PAPER TRAY UNIT

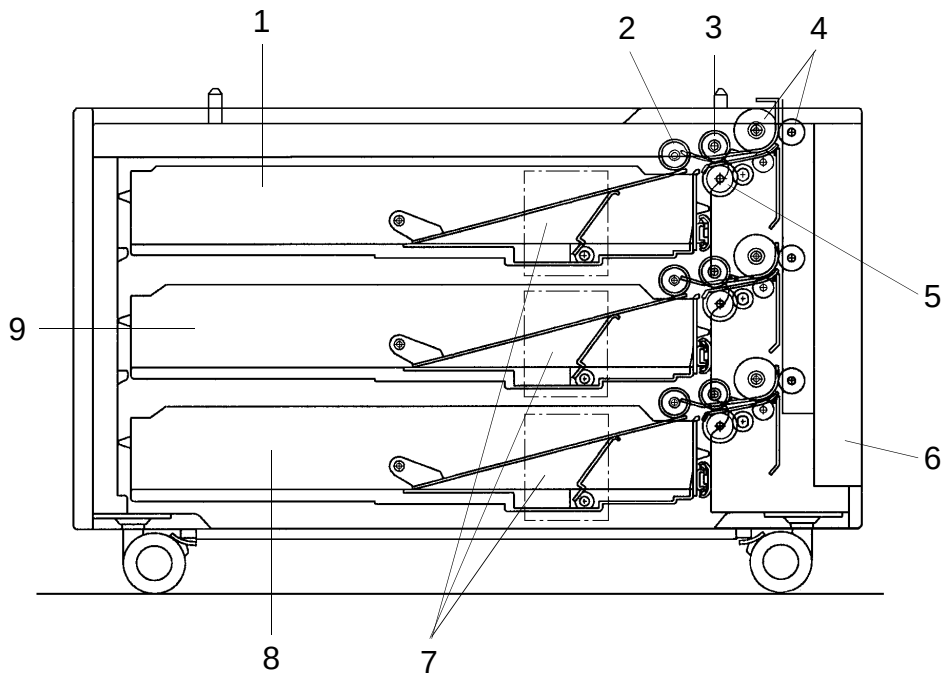
(Machine Code: A549/550)

1. SPECIFICATIONS

Configuration:	Two-tray table or three-tray table
Copy Paper Size:	Maximum A3/11" X 17" Minimum B5/8 1/2" X 11"
Copy Paper Weight:	52 - 105 g/m^2, 14 - 28 lb
Copy Paper Capacity:	Approximately 500 sheets
Paper Feed Speed:	20 ~ 40 copies/minute (A4 / 8 1/2"X11" sideways)
Power Source:	DC 24V, 5V and AC 120V, 220~240V from the main machine
Power Consumption:	Maximum 110.5 W Average 50 W
Dimensions:	620 mm/24.4" (width) X 632 mm /24.9" (depth) X 390 mm/15.4" (height)
Weight:	Less than 36 kg/79.4 lb (Two-tray type) Less than 38 kg/83.8 lb (Three-tray type)

2. COMPONENT LAYOUT

2.1 MECHANICAL COMPONENT LAYOUT



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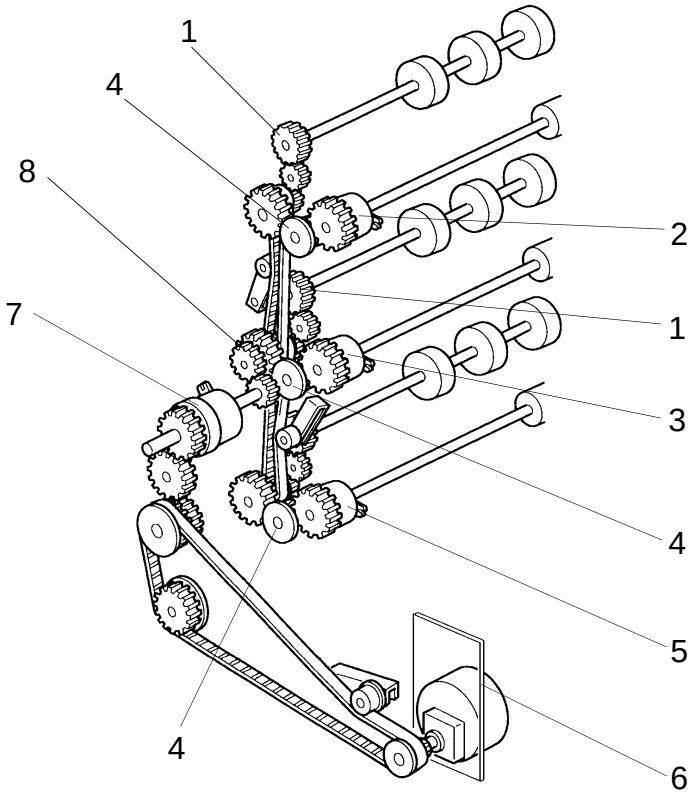
1. Paper Tray 1
2. Pick-up Roller
3. Paper Feed Roller
4. Relay Rollers
5. Reverse Roller
6. Lower Right Door
7. Paper Lift Motors
8. Paper Tray 3 (A549 model only)
9. Paper Tray 2

