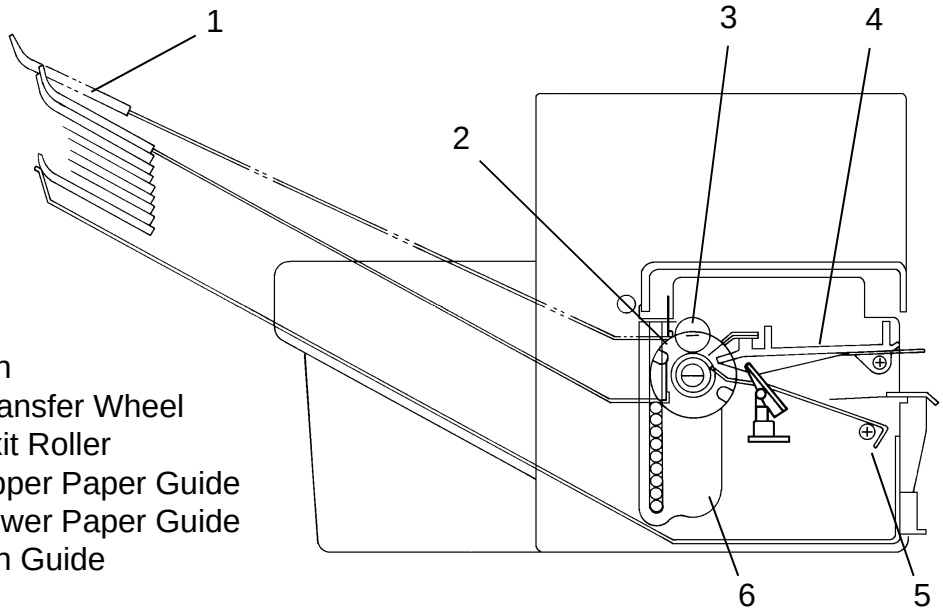
10 BIN SORTER
(MICRO)
(Machine Code: A327)

1. SPECIFICATIONS

Number of Bins:	10 bins	
Paper Size for Bins Sort or Stack Mode:	Maximum	A3, 11" x 17"
	Minimum	A5, 5 1/2" x 8 1/2"
Paper Weight:	64 to 90 g/m^2 (17 to 24 lb)	
Bin Capacity:	Sort/Stack Mode	20 sheets/A4, 8 1/2" x11"
		15 sheets/B4, 8 1/2" x 14"
		10 sheets/A3, 11" x 17"
Top Bin Capacity: (Non-Sort/Stack Mode)	100 sheets (all sizes)	
Power Source:	+5 volts and +24 volts from the copier	
Power Consumption:	12 W	
Dimensions: (W x D x H)	402 mm x 487 mm x 217 mm (15.7" x 19.1" x 16.7")	
Weight:	7.6 kg (16.7 lb).	

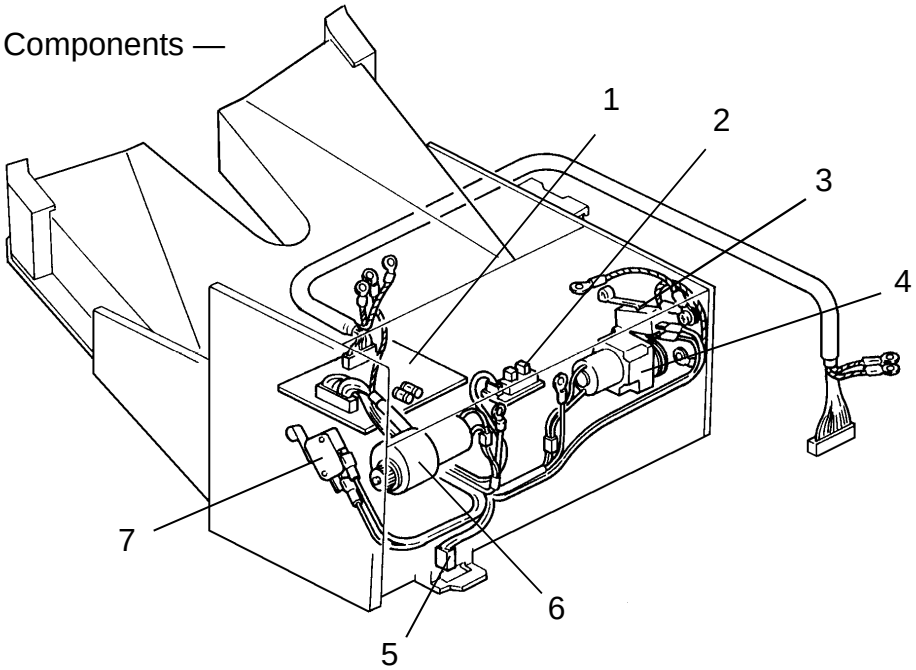
2. COMPONENT LAYOUT

— Mechanical Components —



1. Bin
2. Transfer Wheel
3. Exit Roller
4. Upper Paper Guide
5. Lower Paper Guide
6. Bin Guide

— Electrical Components —



1. Sorter Main Board
2. Paper Sensor
3. Wheel Switch
4. Roller Drive Motor
5. Sorter Switch
6. Bin Drive Motor
7. Home Position Switch

3. ELECTRICAL COMPONENT DESCRIPTIONS

Symbol	Name	Function	Location
Motors			
M1	Roller Drive Motor	Dc motor that energizes to drive the lower exit rollers.	4
M2	Bin Drive Motor	Reversible dc motor that energizes to move the bins up or down.	6
Switches			
SW1	Wheel Switch	Detects the rotation of the transfer wheel and stops it in the correct position.	3
SW2	Sorter Switch	Reed switch that becomes activated when the sorter is in the proper position (aligned next to the copier). Also works as a jam reset switch for the sorter.	5
SW3	Home Position Switch	Informs the CPU that all the bins are lowered.	7
Sensors			
S1	Paper Sensor	Serves as the misfeed sensor for the sorter and also sets exit roller and bin drive timing.	2
Printed Circuit Boards			
PCB1	Sorter Main Board	Serves as the communication board between the copier main board and the sorter.	1

4. BASIC OPERATION

- Clear Mode -

When the main switch of the copier is turned on, the sorter automatically assumes the clear mode. In this mode, all copies are stacked on the first bin. The sorter also assumes the clear mode when either the interrupt mode or the manual feed mode is selected.

