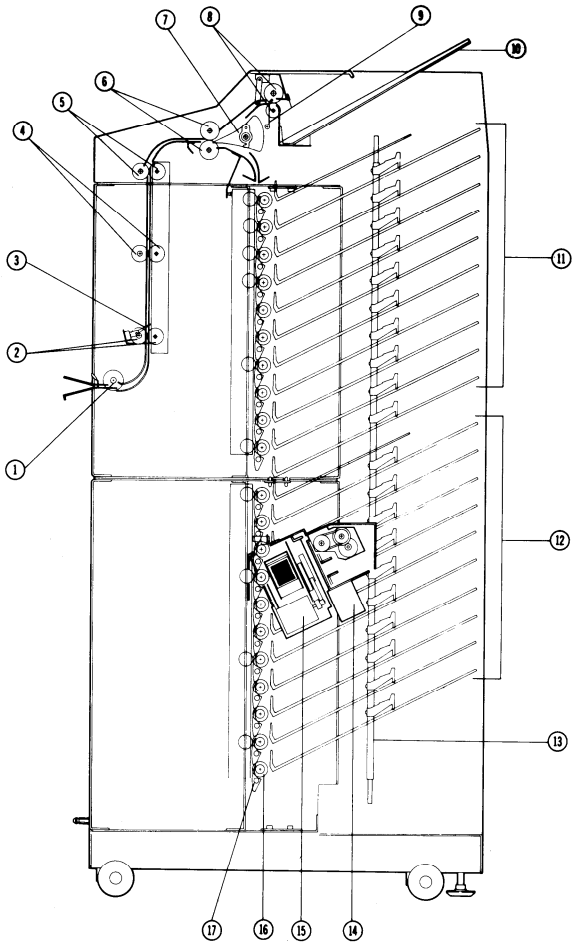
SPECIFICATIONS

Configuration	Console
Paper Transport System	Roller
Number of bins	20 + Proof Tray
Paper Size	Sort or Stack Mode: Maximum A3 or 11" x 17" Minimum B6 or 5.5" x 8.5" Staple Mode: Maximum A3 or 11" x 17" Minimum B5 or 8.5" x 11"
Paper Weight	Maximum 93 g, 24 lb Minimum 52 g, 14 lb
Bin Capacity	Sort: 70 sheets/bin Stack: 50 sheets/bin
Proof Tray Capacity	250 sheets
Dual Sorter Mode	Two groups of 10 bins each
Number of Sheet Stapled	2 to 30 sheets
Stapler Capacity	5,000 staples per cartridge
Staple Position	About 5 millimeters from the top-left corner of the paper.
Staple Time	20 bins: 40 seconds maximum
Power Source	100 volt 50/60 Hz (from copier)
Maximum Power Consumption	200 watts
Dimensions (W x D x H)	513 x 819 x 1038 mm 20.2" x 32.2" x 40.9"
Weight	120 Kg 263.7 lb
Main Copier Interface	Optic Cables

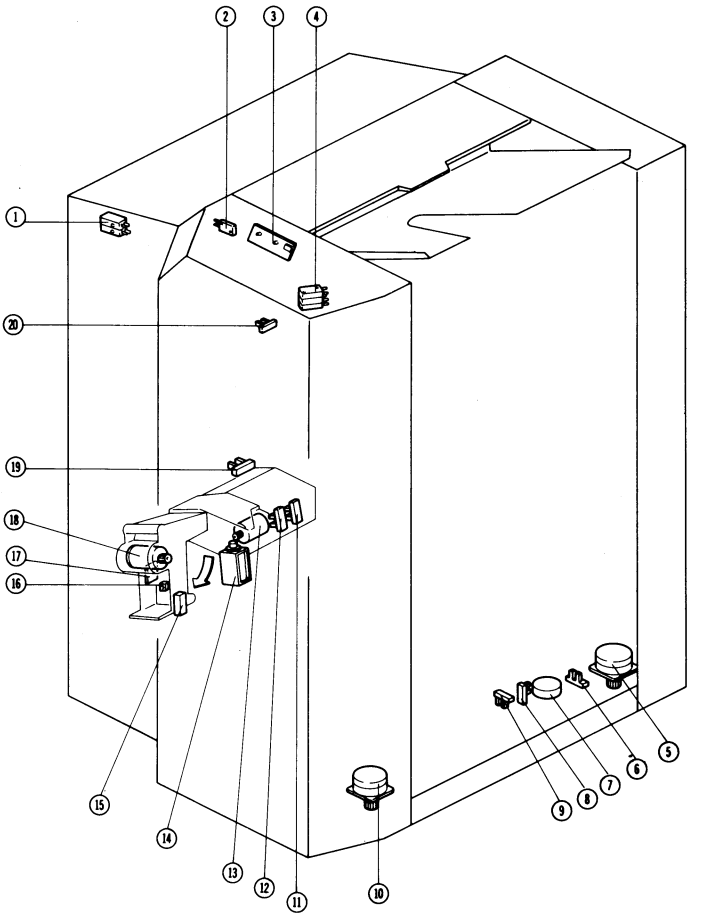
COMPONENT LAYOUT

1. Mechanical Component Layout

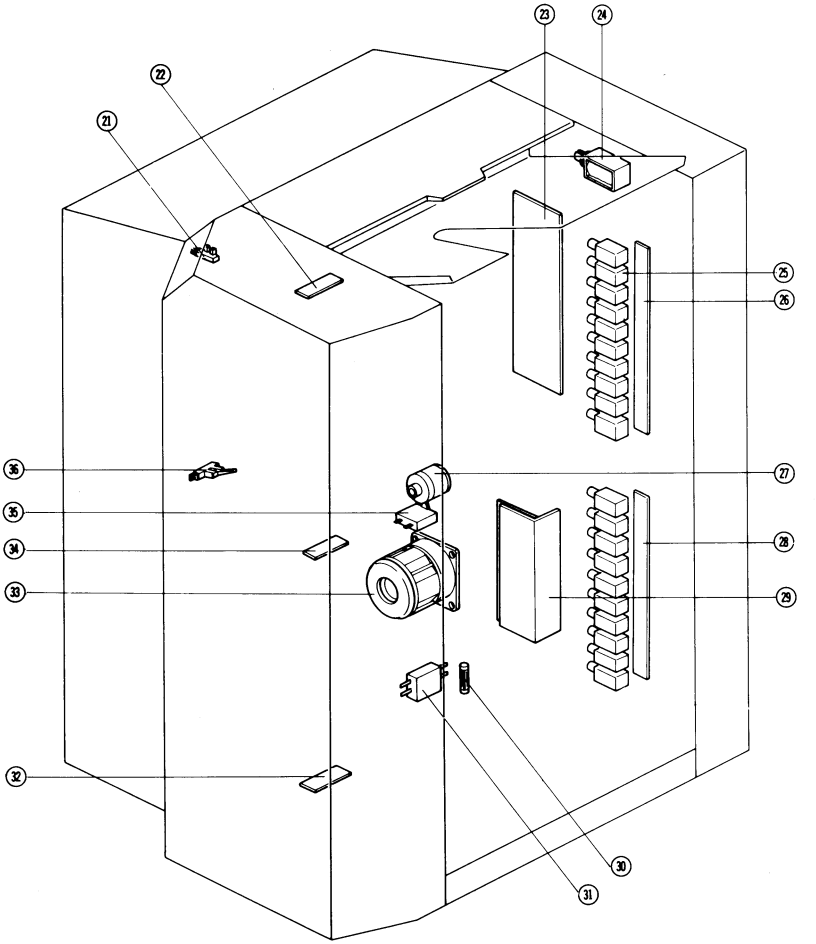


1. Entrance Roller
2. First Transport Rollers
3. Timing Sensor Feeler
4. Second Transport Rollers
5. Third Transport Rollers
6. Fourth Transport Rollers
7. Turn Gate
8. Exit Rollers
9. Exit Sensor Feeler
10. Proof Tray
11. Upper Bins
12. Lower Bins
13. Side Plate
14. Gripper Assembly
15. Stapler
16. Distribution Roller
17. Bin Gate

2. Electrical Component Layout



1. Left Door Safety Switches (x2)
2. Top Cover Safety Switch
3. Indicator Board
4. Right Door Safety Switches (x3)
5. Side Plate Motor
6. Side Plate HP Sensor
7. Jog Motor
8. Jog HP Sensor
9. Side Plate Position Sensor
10. Staple Unit Motor
11. Gripper Forward Sensor
12. Gripper HP Sensor
13. Gripper Motor
14. Gripper Solenoid
15. Paper Sensor
16. Staple End Sensor
17. Stapler HP Sensor
18. Stapler Motor
19. Staple Unit Position Sensor
20. Staple Unit HP Sensor