2.2 DRIVE LAYOUT



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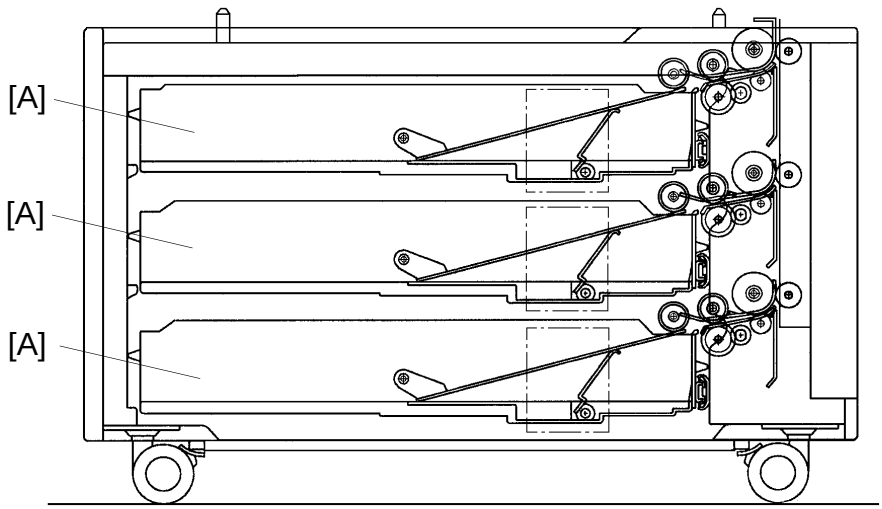
1. Vertical Transport Roller Gears
2. Paper Feed Clutch 1
3. Paper Feed Clutch 2
4. Separation Roller Gears
5. Paper Feed Clutch 3
6. Main Motor
7. Relay Clutch
8. Timing Pulley

2.3 ELECTRICAL COMPONENT DESCRIPTION

Refer to the electrical component layout on the reverse side of the Point to Point Diagram (on waterproof paper).

Symbol	Index No.	Description	Note
Motors			
M1	5	Main	Drives all the components of the paper tray
M2	2	Tray lift 1	Raises the bottom plate in the paper tray
M3	30	Tray lift 2	
M4	29	Tray lift 3 (A549 only)	
Circuit board			
PCB1	1	Interface board	Controls the paper tray in response to signals from the copier
Sensors			
S1	7	Tray upper limit 1	Detects the top of the stack to stop the tray lift motor
S2	18	Tray upper limit 2	
S3	19	Tray upper limit 3 (A549 only)	
S4	25	Relay 1	Detects the leading edge of the paper as it leaves the tray to control pick-up solenoid and jam detection timing
S5	23	Relay 2	
S6	20	Relay 3	
S7	28	Paper end 1	Detects when the paper tray is empty
S8	24	Paper end 2	
S9	21	Paper end 3 (A549 only)	
Switches			
SW1	22	Tray cover	Detects whether the tray unit cover is open and cuts the 24 Vdc power if it is
SW2	3	Tray set 1	Detects whether the paper tray is in place
SW3	4	Tray set 2	
SW4	6	Tray set 3 (A549 only)	
Magnetic clutches			
CL1	9	Paper feed 1	Starts feeding paper from the tray
CL2	12	Paper feed 2	
CL3	15	Paper feed 3 (A549 only)	
CL4	11	Relay	Drives the rollers in the paper trays
Solenoids			
SOL1	8	Paper pick-up 1	Lifts/drops the pick-up roller
SOL2	13	Paper pick-up 2	
SOL3	16	Paper pick-up 3 (A549 only)	
SOL4	10	Separation 1	Lifts/drops the separation roller
SOL5	14	Separation 2	
SOL6	17	Separation 3	
Heaters			
H1	26	Tray (Option)	Turns on when the main switch is off to keep the paper in the trays dry
H2	27	Tray (Option)	

3. OVERVIEW



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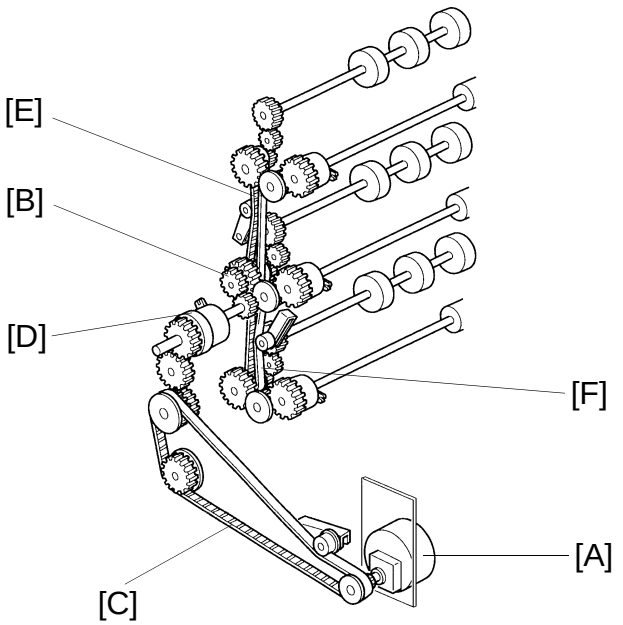
There are two types of paper tray unit: the two-tray and three-tray types. Each paper tray [A] is a drawer type that can hold up to 500 sheets of paper.

The paper feed mechanism uses an FRR feed system. The function of the system is exactly the same as for the main machine except that there is no paper size detection. The paper size for each paper tray is input at the operation panel, either by the user or by a technician.

All the electrical components of the paper tray are controlled by the copier main board through the tray interface board.

4. DRIVE MECHANISM



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All the tray rollers are driven by the main motor [A] via timing belts, clutches and a train of gears.

Drive is transmitted to the timing pulley [B] through the timing belt [C], relay clutch [D] and the gears.

Paper Feed Unit 1:
The drive from the timing pulley is transmitted to the unit through the timing belt [E].

Paper Feed Unit 2:
The drive from the timing pulley is directly transmitted to the unit.