Sorter operation begins when a copy actuates the copier exit sensor. At this time, the roller drive motor energizes. When the paper exits onto the sorter bin, the paper sensor is de-activated and the roller drive motor is then de-energized. The copier main board monitors the paper sensor through the sorter main board to check for paper misfeeds.

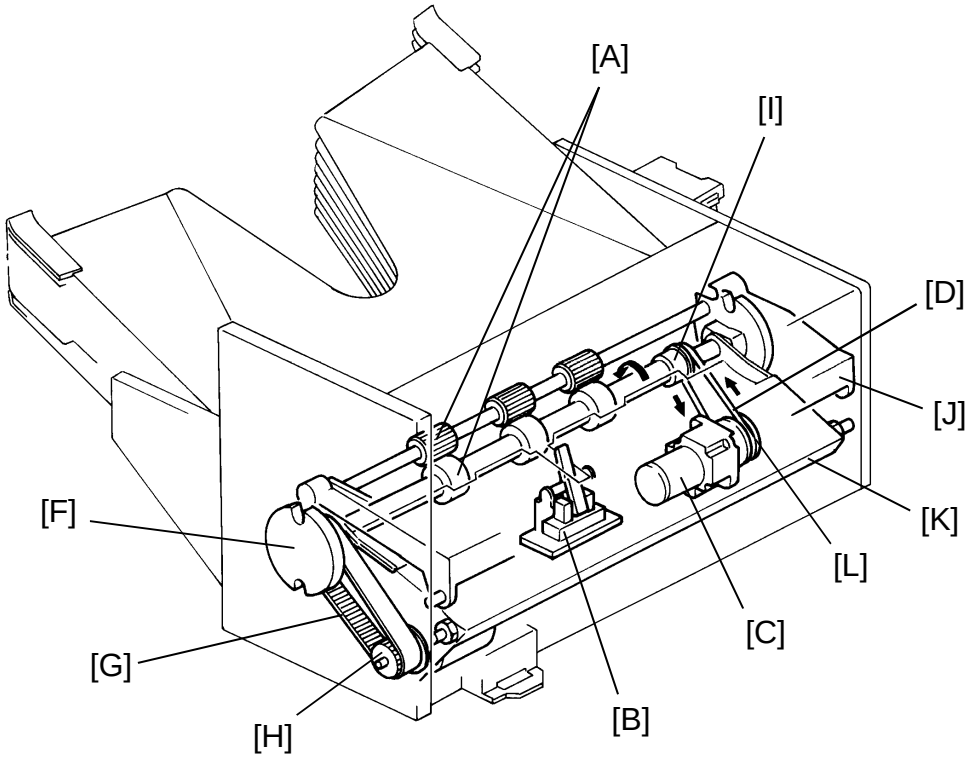
- Sort Mode -

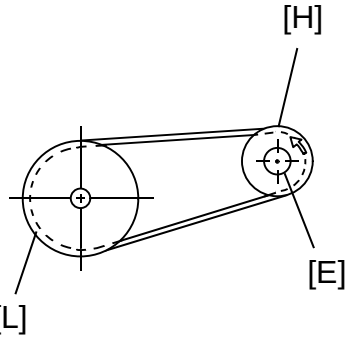
Pressing the Sorter key once shifts the copier to the sort mode. In this mode, all copies of the first original are delivered to separate bins starting from the top. The copies of the second original are delivered to the same bins, but starting from the bottom. The copies of the third original start from the top and so on. The bin drive motor turns on to advance the bin one step, 250 milliseconds after the copy has gone through the paper sensor. If the Copy Quantity, Clear/Stop, Book Copy, or Sorter key is pressed during the sort mode, all bins shift to the home position.

- Stack Mode -

Pressing the Sorter key twice shifts the copier to the stack mode. In this mode, all copies of the first original are delivered to the first bin, all copies of the second original are delivered to the second bin, and so on. The bin drive motor turns on to advance the bin one step, 250 milliseconds after the last copy of the original has gone through the paper sensor. If the Sorter key is pressed during stack mode, all bins shift to home position.

