3000-SHEET FINISHER
## (Machine Code: B706)

1. INSTALLATION

For details about installing the 3000 Sheet Finisher B706, please refer to the instructions you received with the instructions or the "1. Installation" in the main machine service manual.

Peripherals

2. PREVENTIVE MAINTENANCE

For details about the 3000 Sheet Finisher B706 PM table, please refer to Section "2. Preventive Maintenance" in the main Service Manual.

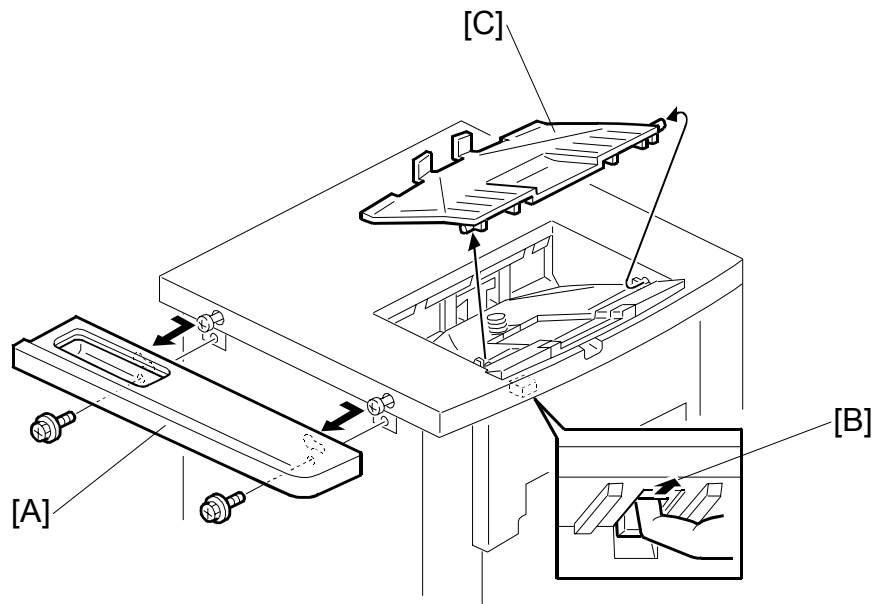# 3.   REPLACEMENT AND ADJUSTMENT

3.1   DOOR AND COVER REPLACEMENT

[A]

B706R502.WMF   [B]   [C]

[D]

B706R505.WMF
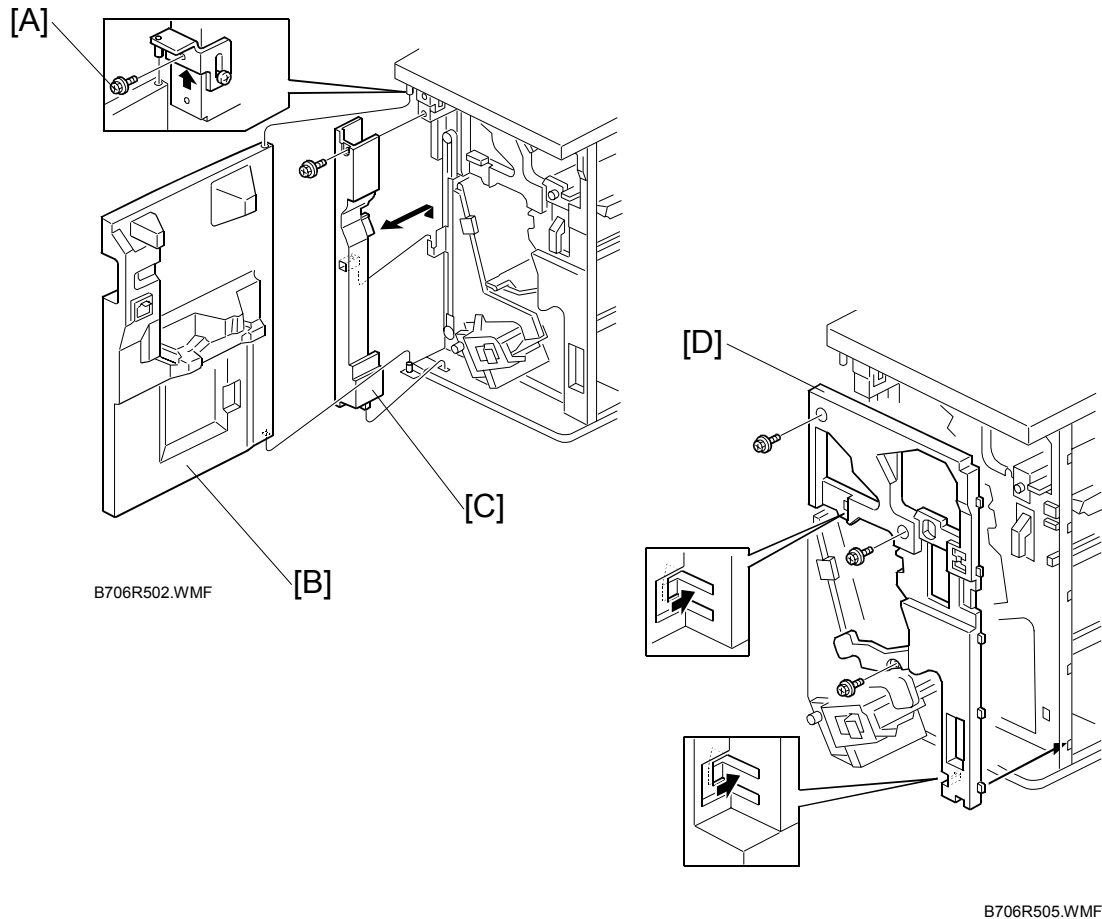
Front Door

1.   Remove the front door screw [A] ($\mathscr{F}$ x 1).

2.   Remove the front door [B].

Left Inner Cover

1.   Remove the front door.
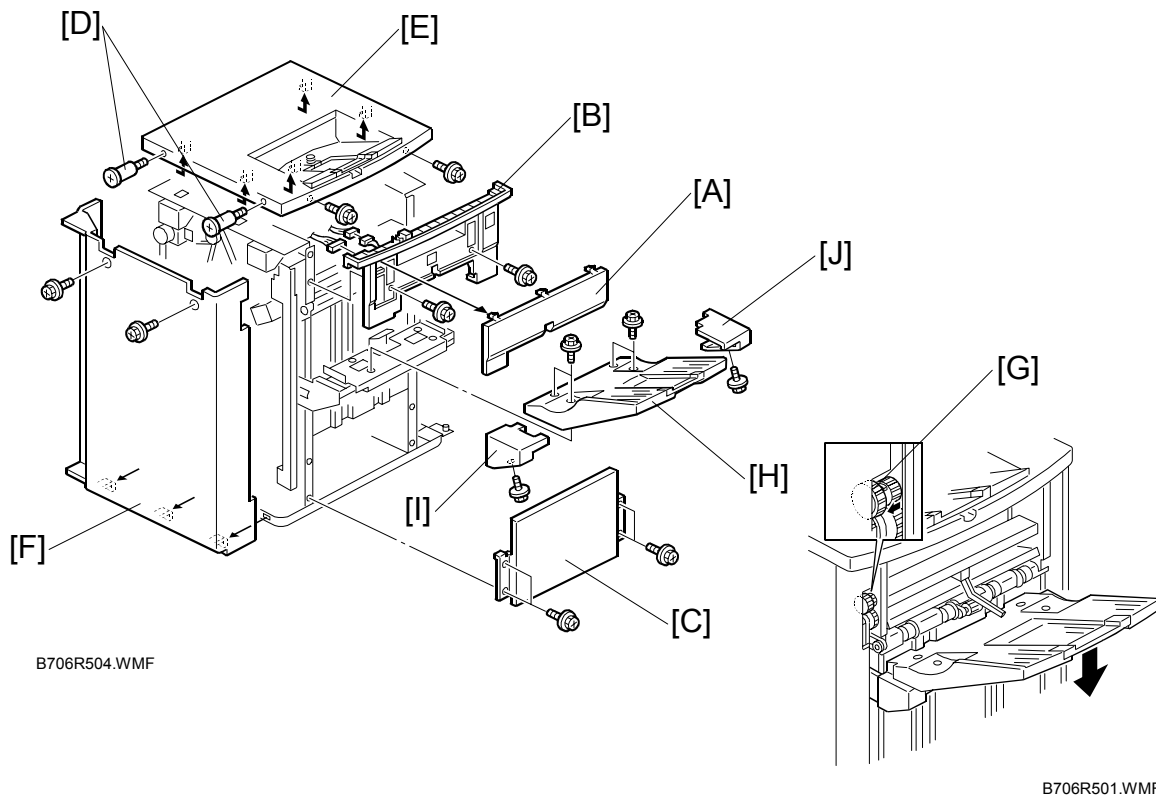
2.   Remove the left inner cover [C] ($\mathscr{F}$ x 1).

Inner Cover

1.   Remove the inner cover [D] ($\mathscr{F}$ x 3).

Peripherals

Side Table and Upper Tray

B706R503.WMF

1. Remove the side table [A] (🖉 x 2). Slide to the right to remove it.
2. Click the release lever [B] and remove the upper tray [C].

B706R504.WMF

B706R501.WMF

Left Covers

1. Remove the left upper panel [A].

2. Remove the left upper cover [B] (🔩 x 2, ⧟ x 2).

3. Remove the door and left inner cover. (See "Front Door and Left Inner Cover Replacement".)

4. Remove the rear cover [F] (🔩 x 2).

5. Remove the left lower cover [C] (🔩 x 4).

Rear Cover and Top Cover

1. Remove the upper tray. (See "Side Table and Upper Tray".)

2. Remove the step screws [D] (🔩 x 2).

3. Remove the top cover [E] (🔩 x 2). Slide to the right to remove.

4. Remove the rear cover [F] (🔩 x 2).

Shift Tray

1. If you need to lower the shift tray, support the bottom of the tray with your hand, then pull the gear toward you [G] to release the tray and lower it.

2. Remove the shift tray [H] (🔩 x 4).

3. Remove the shift tray rear cover [I] and front cover [J] (🔩 x 1 each).

Peripherals

3.2 ROLLERS

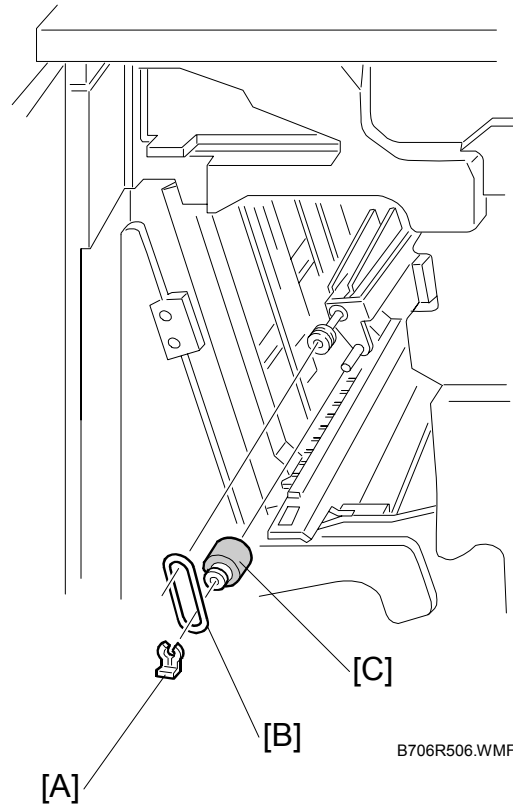### 3.2.1 SHIFT POSITIONING ROLLER
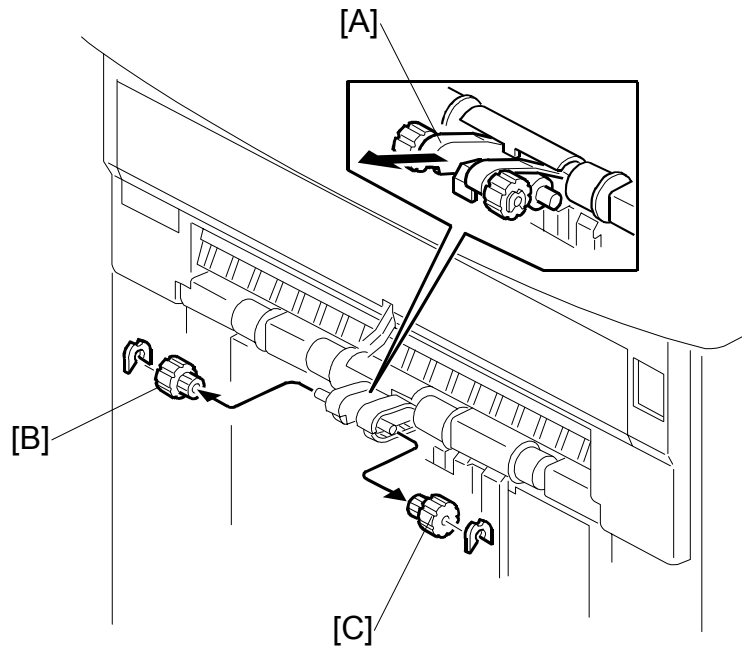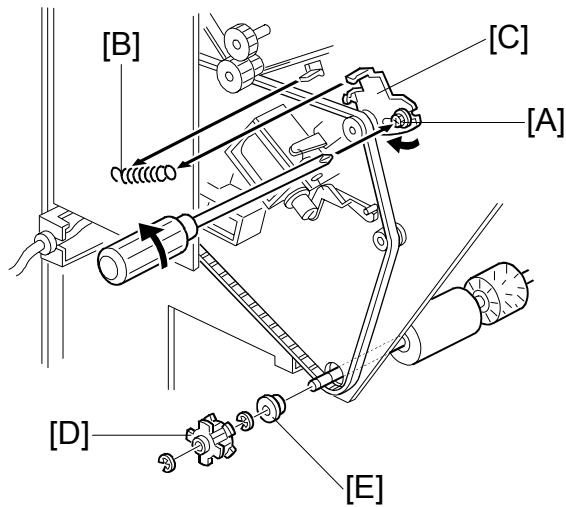

B706R522.WMF

1. Above the shift tray, pull the roller mount [A] out.
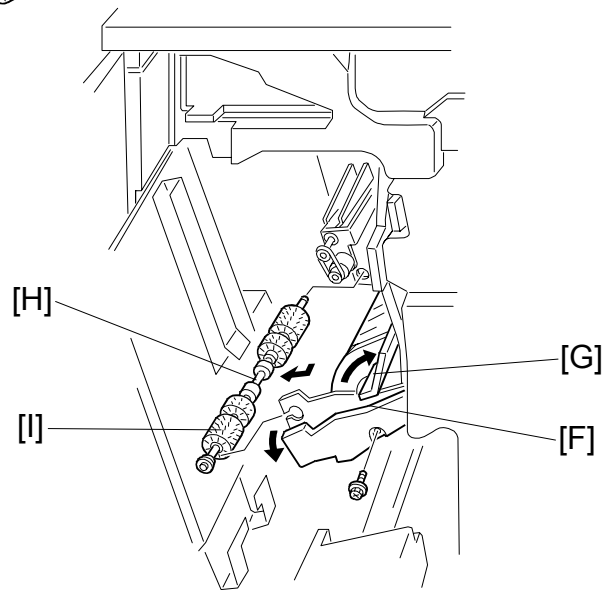2. Remove the rollers [B] and [C] (⌷ x 1 each)

3.2.2 POSITIONING ROLLER

B706R506.WMF

1. Open the front door.
2. Remove the snap ring [A].
3. Release the rubber belt [B].
4. Replace the positioning roller [C].

Peripherals

3.2.3 ALIGNMENT BRUSH ROLLER

B706R507.WMF

B706R508.WMF

1. Open the front door and pull out the staple unit.

2. Remove the rear cover.

3. Remove the main board and all connectors ($\hat{\beta}$ x 8).

4. Remove the screw [A] and tension spring [B] for the tension bracket [C], and release the tension of the timing belt.

5. Remove the pulley [D] and bushing [E] ($\mathbb{C}$ x 2).

6. Remove the inner cover [F] ($\hat{\beta}$ x 1).

7. Open the guide [G], then remove the alignment brush roller assembly [H] ($\mathbb{C}$ x 1).

8. Remove the alignment brush roller [I] ($\overline{\mathbb{O}}$ x 1, bushing x 1 front/back).

## 3.3 STACK FEED-OUT BELT

B706R523.WMF

B706R524.WMF
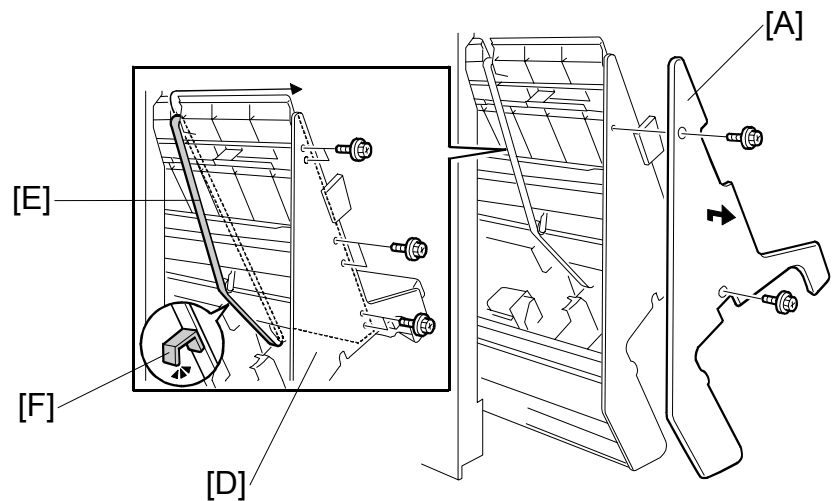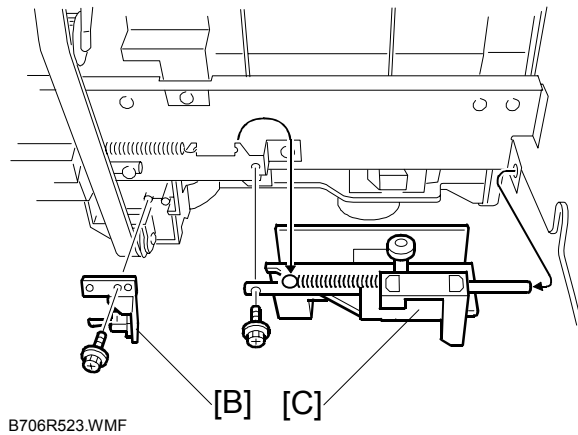
1. Open the front door.

