10-BIN SORTER
(MICRO - α)
(Machine Code: A557)

1. SPECIFICATIONS

Number of Bins: 10 bins

Paper Size for Bins: Sort/Stack Mode
Maximum - A3, 11" x 17"
Minimum - A5, 5 1/2" x 8 1/2"

Paper Weight: Sort/Stack Mode: 64 to 90 g/m^2 (17 to 24 lb)
Non-Sort/Stack Mode: 52 to 162 g/m^2 (14 to 43 lb)

Bin Capacity:

	Sort/Stack Mode (All Bins)	**Non Sort/Stack Mode (Top Bin)**
A4, 8 1/2" x 11" or less	20	100
B4, 8 1/2" x 14"	15	100
A3, 11" x 17"	10	100

Power Source: +5 volts and +24 volts from the copier

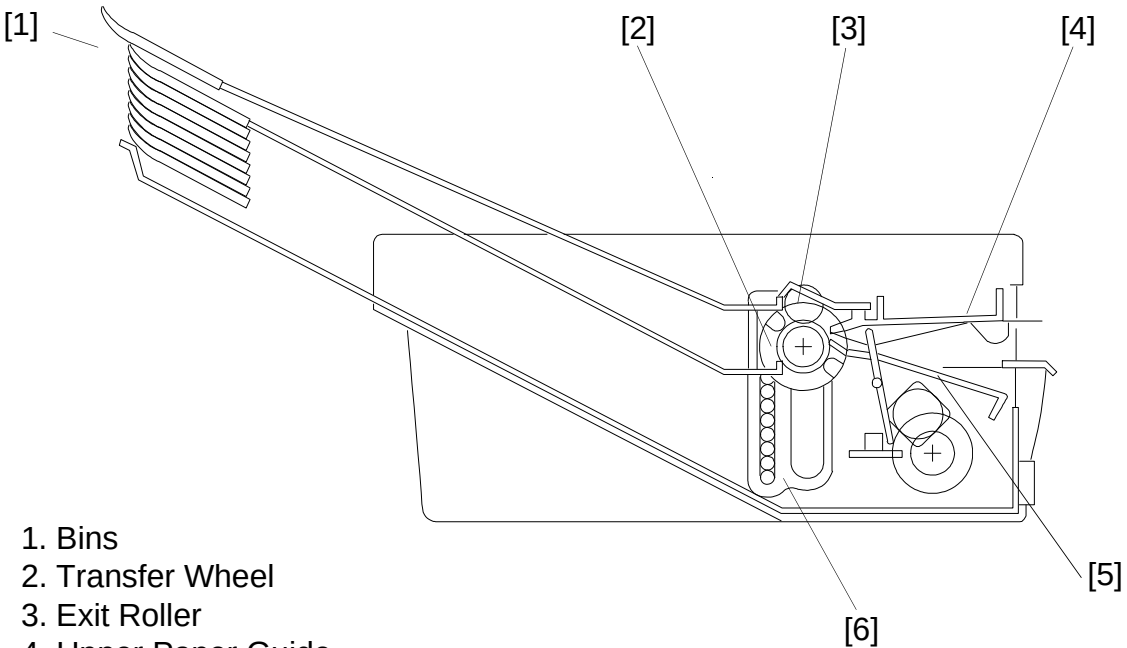
Power Consumption: 15 W

Dimensions: 402 mm x 455 mm x 217 mm
(W x D x H) (15.7" x 17.8" x 16.7")

Weight: 7.5 kg (16.5 lb)