5. EXIT ROLLER DRIVE MECHANISM



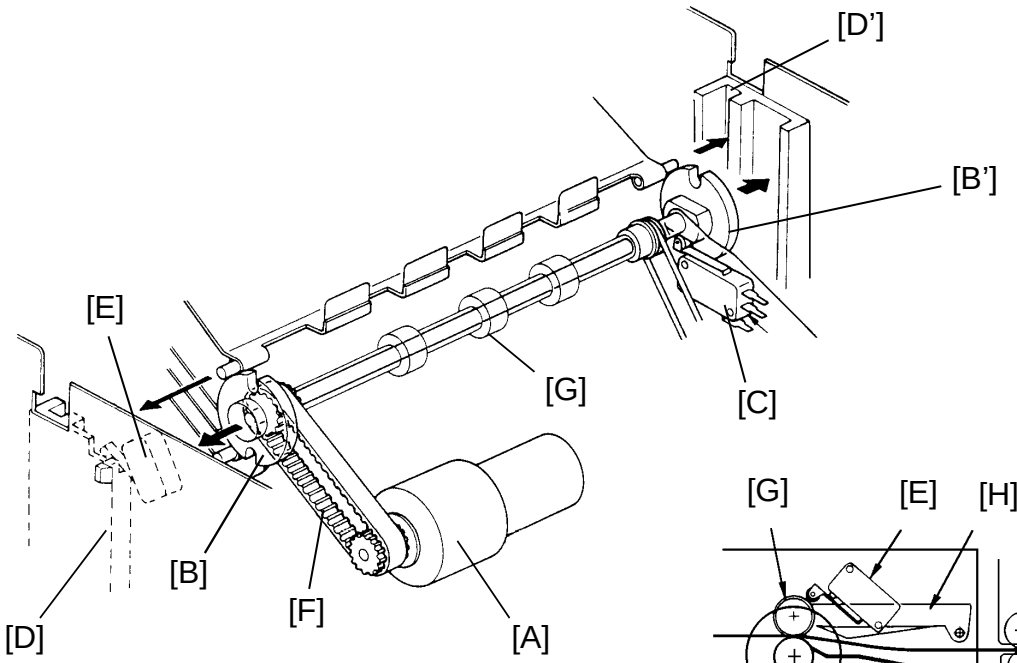


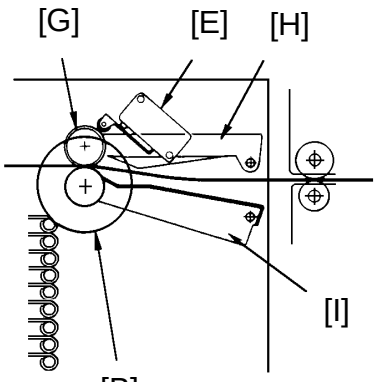
F: Transfer Wheel
G: Bin Drive Belt
H: Bin Drive Pulley
I: Exit Roller Pulley
J: Upper Paper Guide
K: Lower Paper Guide
L: Roller Drive Motor Pulley

The exit rollers [A] take over paper transport from the copier. When the copy paper actuates the copier exit sensor, the exit rollers start rotating. The exit rollers continue to rotate for 250 milliseconds after the copy paper has gone through the paper sensor [B].

The roller drive motor [C] rotates the lower exit roller via the roller drive belt [D]. The shaft of the lower exit roller is a cylindrical cavity type which rotates around the transfer wheel shaft [E]. The paper sensor is positioned just in front of the exit rollers. The paper sensor detects misfeeds in the sorter.

6. BIN DRIVE MECHANISM

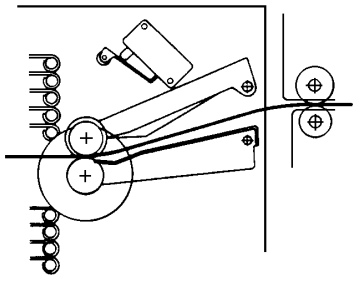


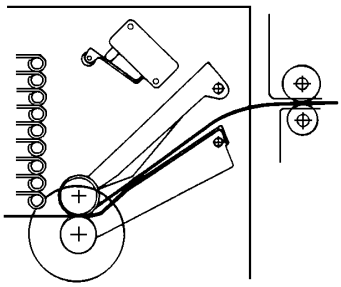


G : Exit Roller
H : Upper Paper Guide
I : Lower Paper Guide

The bin drive mechanism moves the bins up and down to receive copies under the direction of the copier CPU. The main components in this mechanism are the bin drive motor [A], two transfer wheels [B,B'], the wheel switch [C], and the bins themselves.

Pins on either side of each bin are inserted into slots called bin guides [D,D']. The bins slide up and down in the bin guides. The bins sit on each other with the lower bin resting on the permanently-mounted 10th bin. The upper and lower paper guides pivot up and down depending on the height of the bin to be picked up or released.





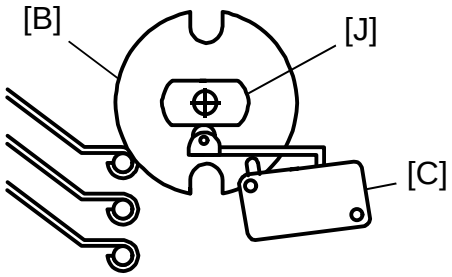
The home position switch [E] informs the CPU when all the bins are lowered.

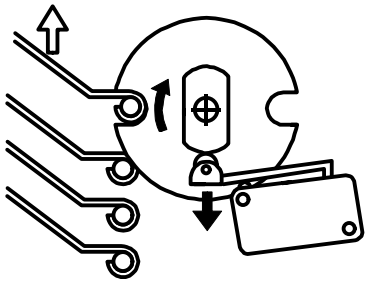
To move the bins up, the bin drive motor turns clockwise (as viewed from the front). A timing belt [F] turns the transfer wheels.

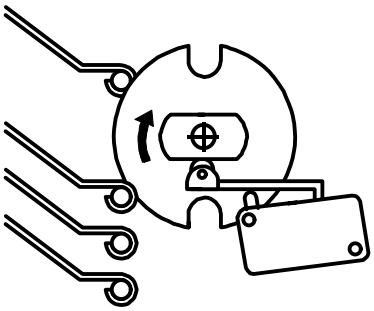
The transfer wheels have two slots in them 180 degrees apart. As the transfer wheels turn, these slots engage the bins and lift them up. Each time the transfer wheels turn 180 degrees, they raise one bin.

