

3000-SHEET FINISHER
(Machine Code: B468/B469/B674)

What This Manual Contains

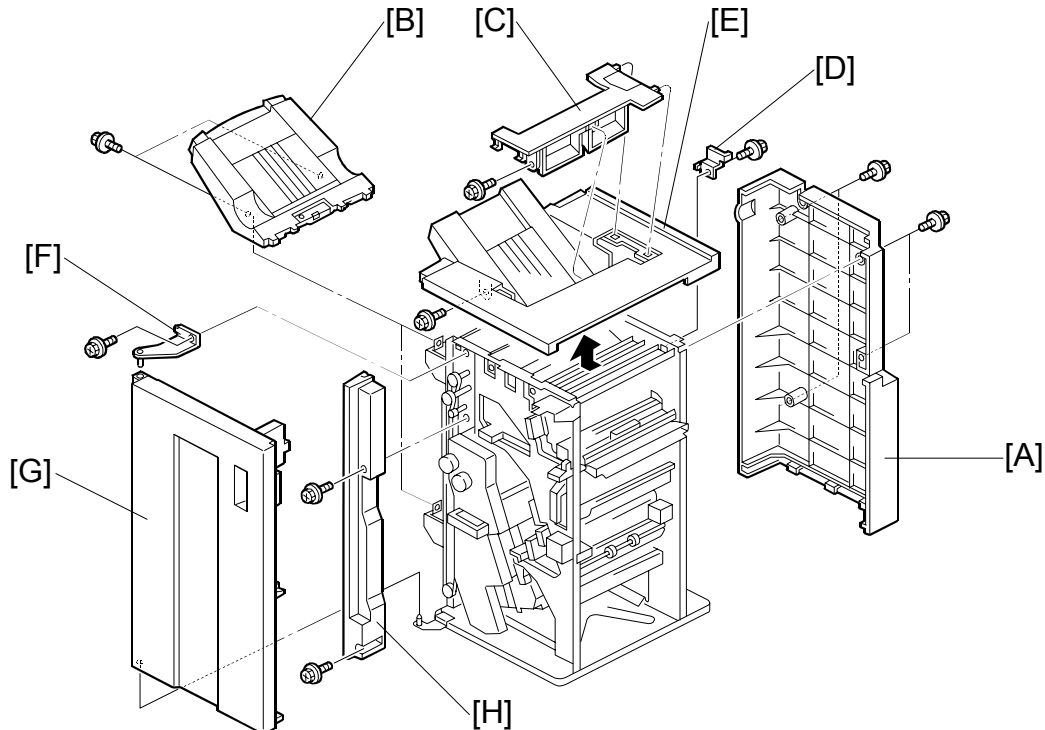
This manual describes three 3000-sheet finishers:

- B468 does center folding and saddle-stitching with staples.
- B469 does stapling, but not saddle-stitching.
- B674 does center folding and saddle stitching with staples, and also can staple of Z-folded sheets when the Z-Folding unit is installed with the finisher.

NOTE: Almost all descriptions in this manual apply to all three finisher units. When the machines are different, you will see the codes: B468, B469, or B674.

1. REPLACEMENT AND ADJUSTMENT

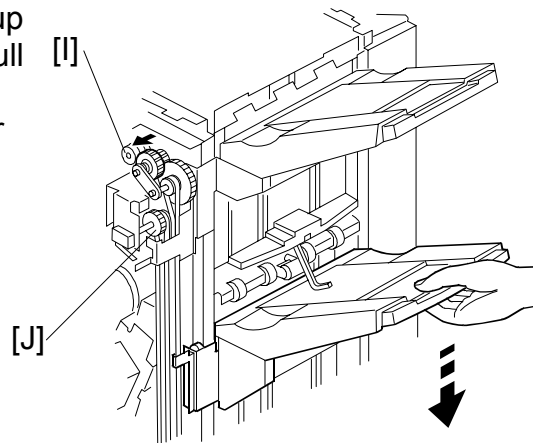
1.1 EXTERNAL COVERS



B468R002.WMF

- [A]: Rear cover (⌘ x 4)
- [B]: Upper tray, lower tray (⌘ x 2 each) (See note below)
- [C]: Top cover center (⌘ x 1)
- [D]: Stopper (⌘ x 1)
- [E]: Top cover (⌘ x 1)
- [F]: Front door hinge (⌘ x 2)
- [G]: Front door
- [H]: Left side cover (⌘ x 2)

The trays may be difficult to remove at the up position. Support the tray with your hand, pull out the gear [I] (for the lower tray) or [J] (for the upper tray) to release the tray and lower it slowly.



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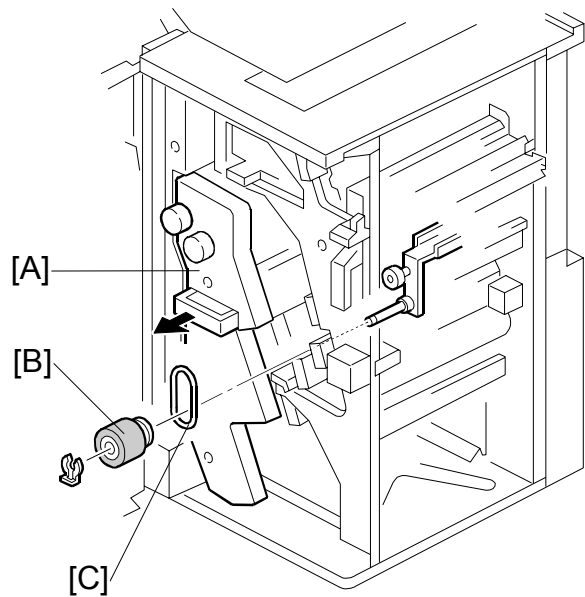
1.2 POSITIONING ROLLER

Open the front door.

[A]: Pull out the jogger unit.