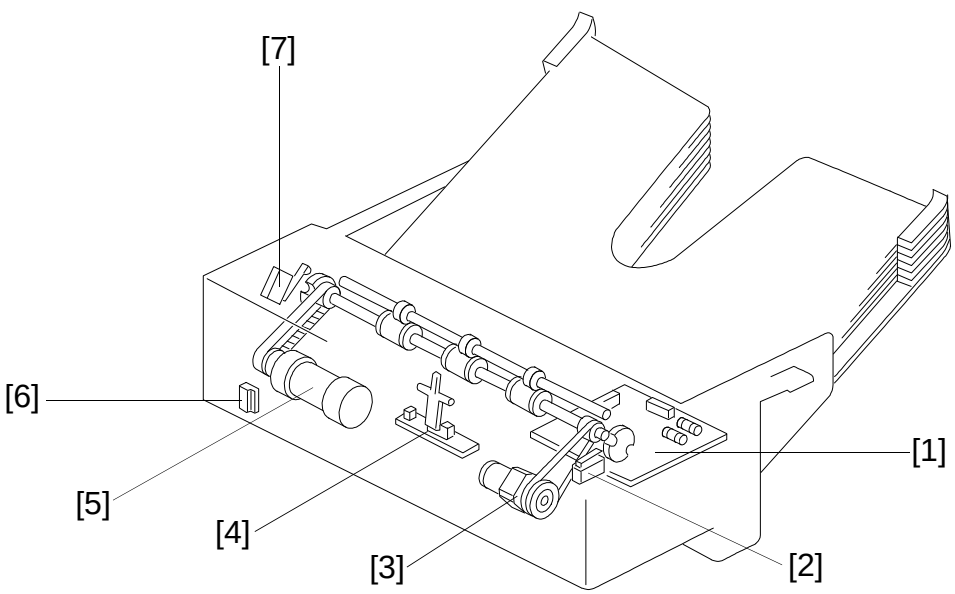
2. COMPONENT LAYOUT

— Mechanical Components —



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

— Electrical Components —



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

3. ELECTRICAL COMPONENT DESCRIPTIONS

Symbol	Name	Function	Index No.
Motors			
M1	Roller Drive Motor	This dc motor drives the lower exit rollers.	3
M2	Bin Drive Motor	This reversible dc motor moves the bins up or down.	5
Switches			
SW1	Wheel Switch	Detects the rotation of the transfer wheel and stops it in the correct position.	2
SW2	Sorter Switch	This reed switch becomes activated when the sorter is in the proper position (aligned next to the copier). It also works as a jam reset switch for the sorter.	6
SW3	Bin 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.	4
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 clear mode. In this mode, all copies are stacked in the first bin. The sorter also assumes clear mode when interrupt mode is selected.

Sorter operation begins when the copier sends the paper feed signal to the selected paper feed station. 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.

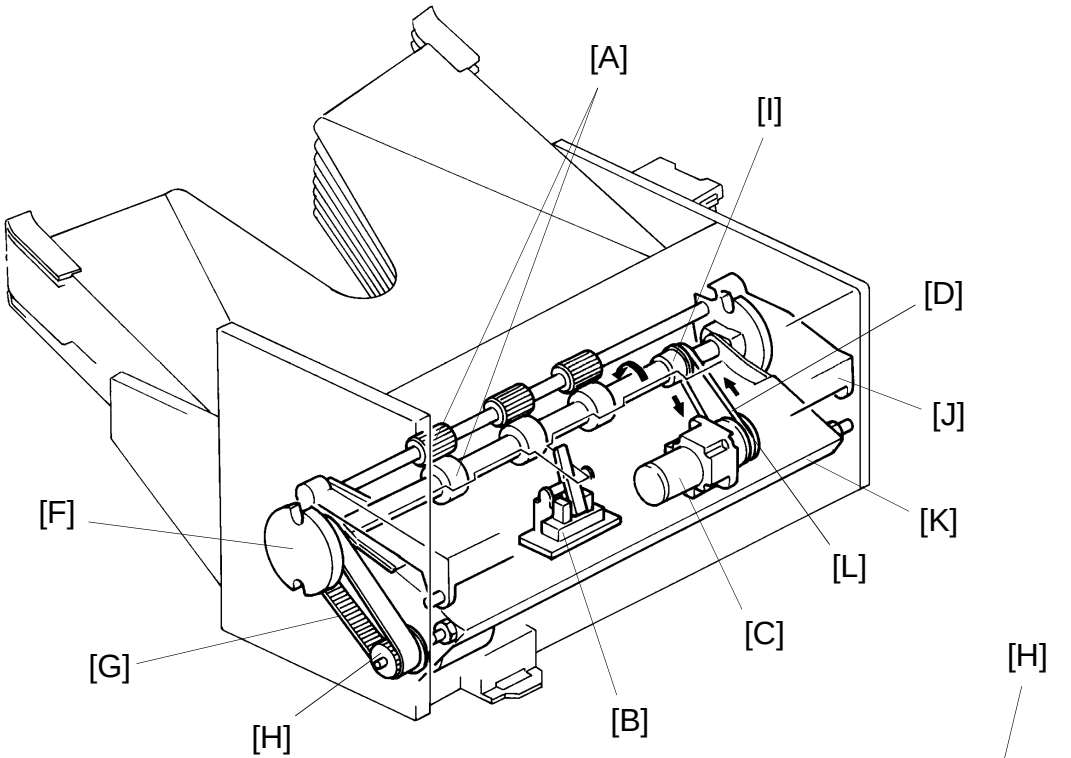
- Sort Mode -

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. At 250 milliseconds after the copy has gone through the paper sensor, the bin drive motor turns on to advance the bin one step.

