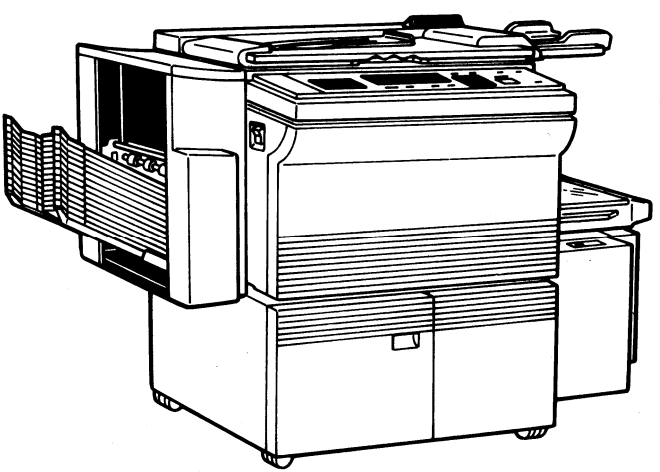
RICOH

RICOH FT5580/FT5590

FIELD SERVICE MANUAL



RICOH COMPANY, LTD.

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ENVIRONMENT

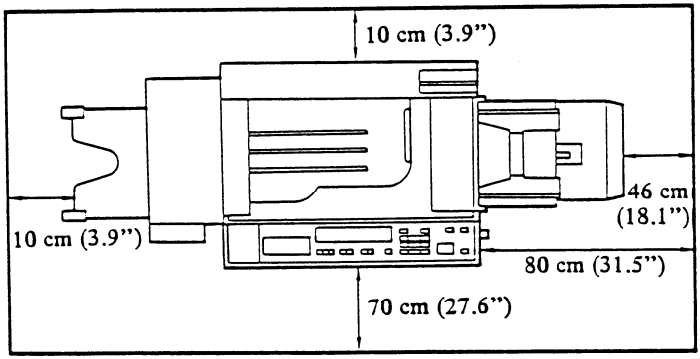
1. Temperature Range: 10°C to 30°C (50°F to 80°F)
2. Humidity Range: 15% to 90% RH
3. Ambient Illumination: Less than 1,500 lux (Do not expose to direct sun light.)
4. Ventilation: Room air should turn over at least 3 times/hour.
5. Ambient Dust: Less than 0.15 mg/m^3 (4×10^{-3} Oz/yd^3)
6. Room size More than 10 m^3 (13.4 yd^3)
7. If the place of installation is air-conditioned or heated, place the machine:

   a) where it will not be subjected to sudden temperature changes from low to high, or vice versa.

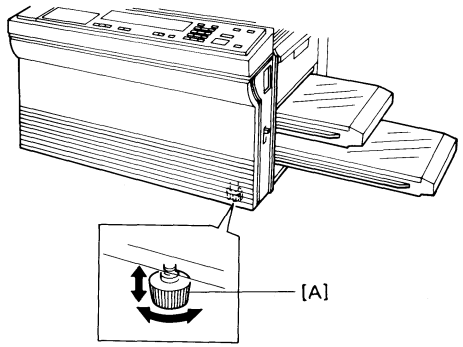
   b) where it will not be directly exposed to cool air from an air conditioner.

   c) where it will not be directly exposed to reflected heat from a heater.
8. Avoid placing the copier in an area filled with corrosive gas.
9. Avoid any area higher that 2,000 m (6,500 feet) above sea level.
10. Place the copier on a strong and level base.
11. Avoid any area where the copier may be subjected to strong vibration.

MINIMUM SPACE REQUIREMENTS



MACHINE LEVEL



1. Front to Back: Within 5 mm (0.2") of level
2. Right to Left: Within 5 mm (0.2") of level
3. Screw the leveling feet [A] up or down to level the machine.

POWER SOURCE

1. Input voltage Level

   110 V/60 Hz - 15A
   115 V/60 Hz - 15A
   220 V/50 Hz - 8A
   240 V/50 Hz - 8A

2. Permissible Voltage Fluctuation : 10%

3. Permissible Extension Cord : None recommended

NOTE: - Be sure to ground the machine. (Do not connect the grounding wire to a gas pipe.)

- Make sure the plug is firmly inserted in the outlet.

- Should be a dedicated power outlet.

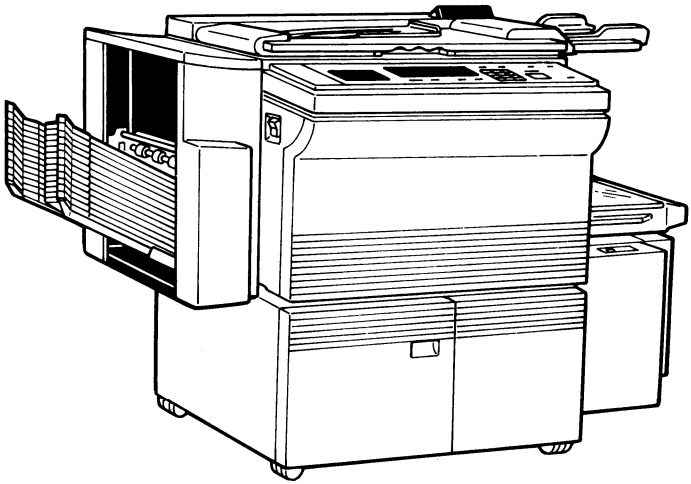
- Do not set anything on the power cord.

ACCESSARY CHECK

Check the quantity and condition of the accessories in the box according to the following list:

	USA	Europe	Middle East & Asia	Taiwan
1. Editing Sheet	1	1	1	1
2. Sort/Stack Key Top	1	1	1	1
3. Sort/Stack Key Cover	1	1	1	1
4. NECR	1	1	1	1
5. Cassette - Large	1	1	2	2
6. Cassette - Small	2	2	1	2
7. Paper Size Actuator Plate	4	3	5	6
8. Paper Size Decal	8	6	10	12
9. Toner Catch Pan	1	1	1	1
10. Copy Tray	0	1	1	1
11. Original Holder	0	0	1	1
12. Operating Instructions - English	1	0	1	1
- Five languages	0	1	0	0
13. Envelope - NECR	1	0	0	0
14. Multiple Language Decal	1	1	1	1

INSTALLATION PROCEDURE

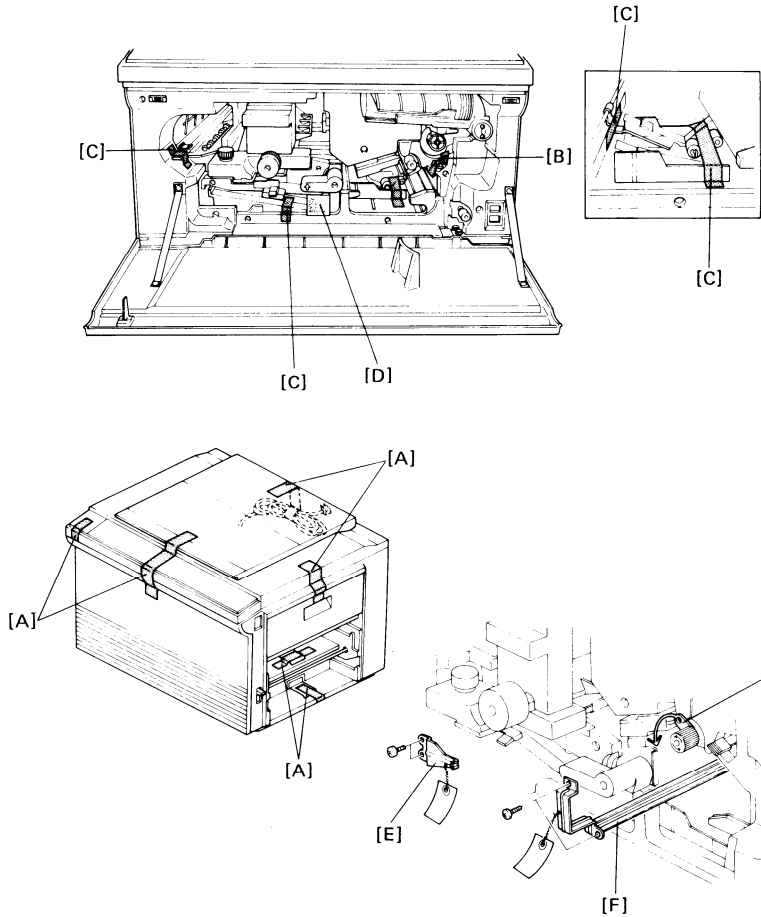


NOTE: **-USA version-**
The platen cover and the original stacker are needed as options if DF is not to be installed. Also, the copy tray is needed if the sorter is not to be installed.

-European version-
The platen cover and the original stacker are needed as options if DF is not to be installed. Also, the guidance ROM kit (option) is needed if one of the following optional languages is wanted on the guidance display.

Option ROM	Standard ROM
0: Swedish	0: Japanese
1: English	1: English
2: Danish	2: French
3: Norwegian	3: German
4: Finnish	4: Italian
5: Dutch	5: Spanish

(The English in both the optional and the standard ROMs are the same.)



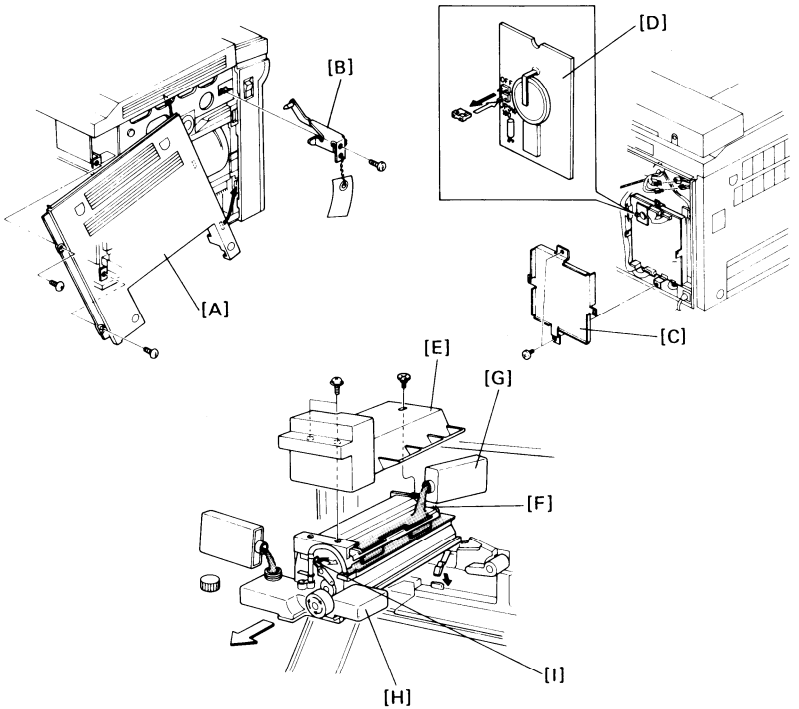
1. Remove the strips of tape [A], and open the front cover.

2. Remove the strips of tape as follows:
   Non-duplex model --- [B]
   Duplex model --- [B+C]

3. Remove the fork gate unit support cushion [D] (Duplex model only).

4. Remove the fork gate unit lock plate [E] (2 screws) (Duplex model only).

5. Remove the transport unit lock plate [F] (2 screws) and the wedge [G] from between the registration rollers.



6. Remove the rear cover (2 screws), the left cover [A] (2 screws), and the scanner lock plate [B] (1 screw).

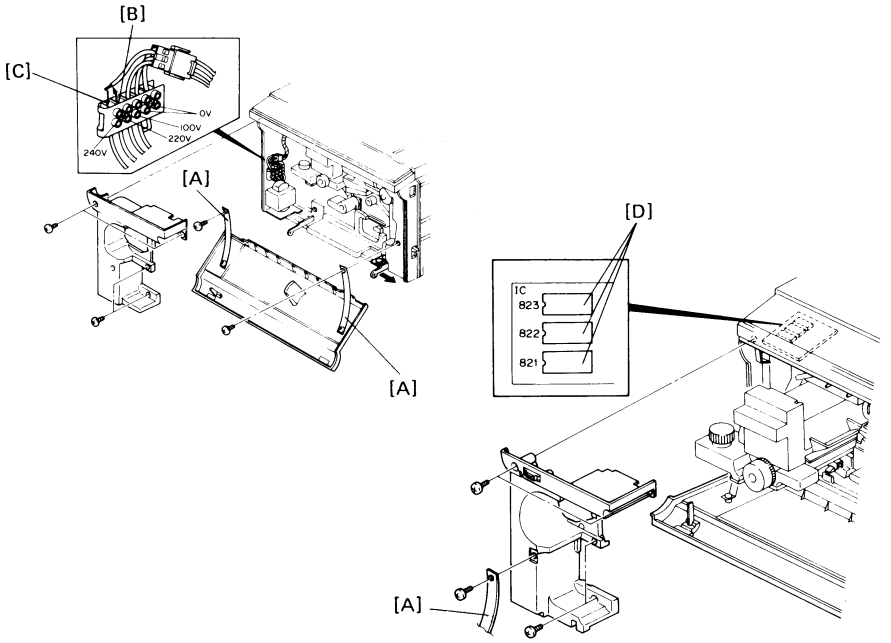
   NOTE: Reinstall the screw for future use. Do not throw away the scanner lock plate. It is necessary to reinstall it if the copier is to be transported long distances (by vehicle).

7. Remove the main PCB shielding plate [C] (2 screws), and move the jumper connector (JPSW 191) on the timer PCB [D] from the upper (printed "OFF") to the lower position. Then, reinstall the removed covers if no peripherals are to be installed.

8. Remove the fusing unit, then remove the fusing unit cover [E] (2 screws, 1 shoulder screw).

9. Prime the oil supply pad [F] with silicon oil [G]. Then, fill the oil tank [H] with silicon oil.

10. Manually operate the oil pump lever [I] and confirm correct operation and the overall condition of the silicon oil supply assembly. Then, reassemble the fusing unit.



11. European version only:

-220 to 240 volts conversion-

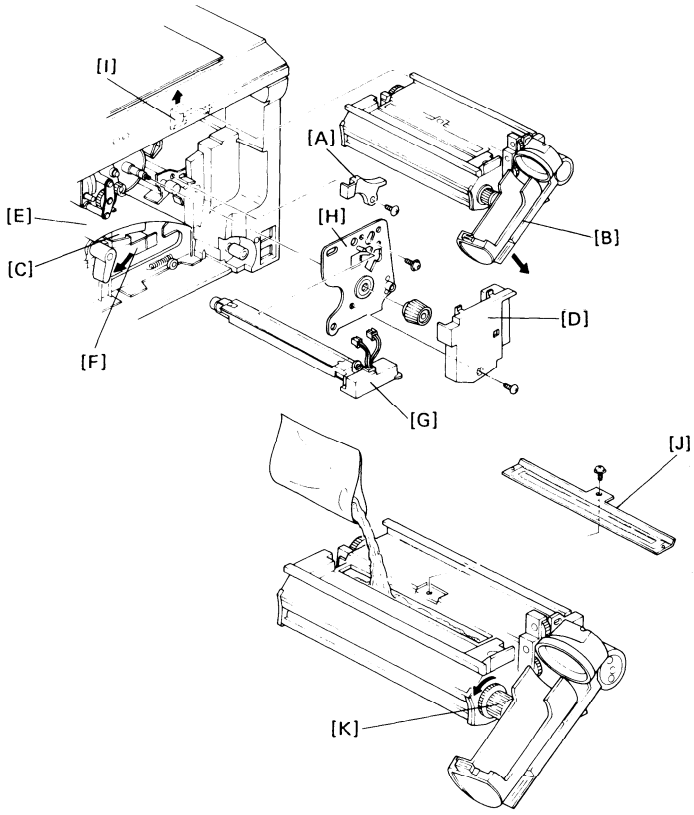
a) Remove the support straps [A] (1 screw each), the front cover (2 knob screws) and the left inner cover (4 screws).

b) Disconnect the wire from the 220 volt terminal [B], and connect this wire to the 240 volt terminal [C] as shown.

-Guidance ROM kit installation-

a) Replace the three ROMs [D] (IC 821, 822 & 823) on the operation panel with the ROMs of the guidance ROM kit.

b) Reinstall the right inner and the front covers.



12. Reinstall the fusing unit.

13. Remove the image density sensor cover [A].

14. Pull down the toner bottle holder [B], lower the transport unit [C], and remove the drum inner cover [D] (1 screw).

15. Put a sheet of paper [E] on the T/S corona unit [F].

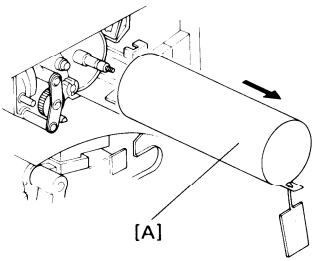
16. Remove the charge corona unit [G] (2 connectors), and remove the drum stay [H] (1 screw, knob - reverse thread).

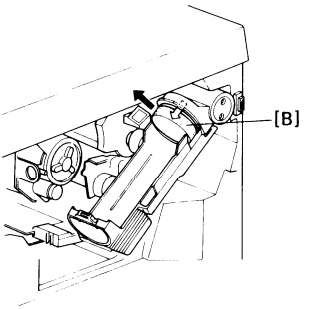
17. Place a sheet of paper on the floor. Raise the development unit lock lever [I], remove the development unit, and place it on the paper.

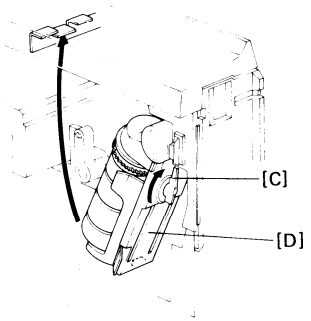
18. Remove the developer inlet cover [J] (1 screw).

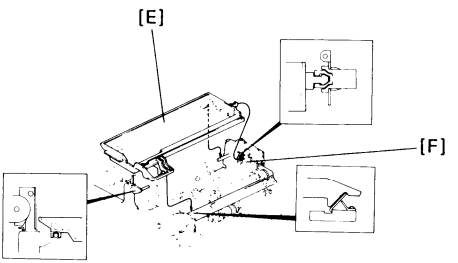
19. Pour one kilogram of developer into the development unit while turning the knob [K] counterclockwise to distribute the developer.

20. Reinstall the developer inlet cover.









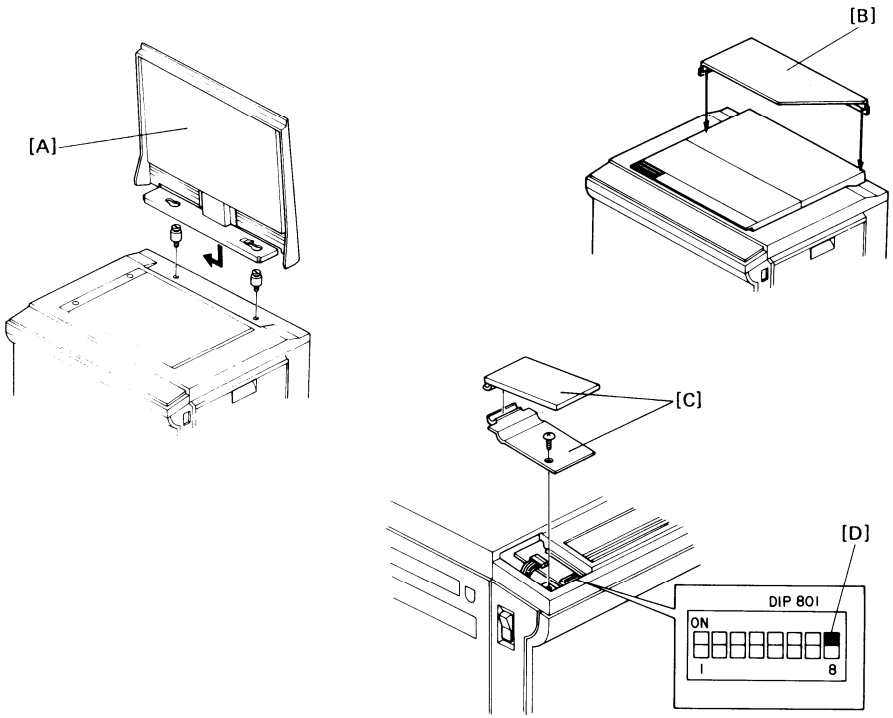
21. Pull out the drum protective sleeve [A] from the drum.

    NOTE: Save the drum protective sleeve for future use when servicing the copier.

22. Reinstall all removed parts, and return them to their original position.

23. Remove the toner tank plug [B] and load the toner bottle onto the bottle holder. Then, fix the bottle with the lever [C], and raise the holder [D] up to the bracket.

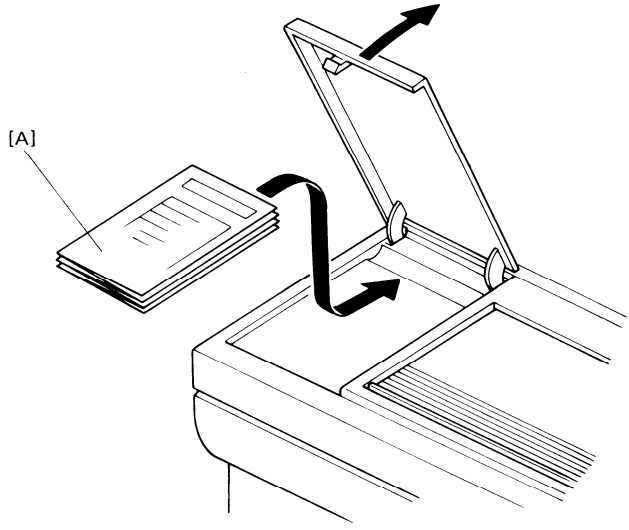
24. Install the toner catch pan [E] on the jogger unit [F].



25. Install the platen cover [A] (2 stud screws) and the original holder [B] (Two sided tape) as necessary.

26. Remove the DIP switch cover [C] (1 screw), and turn on DIP switch 801-8 [D]. Then, plug in the machine and turn on the main switch.

27. Set the proper language in the guidance display using SP 12 (LT Version) or SP 13 (A4 Version).
    To access SP (Service program mode), enter 12 or 13 using the number keys. Press the Recall/Enter key.



28. Put five sheets of white paper (A3 of 11" x 17") on the exposure glass.

29. Set SP 10 for drum conditioning.

30. After the warm up period is completed, press the Start Key to start drum conditioning. (100 is automatically displayed on the copy counter by SP 10.)

31. Set all appropriate SP modes as required.

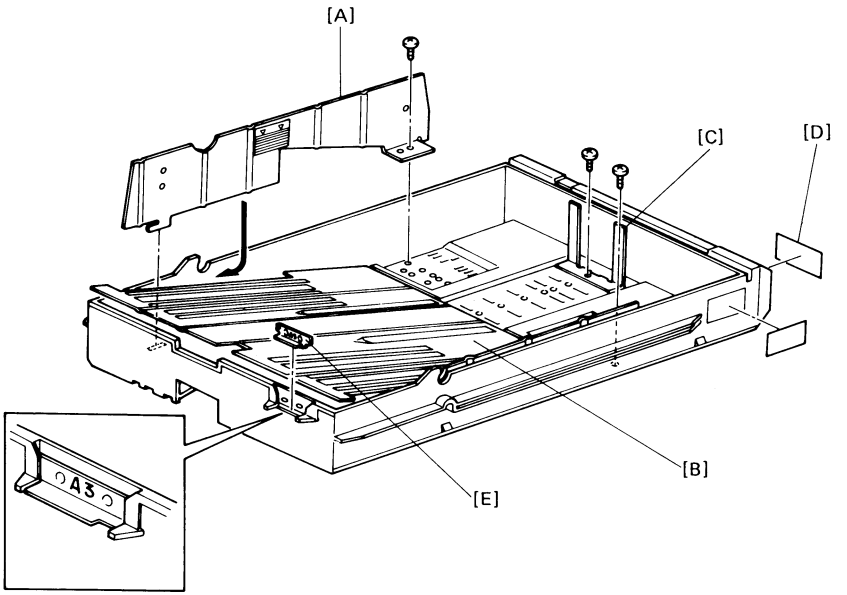
32. Turn off the main switch the DIP switch 801-8, and reinstall the DIP switch cover. Then, turn on the main switch.

33. Install the operating instruction cards [A] over the DIP switch cover (two-sided tape). Then, install the receiving tray.

34. Load paper into the cassette, then check the machine operation and the copy quality.

35. Fill out the New Equipment Condition Report.

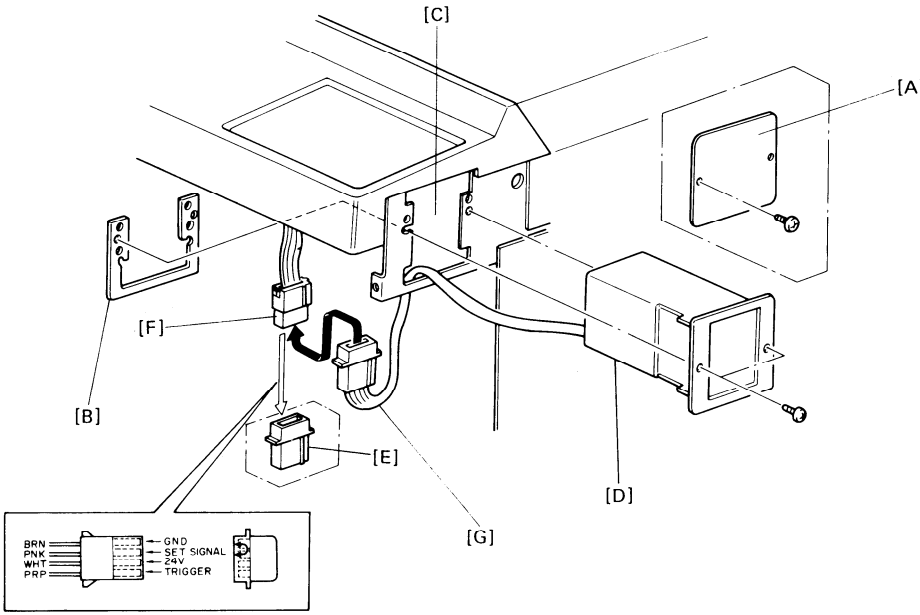
CASSETTE MODIFICATION



1. Remove the cassette cover.
2. Remove the side fences [A] (1 screw each) and the bottom plate [B].
3. Reposition the rear fence [C] (1 screw) in the desired paper size position.

   NOTE: Paper size positions are shown on the inside of the cassette.
4. Reinstall the bottom plate.
5. Reinstall the side fences in the desired paper size position.
6. Attach the appropriate paper size decals [D] on the cassette at the positions shown.
7. Insert the desired actuator plate [E] in the slot on the front of the cassette as shown.

KEY COUNTER HOLDER INSTALLATION



1. Remove the front cover (2 screws).
2. Remove the right inner cover (4 screws) and right front cover (1 screws).
3. Remove the cover plate [A] and fixing plate [B] from the key counter bracket [C].
4. Hold the fixing plate on the inside of the key counter bracket and insert the key counter bracket. Insert the key counter holder [D].
5. Align the holes in the fixing plate with the mounting holes of the key counter holder and secure the key counter holder.

   NOTE: The fixing plate has three sets of holes. Make sure to use the holes that match the type of counter.