2. Pull out the jogger and stapler unit.

3. Remove the inner cover [A] (𝄛 x 2).

4. Remove the sensor bracket [B] (𝄛 x 1, ▱ x 1, clamp x 1).

5. Remove the front guide [C] (𝄛 x 1, spring x 1).
   NOTE: When re-installing, make sure that the flat end of the shaft is against the plate.

6. Remove the front panel [D] from the stays (𝄛 x 6).

7. Remove the old belt [E] from the bottom, center, then the top.

NOTE: 1) Make sure the ribbed side of the new belt and pawl [F] are facing down.
   2) Make sure the new belt is engaged at all three rollers.

B706-9
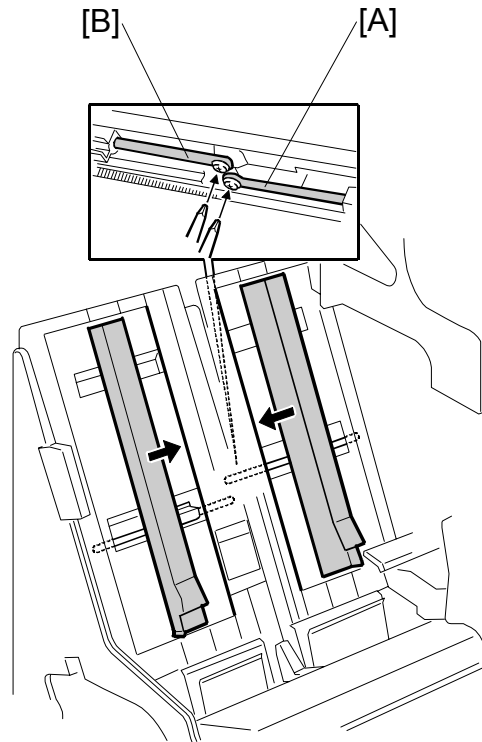
3.4 JOGGER FENCE

B706R525.WMF

1. Open the front door.

2. Pull out the jogger and stapler unit.

3. Push both fences to the center.

4. Remove the left jogger fence [A] ($\mathcal{F}$ x 1)

5. Remove the right jogger fence [B] ($\mathcal{F}$ x 1).
    NOTE: If the screws are difficult to remove or re-attach, remove the jogger
    fence belt and spring plate.

3.5 SENSORS

3.5.1 STACK HEIGHT 1, 2 AND EXIT GUIDE OPEN SENSOR


B706R509.WMF
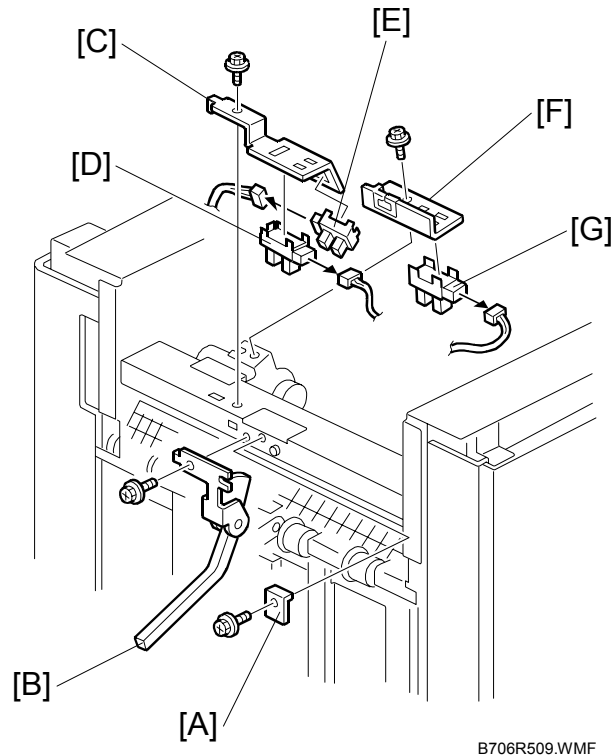
Stack Height Sensors 1 and 2

1. Remove the top cover. (☛ 3.1)
2. Remove the left upper panel and left upper cover (📎 x 2, 🔌 x 2).
3. Remove the protector plate [A] (📎 x 1).
4. Remove the sensor feeler [B] (📎 x 1).
5. Remove the sensor bracket [C] (📎 x 1).
6. Replace the stack height sensor 1 [D] (🔌 x 1) or 2 [E] (🔌 x 1).

Exit Guide Open Sensor

1. Remove the sensor bracket [F] (📎 x 1).
2. Replace the exit guide open sensor [G] (🔌 x 1).

Peripherals

3.5.2 UPPER TRAY PAPER LIMIT AND EXIT SENSOR
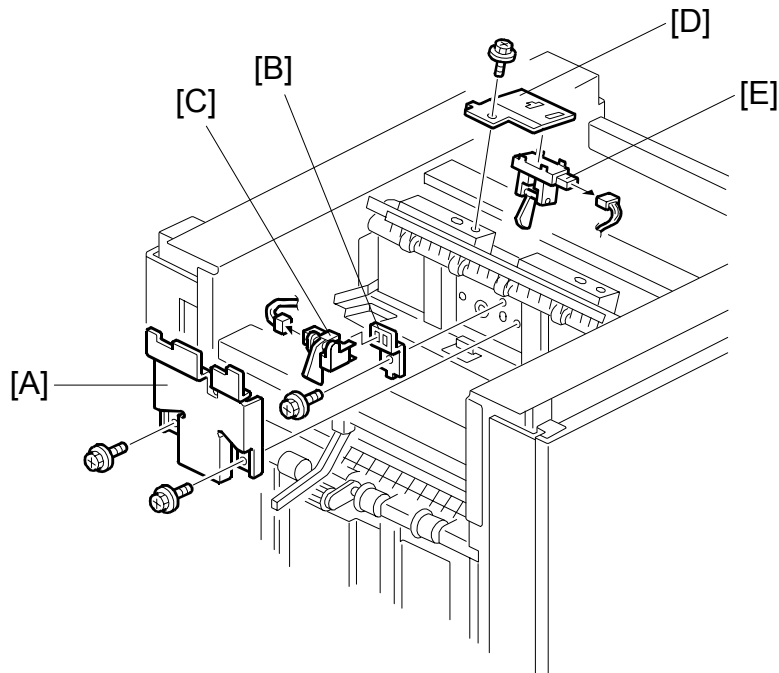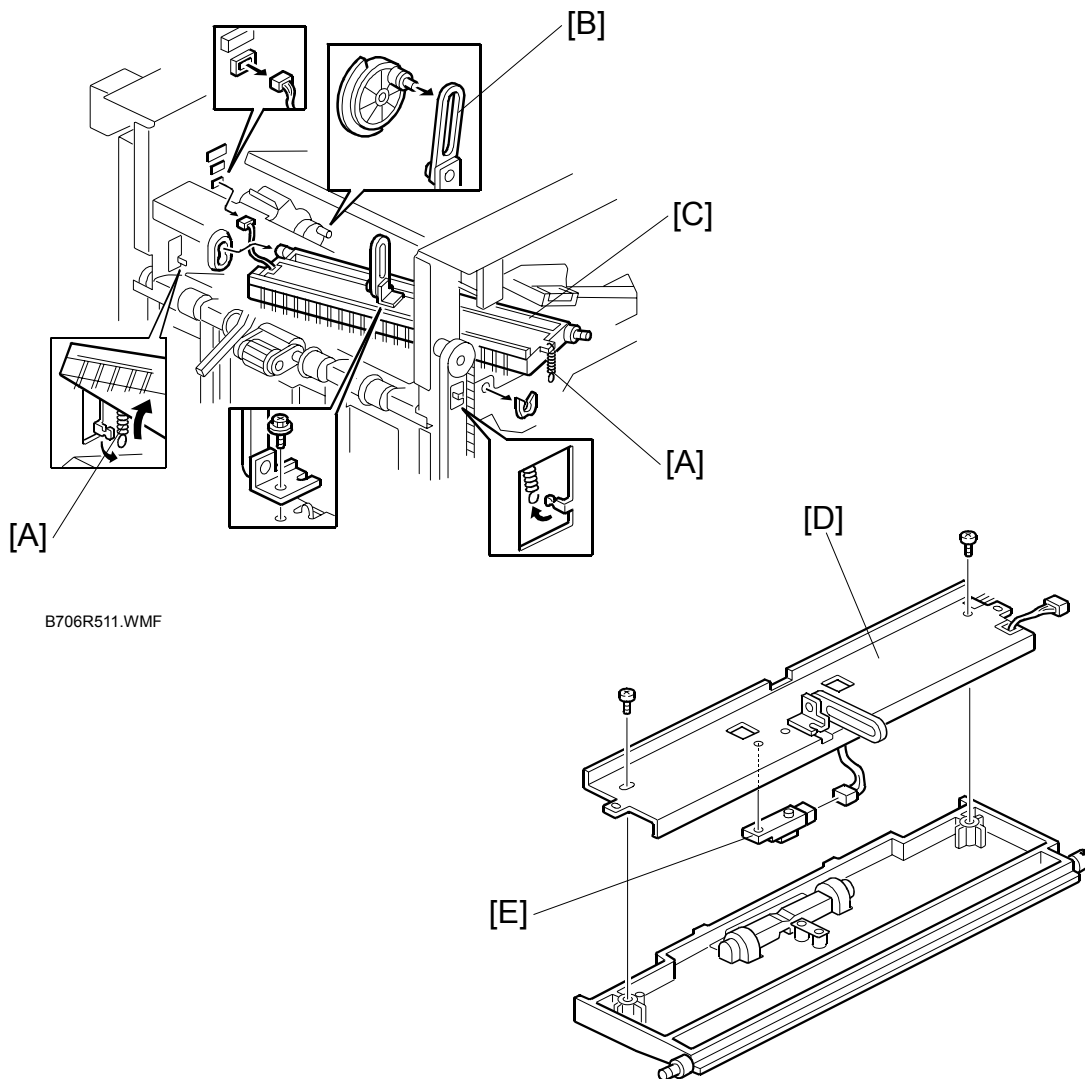

B706R510.WMF

Upper Tray Paper Limit Sensor

1. Remove the top cover.

2. Remove the sensor cover [A] (📎 x 2).

3. Remove the sensor bracket [B] (📎 x 1).

4. Replace the upper tray paper limit sensor [C] (🔌 x 1).

Upper Tray Exit Sensor

5. Remove the sensor bracket [D] (📎 x 1).

6. Replace the upper tray exit sensor [E] (🔌 x 1).

3.5.3 SHIFT TRAY EXIT SENSOR

B706R511.WMF

B706R512.WMF

1. Remove the top cover.

2. Open the front door.

3. Remove the inner cover.

4. Release the upper exit guide springs [A] (x 2).

5. Disconnect the link [B] from the cam ($\hat{\mathscr{F}}$ x 1).

6. Remove the upper exit guide [C] ($\oslash$ x 1, 曰 x 1).

7. Remove the guide stay [D] ($\hat{\mathscr{F}}$ x 2).

8. Replace the shift tray exit sensor [E] ($\hat{\mathscr{F}}$ x 1, 曰 x 1).

Peripherals

3.5.4 ENTRANCE AND STAPLER TRAY ENTRANCE SENSORS

B706R513.WMF

B706R514.WMF
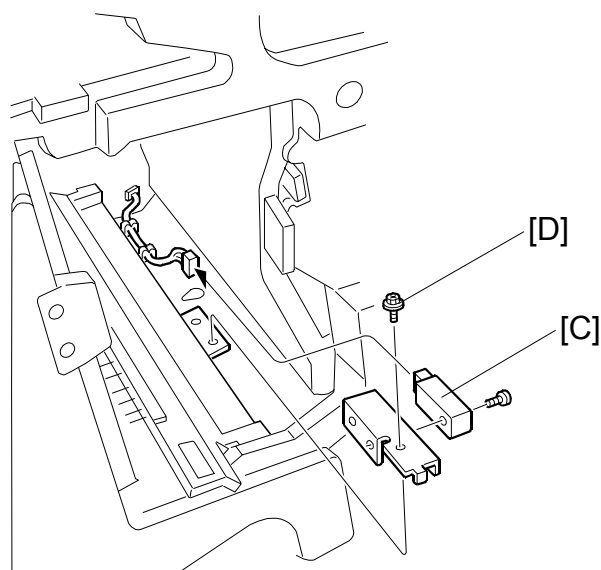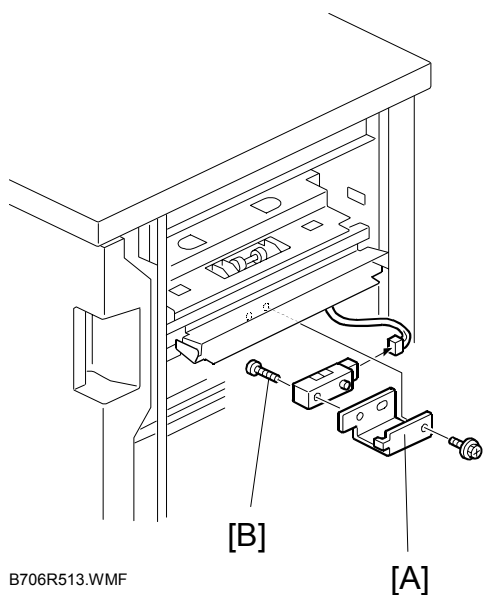
Entrance Sensor

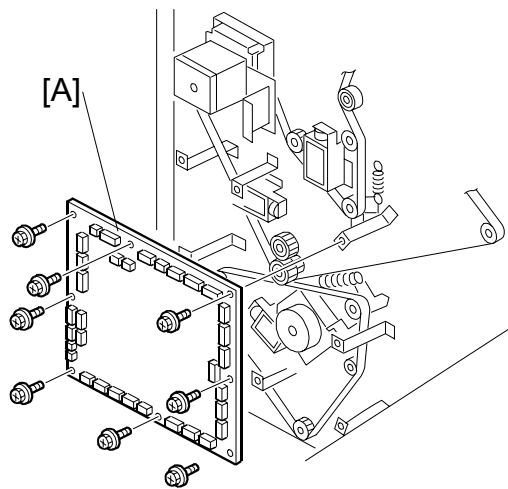1. Disconnect the finisher from the copier.

2. Remove the sensor bracket [A] (🗲 x 1).

3. Replace the entrance sensor [B] (🗲 x 1, ⬡ x 1).

Stapler Tray Entrance Sensor

1. Open the front door.

2. Remove the sensor bracket [C] (🗲 x 1).

3. Replace the stapler tray entrance sensor [D] (🗲 x 1, ⬡ x 1).

3.5.5 PRE-STACK PAPER SENSOR

B706R521.WMF
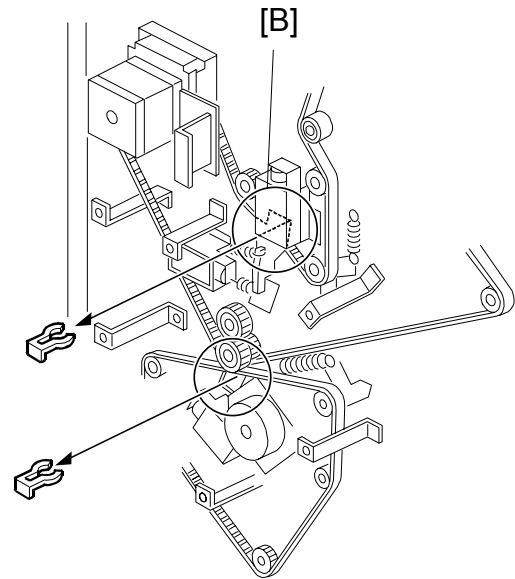
B706R515.WMF
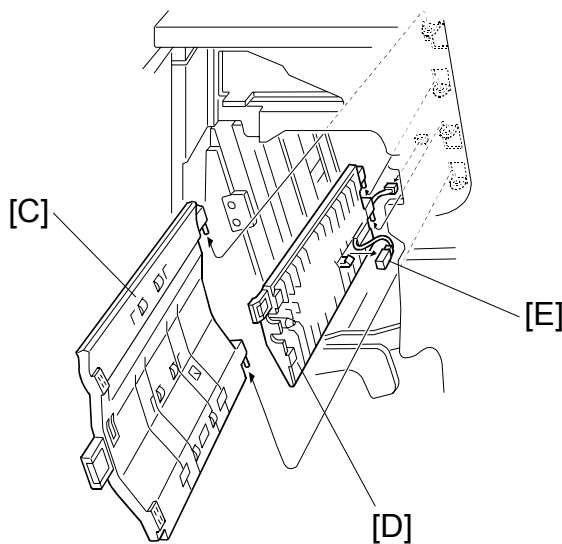
B706R516.WMF