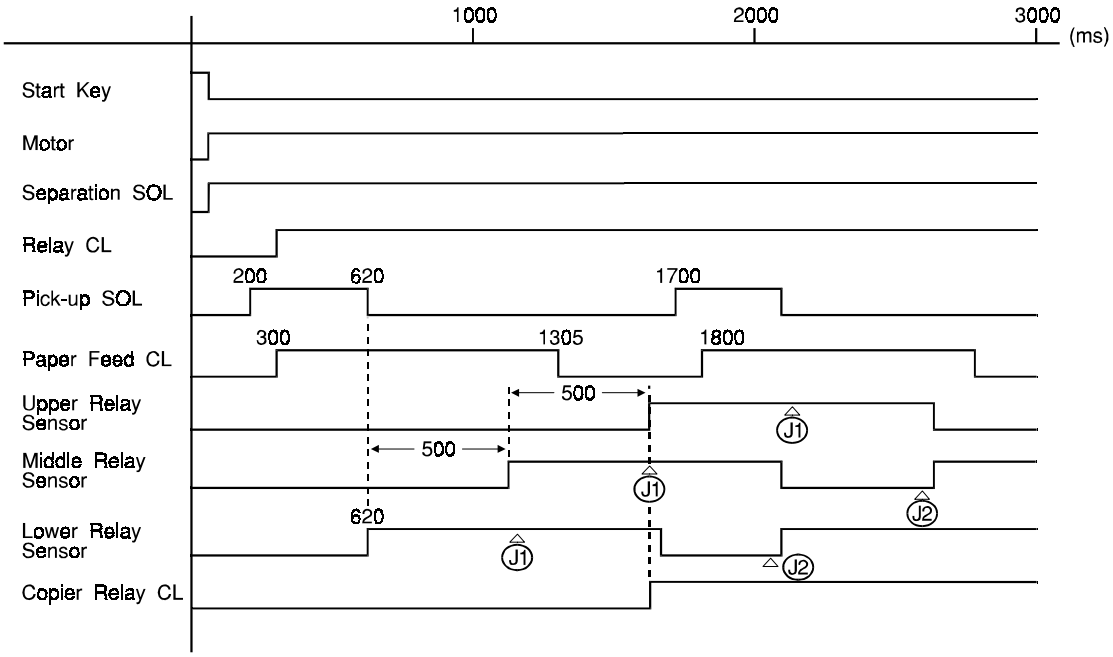
Paper Feed Unit 3:
The drive from the timing pulley is transmitted to the unit through the timing belt [F].

The main motor and the relay clutch are energized at the same time that the Start key is pressed.

The paper feed clutch is energized 300 ms after the main motor starts to rotate. When the paper feed clutch for the selected paper tray is energized, paper is fed from the paper tray to the main machine through the relay rollers.

5. PAPER FEED AND MISFEED DETECTION TIMING

A4 Sideways, Lower Paper Feed Station, Line speed 200 mm/s



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J1 and J2: Checks whether the sensor is activated within 500 ms after the designated time for these sensors.

6. SERVICE TABLES

6.1 DIP SWITCHES

DIP SW 101 (Free Run Mode)

1	2	3	4	5	6	7	Function
Off	-	-	-	-	-	-	Speed in the free run mode: 200 mm/s
On	-	-	-	-	-	-	Speed in the free run mode: 150 mm/s
-	On	Off	-	-	-	-	Bank type : 500 sheet type
-	Off	On	-	-	-	-	Bank type : 250 sheet type
-	-	-	Off	On	-	-	Normal Operation / Free Run Mode 1*: One-tray type
							Free Run Mode 2*: Paper feed tray 1 only
-	-	-	On	Off	-	-	Normal Operation / Free Run Mode 1*: Two-tray type
							Free Run Mode 2*: Paper feed tray 2 only
-	-	-	On	On	-	-	Normal Operation / Free Run Mode 1*: Three-tray type
							Free Run Mode 2*: Paper feed tray 3 only
-	-	-	-	-	On	Off	Free Run Mode 2
-	-	-	-	-	On	On	Free Run Mode 1
-	-	-	-	-	Off	Off	Normal Operation

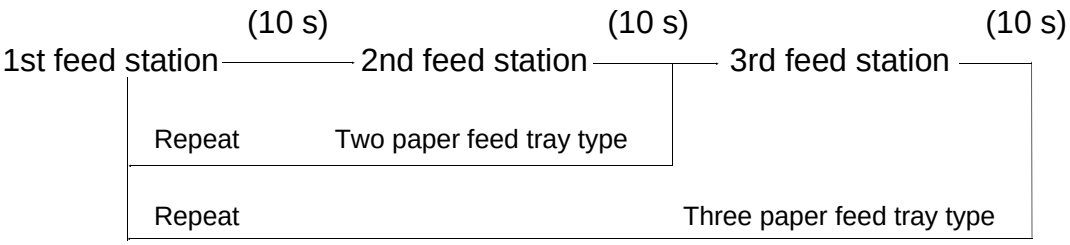
Do not touch dip switches 1 to 5. Switch 8 is not used.

How to do a free run

1. Select either mode 1 or mode 2 with dip switches 6 and 7.
2. Turn off the power, disconnect the optical cable, and turn on the power.
3. Press SW101 on the PCB to start the free run.
4. When you wish to stop the free run, press SW102 on the PCB and return the dip switches to their default settings.

Free Run Mode 1

The paper feed operation performs up to 20 times for each paper feed station.



Free Run Mode 2

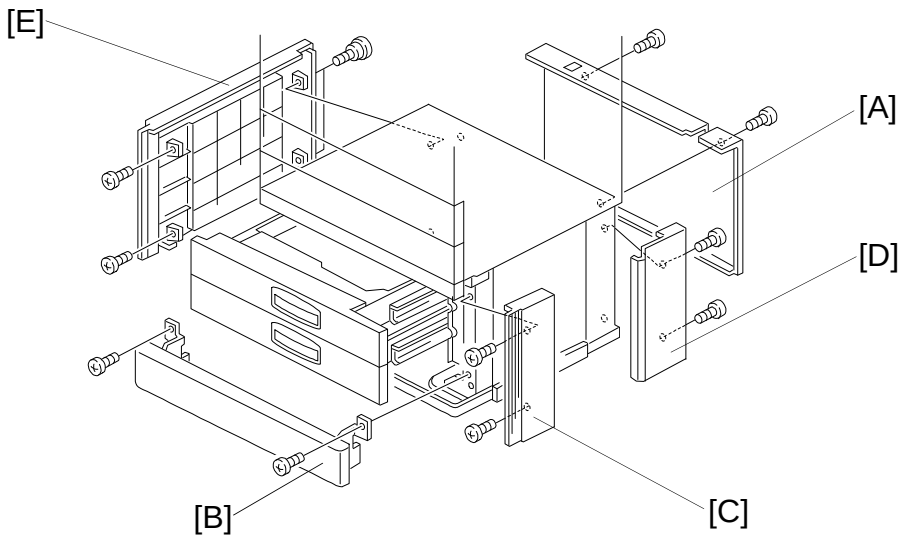
The paper feed operation runs for all paper feed stations at the same time.