[B]: Positioning roller (⌀ x 1)

[C]: Positioning roller drive belt

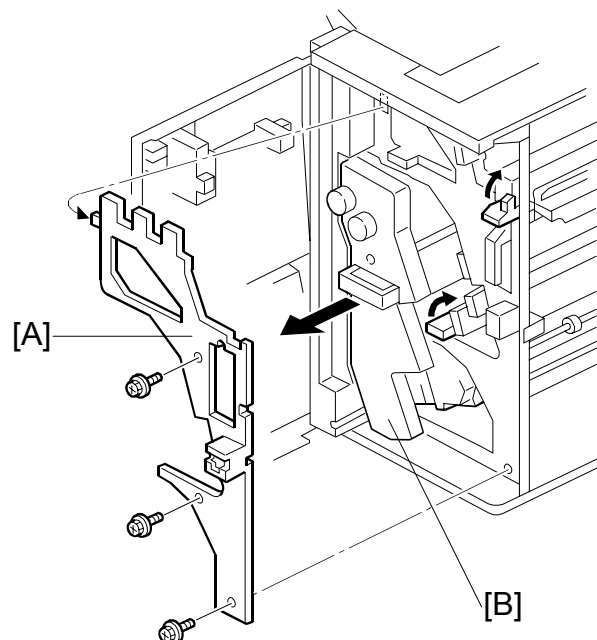


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1.3 INNER COVER

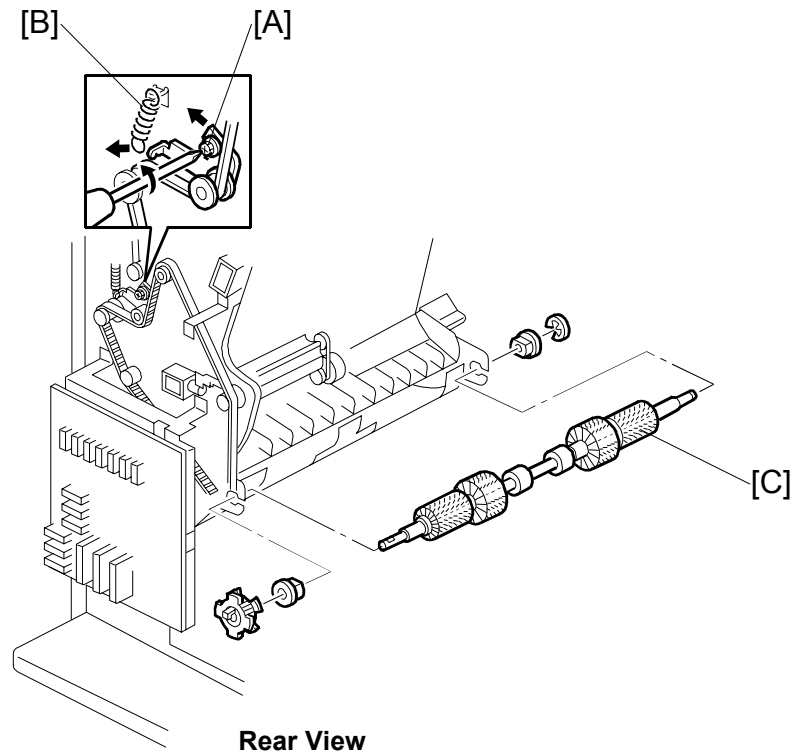
[A]: Inner cover (⌀ x 3)

[B]: Pull out the jogger unit.



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1.4 BRUSH ROLLER



B468R005.WMF

Open the front door.

Pull out the jogger unit.

Rear cover (➡ 1.1)

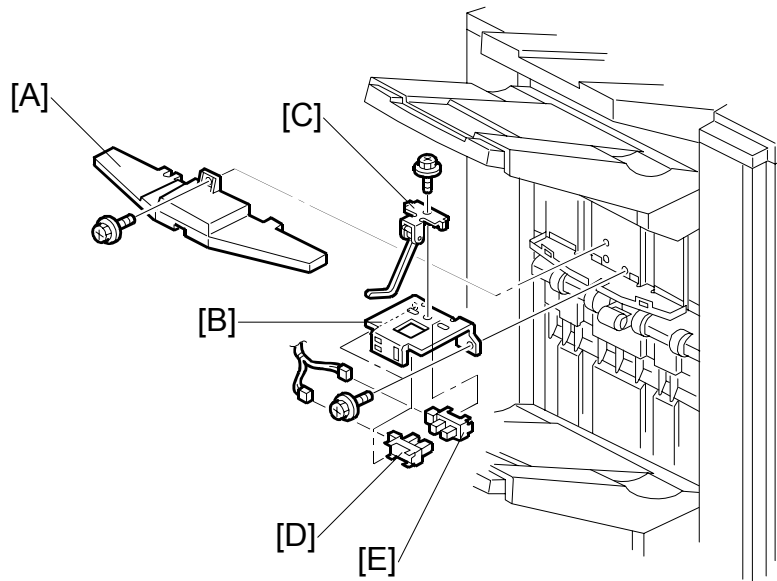
[A]: Loosen tension bracket (⚙ x 1)

[B]: Spring

[C]: Brush roller assy (Ⓒ x 1, bushing x 3)

- Remove the e-ring and bushing at [C] before removing the bushings on the back end of the shaft.

1.5 LOWER TRAY PAPER HEIGHT SENSORS 1, 2



B468R006.WMF

[A]: Paper height sensor cover (🔩 x 1)

- Lift the back edge of the cover up. Then pull it toward you slowly to disengage the tabs under the front edge of the cover and remove it.

[B]: Paper height sensor bracket (🔩 x 2, 📏 x 2)

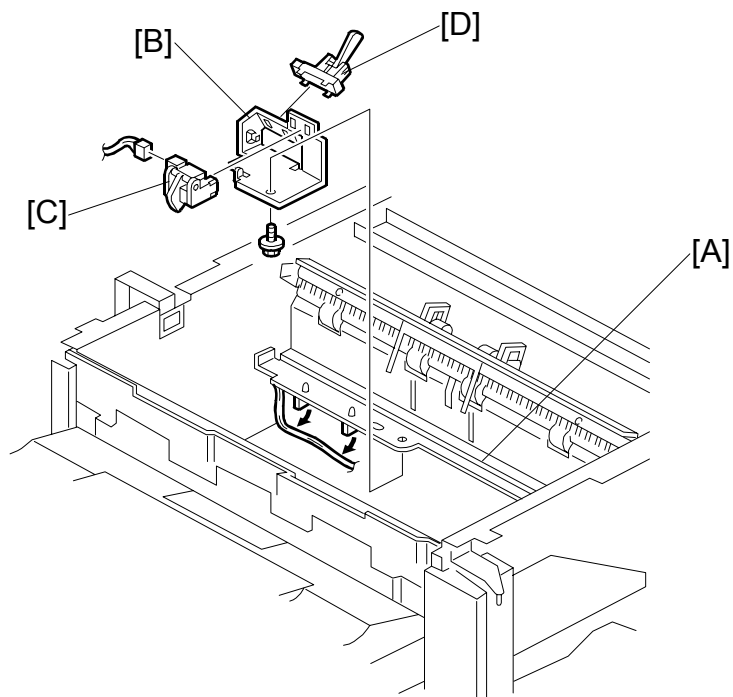
- Mark the one socket and its connector with a felt pen to ensure that you do not reverse the connectors at re-connection.