1. Remove the rear cover.

2. Remove the main board [A] (𝒫 x 8, ⬚ x all).

3. Release the guide [B] (⬚ x 2).

4. Open the front door.

5. Remove the left vertical transport guide [C].

6. Remove the middle vertical transport guide [D] (⬚ x 1).

7. Replace the pre-stack paper sensor [E] (⬚ x 1).

3.5.6 STAPLE WASTE HOPPER SENSOR
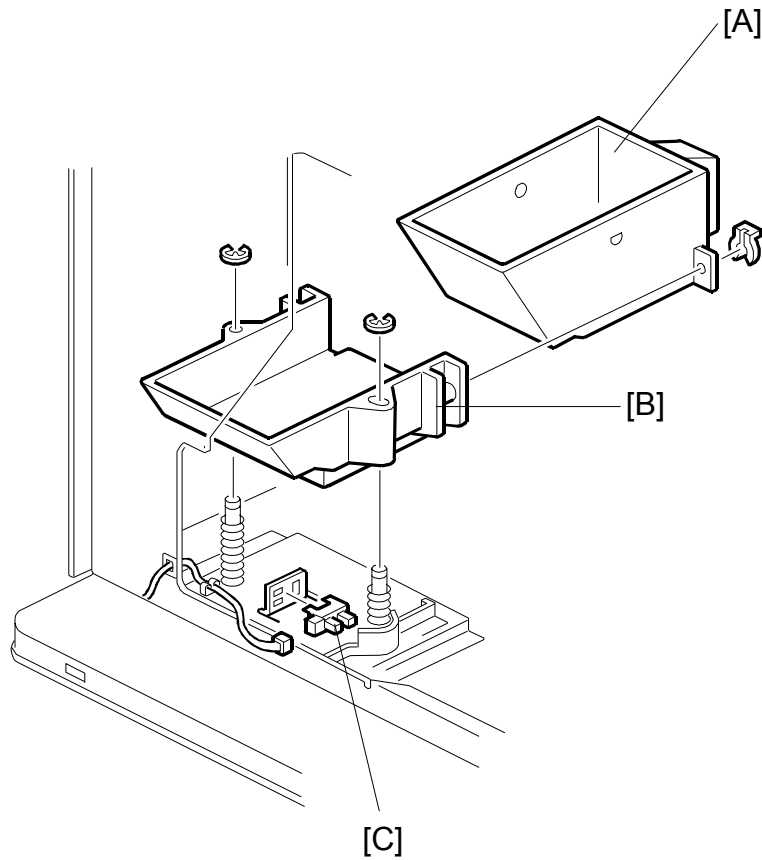
B706R517.WMF

1. Open the front door, pull out the stapler unit, then remove the rear cover.

2. Remove the rear cover ($\mathscr{F}$ x 2).

3. Remove the staple waste hopper [A] ($\overline{\mathbb{O}}$ x 1).

4. Remove the hopper holder [B] ($\mathbb{C}$ x 2).

5. Replace the staple waste hopper sensor [C] (◫ x 1).

3.5.7 STAPLER ROTATION HP AND STAPLER RETURN SENSORS
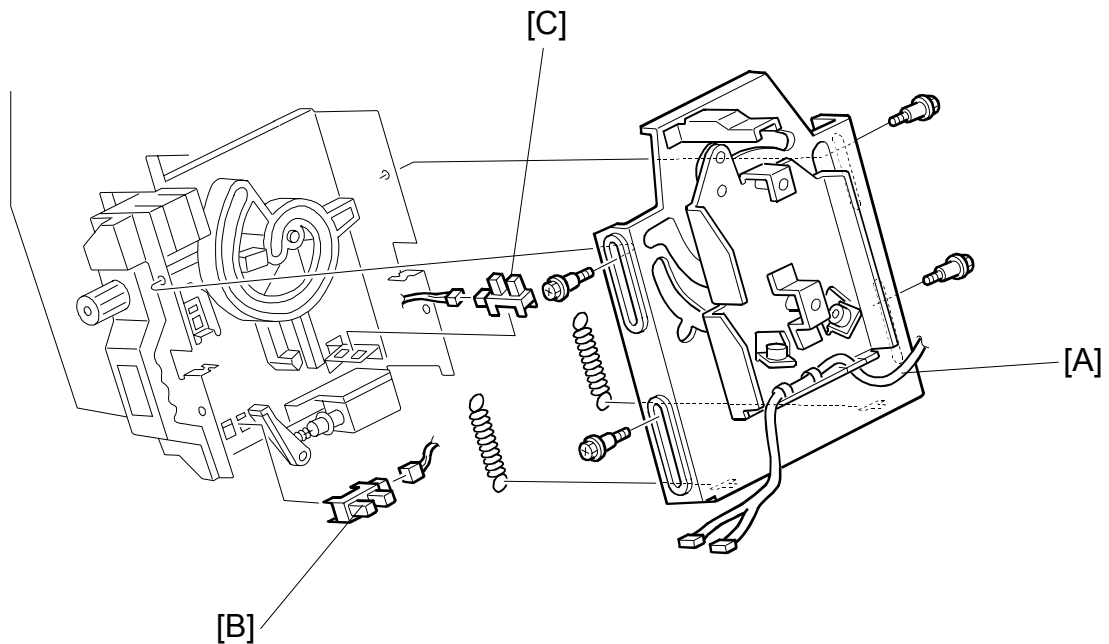
B706R519.WMF

1. Remove the stapler unit. (See next page.)
2. Remove the stapler mount bracket [A] (⌀ x 4, springs x 2).
3. Replace the stapler rotation HP sensor [B] (▭ x 1).
4. Replace the stapler return sensor [C] (▭ x 1).

Peripherals

B706-17
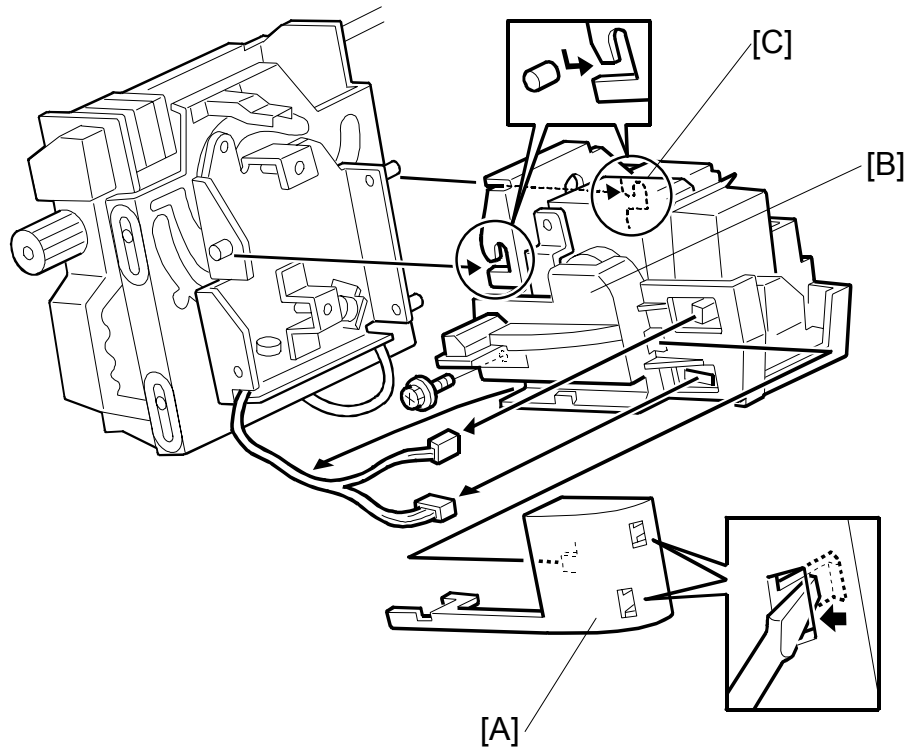
3.6 STAPLER

B706R518.WMF

1. Open the front door and pull out the staple tray.

2. Remove the stapler unit harness cover [A].

3. Remove the stapler cover [B] (🔩 x 1, 🗐 x 2).

4. Lift the stapler off of the pegs [C].

3.7   SHIFT TRAY MOTOR
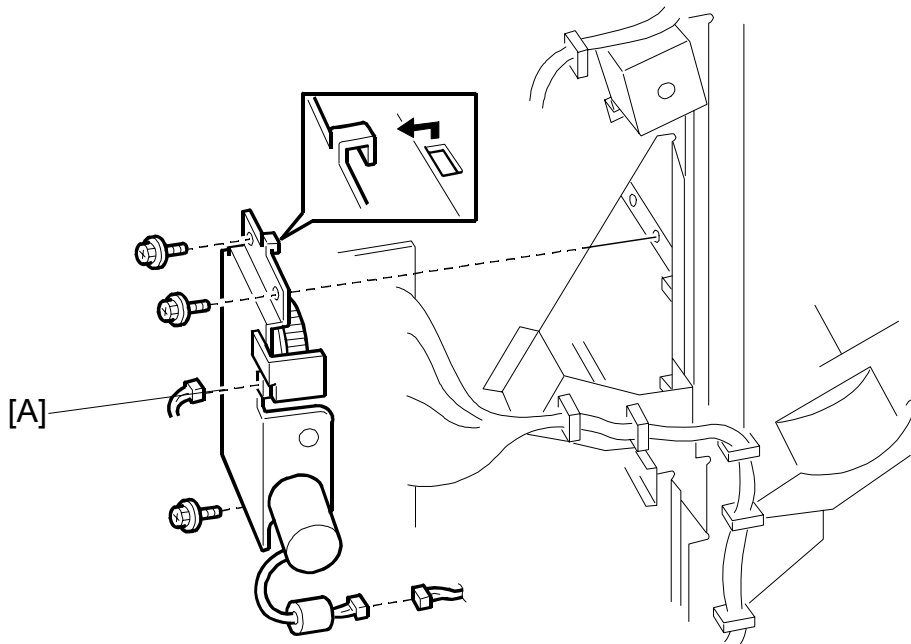
B706R531.WMF

1.   Remove the front door and rear cover (☛ 3.1).

2.   Shift motor [A] (⬚ x 2, 🖉 x 3)

3.7.1 STACKING ROLLER/ROLLER DRAG MOTORS, RETURN HP SENSOR
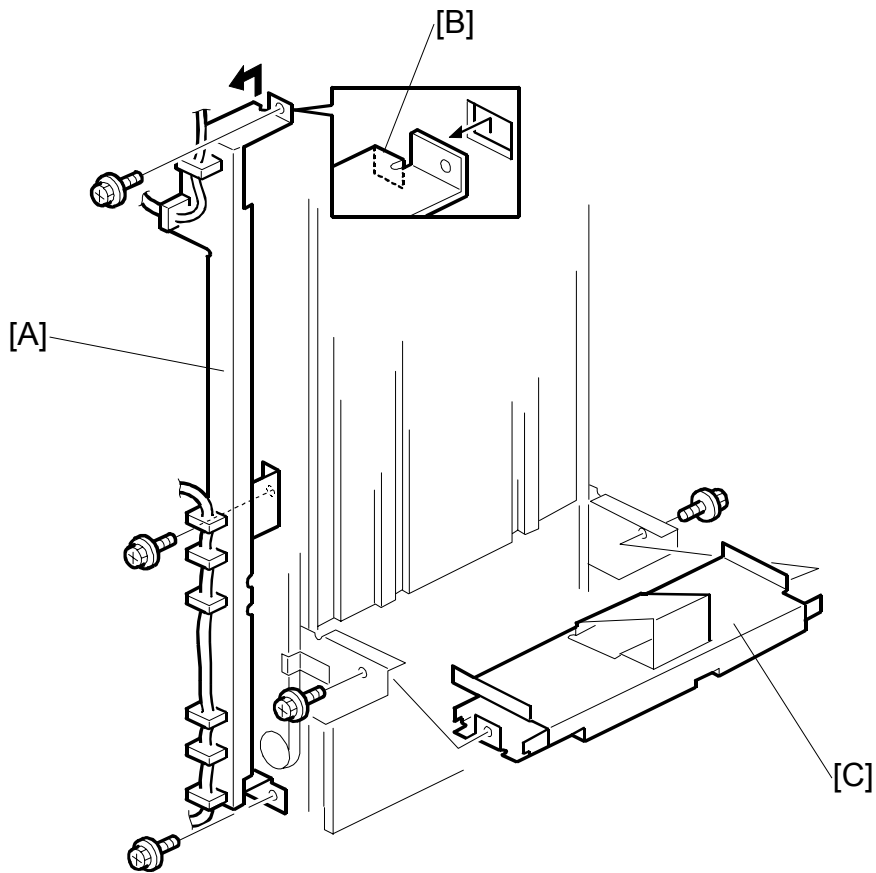
B706R526.WMF

1. Do the procedures to remove the front door and all covers, with the exception of the left lower cover and top cover (labeled [C]: and [E]).
   NOTE: Be sure to lower the shift tray by pulling the gear toward you. The shift tray must be down.

2. Remove the shift tray motor. (☛ 3.7)

3. Remove the left stay [A] (𝄐 x 3).

4. Unhook the stay at top [B].

5. Remove the shift tray mounting plate [C] (𝄐 x 2).

B706R527.WMF

B706R528.WMF
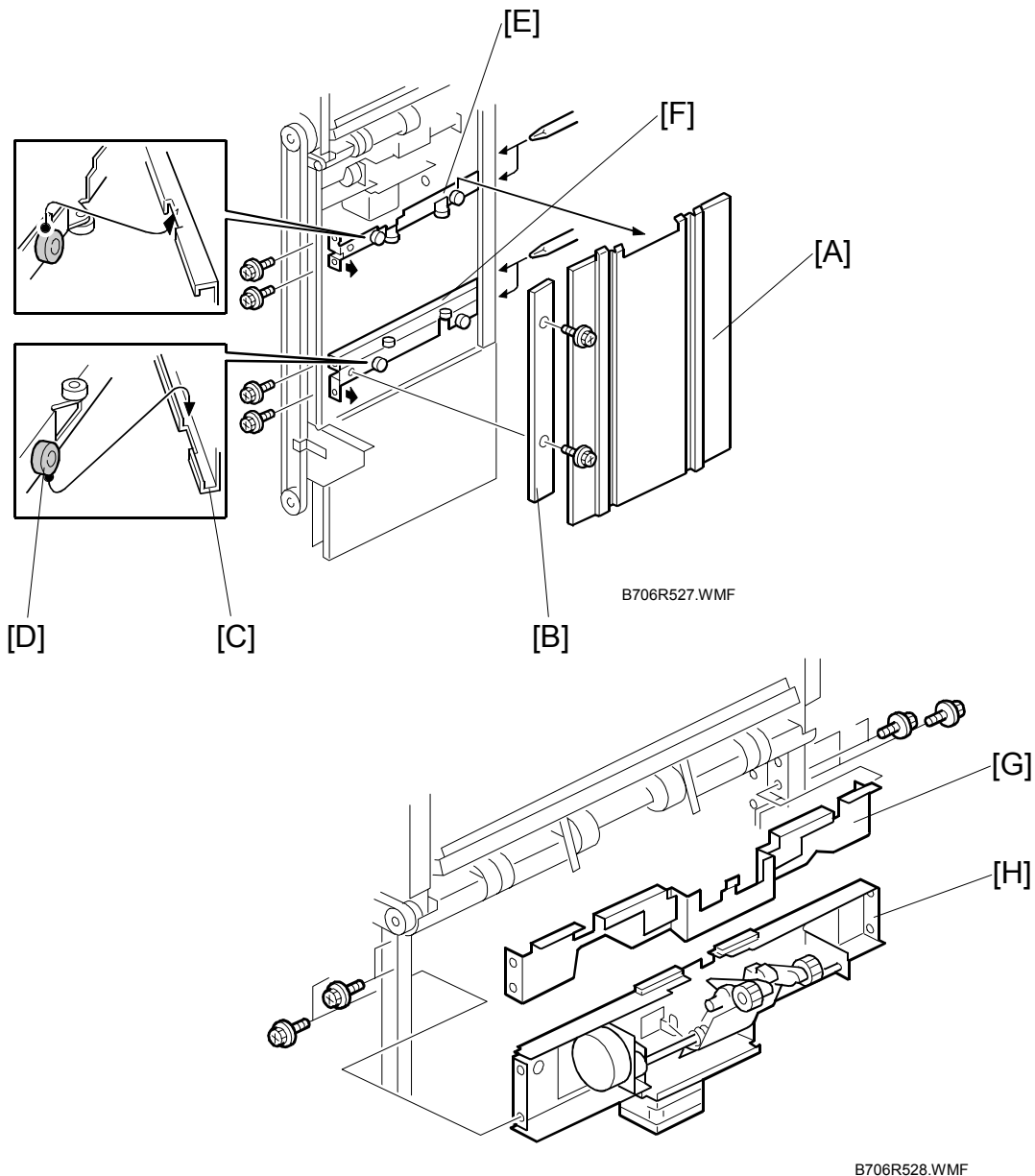
6. Remove the end fence [A] and plate [B] (𝄫 x 2).