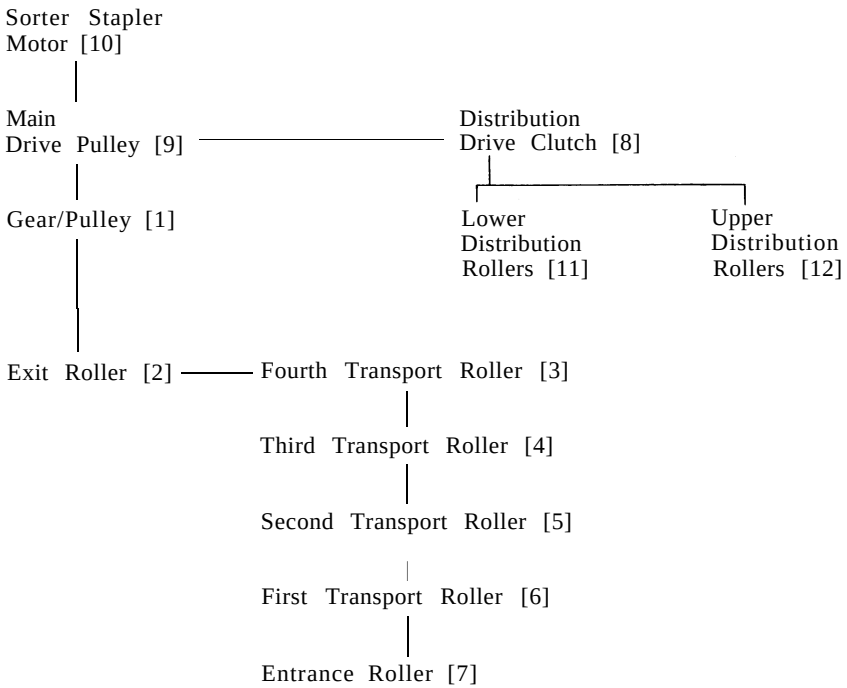


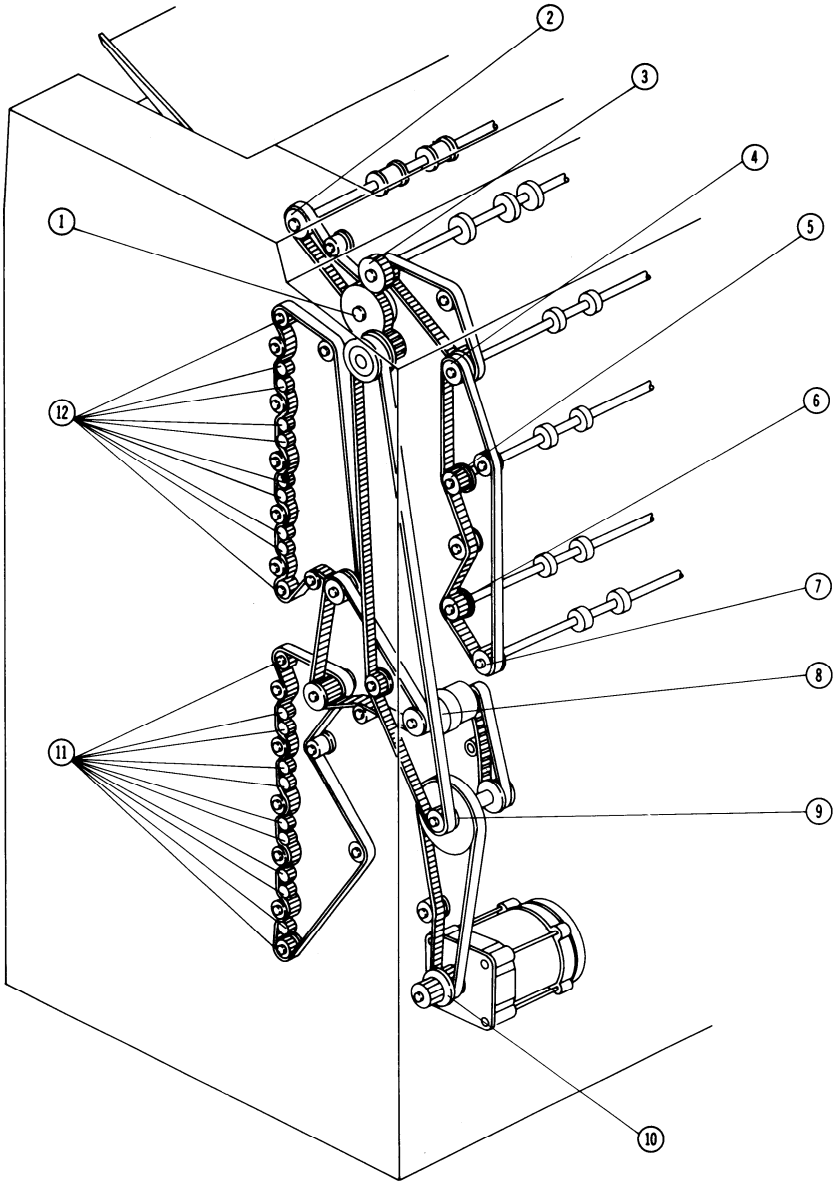
21. Exit Sensor
22. Upper Bin/Jam Sensor Board
23. Mmin Board
24. Turn Gate Solenoid
25. Bin Solenoid
26. Upper Solenoid Board
27. Distribution Drive Clutch
28. Lower Solenoid Board
29. DC Power Supply Board
30. Fuse
31. Noise Filter (220, 240 volts only)
32. Lower Bin/Jam Sensor Board
33. Sorter Stapler Motor
34. Sensor LED Board
35. Sorter Stapler Motor Capacitor
36. Timing Sensor

3 Drive Layout

The drive power distribution mechanism is shown in the illustration on the facing page.

The drive train is as follows:

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ELECTRICAL COMPONENT DESCRIPTION

Motors	
Sorter Stapler (Ml)	Drives the rollers. (100 Vac)
Side Plate Drive (M2)	Drives the side plate side to side according to the paper size. (dc stepper)
Staple Unit (M3)	Drives the staple unit up or down to the appropriate bin. (dc stepper)
Stapler (M4)	Feeds the staples and drives the stapler hammer. (dc brush)
Gripper (M5)	Drives the gripper forward into the bin to grip the copies and bring them to the stapling position. (dc brush)
Jog (M6)	Jogs (pivots) the side plate to align the copy against the side plate of the bin. (dc stepper)

Clutch	
Distribution Drive (MC1)	Drives the rollers in the distribution section.

Solenoids	
Bin (SOL1 to 20)	Opens and closes the bin gate to direct the copies into the appropriate bin.
Turn Gate (SOL21)	Opens and closes the bin gate to direct the copies into either proof tray or the bins.
Gripper (SOL22)	Opens and closes the bin gate to drive the grippers to grip copies on the bins.

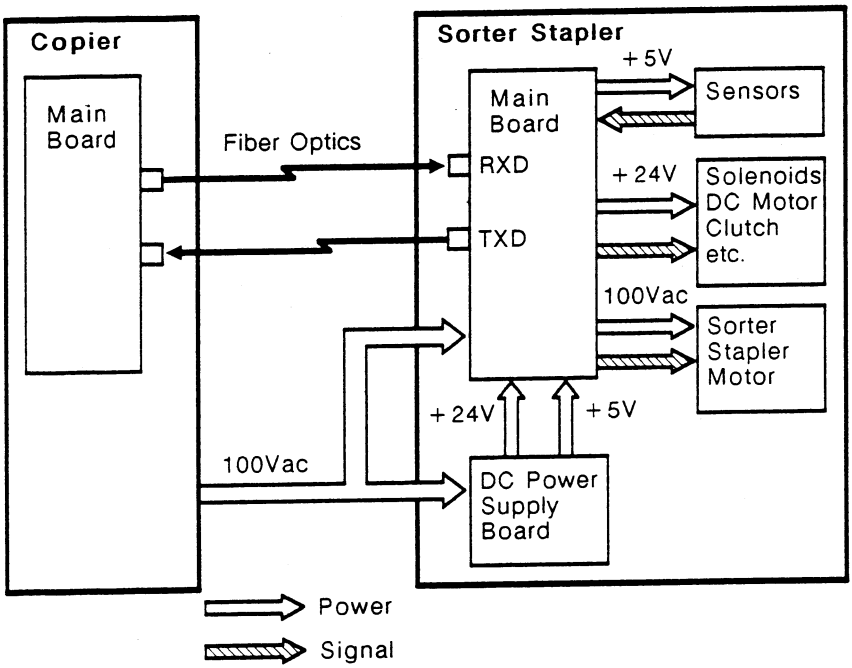
Switches	
Right Door Safety (SW1 to 3)	Control the 100 volt ac, 24 volt dc, and 5 volt dc lines.
Left Door Safety (SW 4 to 5)	Control the 100 volt ac line and provides input to the main board on the status of the left cover.
Top Cover Safety (SW6)	Provides input to the main board on the status of the top cover.

Sensors	
Exit Sensor (S1)	Detects paper jams at the sorter exit. (Proof tray)
Lower Bin Copy (S2)	Detects whether copies are in the lower bins.
Lower Jam (S3)	Jam detector
Upper Bin Copy (S4)	Detects whether the copies are in the upper bins.
Upper Jam (S5)	Jam detector
Timing (S6)	Detects whether copies are in the vertical transport guide plates
Side Plate HP (S7)	Detects if the side plate is in the home position.
Side Plate Position (S8)	Detects the position of the side plate.
Jog HP (S9)	Detects the side plate jogging home position.
Staple Unit HP (S10)	Detects the home position of the staple unit.
Stapler HP (S11)	Detects the home position of the stapler.
Staple End (S12)	Detects whether staples run out.
Paper (S13)	Detects whether copies are under the hammer
Staple Unit Position (S14)	Detects the position of the staple unit.
Gripper Forward (S15)	Detect if the gripper is in the forward position.
Gripper HP (S16)	Detects whether the gripper is at the home position.

Circuit Boards	
Lower Solenoid (PCB1)	Interfaces between the lower bank of bin gate solenoids and the main board.
Upper Solenoid (PCB2)	Interfaces between the upper bank of bin gate solenoids and the main board.
Sensor LED (PCB3)	Light source for bin jam sensors.
Main (PCB4)	Controls all sorter stapler functions.
DC Power Supply (PCB5)	Converts 100 volts ac to 5 volts dc and 24 volts dc, and supplies power to all dc components.
Indicator (PCB6)	This indicator board has a Staple End and Stapler Operation indications. NOTE : Staple End indication turns on only when two sorter staplers are installed. Stapler Operation indicator is displayed while the stapler motor is on.

Others	
Noise Filter (O1)	Removes electrical noise generated by the copier and the sorter stapler. (220, 240 volts version only as required by TUV)

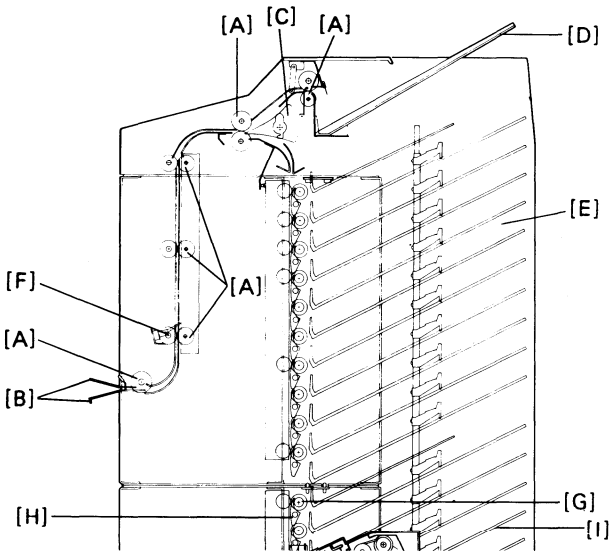
OVERALL MACHINE CONTROL



The sorter stapler dc power supply board and the main board receives 100 volts ac from the copier where it is converted to +5 and +24 volts dc and supplied to the sorter stapler main board.

The copier and sorter stapler main boards communicate via optical fibers (RXD and TXD). The sorter stapler main board supplies +5 volts to each sensor, +24 volts to other dc components, and 100 volts ac to the sorter stapler motor.

BASIC OPERATION



- From copier exit section to turn gate section -
The six rollers [A] start turning when the start key is pressed. Copies exiting the copier pass through the entrance guides [B] and are fed by the six rollers to the turn gate [C] section.

- From turn gate section to proof tray (normal mode) -
In normal mode, the turn gate is flush with the proof tray guide plate, so copies are directed to the proof tray [D].

- From turn gate section to bin (sort and stack modes) -
In sort and stack mode, when the paper feed of the copier starts, the side plate [E] moves into position according to the paper size. When the leading edge of the copy actuates the timing sensor [F], the turn gate raises and the distribution rollers [G] start rotating.

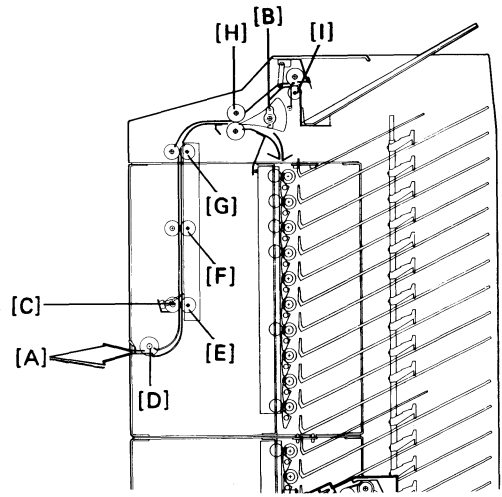
The copies are then directed toward the distribution rollers. The appropriate bin gate [H] opens and the copies are delivered to each bin [I]. The side plate then jogs to square the copies.

- Grip (Staple Mode) -
When the copy of the last page of the originals is delivered to the first bin, the staple unit is lowered. The grippers move forward, grip the copies, and bring them up underneath the stapler. The stapler staples the copies. The grippers open and the copies are pushed back into the bin.

- Preparation for next cycle -
When the final set of copies is stapled, the staple unit is raised to the home position. When all the copies have been removed from the bins, the side plate returns to the side plate home position.

