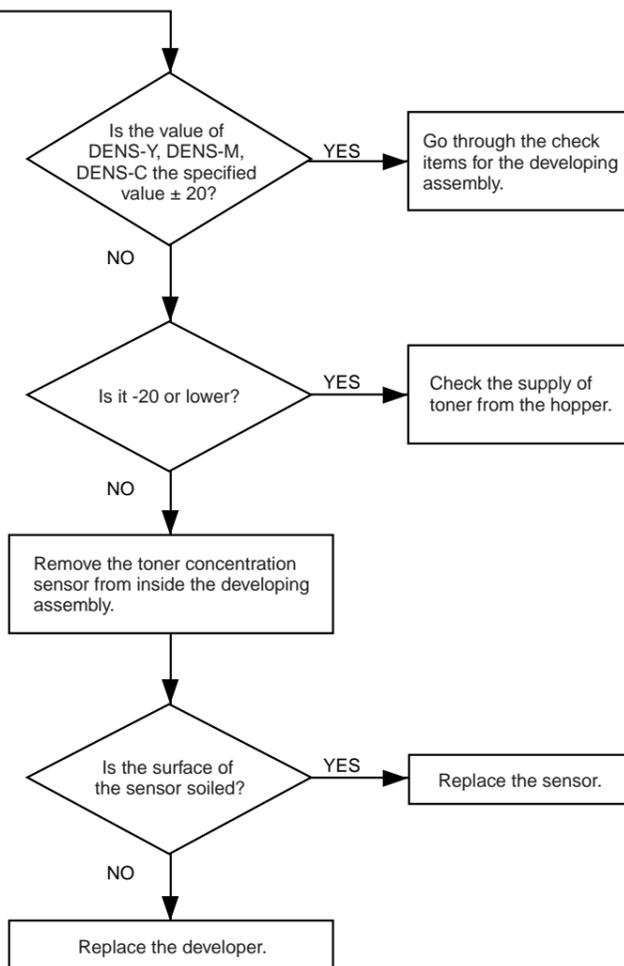
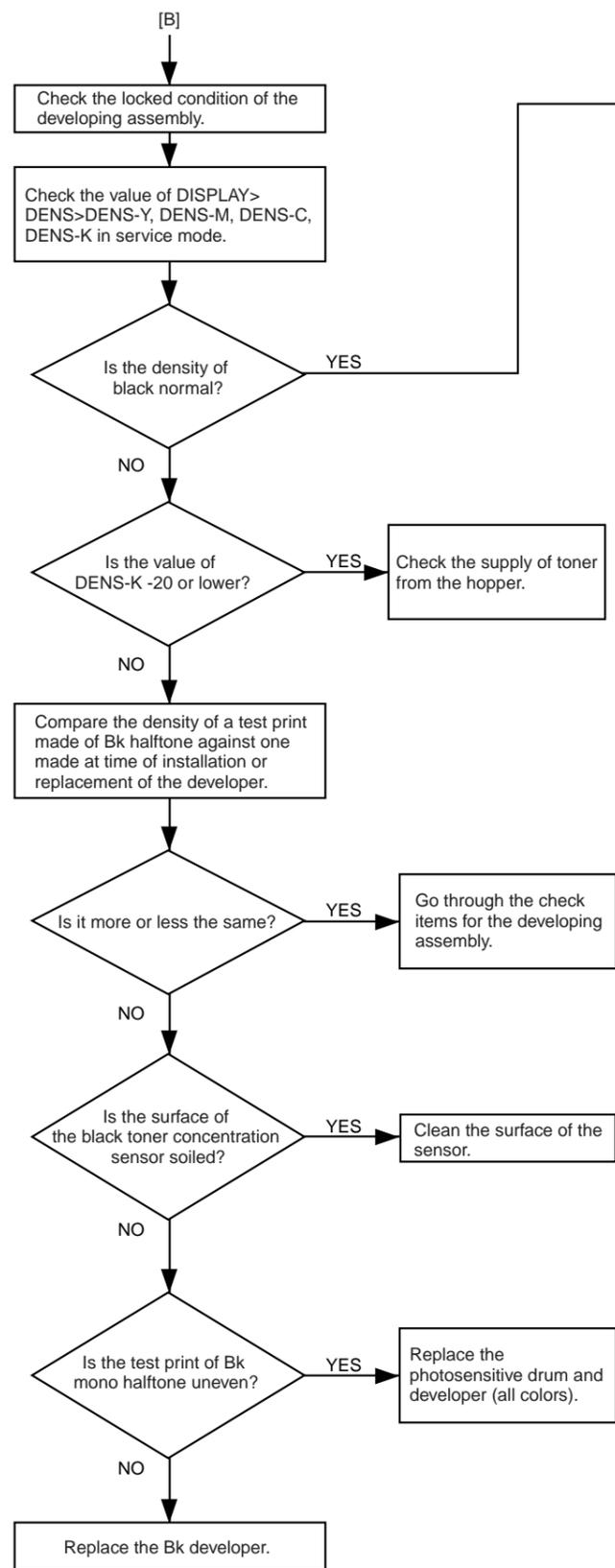
As of **December** 2000