7. Disengage the end fence races [C] from the rollers [D] behind the fence.

8. Remove the upper stay [E] (𝄫 x 4).

9. Remove the lower stay [F] (𝄫 x 4).

10. Remove the cover [G] (𝄫 x 4).

11. Remove the stacking roller/drag motor stay [H] (▤ x 3, 𝄫 x 4).
    NOTE: Make sure the motor and sensor connectors are disconnected before
    removing.
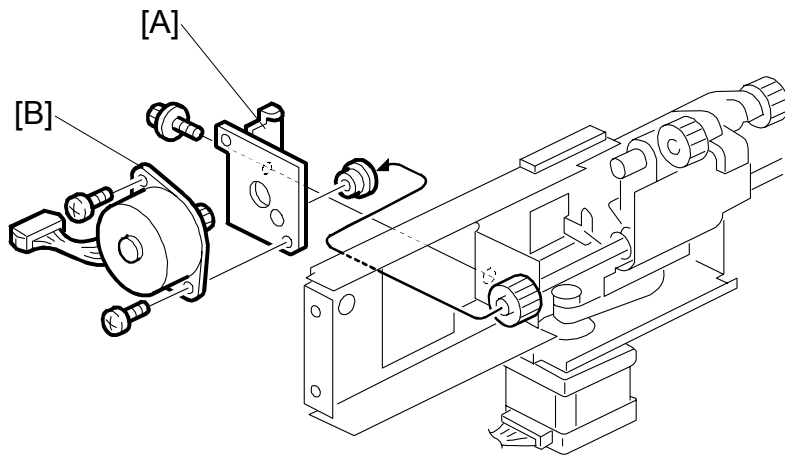
B706R530.WMF
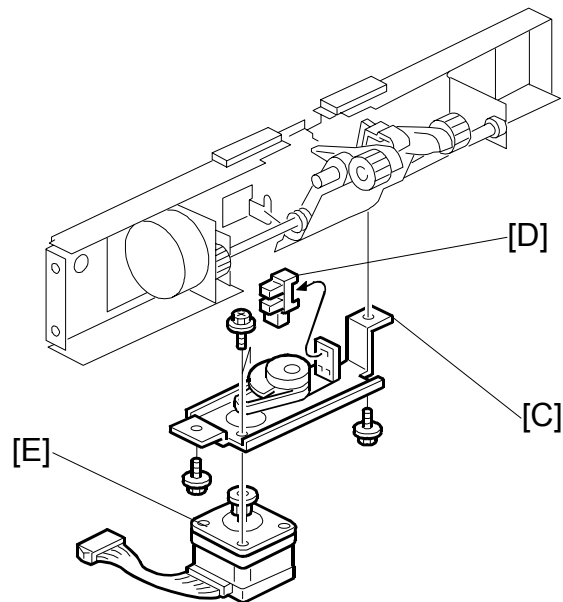
B706R529.WMF

12. Remove the stacking motor bracket [A] (bushing x 1, ✐ x 1).

13. Remove the stacking motor [B] (✐ x 2).

14. Remove the roller drag motor bracket [C] (✐ x 2).

15. Remove return HP sensor [D].

16. Remove the roller drag motor [E] (✐ x 1).

3.8 Z-FOLD JOGGER UNIT

3.8.1 Z-FOLD JOGGER UNIT COVER

B706R101.WMF
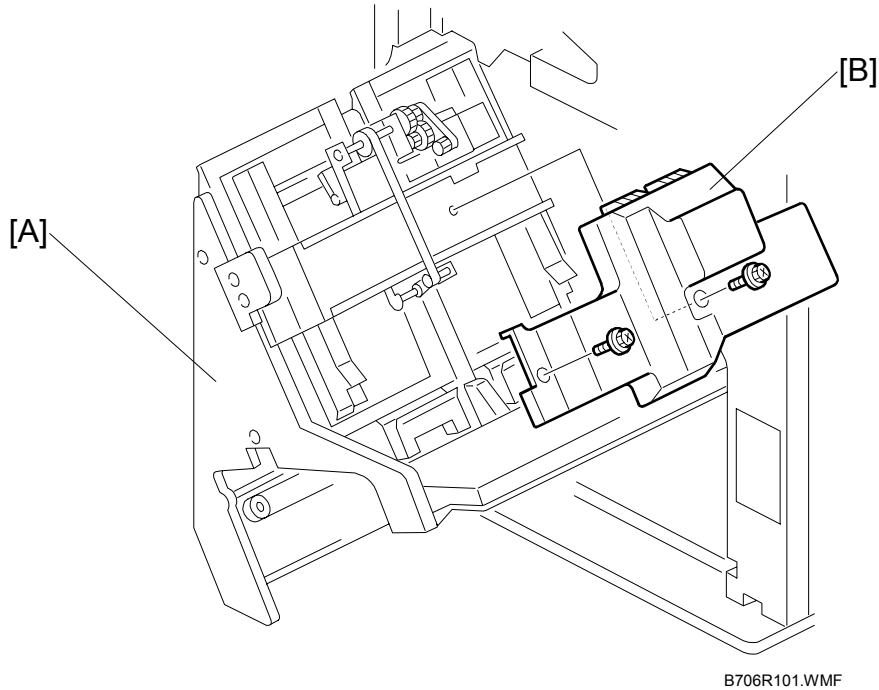
1. Open the front door.
2. Pull out the stapler tray unit [A].
3. Remove the Z-fold jogger unit cover [B] ($\hat{\mathscr{F}}$ x 2).

Peripherals

3.8.2 Z-FOLD JOGGER UNIT
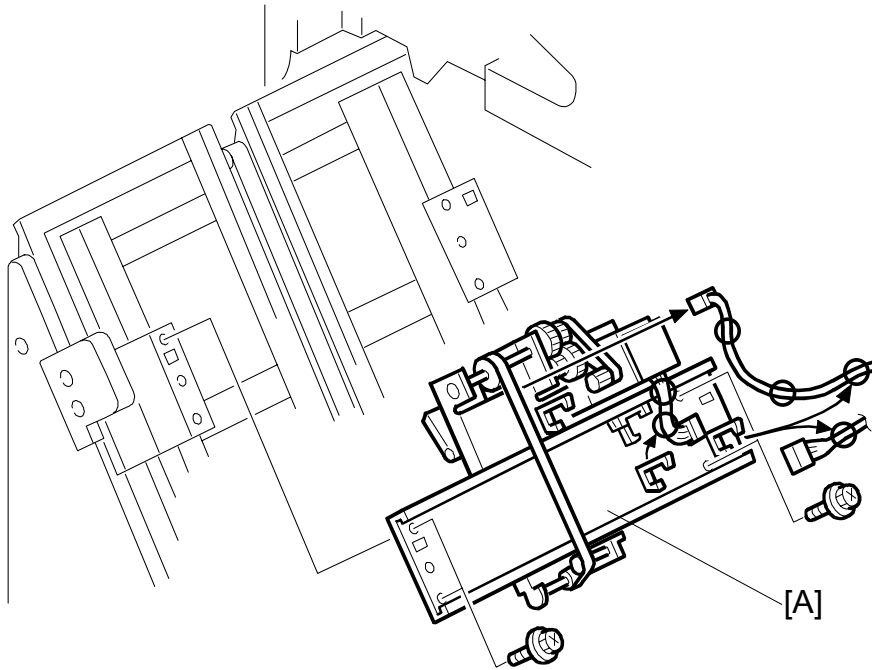
B706R103.WMF

1. Open the front door and pull out the stapler tray unit.

2. Remove the Z-fold jogger unit cover ($\hat{\mathscr{F}}$ x 2).

3. Remove the Z-fold jogger unit [A] ($\hat{\mathscr{F}}$ x 4, 🖾 x 4, 🗐 x 2).

3.8.3 JOGGER TOP FENCE MOTOR
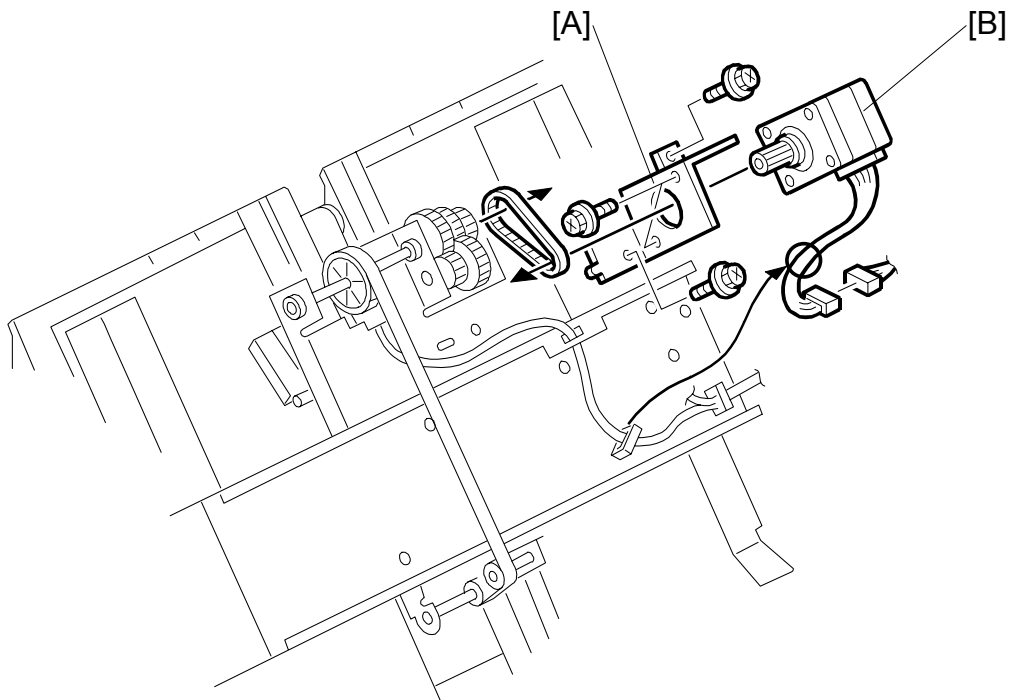
B706R102.WMF

1. Open the front door and pull out the stapler tray unit.

2. Remove the Z-fold jogger unit cover ($\mathscr{F}$ x 2).

3. Remove the motor bracket [A] ($\mathscr{F}$ x 2, timing belt x 1).

4. Remove the jogger top fence motor [B] ($\mathscr{F}$ x 2, 🔌 x 1, 🔌 x 1).

Peripherals

B706-25

3.8.4 JOGGER BOTTOM FENCE MOTOR
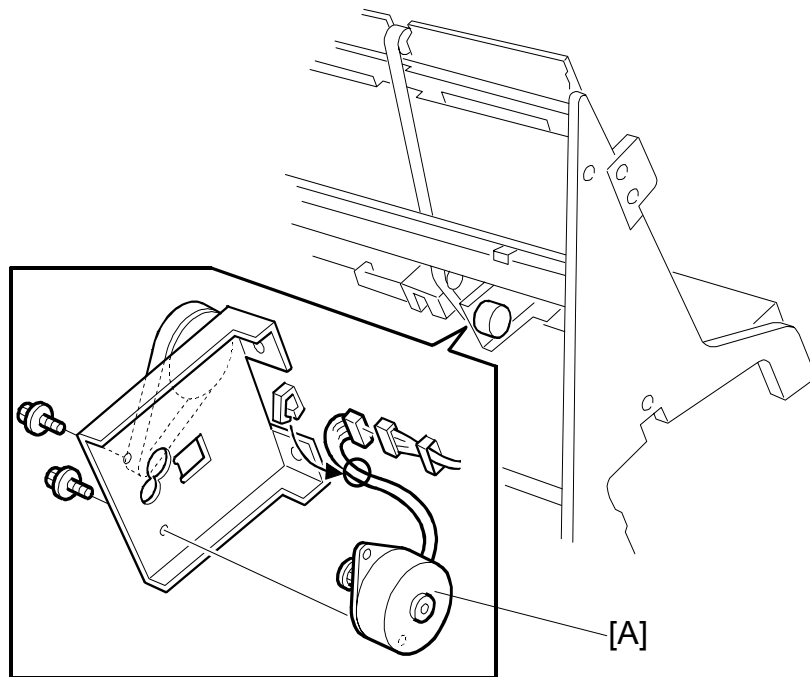
B706R104.WMF

1. Open the front door and pull out the stapler tray unit.
2. Remove the jogger bottom fence motor [A] ($\mathscr{F}$ x 2, timing belt x 1, ⬚ x 1, ⬚ x 1).

3.9 PUNCH UNIT B531 (OPTION)

3.9.1 PUNCH POSITION ADJUSTMENT

B531R101.WMF
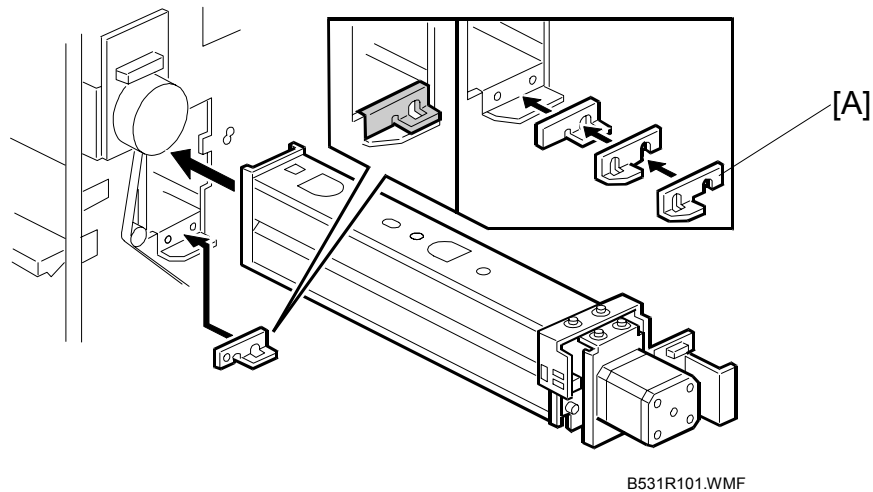
The position of the punched holes can be adjusted in two ways.

Front to Rear Adjustment

Three spacers [A] are provided with the punch unit for manual adjustment of the hole position in the main scan direction:

- 2 mm (x 1)
- 1 mm (x 2)

NOTE: One spacer was installed at installation and the remaining spacers were fastened with a screw to the rear frame of the finisher under the rear cover and slightly above the lock bar.

Right to Left Adjustment

The position of the punched holes can be adjusted right to left in the sub scan direction with SP6-113 Punch Hole Position Adjustment. The position can be adjusted in the range ±7.5 mm in 0.5 mm steps. The default setting is 0.

Press the ▣⊠ key to toggle the ± selection. A +VE value shifts the punch holes left toward the edge of the paper, and a -VE value shifts the holes right away from the edge.

Peripherals

3.10 JOGGER UNIT B513 (OPTION)

3.10.1 JOGGER UNIT
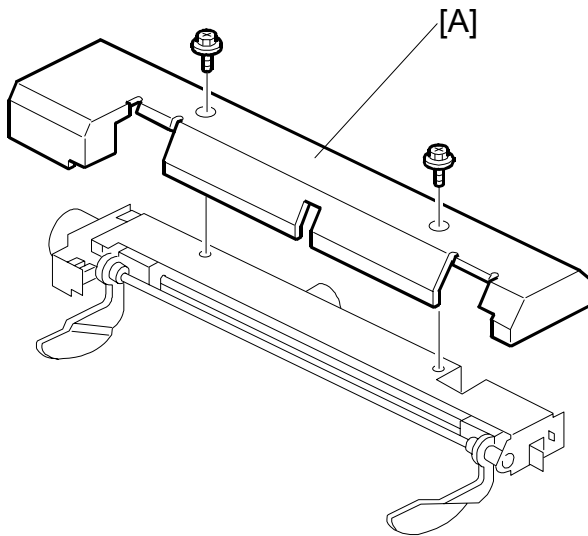
B513I002.WMF
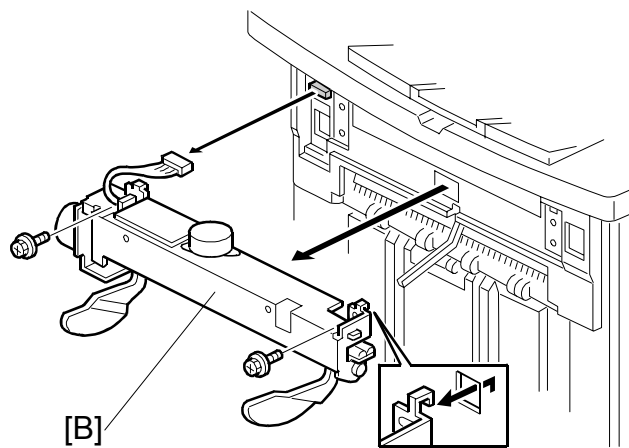
B513R003.WMF

1. Remove the jogger unit cover [A] (🔩 x 2).

2. Remove the jogger unit [B] (🔩 x 2, 🔌 x 1).

3.10.2 JOGGER UNIT PCB
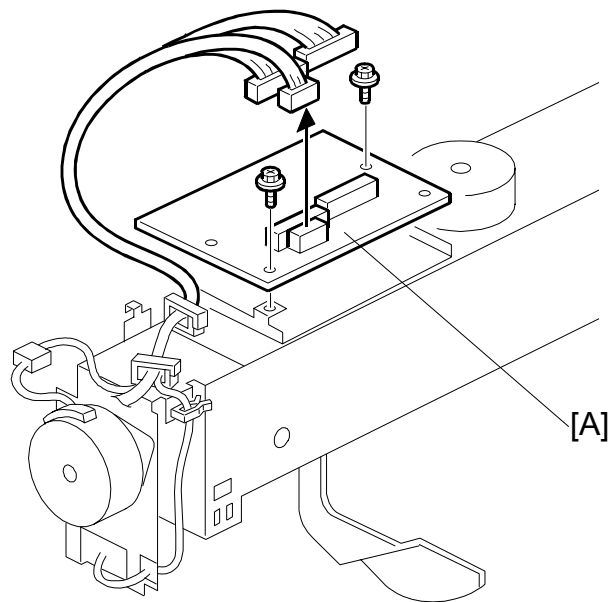
B513R001.WMF

1. Remove the jogger unit from the finisher. (☛ 3.10.1)

2. Remove the jogger unit control PCB [A] (🔩 x 2, 🔌 x 3)

3.10.3 JOGGER UNIT MOTOR
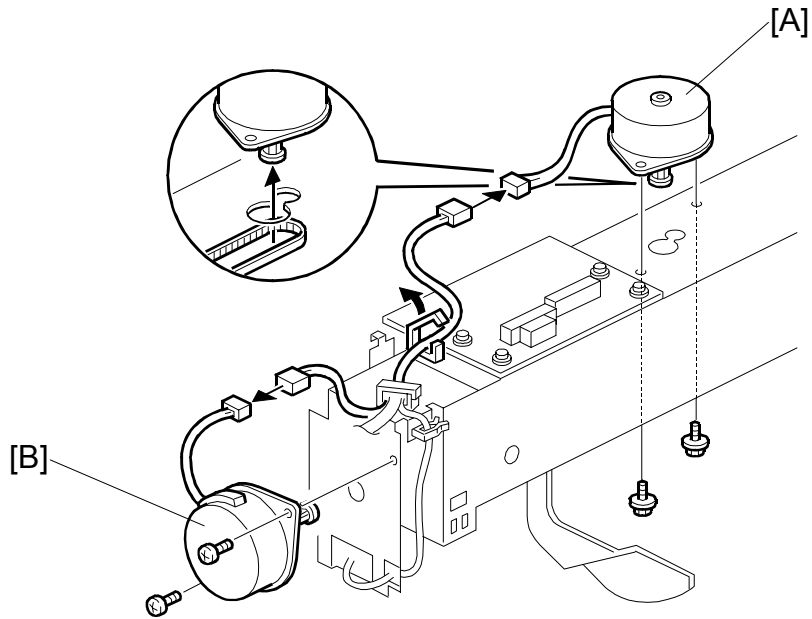
B513R002.WMF

1. Remove the jogger unit from the finisher. (☛ 3.10.1)

2. Remove the shift jogger motor [A] (✐ x 2, ⬚ x 1).

3. Remove the shift jogger lift motor [B] (✐ x 2, ⬚ x 1).

4. TROUBLESHOOTING

If the machine logs an SC code in the display of the operation panel, see "Section 4 Troubleshooting" of the Service Manual. Section 4 contains a complete list of all service codes and how to troubleshoot the problem.