6. Remove the shorting plug [E] from the key counter connector [F].
7. Plug in the key counter harness [G].
8. Reassemble the copier. Insert the key counter and check its operation.

   NOTE: Confirm that SP 90 (Secret mode) is set in “No” position.

SECTION 2

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PM TABLE

C: Clean R: Replace L: Lubricate A: Add I: Inspect

ITEM	EM	80k	160k	240k	320k	NOTE
OPTICS						
Mirrors, Lens Reflectors, Toner Shield Glass	C	C	C	C	C	Alcohol/Water
Exposure Glass	C	C	C	C	C	Glass Cleaner
Platen Cover	C	C	C	C	C	Alcohol/Water
Exposure Lamp		I	I	I	I	Replace if necessary
Scanner Guide Rods and Plate		C,L	C,L	C,L	C,L	Launa Oil
Guide Rod Felt		I	I	I	I	Replace if necessary
ADS/APS Sensors		C	C	C	C	Blower Brush Only
PAPER FEED						
Paper Feed Rollers	C	R	R	R	R	Damp Cloth
Pick-up Rollers	C	R	R	R	R	Damp Cloth
Separation Rollers	C	R	R	R	R	Damp Cloth
Slip Clutch		L	L	L	L	Mobil Temp.78
Registration Roller		C	C	C	C	Damp Cloth
Lift Motor Worm Gear and Worm Wheel		L	L	L	L	Mobil Temp.78
Paper Feed Guide Plate		C	C	C	C	Damp Cloth
Registration Sensor		C	C	C	C	Blower Brush
Cassette Bottom Plate Pad		C	C	C	C	Damp Cloth
Paper Dust Cleaner		C	C	C	C	Damp Cloth
Relay Rollers		C	C	C	C	
AROUND DRUM						
Corona Wires		I	I	I	I	Replace if necessary
Wire Cleaner Pad		R	R	R	R	
End Blocks and Casing	C	C	C	C	C	Dry Cloth
Cleaner Drive Wire		I	I	I	I	Replace if necessary
PTL Filter	C	C	C	C	C	Dry Cloth, Discharge before installation
QL Filter	C	C	C	C	C	Dry cloth, Discharge before installation
ID Sensor	C	C	C	C	C	Blower Brush
Erase Lamp Unit		C	C	C	C	Dry Cloth

ITEM	EM	80k	160k	240k	320k	NOTE
CLEANING UNIT						
Cleaning Blade		R	R	R	R	
Cleaning Seals		I	I	I	I	Clean or replace if necessary
Cleaning Brush		R	R	R	R	
Bias Roller		I	I	I	I	Clean if necessary
Bias Roller Blade		C	C	R	C	Dry Cloth
Pick-off Pawls		I	I	I	I	Clean if necessary
DEVELOPMENT UNIT						
Developer		R	R	R	R	
Upper Brush Seal		C	C	C	C	
Development Unit Drive Gears		L	L	L	L	Mobil Temp.78
Development Filter		R	R	R	R	
FUSING UNIT						
Hot Roller			R		R	
Pressure Roller			R		R	
Stripper Pawls	I	C	C	C	C	
Oil Supply Pad	I	R	R	R	R	Prime with oil when replacing
Oil Blade	I		R		R	Prime with oil when replacing
Fusing Entrance & Exit Guide		C	C	C	C	Suitable Solvent
Oil Sump		C	C	C	C	
Oil Tank	A	A	A	A	A	
Gears		L	L	L	L	Mobil Temp.78
OTHERS						
Transport Ozone Filter		R	R	R	R	
Registration Roller Gears		L	L	L	L	Mobil Temp.78
First Relay Roller Gears		L	L	L	L	Mobil Temp.78
First Relay Rollers		C	C	C	C	Damp Cloth
Drive Chains and Belts		I	I	I	I	Replace if necessary
Transport Belt		C	C	C	C	Damp Cloth
Vacuum Fan Filter		R	R	R	R	
Exit Relay Rollers		C	C	C	C	Damp Cloth
Bushings			L		L	

ITEM	EM	80k	160k	240k	320k	NOTE
DUPLEX						
Inverter Support Roller		C	C	C	C	Damp Cloth
Inverter Pressure Roller		C	C	C	C	Damp Cloth
Positioning Roller Drive Belt		C	C	C	C	Damp Cloth
Positioning Roller		C	R	C	R	Damp Cloth
Duplex Slip Clutch		L	L	L	L	Mobil Temp.78
Duplex Pick-up Roller	C	C	R	C	R	Damp Cloth
Duplex Separation Roller	C	C	R	C	R	Damp Cloth
Duplex Feed Roller	C	C	R	C	R	Damp Cloth
DOCUMENT FEEDER						
Belt	C	C	C	C	C	Belt cleaner, replace if necessary
Pick-up Roller	C	C	R	C	R	Water, replace if necessary
Feed Roller	C	C	R	C	R	Water, replace if necessary
Friction Roller	C	C	R	C	R	Water, replace if necessary
CASSETTE BANK						
Pick-up Roller	C	C	R	C	R	Water, replace if necessary
Feed Roller	C	C	R	C	R	Water, replace if necessary
Friction Roller	C	C	R	C	R	Water, replace if necessary

SERVICE TABLES

1. Test Points

- Main Board -

Number	Function
TP100	Input voltage of image density sensor.
TP101	+24 V
TP102	+5 V
TP103	GND

- Scanner Control -

Number	Function
TP301	+24 V (Vm)
TP303	Factory Use
TP304	Factory Use
TP305	Factory Use
TP306	Factory Use
TP307	Factory Use
TP308	Original Density Voltage
TP309	Scanner Forward Signal (Low Active)
TP310	Scanner Return Signal (Low Active)
TP311	GND
TP312	+5 V (Vc)

2. Variable Resistors

- ID Sensor Board -

VR	Function
VR-1	LED Light Intensity Adjustment

- Main Board -

VR	Function
VR-100	ADS Voltage Adjustment

- Optics Control Board -

VR	Function
VR-301	APS Width Sensor (OWS) Voltage Adjustment
VR-302	APS Length Sensor (OLS) Voltage Adjustment

3. DIP Switches Tables

DIP SW 801 (Operation panel)

SW #	Description
1*	Free run
2	Not used
3 4 5	Language code (see language code table)
6	Not used
7	Clear counter (see CLEAR MEMORY PROCEDURE)
8	Service Program mode access

* When ON, the SP mode is disabled.

DIP SW 100 (Main Board)

SW #	Description
1	Factory use only (must be off)
2	Factory use only (must be off)
3	Disables the oil end sensor operation
4,5 6,7	Not used
8	RAM clear (See CLEAR MEMORY PROCEDURE)

4. User Codes Table

There are 20 user codes as follows:

1.	1101	11.	2111
2.	1202	12.	2212
3.	1303	13.	2313
4.	1404	14.	2414
5.	1505	15.	2515
6.	1606	16.	2616
7.	1707	17.	2717
8.	1808	18.	2818
9.	1909	19.	2919
10.	2010	20.	3020

5. Service Program SP-8 Data Input Guide Table

INPUT #	SENSOR	DATA
1 2 3	Registration sensor Fuser sensor Exit sensor	
4 5 6	Relay roller sensor #1 Relay roller sensor #2 Relay roller sensor #3	DATA 1 . . When paper is present
8 9 10 11	Inverter entrance sensor Inverter exit sensor Duplex entrance sensor Duplex paper sensor	DATA 0 . . When paper is not present
12	Jogger home position	DATA 0 . . Jogger at H.P.
15 16	Sorter inlet sensor Sorter bin sensor	DATA 0 . . Paper not present
17	Sorter home position sensor	DATA 1 . . Bins at H.P.
18	Sorter door safety switch	DATA 0 . . Sorter door closed
20	Toner end sensor	DATA 1 . . Toner present
21	Total counter confirmation signal	DATA 0 . . Confirmation signal LOW (T.C. off)
24	Pressure plate reed switch	DATA 1 . . Pressure plate down
25	Paper bank set signal	DATA 1 . . Paper bank installed
27	Duplex unit set signal	DATA 1 . . Duplex unit installed
30 31 32 33	Paper lift sensor #1 Paper lift sensor #2 Paper lift sensor #3 Paper lift sensor #4	DATA 1 . . Cassette lifted DATA 0 . . Cassette down
35	Cassette release sensor	DATA 1 . . Cassette #1 released

For all sensors, DATA is displayed in the guidance display.

SERVICE PROGRAM MODE OPERATION

The service program mode is used to check electrical data and change modes or adjustment values.

1. Service Program Access Procedure

1. Turn the main switch off.
2. Remove the DIP switch cover on the Operation Panel and turn on DIP SW 801-8, then turn the main switch on.

   NOTE: At this point the guidance display will prompt...

   "PROGRAM No." . . . . . No. 5

3. Using the numeric key board, enter the desired SP mode number according to the Service Program Mode Table. The SP program can also be selected with the magnification keys (+, -), in this case SP numbers are scanned through. After selecting an SP number, press the ENTER key (#).

   NOTE: To cancel an already entered program, press the clear key. Also, if an invalid SP number is entered, "Press Clear key" is displayed.

4. To abandoned SP mode, turn the main switch OFF, set DIP SW 801-8 to the off position, and turn the main switch on.

2. Change Adjustment Values or Modes

1. Follow steps 1-3 of the preceding procedure.
2. Factory setting values or mode will be displayed in the Guidance Display.
3. Enter the desired value or mode using the numeral keys according to the Service Program Mode table.
4. Turn off the main switch, set DIP SW 801-8 to the off position, and turn the main switch on.

The following procedure can also be used to access program numbers 80, 81, 90, 91, and 92 instead of using DIP SW 801-8.

1. Press the Mode Clear key.
2. Press the Clear/Stop key.
3. Press the Enter key, simultaneously the Guidance Display prompts

   "PROGRAM No." . . . . . NO. 80

4. Enter the desired number using the number keys or zoom keys.

5. Press the Enter key.

- Service program mode is cleared by pressing the Clear Modes key.

3. Memory Clear Procedure

<SP-97 "Clears service counters and jam counters">

Service Program SP-97 is used to clear all self-diagnostic counters and paper jam counters.

To perform this clear function, the following procedure must be performed.

1. Turn main switch OFF
2. Turn ON DIP SW 801-7, 8 on the operation panel and turn the main switch ON.
3. Select Service program SP-97 and and press the "1" key on the key pad, then press the Enter key.

   At this point Service Programs SP-120 through 139 will be cleared, and default to "0"
4. Turn off the main switch.
5. Turn DIP SW 801-7 and 8 off.
6. Turn the main switch ON to resume normal copier operation.

<SP-98 "Clears all counters">

Service Program SP-98 is used to clear all copy counter, self-diagnostic counters and jam counters at once.

To perform this clear function, follow the same procedure as previously describe but using SP-98 instead.

The following programs will be cleared:

1) SP-100 through SP-139
2) SP-85 (E.M. call telephone number)
3) SP-86 through SP-89 (PM counter)
4) All User Programs are cleared

5) Secret Mode counters 1-20 are cleared.

<SP-99 “Clear all memory”>

This Service Program clears all those service programs previously described as well as all adjustments and modes. All mode default to factory settings.

1. Turn the main switch OFF
2. Turn on DIP SW 801-7 and 8 on the operation board.
3. Turn on DIP SW 100-8 on the main board.
4. Turn the main switch on.
5. Select SP-99 and press the “1” key on the key pad, then press the Enter key to perform memory clear function.
6. Turn the main switch OFF and reset DIP switches to the OFF position, then turn the main ON to resume copier operation.

4. Service Program Mode Table

Mode No.	Function	Data	Factory Setting	Comments
5 Exposure Lamp OFF Free Run	Free run with exposure lamp OFF.			
6 Jam Detection OFF	Copies are made without jam detection.			"No" is displayed when 0 is selected.
7 Corona wire cleaner function	CC/TC cleaner motors operation.			The motor starts when Enter key is pressed. Stops after 1 cycle.
8 Input Check	Displays the input from sensors.			For data, see the input check table.
10 Drum Conditioning	Used to condition a new drum.			100 will appear in the copy counter. Press Start to activate.
11 All Indicators ON	Turns on all the indicators on the operation panel.			
12 Language (LT version only)	Selects desired language. (French or English	0: E 1: F	0: E	DIP SW 801-3, 4, 5 must be set. See DIP SW tables.
13 Language (A4 version only)	Selects language. (Japanese, English French, German, Italian and Spanish)	0: J 1: E 2: F 3: G 4: I 5: S		DIP SW 801-3, 4, 5 must be set. See DIP SW tables.
15 Auto Reset Time	Selects auto reset of 1 or 3 minutes.	0: 1 min. 1: 3 min. 2: none	0	
16 Count Up/Down	Selects count up or count down.	0: UP 1: DOWN	0	
17 Auto cassette shift	Selects auto-cassette shift mode.	0: YES 1: NO	0	Copier automatically shifts to another cassette holding same size paper when paper runs out.

Mode No.	Function	Data	Factory Setting	Comments
18 Beeper	Turns beeper ON or OFF.	0: YES 1: NO	0	
19 Auto ID Priority	Selects the priority of image density control when the main switch is turned on.	0: ADS 1: Manual	0	
20 Feed Station Priority	Selects feed station priority at power on.	0: 1st 1: 2nd (LCT)	0	
21 APS Priority	Selects APS or manual.	0: Yes 1: No	0	
22 SADF Shut-Off Time	Selects shut-off time for SADF mode.	0: 4 sec. 1: 60 sec.	0	
23 Free Size	Enables originals of various sizes to be fed from the same stack.	0: No 1: Yes	0	Possible in SADF Mode.
24 RDH/ARDF priority	Selects RDH or ARDF.	0: RDH 1: ARDF	0	Only if RDH/ARDF is installed.
25 Staple limit	Sets staple limit at 35 copies.	0: Yes 1: No	0	Finisher only.
26 Shift stack	Shift stack mode is automatically selected when no staple.	0: No 1: Yes	0	Finisher only.
27 Side erase	Decreases side erase margins about 5mm each.	0: No 1: Yes	0	First LEDs inside the paper boundaries turn on.
28 Sort Priority	Sort Mode is automatically selected when more than 1 original is set on the DF table and the entered copy quantity is greater than 2 and less than 20.	0: Normal 1: Sort	0	Sorter and DF must be installed on the machine.

Mode No.	Function	Data	Factory Setting	Comments
30 Toner Supply Mode	Selects toner supply system.	0: Detect 1: Fixed	0	See SP31/SP32 for ratios.
31 Toner Supply Amount (Detect Mode)	Determines how much toner is supplied in detect mode.	0: 30% 1: 15% 2: 45% 3: 60%	0	
32 Toner Supply Amount (Fixed and Detect)	Determines how much toner is supplied in fixed and detect mode.	0: 7% 1: 4% 2: 11% 3: 14%	0	
33 ID Sensor Bias	Sets the bias voltage applied to the bias roller when sensing image density.	0: 500 1: 380 2: 470 3: 530	0	500 V = normal 470 V = light 380 V = lightest 530 V = dark
34 Bias shift	Permanently shifts bias output.	0: N 1: 60 V 2: 120 V	0	Shifts all bias levels including ID pattern bias.
37 Lead Edge Separation Corona timing	Sets off timing of the separation corona.	0: 10 mm 1: 7 mm 2: 13 mm	0	Use when separation problems occur. 7 mm: -10 msec. 13 mm: +10 msec.
38 Edge erase	Sets the width of margin erase.	0: 10 mm 1: 5 mm 2: 15 mm 3: 20 mm	0	
39 Charge wire Cleaner	Sets charge wire cleaner operation to ON or OFF.	0: ON 1: OFF	0	Cleaner motor turns on every 5K copies at power up.
41 Lead Edge Erase Margin Adjustment	Adjusts the lead edge margin.	0 - 15	8	0.6 mm per step. (max. -4.8 mm to +4.2 mm)
42 Registration Adjustment	Adjusts registration.	0 - 15	8	0.6 mm per step. (max. -4.8 mm to +4.2 mm)
43 Vertical Magnification Adjustment	Adjusts magnification in the paper travel direction.	0 - 15	8	-0.8% to +0.7%

Mode No.	Function	Data	Factory Setting	Comments
44 Horizontal Magnification Adjustment	Adjusts magnification perpendicular to the direction of paper travel.	0 - 15	8	-0.8% to +0.7%
45 Lens tolerance adjustment	Adjusts lens position to correct focus.	0 - 15	8	-0.8% to +0.7%
46 Size detection error correction	Corrects size detection.	0 - 15	8	1 mm per step. -8 mm to +7 mm
47 Focus Adjustment	Adjusts 4th/5th mirror position to correct focus.	0 - 15	8	0.215 mm per step. -1.72 mm to +1.505 mm
48 Light Intensity adjustment	Adjusts exposure lamp voltage.	50 - 80 Vac	65	To adjust voltage, enter lamp voltage with key pad in 0.5-volt steps.
49 Fusing Temperature Adjustment	Adjusts fusing temp.	175 - 190 degrees	185	175 to 190 degrees in 1 degree steps.
50 Original Length Detection Check	Displays the length detected by the size detection circuit.			Press # key to display.
51 Exposure Lamp Voltage Check	Displays exposure lamp voltage.			Exposure lamp stays on for 10 seconds. Do not repeat more than 5 times to avoid over heating the optics cavity.
52 Fusing Temperature	Displays the fusing temperature.			
53 Drum Temperature	Displays the drum temperature.			
54 Vsg Adjustment	Turns on ID sensor LED.			Adjust Vsg with VR on the ID sensor board. LED turns on 10 s (no drum rotation).

Mode No.	Function	Data	Factory Setting	Comments
55 Vsg/Vsp Check	Displays Vsg and Vsp.			Vsp/Vsg value updated every 10 copies.
56 Auto ID voltage adjustment	Automatically adjusts the auto ID reference voltage.			Free run starts. Auto ID adjusted automatically.
57 Auto ID voltage value display original)	Displays Voltage and K values. Press Start key to turn on. Press C/S to stop.			Machine starts free run. K = SP57/SP56
58 APS Sensors operation check	Checks operation of fiber optics sensors standard original. Press Start key to turn on.	Vl: Length voltage Vw: Width voltage		Machine starts free run. APS voltage is automatically adjusted. while maintaining the exposure lamp voltage at 70.0 vac.
59 Bias Voltage	Displays bias voltage Press Start to turn on. Press C/S to stop.	V0: ID pattern V1: Developer bias		Without temperature compensation.
60 Toner Density Recovery	After the Start key is pressed, the toner supply clutch turns on and free run starts. Free run stops and constant supply is reset when Vsp becomes < 1/8 Vsg.	V0: Vsg V1: Vsp		Use this mode to bring a low toner condition back to normal. 100% is selected.
61 Idling Period Selection	Selects idling period at power-up.	0: 5 min. 1: 10 min. 2: 15 min.	0	
71 Sorter/finisher operation	Enables sorter or finisher operation.	0: NO 1: Sorter 2: Finisher	0	
72 ARDF/RDH operation	Enables ARDF or RDH operation.	0: No 1: ARDF 2: RDH	0	
76 Sorter Bin Capacity	Sets the stack mode quantity limit.	0: No limit 1: Limit	0	Limit = 35 sheet/bin Use with finnisher.

Mode No.	Function	Data	Factory Setting	Comments
77 Odd Number Duplex Copy	Sets the copier to eject the final copy if an odd number of originals are set.	0: Yes 1: No	0	When off, the final sheet is fed out; when on, it stays in the duplex tray.
80 Clock set	Sets the machine clock.			Also accessible by the customer using the key board.
81 Weekly timer set	Programs the machine to turn ON/OFF each day of the week.			Also accessible by the customer using the key board.
82 Automatic shut off.	Selects automatic shut off time.	0: No 1: 30 min. 2: 1 hour 3: 3 hours	0	
85 EM call phone number.	Sets phone # of service representative.			Use decimal key for a space.
86 PM Counter	Turns on the PM counter.	0: No 1: Yes	0	
87 PM Copy Count	Sets the interval of the PM counter.	0: 80 k 1: 60 k 2: 100 k	0	
88 PM Counter Check	Displays contents of the PM counter.			When the PM count is exceeded the Service call and Key Counter indicators blink.
89 PM Counter Reset	Resets the PM counter.	0: No 1: Yes		Use after performing PM.
90 User Code Mode	Selects user code mode. (Key counter shorting connector must be removed.)	0: No 1: Yes	0	If on, must enter a code to copy. See user code table. Reset after 60 s or if C/S and Clear Modes pressed together. Accessible through key board.
91 User Code Counter Check	Displays the contents of each user counter. Use + and - keys to select user code.			User counters count from 0 to 99999. Accessible through keyboard.

Mode No.	Function	Data	Factory Setting	Comments
92 User Code Counter Reset	Resets user's counters Select the user code counter using + and - keys. To reset press "1" then #.	0: No 1: Yes		Accessible through keyboard.
93 Maximum Copy Quantity	Limits the maximum copy quantity that can be entered.		999	The indicator blinks and the limit quantity is displayed. If you enter 0, the max is 999. Otherwise, max is number entered.
97 Clear S/C & Jam Count	Clears the service call and jam counters.	0: No 1: Yes	0	DIP SW 801-7 on operation must be on.
98 Clear Counters	Clears the following counters: - total copies - S/C & Jam counter - Job Program - PM counter - Service Tel. # - User Code Counter	0: No 1: Yes		DIP SW 801-7 on operation must be on.
99 Clear All Memory	Clears all counters and returns all modes to factory setting.	0: No 1: Yes	0	DIP SW 100-8 (Main board) and DIP SW 801-7 on the operation panel must be ON.
100 Main Motor ON time check	Displays the total (accumulated) time that the main motor has operated.		0	Time in hours.
101 Total Copies	Displays the total number of copies.		0	
102 Duplex Copies	Displays the total number of duplex copies made.		0	
103 DF Copies	Displays the total number of copies made using the DF.		0	

Mode No.	Function	Data	Factory Setting	Comments
104 Sort Copies	Displays the total number of copies made using the sorter.		0	
105 Cassette Bank Copies	Displays the total number of sheets fed from the cassette bank unit.		0	
106 LCT Copies	Displays the total number of sheets fed from the LCT.		0	
108 A3/11 x 17 Copies	Displays the total number of A3 or 11 x 17 copies.		0	
109 A4/8-1/2 x 11 Copies	Displays the total number of A4 or 8-1/2 x 11 copies.		0	
111 Reduction Copies	Displays the total number of reduction copies.		0	
112 Enlarged Copies	Displays the total number of enlarged copies.		0	
114 Originals Copied	Displays the total number of originals copied.		0	
115 Originals Copied Using DF	Displays the total number of originals copied using the DF.		0	
120 Total Service Calls	Displays the total number times that the service call indicator has turned on.		0	
121 Service Call Breakdown	Displays the total number of each service call using + and - keys.		0	

Mode No.	Function	Data	Factory Setting	Comments
130 Paper Jams	Displays the total number of paper jams.		0	
131 Feed Jams	Displays the total number of entrance area paper jams.		0	
132 Fuser jams	Displays the total number of jams at the fusing unit.		0	
133 Inverter jam	Displays total number of jams at the inverter unit.		0	
134 Duplex Jams	Displays the total number of jams in the duplex area.		0	
135 Duplex misfeed	Displays total number of misfeed from duplex selection.		0	
136 Exit Jams	Displays the total number of jams in the exit area.		0	
137 Cassette bank Jams	Displays the total number of paper bank jams.		0	
138 Sorter Jams	Displays the total number of sorter jams.		0	
139 DF Jams	Displays the total number of DF jams.		0	

5. Language Code Table

DIP-801 3	DIP-801 4	DIP-801 5	Destinations	Paper Size	SP-12	SP-13	
0	0	1	PITNEY BOWES	LT	0: English 1: French	No Function	
0	1	0	KALLE INFOTEC RICOH EUROPE RICOH ASIA/ MIDDLE EAST	A4	No Function	Original 0: Japanese 1: English 2: French 3: German 4: Italian 5: Spanish	Option 0: Swedish 1: English 2: Danish 3: Norwegian 4: Finnish 5: Dutch
0	1	1	NASHUA SOUTH AMERICA	LT	0: English 1: French	No Function	
1	0	0	RICOH USA	LT	0: English 1: French	No Function	
1	0	1	SAVIN	LT	0: English 1: French	No Function	
1	1	0	RICOH TAIWAN	A4	No Function	Same as Ricoh Europe **NOTE: When language selection is required, turn off DIP-801-3.**	
1	1	1	NASHUA EUROPE	A4	No Function	Original 0: Japanese 1: English 2: French 3: German 4: Italian	Option 0: Swedish 1: English 2: Danish 3: Norwegian 4: Finnish

SPECIAL TOOLS AND LUBRICANTS

Item	Description	Part No.	Q'ty
1	Test Chart OS-A3 -- 10 sheets -- 100 sheets	5420 9516 5420 9502	1
2	Digital Thermometer (HLC-60E)	5420 9504	1
3	Digital Thermometer Probe (HLC-60E)	5420 9505	1
4	Digital Multimeter (BECKMAN RMS3030)	5420 9507	1
5	Test Lead Kit (BECKMAN DL241)	5420 9508	1
6	Drum shoe	5442 9106	1
7	Shoe Adaptor	5447 9104	1
8	Omega Clamp	5205 9111	2
9	Thickness Gauge - 0.2mm	5446 9140	1
10	Thickness Gauge - 0.75mm (2 pcs / set)	5215 9500	1
11	Setting Powder	5442 9101	1
12	Silicone Oil	5420 9550	1
13	Launa 40 Oil	5442 9103	1
14	Grease (MOBIL TEMP 78) 400g	5447 9078	1

SERVICE REMARKS

1. Handling The Drum

1. Never touch the drum surface with bare hands.

2. Store the drum in a cool dry place.

3. Always wear gloves when cleaning the drum.

4. Prime the drum with setting powder only when the cleaning blade, cleaning brush, and drum are replaced as a set.

5. Never expose the drum to light for a long time.

6. Always keep the drum in the protective sleeve when inserting or pulling the drum out of the copier.

7. Drum conditioning is necessary when a new drum is installed. In addition, it should be done at the following times:

   a) When image density is reduced due to overexposure of the drum.
   b) After cleaning the drum.
   c) When the drum is lightly scratched.

8. Before inserting or sliding out the drum, the cleaning unit should be removed to avoid drum damage. When pulling out the cleaning unit, press the drum shaft slightly to the left.

9. Return used drums to the distributor according to standard procedure.

2. Charge Corona

1. Do not use emery paper which abrades the coating on the wire for wire cleaning.

2. Do not touch the corona wire with oily hands. Oil stains may cause white bands on copies.

3. The corona wire height should be adjusted only when:

   a) The front end block is replaced.
   b) The drum charge current is uneven.

4. Make sure that the corona wires are correctly positioned between the cleaner pads.

3. Erase Lamp

1. A narrower lead edge erase margin increases the possibility of fusing jams. At least 1.0mm of margin is necessary to prevent fusing jams.

2. After cleaning the erase lamp filter, discharge any static charge on the filter surface with a finger before replacing the unit.

4. Optics

1. A small amount of Iauna oil should be used to lubricate the following parts:

   a) Scanner Guide Rods
   b) Scanner Guide Rod Pads
   c) Lens Housing Guide Rods

2. Clean the exposure glass with glass cleaner and a dry cloth to reduce static electricity on the glass which attracts foreign substances (dust, oil, etc.).