6.2 TEST POINTS

NUMBER	FUNCTION
TP101	+ 5V
TP102	+ 24V
TP103	GND
TP104	TXD (Transmit signal)
TP105	RXD (Receive signal)
TP106	GND

7. REPLACEMENT AND ADJUSTMENT

7.1 EXTERIOR COVER REMOVAL



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Rear Cover [A]: (2 screws)

Front Lower Cover [B]: [Two-tray type only]

1. Slide out the cassettes.
2. Remove the front lower cover (2 screws).

Right Front Cover [C]:

1. Remove the front lower cover [B].
2. Remove the right front cover (2 screws).

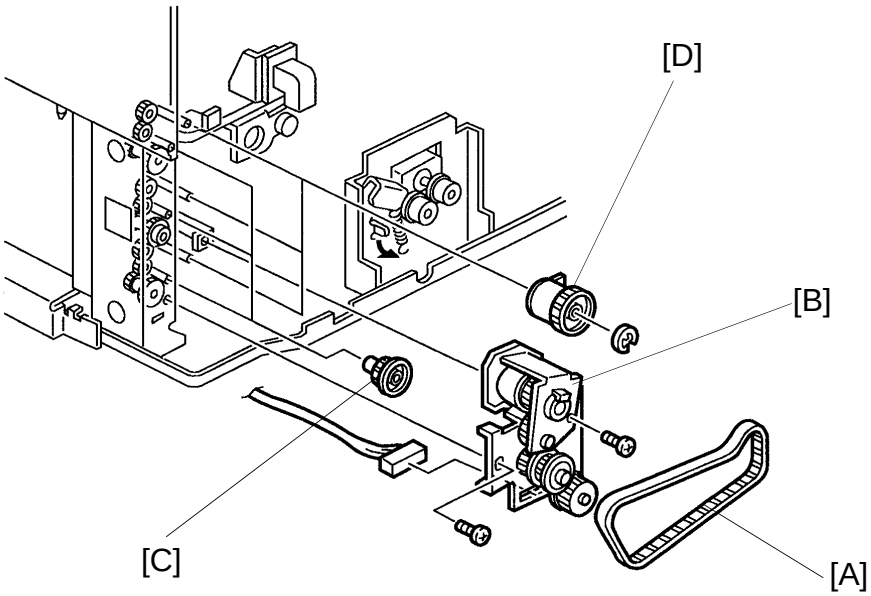
Right Rear Cover [D]:

1. Remove the rear cover [A].
2. Remove the right rear cover (2 screws).

Left Cover [E]:

1. Remove the rear cover [A].
2. Remove the front lower cover [B].
3. Remove the left cover (4 screws).

7.2 PAPER FEED CLUTCH REPLACEMENT



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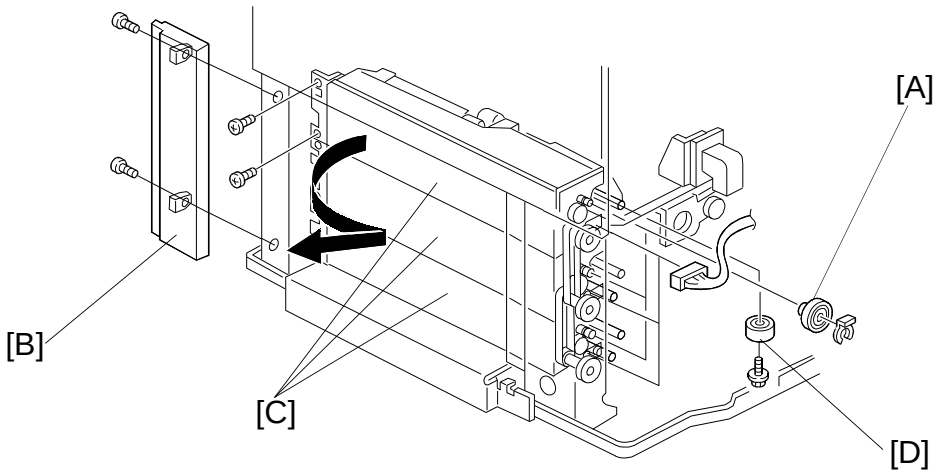
1. Remove the rear cover (see Exterior Cover Removal).
2. Remove the timing belt [A].
3. Remove the drive unit [B] (2 screws, 2 connectors).
4. Remove the separation roller gear [C].
5. Remove the paper feed clutch [D] (1 connector).

NOTE: When reinstalling the clutch, make sure that the clutch stopper groove engages the stopper bracket.