- 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. At 250 milliseconds after the last copy of the original has gone through the paper sensor, the bin drive motor turns on to advance the bin one step.

5. EXIT ROLLER DRIVE MECHANISM

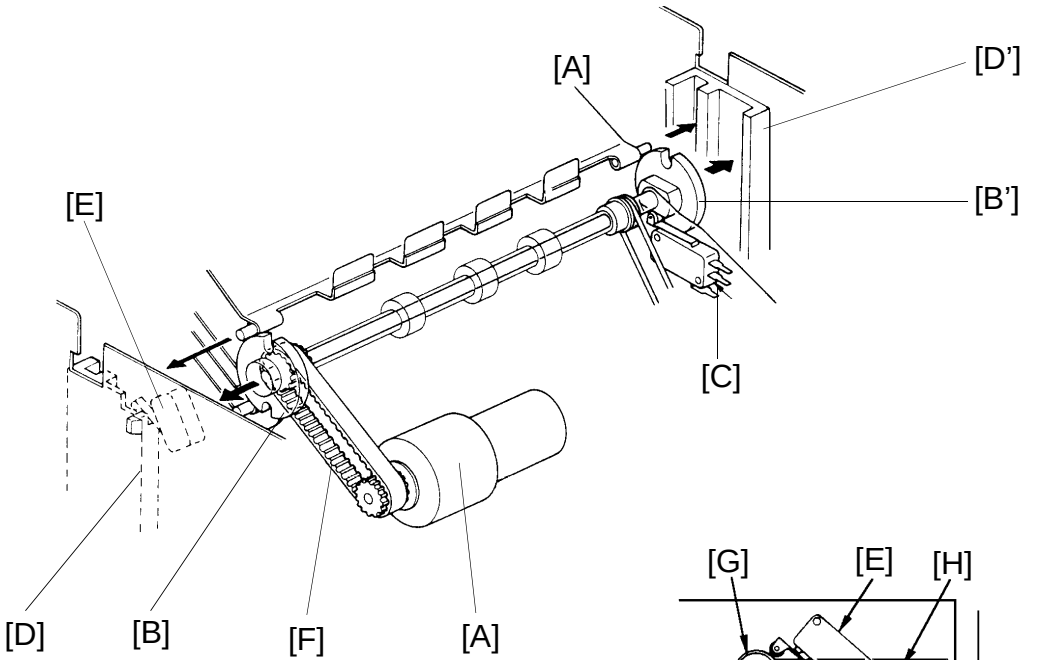


F: Transfer Wheel
G: Bin Drive Belt
H: Bin Drive Pulley
I: Exit Roller Pulley
J: Upper Paper Guide
K: Lower Paper Guide
L: Roller Drive Motor Pulley

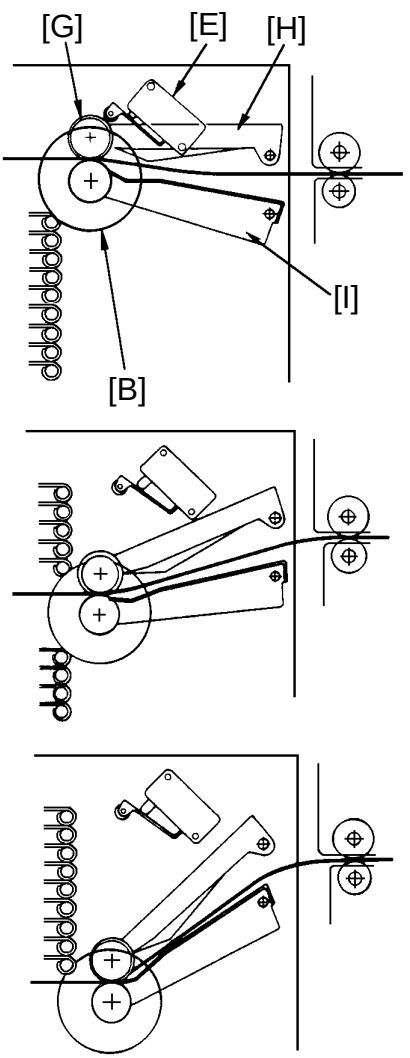
The exit rollers [A] take over paper transport from the copier. When the copier sends the paper feed signal to the selected paper feed station, the exit rollers start rotating. The exit rollers continue to rotate for 250 milliseconds after the copy paper has gone through the paper sensor [B].