Peripherals

5.   SERVICE TABLES

For details about 3000-Sheet Finisher B706 SP codes, please refer to "5. Service Tables" in the main machine service manual.

5.1   DIP SWITCHES

DPS100				Description
1	**2**	**3**	**4**	
0	0	0	0	Default
0	0	1	0	Free run: A4 LEF, staple mode
0	0	0	1	Free run: staple and tray shift

NOTE: Do not use any other settings.

5.2   TEST POINTS

No.	Label	Monitored Signal
TP100	(5V)	+5 V
TP101	(GND)	Ground
TP102	(RXD)	RXD
TP103	(TXD)	TXD

5.3   FUSES

No.	Function
FU100	Protects 24 V.

6.   DETAILS

6.1   TRAY AND STAPLER JUNCTION GATE

Upper Tray Mode
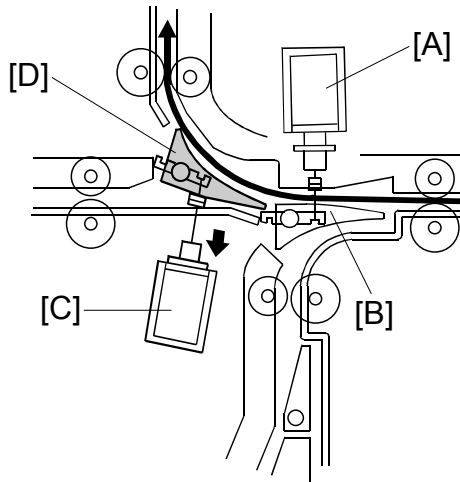
B706D506.WMF

Sort/Stack Mode
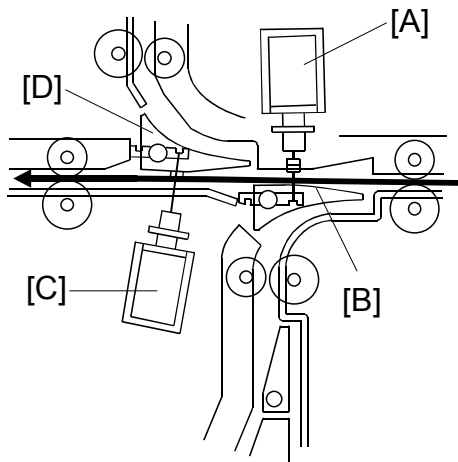
B706D505.WMF

Staple Mode
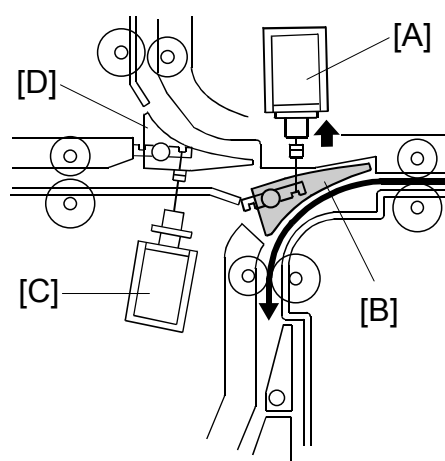
B706D507.WMF

Depending on the finishing mode, the copies are directed up, straight through, or down by the combinations of open and closed junction gates.

Solenoid/Gate		Selected Operation Mode		
		Upper Tray	Sort/Stack	Staple
[A]	Stapler junction gate solenoid	Off	Off	ON
[B]	Stapler junction gate	Closed	Closed	OPEN
[C]	Tray junction gate solenoid	ON	Off	Off
[D]	Tray junction gate	OPEN	Closed	Closed

B706-33

6.2 PAPER PRE-STACKING
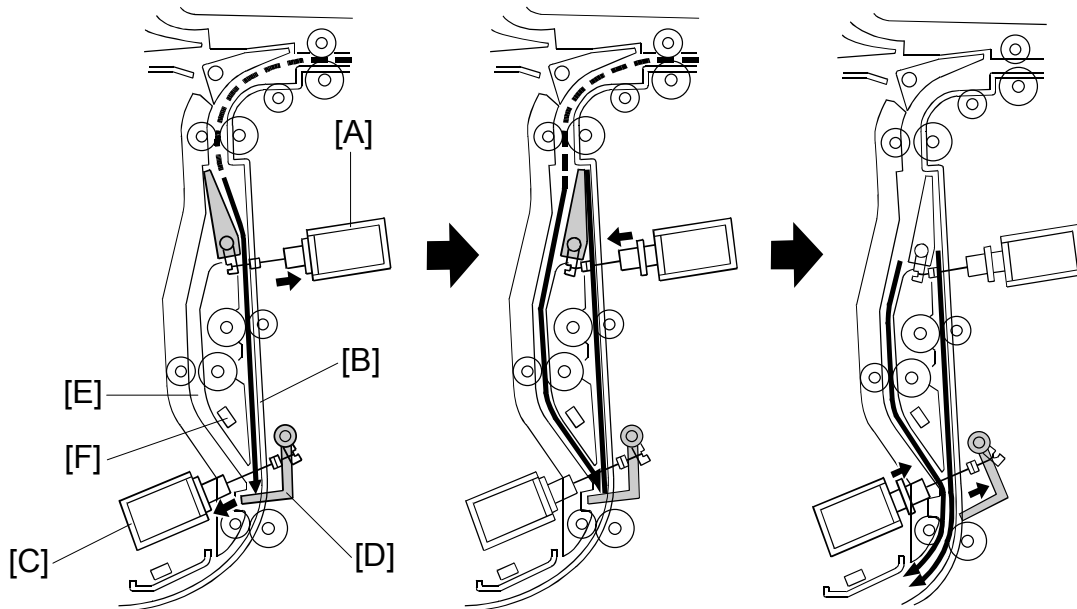
B706D000.WMF

This mechanism improves productivity in staple mode. It is only used when copying on A4, LT, or B5 (all LEF).

During stapling, the copier has to wait. This mechanism reduces the wait by holding the first two sheets of a job while the previous job is still being stapled. It only works during the second and subsequent sets of a multi-set copy job.

The pre-stack junction gate solenoid [A] turns on 120 mm after the 1st sheet of paper turns on the entrance sensor, and this directs the sheet to the pre-stack tray [B]. (This sheet cannot be fed to the stapler yet, because the first set is still being stapled.) The pre-stack paper stopper solenoid [C] turns on 350 mm after the 1st sheet turns on the entrance sensor. The pre-stack paper stopper [D] then stops the paper.

The pre-stack junction gate solenoid turns off 230 mm after the trailing edge of the 1st sheet passes through the entrance sensor, and the 2nd sheet is sent to the paper guide [E]. The pre-stack paper stopper is released about 40 mm after the 2nd sheet turns on the pre-stack stopper sensor [F], and the two sheets of copy paper are sent to the stapler tray. All sheets after the 2nd sheet go to the stapler tray via the paper guide [E].

6.3 JOGGER UNIT PAPER POSITIONING

B706D508.WMF
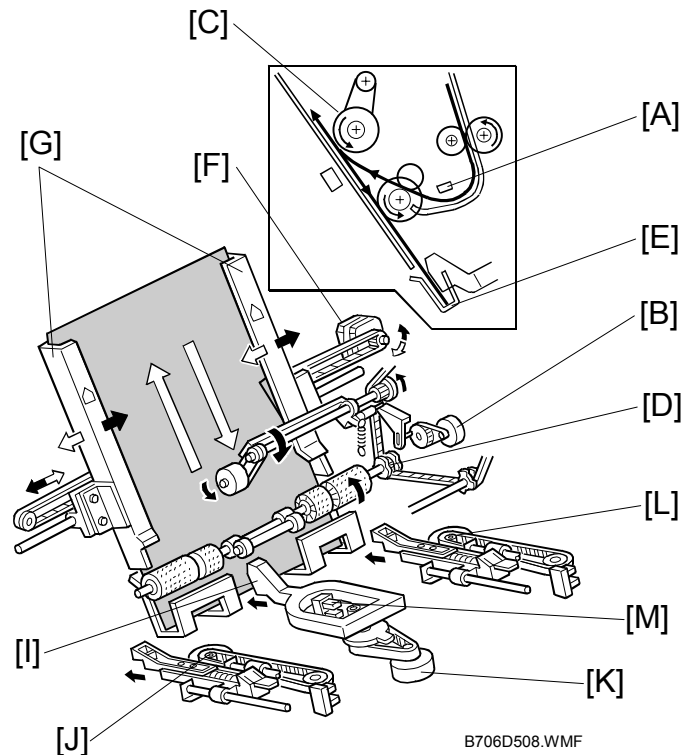
In the staple mode, as every sheet of paper arrives in the jogger unit, it is vertically and horizontally aligned, then the staple edge is pressed flat to ensure the edge of the stack is aligned correctly for stapling.

Vertical Paper Alignment: About 60 ms after the trailing edge of the copy passes the staple tray entrance sensor [A], the positioning roller motor [B] is energized to push the positioning roller [C] into contact with the paper. The positioning roller and alignment brush roller [D] rotate to push the paper back and align the trailing edge of the paper against the stack stopper [E].

Horizontal Paper Alignment: When the print key is pressed, the jogger motor [F] turns on and the jogger fences [G] move to the wait position about 7.2 mm wider than the selected paper size on both sides. When the trailing edge of the paper passes the staple unit entrance sensor, the jogger motor moves the jogger fences 3.7 mm towards the paper. Next, the jogger motor turns on again for 3.5 mm for the horizontal paper alignment then goes back to the wait position.

Paper Stack Correction: After the paper is aligned in the stapler tray, the left [J], center [K], and right [L] stack plate motors switch on briefly and drive the front stack, center stack, and rear stack plates against the edge of the stack to flatten the edge completely against the staple tray for stapling. When the next copy paper turns on the stapler entrance sensor, the stack plate motor turns on and returns to its home position. The home position is detected by stack plate HP sensor [M].

Peripherals

6.4 STAPLER UNIT MOVEMENT
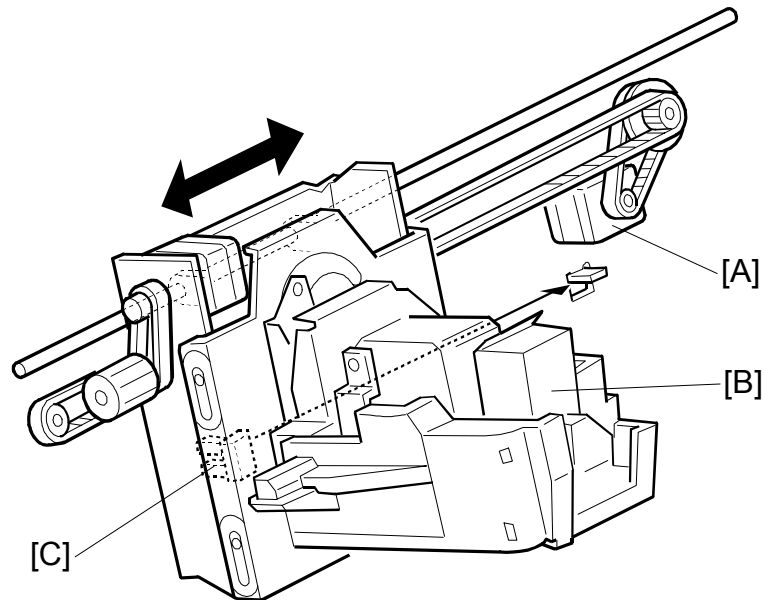
B706D513.WMF

Side-to-Side

The stapler motor [A] moves the stapler [B] from side to side. After the start key is pressed, the stapler moves from its home position to the stapling position.

If two-staple-position mode is selected, for the first stack the stapler moves to the rear stapling position first, staples, moves to the front position, staples and waits at the front. For the second stack, the stapler staples the front corner first, then moves to the rear corner and staples.

NOTE: For continuous stapling jobs, the corners are stapled rear then front for the odd number stacks and stapled front then rear for even number stacks.

After the job is completed, the stapler returns to its home position. This is detected by the stapler HP sensor [C].

B706D514.WMF

B706D523.WMF

B706D515.WMF
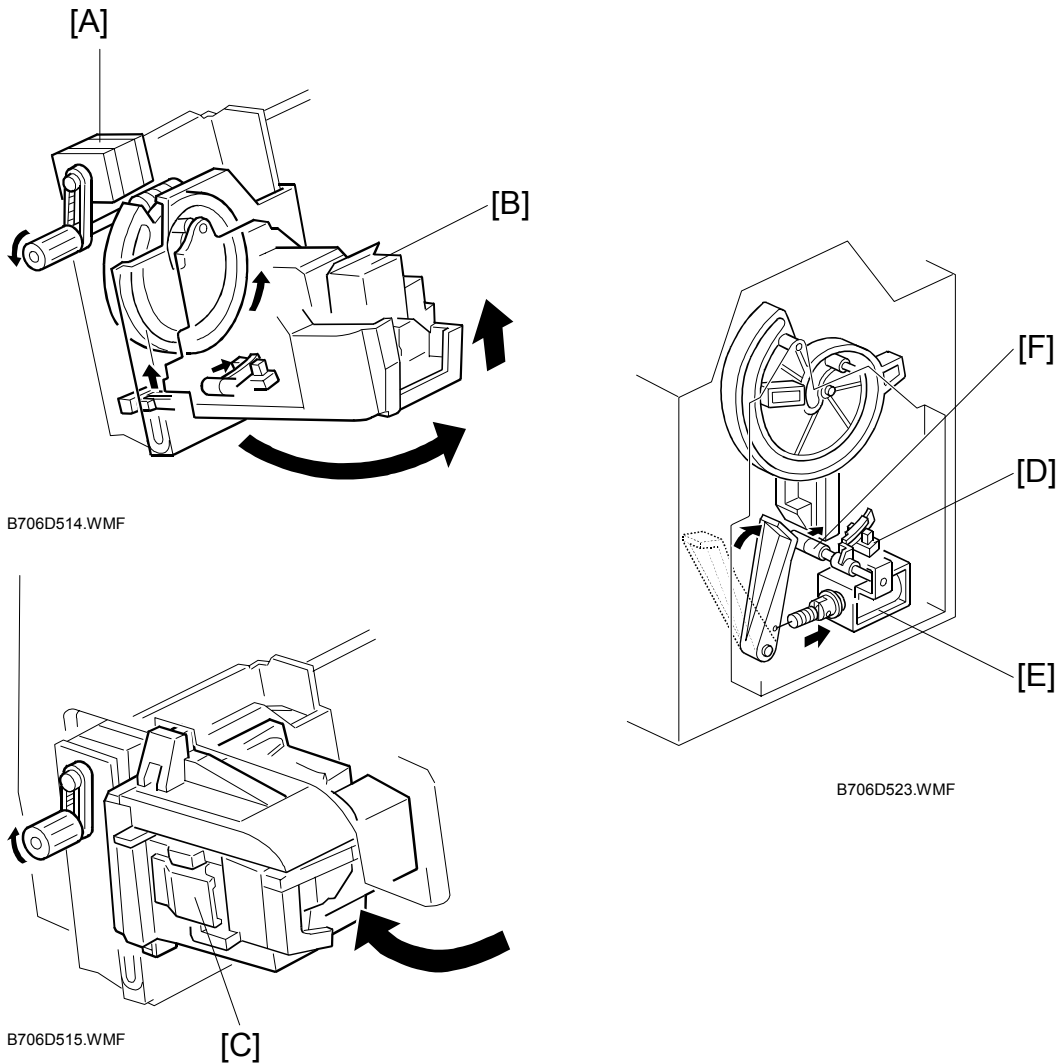
Rotation (1)

In the oblique staple position mode, the stapler rotation motor [A] rotates the stapler units [B] 45° to counterclockwise after it moves to the stapling position.

Rotation (2)

When the staple end condition arises, the stapler motor moves the stapler to the front and the stapler rotation motor rotates the stapler unit to clockwise to remove the staple cartridge [C]. This allows the user to add new staples.

Once the staples have been installed, and the front door closed, the stapler unit returns to its home position. As the stapler unit is returning to the home position, the stapler return sensor [D] is activated, the return solenoid [E] turns on and it assists the guide roller [F] to return to its guide (this guide directs the stapler during rotation).

