PAPER TRAY UNIT

(Machine Code: A549/550)

Options

1. SPECIFICATIONS

Configuration: Two-tray table or three-tray table

Copy Paper Size: Maximum A3/11" X 17"

Minimum B5/81/2" X 11"

Copy Paper Weight: 52 - 105 g/m², 14 - 28 lb

Copy Paper Capacity: Approximately 500 sheets

Paper Feed Speed: 20 ~ 40 copies/minute (A4 / 81/2"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

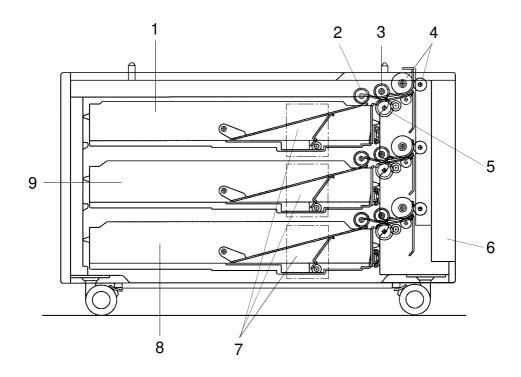
390 mm/15.4" (height)

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

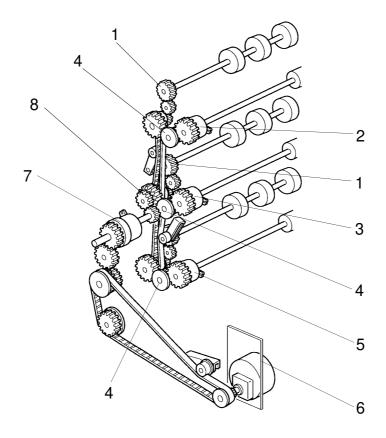


A549V502.img

- 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



A549V503.img

- 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

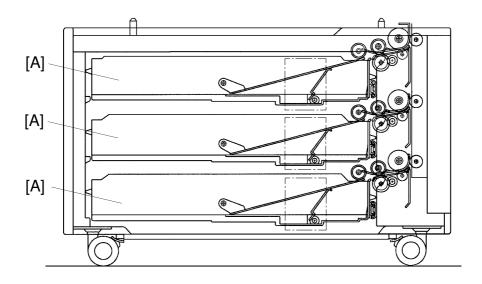
COMPONENT LAYOUT 10 May 1996

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		1			
M1	5	Main	Drives all the components of the paper tray		
M2	2	Tray lift 1			
M3	30	Tray lift 2	Raises the bottom plate in the paper tray		
M4	29	Tray lift 3 (A549 only)			
Circuit bo	ard	1			
PCB1	1	Interface board Controls the paper tray in response signals from the copier			
Sensors					
S1	7	Tray upper limit 1			
S2	18	Tray upper limit 2	Detects the top of the stack to stop the tray		
S3	19	Tray upper limit 3 (A549 only)	lift motor		
S4	25	Relay 1	Detects the leading edge of the paper as it		
S5	23	Relay 2	leaves the tray to control pick-up solenoid		
S6	20	Relay 3	and jam detection timing		
S7	28	Paper end 1			
S8	24	Paper end 2	Detects when the paper tray is empty		
S9	21	Paper end 3 (A549 only)	7		
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	•		
SW3	4	Tray set 2	Detects whether the paper tray is in place		
SW4	6	Tray set 3 (A549 only)	<u> </u>		
Magnetic	clutches				
CL1	9	Paper feed 1			
CL2	12	Paper feed 2	Starts feeding paper from the tray		
CL3	15	Paper feed 3 (A549 only)			
CL4	11	Relay	Drives the rollers in the paper trays		
Solenoids	i	•			
SOL1	8	Paper pick-up 1			
SOL2	13	Paper pick-up 2	Lifts/drops the pick-up roller		
SOL3	16	Paper pick-up 3 (A549 only)	Litts/drops the pick-up foliel		
SOL4	10	Separation 1			
SOL5	14	Separation 2	Lifts/drops the separation roller		
SOL6	· ·				
Heaters					
H1	26	Tray (Option)	Turns on when the main switch is off to		
H2	27	Tray (Option)	keep the paper in the trays dry		

3. OVERVIEW



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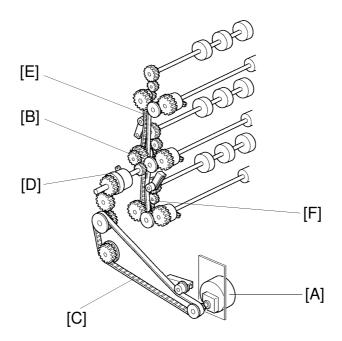
There are two types of paper tray unit: the two-tray and three-tray types. Each paper tray [A] is a drawer type that can hold up to 500 sheets of paper.