7.3 PAPER FEED UNIT REPLACEMENT



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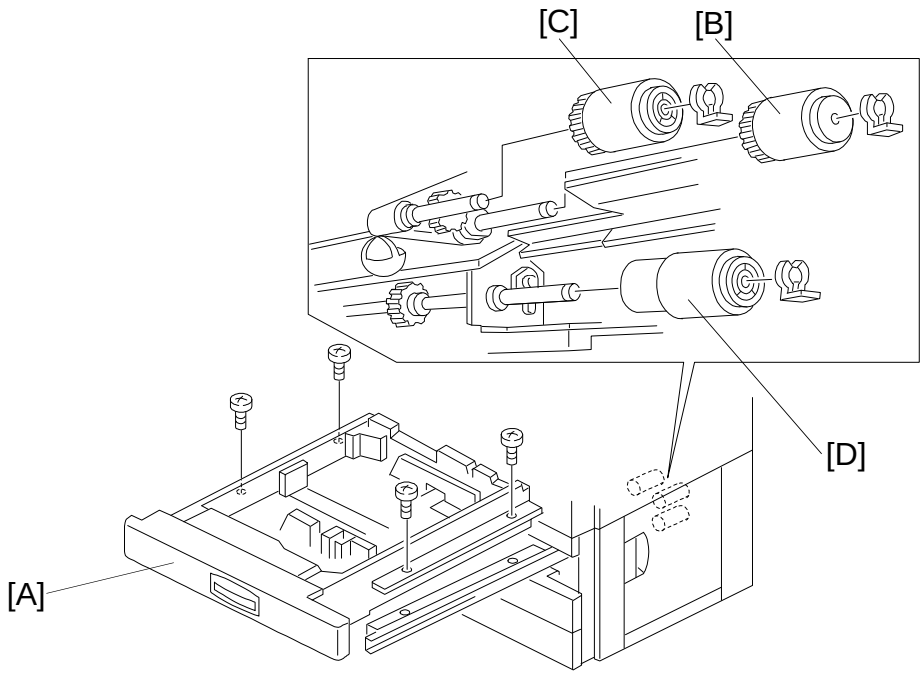
1. Remove the paper feed clutch (see Paper Feed Clutch Replacement).
2. Remove the paper feed roller gear [A].
3. Pull out all the trays.
4. **Two-tray type only:** Remove the front lower cover (see Exterior Cover Removal).
5. Remove the front right cover [B] (2 screws).
6. Remove the paper feed unit [C] (2 screws for each unit).

NOTE: When removing the paper feed unit, do the following.

- When removing the paper feed roller gear, remove the rubber foot [D].
- Remove the joint bracket.

After reinstalling the paper tray, perform the side-to side-registration adjustment (see Removal and Adjustment in the manual for the copier).

7.4 FEED ROLLER, PICK-UP ROLLER, AND REVERSE ROLLER REPLACEMENT



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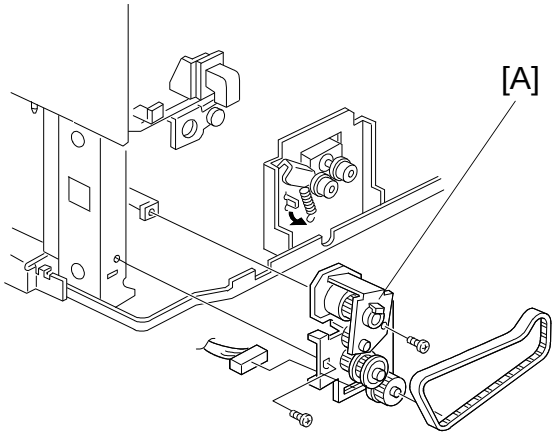
1. Remove the paper feed tray [A] (4 screws).
2. Remove the feed roller [B], pick-up roller [C], and reverse roller [D] (1 clip each).

NOTE: After reinstalling the paper tray, perform the side-to-side registration adjustment (see Removal and Adjustment in the manual for the copier).

7.5 RELAY SENSOR REPLACEMENT



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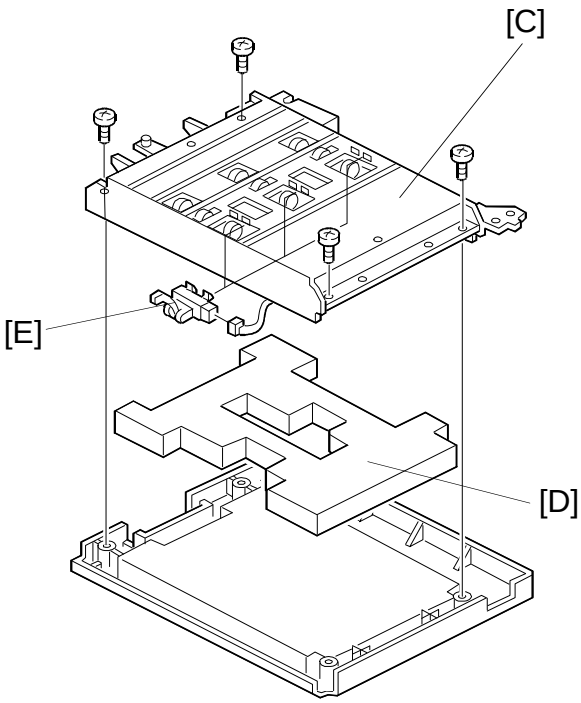

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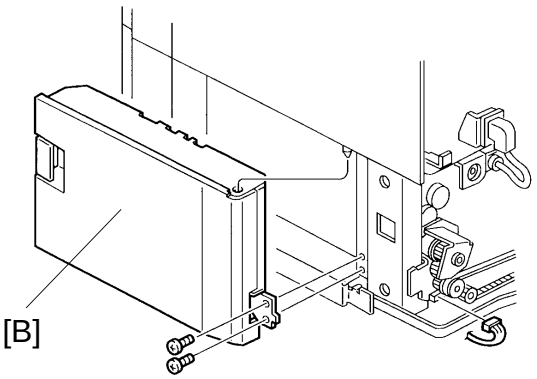

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1. Remove the rear cover (see Exterior Cover Removal).
2. Remove the right rear cover (see Exterior Cover Removal).
3. Remove the drive unit [A] (2 screws, 2 connectors).
4. Remove the vertical transport unit [B] (2 screws).
5. Remove the vertical transport guide [C] (4 screws).
6. Remove the sponge [D].
7. Remove the relay sensors [E] (1 connector each).