MECHANICAL OPERATION

1. Transport Section



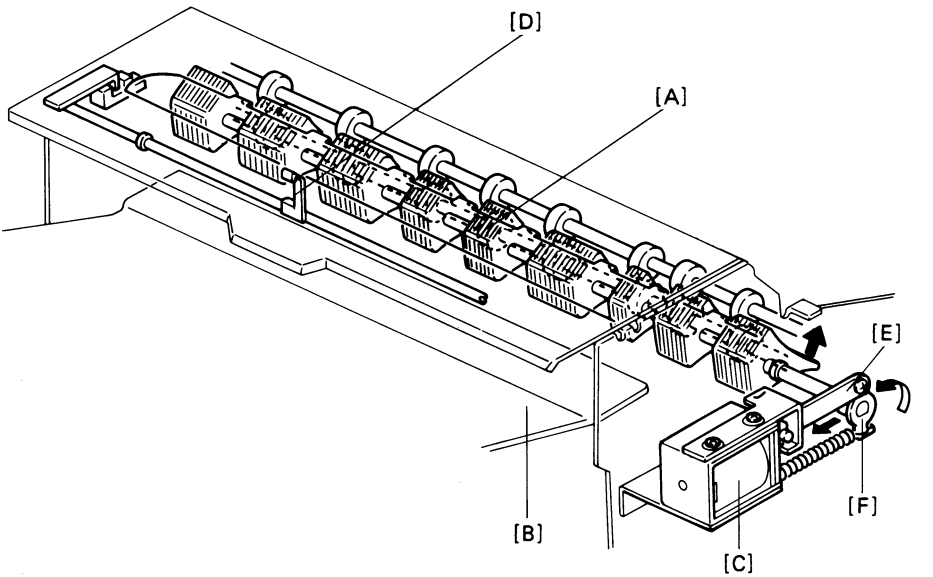
- Overview -
The transport section consists of the transport rollers and the guide plate.

When the Start key is pressed, the sorter stapler motor turns on, and the six rollers tabulated below start turning. Copies are transported by the rollers from the entrance guides [A] through the guide plate to the turn gate [B] section. The timing sensor [C], located at the center of the guide plate, detects the leading edge of each copy. The CPU uses this time data to control the bin gate solenoid on/off timing.

- Speed up -
The transport rollers gradually increase speed between the copier exit and the turn gate section as follows:

Name of Roller	Speed
Copier exit roller	380 mm/sec
Entrance [D] and first [E] transport rollers	437 mm/sec
Second [F] and third [G] transport rollers	510 mm/sec
Fourth [H] and exit [I] rollers	530 mm/sec

2. Turn Gate Section

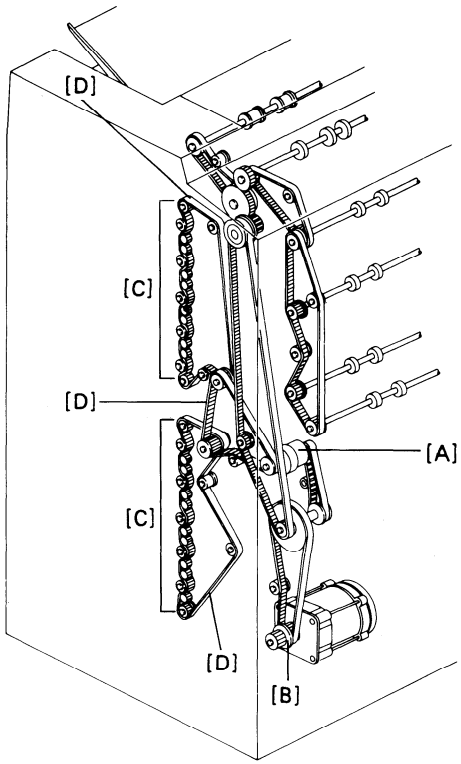


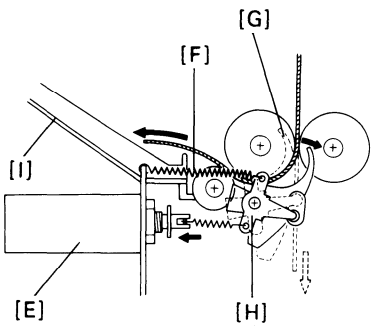
- Overview -
The turn gate section consists of the turn gate [A], exit rollers, guide plates, and proof tray [B].

- Turn gate in normal mode -
In the normal feed mode, the turn gate solenoid [C] stays off and the turn gate remains flush with the proof tray guide plate, allowing sheets to pass over the gate to the proof tray. An exit sensor [D] is used to detect misfeeds is located just before the proof tray.

- Turn gate in sort, stack, or staple mode -
In sort, stack, or staple mode, when the paper feed of the copier starts, the turn gate solenoids turns on. The turn gate link [E] then rotates the gate lever [F], raising the turn gate into the paper path so that sheets are directed downward to the sorter bins. When the solenoid turns off, the turn gate lowers.

3. Distribution Section





- Summary -

The distribution section has the distribution rollers, 21 bin gates, and the 21 bin gate solenoids. If only one sorter staler is installed on the the copier, the 21th bin gate is always opened and the 21th bin gate solenoid is not used. (The spring connecting the bin gate solenoid and the bin gate is disconnected.)

- Distribution Roller -

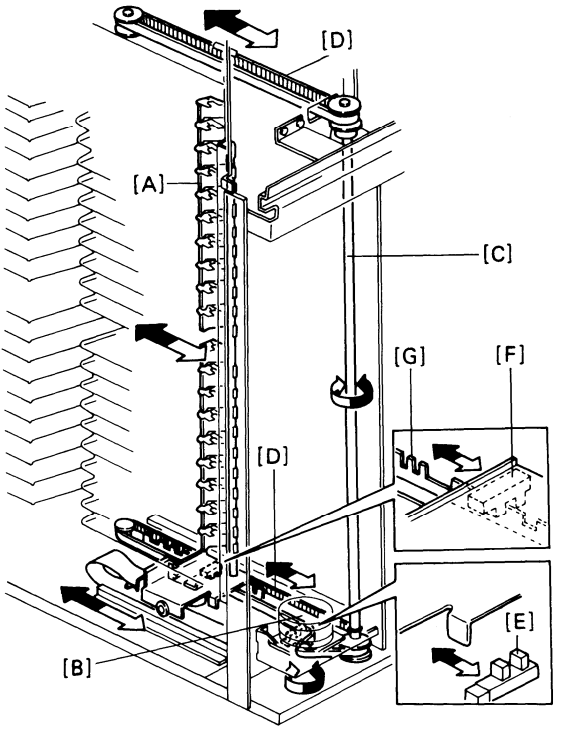
In sort, stack, or staple mode, when the paper feed of the copier starts, the distribution clutch [A] turns on. The rotation of the sorter stapler motor [B] is transmitted to the the distribution rollers [C] via the timing belts [D].

- Bin gate -

When a bin gate solenoid [E] is off, the return spring [F] holds the bin gate [G] out of the paper path, allowing the copies to pass to a lower bin.

The CPU receives signals from the timing sensor and turns on the appropriate bin gate solenoid. The bin gate lever [H] then rotates, moving gate into the paper path and directing the copies into the bin [I].

4. Side Plate

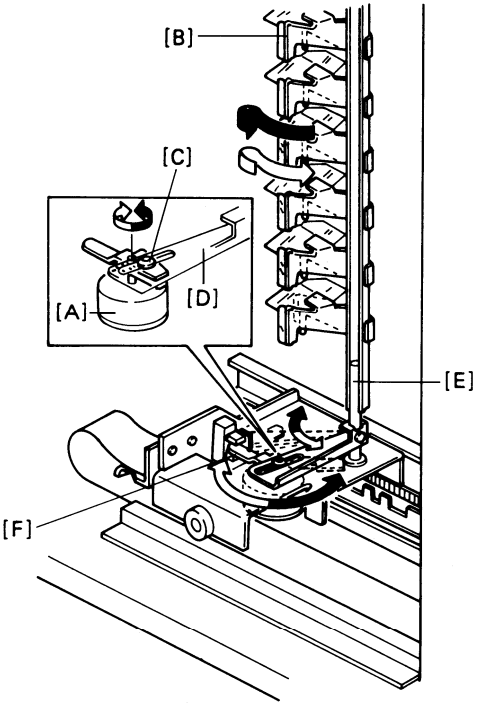


- Overview -
The side plate [A] is driven from side to side by the side plate drive motor [B] (stepper motor). The side plate also jogs (pivots), and this movement is driven by the jog motor (stepper motor).

- Side plate drive mechanism -
When the paper feed of the copier starts, the side plate drive motor turns on. This motor moves the side plate via the side plate drive shaft [C] and the upper and lower timing belts [D].

- Side plate HP sensor -
When the main switch is turned on the side plate HP sensor [E] checks whether the plate is at the home position. If not, the side plate drive motor continues rotating until the side plate home position sensor is actuated.

- Side plate position sensor -
The side plate position sensor [F] is mounted on the side plate. When the plate is moved, the sensor tracks the position actuator plate [G], and generates an on off signal. This on/off signal is sent to the CPU and is used to track the side plate position. The CPU stops the side plate when it reaches the position corresponding to the paper size.

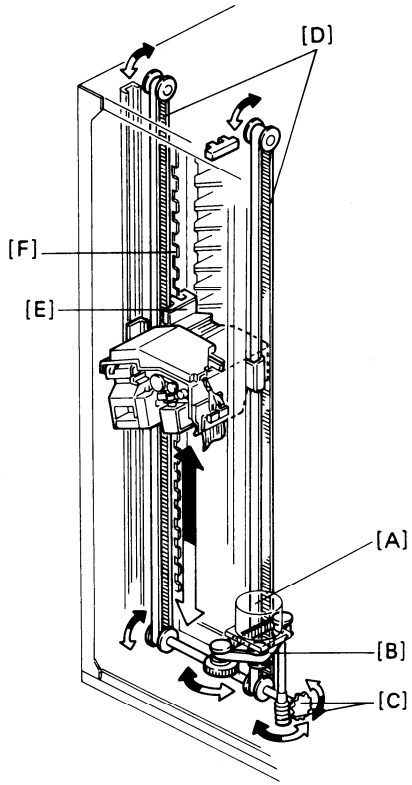


- Jog mechanism -
The jog motor [A] pivots the side plate [B] to square the paper stack via the cam [C], jog lever [D], the jog shaft [E].

- Jog HP sensor -
When the main switch of the copier is turned on, the jog HP sensor [F] checks whether the side plate is at the jog home position. If not, the jog motor rotates counterclockwise until the jog HP sensor is actuated.

Soon after the bin solenoid turns off, the jog HP sensor is deactuated and the jog motor shaft rotates clockwise for 0.2 seconds (rotates about 220°). After stopping for about 0.04 seconds, the motor shaft rotates counterclockwise until the jog HP sensor is actuated.

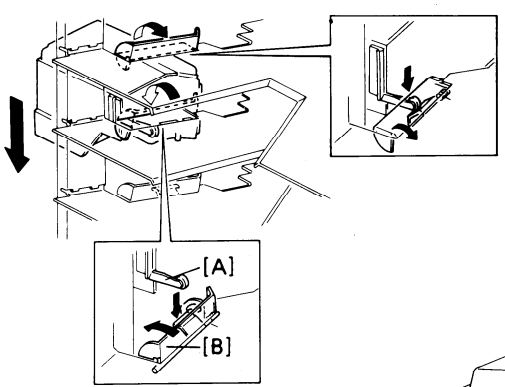
5. Staple Unit

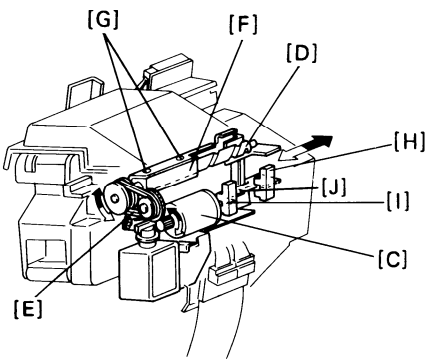


- Overview -
The staple unit consists of the grip assembly and the stapler. The staple unit is lowered from the home position, above the first bin, to the 20th bin in order to staple the copies in each bin. The grip assembly grips the copies stacked in the bin and positions them underneath the stapler. The stapler staples the copies.