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.

DRIVE MECHANISM 10 May 1996

4. DRIVE MECHANISM



A549D503.img

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:

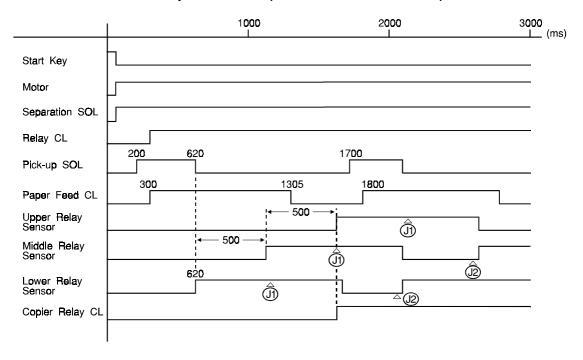
The drive from the timing pulley is transmitted to the unit through the timing belt [F].

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



A549D504.wmf

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

SERVICE TABLES 10 May 1996

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	
		5	-	-	Free Run Mode 2*: Paper feed tray 1 only			
	_		On	n Off			Normal Operation / Free Run Mode 1*: Two-tray type	
			5				Free Run Mode 2*: Paper feed tray 2 only	
	On O		On			Normal Operation / Free Run Mode 1*: Three-tray type		
			OII	5	-		Free Run Mode 2*: Paper feed tray 3 only	
-	-	•	•	•	On	Off	Free Run Mode 2	
_	-	-	ı	-	On	On	Free Run Mode 1	
-	-	-	-	-	Off	Off	Normal Operation	

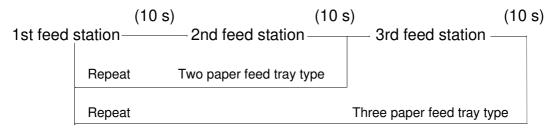
Do not touch dip switches 1 to 5. Switch 8 is not used.

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

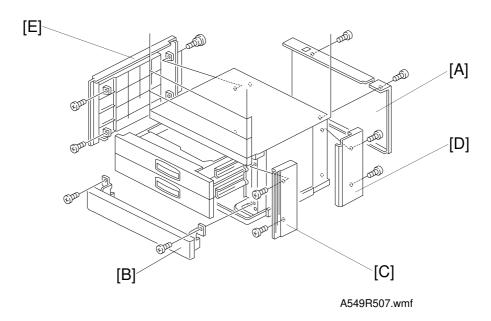
The paper feed operation runs for all paper feed stations at the same time.

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



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).

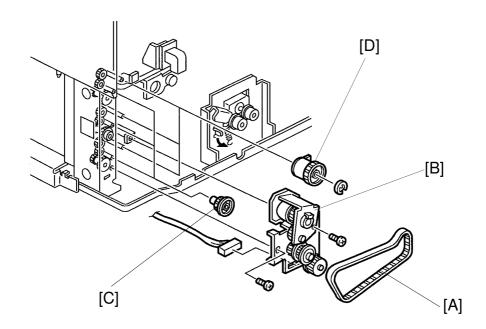
Right Rear Cover [D]:

- 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

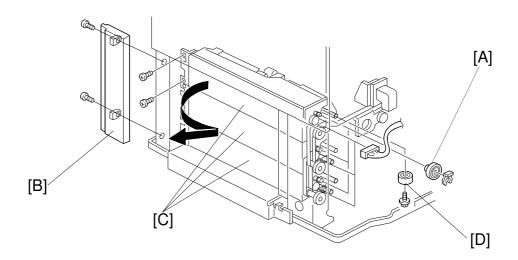


A549R508.img

- 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



A549R509.wmf

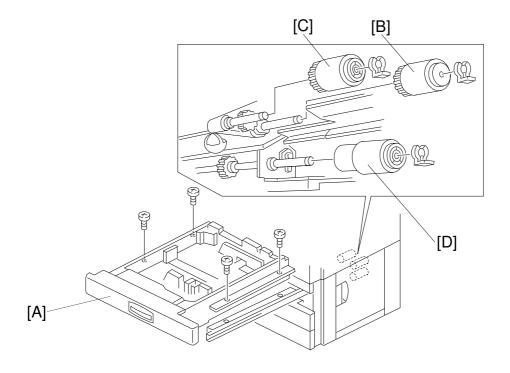
- 1. Remove the paper feed clutch (see Paper Feed Clutch Replacement).
- 2. Remove the paper feed roller gear [A].
- 3. Pull out all the trays.
- 4. **Two-tray type only:** Remove the front lower cover (see Exterior Cover Removal).
- 5. Remove the front right cover [B] (2 screws).
- 6. Remove the paper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

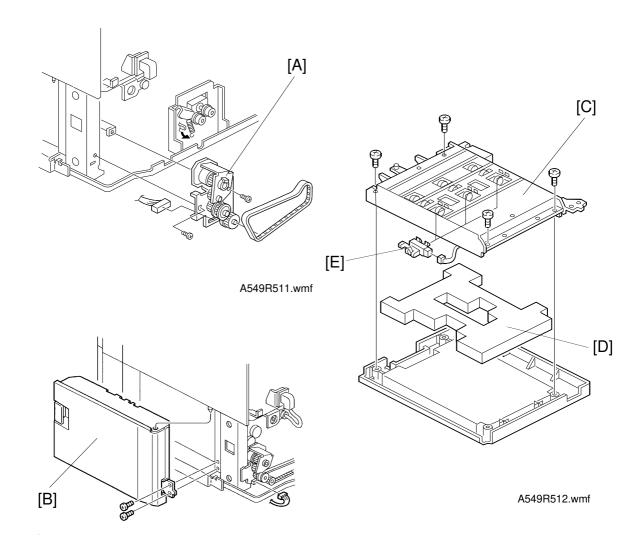


A549R510.wmf

- 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



A549R513.img

- 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).

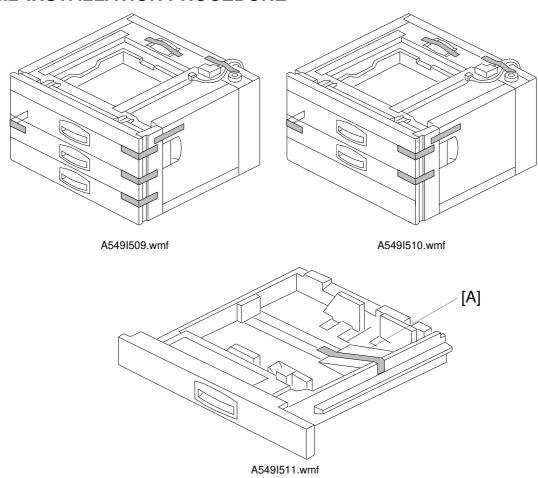
4. PAPER TRAY UNIT (A549/A550) INSTALLATION

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

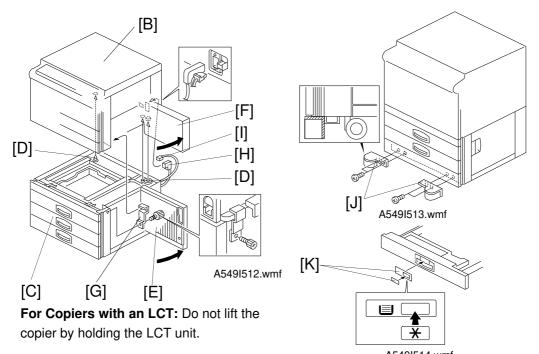


A CAUTION

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].



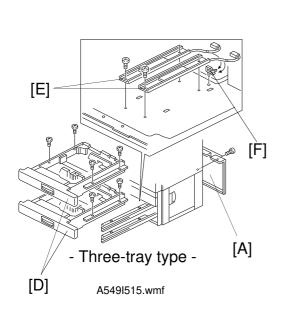
- 3. Set the copier [B] on the paper tray unit [C]. Align the 2 pins [D] on the paper tray unit with the holes in the base plate of the copier.
- 4. Open the lower door [E]. Also, open either the LCT [F] or the upper right door [F], (depending on the type of copier).
- 5. Secure the copier to the paper 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).