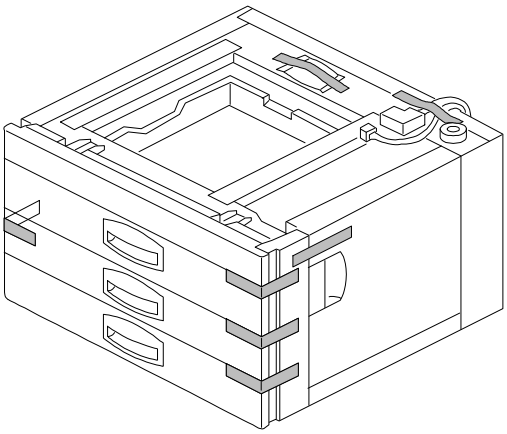
4. PAPER TRAY UNIT (A549/A550) INSTALLATION

4.1 ACCESSORY CHECK

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

1. Right Support Bracket 1
2. Left Support Bracket 1
3. Joint Bracket 1
4. Shoulder Screw 1
5. Screw - M4 x 8 4
6. New Equipment Condition Report 1
7. Installation Procedure 1

4.2 INSTALLATION PROCEDURE



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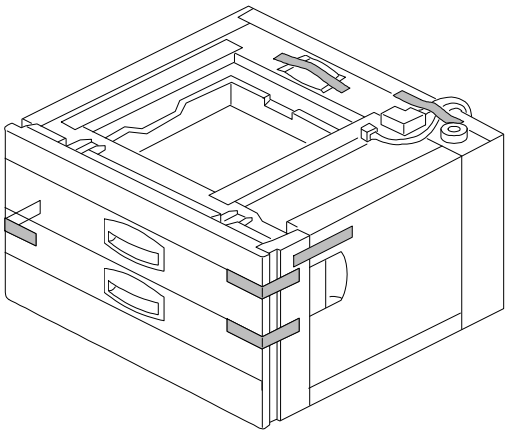

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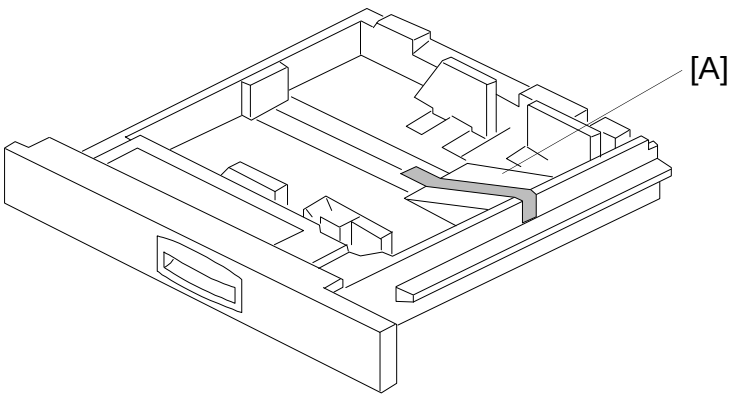

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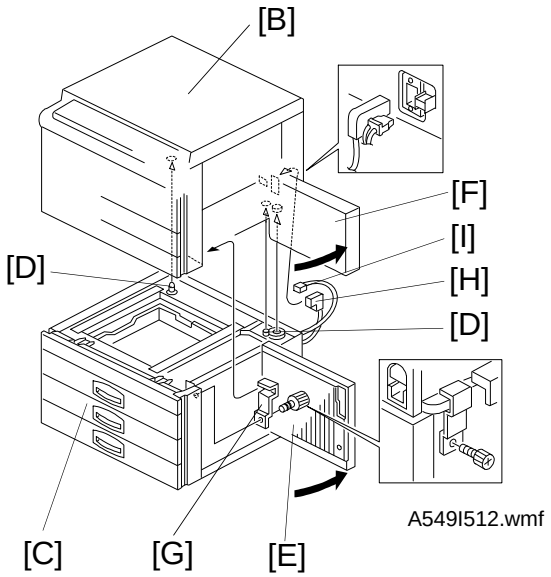
⚠ CAUTION

Unplug the copier power cord before starting the following procedure.

NOTE: Keep the shipping retainers after installing the machine. They will be reused if the machine is transported to another location. Proper reinstallation of the shipping retainers is required in order to avoid any transport damage.

1. Remove the strips of tape.
2. Remove the bottom plate stopper [A].



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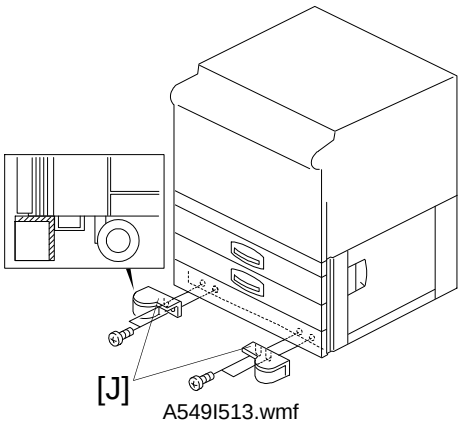
For Copiers with an LCT: Do not lift the copier by holding the LCT unit.



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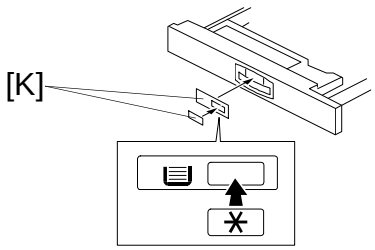

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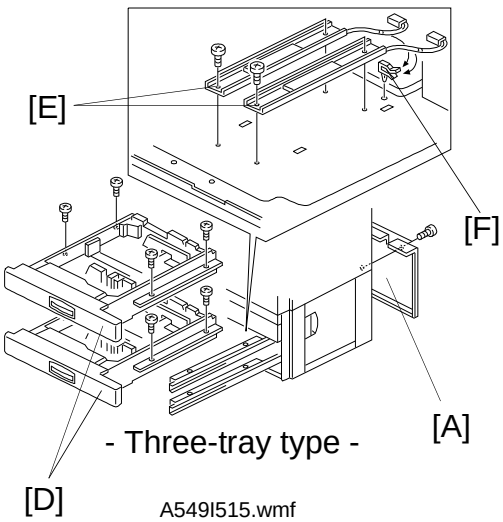
3. Set the copier [B] on the paper tray unit [C]. Align the 2 pins [D] on the paper tray unit with the holes in the base plate of the copier.
4. Open the lower door [E]. Also, open either the LCT [F] or the upper right door [F], (depending on the type of copier).
5. Secure the copier to the paper tray unit with the joint bracket [G].
6. Connect the cable [H] and optic fiber [I].
7. Attach the support brackets [J] to the bottom of the paper tray unit as shown (4 screws).