[C]: Paper height sensor feeler (🔩 x 1)

[D]: Paper height sensor 1

[E]: Paper height sensor 2

1.6 PROOF TRAY EXIT AND FULL SENSORS



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Open the front door.

Top cover (☛ 1.1)

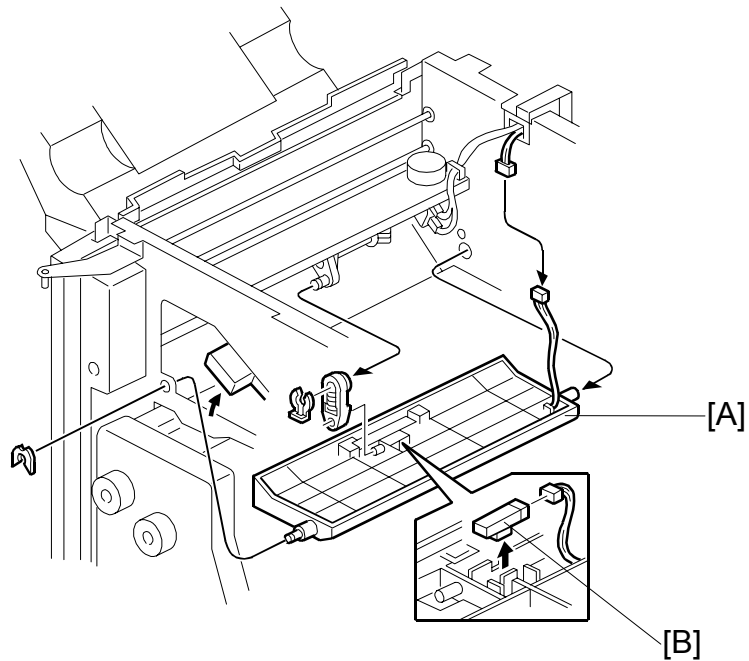
[A]: Guide plate (☛ x 4)

[B]: Sensor bracket (☛ x 1)

[C]: Proof tray full sensor (☛ x 1)

[D]: Proof tray exit sensor (☛ x 1)

1.7 EXIT SENSOR



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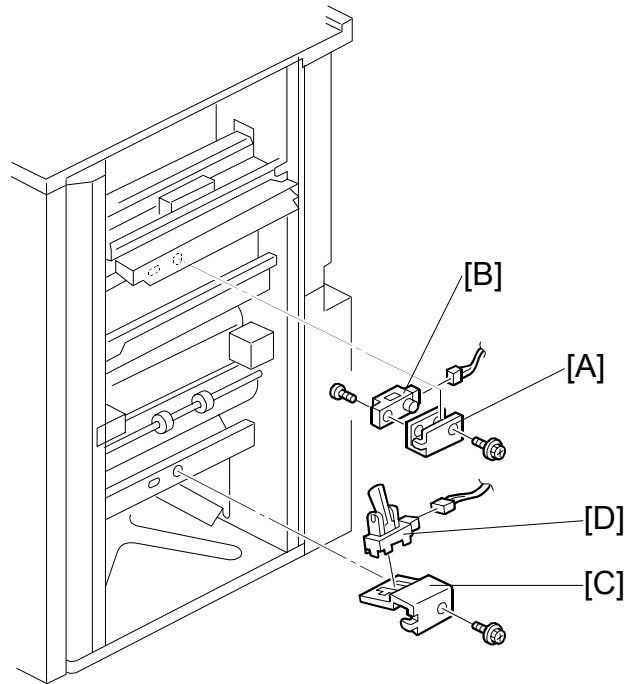
Open the front door.

Top and rear cover (👁 1.1)

[A]: Guide plate (🔧 x 1) (🔧 x 2)

[B]: Exit sensor (🔧 x 1)

1.8 FINISHER, STAPLER ENTRANCE SENSORS



B468R009.WMF

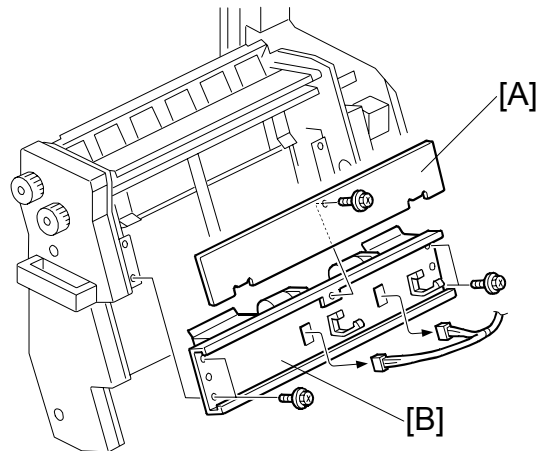
Disconnect the finisher from the main unit.

If the Cover Interposer Tray B470 is installed, remove it. Loosen the three shoulder screws, remove one set screw, then lift it off the frame.

- [A]: Finisher entrance sensor bracket (🔩 x 1)
- [B]: Finisher entrance sensor (🔩 x 1) (🔌 x 1)
- [C]: Stapler entrance sensor bracket (🔩 x 1)
- [D]: Stapler entrance sensor and feeler (🔌 x 1)