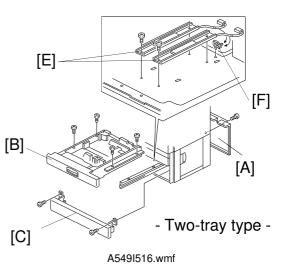
⚠ CAUTION

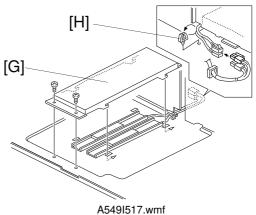
If you do not attach the support bracket, the machine may fall forwards when the paper trays are pulled open.

- 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)







- 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).

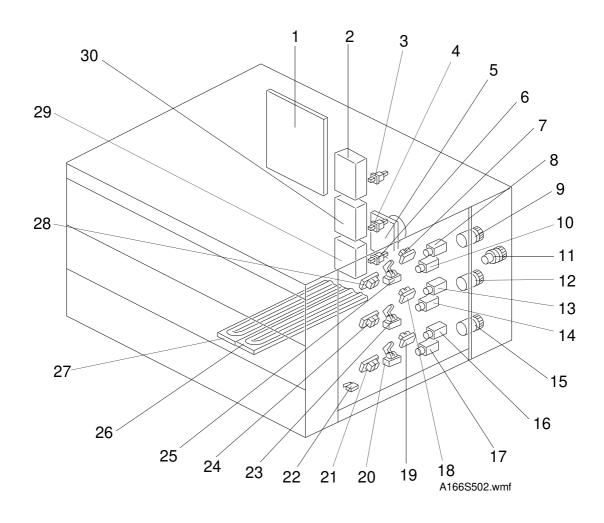
Three-tray type: Remove the second and third paper feed trays [D] (4 screws each).

- 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).