Peripherals

6.5 STAPLER

B706D516.WMF

B706D521.WMF

B706D522.WMF
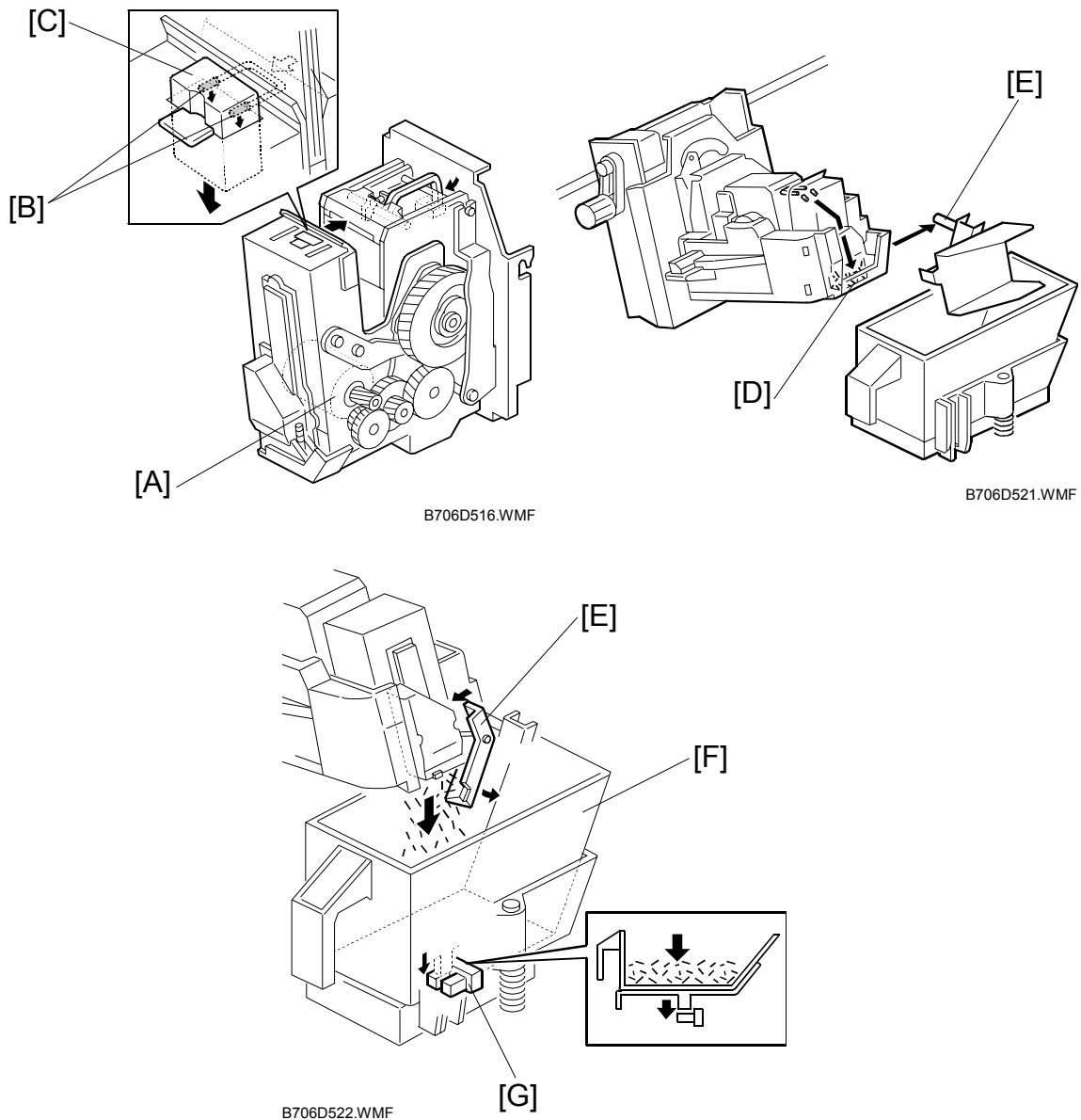
When the aligned copies are brought to the stapling position by the positioning roller and jogger fences, the staple hammer motor [A] starts stapling.

During stapling, the stapler trims off the excess length [B] of the staples by lowering the cutter [C]. This excess length depends on the number of copies in the set; there will be very little for a stack containing 100 sheets. The staple waste drops into the tray [D] in the stapler. When the stapler unit returns to its home position, the tray hits the shaft [E] and the tray opens. The staple waste drops into the staple waste hopper [F]. When the staple waste hopper is full, the actuator on its base activates the staple waste hopper sensor [G]. An SC737 (Full Finisher Staple Waste Hopper) is displayed.
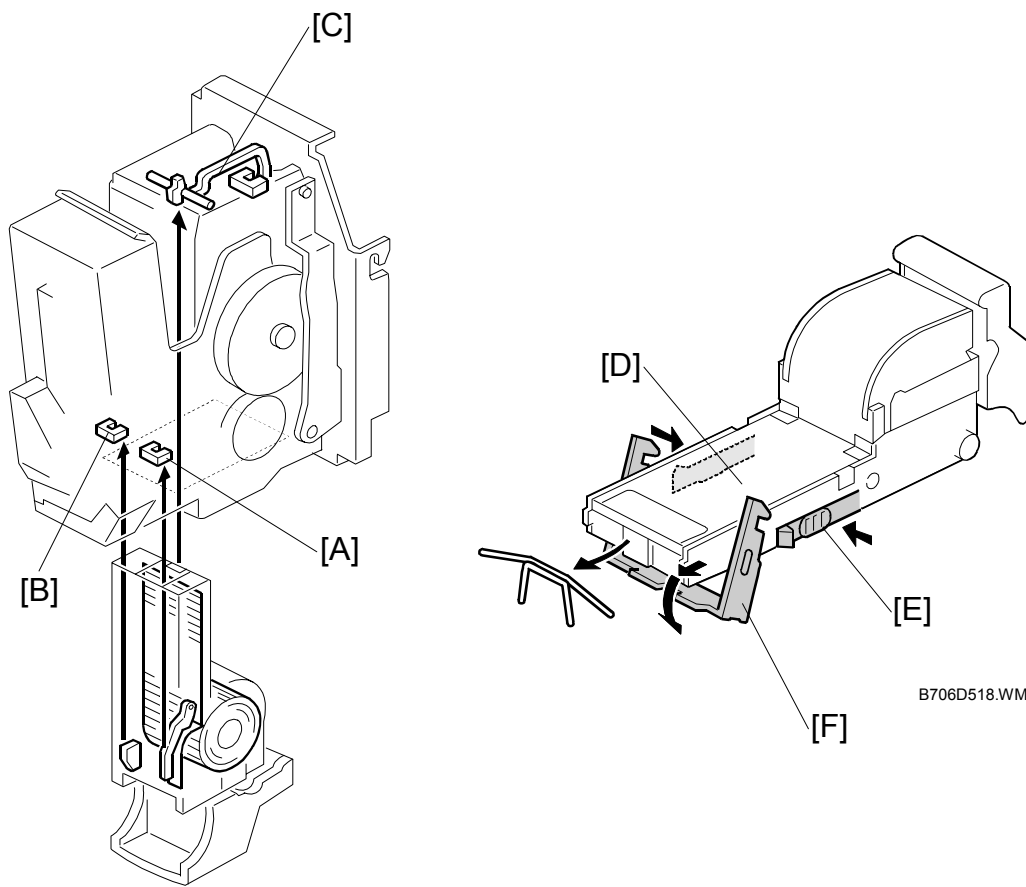
B706D517.WMF

B706D518.WMF

The stapler has a staple end sensor [A], cartridge set sensor [B] and staple hammer HP sensor [C].

When a staple end or no cartridge condition is detected, a message is displayed advising the operator to install a staple cartridge. If this condition is detected during a copy job, the indication will appear, and the copy job will stop.

The staple cartridge has a clinch area [D] where jammed staples collect. The operator can remove the jammed staples from the clinch area by pressing in the releases [E] on both sides, then lowering the bracket lever [F].

Peripherals

B706-39

6.6 FEED-OUT

B706D519.WMF

B706D512.WMF
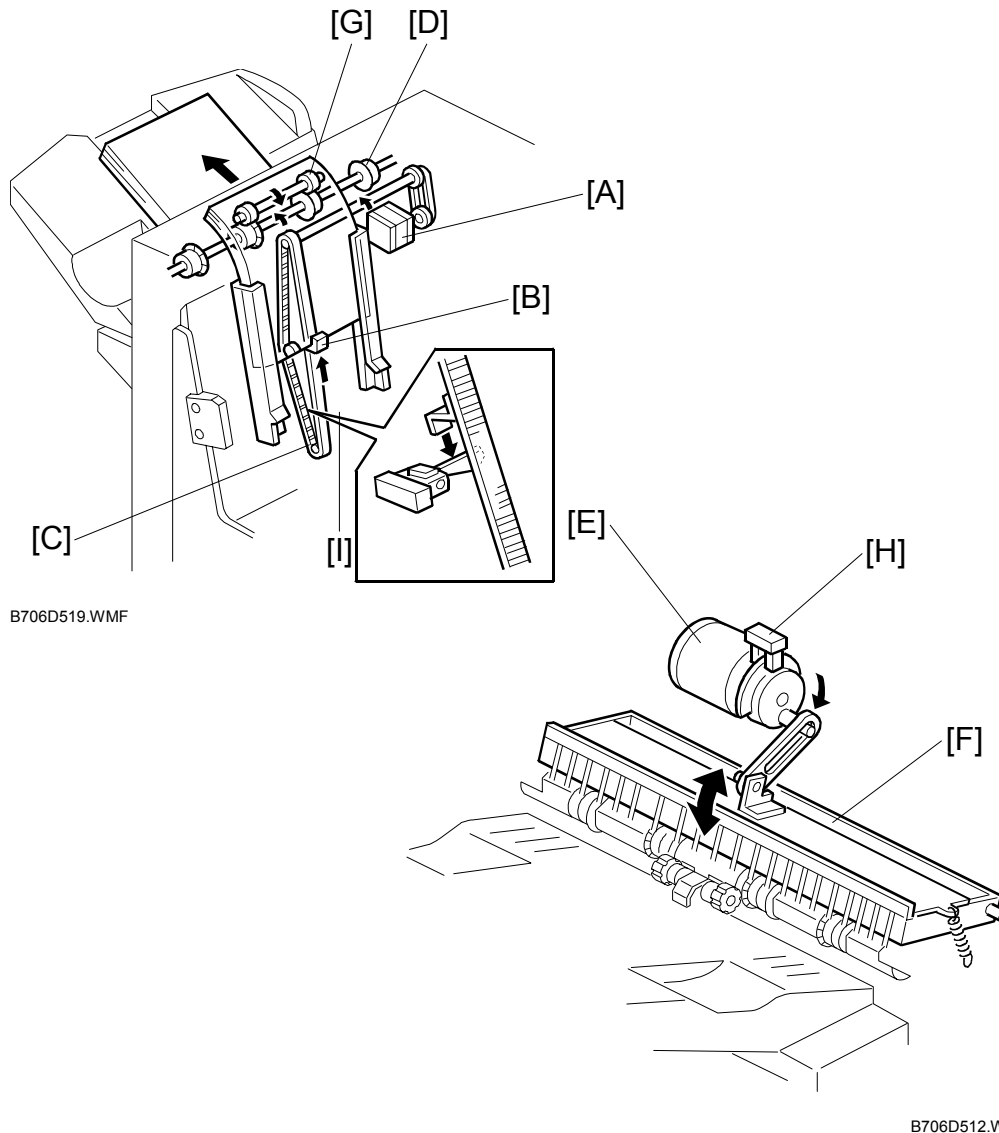
After the copies have been stapled, the stack feed-out motor [A] starts. The pawl [B] on the stack feed-out belt [C] transports the set of stapled copies up and feeds it to the shift tray exit roller [D]. When stapling starts, the exit guide motor [E] opens the upper exit guide [F], which includes the upper shift tray exit roller [G], in order to feed out the leading edge of the copy set smoothly. The exit guide motor turns on again a certain time after stapling is complete, and the upper exit guide plate is lowered. Then the shift tray exit roller takes over the stack feed-out.

The on-off timing of the exit guide motor is detected by the exit guide open sensor [H].

The stack-feed-out motor turns off when the pawl actuates the stack feed-out belt home position sensor [I].

6.7 PAPER EXIT STACKING
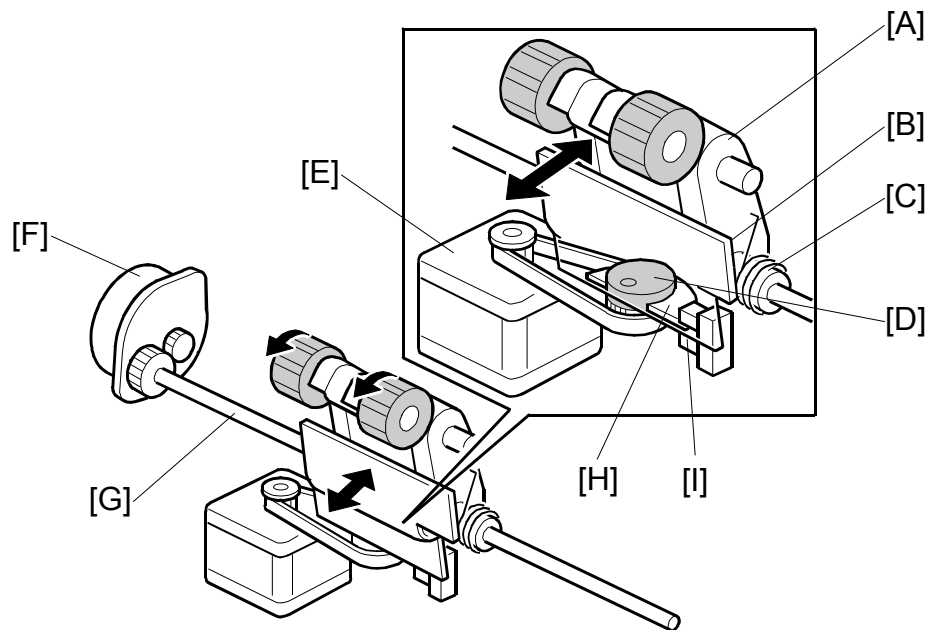
B706D524.WMF

The stacking roller assembly [A] is fastened to a plate [B] on a shaft by a spring [C]. The cam [D], in contact with the bottom of the plate, is connected to the stacking roller drag motor [E] via a timing belt.

The stacking roller drag motor and timing belt rotate the cam against the bottom of the plate to move the rollers forward and back with each sheet ejected onto the shift tray.

The stacking roller motor [F] drives the shaft [G] that rotates the stacking rollers counter-clockwise as the rollers move back. The simultaneous rotation and backward movement of the roller assembly pulls each sheet back toward the copier to align the edges of the stack on the shift tray.

The actuator [H] is mounted on the cam and rotating with both rotating clockwise) and detects the roller assembly home position when the actuator leaves the gap of the return drive HP sensor [I] and signals the machine that the rollers are at the home position. The machine uses this information to control paper feed timing and confirm that the mechanism is operating correctly. The cam and actuator make one complete rotation for every sheet fed out of the machine onto the shift tray.

Peripherals

6.8 SHIFT TRAY

6.8.1 OVERVIEW
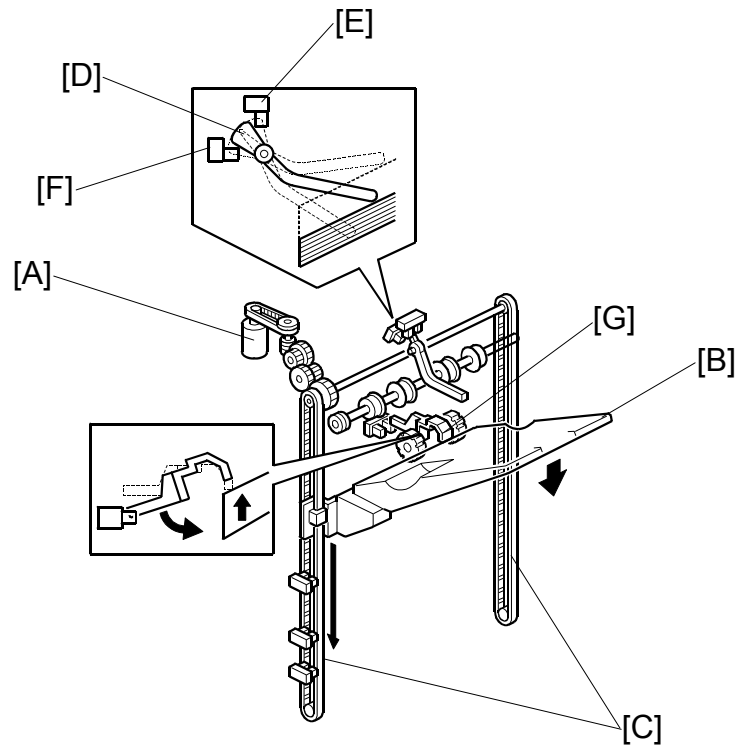
B706D010.WMF

The shift tray lift motor [A] controls the vertical position of the shift tray [B] through gears and timing belts [C].

Stand-by Mode

After the main switch is turned on, or when the stack is removed from the tray, the end of the feeler on the tray falls and its actuator [D] rotates up into staple mode HP sensor 2 [E] (S7) and switches it on. This switches on the lift motor, which raises the tray until the tray pushes the actuator out of the sensor [E]. Then, the lift motor stops the shift tray; this is the home position (the actuator [D] is between the two sensors [E] and [F].

The shift tray upper limit switch (SW1) prevents the drive gear from being damaged if staple mode HP sensor 2 [E] fails. In case of a failure, when the shift tray pushes up the actuator [G] and positioning rollers, the switch will cut the power to the shift tray lift motor.