To move the bins down, the CPU reverses the bin drive motor and the above processes reverses.

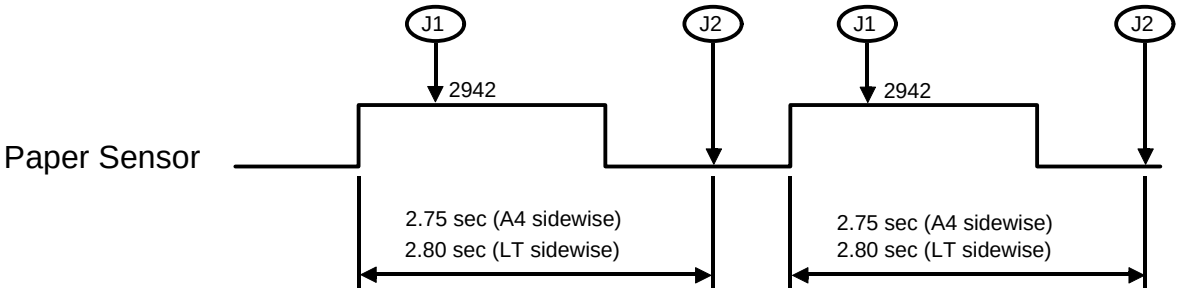
The CPU monitors the position of the bins through pulses generated by the wheel switch and the actuator cam [J]. The actuator cam has two flat sides that are 180 degrees apart and is mounted behind the rear transfer wheel. A pulse is generated each time one of the lobes of the actuator cam passes the wheel switch.







7. MISFEED DETECTION



In addition to being used for the exit roller and bin drive timing, the paper sensor checks for a misfeed in the sorter. The copier CPU checks whether the paper sensor is actuated within 942 pulses (3.8 seconds) after the registration clutch turns on (at 2,000 pulses). (J1: Paper Sensor ON Check)

Also, the copier CPU starts a timing cycle when the paper sensor is actuated. Then, at 2.75 (A4 sidewise) or 2.80 (Letter sidewise) seconds, the CPU checks whether the copy paper has passed through the paper sensor. (J2: Paper Sensor OFF Check)

In misfeed condition, the "Check Paper Path" and "Misfeed Location" indicators lights and copier operation is inhibited. To recover the sorter from the misfeed condition, the sorter has to be slid away from the copier, then, after misfed paper removal, returned to its original position.

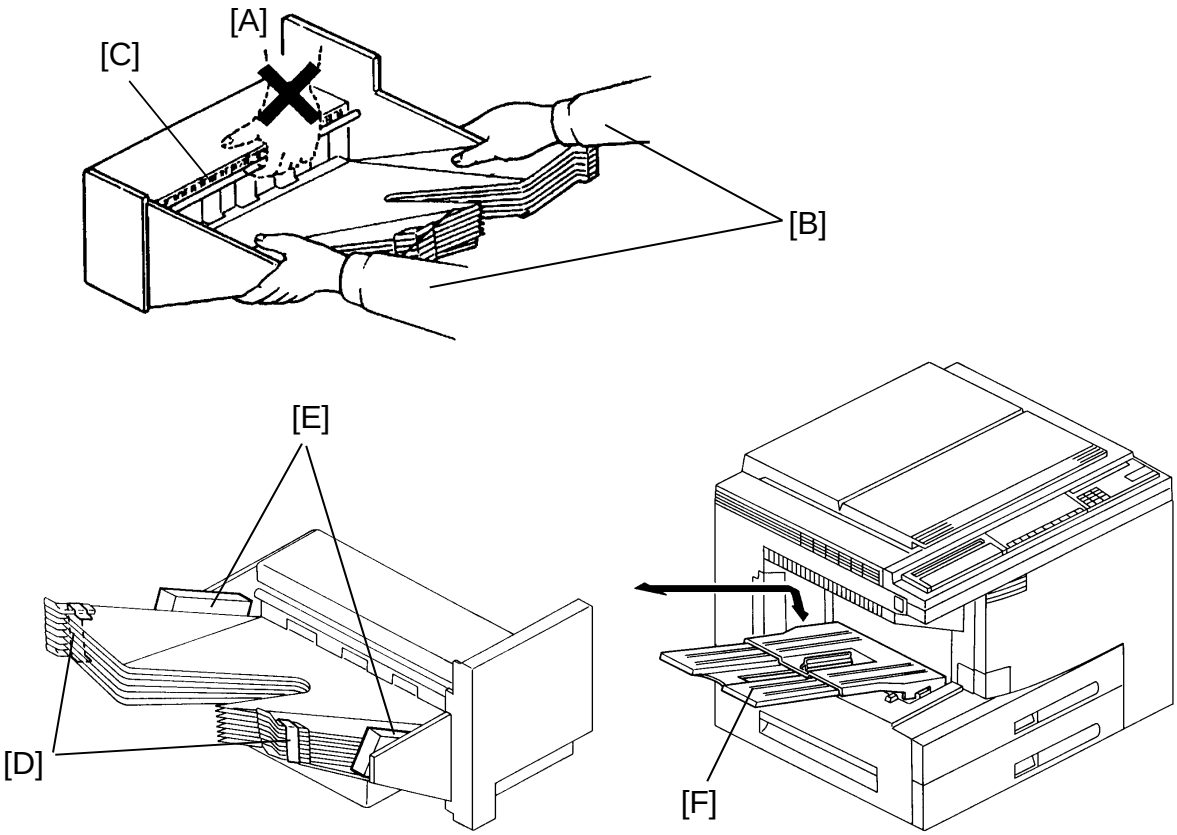
8. INSTALLATION

8.1 ACCESSORY CHECK

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

1. Magnet Catch 1
2. Sorter Holder Bracket 1
3. Sorter Holder Bracket Cover..... 1
4. Exit Cover Spring..... 1
5. Philips Pan Head Screw - M4 x 8 6
6. Philips Pan Head Screw - M4 x 8 1
7. Grounding Screw M4 x 8 1
8. Snap Ring 1
9. Toothed Washer 1
10. Installation Procedure 1
11. New Equipment Condition Report (–27 machine only)..... 1