- Staple unit drive mechanism -
When the copy of the last page of the original is delivered to the first bin the staple unit drive motor [A] turns on. This motor lowers the staple unit via the timing belt [B], the gears [C], and the timing belts [D].

- Staple unit position sensor -
The staple unit position sensor [E] is mounted on the staple unit. While the staple unit is being lowered, the sensor tracks the position actuator plate [F], generating an on off signal that is sent to the CPU. By this means, the CPU then detects the position of the staple unit and stops the staple unit when it reaches the appropriate bin.



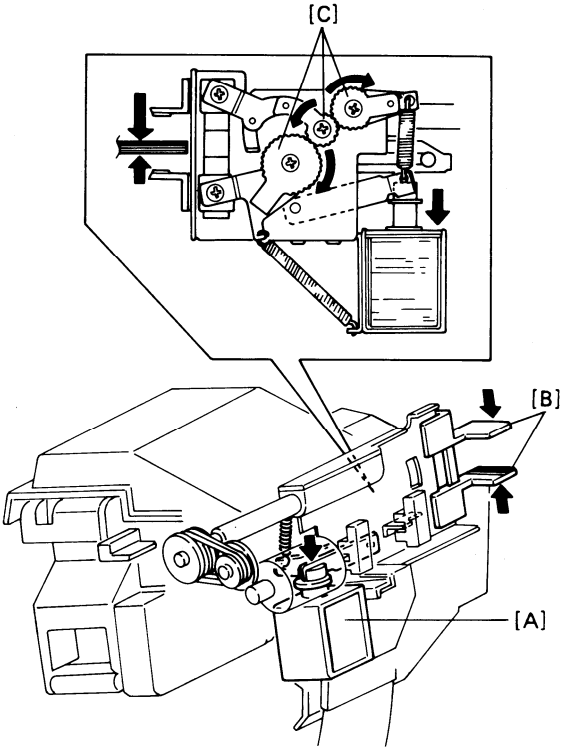


- Grip Assembly -
When the staple unit is lowered to a bin, the staple unit arm [A] makes contact with and pushes down on the bin front side plate [B]. The grip motor [C] (a dc brush motor) turns on and drives the gripper assembly spiral gear [D] via the timing belts [E]. (The gripper assembly [F] and gear are interlocked by bearings [G].) While the gripper motor turns on, the Job indicator turns on.

- Gripper forward sensor and HP sensor -
The gripper forward sensor [H] and the gripper HP sensor [I] are amounted on the grip assembly bracket. They track the actuator plate [J] while the grippers are moving. When the grippers move all the way forward, the gripper forward sensor is actuated.

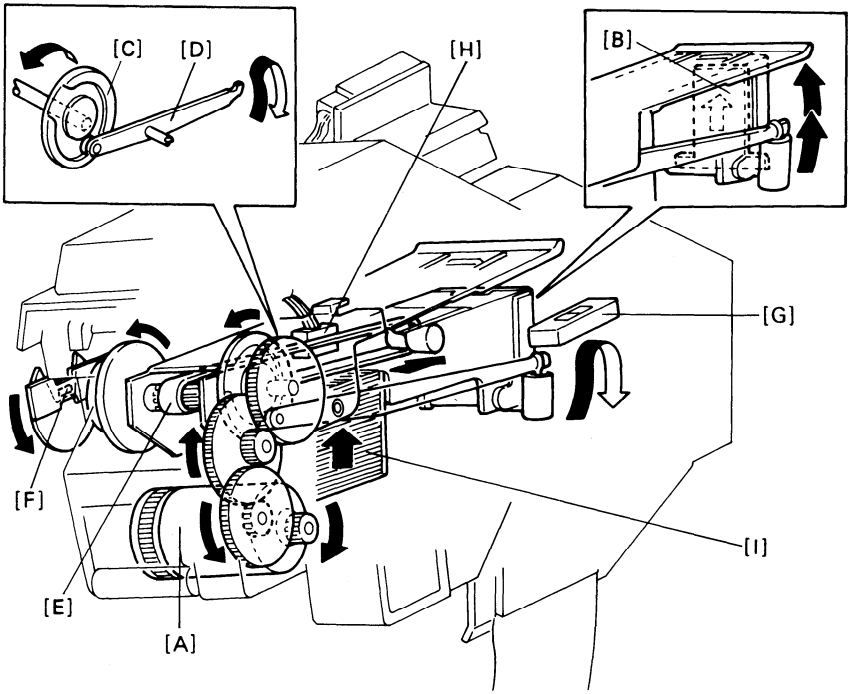
The grip motor turns off and the gripper solenoid is activated to close the grippers. The grip motor then turns on to return the grippers to home position, where the gripper HP sensor is actuated and the grip motor is turned off.

- Initialization of staple unit and grippers -
When the main switch of the copier is turned on, the CPU first checks whether the grippers are at the home position. If not, the grip motor returns the grippers to the home position. The CPU then checks whether the staple unit is at the home position with the staple unit HP sensor. If not, the staple unit drive motor returns the staple unit to the home position.



- Gripper Solenoid -

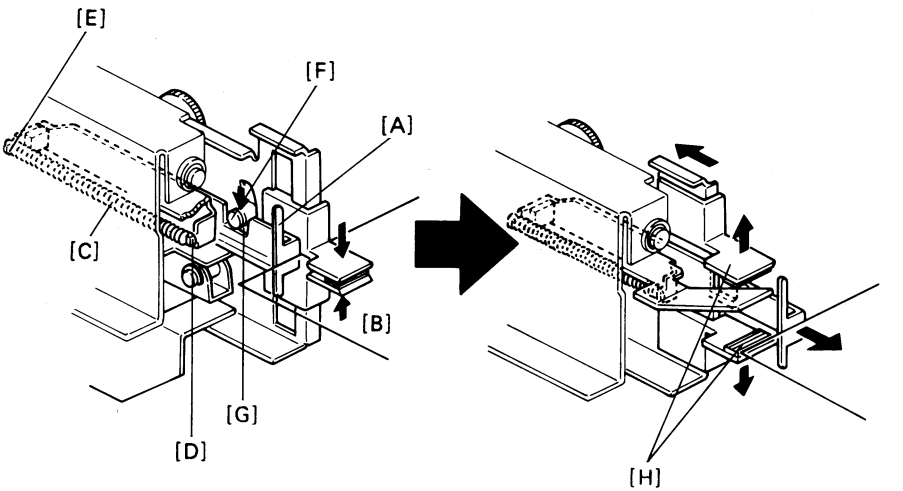
When the grippers are at the home position, they are open. When the grippers move forward to the copies in the bins, the gripper solenoid [A] turns on and the grippers [B] are closed by the links [C]. The grippers grip the copies until stapling is completed.



- Stapler motor -
When the grippers reach the home position, the stapler motor turns on [A]. This moves the hammer [B] up and down via the cam [C], and link [D]. The motor also drives the stapler feed belt [E]. The motor turns off when the stapler HP sensor [F] is actuated.

- Paper sensor -
The paper sensor [G] detects whether copies gripped by the grippers are at the staple position just before stapling. If not, the CPU inhibits stapling.

- Staple end sensor -
The staple end sensor [H] located underneath the staples cartridge [I] detects when staples run out. If the staple cartridge is empty, a signal is sent to the CPU. After all the copies stacked in the bins are stapled, the Staple End indicator is displayed on the copier operation panel and a message to the operator is displayed on the copier guidance display. Stapling is then inhibited even if the main switch is turned off and on.

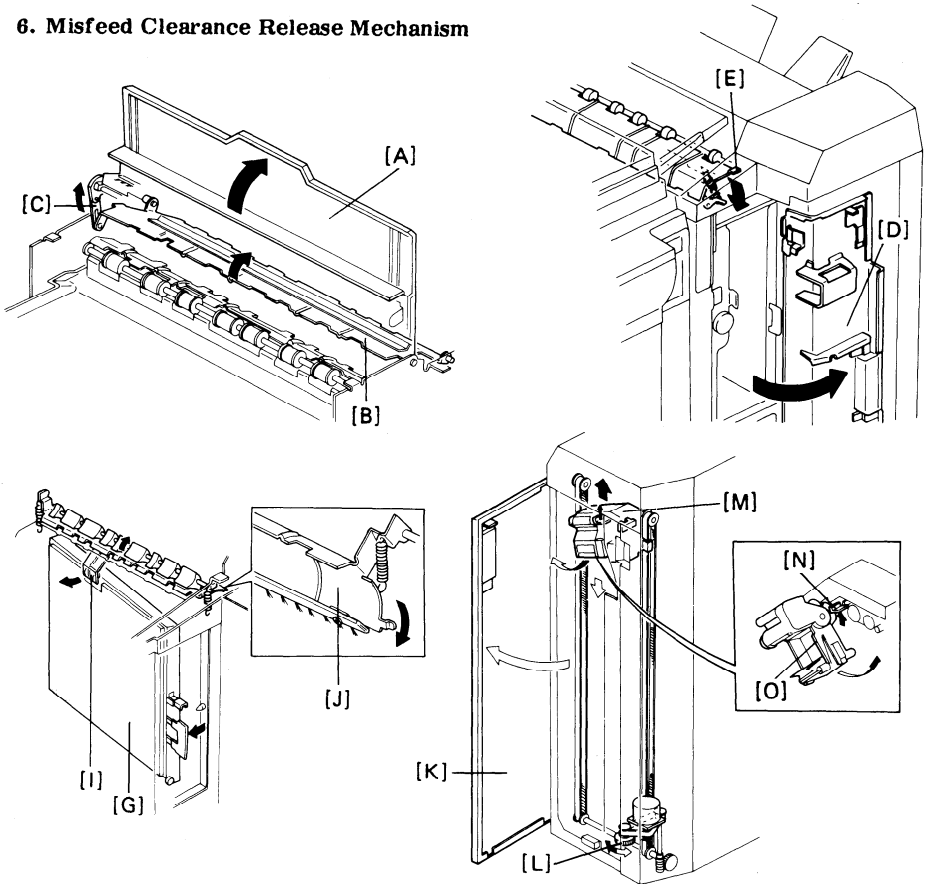


- Gripper push lever -
The gripper push lever [A] pushes stapled copies [B] back to the bin. This is done as follows:

The push spring [C] extends between one end [D] of the gripper push lever and an anchor [E] on the push guide plate. When the grippers close, the pin [F] on the upper gripper arm moves into the slot [G] on the push lever. This locks the push lever and the upper gripper together so that, when the grippers retract to home position, the push spring is stretched.

After the copies are stapled, the grippers [H] open and the push lever lock pin is released. The push lever is driven forward by the push spring, and the copies are pushed back into the bin.

6. Misfeed Clearance Release Mechanism



To clear misfeeds in the sorter stapler, open the top cover, right door, and left door.