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 10th bin (the 10th bin is permanently fixed in position). The upper and lower paper guides pivot up and down depending on the height of the bin to be picked up or released.

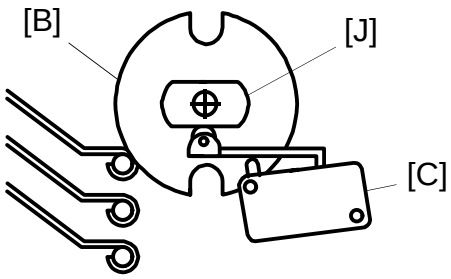
The bin home position switch [E] informs the CPU when all the bins are lowered.

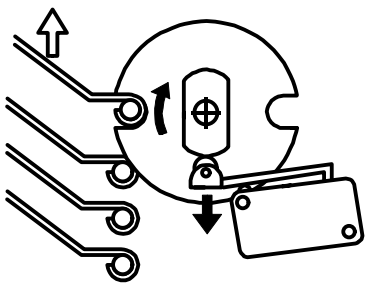
To move the bins up, the bin drive motor turns clockwise (as viewed from the front). A timing belt [F] turns the transfer wheels.

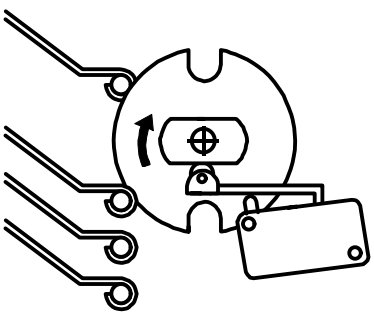
The transfer wheels have two slots in them 180 degrees apart. As the transfer wheels turn, these slots engage the bins and lift them up. Each time the transfer wheels turn 180 degrees, they raise one bin.

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

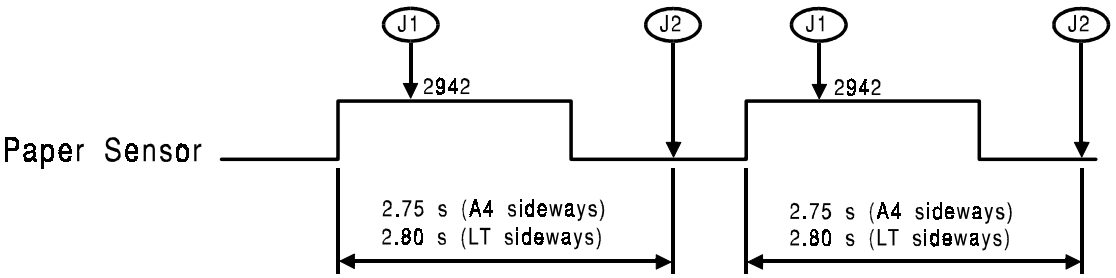
The CPU monitors the position of the bins through pulses generated by the wheel switch and the actuator cam [J]. The actuator cam has two flat sides that are 180 degrees apart and is mounted behind the rear transfer wheel. A pulse is generated each time one of the lobes of the actuator cam passes the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







7. MISFEED DETECTION



In addition to being used for the exit roller drive timing, the paper sensor checks for misfeeds in the sorter.

J1 - Paper Sensor On Check: 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).