3. Do not touch the following parts with bare hands:

   a) Reflectors
   b) Exposure lamps
   c) Mirrors and lens

4. Do not bend or crease the ribbon cable of the exposure lamp and the fiber cables.

5. To move the scanner manually, use the scanner guide bracket, not the scanners which are easily damaged.

6. Do not touch the surface coat of the mirrors with your fingers. When replacing the mirrors, make sure the surface coat faces the optical path.

7. Even when the lamps are off, there is voltage present across them. Make sure that the power is off when working in this area.

8. Clean mirrors and lens with water or silicone cloth only.

5. Development Unit

1. Do not force the development roller to turn opposite to the normal direction of rotation because the gears may be damaged.

2. Be careful not to nick or scratch the development roller sleeve (which is made of aluminum).

3. Always make sure that there are no splits in the upper brush seal. Splits in the upper brush will cause toner scattering.

4. When the development unit is out of the copier, always place a sheet of paper under it to prevent any small pieces of metal (staples, clips, E-rings, etc.) from being attracted to the development roller and getting inside the unit.

6. Transfer and Separation Corona

1. Do not loosen the paint-locked screws holding the entrance mylar guide of the transfer and separation corona unit.

7. Cleaning Unit

1. Do not damage the cleaning blade edge. Clean the blade with a soft, clean cloth.
2. Do not touch the cleaning brush with oily hands which impair the cleaning function.
3. Before pulling out the cleaning unit, place a sheet of paper under it to catch toner falling from the entrance mylar seal.
4. Before adjusting the cleaning blade pressure, check all other possible causes.

8. Pre-transfer & Quenching Unit

1. Clean the lamp filters with a clean damp cloth.

9. Fusing

1. When removing the fusing unit, keep it in an up-right position so that the silicone oil does not spill.
2. After replacement of the oil blade, oil supply pad, and hot roller, prime with silicone oil to the top of the oil blade.
3. Be careful not to damage the edge of the hot roller strippers or their tension springs.
4. Be careful not to bend the pressure roller strippers.
5. Do not touch the fusing lamp with bare hands.
6. Be sure that the fusing lamp is not in contact with the inner surface of the hot roller.
7. Be sure that the oil end sensor contacts the bottom of the oil tank.

10. Paper Feed and Duplex

1. Grease the following parts with Mobil Temp 78 periodically to avoid noise and bad operation:

   a. Slip clutches in upper, lower, and duplex separation roller.
   b. Worm gears and worm wheels of upper and lower lift motors.

2. Be careful not to damage the forks when removing the fork gate unit.

3. The rollers and slip clutch for duplex and cassette feed are not interchangeable.

4. Be sure that the duplex transport belts are matte-side out when replacing them.

5. When reinstalling the support bracket, make sure that the bracket is properly engaged with the groove of the registration clutch stopper.

11. Optional Equipment

1. When servicing the document feeder and/or sorter, make sure that the main switch of the copier is off.

2. Before servicing the large capacity tray, unplug the power supply cord of the tray.

12. Handling PCBs

WARNING: **The timer board has a lithium battery, which may explode if mistreated. Do not recharge this battery, disassemble it, or dispose of it in fire. Used timer boards should be handled according to local regulations.**

SECTION 3

REPLACEMENT AND ADJUSTMENT

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Corona

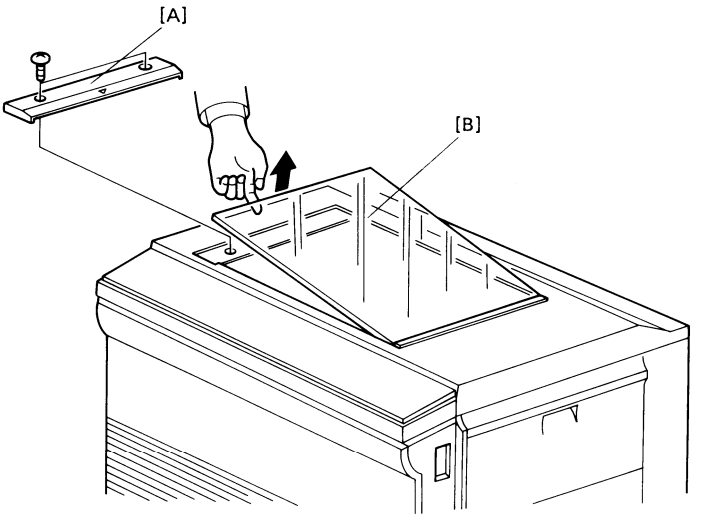
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OPTICS

1. Exposure Glass Removal



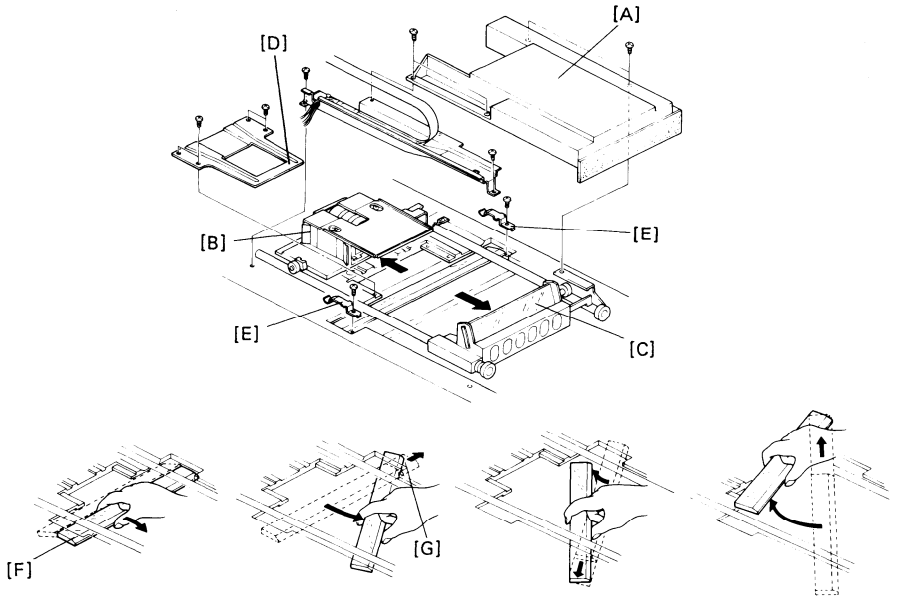
1. Remove the left scale [A] (2 short screws).

2. Grasp the left edge of the exposure glass [B] and lift it up slightly. Slide the other edge out from under the right glass holder. Remove the exposure glass.

NOTE: When reinstalling the exposure glass:
Make sure that the left edge of the glass is flush with the two tabs to the left on the scale plate.

Make sure that the right glass holder firmly secures the exposure glass.

2. Sixth Mirror Replacement



1. Remove the exposure glass. (Refer to “Exposure Glass Removal.”)

2. Remove the lens housing cover [A] (4 screws). Then, shift the lens housing [B] fully to the left and the 4th/5th mirror assembly [C] to the right.

3. Remove the sliding plate [D] (4 screws), and remove the plate springs [E] from the both ends of the sixth mirror (1 screw each).

4. Remove the sixth mirror as follows:

   (1) Slide the sixth mirror [F] to the right.

   (2) Push it into the groove [G] at the rear.

   (3) Swing the front end to the right.

   (4) Pull it towards the front.

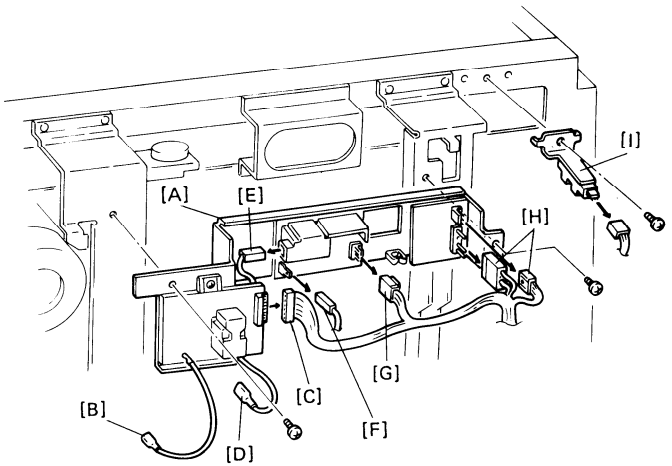
   (5) Swing the rear end to the left.

   (6) Push it towards the rear.

   (7) Remove it from the front.

5. Replace the sixth mirror. (Do not touch the mirror surface with bare hands while installing a new mirror.)

3. Scanner Drive Wire Replacement



1. Remove the exposure glass. (Refer to "Exposure Glass Removal.") Then, remove the top cover (9 screws).

2. Disconnect the following connectors from the power pack bracket (C/B, Q/CB, SSR) [A]:

   Development Bias [B]

   White 11P [C]

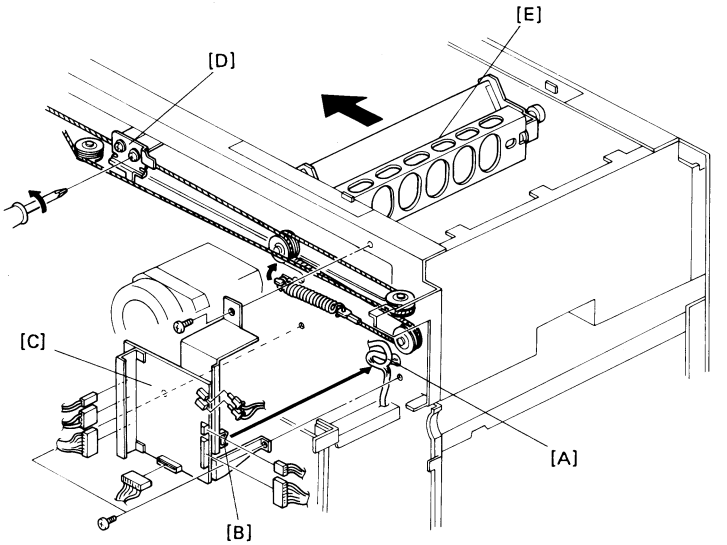
   Charge Corona [D]

   Quenching [E], cleaning bias [F] and white 4P [G]

   Two white 3P [H]

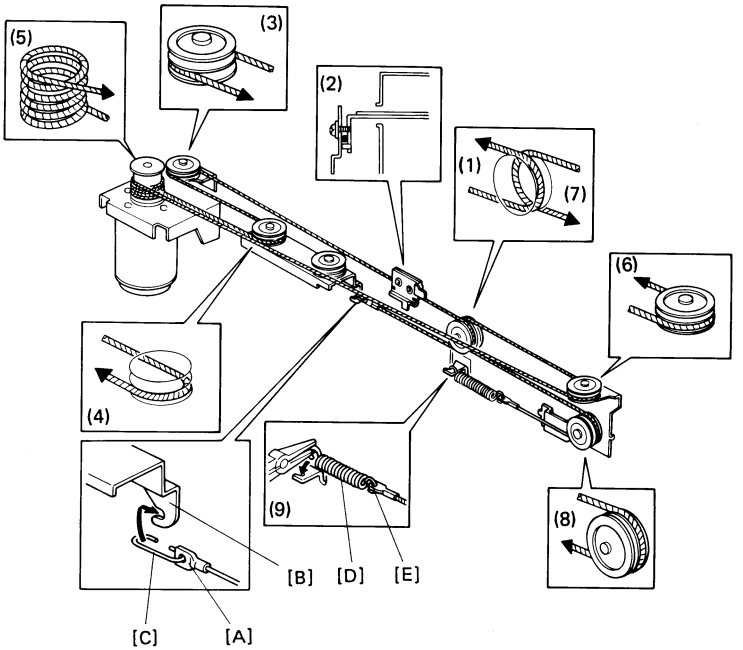
3. Remove the power pack bracket (C/B, Q/CB, SSR) (2 screws).

4. Remove the home position sensor with the bracket [I] (1 screw).



5. Remove the harness [A] from the clamp [B] inserted in the rear side of the optics control PCB bracket [C]. (Be careful not to bend the fiber optics cables.) Then, remove the optics control PCB with the bracket (8 connectors, 3 screws).

6. Loosen the first scanner wire clamp [D] (2 screws), and remove the old wire. Then, shift the second scanner [E] fully to the left (rear view).



7. Hook one end of the wire [A] on the anchor [B] using the ring [C].

8. Route the scanner wire in the following order:

   (1) Outer track counterclockwise.

   (2) Below securing screws.

   (3) Lower track counterclockwise.

   (4) Lower track clockwise.

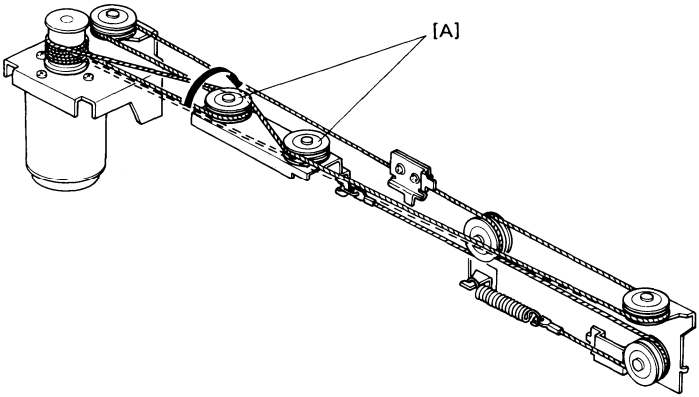
   (5) From lower to upper 5.5 times counterclockwise.

   (6) Lower track counterclockwise.

   (7) Inner track counterclockwise.

   (8) Inner track clockwise.

   (9) Hook the wire to the anchor with the spring [D] and the ring [E].



9. Thread the wire between the two pulleys [A].

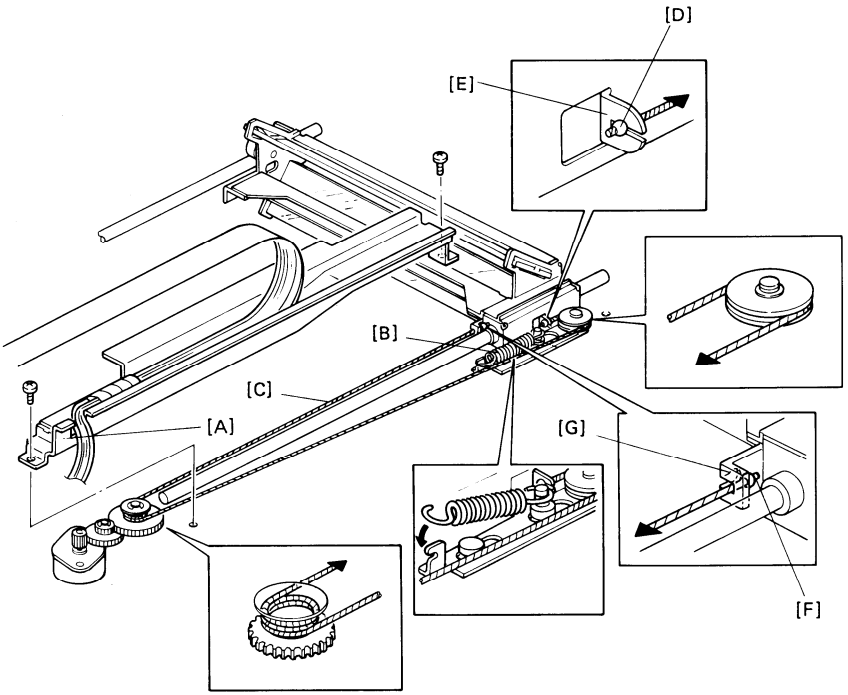
10. Position the first and second scanners according to the adjustment table, and secure the first scanner wire clamp (rough adjustment of the horizontal magnification).

11. Adjust the horizontal magnification using SP 44. (Refer to “Horizontal Magnification Adjustment.”)

12. Adjust the focus using SP 47. (Refer to “Focus Adjustment.”)

13. Reassemble.

4. Fourth and Fifth Mirror Drive Wire Replacement



1. Remove the exposure glass. (Refer to "Exposure Glass Removal.") Then, remove the top cover (9 screws), the lens housing cover (4 screws), and the exposure harness guide plate [A] (2 screws).

2. Remove the tension spring [B] and the old wire [C].

3. Route the wire in the following order:

   (1) Hook one end of the wire [D] into the anchor point [E] on the fourth and fifth mirror assembly (near the tension pulley).

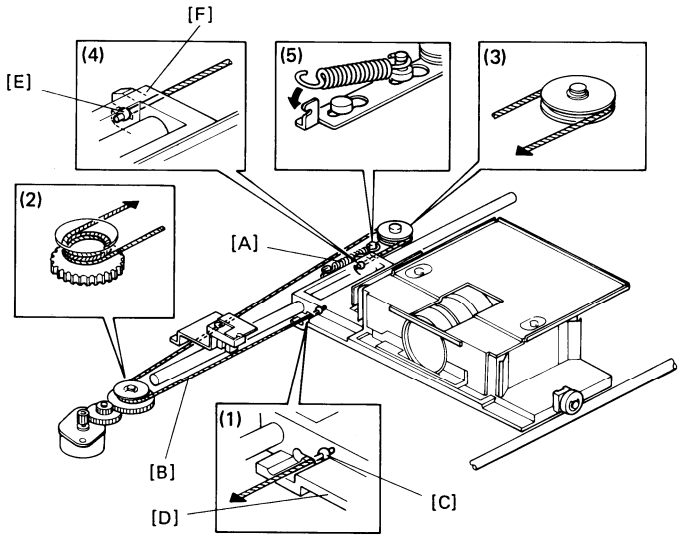
   (2) Wrap the wire clockwise around the tension pulley.

   (3) From lower to upper, wrap the wire 2.5 times clockwise around the drive pulley.

   (4) Hook the other end of the wire [F] onto the fourth and fifth mirror assembly [G].

   (5) Hook up the tension spring and reassemble.

5. Lens Drive Wire Replacement



1. Remove the exposure glass. (Refer to "Exposure Glass Removal.") Then, remove the lens housing cover (4 screws).

2. Remove the tension spring [A] and the old wire [B].

3. Route the wire in the following order:

   (1) Hook one end of the wire [C] onto the front of the lens housing [D].

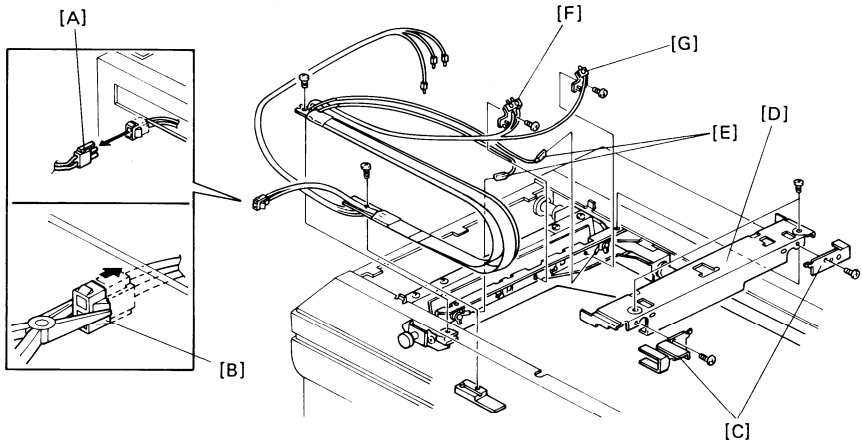
   (2) From lower to upper wrap the drive wire 2.5 times clockwise around the drive pulley.

   (3) Wrap it clockwise around the tension pulley.

   (4) Hook the other end of the wire [E] onto lens housing [F].

   (5) Hook up the tension spring and reassemble.

6. Scanner Harness Replacement (Optics Cables & Exposure Lamp)



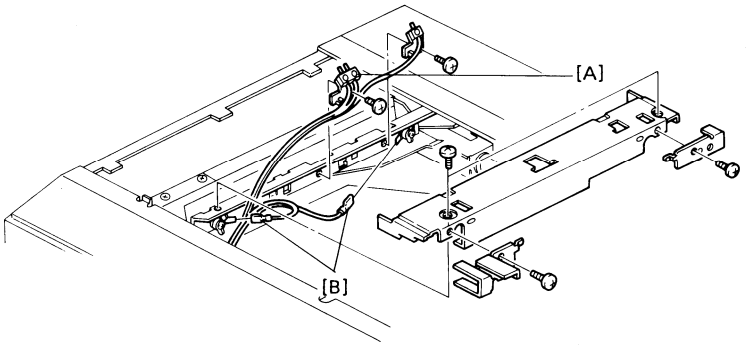
1. Remove the rear and left covers (2 screws each). Then, remove the exposure glass. (Refer to "Exposure Glass Removal.")

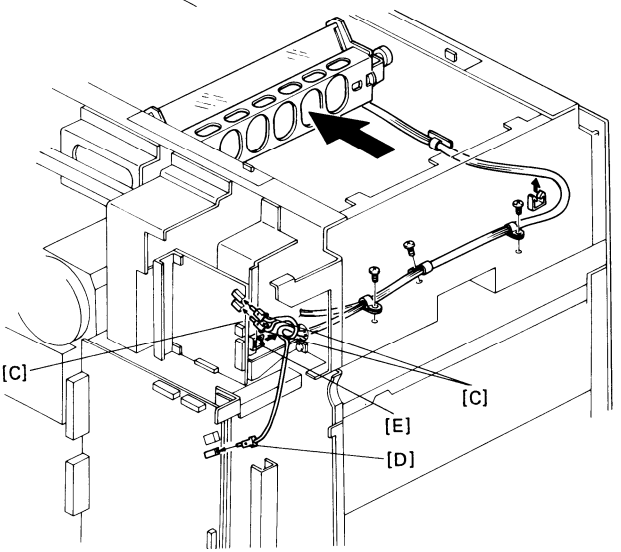
2. Open the front cover, and remove the left inner cover. Then, disconnect the exposure lamp connector [A] (white 2P connector), and push the female half of the connector [B] through the frame into the optics cavity.

3. Remove the front and rear lamp terminal covers [C] (1 screw each). Then, remove the reflector cover [D] (2 screws).

   NOTE: Do not touch the surface of the reflector.

4. Disconnect the front and rear lamp terminals [E]. Then, remove the auto ID and length sensors with the bracket [F] (1 screw). Also, remove the width sensor with the bracket [G] (1 screw).





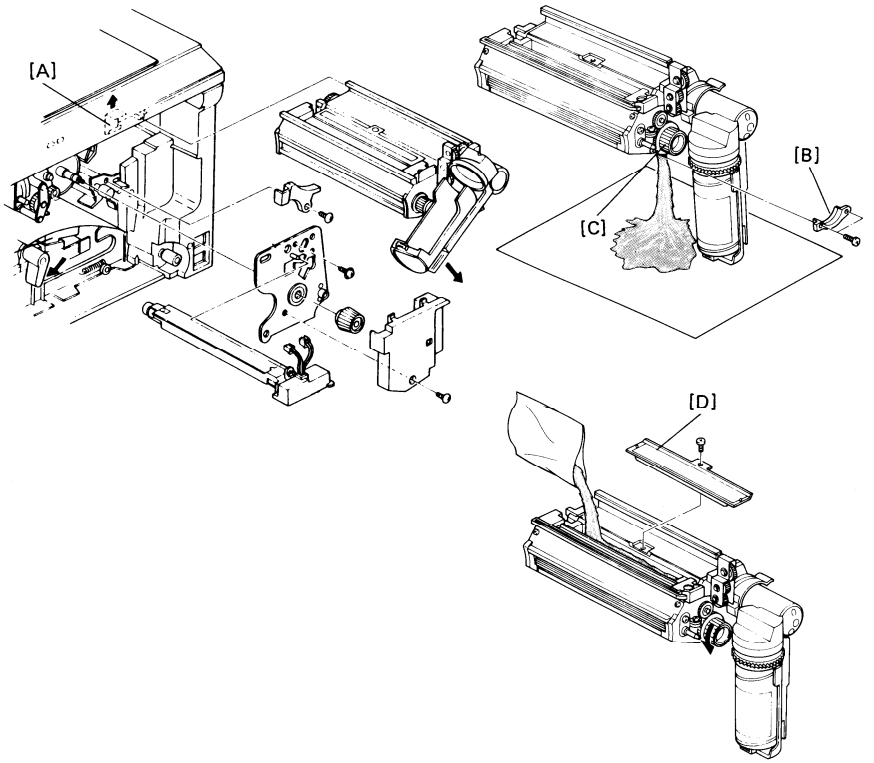
5. Remove the fiber optics cables [A] with the exposure lamp harness [B] from the clamps in the optics cavity (5 screws).

6. Disconnect the OW & OL sensor cables [C] from the optics control PCB (CN307 & 308) and the ADS cable [D] from the main PCB (CN111). Then, remove the cables from the clamp [E] on the back of the optics PCB bracket.

7. Replace the scanner harness, and reassemble.

DEVELOPMENT

1. Developer Replacement



1. Raise the development unit release lever [A] and take out the development unit. Then, place it on a sheet of paper.

2. Carefully remove the developer exchange plate [B] (2 screws).

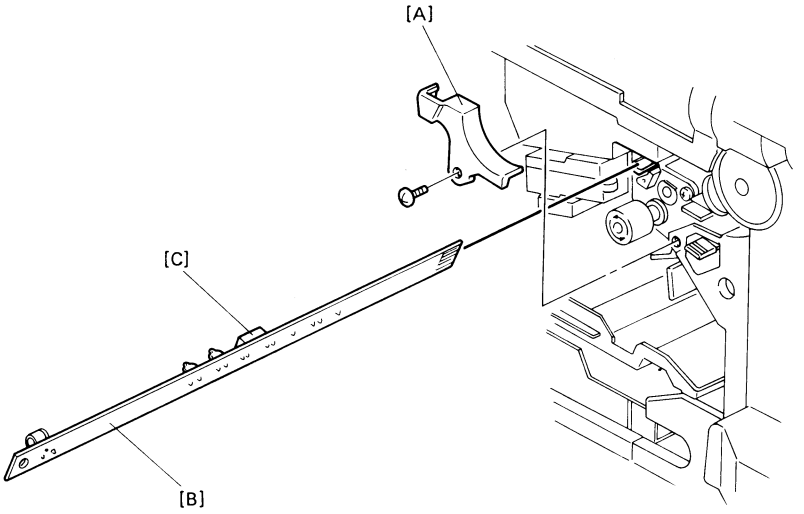
   CAUTION: Developer pours out quite quickly.

3. Rotate the paddle roller knob [C] counterclockwise to remove all the developer. Then, reinstall the developer exchange plate.

4. Remove the developer inlet cover [D] (1 screw), and pour one kilogram of developer into the development unit while rotating the paddle roller knob to evenly distribute the developer.