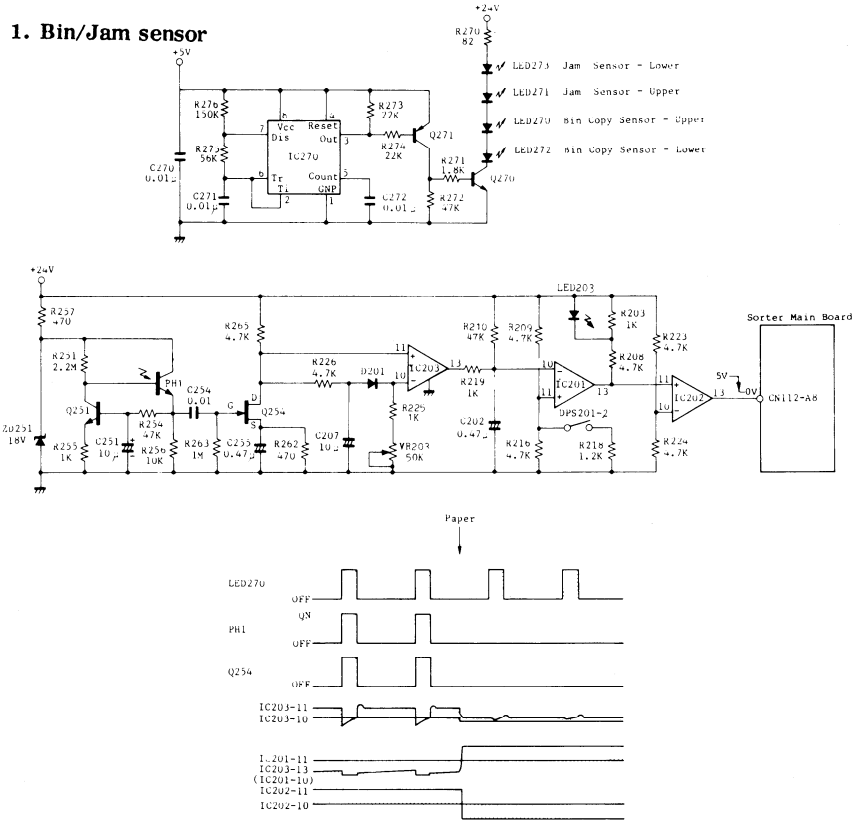
- Top cover -
To access the turn gate section, open the top cover [A]. The proof tray upper guide plate [B] will also open because it is connected to the cover by a link [C].

- Left door -
To access the transport and distribution sections, open the left cover [D]. Then open either the lower transport guide plate [E], left guide plate, right upper guide plate [G], and lower guide plate. When the right upper guide plate is opened, the release lever [I] of the lower turn guide [J] is pushed up and the guide swings to the left.

- Right door -
To access the staple unit, to remove jammed staples as well as paper open the right door [K]. Turn the knob [L] to manually lower the staple unit [M]. Lift up the stapler release lever [N] to swing open the stapler [O].

ELECTRICAL OPERATION

1. Bin/Jam sensor



The bin copy sensors (upper and lower) detect copy paper in the bins. The jam sensors (upper and lower) check that copy paper is fed to the bins and also count copies as they enter the bins.

The circuit description for all four sensors is the same (except for connector numbers and pin numbers). So, we will discuss only the upper bin copy sensor circuit (shown above).

When there is no paper in the sorter bins, LED-270 on the sensor LED board activates PH1. PH1 turns on Q254, which causes IC203 pin 10 to be greater than pin 11. IC203 pin 13 then goes LOW. IC201 pin 10 is then lower than pin 11, causing pin 13 of IC201 to output HIGH. Pin 11 of IC202 is then higher than pin 10; so, IC202 pin 13 goes HIGH. This HIGH signal at CN112-A8 informs the sorter main board that no paper is present.

When paper enters a bin, the phototransistor (PH1) turns off. This causes the circuit to output a LOW signal to CN112-A8. The sorter main board determines that paper is in the bins.

2. safety Switch

There are six safety switches, SW1 to 6, in the sorter stapler. SW1, 2, and 3 are for the right door. SW4 and 5 are for the left door. SW6 is for the top cover.

SW1 and 4 are on a 100 volt ac line. SW2 is on a +24 volt line and SW3 is on a +5 volt line. SW5 and 6 are connected with the main board.

These switches are all closed during normal operation. The status when each switch opens is as follows:

SW1 and 4
The 100 volt ac line is opened, and the sorter stapler motor is turned off.

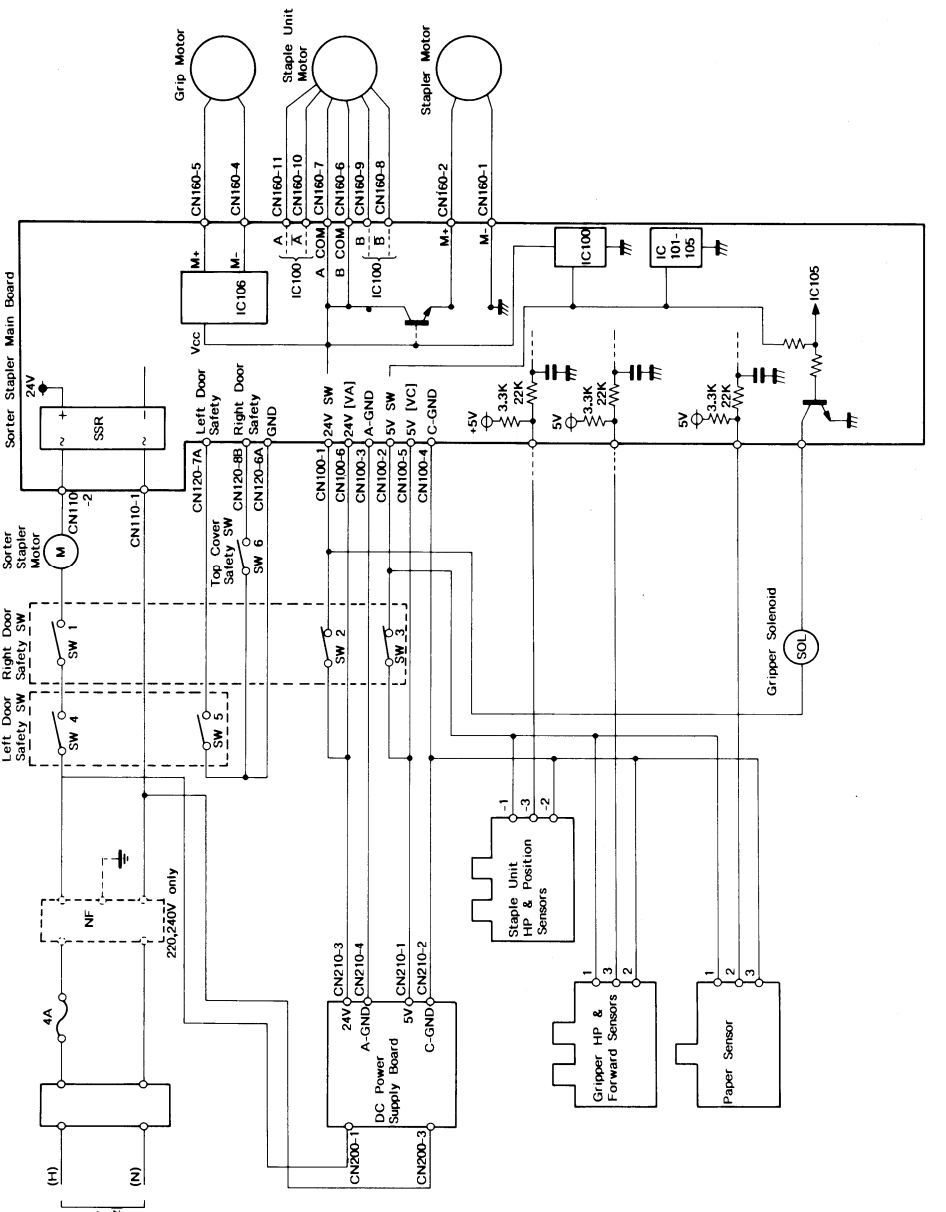
SW2
+24 volts is not supplied to CN100-1 on the main board, and the following components are turned off:

1. Gripper Motor
2. Staple Unit Motor
3. Stapler Motor
4. Gripper Solenoid

SW3
+5 volts is not supplied to CN100-5 on the main board, the ICs on the main board turn off. Consequently, the following components are turned off:

1. Staple Unit HP Sensor
2. Staple Unit Position Sensor
3. Gripper HP Sensor
4. Gripper Forward Sensor
5. Paper Sensor
6. Gripper Motor
7. Staple Unit Motor
8. Stapler Motor
9. Gripper Solenoid

SW5 or 6
CN120-7A or 8A on the main board changes to +5 volts, and the CPU turns off all moving components (solenoids, motors, etc) except for the stapler motor. The staple motor stays on until the staple HP sensor is actuated.


Grip Motor
Staple Unit Motor
Stapler Motor
Sorter Stapler Main Board
24V
SSR
IC106
IC100
IC 101-105
IC105
Vcc
M+
M-
A
A COM
B
B COM
CN160-5
CN160-4
CN160-11
CN160-10
CN160-7
CN160-6
CN160-9
CN160-8
CN160-2
CN160-1
CN110-2
CN110-1
Sorter Stapler Motor
Left Door Safety SW
Right Door Safety SW
Top Cover Safety SW
SW 1
SW 2
SW 3
SW 4
SW 5
SW 6
CN120-7A
CN120-8B
CN120-6A
Left Door Safety
Right Door Safety
GND
CN100-1
CN100-6
CN100-3
CN100-2
CN100-5
CN100-4
24V SW
24V [VA]
A-GND
5V SW
5V [VC]
C-GND
+5V
5V
3.3K
22K
Gripper Solenoid
SOL
Staple Unit HP & Position Sensors
Gripper HP & Forward Sensors
Paper Sensor
DC Power Supply Board
CN210-3
CN210-4
CN210-1
CN210-2
CN200-1
CN200-3
NF
4A
220,240V only
(H)
(N)
AC100V 50/60Hz

3. Service call conditions

There are two service call conditions for the sorter stapler although a numeric number is not provided. They are the staple inhibition and sort/stack inhibition.

- Staple inhibition -
Under this condition, only the staple mode is inhibited. The sort and stack modes can be used. When the staple key on the operation panel is pressed, "Service Call Sorter with Stapler" is indicated in the guidance display. This inhibition is provided for the following status:

a. Staple unit motor lock
The status of the staple unit motor is monitored by the staple unit position sensor.
(l). Lowering
(a). In the normal staple mode, if staple unit motor takes more than 0.7 seconds to lower the staple unit to the next bin.

(b). In the staple unit lowering mode (i.g. DIP SW 100-1 on: the staple unit rotating speed in this mode is slower than that of the normal staple mode), if staple unit motor takes more than 1.9 seconds to lower the staple unit to the next bin.

(2). Raising
If staple unit motor takes more than 2.0 seconds to raise the staple unit to the next bin.

Note: When the CPU detects the above staple unit motor lock condition, first, the misfeed indication is displayed. When the CPU detects the same condition again, the CPU applies the staple inhibition condition.

b. Gripper motor lock
The status of the gripper motor is monitored by the gripper forward and HP sensors. If the gripper motor takes more than 1.0 second to move the grippers from the home position to the forward end and vice versa.

c. Stapler motor lock
The status of the stapler motor is monitored by the stapler HP sensor. If the stapler motor takes more than 0.7 second for one staple cycle. (form HP to HP)

d. Jog motor lock
The status of the jog motor is monitored by the jog HP sensor. If the jog motor takes more than 1.0 second for one jog cycle. (form HP to HP)

- Sorter inhibition -
Under this condition, the sorter and stapler modes cannot be used. "Service Call Sorter with Stapler" is displayed in the guidance display when either sort or staple mode is selected. However, the stack mode can still be used and also copies can be fed out to the proof tray. This inhibition occurs when an abnormality is detected in side plate movement.