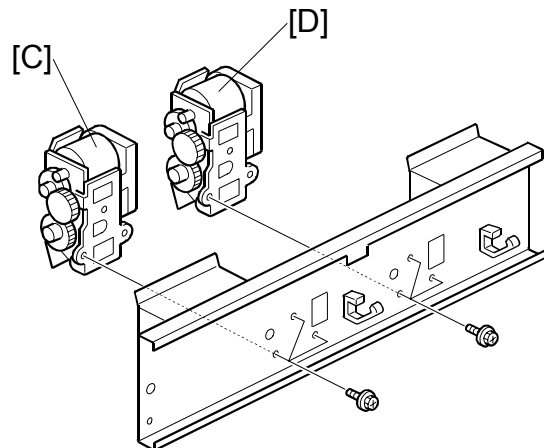
1.9 SADDLE-STITCH STAPLER REPLACEMENT

1. Remove the cover [A] (⌘ x 1).
2. Remove the staple unit motor mount [B] (⌘ x 4, ⌘ x 2).



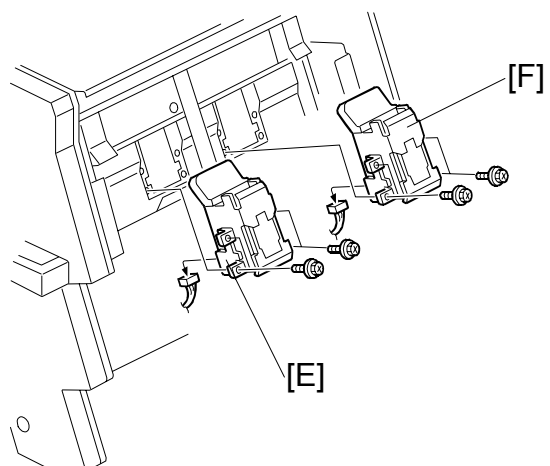
B468R101.WMF

3. Remove the old booklet stapler motors (⌘ x 3 each ⌘ x 1 each).
 4. Attach the left booklet stapler motor [C] and right stapler motor [D] (⌘ x 3 each).
- NOTE:** Do not tighten the screws.



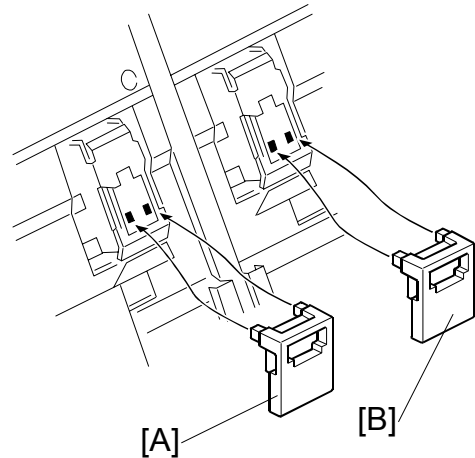
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5. Remove the old booklet staplers (⌘ x 4 each, ⌘ x 1 each).
6. Attach the booklet stapler [E] and the stapler [F] (⌘ x 4 each, ⌘ x 1 each) and tighten the screws.



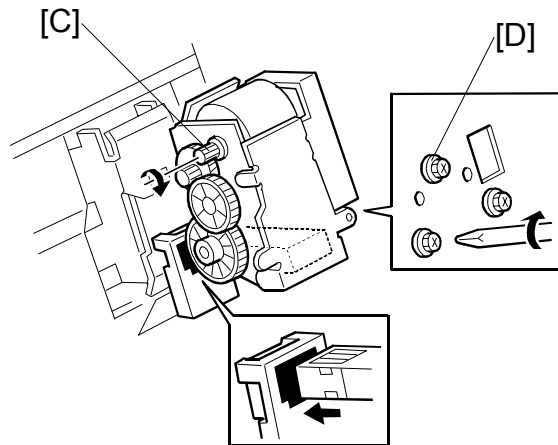
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7. Attach the Teflon jigs [A] and [B].
8. Attach the new booklet stapler motor mount to the frame (⌀ x 4).



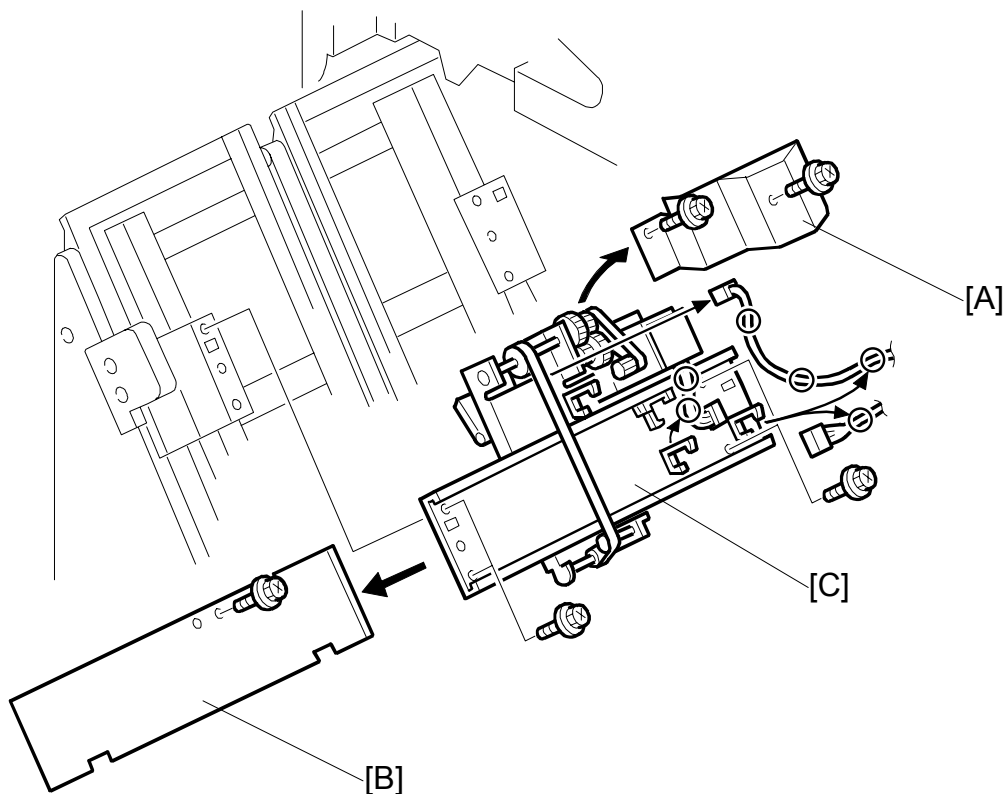
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9. On each motor, with your finger turn the brass gear [C] toward you until it stops then tighten the motor screws [D] .(⌀ x 3)
10. Remove the motor mount board (⌀ x 4) and remove the jigs.
11. Fasten the new motor mount to the frame (⌀ x 4, ⌀ x 2).