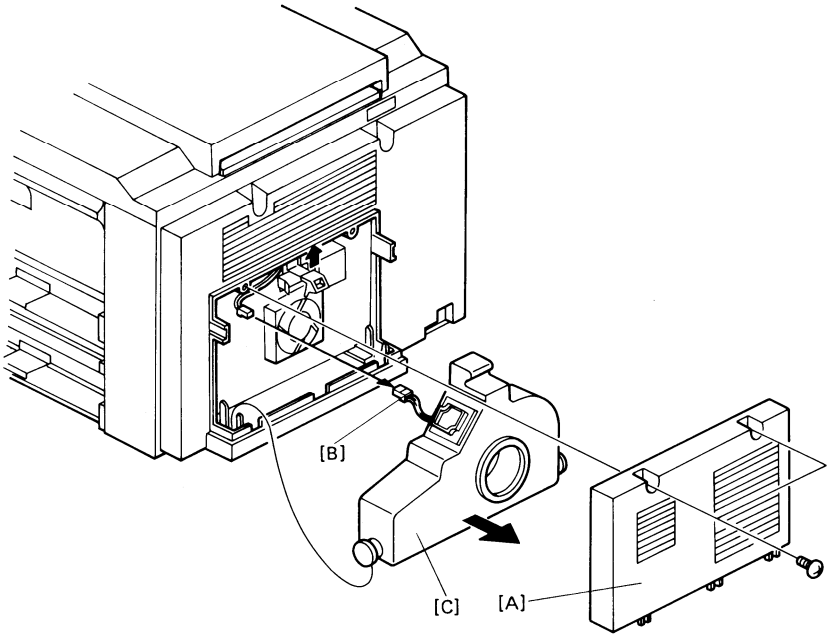
5. Reassemble.

2. Image Density Sensor Removal



1. Open the front cover.
2. Remove the image density cover [A] (1 screw).
3. Slide out the image density sensor [B].
4. Clean or replace the sensor [C].

3. Toner Collection Bottle Cleaning



1. Remove the toner collection bottle cover [A] (2 screws).
2. Disconnect the toner overflow sensor connector [B], and remove the bottle [C].
3. Remove the stopper from the toner collection bottle to clean out the toner.

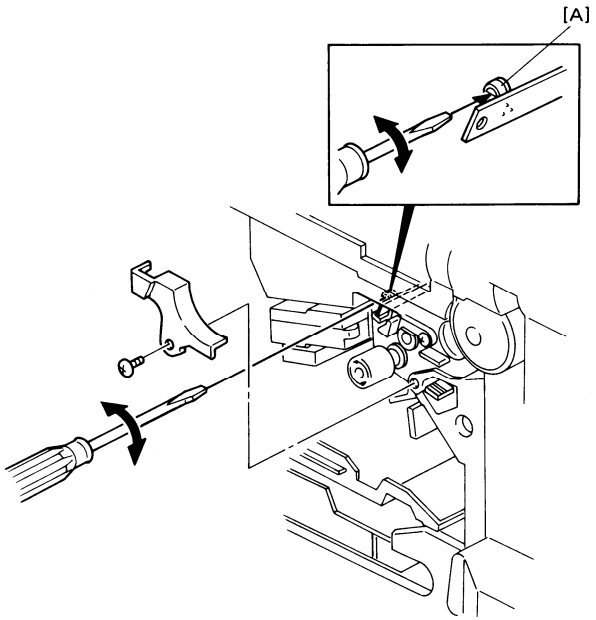
4. Vsg Voltage Checking

When : Every call (especially if the drum is changed)
Purpose : To confirm ID sensor mode operation.
Target : Vsg = 4.00 ± 0.20 volts
Measure : SP 54
How : Vsg is displayed on the guidance display for ten seconds.

1. Remove the ID sensor PCB. (Refer to “ID Sensor Replacement.”)
2. Clean the ID sensor.
3. Reinstall the ID sensor PCB, then check Vsg using SP 54.

5. Vsg Voltage Adjustment

When	:	Vsg is not within specifications. After replacing either the ID sensor PCB or the main PCB.
Purpose	:	To ensure correct ID sensor mode operation. Vsg = 4.00 ± 0.20 volts
Measure	:	VR 1 on ID sensor PCB
How	:	Light intensity of the ID sensor LED is changed.

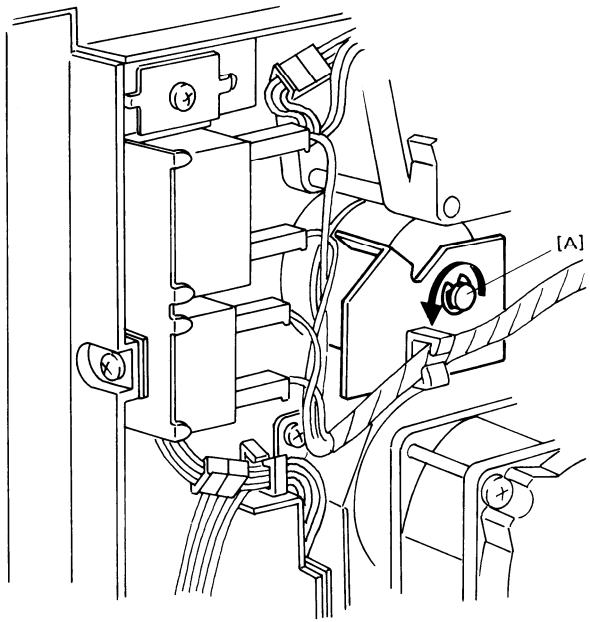


1. Perform steps 1 and 2 of “Vsg Voltage Checking.”

2. Adjust the Vsg voltage using VR 1 [A] on the ID sensor PCB while monitoring Vsg using SP 54. (Rotate VR 1 clockwise to increase the voltage.)

6. Toner Supply System Checking

When	: Problems with toner supply occur.
Purpose	: To check if the ID sensor is the cause of the problem.
Target	: Check if the toner supply clutch turns on when the Vsp is greater than one eighth of the Vsg.
Measure	: SP 55
How	: Vsp and Vsg are displayed on the guidance display. They change every ten copies. ("V0" is Vsg "V1" is Vsp)



1. Remove the rear cover (2 screws).
2. Set SP 55, and read Vsg and Vsp.
3. Divide the Vsg reading by eight. (When the Vsp reading is greater than one eighth of Vsg, the toner supply clutch should turn on while copying.)
4. Check if the toner supply clutch [A] turns on while making twenty copies using an A3/LDG original.

7. Toner Density Recovery

When : Vsp is extremely high (toner density low).
Purpose : To maintain correct toner density.
Target : Vsp < 0.5 volts
Measure : SP 60
How : The copier runs and the toner supply clutch turns on (100%) until Vsp becomes below 0.5 volts. Vsp and Vsg are displayed on the guidance display. ("V0" is Vsg "V1" is Vsp)

1. Set SP 60, then press the Enter key and the Start key.

8. Detect/Fixed Mode Selection

When : The ID sensing system problem can not be solved during a service call. (Detect supply mode does not function.)
Purpose : Manually turn on the toner supply mechanism.
Target : Detect supply mode (Factory setting) changed to fixed supply mode.
Measure : SP 30
How : Toner supply clutch turns on every copy cycle in fixed supply mode.

1. Set SP 30 to select fixed supply mode.

9. Toner Amount Changing

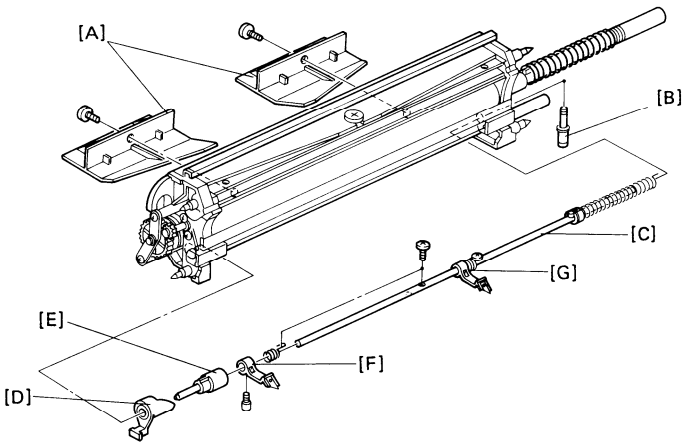
When : The factory setting for toner supply amount (30 %) is not sufficient due to the customer's originals.
Purpose : To satisfy the toner supply amount needed for the customer's original toner consumption.
Target : Detect mode - 30 (Factory Setting), 15, 45 or 60 %
Fixed mode - 7, 4, 11 or 14 %
Measure : Detect Mode - SP 31
Fixed Mode - SP 32
How : The toner supply clutch on period is changed.

10. ID Pattern Bias Voltage Adjustment

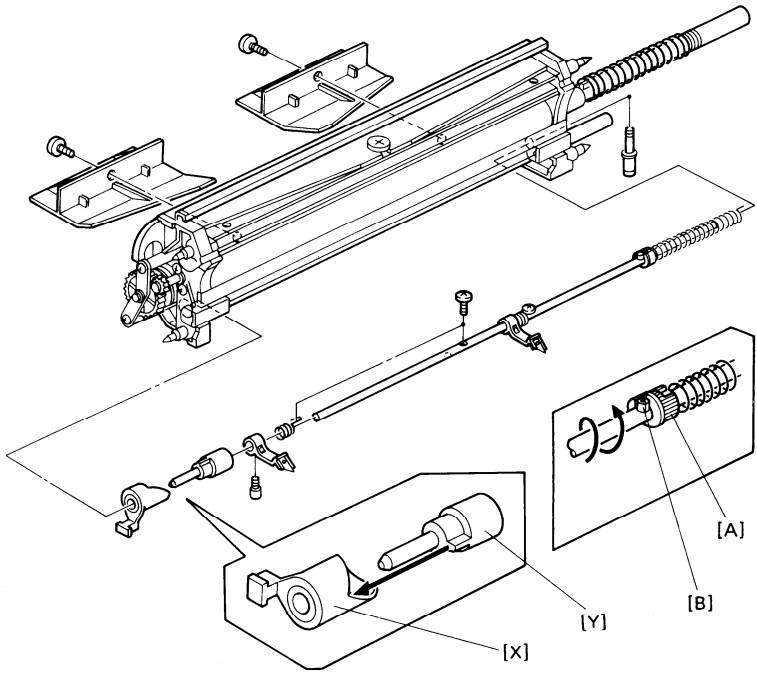
When : Customer wants to change the overall image density of the copies.
Purpose : To change toner concentration inside development unit.
Target : Bias Voltage = 500 (factory setting), 380 (darkest) 470 (darker), and 530 (lightest)
Measure : SP 33
How : ID pattern bias voltage is changed. So, the toner supply threshold is changed.

CLEANING

1. Pick-off Pawl Replacement



1. Remove the pick-off guide plates [A] (1 screw each).
2. Remove the pawl shaft pin [B] from the pawl shaft [C].
3. Push the pawl shaft to the rear and slide the cam holder [D] off the front side plate.
4. Remove the complete pawl shaft assembly.
5. Slide off the cam holder and cam rider [E].
6. Slide off the front pick-off pawl [F] (1 screw).
7. Slide off the rear pick-off pawl [G] (1 positioning pin [H]).
8. Place the new pick-off pawls on the shaft and position them with the positioning pins and pawl springs.



9. Assemble the pawl shaft assembly and slide it into the cleaning unit until the shaft touches the rear side plate.

   NOTE: When installing the cam holder and the cam rider, align X and Y as shown in the figure.

   Make sure that the end of the spring is in the small hole on the rear side plate.

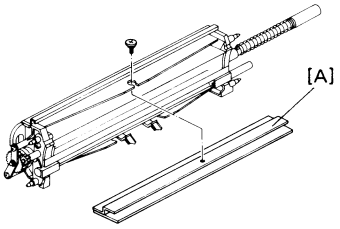
10. Install the pawl shaft pin.

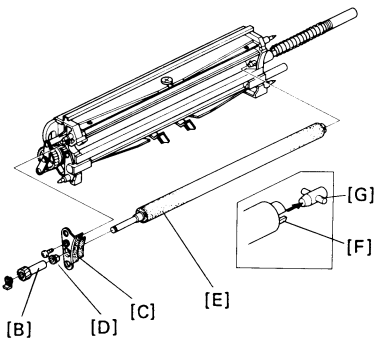
11. Push the spring collar [A] to the rear and rotate it with one turn as shown in the figure. Set the collar on the pin [B].

    NOTE: Make sure that the end of the spring is correctly positioned in the groove of the collar.

12. Reassemble.

2. Cleaning Blade and Brush Replacement





- Cleaning Blade -

1. Take out the cleaning unit.

2. Replace the cleaning blade [A] (1 screw). (Be careful not to touch the edge of the new blade.) (Apply setting powder or toner to the new blade's surface before installing.)

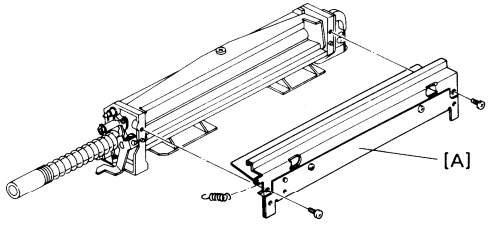
3. Reassemble. After installing the blade, make sure that the blade swivels.

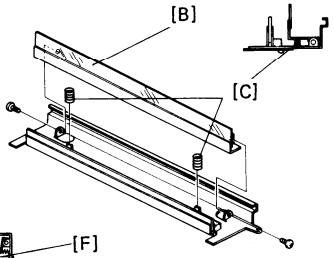
- Cleaning Brush -

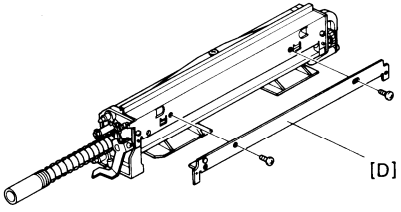
1. Remove the brush drive shaft [B] (1 snap ring) and the brush shaft holder [C] with the bushing [D] (1 screw).

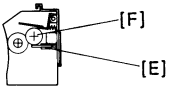
2. Replace the cleaning brush [E]. Do not touch the brush with bear hands as the brush is conductive and oil may effect this. Make sure the notch of the cleaning brush [F] is fitted properly over the positioning pins [G] of the rear spindle.

3. Blade Cleaner and Bias Roller Blade Replacement









- Blade Cleaner -

1. Remove the blade assembly [A] (2 screws, 1 spring).
2. Remove the old blade cleaner [B] (1 screw).
3. Install the new blade cleaner. Make sure that the springs [C] are set properly.

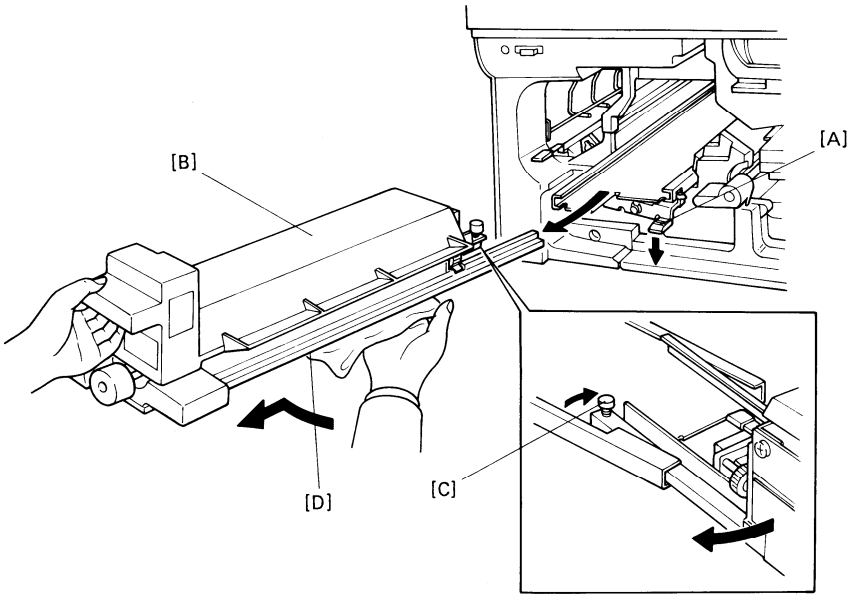
- Bias Roller Blade -

1. Remove the old bias roller blade [D] (2 screws).
2. Install the new bias roller blade.

CAUTION: When reassembling, make sure the bias roller blade [E] is inserted under the bias roller [F].

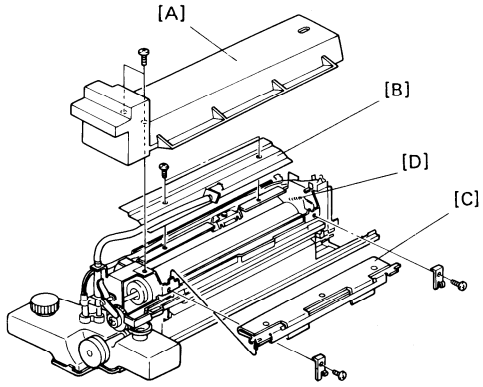
FUSING

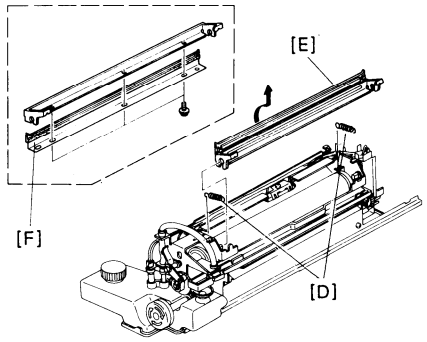
1. Fusing Unit Removal



1. Open the front cover.
2. Push down the fusing unit release lever [A], and pull the fusing unit [B] all the way out.
3. Move the fusing unit to the left to disengage the stopper [C], and remove the unit from the copier. (Do not touch the base plate [D] of the fusing unit with bare hands since it is hot.)

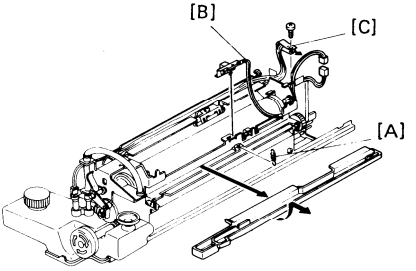
2. Oil Blade Replacement





1. Remove the fusing unit. (Refer to “Fusing Unit Removal.”)
2. Remove the fusing unit cover [A] (3 screws), and remove the pressure plate [B] (2 screws).
3. Remove the oil supply pad [C] (2 screws and 2 clamp plates), and unhook the two tension springs [D].
4. Turn and remove the oil blade assembly [E].
5. Remove the three screws from the oil blade assembly and remove the oil blade [F].
6. Replace the oil blade.

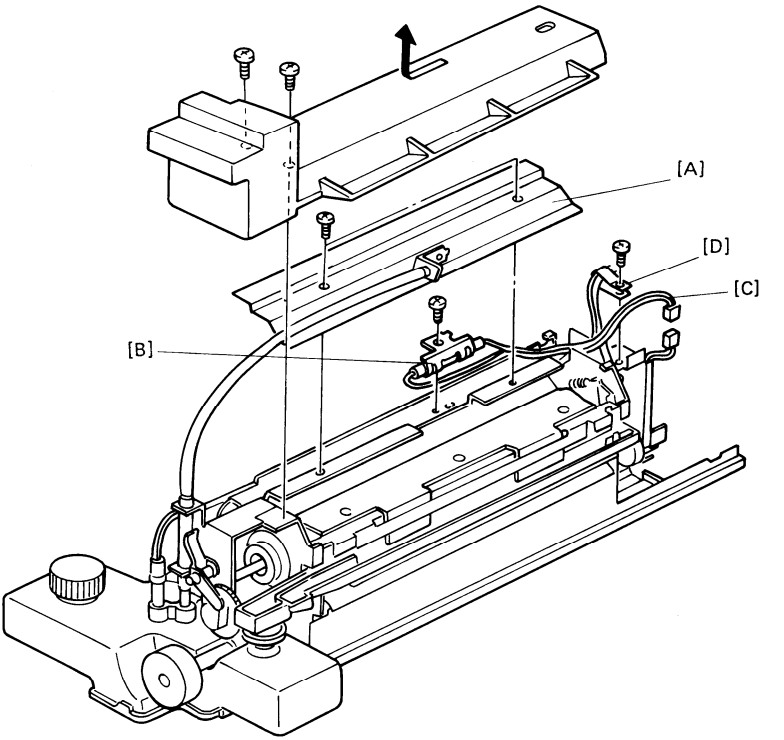
3. Thermistor Replacement



1. Remove the oil blade. (Refer to “Oil Blade Replacement.”)
2. Unhook the thermistor spring [A].
3. Remove the thermistor wire [B] from the metal wire clamp [C] (1 screw) and replace the thermistor (1 connector).
4. Reassemble.

NOTE: Be sure the thermistor wire is properly dressed.

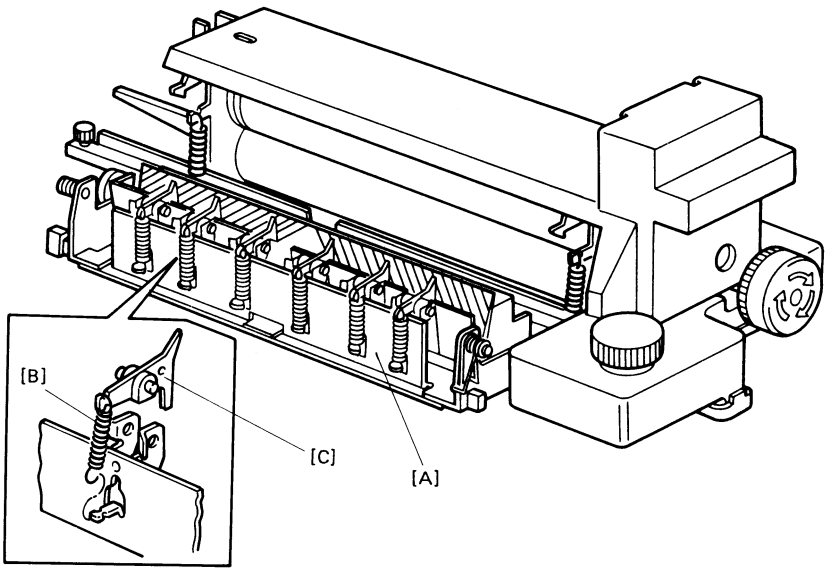
4. Thermofuse Replacement



1. Remove the fusing unit. (Refer to “Fusing Unit Removal.”)
2. Remove the fusing unit cover (3 screws).
3. Remove the pressure plate [A] (2 screws) and the thermofuse bracket [B] (1 screw).
4. Remove the thermofuse lead wire [C] from the metal wire clamp [D] (1 screw).
5. Replace the thermofuse (1 connector), and reassemble.

NOTE: Be sure the thermofuse wire is properly dressed.

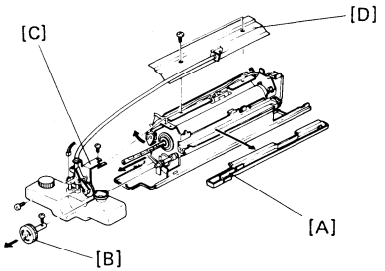
5. Hot Roller Stripper Replacement

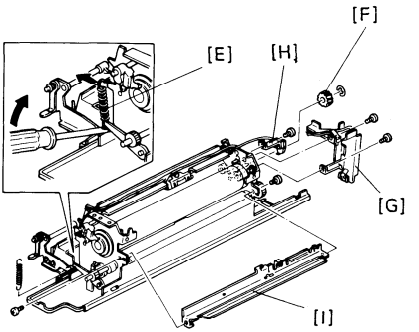


1. Pull out the fusing unit all the way out, and open the fusing exit assembly [A].
2. Unhook the springs [B], and remove the hot roller strippers [C].
3. Replace the strippers, and reassemble.

NOTE: It is best to replace strippers and springs as a set.

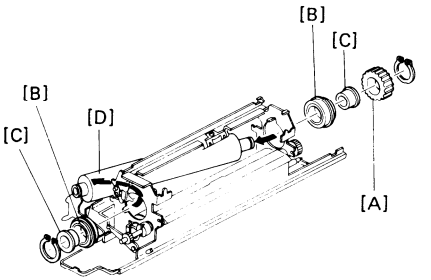
6. Hot Roller Replacement

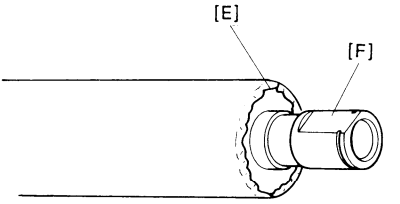




1. Remove the oil blade. (Refer to “Oil Blade Replacement.”)
2. Remove any excess oil from the oil sump area [A], and remove the oil sump.
3. Remove the fusing unit knob [B] (1 screw).
4. Remove the oil pump mechanism [C] with the oil tank (2 screws) and the pressure plate [D] (2 screws).
5. Rotate the front lamp terminal clockwise and remove the fusing lamp.

   NOTE: Do not touch the lamp with your hands because oil may discolor the lamp.
6. Swing down the fusing exit assembly and unhook the pressure springs [E].
7. Remove the gear [F] (1 E-ring), and remove the harness support bracket [G] (2 screws and 2 hooks). Then, remove the rear lamp terminal [H] (1 screw and 1 hook).
8. Remove the thermistor bracket [I] (2 screws).





9. Remove the hot roller gear [A] and bearings [B] and collars [C] from both ends of the hot roller [D] (1 C-ring each).

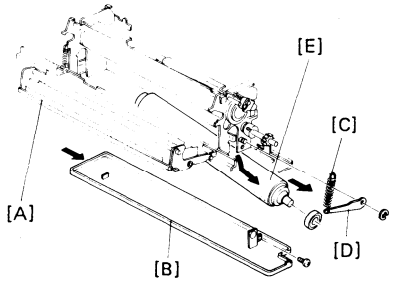
10. Slide the hot roller slightly to the rear and remove the hot roller as shown.

11. Tear the protective paper [E] from the ends of a new hot roller [F] and install it.

12. After the new hot roller is installed, remove the remaining protective paper.

NOTE: When reinstalling the fusing lamp, make sure it does not touch the inside of the hot roller.

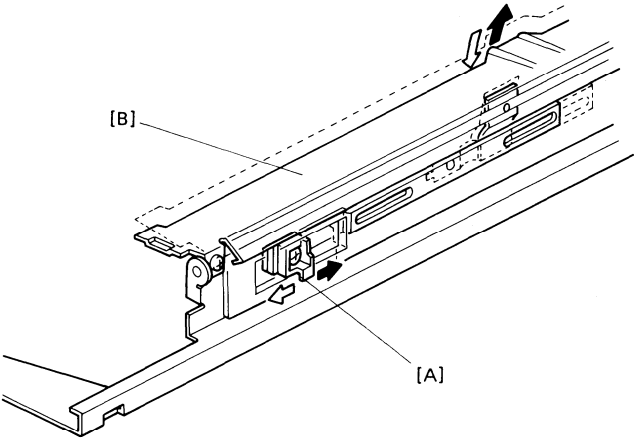
7. Pressure Roller Replacement



1. Perform steps 1 through 4 of “Hot Roller Replacement.”
2. Open and remove the fusing exit assembly [A] (1 E-ring and 1 connector).
3. Remove the oil pan [B] (4 screws and 4 hooks).
4. Remove the front pressure spring [C], and remove the front pressure lever [D] (1 E-ring).
5. Lift up the upper part of the fusing unit and remove the pressure roller [E].
6. Install the bearings on the new pressure roller and reassemble.

8. Entrance Guide Height Adjustment

When	:	Misfeeds with thick paper or paper creasing with thin paper occur.
Purpose	:	To satisfy customer's applications (exceptionally thick or thin paper).
Target	:	No misfeeds and no creasing
Measure	:	Height Adjusting Lever Upper position = Thin paper Lower Position = Thick paper
How	:	Changes the angle of incidence of the paper when it contacts the hot roller surface.