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

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

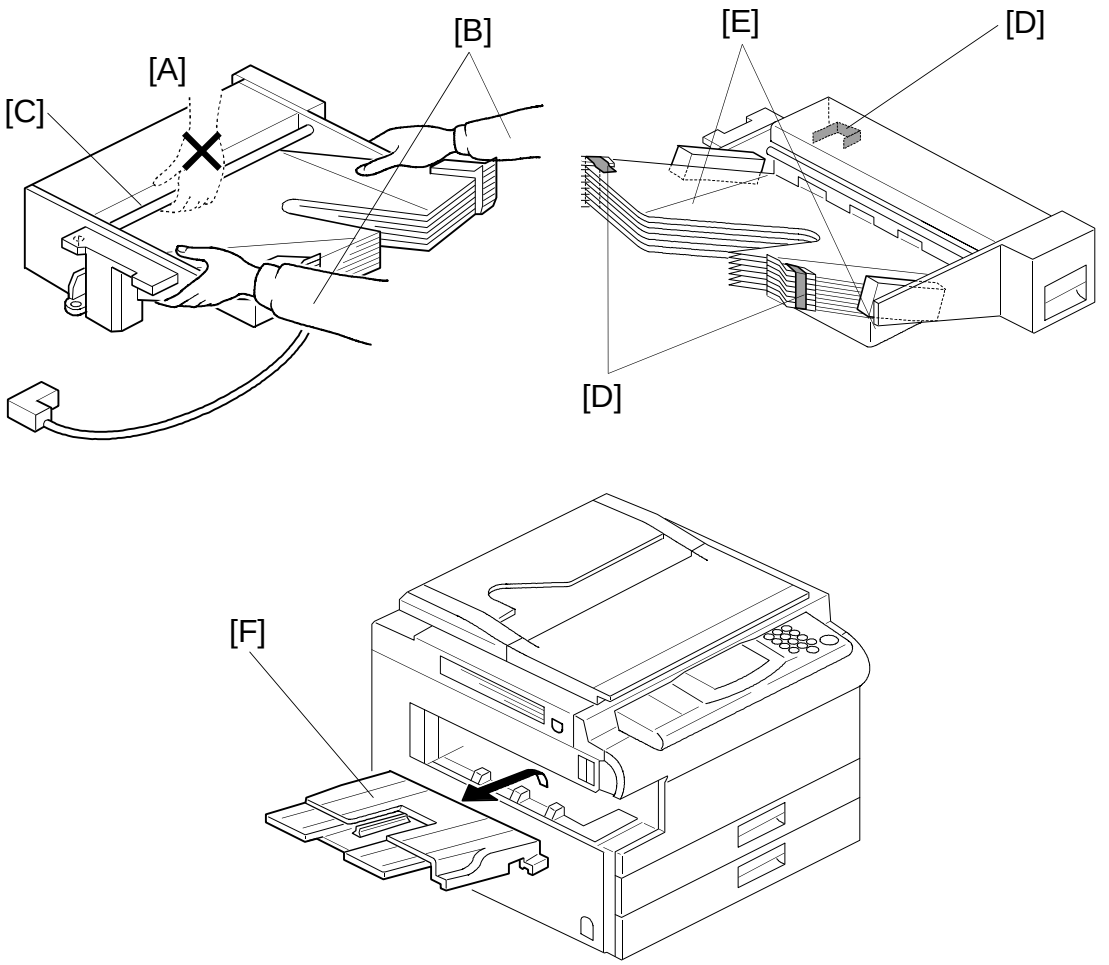
8. INSTALLATION

8.1 ACCESSORY CHECK

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

1. Magnet Catch 1
2. Sorter Holder Bracket 1
3. Tapping Screw - M4 x 6 3
4. Tapping Screw - M4 x 8 2
5. Snap Ring 1
6. Installation Procedure 1
7. New Equipment Condition Report 1

8.2 INSTALLATION PROCEDURE



NOTE: (1) Keep the shipping retainers after installing the machine. They will be reused if the machine will be transported to an another location in the future.