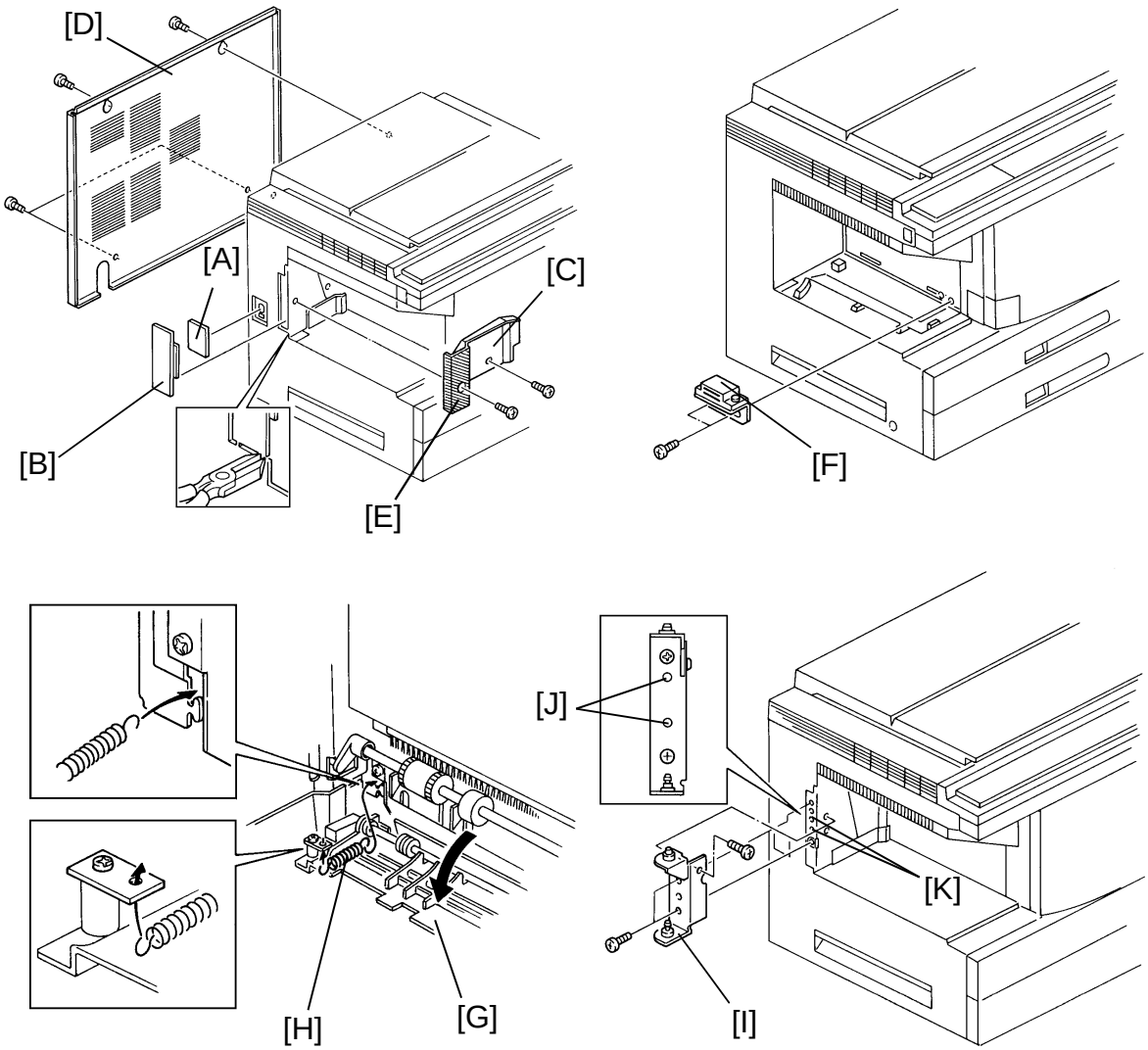
8.2 INSTALLATION PROCEDURE



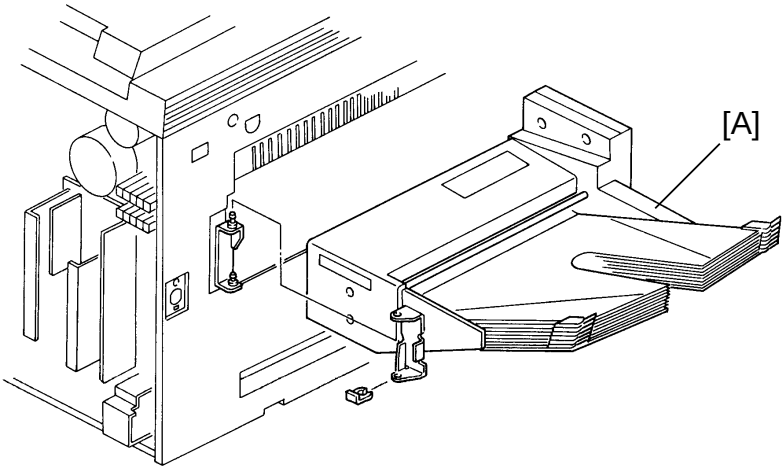
CAUTION: Unplug the copier power cord before starting the following procedure.