1. Pull out the fusing unit all the way out.

2. Move the height adjusting lever [A] to the rear to raise the fusing guide plate [B].

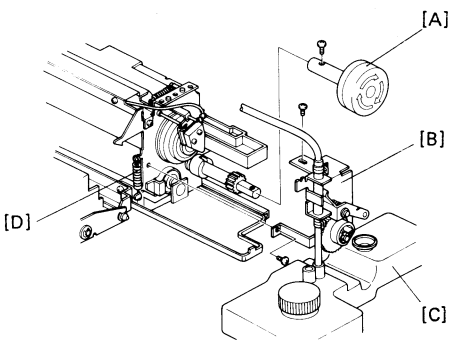
   Move the height adjusting lever to the front to lower the fusing guide plate.
   (Fusing Movement range is 1 mm.)

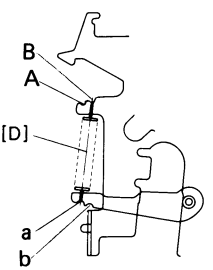
   The upper position prevents creasing with thin paper.

   The lower position prevents misfeed with thick paper.

9. Fusing Pressure Adjustment

When : Unfused copy with thick paper or paper curl with thin paper occurs.
Purpose : To satisfy customer's applications.
Target : Well fused copy without curl
Measure : Adjust fusing pressure spring positioning. (Three fusing pressures are available.)
How : Changes the distance between upper and lower fusing pressure levers.





1. Remove the fusing unit. (Refer to "Fusing Unit Removal.")
2. Remove the fusing unit cover (2 screws).
3. Remove the fusing unit knob [A] (1 screw).
4. Remove the oil pump mechanism [B] with the oil tank [C] (2 screws, 1 connector).
5. Move the pressure springs [D] to the desired position. (See the following table.)

Position	Nip Width	Spring Pressure
A -- a	7.2 mm	40 kg (Normal/Factory setting)
A -- b	6.7 mm	33 kg (Thin)
B -- a	7.7 mm	48 kg (Thick)
B -- b	7.2 mm	40 kg (Normal)

10. Hot Roller Temperature Adjustment

When	:	Unfused copy with thick paper or paper curl with thin paper can not be corrected by fusing pressure adjustment.
Purpose	:	To satisfy customer's paper applications.
Target	:	Well fused copy without curl
Measure	:	SP 49 (from 175 to 190°C, 1°C/step)
How	:	Changes hot roller operating temperature.

1. Set SP 49, and change the number indicated using number keys while checking the copy quality with customer's paper.

2. Set SP 52 to check the hot roller temperature.

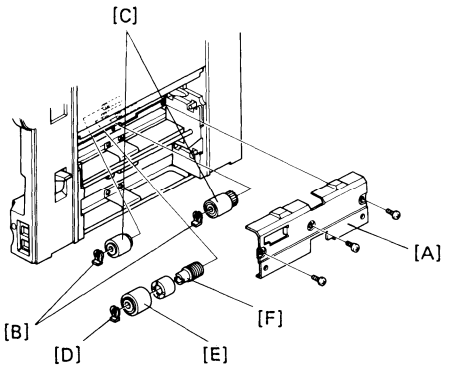
11. Idling Period Selection

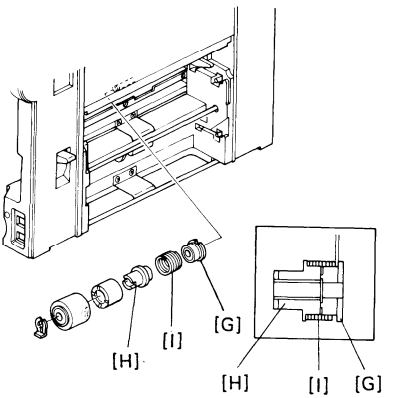
When	:	The following items cause unfused copy even after five minutes idling. 1. Customer's paper is thick. 2. Power source drops by more than five percent. 3. Room temperature is less than 15°C in the morning.
Purpose	:	To meet the customer's environment.
Target	:	Well fused copy.
Measure	:	SP 61 (5, 10 or 15 minutes idling periods are available.
How	:	Changes initial hot roller operating temperature.

1. Select idling period using Set SP 61.

PAPER FEED

1. Pick-up, Paper Feed and Separation Rollers Replacement





- Pick-up and Feed Rollers -

1. Remove the paper feed guide plate [A] (2 screws). Then, remove the snap ring [B], and replace the rollers [C].

- Separation Roller -

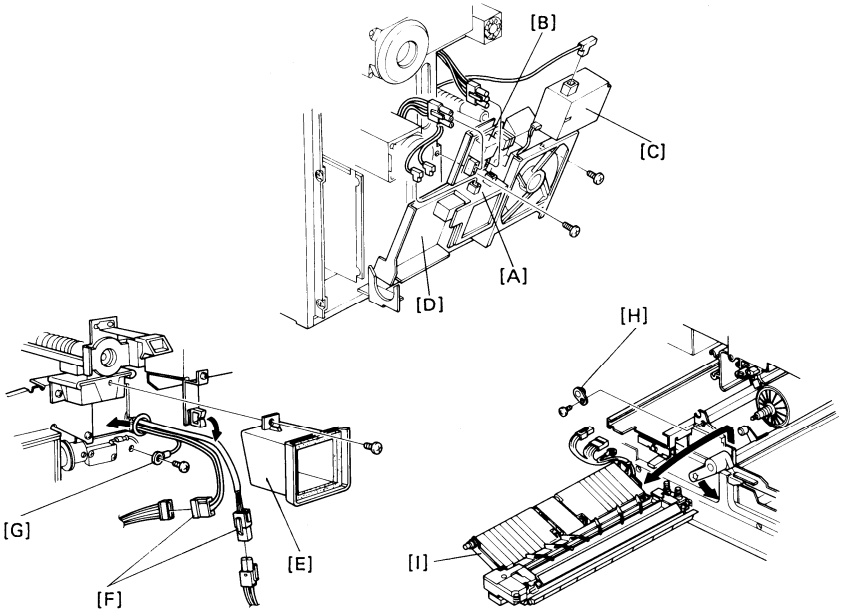
1. Remove the snap ring [D], and remove the roller [E].

2. Slide the slip clutch [F] off of the shaft. Then, clean and lubricate the clutch with Mobil Temp 78.

CAUTION: When reinstalling the spring to between inner [G] and outer [H] hubs, make sure that the spring [I] does not contact the inner hub. This is because the inner hub does not slip properly if the spring contacts the inner hub. This may cause midfeeds.

3. Reassemble.

2. Transport Unit Removal



1. Remove the rear cover (2 screws) and the toner collection bottle.
2. Disconnect the connectors from the following components:

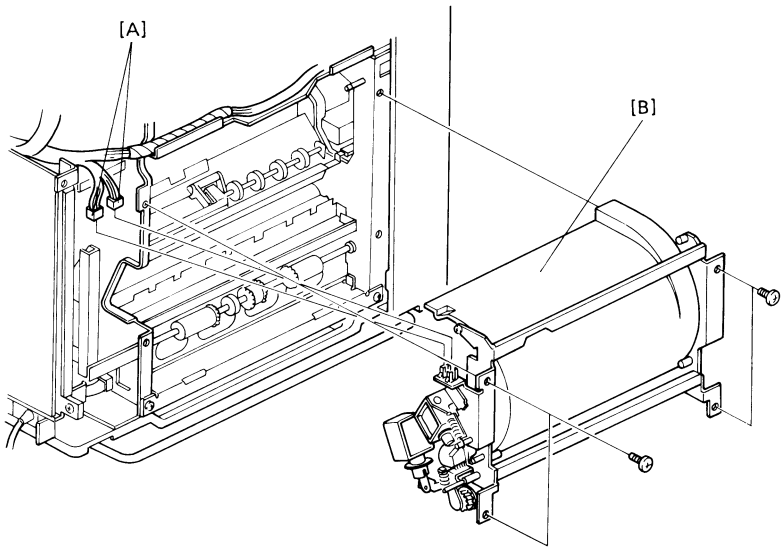
   TC/SC power pack [A] : Two 1P White

   Quenching Stabilizer [B] : 3P Red
   3P White

   PCC power pack [C] : 1P White
3. Lower the power pack bracket [D] (TC/SC, PCC, Stabilizer) (2 screws).
4. Remove the vacuum fan duct [E] (1 screw), and disconnect the free two white connectors (2P & 6P) [F], and remove the ground wire [G] (1 screw).
5. Remove the fusing and cleaning units. Then, remove the bushing [H] (1 screw).
6. Remove the transport unit [I] with the bushing from the rear.

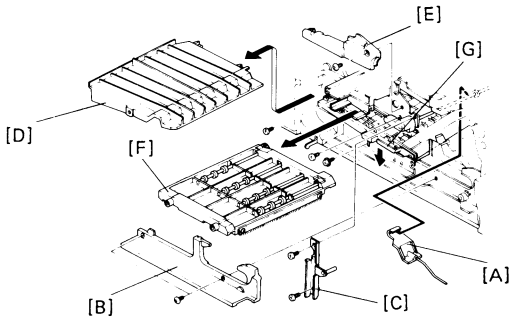
DUPLEX

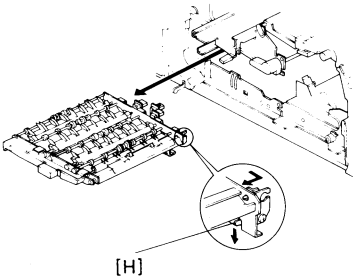
1. Invertor Unit Removal

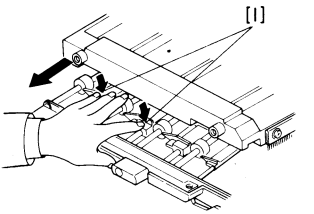


1. Turn off the main switch, and remove the rear and left covers (2 screws each).
2. Remove two connectors [A].
3. Remove the invertor unit [B] (4 screws).

2. Duplex Transport and Fork Gate Units Removal







1. Turn off the main switch and open the front cover.

2. Remove the settler bar [A], the lower inner cover [B] (2 screws), and the transport unit post [C] (2 screws). Then, remove the duplex delivery tray [D] (1 stud screw).

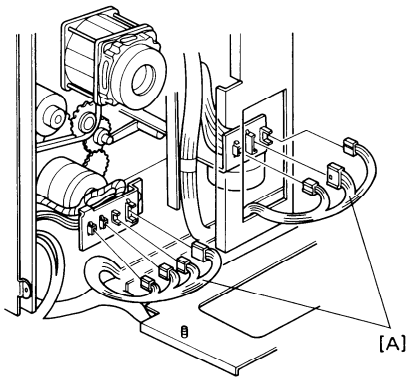
3. Lower the transport unit, and remove the duplex transport unit cover [E] (1 screw). Then, remove the duplex transport unit [F] (2 screws).

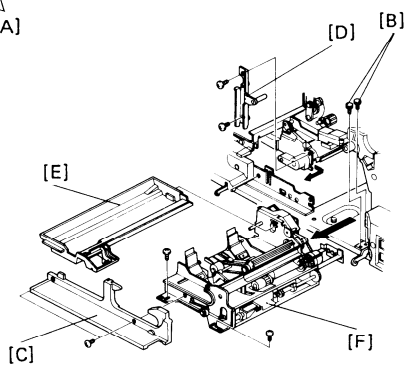
4. Remove the rear cover (2 screws), and remove the main board (2 screws, leave connectors inserted). Then, remove the connectors from the fork gate unit.

5. Lower the fork gate unit [G], and press down the lever [H] on the bottom of the rear, right corner of the fork gate unit. Then, pull the fork gate unit to the right, and remove it.

   NOTE: When reinstalling the fork gate unit, press the 1st & 2nd fork gate [I] with your fingers to avoid the fork gate from being damaged.

3. Jogger Unit Removal





1. Remove the rear cover (2 screws) and the toner collection bottle.

2. Lower the power pack bracket. (Refer to “Transport Unit Removal.”) Then, remove the seven connectors [A] (2P black, 2P white, 2P yellow, 3P black, 6P black, 3P white, 3P red) from the jogger unit.

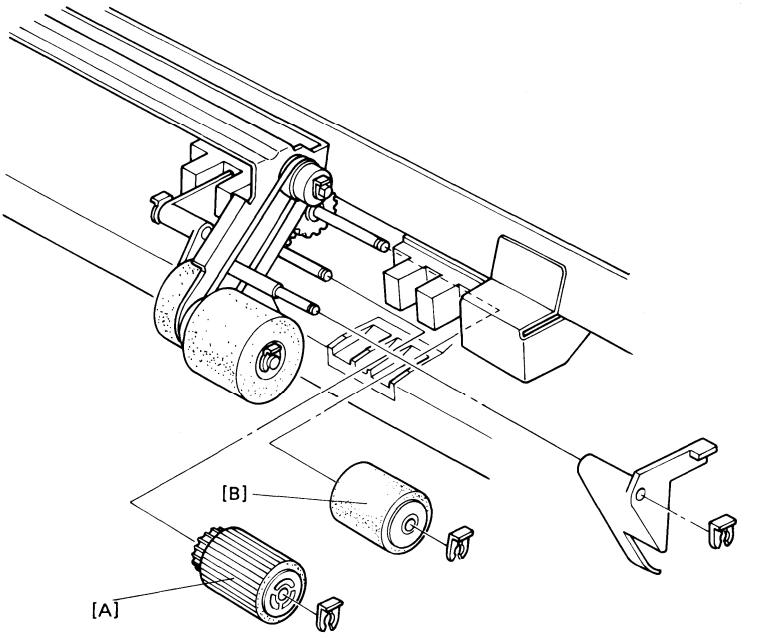
4. Remove the front cover (2 knob screws [B]) and the lower inner cover [C] (2 screws).

5. Remove the transport unit post [D] (2 screws). Then, remove the toner catch pan [E] and the settler bar.

6. Remove the knob screws, then remove the jogger unit [F] (2 screws).

NOTE: When reinstalling the jogger unit, install it half way, and then confirm from the rear that the gears mesh.

4. Duplex Pick-up and Feed Rollers Replacement

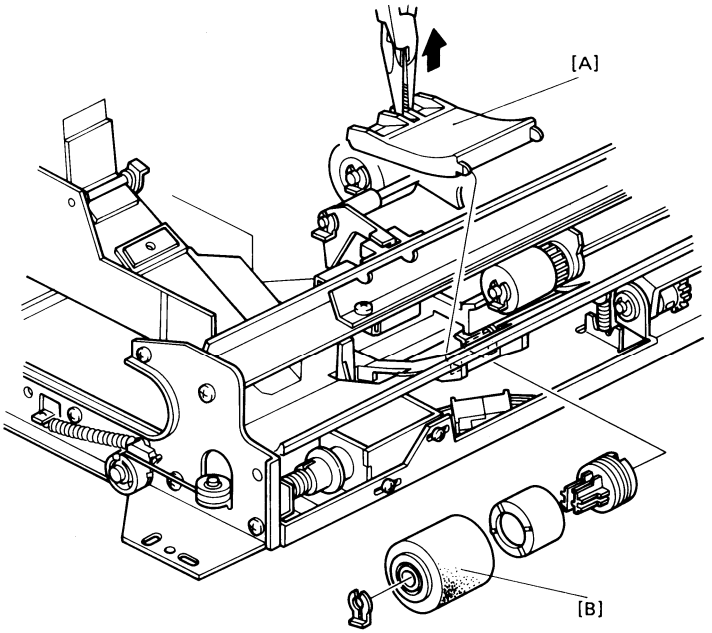


1. Open the front cover (2 thumb screws).
2. Remove the toner catch pan, the settler bar and the duplex paper actuator (1 snap ring - M3).
3. Remove the pick-up roller [A] and the feed roller [B] (1 snap ring each).

CAUTION: The rollers for duplex feed and the rollers for cassette feed are not interchangeable.

The duplex feed roller must be installed with the beveled edge of the one-way bearing to the front.

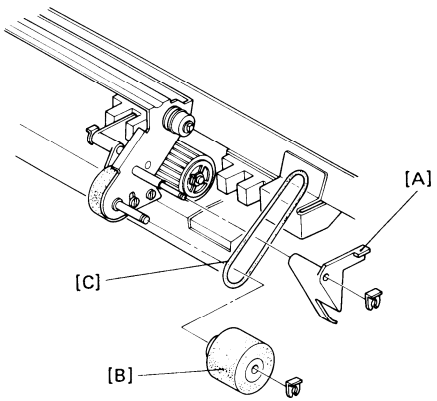
5. Duplex Separation Roller Replacement

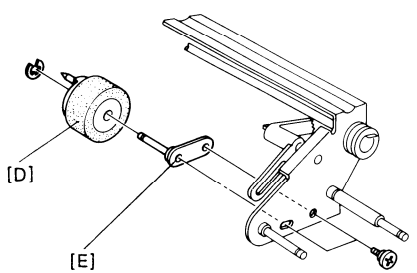


1. Remove the jogger unit. (Refer to "Jogger Unit Removal.") Then remove the separation roller cap [A].
2. Remove the separation roller [B] (1 snap ring) and the slip clutch.
3. Lubricate the slip clutch with Mobil Temp 78.
4. Install a new separation roller.

CAUTION: The rollers and slip clutch for the duplex and the rollers for cassette feed are not interchangeable.

6. Positioning and Entrance Actuator Rollers Replacement





1. Open the front cover.

2. Remove the toner catch pan and the duplex paper actuator [A] (1 snap ring - M3).

- Positioning Roller -

3. Remove the positioning roller [B] together with the drive belt [C] (1 snap ring).

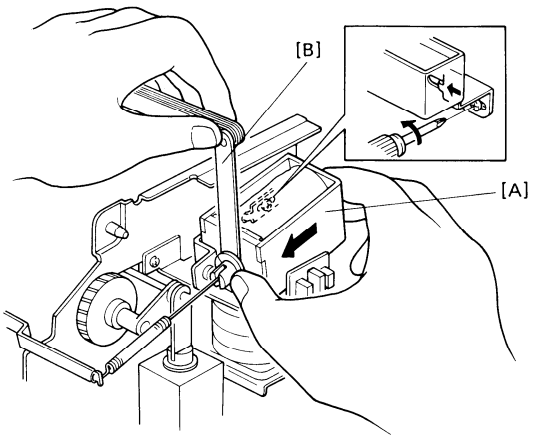
   NOTE: When installing the new positioning roller, make sure that the drive belt fits snugly in the grooves of the pulleys.

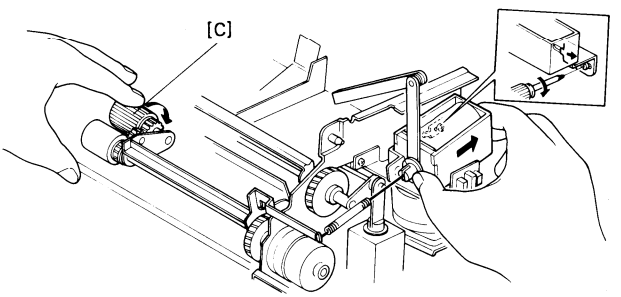
- Entrance Actuator Roller -

4. Remove the entrance actuator roller [D] together with its axle plate [E] (2 shoulder screws).

5. Separate the actuator roller from the axle plate (1 E-ring).

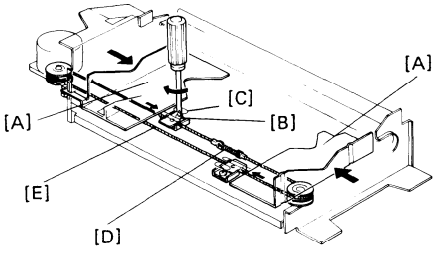
7. Duplex Pick-up Solenoid Adjustment

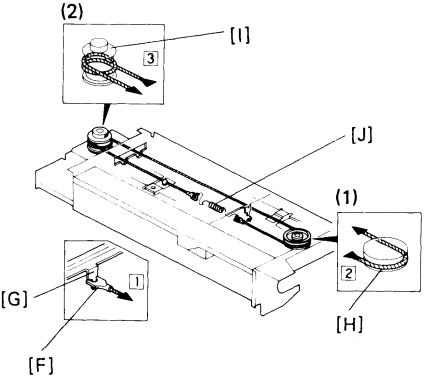




1. Remove the jogger unit. (Refer to “Jogger Unit Removal.”)
2. Loosen the two screws to shift the duplex pick-up solenoid bracket [A] fully to the left (rear view).
3. Insert a 1.5 mm thickness gauge [B] between the plunger and the solenoid. Then, push the plunger to the right.
4. While rotating the duplex pick-up roller [C], shift the duplex pick-up solenoid bracket to the right until the roller can not be rotated. Then, secure the duplex pick-up solenoid bracket.

8. Jogger Wire Replacement





1. Remove the jogger unit. (Refer to "Jogger Unit Removal.")

2. Slide both the front and rear jogger fences [A] to align the screws [B] and holes [C]. Then, remove the screws.

3. Unhook the spring [D] and remove the old wire [E].

4. Turn over the jogger unit, and place the eyelet [F] (the one furthest from the ball) on the anchor pin [G]. Then, route the wire as follows:

   (1) Wrap the wire counterclockwise around the lower track of WP1 [H].

   (2) Wrap the wire counterclockwise, from lower to upper, around the jogger motor pulley [I].

5. Connect both ends of the wire with the spring [J].

6. Adjust the jogger home position. (Refer to the adjustment table.)

COPY IMAGE

1. Vertical Magnification Adjustment

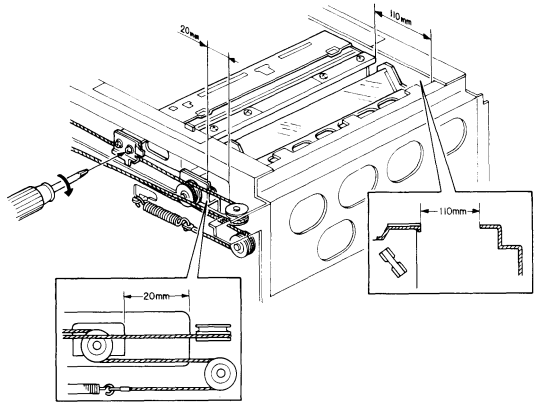
When : The vertical magnification is not within specifications.
Purpose : To maintain correct vertical magnification.
Target : ± 1 %
Measure : Adjust SP 43 (0.1 % / step, 15 steps)
How : The compensation of the scanner speed is changed.

1. Place a 150 mm scale on the exposure glass and align it perpendicular to the left scale.

2. Adjust the vertical magnification using SP 43. Make three copies each time.

2. Horizontal Magnification

When	:	The horizontal magnification is not within specifications. After loosening the first scanner wire clamp.
Purpose	:	To maintain proper horizontal magnification.
Target	:	± 0.5 %
Measure	:	Position the first scanner wire clamp (rough adjustment).
How	:	The distance between the original and the drum surface is changed.
Measure	:	Adjust SP 44 (0.1 % / step, 15 steps) (fine adjustment).
How	:	The lens home position can be changed.



Rough Adjustment

1. Set SP 44, and enter “8” using number key.

2. Turn off the main switch, and shift the first and second scanners so that they are located as shown above.

Fine Adjustment

3. Place a 150 mm scale on the exposure glass parallel to the left scale.

4. Adjust the horizontal magnification using SP 44. Make three copies each time.

3. Focus Adjustment

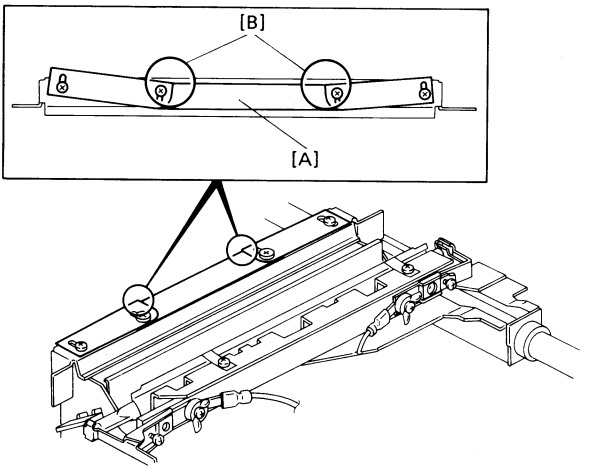
When	:	The copy image is out of focus. After adjusting the horizontal magnification.
Purpose	:	To maintain the correct focus.
Target	:	The copy image keeps proper focus.
Measure	:	Adjust SP 47 (0.1 % per step, 15 steps)
How	:	The fourth and fifth mirror assembly home position changes the distance between the original and the drum surface.

1. Make three A3/LDG copies with the test chart.

2. Adjust the focus using SP 45. Refer to the letter portion on the copies.

4. Uneven Exposure Adjustment

When	:	The exposure is uneven.
Purpose	:	To maintain even exposure.
Target	:	The side-to-side variation of the gray scales of the test chart should be less than one level.
Measure	:	Exposure adjusting plate positioning.
How	:	The light intensity from the exposure lamp is made even across its length by changing the position of the adjusting plates.



1. Clean the optics and the charge corona wires.

2. Place a test chart on the exposure glass and make three A3/LDG copies.

3. If the side-to-side variations of the gray scales is not within specifications, turn off the main switch and remove the exposure glass. (Refer to “Exposure Glass Removal.”)

4. Position the adjusting plates [A] so that the copy image meets the adjustment standard. The leading edges of the three adjusting plate must be aligned [B] to avoid white streaks.

5. Light Intensity Adjustment

When : Every call
Purpose : To maintain the correct light intensity.
Target : Second level of the standard test chart should be slightly visible or there is no background on the copy when the second level of the density control is selected.
Measure : Adjust SP 48
How : The lamp regulator output voltage is changed.

1. Clean the optics, the ID sensor, and the charge corona wires.
2. Check/adjust uneven exposure and horizontal magnification.
3. Select the fourth manual ID level and make ten A3/LDG copies to stabilize drum sensitivity.
4. Select the second manual ID level and make three A3 copies.
5. Adjust the light intensity using SP 48.

6. Setting ADS Reference Voltage

When : Every call
Purpose : To maintain correct ADS mode operation.
Target : ADS voltage = from 2.6 to 3.1 volts
Measure : Set SP 56
How : Main CPU automatically stores the reference voltage displayed ("V0") during SP 56 operation. The ADS voltage is displayed in the guidance display ("V0"). (Setting this voltage is only valid when ADS voltage is from 2.6 to 3.1 volts.)

This process enables a speed up of image adjustments as the rear cover does not have to be removed to adjust the ADS voltage.

1. Clean the optics, and select ADS mode. Then, set SP 56.
2. Place three sheets of A3/LDG white paper on the exposure glass, and press the Enter key.
3. Check if the ADS voltage "V0" is within specifications (from 2.6 to 3.1 volts).
4. If it is not within specifications, perform "ADS Voltage Adjustment."

7. ADS Voltage Adjustment

When	:	ADS voltage is not within specifications (from 2.6 to 3.1 volts). After replacement of either exposure lamp, ac drive PCB, main PCB or ADS sensor. After "Light Intensity Adjustment"
Purpose	:	To maintain correct ADS mode operation.
Target	:	ADS voltage = 3.0 + 0.1, - 0.4
Measure	:	Voltage Adjustment = VR 100 on the main PCB
How	:	Set SP 56 The ADS output voltage on the main PCB can be changed. The ADS voltage is displayed on the guidance display ("V0").

1. Clean the optics, and select ADS mode. Then, set SP 56.
2. Place three sheets of A3/LDG white paper on the exposure glass, and press the Enter key.
3. Open the rear cover (2 screws) and adjust the ADS sensor output voltage using VR 100 on the main PCB.