The status of the side plate is monitored by the side plate position sensor. If the side plate motor takes more than 1.7 second to move the side plate from the one paper size position to the next.

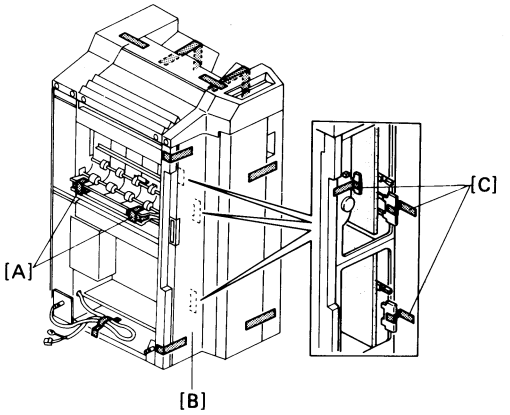
INSTALLATION

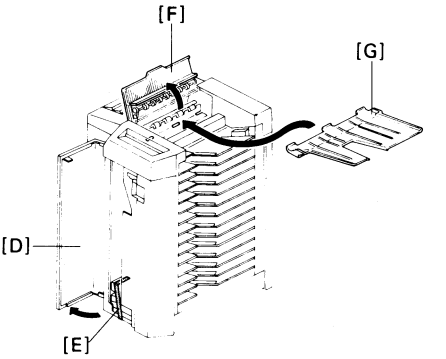
1. Accessory Check

Make sure that each accessory listed in the following table is in the box. Also check the condition of each item:

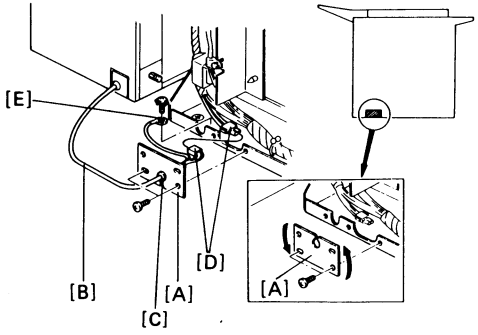
Description		Q'ty
1.	Proof Tray	1
2.	Fixing Plate	1
3.	Screw - M4 x 6	2
4.	Leveling Shoe	2
5.	Grounding Screw with Tooth Washer	1
6.	Installation Procedure	1
7.	Multiple Language Decals (Europe)	1
8.	NECR	1
9.	Envelopes for NECR (USA)	1

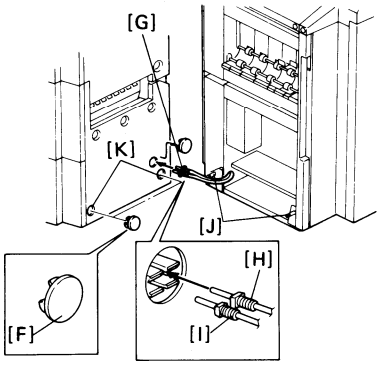
2. Installation Procedure





1. Turn off the copier main switch and disconnect the power supply cord. Remove all external strips of tape and styrofoam blocks [A].
2. Open the left door [B] and remove the strips of tape [C] securing the guide plates.
3. Open the right door [D] and remove the tape [E] securing the staple unit.
4. Open the top cover [F], and install the proof tray [G].





5. Remove the copier lower rear cover (2 screws) and the cover plate [A] (2 screws).

6. Feed the sorter stapler power cord [B] through the opening in the cover plate until the cord stopper [C] reaches the opening. Then invert the opening faces down and install it (2 screws).

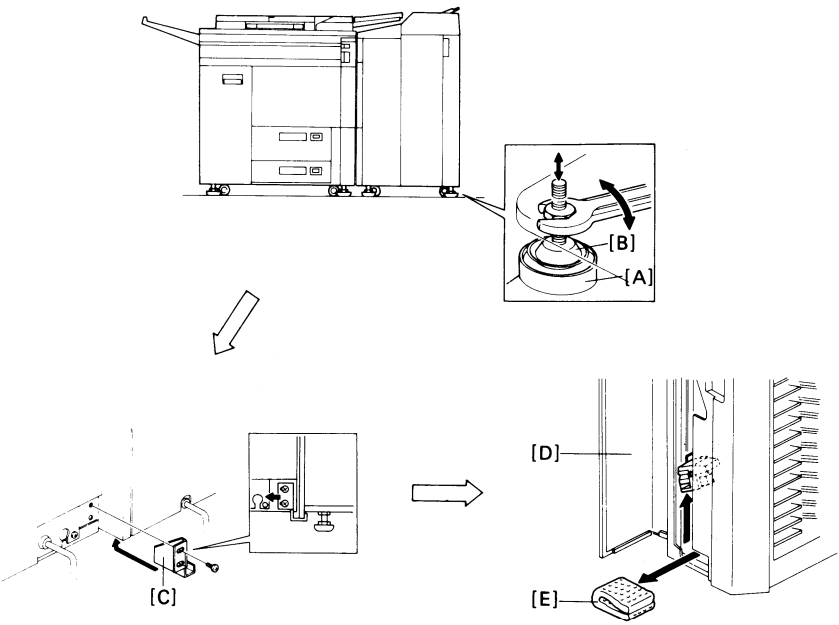
7. Connect the 2P free connectors [D] and secure the ground wire [E] on the copier base plate (1 ground screw with tooth washer).

8. Remove the three plastic covers [F] from the lower right cover of the copier. Connect the fiber optic cables [G] to the copier through the upper opening with the brown connector [H] connected to the rear terminal and the black connector [I] to the front terminal.

9. Reinstall the copier lower rear cover.

Caution: Before docking the sorter stapler with the copier, open the copier top unit to prevent damage to the sorter stapler entrance guide plates.

10. Dock the sorter stapler with the copier. Make sure the docking pins [J] are seated firmly in the notches [K] in the copier frame. Close the copier top unit.



11. Insert the leveling shoes [A] under the sorter stapler feet [B], and level the sorter stapler and align it with the copier by securing down the feet.

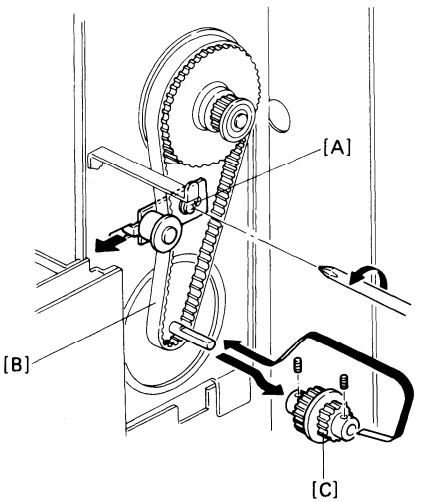
12. Install the fixing plate [C] (2 screws: M4 x 6 mm).

13. Plug in the power supply cord, and turn on the copier main switch. The staple unit raises to the home position, so open the right door [D] and remove the styrofoam [E] from the base plate.

14. Make 20 copies of two originals in staple mode, and confirm that the copies are properly stapled.

Note: This step is necessary to get staples feeding properly. A new staple cartridge has to be cycled 10 to 20 times to feed staples to the stapling position.

15. Check the sorter stapler operation.



50Hz/60Hz Modification

1. Loosen the belt tension bracket screw [A] and release the timing belt [B] from the sorter stapler motor pulley.
2. Loosen the two Allen screws and remove the sorter stapler pulley [C].
3. Reverse the sorter stapler pulley and install it so that it is flush with the end of the sorter stapler motor shaft.
4. Adjust the sorter stapler motor drive belt tension. There should be 6,0 ± 1.0 mm (0.24" ± 0.04") deflection of the belt when 200 grams pressure is applied.

SERVICE TABLE

1. Test Point Table

Number	Specification
TP100	GND
TP101	+5V
TP102	+24V

2. Variable Resistor Table

Number	Function
VR100	Adjusts the upper jam sensor threshold level.
VR101	Adjusts the upper bin copy sensor threshold level.
VR102	Adjusts the lower jam sensor threshold level.
VR103	Adjusts the lower bin copy sensor threshold level.

3. LED Table

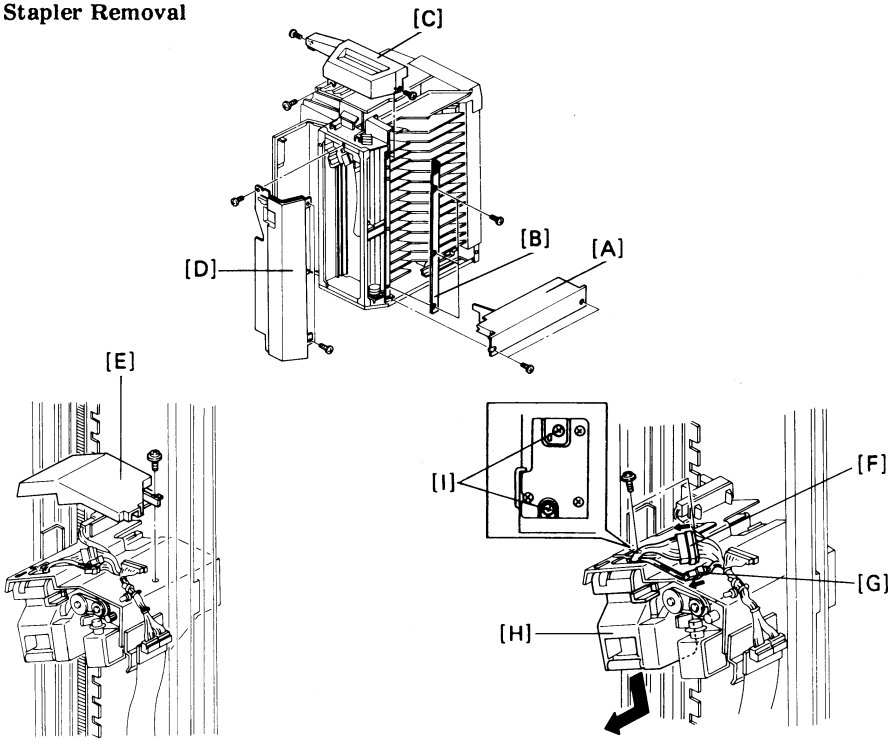
Number	Function
LED100	Upper jam sensor adjustment
LED101	Upper bin copy sensor adjustment
LED102	Lower jam sensor adjustment
LED103	Lower bin copy sensor adjustment

4. Dip Switch Table

1 2 3 4 5 6	
1 0 0 0 0 -	Lowers the staple unit.
0 1 0 0 0 -	Stapler free run.
0 0 1 0 0 -	All free run.
- - - - - 1	Bin/Jam sensor adjustment
0 0 0 0 0 0	Factory setting.

REPLACEMENT AND ADJUSTMENT

1. Stapler Removal



1. Turn off the main switch, and remove the sorter stapler rear cover (2 screws).

2. Turn on DIP switch 101-1 *(lowers staple unit)* on the sorter stapler main board, and turn on the main switch. The staple unit then lowers and stops when it reaches the 10th bin.