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



## D. Image Adjustment Basic Procedure

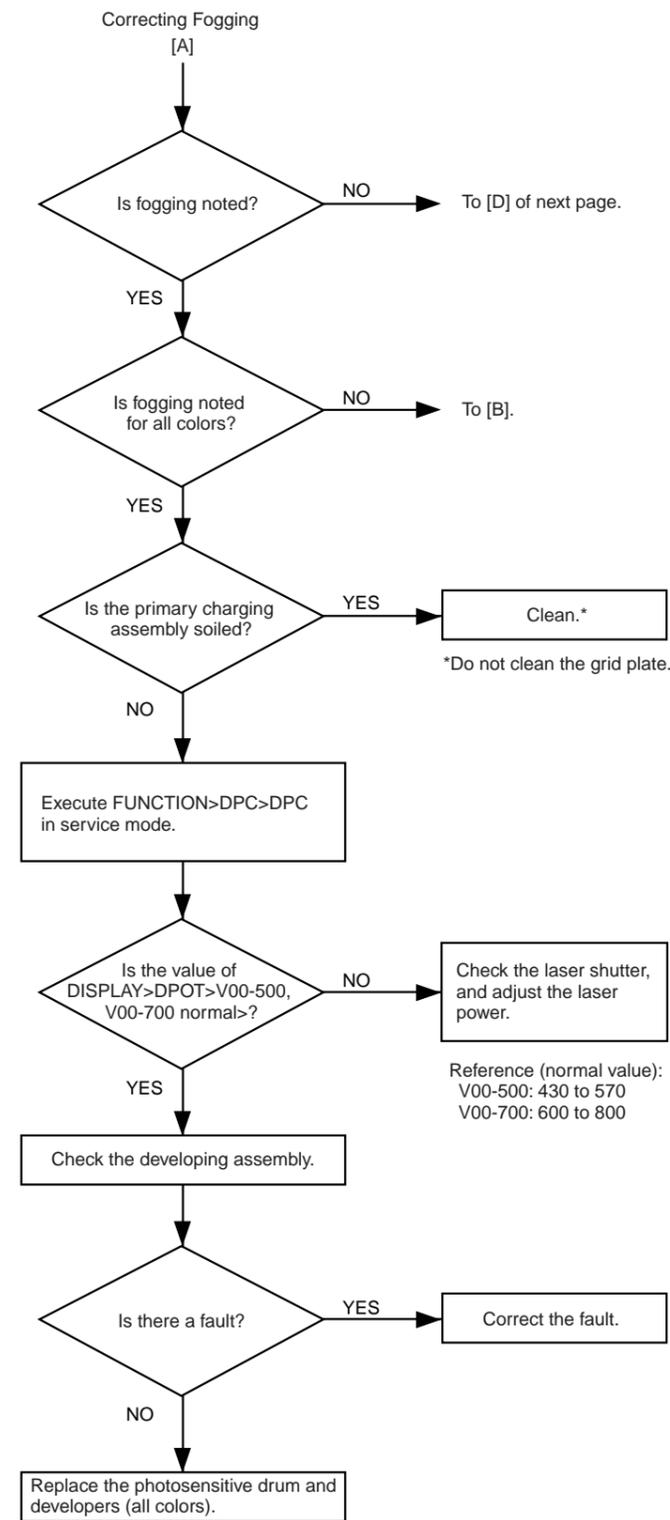


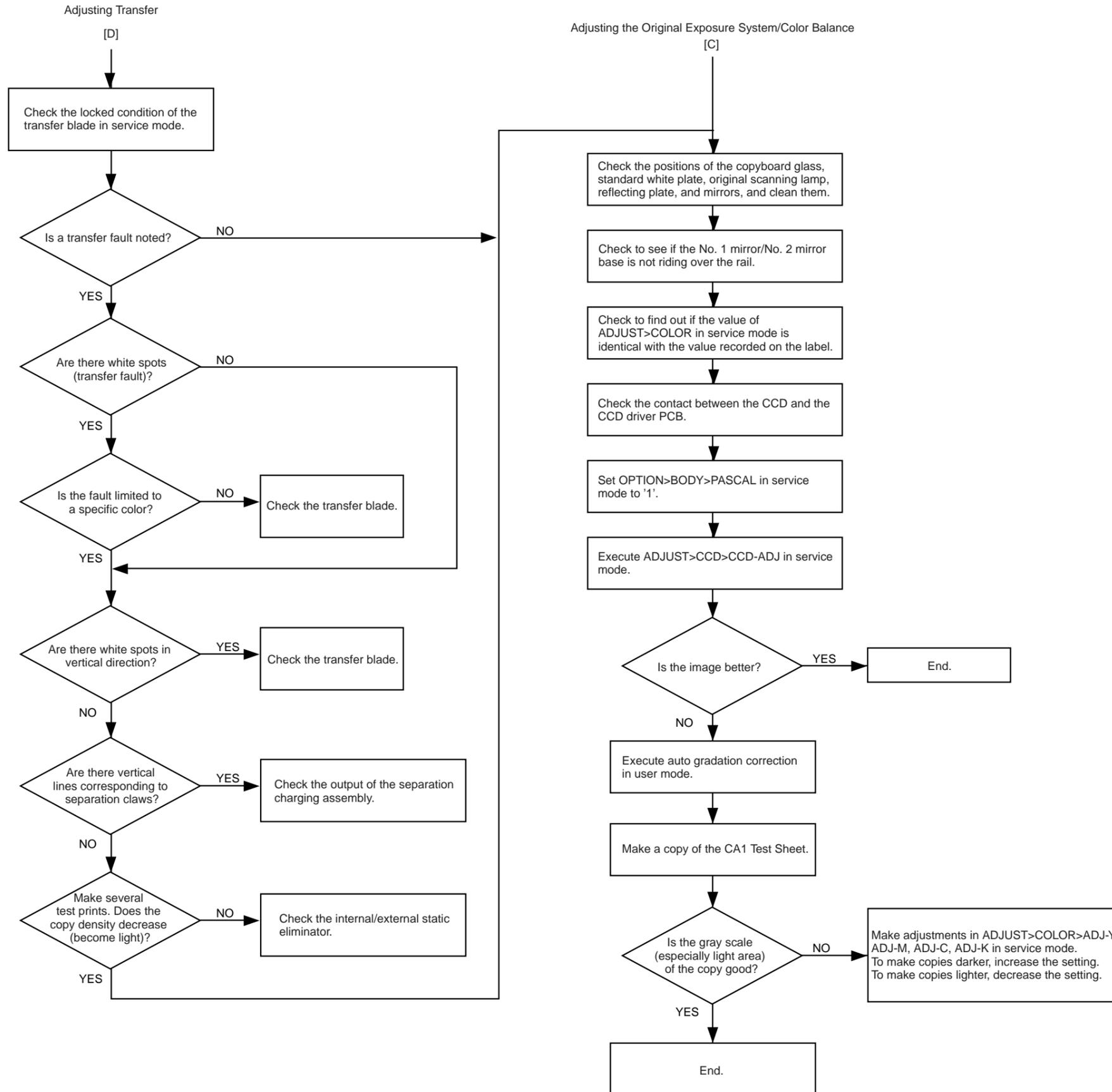


**Check Items for the Developing Assembly**

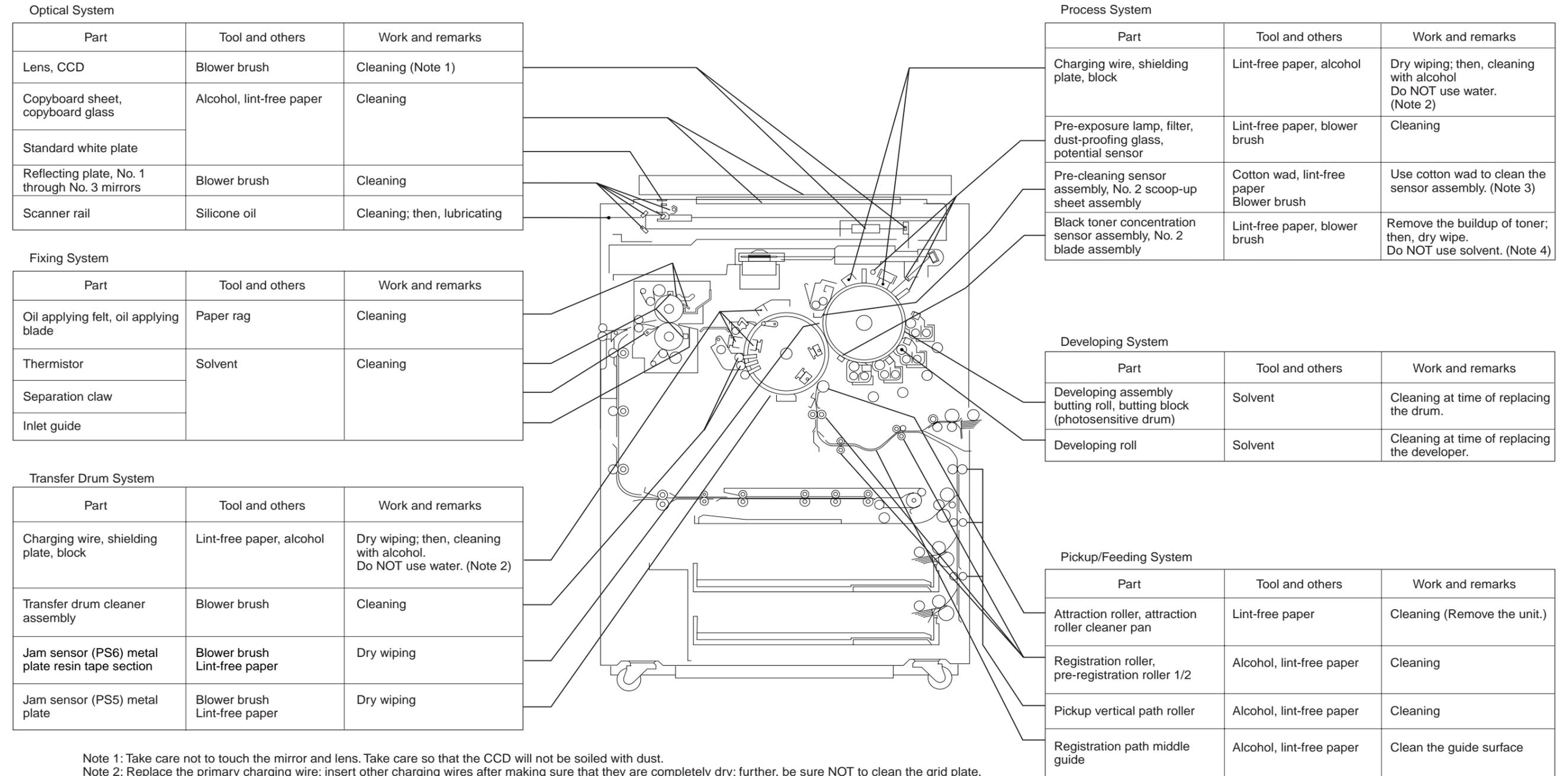
1. Is the mechanism used to lock the developing assembly to the photosensitive drum normal?
2. Is the position of the developing assembly normal?