⚠ CAUTION

If you do not attach the support bracket, the machine may fall forwards when the paper trays are pulled open.

8. Pull out the paper tray and load paper into it. (The paper size and direction for each tray should be designated by a customer.) Position the side and rear fences properly.
9. Turn on the main switch.
10. Enter the proper paper size for each paper tray by following the procedure in the copier's manual.
11. Attach the appropriate tray decals [K] which are included in the accessory box with the main copier.
12. Check the machine's operation and copy quality.

4.3 TRAY HEATER (OPTION)



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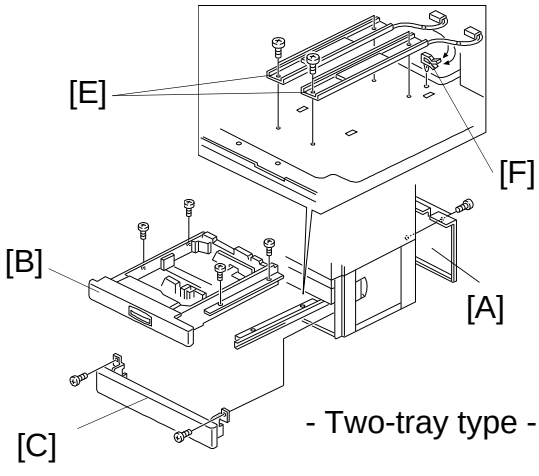

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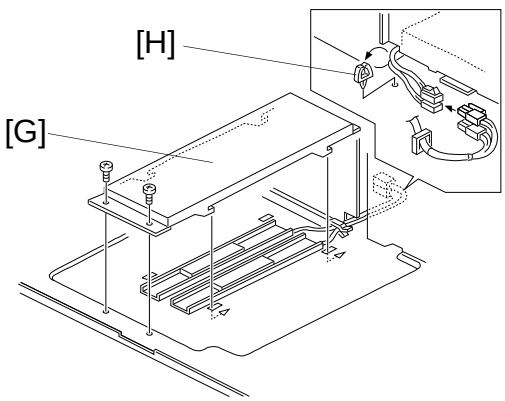

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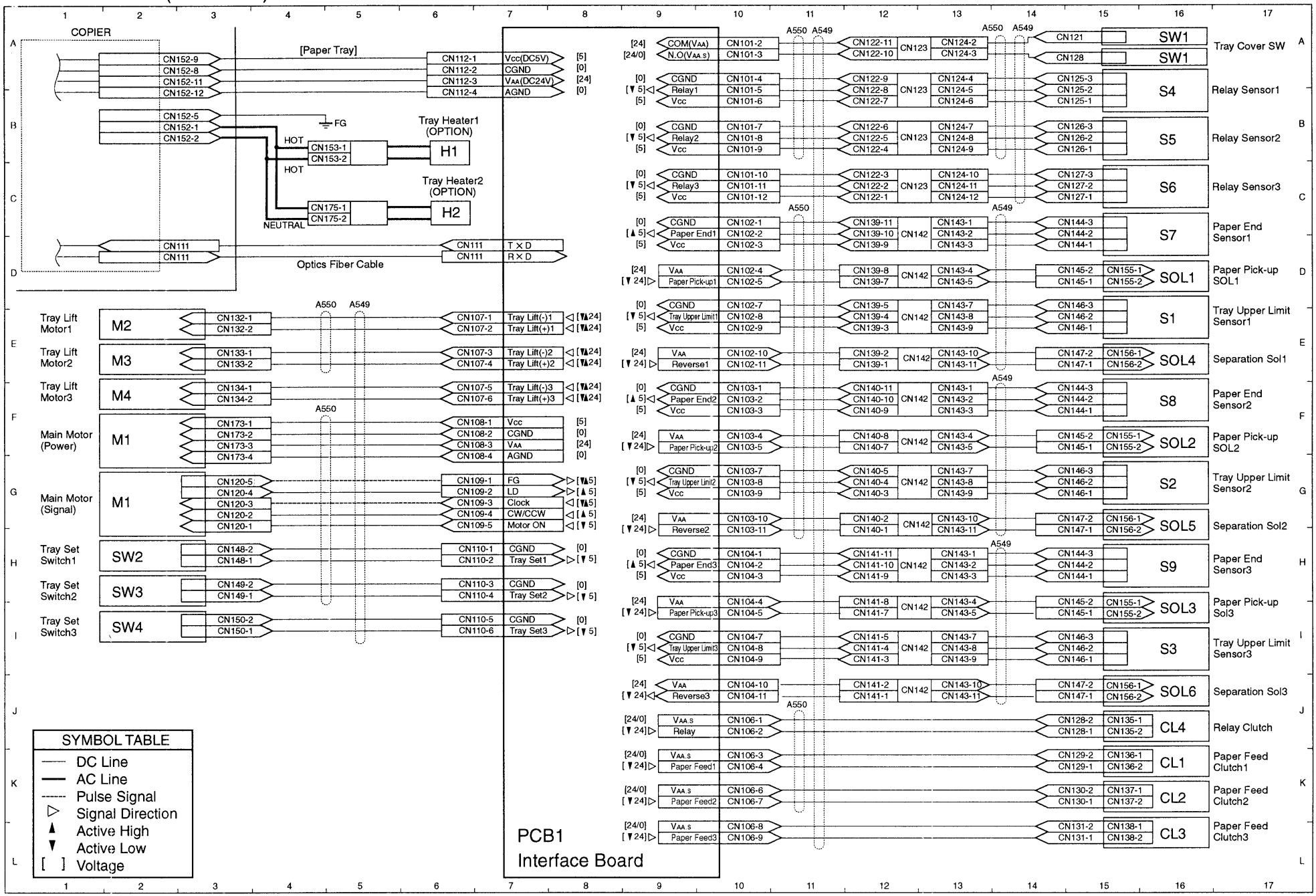
1. Remove the rear cover [A].
2. **Two-tray type:** Remove the second paper tray [B] (4 screws) and the lower front cover [C] (2 screws).