8. ADS Operation Checking

When : Problem with ADS mode occurs.
Purpose : To check if ADS controls development bias voltage properly.
Target : Darker original should increase the development bias voltage during ADS operation.

ADS Voltage Checking
Measure : Set SP 57
How : ADS voltage is displayed on the guidance display ("V1"). Also, the number "K", which is the actual ADS voltage divided by the reference ADS voltage (fixed by SP 56), is displayed.

Development Bias Voltage Checking
Measure : SP 59
How : Actual bias voltage is displayed on the guidance display ("V1").
Also, the ID sensor pattern development bias is displayed ("V0").

1. Set the ADS reference voltage (SP 56).

2. Adjust the ADS voltage if necessary.

3. Place three sheets of A3/LDG white paper on the exposure glass, and set SP 57. Then, press the Enter key and the Start key.

4. Write down the "V1" & "K" reading, and set the SP 59. (First set ADS mode.)

5. Repeat steps 3 through 5 using any original but white paper on the exposure glass, and confirm that "V1" & "K" (SP 57) and "V1" (SP 59) all change (SP 57 decrease, SP 59 increase).

9. OW/OL Sensor Voltage Adjustment

When : Every call
Purpose : To maintain correct APS mode operation.
Target : OW and OL sensor voltages are from 2.6 to 3.1 volts

Voltage Checking
Measure : Set SP 58
How : OW sensor voltage (Vw) and the OL sensor voltage (VL) are displayed on the guidance display.

Voltage Adjustment
Measure : VR 301 on optics PCB = OWS voltage
VR 302 on optics PCB = OLS voltage
How : OW sensor (Vw) and OL sensor (VL) voltages are changed.

1. Clean the optics, and set SP 58.
2. Place three sheets of A3/LDG white paper on the exposure glass, then press the Enter key and the Start key.
3. Open the rear cover (2 screws), and adjust the OW and the OL sensor voltages using VR 301 and VR 302 respectively on the optics PCB.

10. OL Sensor Length Sensing Adjustment

When : Problems with APS occur.
After replacement of either main PCB, optics PCB or scanner drive motor.
Purpose : To check and adjust OL sensor length sensing.
Target : 420 mm with A3 paper
432 mm with LDG (11" x 17") paper

OL Sensor Length Sensing Checking
Measure : Set SP 50
How : Displays the length "L" of the original placed on exposure glass.

OL Sensor Length Sensing Adjustment
Measure : Set SP 46 (1 mm / step, 15 steps)
How : Reference clock used to sense original length will be corrected.

1. Place a sheet of A3/LDG paper on the exposure glass, and align it to the left scale.
2. Set SP 50, and write down "L" reading. Then, subtract "L" from 420 (A3) or 432 (LDG).
3. Set SP 46, and add the result of the subtraction to the number displayed on the guidance display.
4. Enter the result of the addition using the number keys.
5. Set SP 50 to check if "L" is 420 or 432. If not, repeat steps 3 through 5.

11. Erase Adjustment

When : The leading erase margin is not within specifications.
Purpose : To maintain the correct leading erase margin.
Target : 3.5 ± 2.5 mm
Measure : SP 41 (0.6 mm/step, 15 steps) The erase lamp on period can be changed.

1. Place a 150 mm scale on the exposure glass, align it perpendicular to the left scale.
2. Adjust the leading edge erase margin using SP 41. Make three copies each time.

12. Registration Adjustment

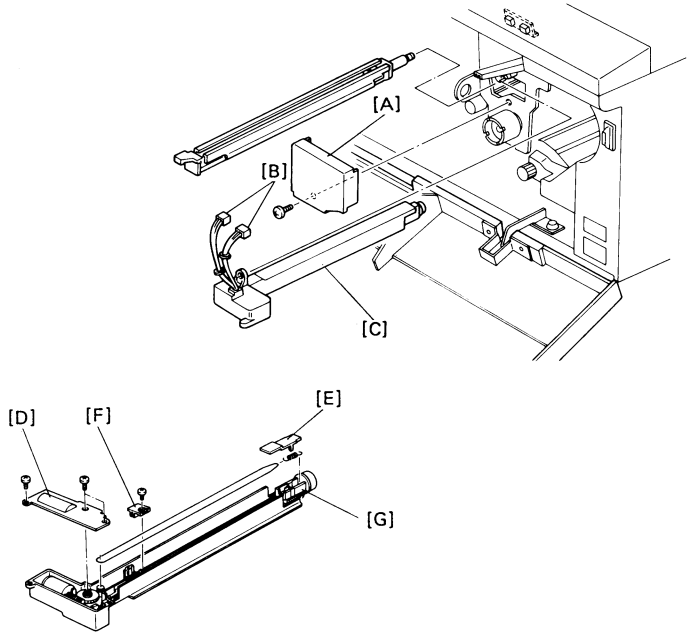
When : Registration is not within specifications.
Purpose : To maintain proper registration.
Target : 0 ± 2 mm
Measure : SP 42 (0.6 mm/step, 15 steps) The registration roller start timing can be changed.

1. Place a 150 mm scale on the exposure glass, align it perpendicular to the left scale.

2. Adjust the registration using SP 42. Make three copies each time.

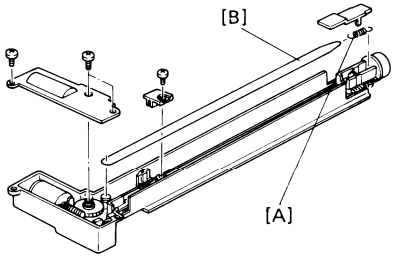
CORONA

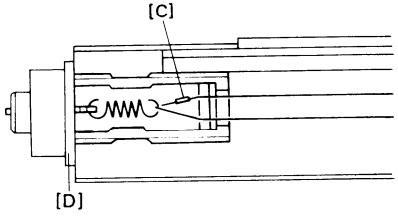
1. Charge Corona Wire Replacement

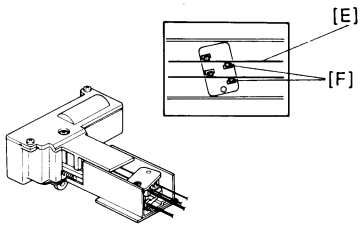


1. Remove the drum inner cover [A] (1 screw).
2. Unplug the charge corona connectors [B] and take out the charge corona unit [C].
3. Remove the front [D] and rear [E] endblock covers (front - 3 screws).
4. Remove the wire cleaner [F] (1 screw).
5. Remove the rear endblock [G] (1 screw).

CAUTION: The endblock may spring away from the corona unit, so hold it firmly.







6. Unhook the tension spring [A] and take off the old corona wire [B].

7. Clean the endblock, endblock covers, and the corona unit casing with a blower brush and dry cloth.

8. Hook the corona wire to the front anchor post.

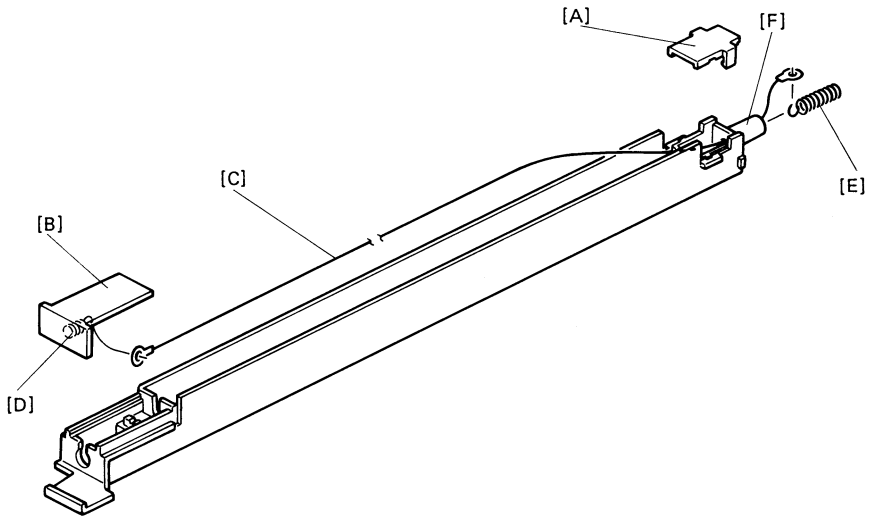
9. Hook the tension spring to the wire; then, hook it to the rear terminal. (The wire junction [C] should be positioned inside the rear endblock [D].)

10. Reassemble the charge corona unit.

NOTE: Make sure that the corona wire [E] is positioned between the cleaner pads [F]. Also, check the wire cleaner movement using SP 7.

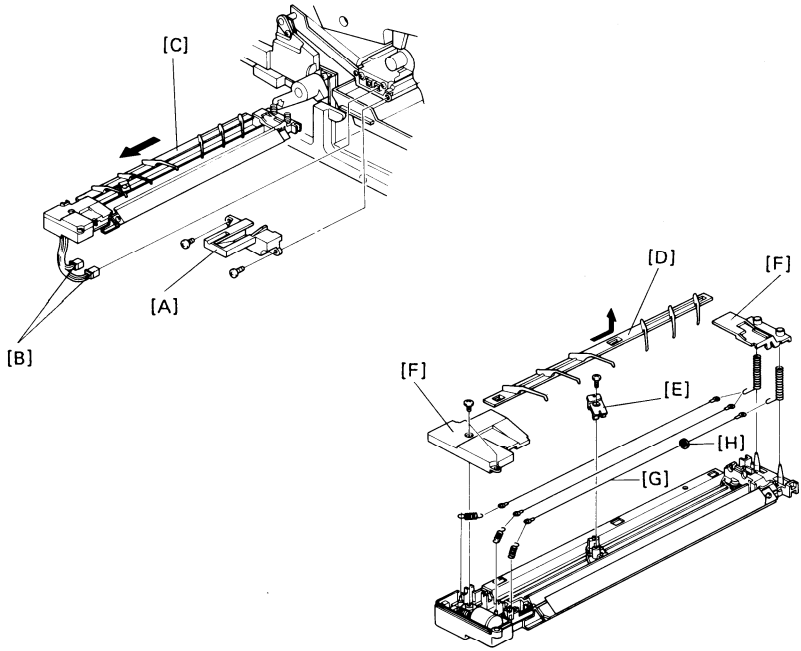
Make sure that the spring that acts upon the home position sensor actuator is seated correctly.

2. Pre-quenching Corona Wire Replacement



1. Remove the pre-quenching corona unit.
2. Remove the rear endblock cover [A].
3. Remove the front endblock cover [B] and take the old corona wire [C] off the front spring [D].
4. Pull the rear spring [E] out of the rear endblock [F], and remove the old quenching corona wire.
5. Install a new corona wire.
6. Reassemble the quenching corona unit.

3. Transfer and Separation Corona Wires Replacement



1. Open the front cover and remove the TC/SC unit cover [A] (2 screws). Then, disconnect the two cleaner motor connectors [B].

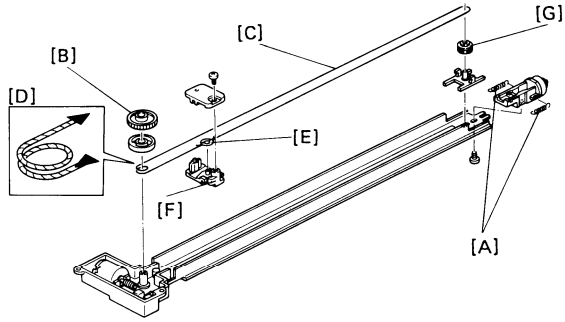
2. Lower the transport unit and slide out the TC/SC unit [C].

3. Remove the paper guide [D] lifting it from the rear. Then, remove the cleaner cover [E] (1 screw).

4. Remove the rear and front endblock covers [F] (2 screws from the front). Then, replace the wires.

CAUTION: When installing the transfer corona wire [G], confirm that the ring [H] is installed on the wire.

4. Charge Cleaner Drive Wire Replacement

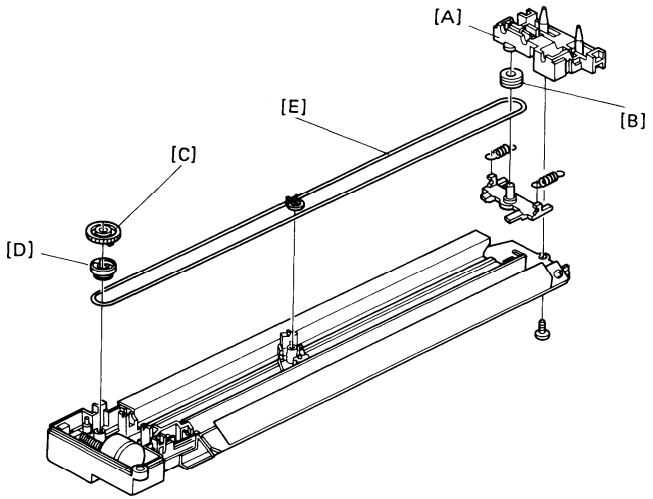


1. Remove the corona wires. (Refer to "Charge Corona Wire Replacement.")
2. Remove the drive wire tension springs [A], drive gear [B], and the old drive wire [C].
3. Wrap the new wire around the drive pulley one and one-half times [D].
4. Place the drive ring [E] over the post of the wire cleaner [F].
5. Slip the wire over the idle pulley [G].
6. Install the wire.
7. Reassemble the corona unit.

NOTE: Make sure that the corona wire is positioned between the cleaner pads. Also, check the wire cleaner movement using SP-7.

Make sure that the spring that acts upon the home position sensor actuator is seated correctly.

5. TC/SC Cleaner Drive Wire Replacement



1. Remove the TC/SC wires. (Refer to “Transfer and Separation Corona Wires Replacement.”)

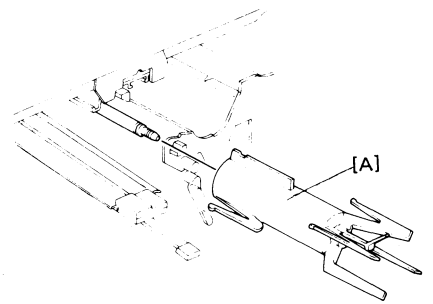
2. Remove the rear endblock [A] (1 screw) while holding it firmly, since it may spring away. Then, remove the drive pulley [B].

3. Remove the drive gear [C] and the pulley [D] from the front side. Then, replace the drive wire [E].

4. Reassemble.

   NOTE: Make sure that the spring that acts upon the home position sensor actuator is seated correctly.

6. Drum Current Adjustment Preparation

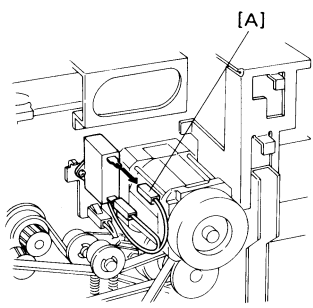


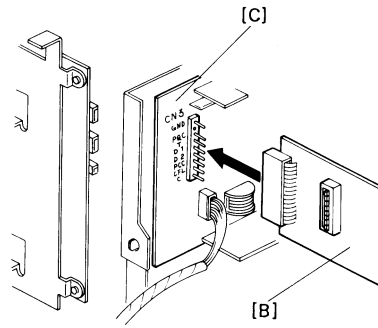
NOTE: The drum current varies with environmental conditions such as humidity and atmospheric pressure. The drum current should be checked and adjusted only when the corona power pack is replaced or the copy image is out of specification. This is because each corona unit is adjusted to a range of environments in the factory.

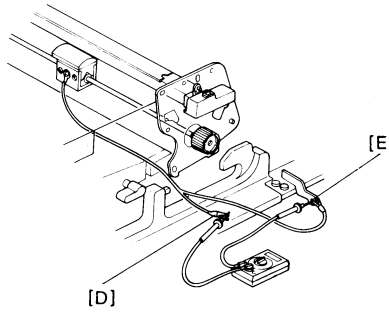
CAUTION: Make sure that the main switch is turned off when you change the range on the digital multimeter otherwise it may be damaged.

Make sure that the main switch is turned off when you touch the drum shoe.

1. Turn off the main switch and remove the following parts:
   - Drum cover
   - Charge corona unit
   - T/S corona unit cover
   - T/S corona unit
   - T/S corona paper guide
   - Drum stay
   - Pre-quenching corona unit
   - Cleaning unit
   - Development unit
   - Drum flange
   - Drum -- cover it with the protective sleeve
   - Drum guide [A]
   - Rear cover







2. Clean all corona units including the corona wires.

3. Disconnect the connector [A] on the main motor to inhibit the drum shaft from rotating during adjustment.

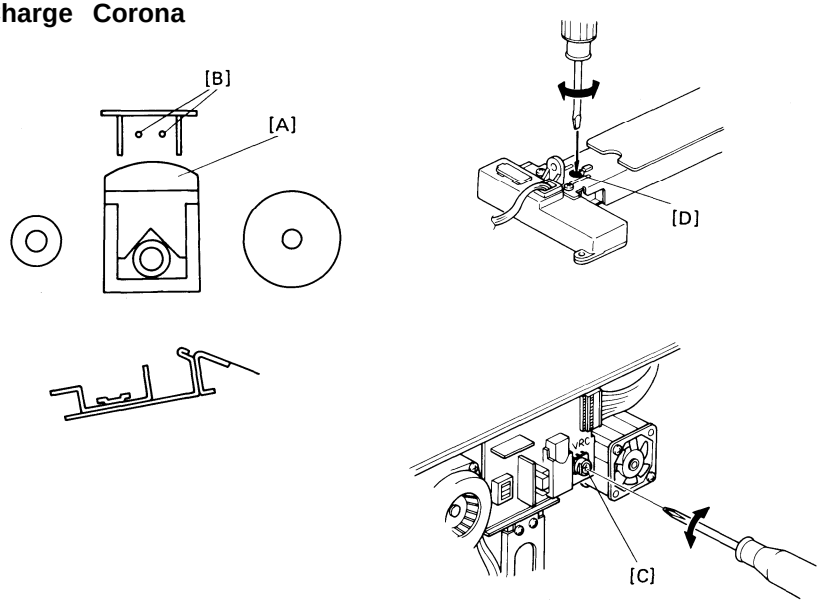
4. Plug a switching PCB [B] into CN3 of the TC/SC power pack PCB [C]. Confirm that the DIP switches face toward the paper feed control PCB.

5. Install the drum shoe and adapter on the drum shaft with the lip to the rear. Route the shoe lead wire out through the development unit opening.

6. Connect the positive lead of the digital multimeter to the red lead [D]. Connect the negative lead of the digital multimeter and the black lead [E] to the machine ground.

7. Deactuate the front safety switch.

Charge Corona

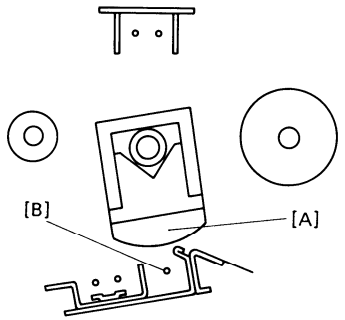


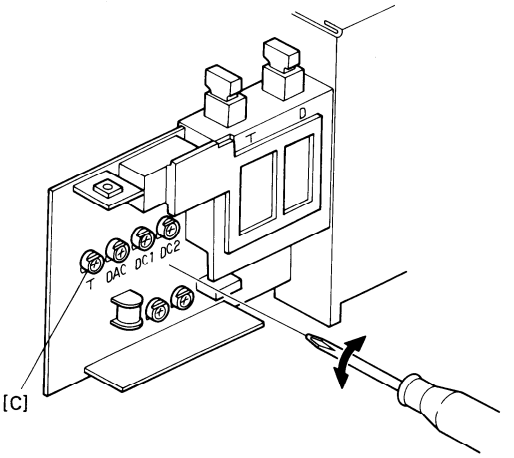
Optimum Adjustment Value: DC + 92.0 ± 1.0µA

CAUTION: Make sure that the main switch is turned off when you touch the drum shoe.

1. Reinstall the drum stay (1 screw and 1 knob) and the charge corona unit.
2. Position the drum shoe so that the axis of the current sensing plate [A] is aligned with the charge corona wire [B].
3. Select the dc 200 µA range of the digital multimeter.
4. Turn on the DIP switch on the switching PCB corresponding to "C" on the TC/SC power pack PCB to turn on the charge corona. (The silk screen printed on the TC/SC power pack PCB is correct.)
5. Adjust the corona current by turning VR "C" [C] on the C/B power pack. (Wait 30 seconds for the current to stabilize.)
6. Confirm that the corona current at the front and the rear are the same by repeating the above procedure with the drum shoe in different positions. If not, adjust the wire hight using the screw [D] on the front end block.
7. Remove the drum shoe, and reassemble.
8. Check copy quality.

Transfer Corona





Optimum Adjusting Value: DC + 18.5 ± 1.0µA

1. Reinstall the TC/SC corona unit and position the drum shoe at the center of the shaft, so that the axis of the current sensing plate [A] is aligned with the transfer corona wire [B].

2. Select the dc 200 µA range of the digital multimeter.

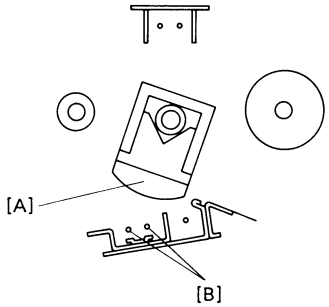
3. Turn on the DIP switch on the switching PCB corresponding to "T" on the TC/SC power pack PCB to turn on the transfer corona. (The silk screen printed on the TC/SC power pack PCB is correct.)

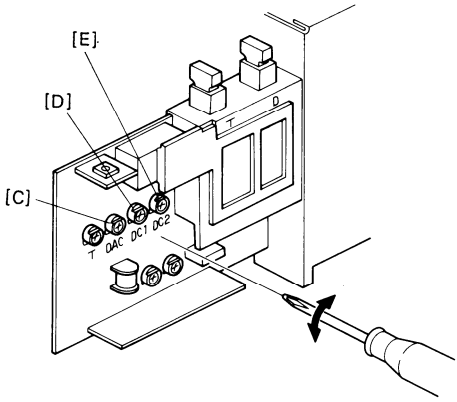
4. Adjust the corona current by turning VR "T" [C] on the TC/SC power pack. (Wait 30 seconds for the current to stabilize.)

5. Remove the drum shoe, and reassemble.

6. Check copy quality.

Separation Corona





Optimum Adjusting Values:

AC 57.0 ± 2.0 µA (D1)
DC -8.0 ± 1.0 µA (leading edge: D1)
DC -2.5 ± 1.0 µA (normal: D1 & D2)

1. Reinstall the TC/SC corona unit, and position the drum shoe at the center of the shaft so that the axis of the current sensing plate [A] is aligned with the separation corona wires [B] as shown.

AC current: D1

2. Select the ac 200 µA range on the digital multimeter.

3. Turn on the DIP switch on the switching PCB corresponding to "D1" on the TC/SC power pack PCB to turn on the separation corona. (The silk screen printed on the TC/SC power pack PCB is correct.)

4. Adjust the corona current by turning VR "DAC" [C] on the TC/SC power pack. (Wait 30 seconds for the current to stabilize.)

Leading edge dc: D1

5. Turn off the main switch, and select the dc 200 µA range on the digital multimeter.

6. Turn on the main switch, and adjust the corona current by turning VR "DC1" [D] on the TC/SC power pack. (Wait 30 seconds for the current to stabilize.)

Normal dc

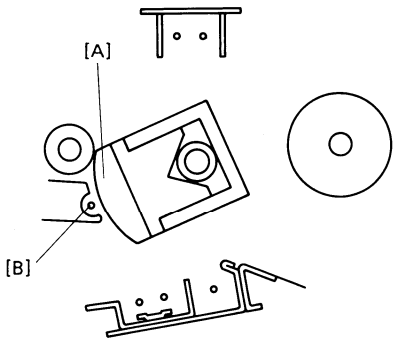
7. Turn on the DIP switches on the switching PCB corresponding to "D1 & D2" on the TC/SC power pack PCB to turn on the separation corona. (The silk screen printed on the TC/SC power pack PCB is correct.)

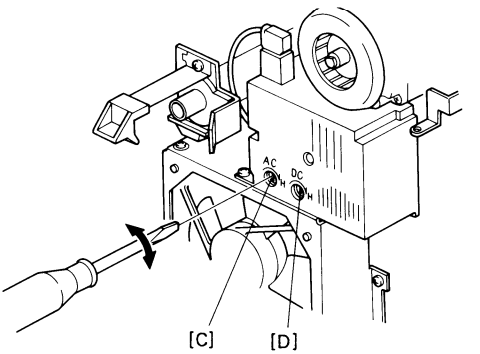
8. Adjust the corona current by turning VR "DC2" [E] on the TC/SC power pack. (Wait 30 seconds for the current to stabilize.)

9. Remove the drum shoe, and reassemble.

10. Check copy quality.

Pre-Cleaning Corona





Optimum Adjusting Values:

AC 46.0 ± 2.0 µA
DC -24 ± 1.0 µA

1. Reinstall the cleaning unit, and position the drum shoe at the center of the shaft so that the axis of the current sensing plate [A] is aligned with the PCC wire [B].

2. Select the ac 200 µA range of the digital multimeter.

3. Turn on the DIP switch on the switching PCB corresponding to “PCC” on the TC/SC power pack PCB to turn on the PCC. (The silk screen printed on the TC/SC power pack PCB is correct.)

4. Adjust the corona current by turning VR “AC” [C] on the PCC power pack. (Wait 30 seconds for the current to stabilize.)

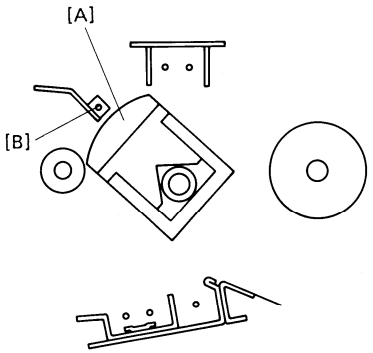
5. Turn off the main switch, and select the dc 200 µA range on the digital multimeter.

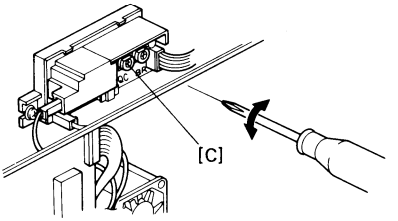
6. Turn on the main switch, and adjust the corona current by turning VR “DC” [D] on the PCC power pack. (Wait 30 seconds for the current to stabilize.)