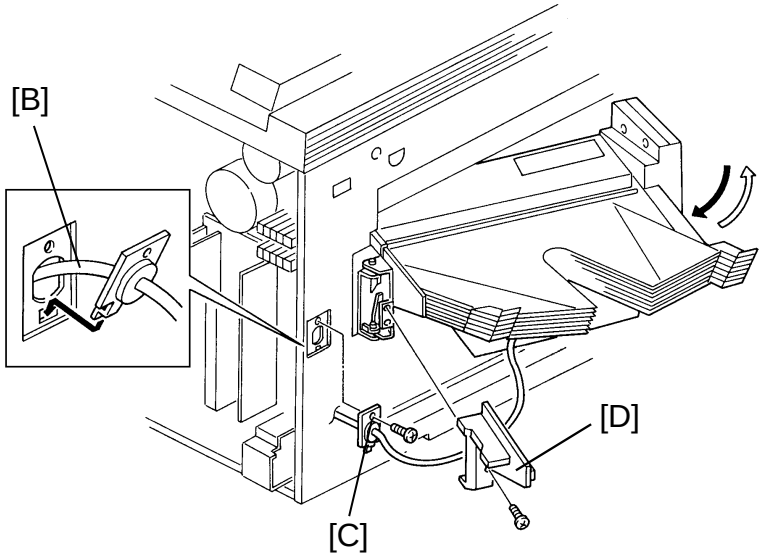
NOTE: • Do not grasp the sorter by the top cover and stay as shown by [A]. Hold both sides of the sorter as shown by [B]. This is to prevent anti-static brush [C] damage.

1. Remove the strips of tape [D] and styroform blocks [E].
2. Remove the copy tray [F].

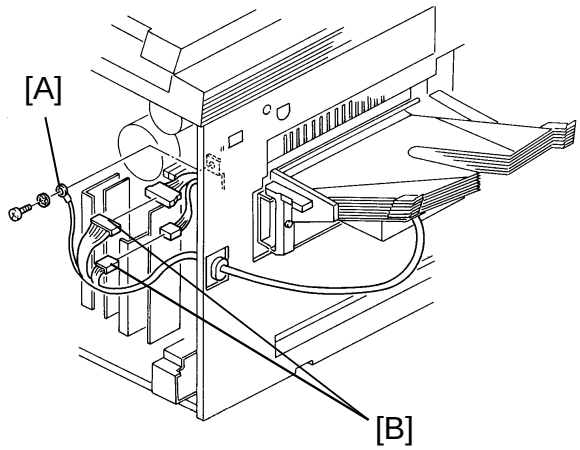


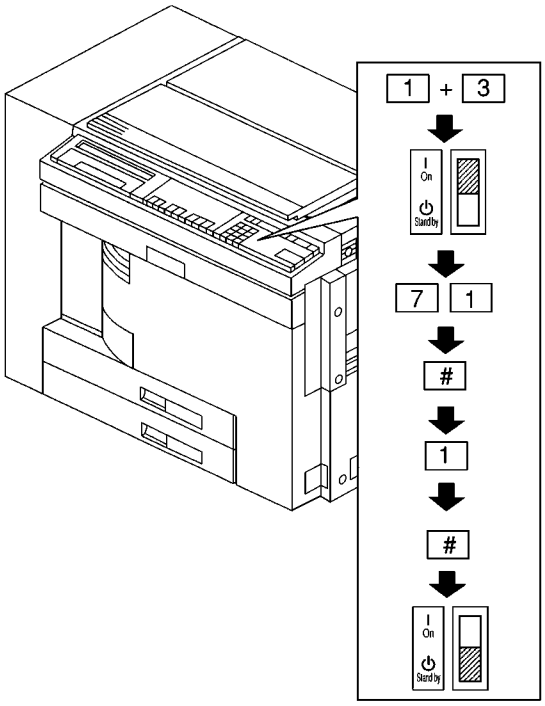
3. Remove the plastic cap [A] and cover plate [B] from the left cover with cutting pliers as shown.
4. Remove the left small cover [C] (2 screws) and rear cover [D] (remove 2 screws and loosen 2 screws).
5. Remove the portion [E] of the left small cover with cutting pliers and reinstall the rest of the left small cover (1 screw).
6. Install the magnet catch [F] on the exit cover (2 screws).
7. Open the exit cover [G] and hook the exit cover spring [H] and close the exit cover (duplex machine only).
8. Install the sorter holder bracket [I] (3 screws) so that the two holes [J] on the bracket align with the holes [K] on the copier frame as shown.