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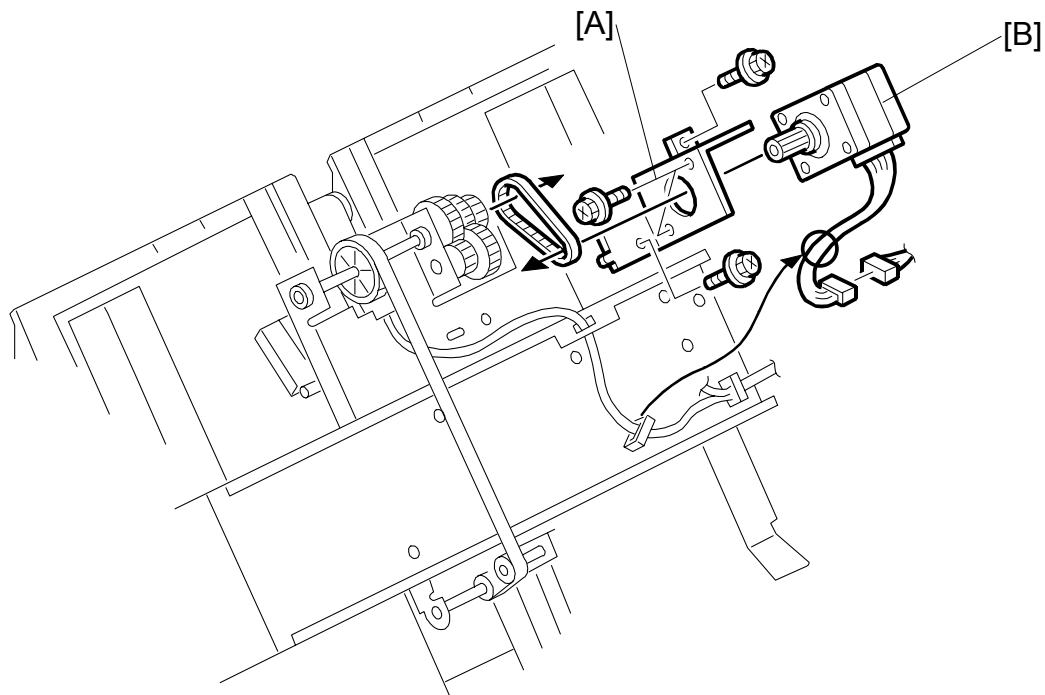
1.10 Z-FOLD JOGGER UNIT (B674 ONLY)



B468R900.WMF

1. Open the front door and pull out the stapler tray unit.
2. Remove the Z-fold jogger unit cover [A]. (⚙ x 2)
3. Remove the Z-fold jogger unit cover [B]. (⚙ x 1)
4. Remove the Z-fold jogger unit [C] (⚙ x 4, 🛠 x 4, 🛠 x 2)

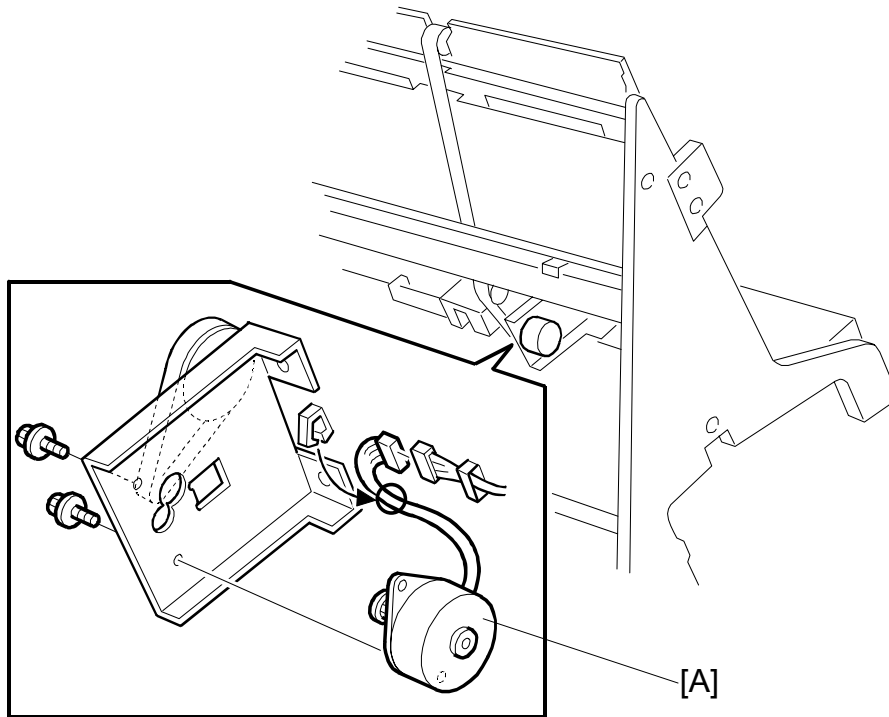
1.11 JOGGER TOP FENCE MOTOR (B674 ONLY)



B468R901.WMF

1. Open the front door and pull out the stapler tray unit.
2. Remove the Z-fold jogger unit cover (🔩 x 2)
3. Remove the motor bracket [A] (🔩 x 2, timing belt x 1)
4. Remove the jogger top fence motor [B] (🔩 x 2, 📡 x 1, 📡 x 1)

1.12 JOGGER BOTTOM FENCE MOTOR(B674 ONLY)



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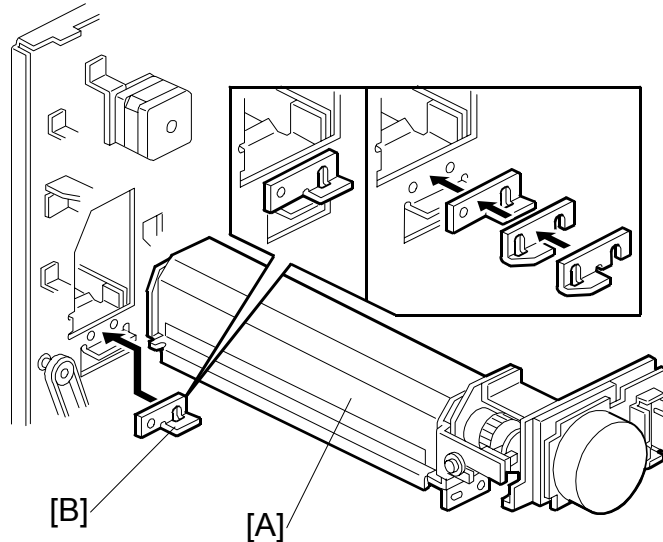
1. Open the front door and pull out the stapler tray unit.
2. Remove the jogger bottom fence motor [A] (⚙ x 2, timing belt x 1, ⚙ x 1, ⚙ x 1).