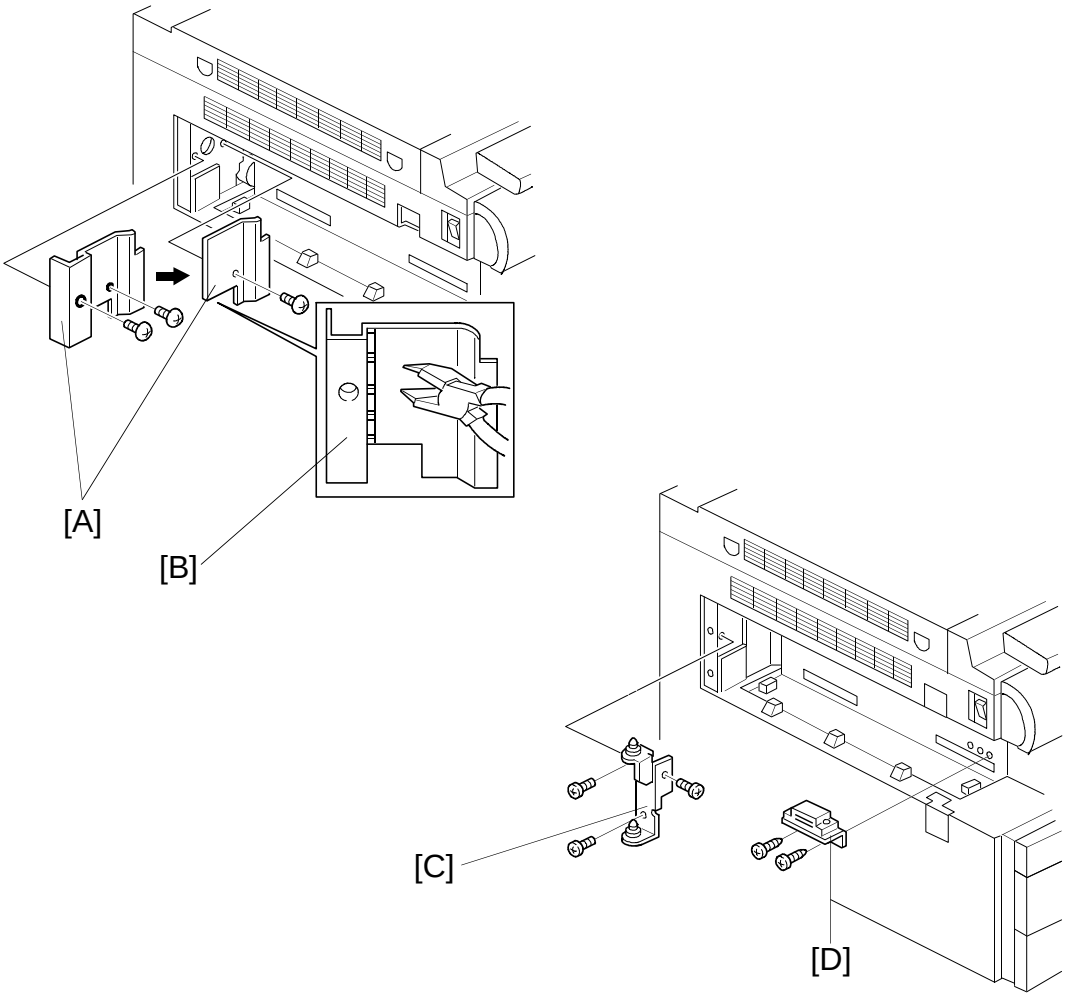
(2) Proper installation of the shipping retainers is required in order to avoid any transport damage.

(3) 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 damage to the anti-static brush [C].

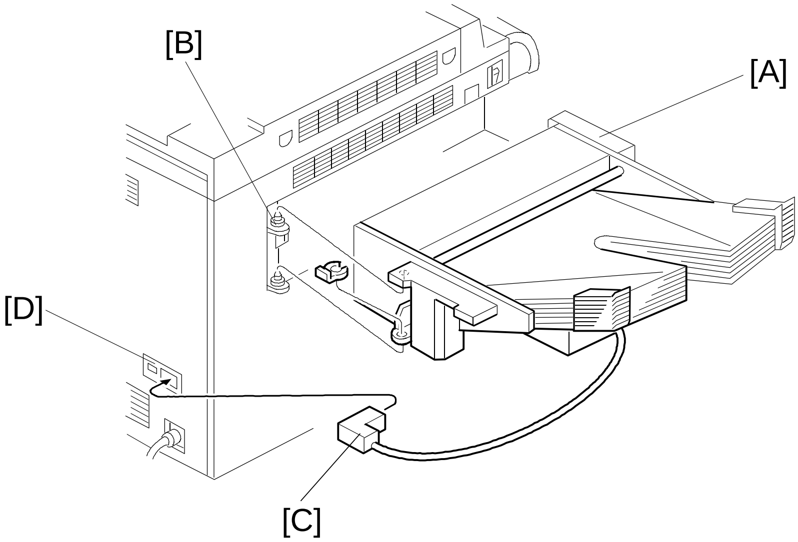
! CAUTION

Unplug the copier power cord before starting the following procedure.

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



3. Remove the cover plate [A] (2 screws).
4. Cut the links in the cover plate [A] with nippers to remove the smaller part [B].
5. Remount the cover plate [A] (1 screw).
6. Mount the sorter holder bracket [C] (3 tapping screws) on the copier frame as shown.
7. Mount the magnetic catch [D] on the exit cover (2 self-tapping screws).

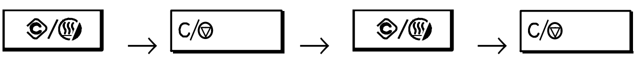


8. Install the sorter [A] on the sorter holder bracket [B] (1 snap ring) as shown.

9. Connect the connector [C] to the socket [D] on the rear side of the copier.

10. Plug in the copier power cord and turn on the main switch.

11. Press the following sequence of keys to enter SP mode.



NOTE: (1) Hold the last [C/⊘] key for more than 3 seconds.