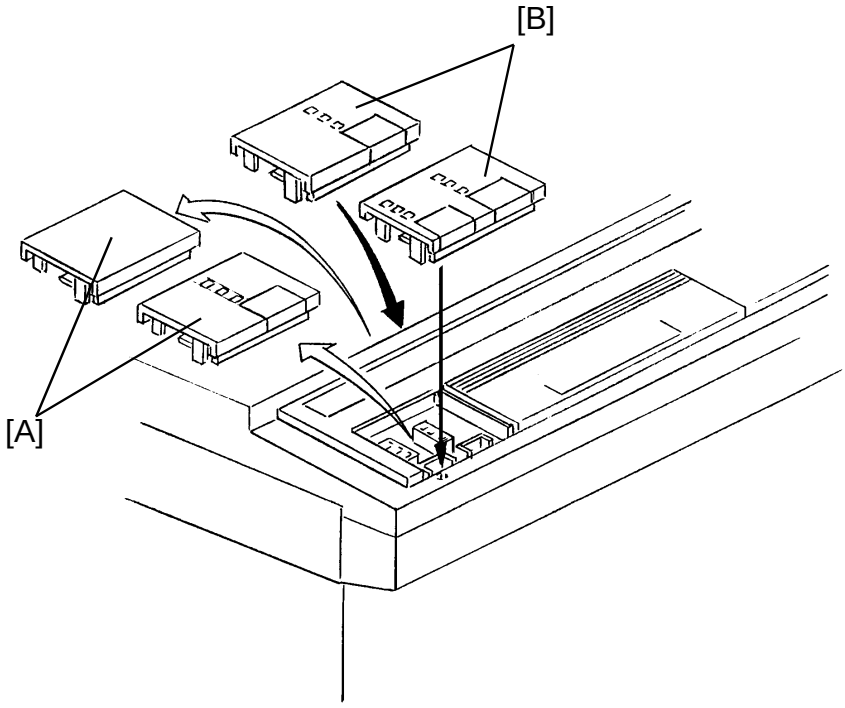
9. Install the sorter [A] on the sorter holder bracket (1 snap ring) as shown.
10. Close the sorter and run the harness [B] through the access hole.
11. Install the sorter harness bracket [C] (1 screw).
12. Install the sorter holder bracket cover [D] (1 screw).





13. Secure the sorter protective earth wire [A] (1 screw and toothed washer).
14. Connect the two connectors [B] as follows:
    4P white to 4P white free
    11P white to 11P white free
15. Reinstall all the covers.
16. Plug in the copier power cord.
17. While pressing both the "1" and "3" on the operation panel number keys, turn on the main switch in order to access the SP mode.

    NOTE: Release the number keys after confirming that the call service indicator and the copy counter number "0" and blinking.
18. Enter "71" using the number keys and then press the enter key.
19. Enter "1" and then press the enter key.
20. Turn off the main switch.

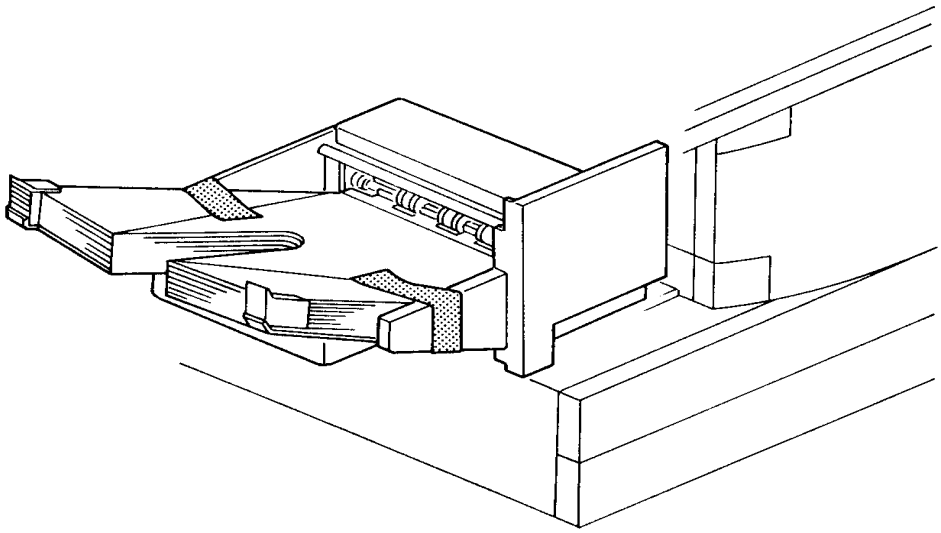


21. Remove the left plastic cover [A] on the operation panel and install the sorter key top and cover [B] instead.

    NOTE: The sorter key top and cover are provided as an accessory for the copier.