FAPER TRAY UNIT(A549/A550) POINT TO POINT DIAGRAM 17 13 15 16 A550 A549 A550 A549 COPIER CN121 SW₁ N.O(VAA.s) CN101-2 CN122-11 CN124-2 Tray Cover SW [Paper Tray] CN123 CN122-10 CN124-3 CN101-3 Vcc(DC5V) [24/0] CN128 SW₁ CN112-1 CN152-9 [0] CN112-2 CGND CN152-8 CN101-4 CN125-3 CN124-4 CN112-3 VAA(DC24V)> CN152-11 CN101-5 CN122-8 CN122-7 CN124-5 CN125-2 CN123 **S4** Relay Sensor1 CN152-12 CN112-4 CN101-6 CN124-6 CN125-1 Trav Heater1 -≟-FG [0] CGND [v 5] Relay2 Vcc CN152-1 CN101-7 CN122-6 CN124-7 CN126-3 (OPTION) CN122-5 CN152-2 CN101-8 CN124-8 CN126-2 S5 Relay Sensor2 CN153-1 H1 CN101-9 CN122-4 CN124-9 CN126-1 CN153-2 [0] CGND [V 5] Relay3 Vcc CN101-10 CN122-3 CN124-10 CN127-3 Tray Heater2 CN122-2 CN122-1 CN124-11 CN127-2 CN101-11 CN123 S6 Relay Sensor3 (OPTION) CN127-1 CN101-12 CN124-12 CN175-1 H2 NEUTRAI CN175-2 [0] CGND
[1 5] Paper End1
[5] Vcc CN139-11 CN142 CN102-1 CN143-1 CN144-3 Paper End CN102-2 CN143-2 CN144-2 S7 Sensor1 CN139-9 CN111 CN102-3 CN143-3 CN144-1 CN111 $T \times D$ CN111 RXD CN111 Optics Fiber Cable CN139-8 CN142 Paper Pick-up [24] VAA CN102-4 [▼24]⊳ Paper Pick-up1 CN102-5 CN102-4 CN145-2 CN155-1 CN145-1 CN155-2 SOL1 CN143-4 SOI 1 CN143-5 CN139-7 A550 A549 CN102-7 CN146-3 Tray Upper Limit CN139-4 CN142 CN143-8 CN132-1 CN102-8 CN146-2 Tray Lift S1 Sensor1 M2 Motor1 CN132-2 CN102-9 CN139-3 CN143-9 CN146-1 CN133-1 Tray Lift [24] VAA [▼24] ▷ Reverse1 CN147-2 CN156-1 CN147-1 CN156-2 SOL4 CN102-10 CN139-2 CN143-10 CN142 Separation Sol1 МЗ Motor2 CN133-2 CN102-11 CN139-1 CN143-11 CN140-11 Tray Lift **CGND** CN103-1 CN134-1 CN143-1 CN144-3 Paper End M4 Paper End Motor3 CN134-2 CN103-2 CN140-10 CN142 CN143-2 CN144-2 S8 Sensor2 4550 CN103-3 CN140-9 CN144-1 CN108-1 CN173-1 [24] VAA [▼24]⊳ Paper Pick-up CN140-8 CN142 CN108-2 CGND [0] Main Motor CN173-2 CN145-2 CN155-1 CN145-1 CN155-2 CN103-4 CN143-4 Paper Pick-up M1 SOL₂ [24] CN173-3 CN108-3 VAA CN140-7 (Power) CN103-5 CN143-5 SOL2 [0] CN173-4 CN108-4 AGND CN103-7 CN146-3 CN140-5 CN143-7 Tray Upper Limit CN140-4 CN140-3 CN120-5 CN109-1 CN103-8 CN143-8 CN146-2 S2 Sensor2 CN109-2 LD >D[1 5] CN146-1 CN120-4 CN103-9 Main Motor M1 CN109-3 Clock l⊲ivasi CN120-3 (Signal) CN109-4 CW/CCW CN120-2 [24] VAA [▼24] ▷ Reverse2 CN147-2 CN156-1 CN147-1 CN156-2 CN103-10 CN140-2 CN143-10 CN109-5 Motor ON CN140-2 CN140-1 CN142 CN143-11 SOL₅ CN120-1 Separation Sol2 CN103-11 A549 CN148-2 Tray Set [0] CGND CN104-1 [1 5] Paper End3 CN104-2 [5] Vcc CN104-3 CN141-11 CN144-3 CN143-1 SW2 Paper End Switch 1 CN148-1 CN141-10 CN142 CN143-2 CN144-2 S9 Sensor3 CN141-9 CN143-3 CN144-1 CN149-2 CN110-3 CGND CN110-3 CGND [0] CN110-4 Tray Set2 [▼ 5] Tray Set SW3 Switch2 CN149-1 [24] VAA [▼24] ▷ Paper Pick-up3 CN145-2 CN155-1 CN145-1 CN155-2 CN104-4 CN141-8 CN143-4 Paper Pick-up CN142 SOL3 CN104-5 CN141-7 CN143-5 Soi3 CN150-2 CN110-5 CGND Tray Set SW4 CN110-6 Tray Set3 > [▼ 5] CN150-1 Switch3 [0] CGND [▼ 5] Tray Upper Limit3 [5] Vcc CN143-7 CN146-3 Tray Upper Limit CN141-4 CN141-3 CN104-8 CN143-8 CN146-2 S3 Sensor3 CN143-9 CN104-9 CN146-1 [24] VAA [▼24] Reverse3 CN104-10 CN141-2 CN143-10 CN147-2 CN156-1 CN147-1 CN156-2 SOL6 Separation Sol3 CN104-11 CN141-1 CN143-11 [24/0] VAA.S [▼24]⊳ Relay CN128-2 CN135-1 CN106-1 CL4 Relay Clutch CN106-2 CN128-1 CN135-2 SYMBOL TABLE [24/0] VAA.S CN129-2 CN136-1 CN106-3 Paper Feed --- DC Line CL1 [▼24] ▷ Paper Feed CN106-4 CN129-1 CN136-2 Clutch1 - AC Line [24/0] VAA.S CN106-6 CN130-2 CN137-1 Paper Feed ----- Pulse Signal CL₂ [▼24] ▶ Paper Feed CN106-7 CN130-1 CN137-2 Clutch2 Signal Direction [24/0] VAA.S Paper Feed CN131-2 CN138-1 CN 106-8 Active High PCB₁ CL3 [▼24] ▷ Paper Feed3 CN106-9 CN131-1 CN138-2 Clutch3 • Active Low Interface Board [] Voltage 10 12 13 16 17 11 14 15

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)	12
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)	l16
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