(2) Upon entering SP mode, "1" blinks in the 3rd digit of the copy counter, the Auto Image Density indicator starts blinking and the reduce/enlarge indicator turns off.

(3) The above procedure must be finished within 20 seconds.

12. Press the following sequence of keys to change the "SP6-101" value to "1".

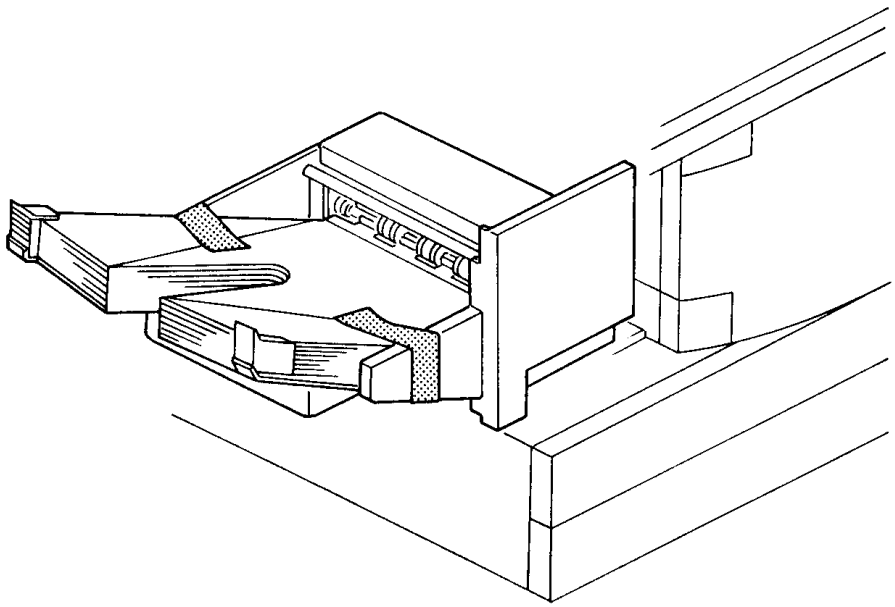
[6] → **[R/#]** → **[1]** → **[0]** → **[1]** →

[R/#] → **[1]** → **[R/#]**

13. Turn the main switch off and on.

14. Check the sorter's operation.

9. PREPARATION FOR TRANSPORTATION



! CAUTION

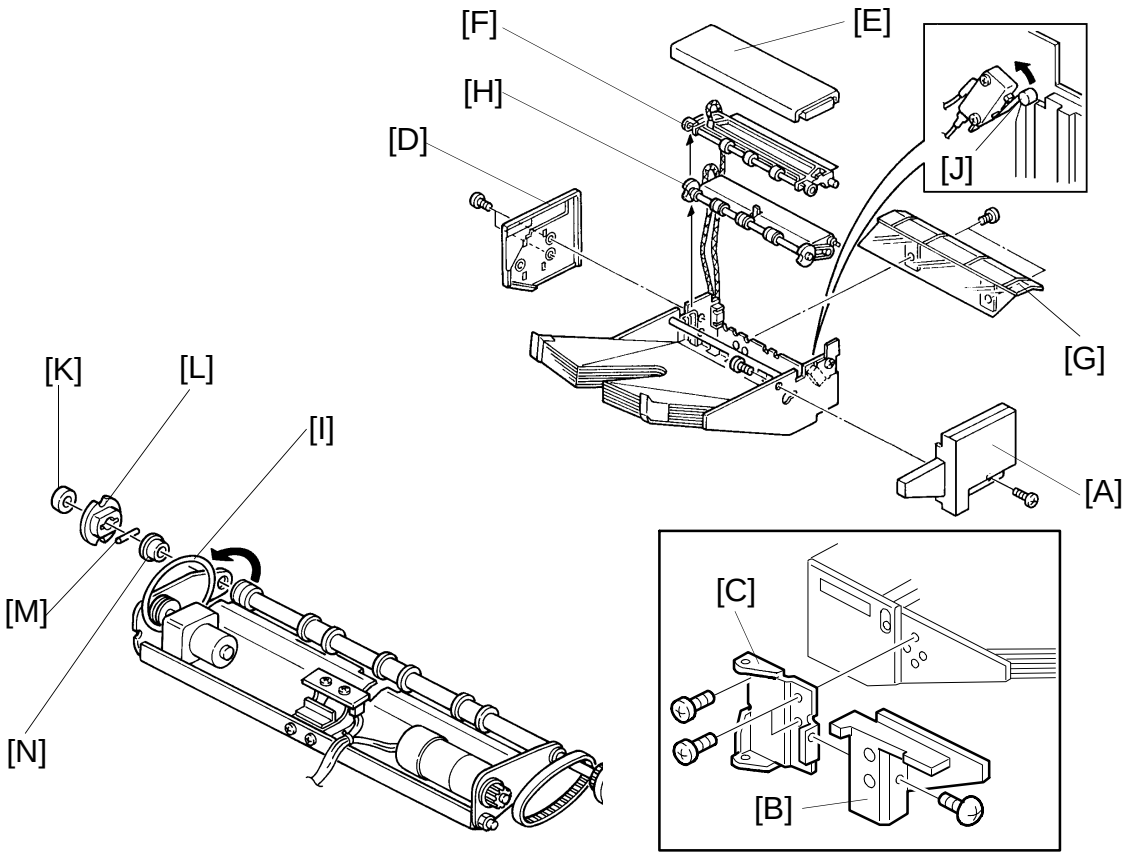
When removing and transporting the sorter, be careful not to carry it in a vertical position as the bins will become dislocated.