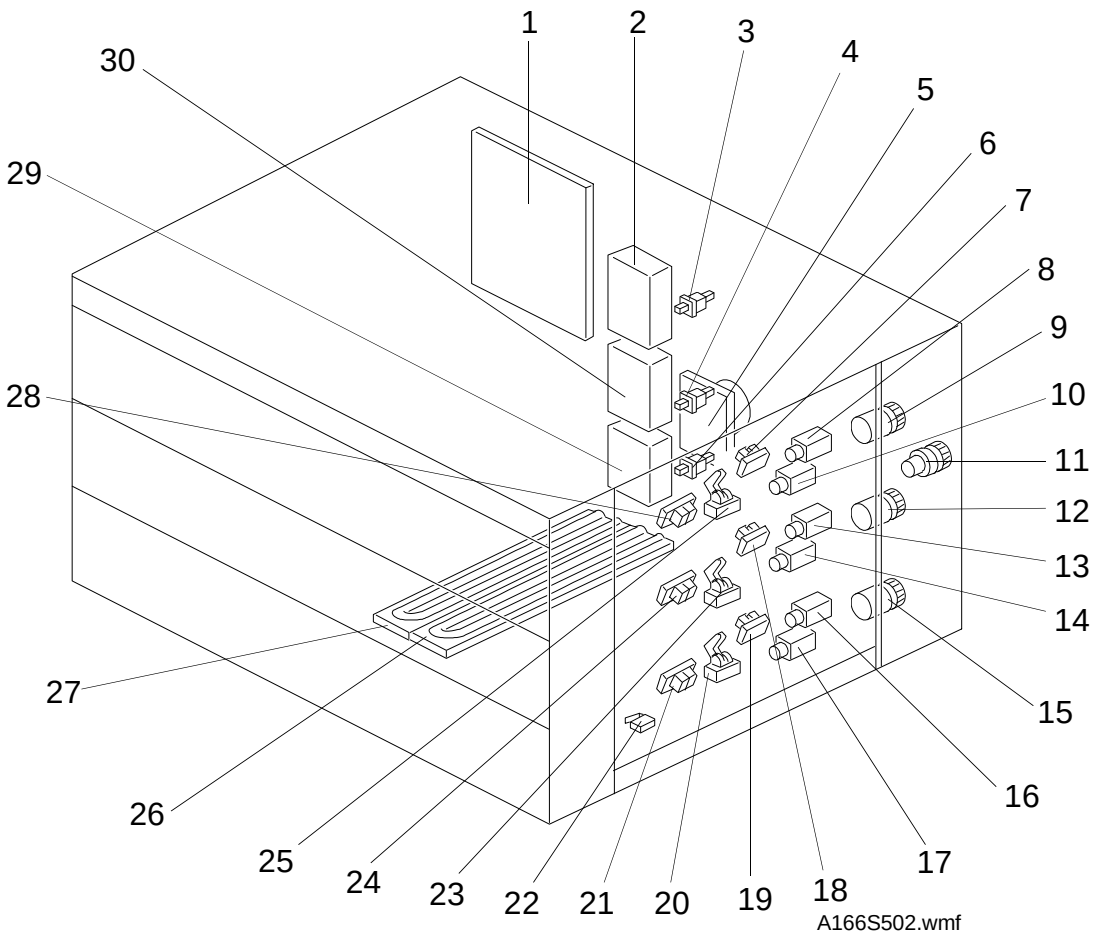
   Three-tray type: Remove the second and third paper feed trays [D] (4 screws each).
3. Install the tray heaters [E] (2 screws each).
4. Install the clamper [F] and clamp the heater harnesses.
5. Install the heater bracket [G] (2 screws).
6. Connect the heater harnesses.
7. Install the clamper [H] and clamp the heater harnesses.

NOTE: After replacing the paper tray, perform the side-to-side registration adjustment (see Replacement and Adjustment in the copier manual).

PAPER TRAY UNIT(A549/A550) POINT TO POINT DIAGRAM



PAPER TRAY UNIT (A549/A550) ELECTRICAL COMPONENT LAYOUT



Index No.	Description	P to P Location
1	Interface Board (PCB1)	F8
2	Tray Lift Motor 1 (M2)	E2
3	Tray Set Switch 1 (SW2)	H2
4	Tray Set Switch 2 (SW3)	H2
5	Main Motor (M1)	F2
6	Tray Set Switch 3 (A549 only) (SW4)	I2
7	Tray Upper Limit Sensor 1 (S1)	E16
8	Paper Pick-up Solenoid 1 (SOL1)	D16
9	Paper Feed Clutch 1 (CL1)	K16
10	Separation Solenoid 1 (SOL4)	E16
11	Relay Clutch (CL4)	J16
12	Paper Feed Clutch 2 (CL2)	K16
13	Paper Pick-up Solenoid 2 (SOL2)	F16
14	Separation Solenoid 2 (SOL5)	G16
15	Paper Feed Clutch 3 (A549 only) (CL3)	L16
16	Paper Pick-up Solenoid 3 (A549 only) (SOL3)	I16
17	Separation Solenoid 3 (A549 only) (SOL6)	J16
18	Tray upper Limit Sensor 2 (S2)	G16
19	Tray upper Limit Sensor 3 (A549 only) (S3)	I16
20	Relay Sensor 3 (A549 only) (S6)	C16
21	Paper End Sensor 3 (A549 only) (S9)	H16
22	Tray Cover Switch (SW1)	A16
23	Relay Sensor 2 (S5)	B16
24	Paper End Sensor 2 (S8)	F16
25	Relay Sensor 1 (S4)	B16
26	Tray Heater (Option) (H1)	B6
27	Tray Heater (Option) (H2)	C6
28	Paper End Sensor 1 (S7)	C16
29	Tray Lift Motor 3 (A549 only) (M4)	F2
30	Tray Lift Motor 2 (M3)	E2