6.8.2 SHIFT TRAY UP/DOWN MOVEMENT
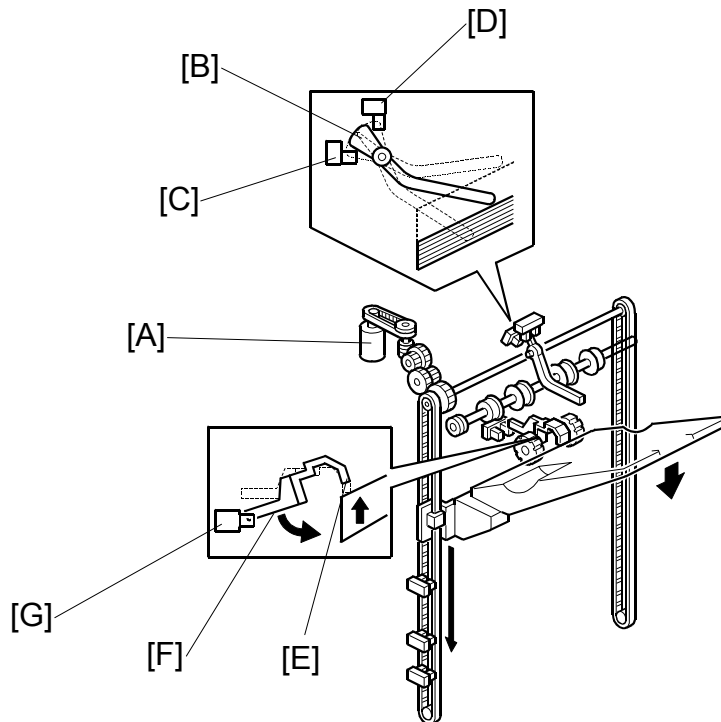
B706D010.WMF

Sort/Stack Mode (Shift Mode)

The shift tray moves to home position, which is when the actuator [F] has just exited the shift mode home position sensor [G] (S12). During feed-out, the tray is lowered automatically at prescribed intervals; sensor [D] (S7) is ignored. When the stack is removed from the tray, the end of the feeler [E] between the arms of the stacking roller falls, and its actuator [F] enters sensor [G] (S12) and switches it on. This switches on the lift motor [A], which raises the tray until the actuator leaves the sensor. Then, the lift motor stops the tray; this is the home position.

In sort/stack mode, if S12 fails when the tray is being lifted, the shift tray upper limit switch (SW1) prevents the drive gear from being damaged.

Staple Mode

The shift tray moves to home position, which is when the actuator [B] is between the staple mode home position sensors [C] and [D]. During feed-out, the shift tray is lowered automatically at prescribed intervals. When the stack is removed from the tray, the tray returns to the home position for stand-by mode. (☛ 6.8.1)

Peripherals

6.8.3 SHIFT TRAY LOWER LIMIT DETECTION

B706D010.WMF
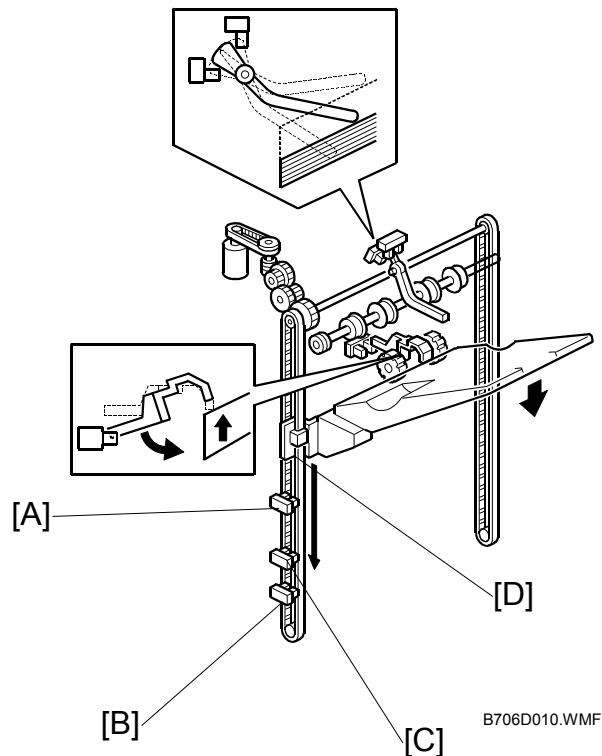
This machine has two shift tray lower limit sensors: shift lower limit sensor [A] (S9) for large paper (B4 and larger) and shift lower limit sensor [B] (S11) for small paper (smaller than B4).

NOTE: Sensor [C] (S10) is not used.

When the actuator [D] enters sensor [A] while using large paper (about 1500 sheets are on the tray), a message will be displayed and copying will stop.

When the actuator [D] enters sensor [B] while using small paper (about 3,000 sheets are on the tray), a message will be displayed and copying will stop.

6.9 SHIFT TRAY SIDE-TO-SIDE MOVEMENT
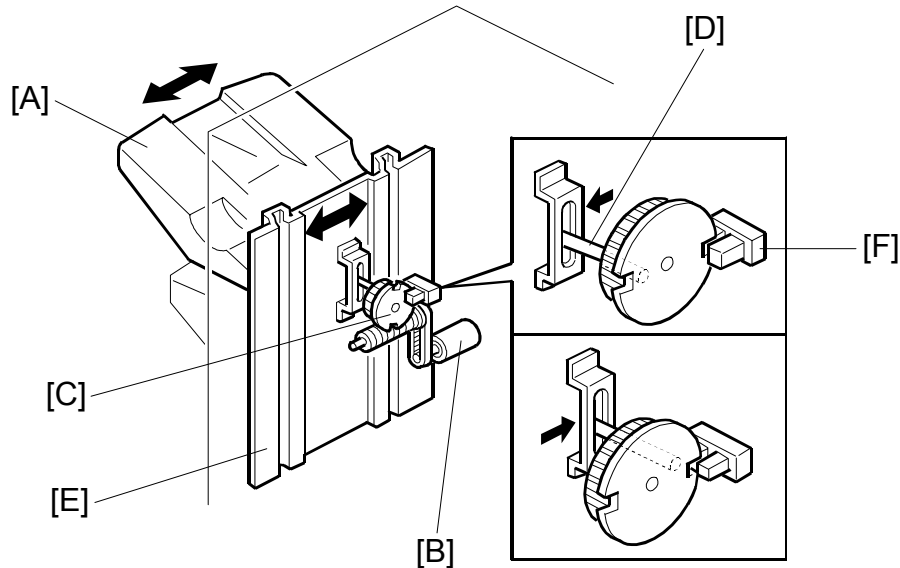
B706D520.WMF

In sort/stack mode, the shift tray [A] moves from side to side to separate the sets of copies.

The horizontal position of the shift tray is controlled by the shift motor [B] and shift gear disk [C]. After one set of copies is made and delivered to the shift tray, the shift motor turns on, driving the shift gear disk and the shaft [D]. The end fence [E] is positioned by the shaft, creating the side-to-side movement.

When the shift gear disk has rotated 180 degrees (when the shift tray is fully shifted across), the cut-out in the shift gear disk turns on the shift tray half-turn sensor [F] and the shift motor stops. The next set of copies is then delivered. The motor turns on, repeating the same process and moving the tray back to the previous position.

Peripherals

6.10 STAPLING Z-FOLDED PAPER
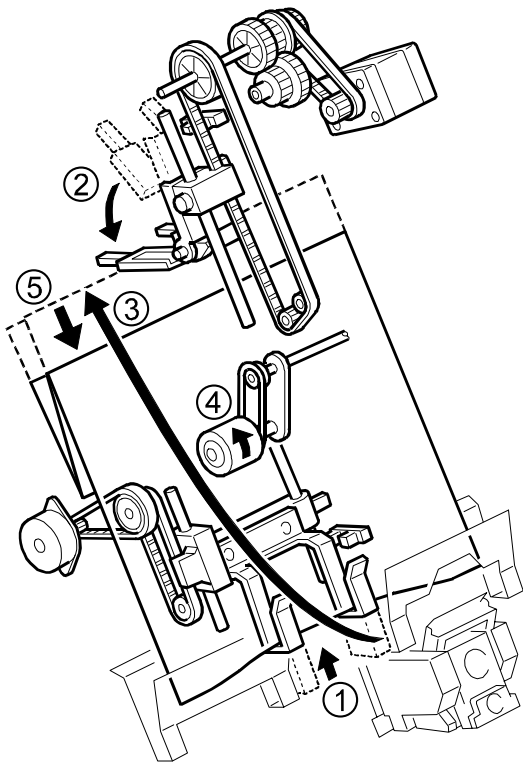
B706D004.WMF
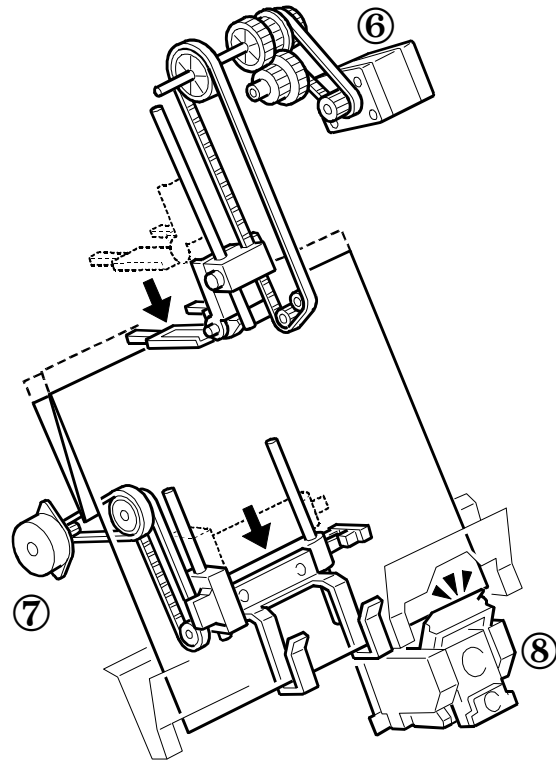
B706D005.WMF

Here is the operation sequence for jogging and stapling Z-folded sheets:

① The lower jogger fence lifts to receive the Z-folded sheets.

② The top fence moves down, to the horizontal position.

③ A sheet of paper goes into the stapler tray.

④ The positioning roller turns when each sheet is fed to the stapler tray.

⑤ Each sheet is fed down against the lower jogger fence to align the bottom edge.

⑥ After the set number of sheets come in, the jogger top-fence motor switches on and lowers the top fence against the top of the stack. This aligns the stack for stapling.

⑦ The bottom fence motor lowers the aligned stack to the stapling position.

⑧ The stapler staples the stack.

6.11 JAM CONDITIONS

1. The entrance sensor does not turn on when the copier has fed paper 426 mm after the copier exit sensor turned off.

2. The entrance sensor does not turn off when the upper transport motor has fed paper 1.5 times the paper's length after it turned on.

3. The upper tray exit sensor does not turn on when the upper transport motor has fed paper 574 mm after the entrance sensor turned on.

4. The upper tray exit sensor does not turn off when the upper transport motor has fed paper 1.5 times the paper's length after it turned on.

5. In sort/stack mode, the shift tray exit sensor does not turn on when the upper transport motor has fed paper 733 mm after the entrance sensor turned on.

6. In sort/stack mode, the shift tray exit sensor does not turn off when the upper transport motor has fed paper 1.5 times the paper's length after it turned on.

7. In staple mode, the stapler tray entrance sensor does not turn on when the upper and lower transport motor have fed paper 835 mm after the entrance sensor turned on.

8. In staple mode, the stapler tray entrance sensor does not turn off when the upper transport motor has fed paper 1.5 times the paper's length after it turned on.

9. In staple mode, the stapler tray paper sensor does not turn off within 250 pulses of the stack feed-out motor after it started.

10. In staple mode, the shift tray exit sensor does not turn off within 1,260 ms after the stack feed-out motor started.

Peripherals

6.12 PUNCH UNIT B531 (OPTION)

6.12.1 PUNCH UNIT DRIVE
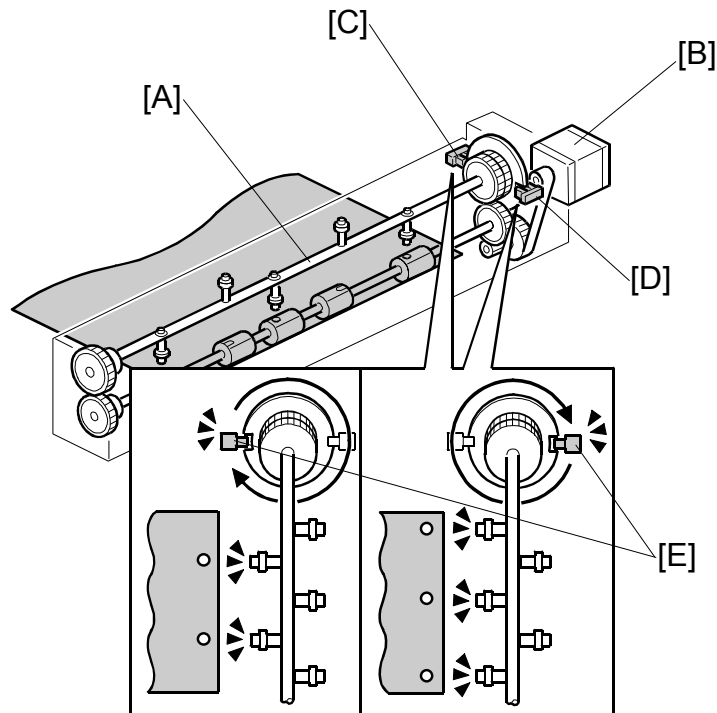
B531D102.WMF

The punch unit makes 2 or 3 holes at the trailing edge of the paper. The number of holes depends on a selection made on the operation panel.

The cam [A] has 2 punches on one side and 3 punches on the other, and is turned by the punch motor [B]. The punch motor turns on immediately after the trailing edge of the paper passes the entrance sensor. The punches on the cam rotate downward and punch holes in the paper.

After punching a sheet of paper, the cam returns to home position and stops. Home position depends on whether 2 holes or 3 holes are being made, so there are two punch HP sensors. Punch HP sensor 1 [C] is used when 2-hole punching is selected, and punch HP sensor 2 [D] is used when 3-hole punching is selected. When the cut-out [E] enters the slot of the punch HP in use (sensor 1 or 2-hole punching or sensor 2 for 3/4-hole punching) the motor stops.

The knob (not shown) on the front end of the punch unit can be turned in either direction to clear paper jammed in the punch unit.

6.12.2 PUNCH WASTE COLLECTION
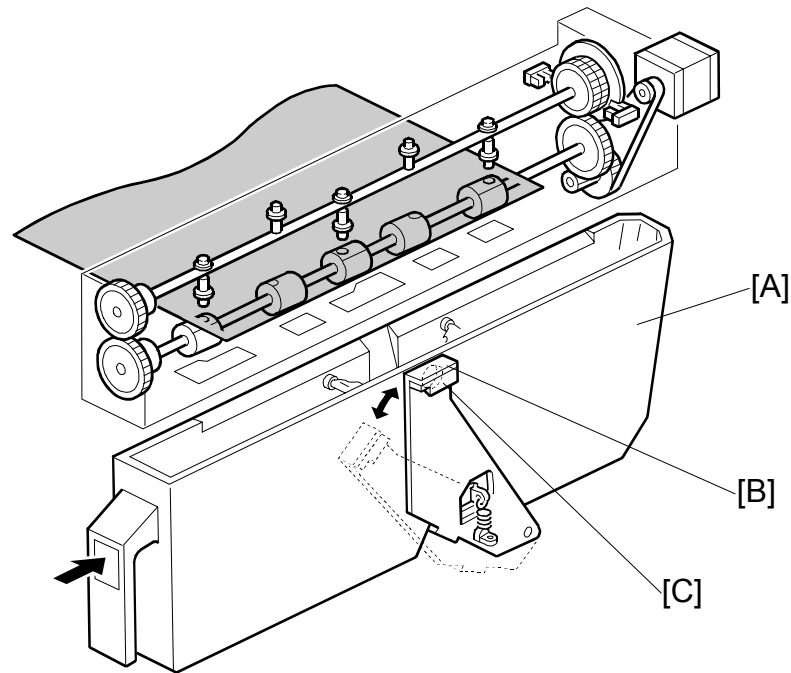
B531D103.WMF

Punch waste is collected in the punch waste hopper [A] positioned under the punch unit.

When the level of the punch waste in the hopper rises as far as the hole [B] in the hopper, the punch waste sensor [C] turns on, stops the job, and triggers a message on the operation to indicate that the hopper is full and must be removed and emptied.

The job resumes automatically after the hopper is emptied and returned to the finisher.

The punch waste hopper sensor also functions as the hopper set sensor. When the hopper is not in the finisher, or if it is not inserted completely, the spring loaded sensor arm rotates up and to the right with the punch waste sensor away from the hole in the hopper holder and a message is displayed. The message in this case is the same as the hopper full message.