1.13 PUNCH POSITION ADJUSTMENT

The positions of punch holes can be adjusted in two directions:



- **Vertical position.** To adjust the vertical positions of the punch holes, execute **SP6113 002** (Punch Hole Adjustment – 2 Holes) or **003** (3 Holes) to adjust the timing of the punch motor.



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- **Horizontal position.** To adjust the horizontal positions of the punch holes, install or remove the metal spacers. Three spacers are used:
 - 1 spacer, 2 mm thick
 - 2 spacers, each 1 mm thick.

Rear cover (➡ 1.1)

[A]: Punch unit (⚙ x 2)

[B]: Spacer

- Attach or remove the required number of spacers.
- The 2 mm spacer should be installed to set the default punch hole positions. Use the 1 mm spacers to adjust.

1.14 JAM DETECTION

Mode	Jam	Cause
Proof/Shift/Staple	Finisher entrance sensor check in failure	Remains off even after the main machine exit sensor goes OFF and the paper feeds 270 mm.
	Finisher entrance sensor check out failure	Remains on even after enough time has elapsed for twice the length of the paper to feed.
Proof	Proof tray exit sensor check in failure	Remains OFF even after the entrance sensor goes ON and the paper has fed 380 mm.
	Proof tray exit sensor check out failure	Remains OFF even after enough time has elapsed for twice the length of the paper to feed.
Shift	Exit sensor check in failure	Remains OFF after the entrance sensor goes ON and the paper has fed 570 mm.
	Exit sensor check out failure	Remains ON after enough time has elapsed for twice the length of the paper to feed.
Staple	Booklet exit sensor check in failure	Remains OFF after the entrance sensor goes ON and the paper has 760 mm.
	Booklet exit sensor check out failure	Remains ON after the stapler tray entrance sensor goes ON, and enough time has elapsed for twice the length of the paper to feed.
	Stapler tray paper sensor check out failure	Remains ON after the feed out belt motor switches ON and pulse count exceeded 466.
	Exit sensor check in failure	Remains OFF after the feed out belt motor switches ON for 1260 ms.

1.15 DIP SW 100 (MAIN BOARD)

The settings of DIP SW 100 on the main finisher board should remain set to OFF (zero in the table below). These settings should not be changed by the customer or the customer engineer during normal operation or testing. These settings are provided for reference only.

DIP SW 101				Mode	Content
1	2	3	4		
0	0	0	0	Default	
1	0	0	0	Not Used	
0	1	0	0	Cover Feeder Test	Operation Check
1	1	0	0	Cover Feeder Test	Operation Check
0	0	1	0	Move to Shipping Position ^{*1}	See note below.
1	0	1	0	Cover Feeder Check	Operation Check
1	1	1	0	Cover Feed Test	Operation Check

^{*1}: The following procedure repositions the trays to the shipping position.

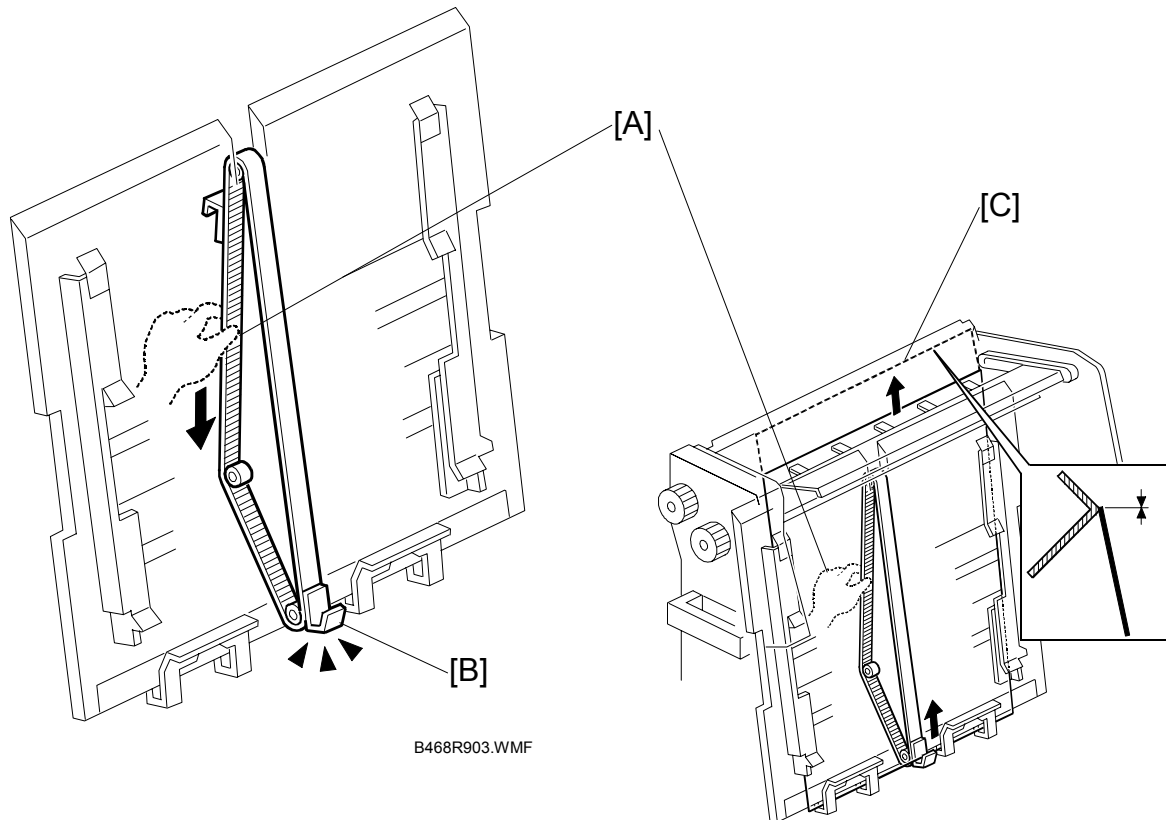
- 1) Make sure that the main switch is turned off.
- 2) Turn on DIP SW101-3.
- 3) Turn on the main switch. The finisher automatically repositions the trays to the shipping position.
- 4) After the finisher completes moving the trays, turn off DIP SW101-3.