3. Are the developing assembly butting roll and butting block free of dirt?
4. Are the developing bias AC and DC outputs normal?
5. Is the developing cylinder 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.





## E. Points to Note for Scheduled Servicing



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: Replace the primary charging wire; insert other charging wires after making sure that they are completely dry; further, be sure NOT to clean the grid plate.

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.

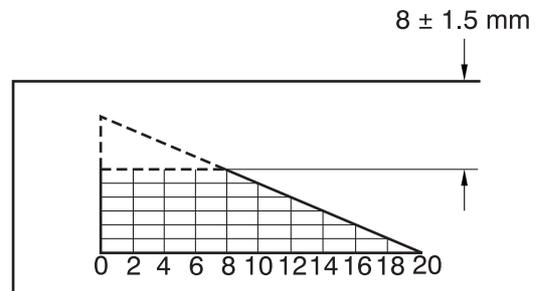


Figure 2-1 Leading Edge Image Margin

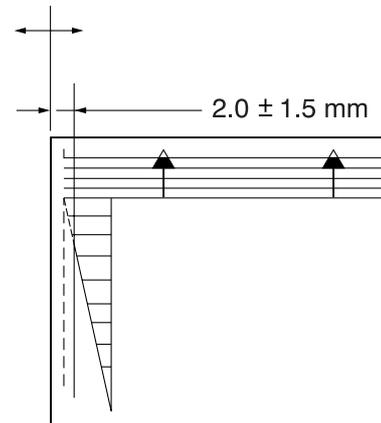


Figure 2-2 Left/Right Image Margin

#### 2 Checking/Adjusting the Image Margin

When making checks and adjustments, observe the following order:

- 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, 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:

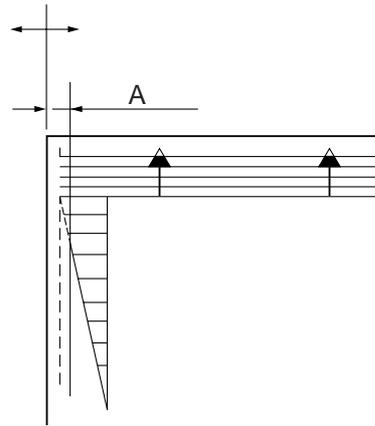


Figure 2-3

- For the Cassette
  - 1) Remove the cassette front cover from the cassette holder you want to adjust.
  - 2) Loosen the left/right screw [1].
  - 3) Turn the adjusting screw [2] 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.
  - 4) After the adjustment, be sure to perform "registering the paper width basic value."

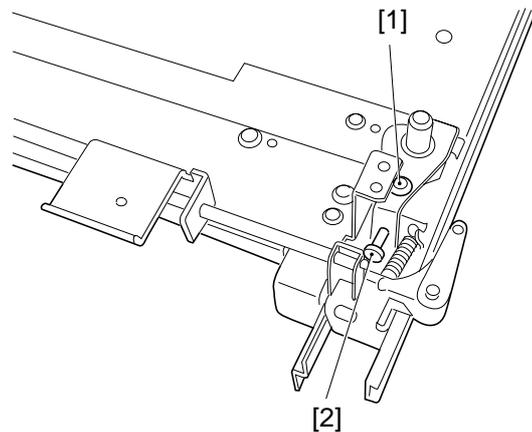


Figure 2-4

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

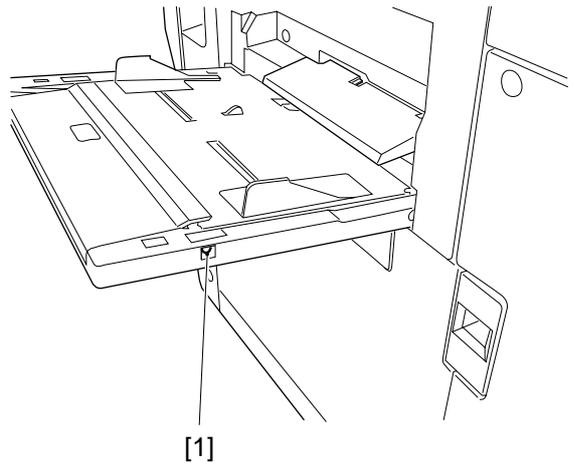


Figure 2-5

- 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.

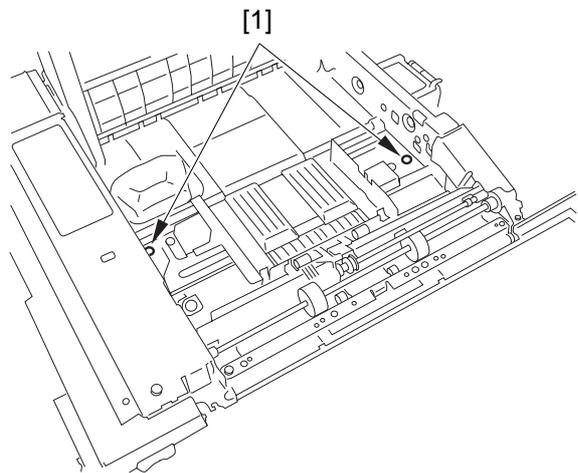


Figure 2-6

- 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 2-7) 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.