Peripherals

6.13 JOGGER UNIT B513 (OPTION)

6.13.1 JOGGER UNIT MECHANICAL LAYOUT
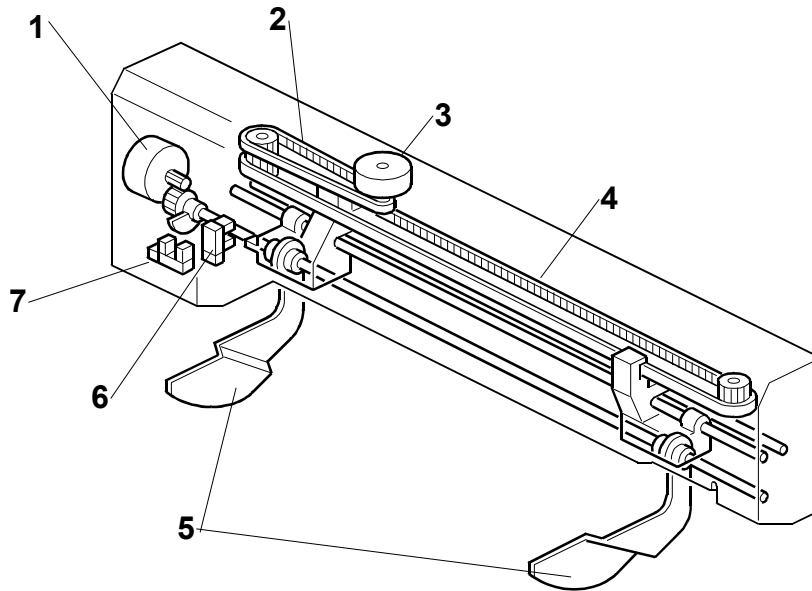
B513D003.WMF

1. Shift Jogger Fence Lift Motor
2. Shift Jogger Motor Timing Belt
3. Shift Jogger Motor
4. Shift Jogger Fence Timing Belt
5. Shift Jogger Fences
6. Shift Jogger HP Sensor
7. Shift Jogger Lift HP Sensor

6.13.2 JOGGER UNIT DRIVE
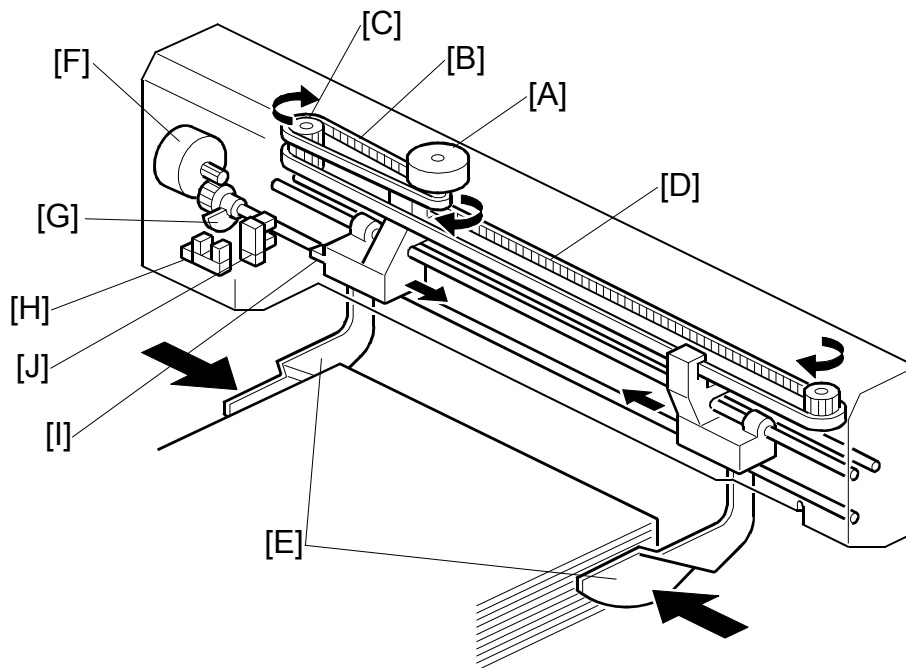
B513D002.WMF

At prescribed intervals, the jogger motor [A] switches on and drives the jogger timing belt [B], gear [C] and jogger fence timing belt [D] which drives the shift jogger fences [E] against the sides of the stack to align its edges.

At the end of the job, the jogger fence lift motor [F] switches on and raises the fences until the actuator [G] leaves the slot of the shift jogger fence lift HP sensor [H] and shuts off the shift jogger fence lift motor.

At the same time, the jogger motor reverses and drives the fences away from the sides of the stack until the actuator [I] deactivates the shift jogger fence HP sensor [J] and switches off the jogger motor.

The jogger fences remain up in the standby position until the next job starts.

Peripherals

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7. OVERALL MACHINE INFORMATION

7.1 MECHANICAL COMPONENT LAYOUT

B706V900.WMF
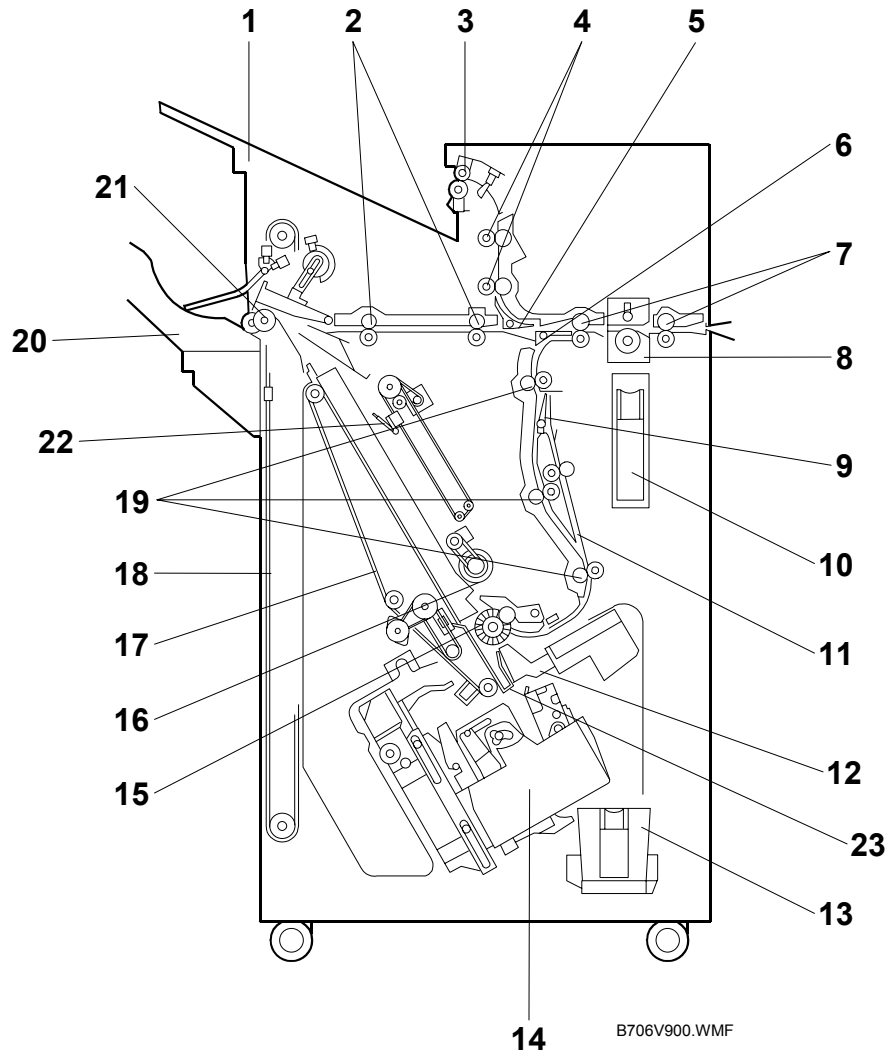
1. Upper Tray	12. Stack Plate
2. Middle Transport Rollers	13. Staple Waste Hopper
3. Upper Tray Exit Roller	14. Stapler
4. Upper Transport Rollers	15. Alignment Brush Roller
5. Tray Junction Gate	16. Positioning Roller
6. Stapler Junction Gate	17. Stack Feed-out Belt
7. Entrance Rollers	18. Shift Tray Drive Belt
8. Punch Unit	19. Lower Transport Rollers
9. Pre-stack Junction Gate	20. Shift Tray
10. Punch Waste Hopper	21. Shift Tray Exit Roller
11. Pre-stack Tray	22. Jogger Top Fence
	23. Jogger Bottm Fence

7.2 ELECTRICAL COMPONENT DESCRIPTION

| Symbol	Name	Function
Motors		
M01	Shift Tray Exit	Drives the exit roller for the shift tray.
M02	Shift Tray Lift	Moves the shift tray up or down.
M03	Exit Guide	Opens and closes the upper exit guide.
M04	Lower Transport	Drives the lower transport rollers, the positioning roller and the alignment brush roller
M05	Shift	Moves the shift tray from side to side.
M06	Positioning Roller	Moves the positioning roller into contact with the paper.
M07	Stacking Roller Drag	Moves the stacking roller in and out.
M08	Stacking Roller	Rotates the stacking roller.
M09	Jogger	Moves the jogger fences.
M10	Stack Feed-Out Belt	Drives the stack feed-out belt.
M11	Stack Plate - Center	Presses down the center of the edge for stapling.
M12	Stapler	Moves the staple unit from side to side.
M13	Stack Plate – Front	Presses down the front corner of the edge for stapling.
M14	Stack Plate – Rear	Presses down the rear corner of the edge for stapling.
M15	Stapler Rotation	Rotates the stapler 45 degrees for oblique stapling.
M16	Staple Hammer	Drives the staple hammer.
M17	Punch	Drives the punch shaft and roller. Punch Unit B531 (option).
M18	Upper Transport	Drives the entrance rollers, the middle and upper transport rollers, and upper tray exit roller.
M19	Shift Jogger	Drives the shift jogger fences against the sides of the sheets to align the stack, then reverses to return them to the home position. Jogger Unit B513 (option).
M20	Shift Jogger Lift	Raises the shift jogger fences after aligning the stack, then reverses and lowers them when returning to the home position. Jogger Unit B513 (option).
M21	Jogger Top Fence	Moves the top jogger fence.
M22	Jogger Bottom Fence	Moves the bottom jogger fence.
BOARDS		
PCB	Main	Controls the finisher and communicates with the copier.
PCB	Stapler	Controls the stapler unit.
PCB	Punch	Passes signals between the punch unit and the finisher main board. Punch Unit B531 (option).
PCB	Jogger	Controls the shift/jogger unit B513 (option).

Peripherals

Symbol	Name	Function
SENSORS		
S01	Entrance	Detects the copy paper entering the finisher and checks for misfeeds.
S02	Upper Tray Exit	Checks for misfeeds at the upper tray.
S03	Upper Tray Limit	Detects when the paper stack height in the upper tray is at its upper limit.
S04	Shift Tray Exit	Checks for misfeeds at the shift tray exit.
S05	Exit Guide Open	Detects whether the guide plate is opened or not.
S06	Staple Mode HP 1	Detects the shift tray home position for standby mode and for staple mode.
S07	Staple Mode HP 2	Detects the shift tray home position for standby mode and for staple mode.
S09	Shift Lower Limit – Large Paper	Detects the lower limit for the shift tray when large paper sizes are being used
S10	Shift Tray Lower Limit 2	Not used.
S11	Shift Tray Lower Limit 3	Detects when the shift tray is at its lower limit.
S12	Shift Mode HP	Detects the shift tray home position in sort/stack mode.
S13	Stacking Roller HP	Detects when the stacking roller is at home position.
S14	Shift Tray Half-Turn	Detects whether the shift tray is at either the front or home HP.
S15	Pre-Stack Tray Paper	Determines when to turn off the pre-stack paper stopper solenoid.
S16	Stapler Tray Exit	Detects jams at the staple tray exit.
S17	Positioning Roller HP	Detects the home position of the positioning roller.
S18	Stack Feed-Out Belt HP	Detects the home position of the stack feed-out belt.
S19	Stapler Tray Paper	Detects the copy paper in the stapler tray.
S20	Jogger HP	Detects the home position of the shift jogger fences.
S21	Stack Plate - Center HP	Detects the home position of the center stack plate.
S22	Stack Plate – Front	Detects the home position of the front stack plate.
S23	Stack Plate – Rear	Detects the home position of the rear stack plate.
S24	Stapler HP	Detects the home position of the staple unit for side-to-side movement.
S25	Stapler Rotation HP	Detects the home position of the stapler unit for 45-degree rotation.
S26	Stapler Return	Detects the on timing of the stapler return solenoid.
S27	Staple Waste Hopper	Detects when the staple waste hopper is full.
S28	Punch Waste Hopper	Detects when the punch waste hopper is full and detects when the punch tray is set. Punch Unit B531 (option).
S29	Punch HP 1	Detects the cam home position for the 2-hole punch. Punch Unit B531 (option).
S30	Punch HP 2	Detects the cam home position for 3/4 punch. Punch Unit B531 (option).
S31	Shift Jogger HP	Detects the home position of the jogger unit arms during paper alignment. Jogger Unit B513 (option).

Symbol	Name	Function
SENSORS		
S32	Shift Jogger Lift HP	Detects the when both shift jogger fences are at the lowered position and ready to move against the sides of the stack. Jogger Unit B513 (option).
S33	Top Fence HP	Detects the top fence home position for Z-fold paper staple mode.
S34	Bottom Fence HP	Detects the bottom fence home position for Z-fold paper staple mode.
SOLENOIDS		
SOL1	(Upper) Tray Junction Gate	Drives the tray junction gate.
SOL2	Stapler Junction Gate	Drives the stapler junction gate.
SOL3	Pre-Stack Junction Gate	Drives the pre-stack junction gate.
SOL4	Pre-stack Paper Stopper	Drives the stopper pawl of the pre-stacking tray.
SOL5	Stapler Return	Positions the stapler correctly on its return from the staple supply point.
SWITCHES		
SW1	Shift Tray Upper Limit	Cuts the power to the shift tray lift motor when the shift tray position is at its upper limit.
SW2	Front Door Safety	Cuts the dc power when the front door is opened.
SW3	Emergency Stop	Switches the current job off and on to allow time for the operator to remove paper from the shift tray.
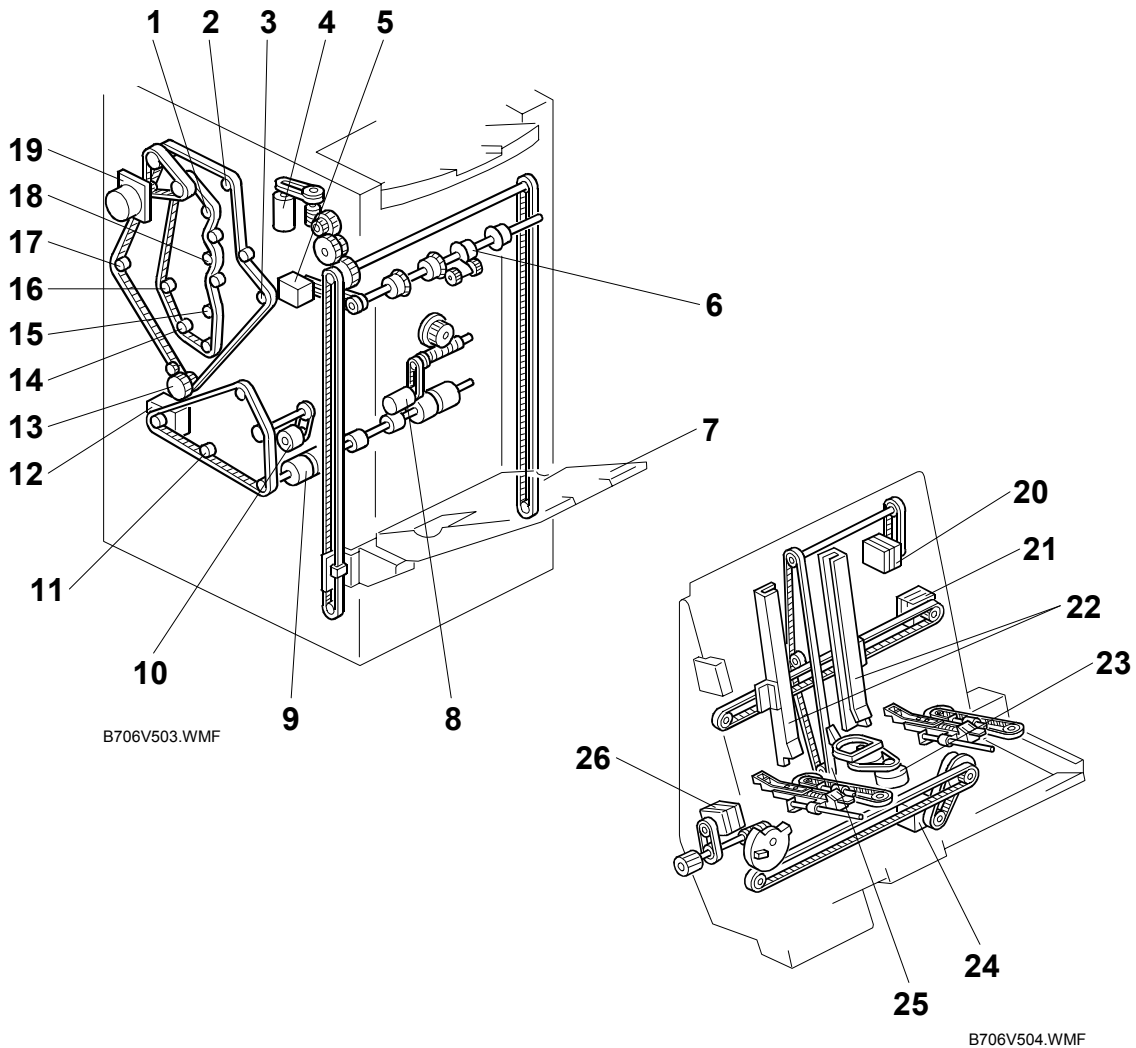
Peripherals

7.3 DRIVE LAYOUT

B706V503.WMF

B706V504.WMF

1. Upper Transport Roller 2
2. Upper Tray Exit Roller
3. Lower Transport Roller 2
4. Shift Tray Lift Motor
5. Shift Tray Exit Motor
6. Shift Tray Exit Roller
7. Shift Tray
8. Shift Motor
9. Staple Tray Exit Roller
10. Positioning Roller
11. Lower Transport Roller 3
12. Lower Transport Motor
13. Lower Transport Rollers 2

14. Lower Transport Roller 1
15. Transport Roller 1
16. Entrance Roller 2
17. Entrance Roller
18. Upper Transport Roller 1
19. Upper Transport Motor
20. Stack Feed-out Motor
21. Jogger Motor
22. Jogger Fence
23. Stack Plate Motor
24. Stapler Motor
25. Stack Feed-out Belt
26. Stapler Rotation Motor