! CAUTION

Refore 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.)

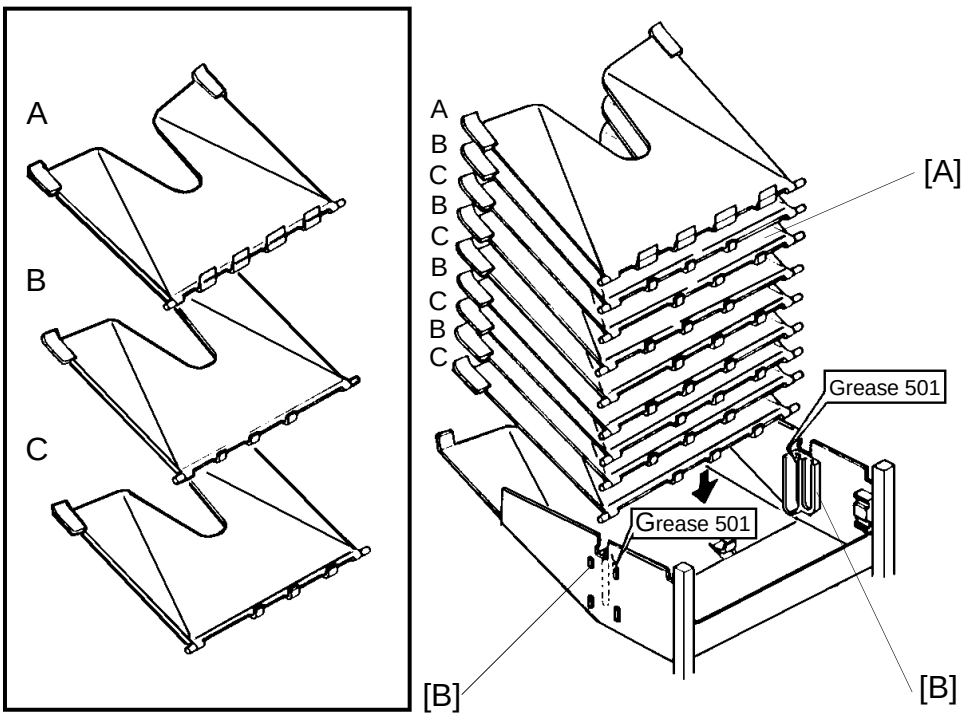
10. ROLLER DRIVE BELT REPLACEMENT



1. Remove the front cover [A] (1 screw).
2. Remove the rear cover [B] (1 screw) and the sorter hinge [C] (2 screws).
3. Remove the rear flat cover [D] (2 screws).
4. Lift off the top cover [E].
5. Lift the upper paper guide [F] up and out of position (1 grounding wire).
6. Remove the entrance guide bracket [G] (2 screws).
7. Lift the lower paper guide [H] out of position and turn it over to remove the roller drive belt [I].

   NOTE: Be careful not to damage the bin home position switch actuator [J] when reassembling.
8. Remove the transfer spacer [K], wheel [L], pin [M], and bushing [N] on both sides of the shaft.
9. Slide the wheel shaft towards the front and replace the roller drive belt.

11. BIN GUIDE LUBRICATION



1. Remove the lower paper guide. (See Roller Drive Belt Replacement.)
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 types of bins (types A, B, and C in the above diagram). Therefore, when installing the bins, be sure that they are installed in the correct order.

MICRO(A557)POINT TO POINT DIAGRAM