22. Turn on the main switch and check the sorter's operation.

9. PREPARATION FOR TRANSPORTATION

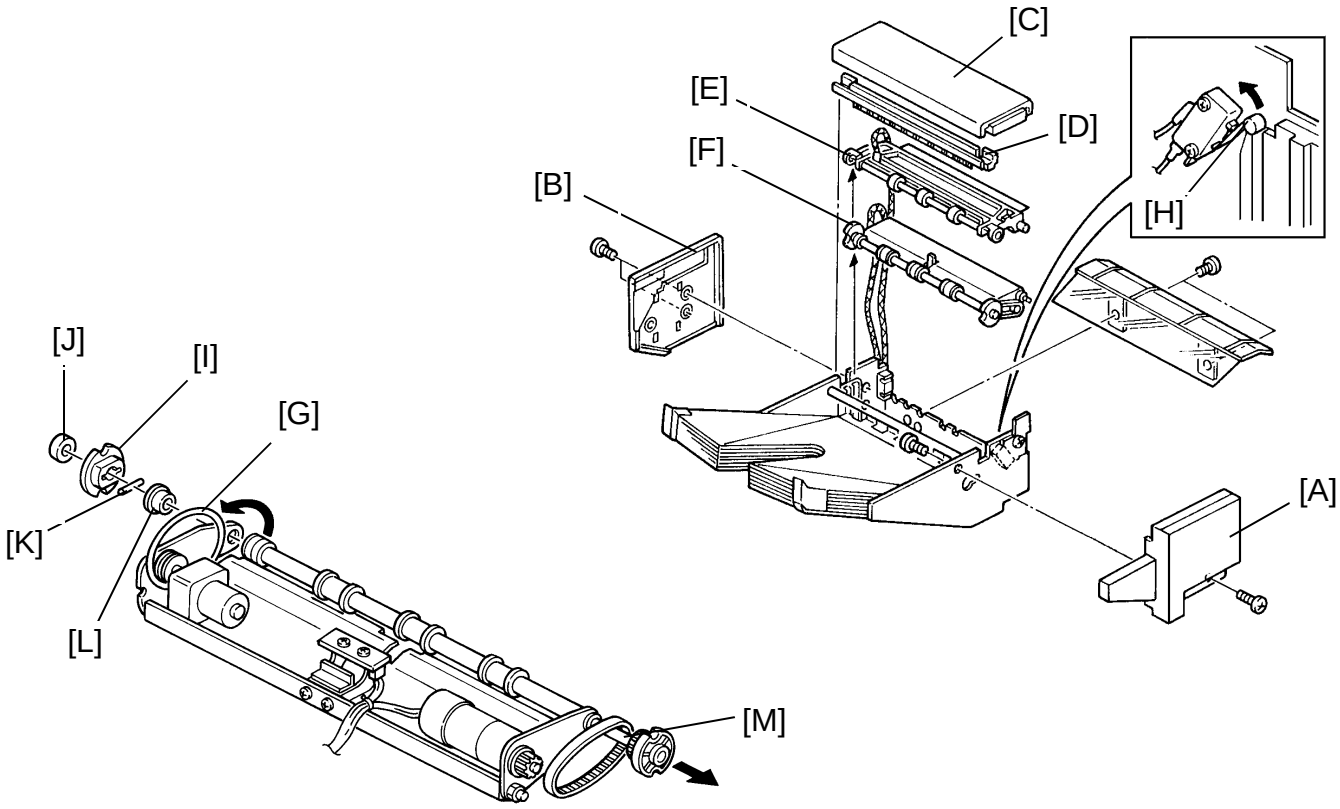


CAUTION: When removing and transporting the sorter, be careful not to carry it in a vertical position as the bins will become dislocated.

CAUTION: Before moving the sorter, be sure to prepare it for transportation as follows. The sorter may be badly damaged if it is moved without proper preparation.

1. If the bins are not at the home position, turn on the main switch of the copier to move the bins to the home position.
2. Secure the bins with strips of tape as shown in the illustration.
3. Remove the sorter from the copier. (See the Installation Procedure [Sorter] section.)

10. ROLLER DRIVE BELT REPLACEMENT



1. Remove the front covers [A] (2 screws) and rear cover [B] (2 screws).
2. Lift off the top cover [C].
3. Remove the top stay [D].

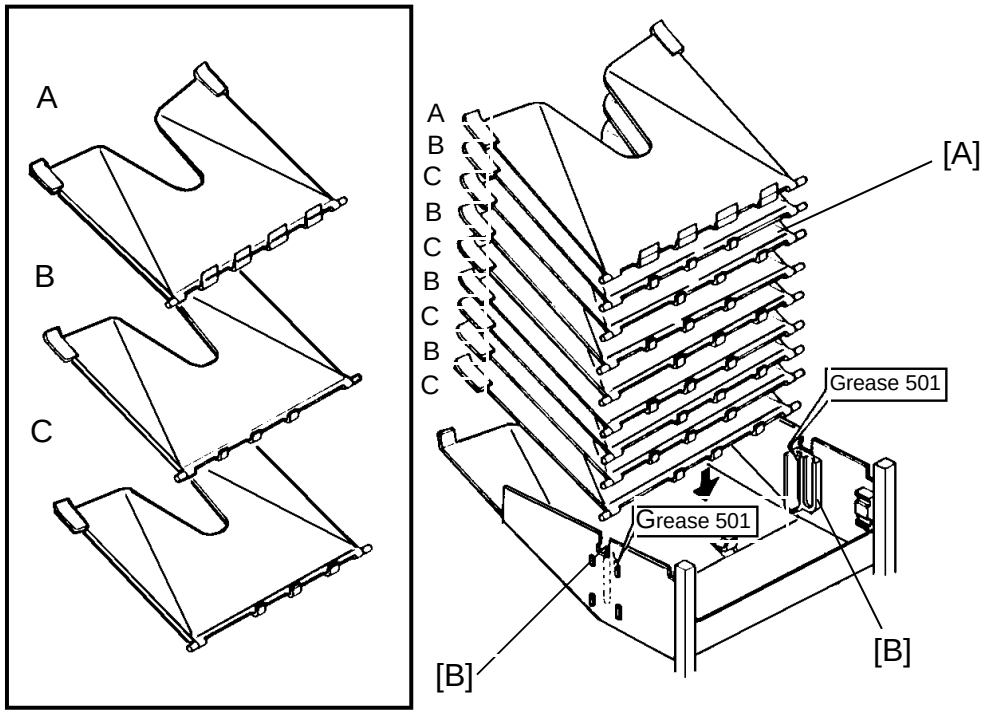
   NOTE: Be sure that the discharge brush on the top stay is facing the exit side of the sorter when reinstalling it.

4. Lift the upper paper guide [E] up and out of position.
5. Lift the lower paper guide [F] out of position and turn it over to remove the roller drive belt [G].

   NOTE: Be careful not to damage the sorter home position switch actuator [H] when reassembling.

6. Remove the transfer wheel [I], spacer [J], pin [K] and bushing [L] (1 C-ring).
7. Slide the wheel shaft [M] towards the front and remove the roller drive belt.

11. BIN GUIDE LUBRICATION



1. Remove the lower paper guide. (See Roller Drive Belt Replacement section.)
2. Remove all bins [A] from the bin guides [B].
3. Apply Grease 501 to the grooves of the bin guides.

   NOTE: There are three kinds of bins. Therefore, when installing the bins, be sure that they are installed in the correct order.