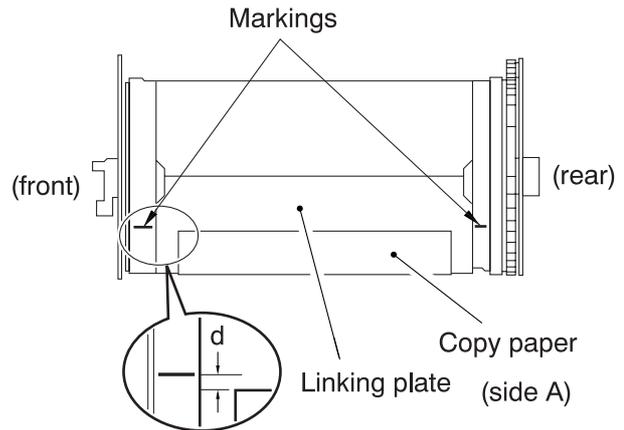


Figure 2-7

- 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 0.4 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.

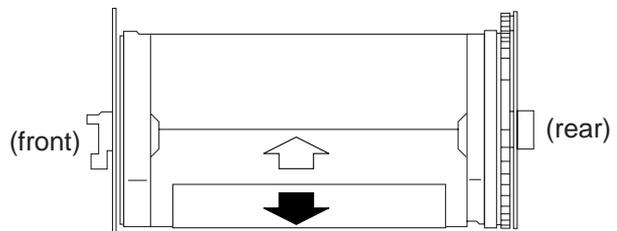
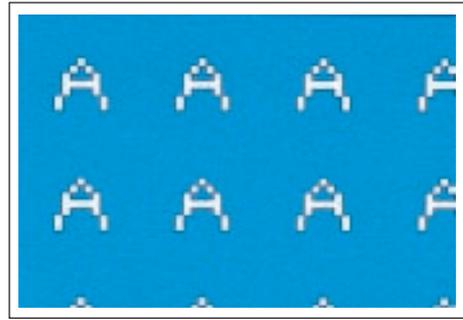


Figure 2-8

- c. Adjusting the Image Leading Edge Margin (RG-XA, RG-XB)
- 1) Select **ADJUST>FEED-ADJ>RGST-CHK** in service mode.
  - 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.



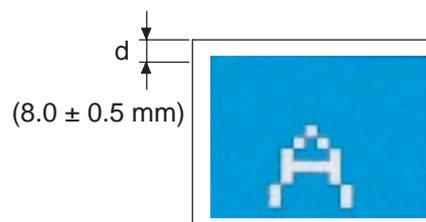
Test print on side A



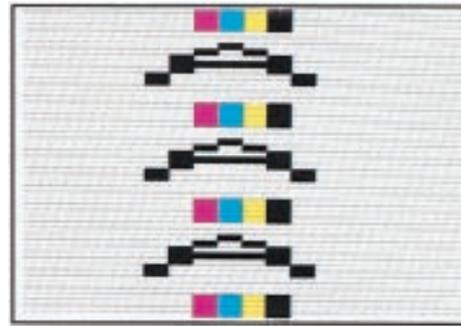
Test print on side B

**Figure 2-9**

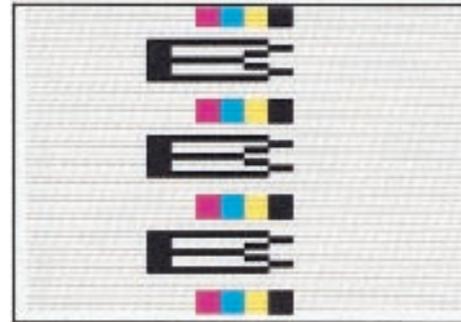
- 4) Measure the leading edge margin  $d$  on the print. Perform this for both sides A and B.
  - 5) Select the following service modes; then, make adjustments by changing the settings so that the leading edge  $d$  is  $8 \pm 0.5$  mm.
    - for side A: **ADJUST>FEED-ADJ>RG-XA**
    - for side B: **ADJUST>FEED-ADJ>RG-XB**
- Setting it to '1' will shift the leading edge margin by about 0.06 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-DLY-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 0.4 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.

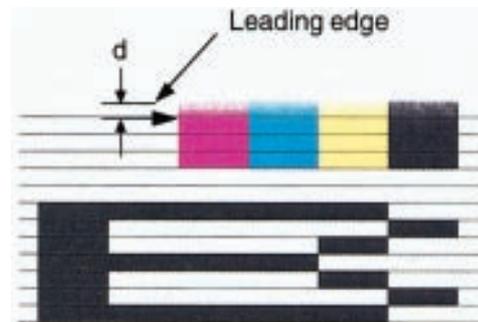


Figure 2-12

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.