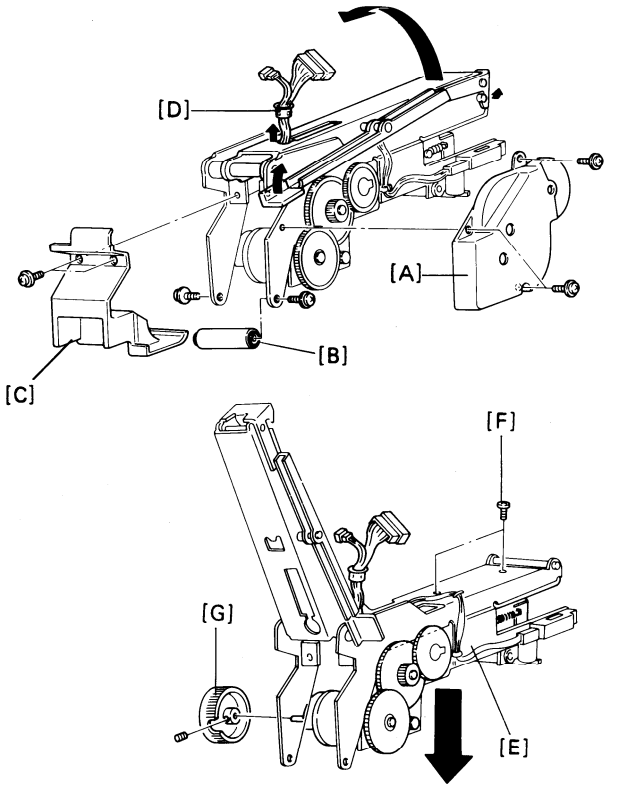
3. Remove the following exterior covers:
   Right lower cover [A] (2 screws)
   Front bin support plate [B] (3 screws)
   Front top cover [C] (3 screws)
   Front right cover [D] (3 screws)

4. Remove the top cover [E] of the staple unit (1 screw).

5. Disconnect connectors 10P [F] and 3P [G].

6. With one hand supporting the stapler assembly [H], remove the stapler assembly (2 screws [I]).

Note: When the screws [I] are removed, the staple position changes. Therefore, mark the position of the screws with a pencil before loosening the two screws [I],



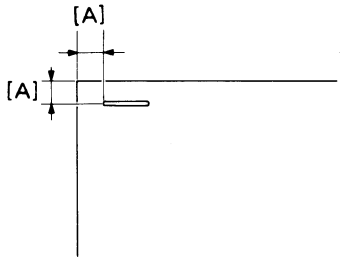
8. Remove the following parts.
   Gear cover [A] (3 screws)
   Stapler lever [B] (2 screws)
   Cover [C] (2 screws)
   Bushing [D]

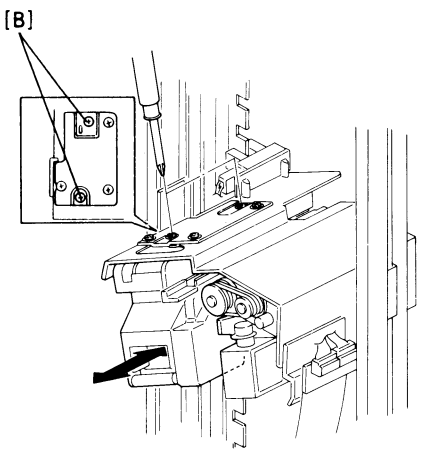
9. Remove the stapler [E] (2 screws [F]).

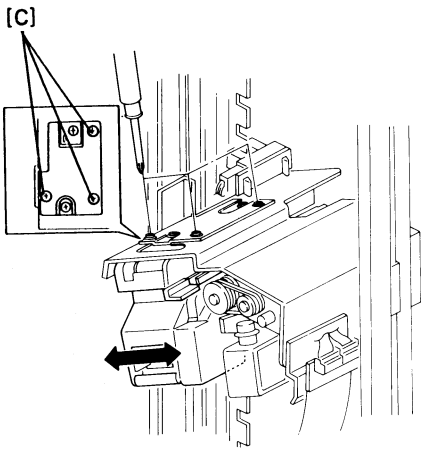
10. Remove the stapler knob [G] (1 Allen screw).

2. Staple Positioning Adjustment

ADJUSTMENT STANDARD: 5±2 mm (0.2"±0.08") [A] from the top-left corner of the paper.







1. Perform steps 1 through 5 in "Stapler Removal".

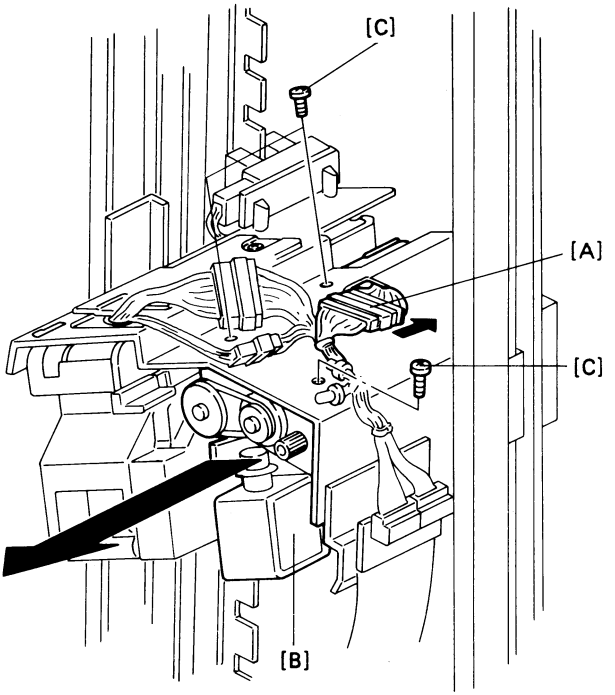
- Front and Rear Adjustment -

2. Loosen the two screws [B], and adjust the stapler position.

- Right and Left Adjustment -

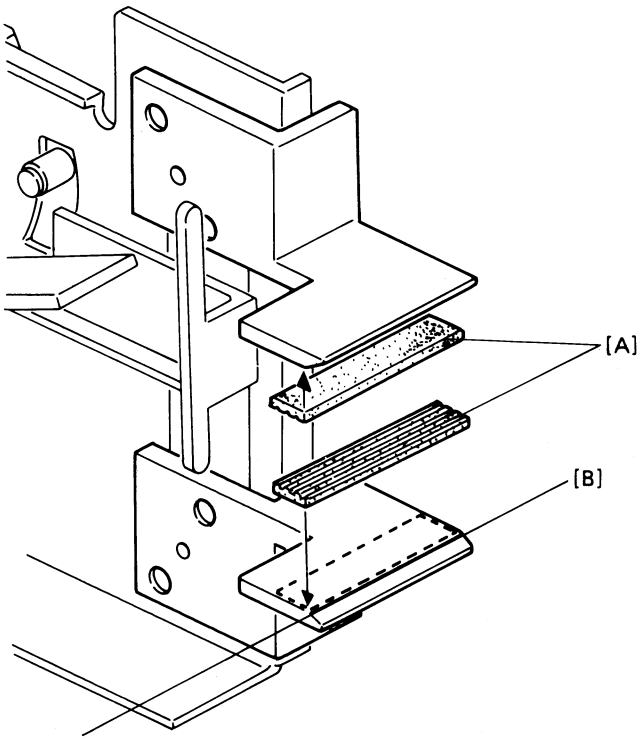
3. Loosen the three screws [C], and adjust the stapler position.

3. Gripper Assembly Removal



1. Perform steps 1 through 5 in "Stapler Removal".
2. Disconnect connector 10P [A].
3. While supporting the gripper assembly [B], with one hand remove the 3 screws [C].
4. Pull the gripper assembly to the front and remove it.

4. Gripper Rubber Strip Replacement



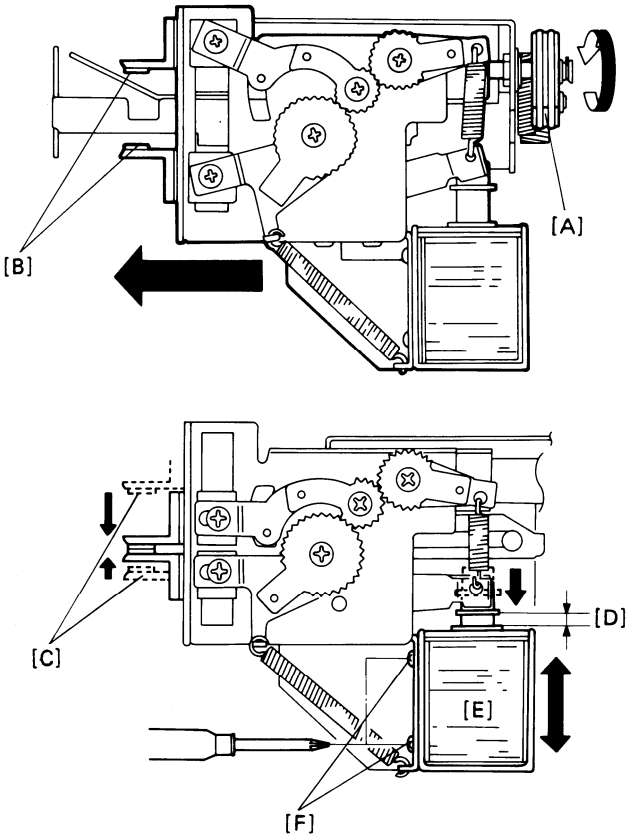
1. Remove gripper the assembly. (Refer to "Gripper Assembly Removal".)
2. Replace the rubbers strips [A] on the grippers.

Note: *Before sticking the rubber strips on the gripper surfaces, clean the gripper surface with alcohol.*

Make sure that the edge of the rubber strip is aligned (flush) with the ends [B] of the gripping surface.

5. Gripper Solenoid Adjustment

ADJUSTMENT STANDARD: 3+0.5, -0.0 mm (0.11"+0.02", -0.00")

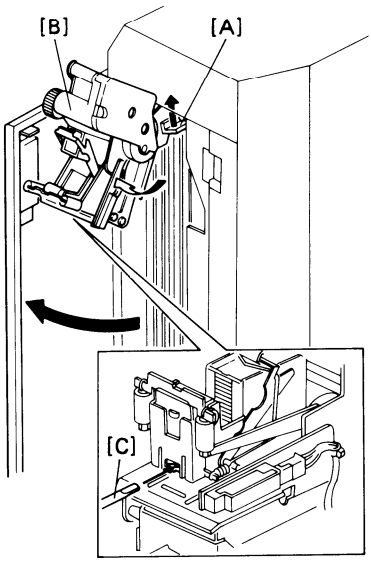


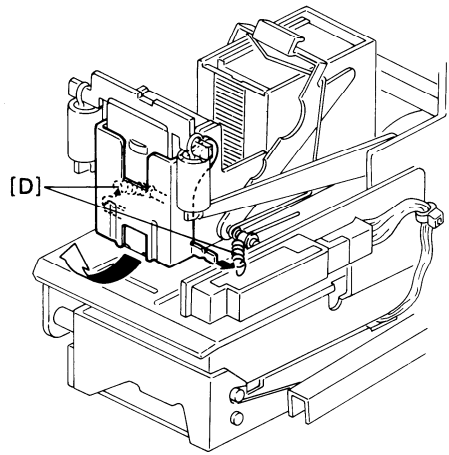
1. Remove the gripper assembly. (Refer to "Gripper Assembly Removal".)