7. Remove the drum shoe, and reassemble.

8. Check copy quality.

Pre-Quenching Corona



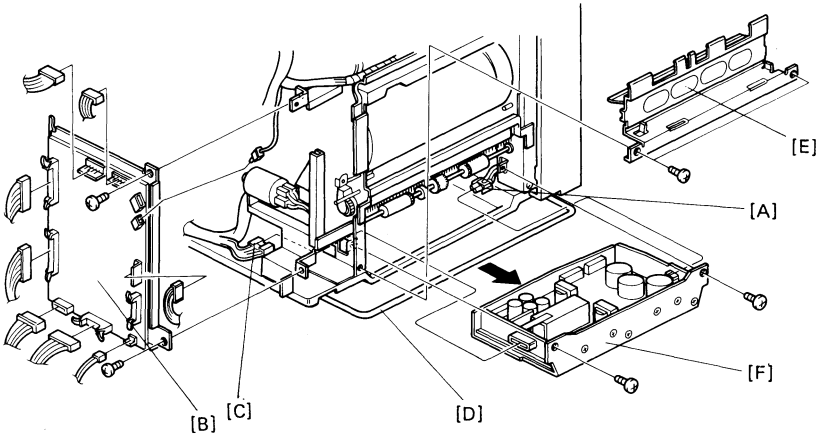


Optimum Adjusting Value: DC +17.0 ± 2.0 µA

1. Disconnect the connector of the cleaning bias roller at the power pack as the on timing of the cleaning bias roller and the pre-quenching corona are the same.
2. Reinstall the PQC unit, and position the drum shoe so that the axis of the current sensing plate [A] is aligned with the PQC wire [B].
3. Select the dc 200 µA range of the digital multimeter.
4. Turn on the DIP switch on the switching PCB corresponding to “PQC” on the TC/SC power pack PCB to turn on the PQC. (The silk screen printed on the TC/SC power pack PCB is correct.)
5. Adjust the corona current by turning VR “PQC” [C] on the PQC/CB power pack. (Wait 30 seconds for the current to stabilize.)
6. Remove the drum shoe, and reassemble.
7. Check copy quality.

OTHERS

1. Power Supply Unit Removal



1. Turn off the main switch.

2. Open the front cover, and remove the left inner cover (4 screws). Then, disconnect the 2P white connector [A] from the power supply unit.

3. Remove the rear cover (2 screws) and the main board [B] (2 screws, leave connectors inserted). Then, remove the 16P white connector [C] from the power supply unit.

4. Pull out the transport handle [D] and remove the exit roller cover [E] (2 screws). Then, remove the power supply unit [F]. (Be careful not to damage any connectors.)

SECTION 10

TROUBLESHOOTING

CONTENTS

Service Call Conditions 10- 1

SERVICE CALL CONDITIONS

Code #11: Exposure Lamp Malfunction

Definition:
Lights if the lamp filament breaks or if the lamp turns on during stand-by.

Observation:
When the main switch is turned on, call service code “11” is displayed.

Points to Check:
If the lamp is lit during the stand-by mode check CN103-5 on the main PCB. If it is not lit during copy cycle, check CN501-6 on the ac drive board.

Check the exposure lamp.

Code #12: Lamp Relay Open

Definition:
Lights if the lamp stays on longer than 15 seconds during a copy cycle.

Observation:
The lamp remains lit when the scanner returns to the home position.

Points to Check:
Check CN102-A20 and CN101-A24 on the main PCB.

Code #21: Scanner Home Position Not On

Definition:
Code #21 lights at power-up if the home position sensor is not actuated 2,000 pulses after the scanner motor starts rotating.

Observation:
At power-up the scanner is out of home position.

Points to Check:
Check that the scanner is working properly. If it is working, check CN305-3 on the optics board. If it is not working properly, check the scanner wire or scanner drive pulley screws.

Code #22: Scanner Home Position Not Off

Definition:
During a copy cycle, code #22 lights if the scanner drive motor is turning and the home position sensor is deactuated and stays deactuated.

Observation:
During a copy cycle, the scanner leaves the home position, and then stops.

Points to Check:
Check that the scanner is working properly. If it is working, check CN305-3 on the optics board. Otherwise, check the scanner wire or scanner driver pulley screws.

Code #24: No Home Position Signal

Definition:
Lights if the main board does not receive the H.P. signal from the optics board within 20 seconds after the scanner return signal.

Observation:
Code 24 is displayed in 20 seconds.

Points to Check:
Check CN106-5 and 6 on the main PCB.
Check CN304-4 and 5 on the cptics control board.

Code #25: Abnormal Encoder Pulse

Definition:
Lights if the scanner drive motor starts turning in the wrong direction.

Observation:
Code #25 is displayed immediately after the scanner drive motor is energized.

Points to Check:
Check CN306-2 and CN306-3 on the optics board.

Code #28: Lens Home Position Not On

Definition:
Lights if the lens is moving towards enlargement, and the H.P. sensor stays at a LOW signal level for longer than 3.82 seconds.

Observations:
1) The lens always moves toward enlargement at power-up, and when in the ready condition the reproduction ratio is changed.
2) The lens is to the right of the H.P. sensor and the lens motor does not turn on.

Points to Check:
Check if the lens is moving properly. If it is moving properly, check CN305-9 on the optics board. Otherwise, check the lens drive section, optics board and lens drive motor.

Check if the H.P. sensor is shorted.

Code #29: Lens Home Position Not Off

Definition:
Lights if the lens H.P. sensor stays at a high signal level longer than 3.82 seconds when the lens is moving towards reduction.

Observations:
1) The lens always moves toward reduction at power-up and in the ready condition, reproduction ratio is changed.
2) The lens is to the left of the H.P. sensor and the lens motor does not turn on.

Points to Check:
Confirm that the lens is moving properly.
If it is moving properly, check CN305-9 on the optics board. If it is not moving properly, check the lens drive section, optics board and lens drive motor.

Check if the H.P. sensor circuit is open.

Code #2A: 4th/5th Mirror Home Position Not On

Definition:
Lights when the 4th/5th mirror sensor is not actuated within 1.83 seconds after the mirror motor is turned on.

Observations:
1) The 4th/5th mirror drive pulley rotates clockwise and the actuator eaves the home position at power-up. If the main switch is turned off and on, the drive pulley continues to move in a clockwise direction.

2) The 4th/5th mirror drive pulley rotates counterclockwise so that the notch is under the home sensor, and the pulley does not move when the main switch is turned on.

Points to Check:
Check if the 4th/5th mirror assembly is moving properly.

If it is moving properly, check CN305-12 on the optics board. Otherwise, check the 4th/5th mirror section, optics board and mirror drive motor motor.

Check if the H.P. sensor is shorted.

Code #2B: 4th/5th Mirror Sensor Not Off

Definition:
Lights when the 4th/5th mirror home position sensor remains actuated for 1.83 seconds after the mirror motor turns on.

Observations:
1) At power-up, the 4th/5th mirror drive rotates counterclockwise past the home position sensor. If the main switch is turned off and on, the mirror motor emits noise and the 4th/5th mirror stays at the home position.

2) Reduction or enlargement can be selected. However, when full size is selected, the drive pulley overshoots the home sensor or does not turn counterclockwise at all.

Points to Check:
Confirm that the second scanner moves properly.

If it moves correctly, check CN305-12 on the optics board. Otherwise, check the 4th/5th mirror section, optics board, and mirror drive motor.

Check if the H.P. sensor circuit is open.

Code #2D: No Encoder Output

Definition:
Lights when the output frequency from the encoder is not detected for 490 milliseconds after the scanner motor is energized.

Observation:
1) At power-up, the scanner overdrives home position.
2) During the copy cycle the scanner at first moves, then stops.
3) The scanner overruns home position when it returns.
4) The scanner will not move at all.

Points to Check:
Check the scanner drive motor, the scanner home position sensor, and CN306-2 on the optics board.

Code #31: Drum Thermistor Blown

Definition:
Lights when the drum thermistor circuit is open.

Observation:
Copies are dirty.

Points to Check:
Check the resistance between CN36-3 and CN36-D on the ID sensor board.
(Reference value: 10 kohms at 25°C)

Check CN103-13 on the main PCB.

Code #52: Thermofuse Blown

Definition
Lights if the thermofuse circuit becomes open or the fusing unit is not set correctly.

Observation
Code #52 is displayed immediately after main switch is turned on.

Points to Check
Confirm that +24 volts exists at CN102-B19 on the main board.

Confirm that the fusing unit is properly set.

Code #53: Thermistor Blown

Definition
Lights if the fusing thermistor is open or shorted.

Observation
Code #53 is displayed immediately after the main switch is turned on.

Points to Check
Disconnect the white thermistor connector on the front side of the fusing unit. Check the resistance of the thermistor at the white connector.
- Reference value: 1.10 kohms at 180°C 180 kohms at 10°C

Code #54: Ready Signal Not On

Definition
Lights if the idle signal is not received within 8 minutes after the power relay turns on.

Observation
The fusing lamp does not turn on. The ready beeper does not sound and code #54 is displayed 8 minutes after power is turned on.

Points to Check
Check the power relay, fusing lamp, ac drive board, and operation panel board.
To control effects of electrical noise from surrounding machines, try JP100.

Check for poor contact in the fusing unit connector.

Code #55: Fusing Overheat

Definition
Lights if the voltage at CN103-4 (fusing thermistor) drops below 0.53 V for 0.4 second.

Observation
The fusing lamp stays on after the temperature rises above 220°C.

Points to Check
Check the voltage at CN504-1 on the ac drive board for line voltage.

Check the resistance of the thermistor.
- Disconnect the white thermistor connector on the front side of the fusing unit.
- Reference value: 1.10 kohms at 180°C 180 kohms at 10°C

Code #61: Pulse Generator Malfunction

Definition
The CPU does not receive a pulse for a period longer than a 4.5 seconds during a copy cycle.

Observation
When the start key is pressed, there is no machine activity except for the scanner motor and main drive motor. Code #61 is displayed in the Guidance Display.

Points to Check
Check the main motor, the ac drive board (CN503-2), the main board (CN101-A16), and the pulse generator (CN102-B2 and -B3).

Confirm that RA-1 is working.

Code #81: Jogger Home Position Not On

Definition
Lights if the jogger home sensor output stays LOW.

Observation
Code #81 will be displayed during duplex mode copy cycles.
There is vibrating noise from the jogger.

Points to Check
Check the voltage at CN104-B2 on the main PCB.

Check the jogger motor.

Code #82: Jogger Home Position Not Off

Definition
Lights if the jogger home position sensor output stays HIGH.

Observation
Code #82 will be displayed during duplex mode copy cycles. There is vibrating noise from the jogger.

Points to Check
Check the voltage at CN104-B2 on the main PCB.

Check the jogger motor.

Code #91: Total Counter Malfunction

Definition
Lights if the total counter is not set or is defective.

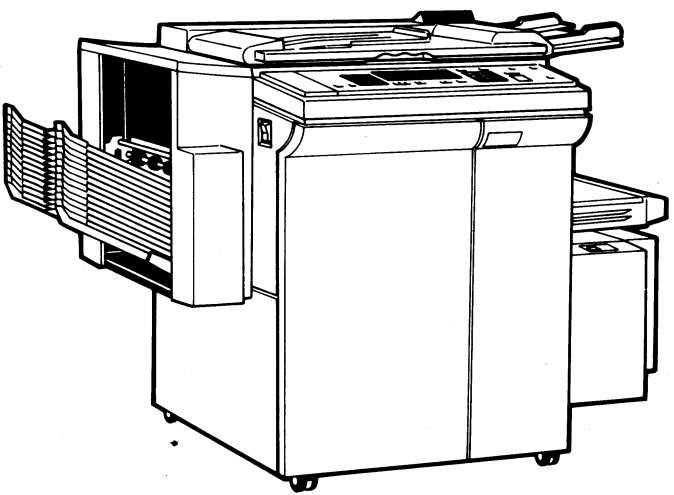
Observation
Total counter does not click during copy cycle.

Points to Check
Check the voltage at CN102-A25 on the main board.

Check the total counter.

SECTION 11

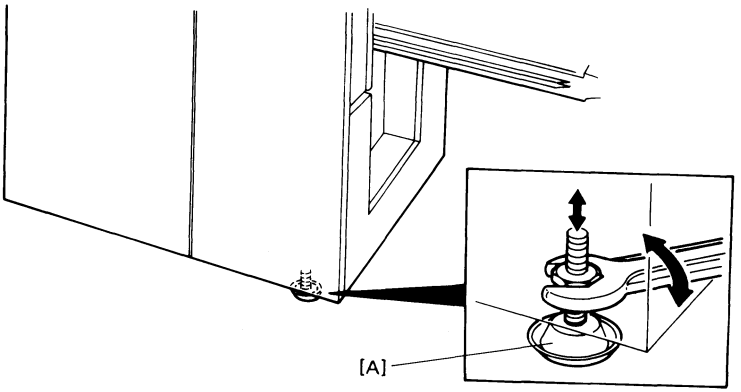
FT6620



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MACHINE LEVEL



1. Front to Back: Within 5 mm (0.2") of level
2. Right to Left: Within 5 mm (0.2") of level
3. Screw the leveling feet [A] up or down to level the machine.

POWER SOURCE

1. Input voltage Level

   110 V/60 Hz - 15A
   115 V/60 Hz - 15A
   220 V/50 Hz - 8A
   240 V/50 Hz - 8A

2. Permissible Voltage Fluctuation : 10%

3. Permissible Extension Cord : None recommended

NOTE: - Be sure to ground the machine. (Do not connect the grounding wire to a gas pipe.)

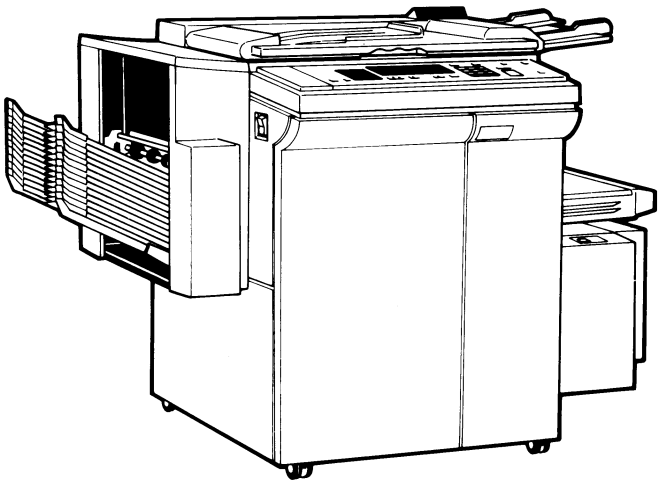
- Make sure the plug is firmly inserted in the outlet.
- Should be a dedicated power outlet.
- Do not set anything on the power cord.

ACCESSORY CHECK

Check the quantity and condition of the accessories in the box according to the following list:

	USA	Europe	Middle East & Asia
1. Editing Sheet	1	1	1
2. Sort/Stack Key Top	1	1	1
3. Sort/Stack Key Cover	1	1	1
4. NECR	1	1	1
5. Cassette – Large	2	1	3
6. Cassette – Small	2	3	1
7. Paper Size Actuator Plate	0	3	1
8. Paper Size Decal	0	6	1
9. Toner Catch Pan	1	1	1
10. Copy Tray	0	1	1
11. Original Holder	0	0	1
12. Operating Instructions – English	1	0	1
– Five Languages	0	1	0
13. Envelope – NECR	1	0	0
14. Multiple Language Decal	0	1	1
15. Operating Instruction Cards – English	1	0	1
– Five Languages	0	1	0
16. Leveling Shoe	4	4	4

INSTALLATION PROCEDURE

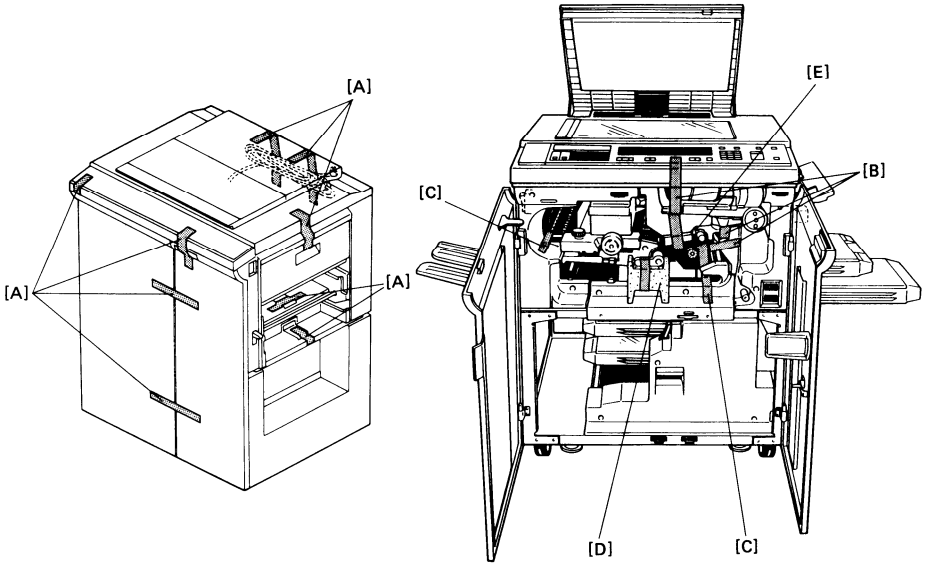


NOTE: **-USA version-**
The platen cover and the original stacker are needed as options if DF is not to be installed. Also, the copy tray is needed if the sorter is not to be installed.

-European version-
The platen cover and the original stacker are needed as options if DF is not to be installed. Also, the guidance ROM kit (option) is needed if one of the following optional languages is wanted on the guidance display.

Option ROM	Standard ROM
0: Swedish	0: Japanese
1: English	1: English
2: Danish	2: French
3: Norwegian	3: German
4: Finnish	4: Italian
5: Dutch	5: Spanish

(The English in both the optional and the standard ROMs are the same.)

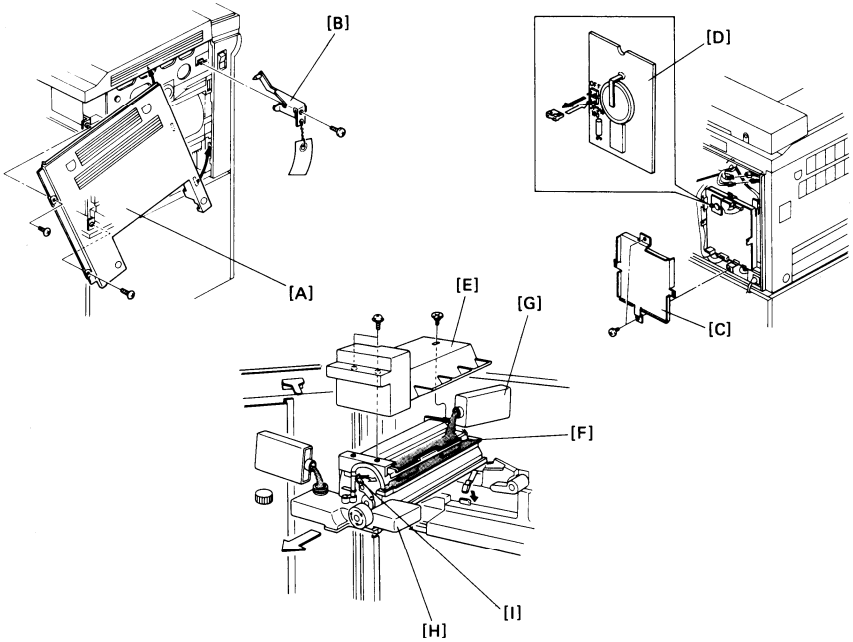


1. Remove the strips of tape [A], and open the right and left doors.

2. Remove the strips of tape as follows:
   Non-duplex model – – [B]
   Duplex model – – [B + C]

3. Remove the fork gate unit support cushion [D] (Duplex model only).

4. Remove the wedge [E] from between the registration rollers.



5. Remove the upper rear cover (4 screws), the upper left cover [A] (2 screws), and the scanner lock plate [B] (1 screw).

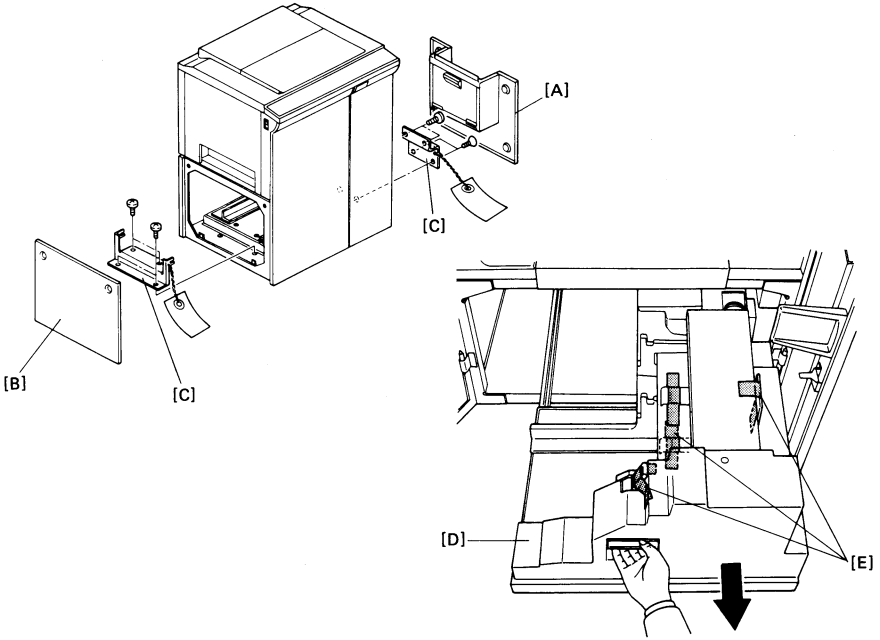
   NOTE: Reinstall the screw for future use. Do not throw away the scanner lock plate. It is necessary to reinstall it if the copier is to be transported long distances (by vehicle).

6. Remove the main PCB shielding plate [C] (2 screws), and move the jumper connector (JPSW 191) on the timer PCB [D] from the upper (printed “OFF”) to the lower position. Then, reinstall the removed covers if no peripherals are to be installed.

7. Remove the fusing unit, then remove the fusing unit cover [E] (2 screws, 1 shoulder screw).

8. Prime the oil supply pad [F] with silicon oil [G]. Then, fill the oil tank [H] with silicon oil.

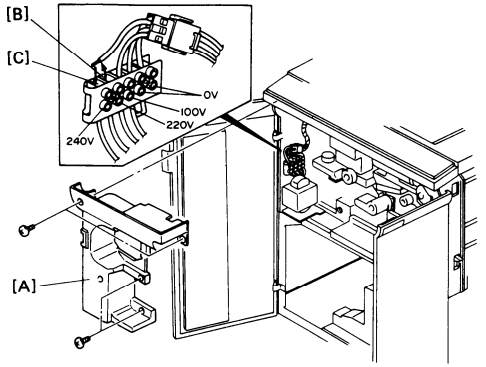
9. Manually operate the oil pump lever [I] and confirm correct operation and the overall condition of the silicon oil supply assembly. Then, reassemble the fusing unit.

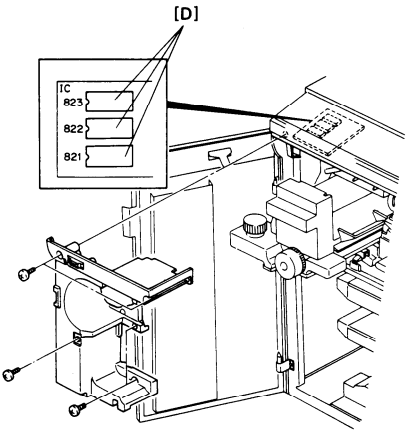


10. Remove the lower right cover [A] (4 screws) and the lower left cover [B] (2 screws), then remove two retainers [C] (4 screws each).

11. Pull the drawer [D] all the way out, and remove the strips of tape [E].

12. Reset the drawer and reinstall the lower right and lower left covers.





13. European version only:

– 220 to 240 volts conversion –

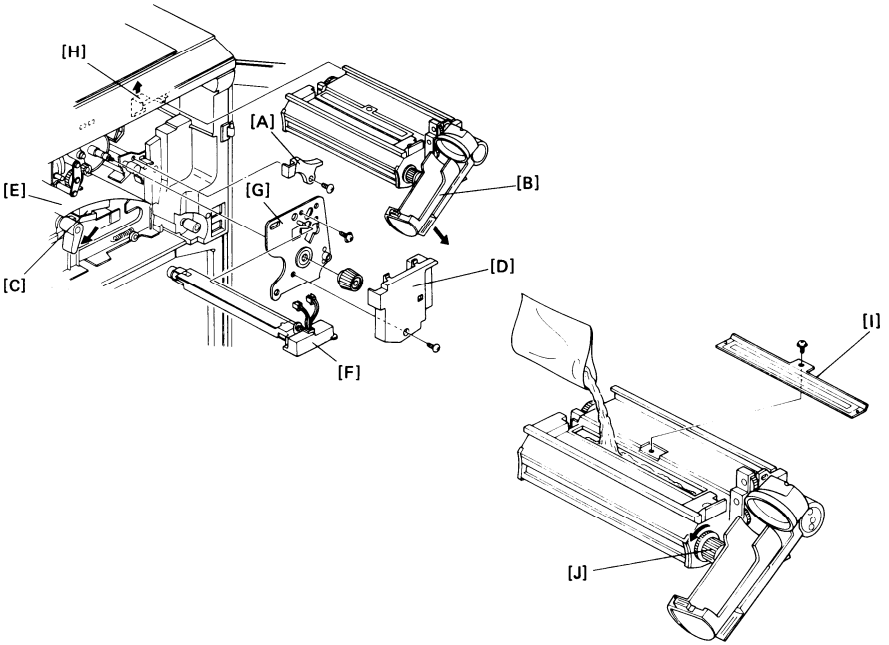
a) Remove the left inner cover [A] (4 screws).

b) Disconnect the wire from the 220 volt terminal [B], and connect this wire to the 240 volt terminal [C] as shown.

– Guidance ROM kit installation –

a) Replace the three ROMs [D] (IC 821, 822 and 823) on the operation panel with the ROMs of the guidance ROM kit.

b) Reinstall the left inner cover.



14. Reinstall the fusing unit.

15. remove the image density sensor cover [A]

16. Pull down the toner bottle holder [B], lower the transport and separation corona unit [C], and remove the drum inner cover [D] (1 screw).

17. Put a sheet of paper [E] on the transport and separation corona unit.

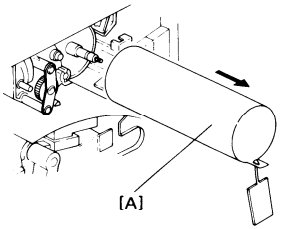
18. Remove the charge corona unit [F] (2 connectors), and remove the drum stay [G] (1 screw, knob — reverse thread).

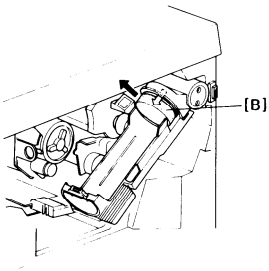
19. Place a sheet of paper on the floor. Raise the development unit lock lever [H], remove the development unit, and place it on the paper.

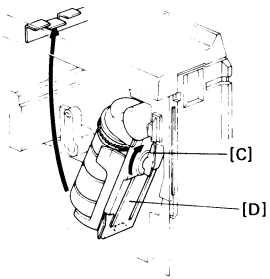
20. Remove the developer inlet cover [I] (1 screw).

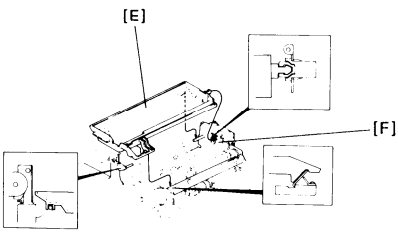
21. Pour one kilogram of developer into the development unit while truning the knob [J] counterclockwise to distribute the developer.