1.16 JOGGER FENCE ADJUSTMENT

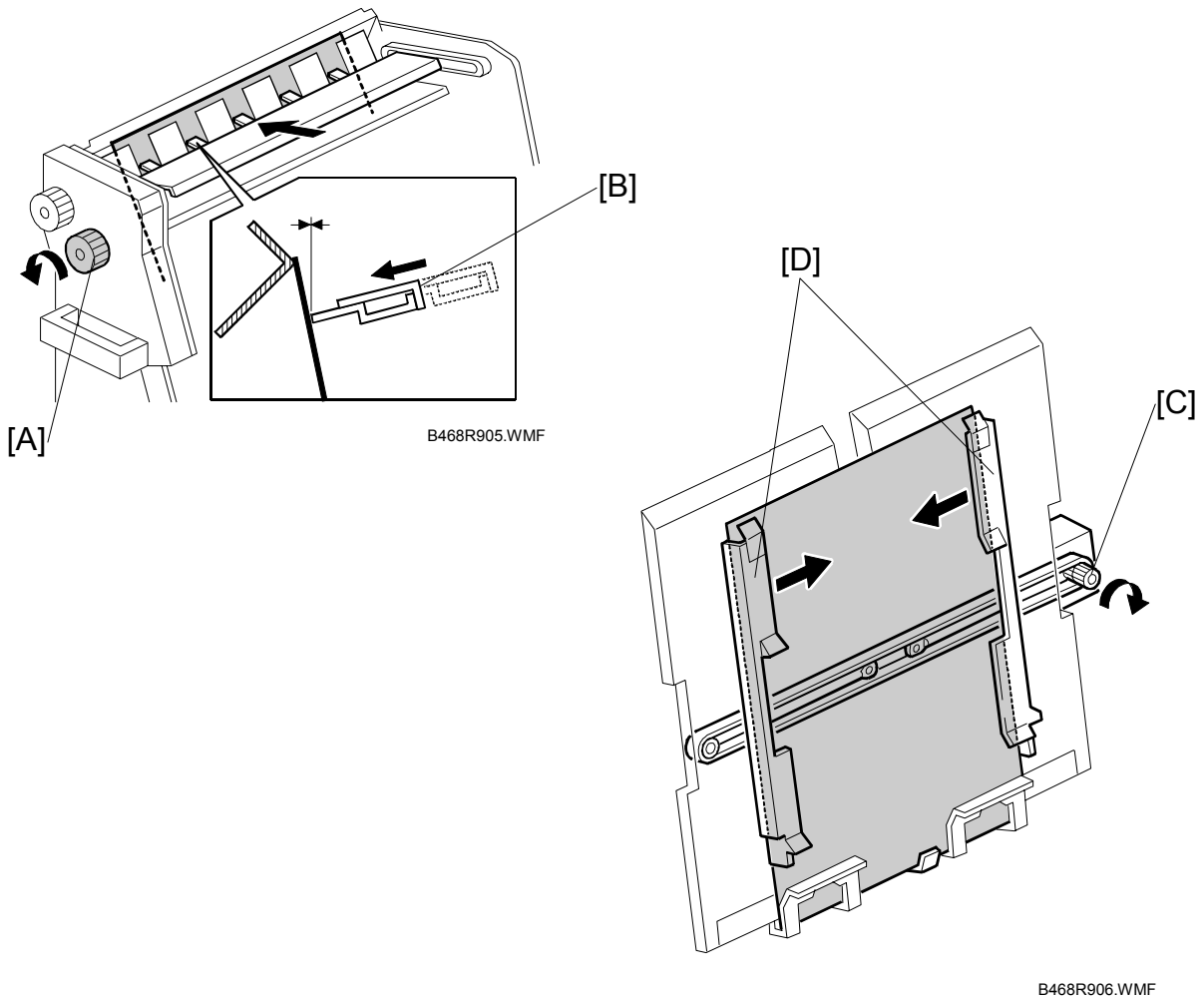
This adjustment corrects booklet skew to ensure that horizontal and vertical skewing occurs only within the specific tolerance of 2 mm or less. The tolerance (2 mm or less) refers to the amount of skew between the edges of the innermost sheet of a folded booklet (or a single sheet).

What You Need

Adjustment board B4689003. A stiff board inserted between the jogger fences during adjustment to ensure more accurate alignment. (A sheet of paper bends and does not allow accurate adjustment.)

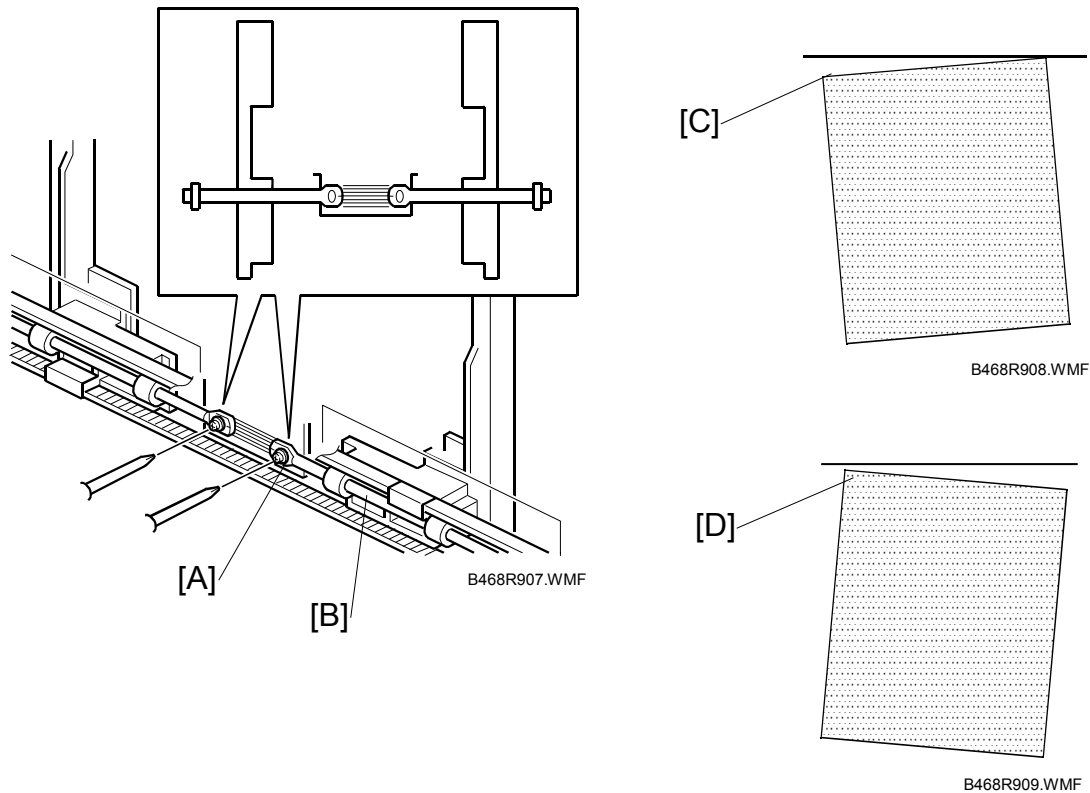


1. On the back of the unit, pull the belt [A] (not the hook) down until the hook is at [B].
2. Insert the adjustment board (B4689003) between the jogger fences.
3. Pull the belt [A] down slightly to raise the adjustment board until its top edge is even with the upper stay [C].