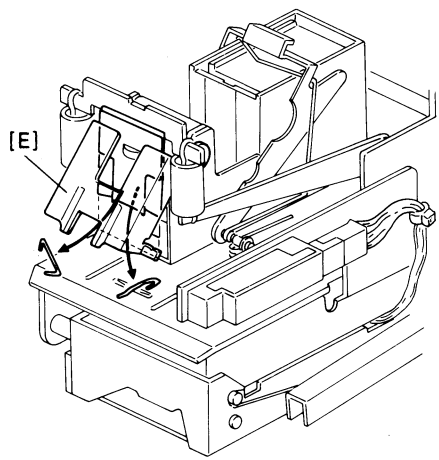
2. Manually rotate the timing belt [A] to move the grippers [B] forward.

3. Manually close the grippers [C] and confirm if the gap [D] is within the adjustment standard. If not, ajust the position of the solenoid [E] (2 screws [F]).

6. Jammed Staple Removal







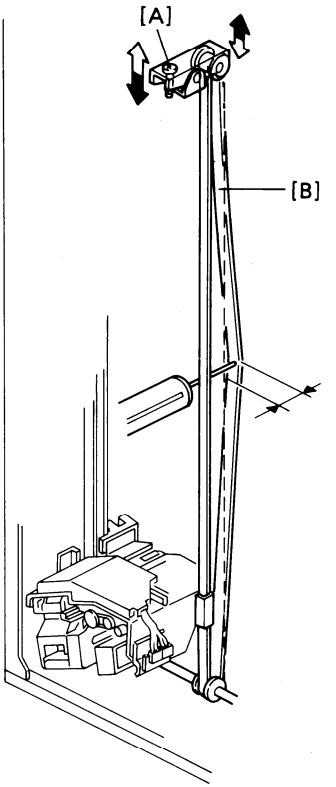
1. Open the left door and lift up the stapler release lever [A] to swing open the stapler [B].

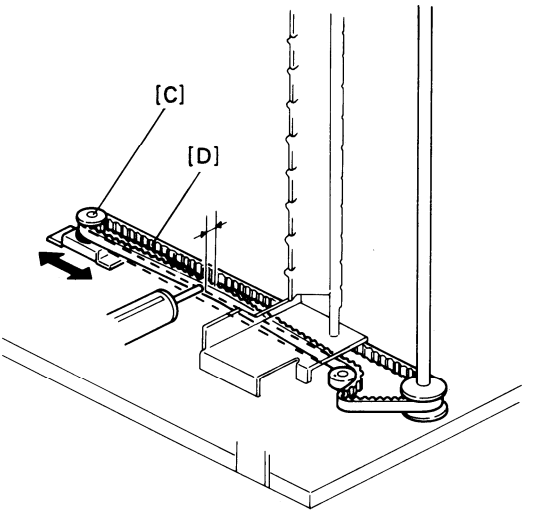
2. Try using a screw driver [C] to remove the jammed staple.

3. If the jammed staple is inaccessible with a screwdriver, unhook the springs [D] and open the stapler hammer cover [E].

4. Remove the jammed staple, and make sure no other staples are jammed inside the stapler.

7. Staple Unit Drive Belt and Side Plate Drive Belt Tension Adjustment





- Staple Unit Drive Belt -

ADJUSTMENT STANDARD: 15 ± 1.0 mm (0.59" ± 0.04") deflection of the belt when 250 grams of pressure is applied.

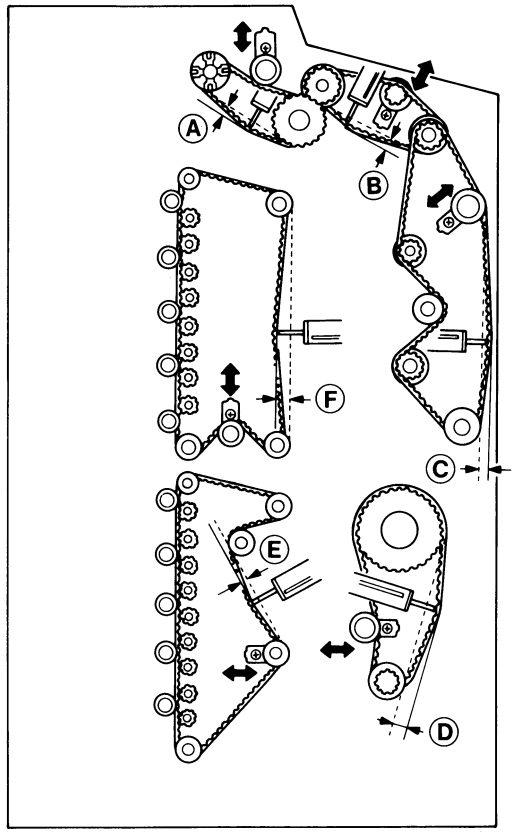
1. Turn the screws [A] to adjust the tension on the stapler unit drive belt [B].

- Side Plate Drive Belt -

ADJUSTMENT STANDARD: 6 ± 1.0 mm (0.24" ± 0.04") deflection of the belt when 60 grams of pressure is applied.

1. Move the tension pulley [C] to adjust the tension on the side plate drive belt [D].

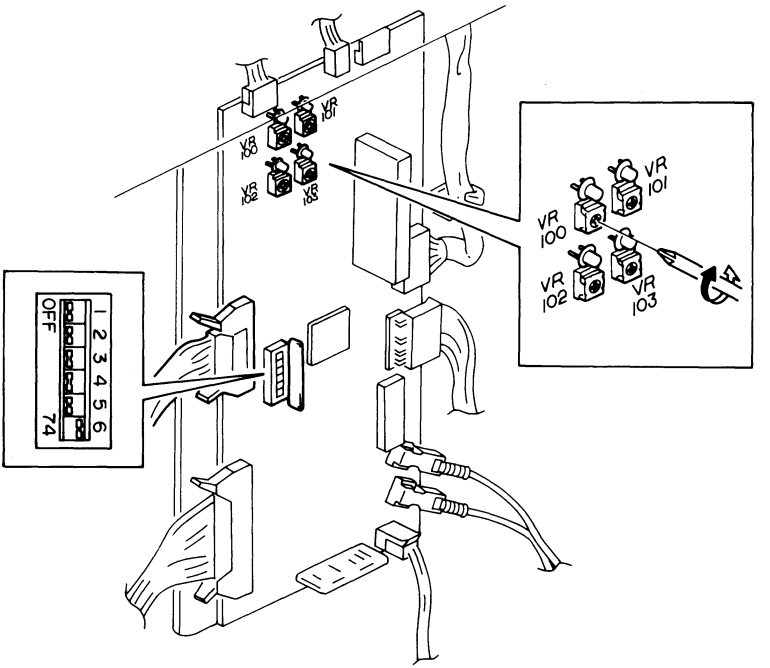
8. Tension Adjustment for Drive Belts A - F



Move tension pulleys shown in the about illustration to adjust the tension on drive belts A - F. The following table gives the adjustment standard for each belt.

Item	Deflection	Pressure
A to E	6±1 mm (0.24"±0.04")	200 g
F	8±1 mm (0.31"±0.04")	200 g

9. Jam Sensor and Bin Copy Sensor Adjustment



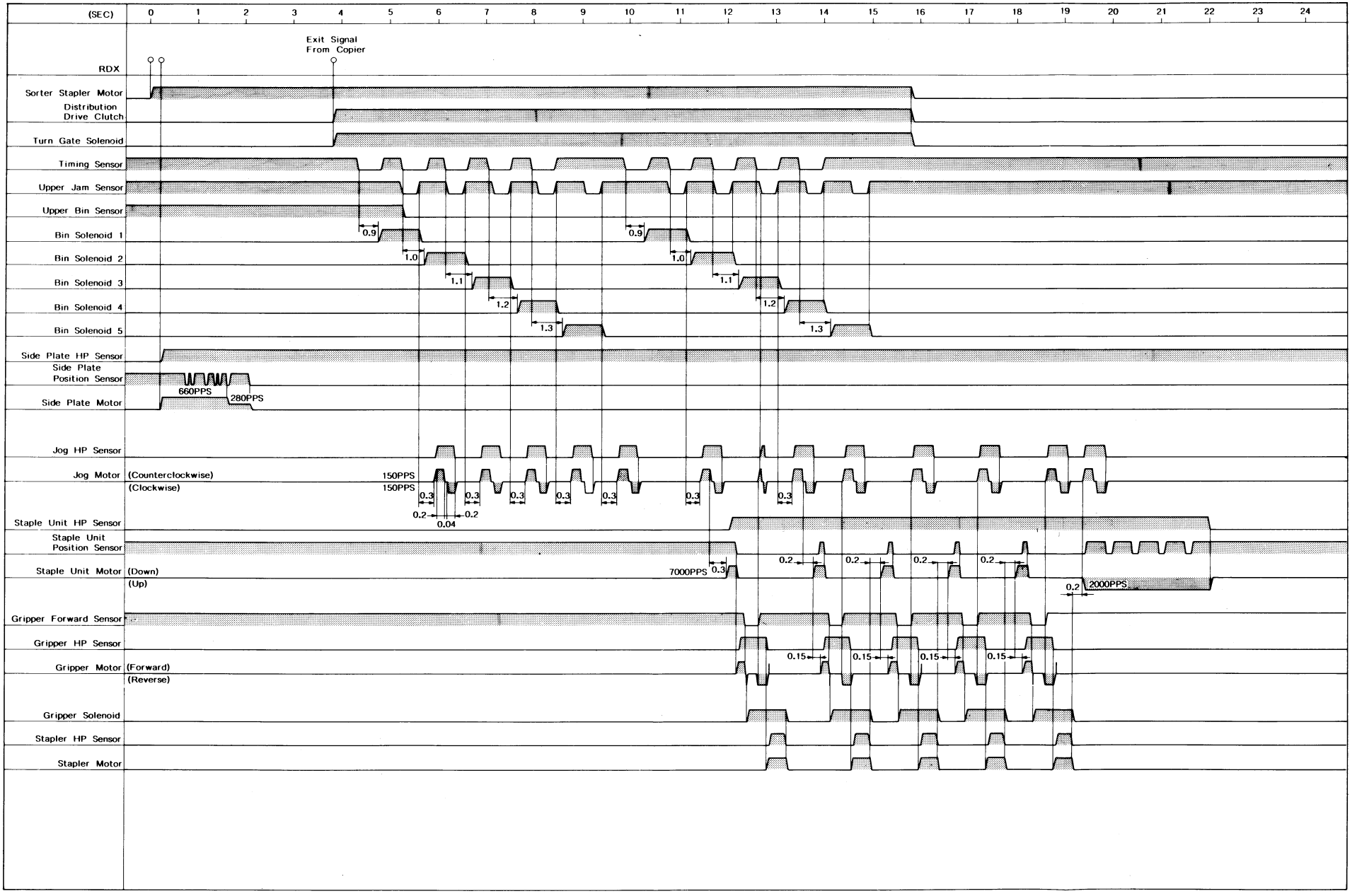
Note: After replacing the main board, the following adjustment must be performed.

1. Turn off the main switch, then remove the rear cover (4 screws) and all paper from the bin.
2. Turn on DIP SW 100-6 [A] on the sorter stapler main board and turn on the main switch.
3. Adjust each of the following VRs so that the corresponding LED turns off.

Sensor	VR	LED
Upper Jam Sensor	VR100	LEDl00
Upper Bin Sensor	VR101	LED101
Lower Jam Sensor	VR102	LED102
Lower Bin Sensor	VR103	LED103

ELECTRICAL OPERATION

TIMING CHART



SORTER STAPLER MAIN BOARD BLOCK DIAGRAM