22. Reinstall the developer inlet cover.









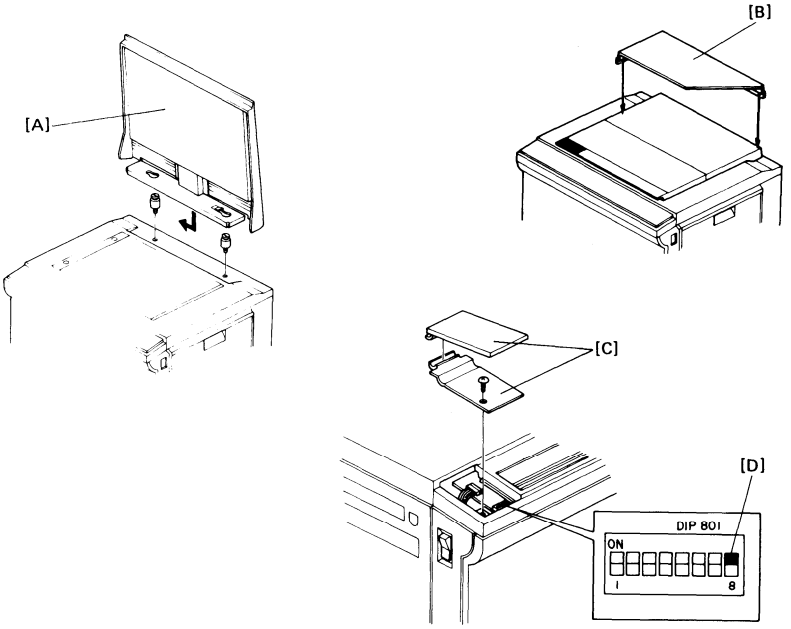
23. Pull out the drum protective sleeve [A] from the drum.

    NOTE: Save the drum protective sleeve for future use when servicing the copier.

24. Reinstall all removed parts, and return them to their original position.

25. Remove the toner tank plug [B] and load the toner bottle onto the bottle holder. Then, fix the bottle with the lever [C], and raise the holder [D] up to the bracket.

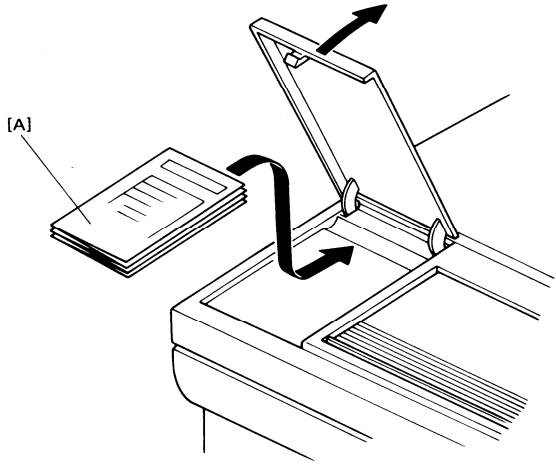
26. Install the toner catch pan [E] on the jogger unit [F].



27. Install the platen cover [A] (2 stud screws) and the original holder [B] (Two sided tape) as necessary.

28. Remove the DIP switch cover [C] (1 screw), and turn on DIP switch 801-8 [D]. Then, plug in the machine and turn on the main switch.

29. Set the proper language in the guidance display using SP 12 (LT Version) or SP 13 (A4 Version).
    To access SP (Service Program mode), enter 12 or 13 using the number keys. Press the Recall/Enter key.



30. Put five sheets of white paper (A3 of 11” x 17”) on the exposure glass.

31. Set SP 10 for drum conditioning.

32. After the warm up period is completed, press the Start Key to start drum conditioning. (100 is automatically displayed on the copy counter by SP 10).

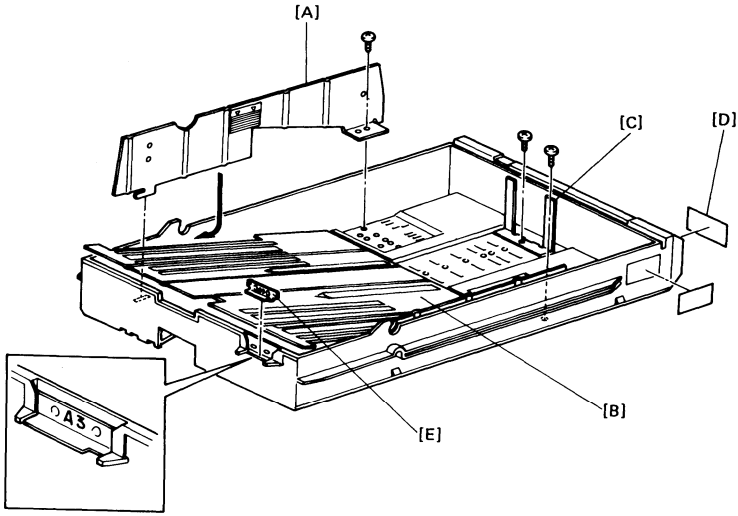
33. Set all appropriate SP modes as required.

34. Turn off the main switch and the DIP switch 801-8, and reinstall the DIP switch cover. Then, turn on the main switch.

35. Install the operating instruction cards [A] over the DIP switch cover (two-sided tape). Then, install the receiving tray.

36. Load paper into the cassette, then check the machine operation and the copy quality.

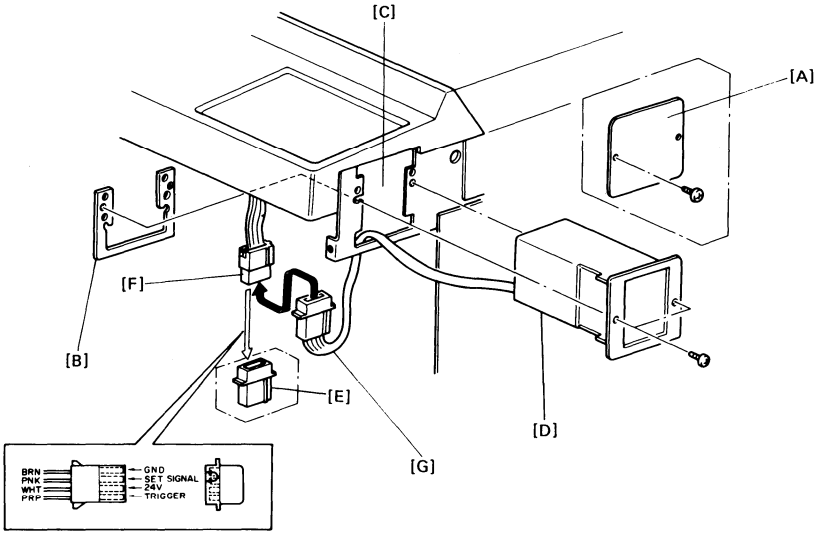
37. Fill out the New Equipment Condition Report.



CASSETTE MODIFICATION

1. Remove the cassette cover.
2. Remove the side fences [A] (1 screw each) and the bottom plate [B].
3. Reposition the rear fence [C] (1 screw) in the desired paper size position.

   NOTE: Paper size positions are shown on the inside of the cassette.
4. Reinstall the bottom plate.
5. Reinstall the side fences in the desired paper size position.
6. Attach the appropriate paper size decals [D] on the cassette at the positions shown.
7. Insert the desired actuator plate [E] in the slot on the front of the cassette as shown.



KEY COUNTER HOLDER INSTALLATION

1. Remove the front cover (2 screws).
2. Remove the right inner cover (4 screws) and right front cover (1 screw).
3. Remove the cover plate [A] and fixing plate [B] from the key counter bracket [C].
4. Hold the fixing plate on the inside of the key counter bracket and insert the key counter bracket. Insert the key counter holder [D].
5. Align the holes in the fixing plate with the mounting holes of the key counter holder and secure the key counter holder.

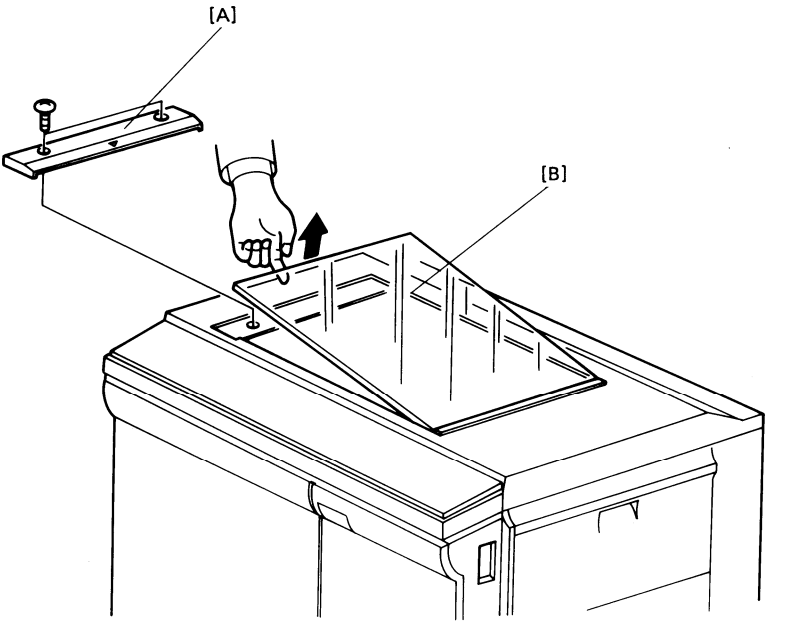
   NOTE: The fixing plate has three sets of holes. Make sure to use the holes that match the type of counter.

6. Remove the shorting plug [E] from the key counter connector [F].
7. Plug in the key counter harness [G].
8. Reassemble the copier. Insert the key counter and check its operation.

   NOTE: Counfirm that SP 90 (Secret mode) is set in “No” position.

OPTICS

1. Exposure Glass Removal



1. Remove the left scale [A] (2 short screws).

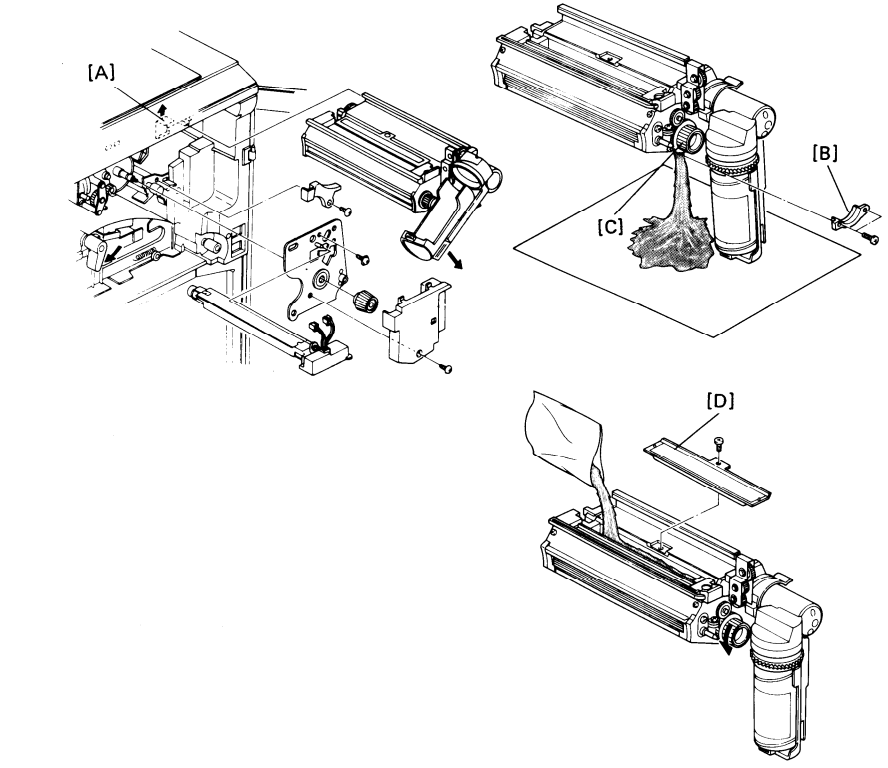
2. Grasp the left edge of the exposure glass [B] and lift it up slightly. Slide the other edge out from under the right glass holder. Remove the exposure glass.

NOTE: When reinstalling the exposure glass:
Make sure that the left edge of the glass is flush with the two tabs to the left on the scale plate.

Make sure that the right glass holder firmly secures the exposure glass.

DEVELOPMENT

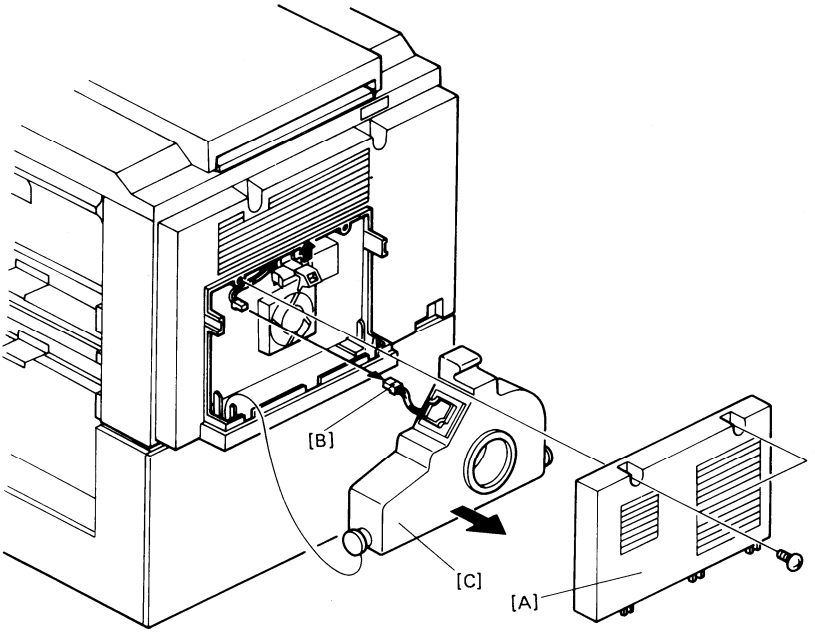
1. Developer Replacement



1. Raise the development unit release lever [A] and take out the development unit. Then, place it on a sheet of paper.
2. Carefully remove the developer exchange plate [B] (2 screws).

   CAUTION: Developer pours out quite quickly.
3. Rotate the paddle roller knob [C] counterclockwise to remove all the developer. Then, reinstall the developer exchange plate.
4. Remove the developer inlet cover [D] (1 screw), and pour one kilogram of developer into the development unit while rotating the paddle roller knob to evenly distribute the developer.
5. Reassemble.

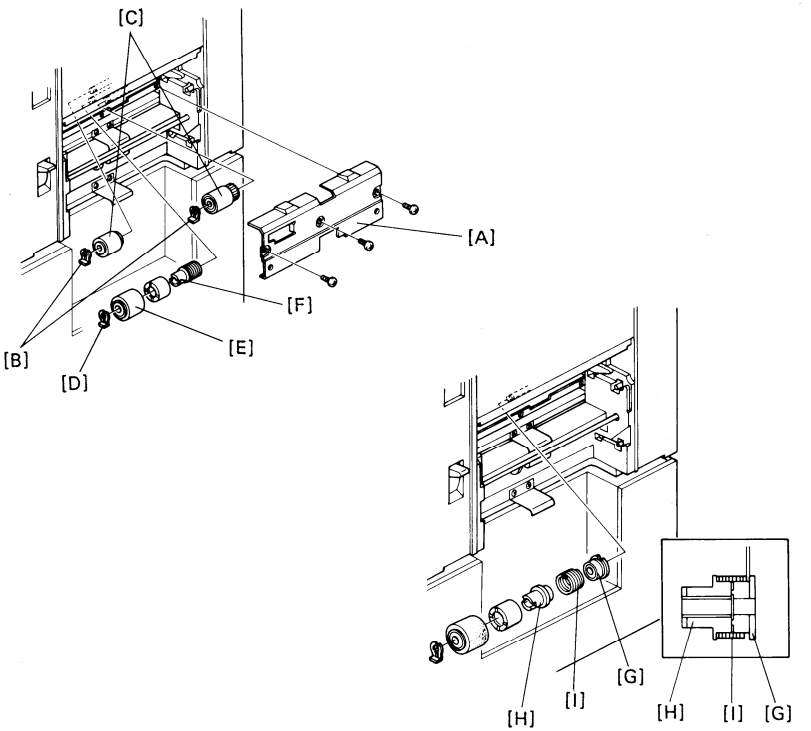
2. Toner Collection Bottle Cleaning



1. Remove the toner collection bottle cover [A] (2 screws).
2. Disconnect the toner overflow sensor connector [B], and remove the bottle [C].
3. Remove the stopper from the toner collection bottle to clean out the toner.

PAPER FEED

1. Pick-up, Paper Feed and Separation Rollers Replacement



- Pick-up and Feed Rollers -

1. Remove the paper feed guide plate [A] (2 screws). Then, remove the snap ring [B], and replace the rollers [C].

- Separation Roller -

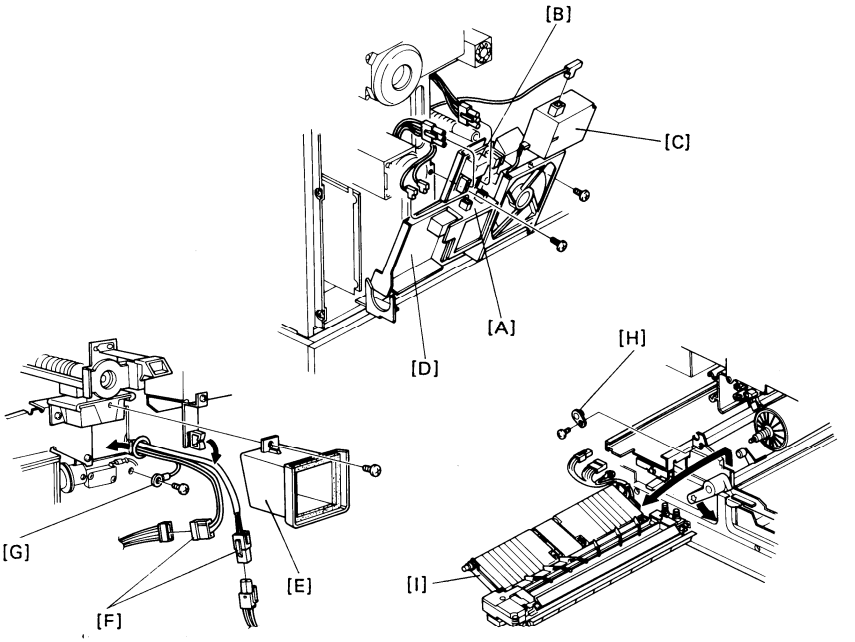
1. Remove the snap ring [D], and remove the roller [E].

2. Slide the slip clutch [F] off of the shaft. Then, clean and lubricate the clutch with Mobil Temp 78.

CAUTION: When reinstalling the spring to between inner [G] and outer [H] hubs, make sure that the spring [I] does not contact the inner hub. This is because the inner hub does not slip properly if the spring contacts the inner hub. This may cause midfeeds.

3. Reassemble.

2. Transport Unit Removal



1. Remove the rear cover (2 screws) and the toner collection bottle.
2. Disconnect the connectors from the following components:

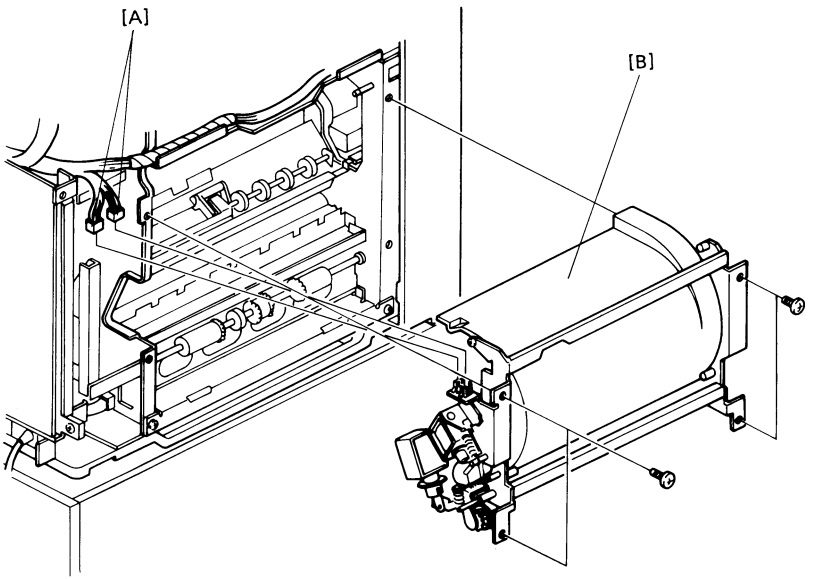
   TC/SC power pack [A] : Two 1P White

   Quenching Stabilizer [B] : 3P Red
   3P White

   PCC power pack [C] : 1P White
3. Lower the power pack bracket [D] (TC/SC, PCC, Stabilizer) (2 screws).
4. Remove the vacuum fan duct [E] (1 screw), and disconnect the free two white connectors (2P & 6P) [F], and remove the ground wire [G] (1 screw).
5. Remove the fusing and cleaning units. Then, remove the bushing [H] (1 screw).
6. Remove the transport unit [I] with the bushing from the rear.

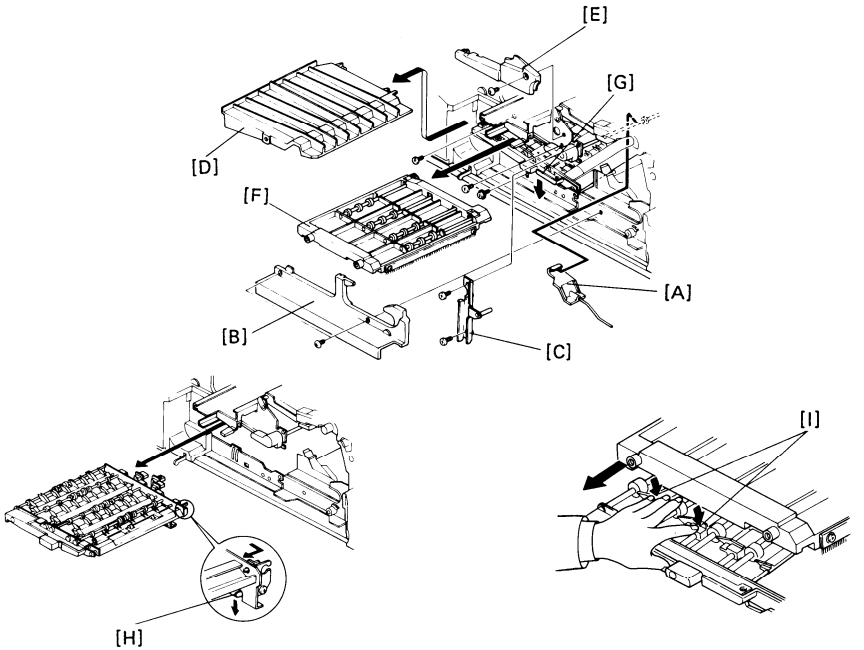
DUPLEX

1. Invertor Unit Removal



1. Turn off the main switch, and remove the rear and left covers (2 screws each).
2. Remove two connectors [A].
3. Remove the invertor unit [B] (4 screws).

2. Duplex Transport and Fork Gate Units Removal



1. Turn off the main switch and open the front cover.

2. Remove the settler bar [A], the lower inner cover [B] (2 screws), and the transport unit post [C] (2 screws). Then, remove the duplex delivery tray [D] (1 stud screw).

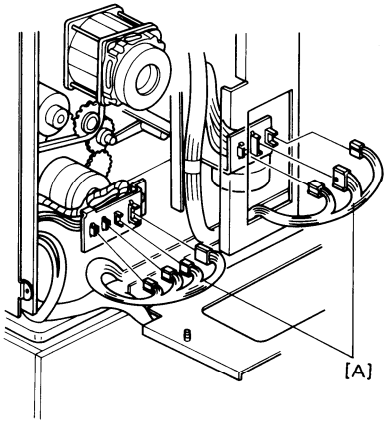
3. Lower the transport unit, and remove the duplex transport unit cover [E] (1 screw). Then, remove the duplex transport unit [F] (2 screws).

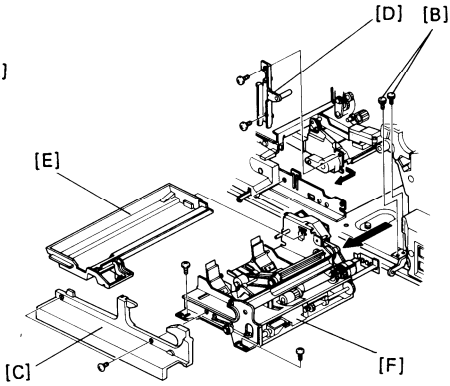
4. Remove the rear cover (2 screws), and remove the main board (2 screws, leave connectors inserted). Then, remove the connectors from the fork gate unit.

5. Lower the fork gate unit [G], and press down the lever [H] on the bottom of the rear, right corner of the fork gate unit. Then, pull the fork gate unit to the right, and remove it.

   NOTE: When reinstalling the fork gate unit, press the 1st & 2nd fork gate [I] with your fingers to avoid the fork gate from being damaged.

3. Jogger Unit Removal





1. Remove the rear cover (2 screws) and the toner collection bottle.

2. Lower the power pack bracket. (Refer to “Transport Unit Removal.”) Then, remove the seven connectors [A] (2P black, 2P white, 2P yellow, 3P black, 6P black, 3P white, 3P red) from the jogger unit.

4. Remove the front cover (2 knob screws [B]) and the lower inner cover [C] (2 screws).

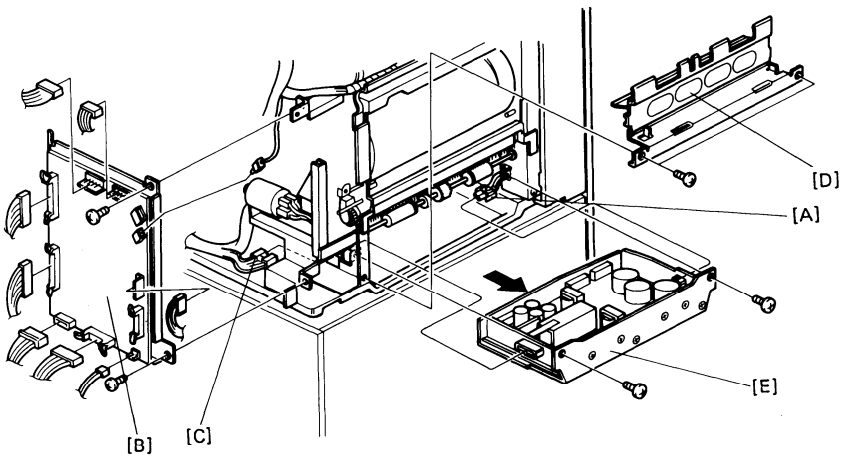
5. Remove the transport unit post [D] (2 screws). Then, remove the toner catch pan [E] and the settler bar.

6. Remove the knob screws, then remove the jogger unit [F] (2 screws).

NOTE: When reinstalling the jogger unit, install it half way, and then confirm from the rear that the gears mesh.

OTHERS

1. Power Supply Unit Removal



1. Turn off the main switch.

2. Open the front cover, and remove the left inner cover (4 screws). Then, disconnect the 2P white connector [A] from the power supply unit.

3. Remove the rear cover (2 screws) and the main board [B] (2 screws, leave connectors inserted). Then, remove the 16P white connector [C] from the power supply unit.

4. Remove the exit roller cover [D] (2 screws). Then, remove the power supply unit [E]. (Be careful not to damage any connectors.)