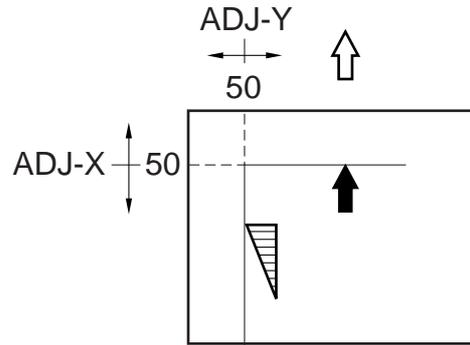


Figure 2-13

- 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>TR2-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>TR2-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.

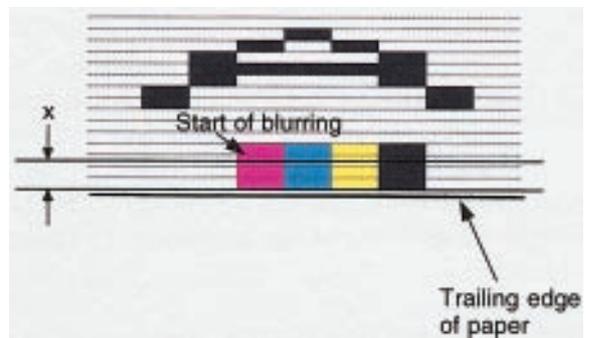


Figure 2-13a

## 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."

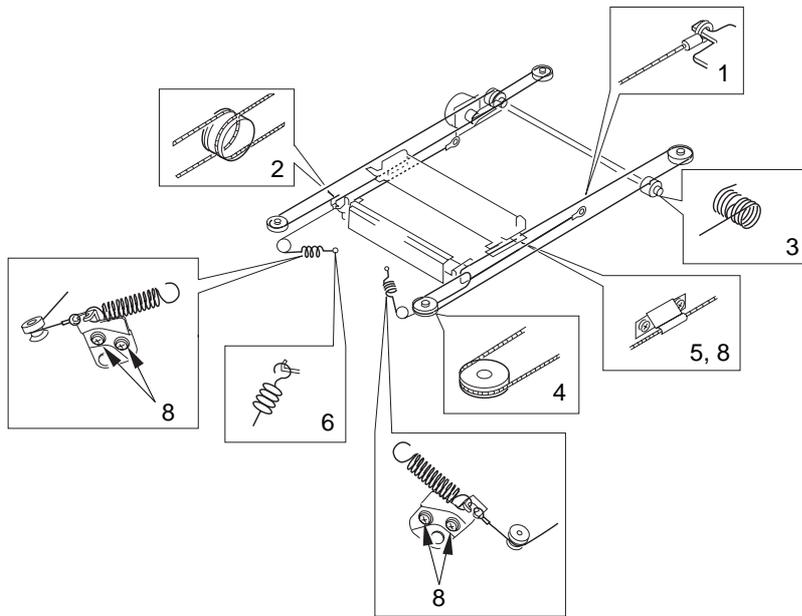


Figure 2-14

### 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) 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.

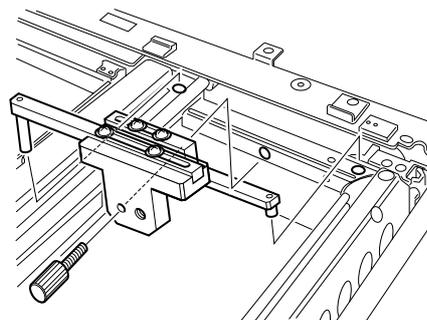


Figure 2-15

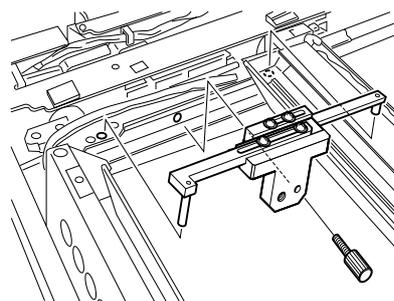


Figure 2-16

### C. Image Formation System

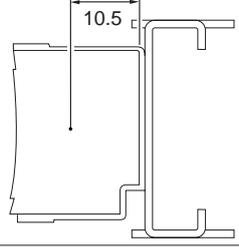
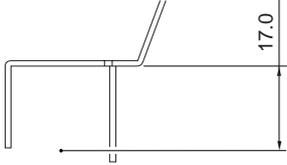
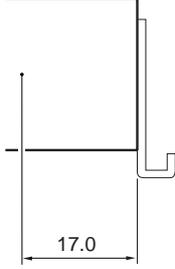
<b>1</b>	<b>Adjusting the Height of Charging Wires</b>
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The height (position) of the charging wire of each charging assembly may be adjusted by turning the screw found behind the assembly. A full turn of the screw will shift the charging wire by about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

You cannot, however, change the height of the wire of the internal static eliminator, external charge eliminator, separation charging assembly 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. At this time, be sure to mount it so that the lot No. label attached inside it is toward the front of the copier.
  - 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		
External charging assembly		

**Figure 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>
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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).

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].

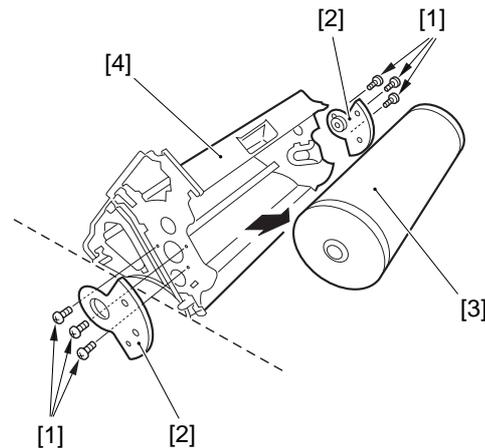


Figure 2-18

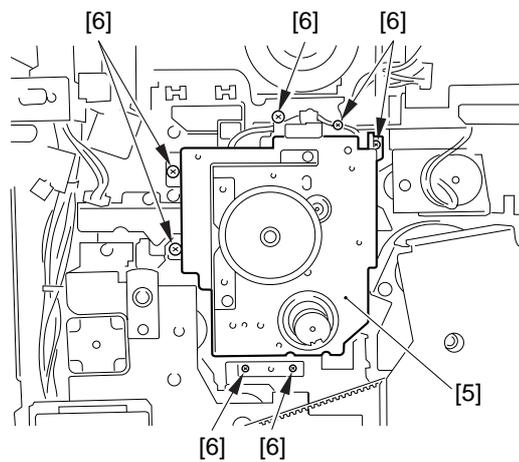
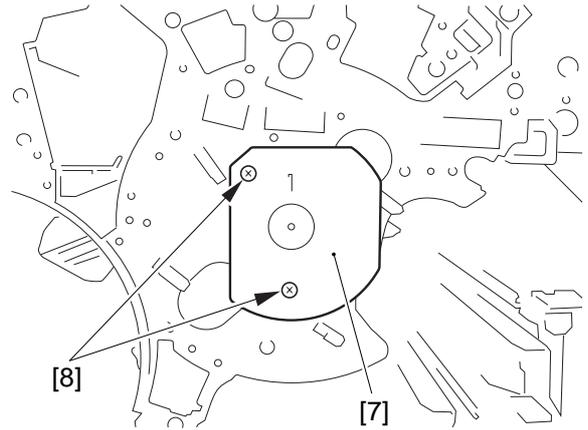


Figure 2-19

- 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**

**4 Use of Grease**

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

**5 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).

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

**Table 2-1**

## 6 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).

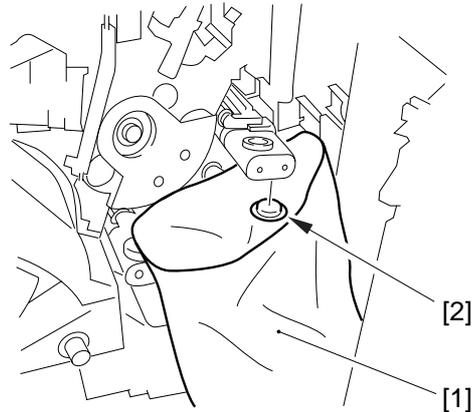


Figure 2-21

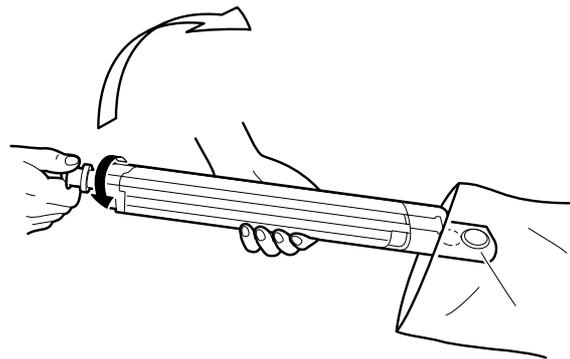


Figure 2-22