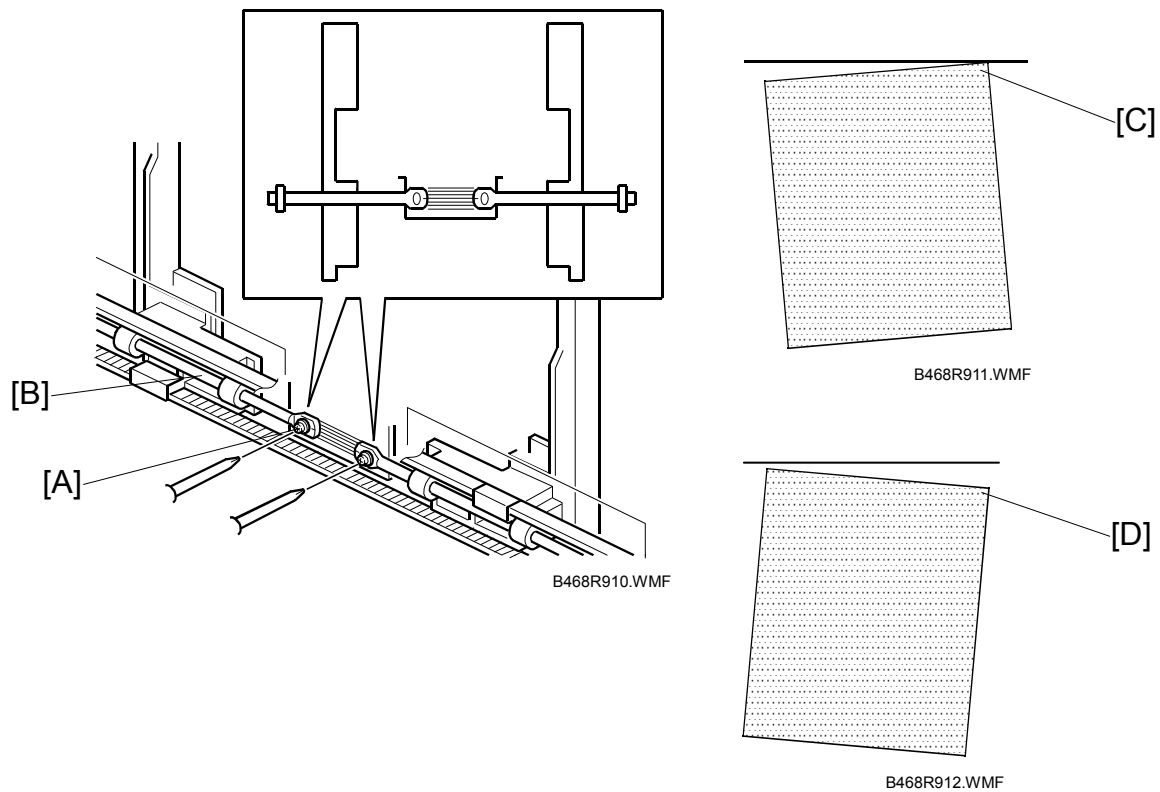


4. Rotate Knob R7 [A] until the folder plate [B] touches the adjustment board.
5. Turn knob [C] to bring both jogger fences [D] parallel to sides of the adjustment board.

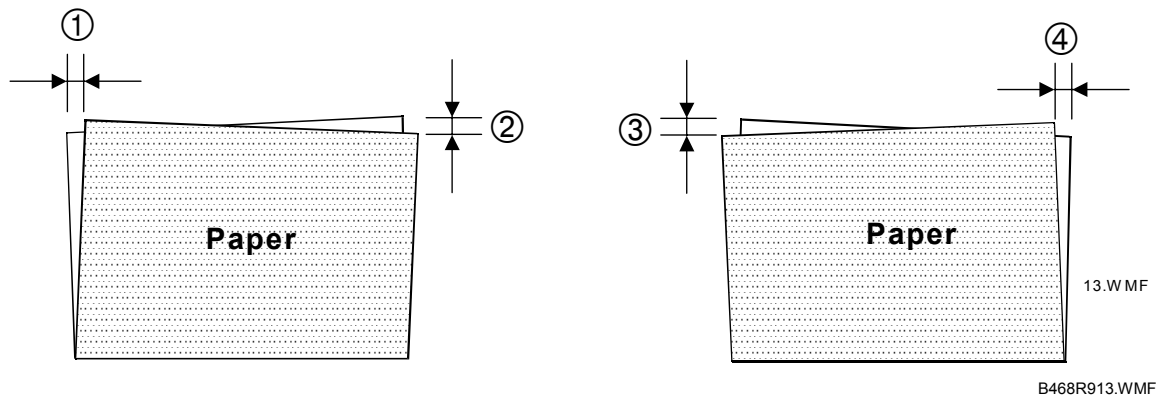
NOTE: Make sure that the adjustment board is flat. There should be a very small gap between the jogger fences and the sides of the adjustment board.



6. Push the left edge of the adjustment board against the front fence.
7. At the back of the unit, loosen screw [A] to release jogger shaft [B].
8. At the front, check the position of the upper left corner. The leading edge should be parallel to the stay.
 - If the left corner of the board is low [C], lower the jogger shaft [B] until the leading edge of the board is parallel to the stay then tighten screw [A].
 - If the left corner of the board is high [D], raise the jogger shaft [B] until the edge is parallel then tighten the screw [A].



9. Push the right edge of the adjustment board against the back fence.
10. At the back of the unit, loosen screw [A] to release jogger shaft [B].
11. At the front, check the position of the upper right corner. The leading edge should be parallel to the stay.
 - If the right corner of the board is high [C], raise the jogger shaft [B] until the leading edge of the board is parallel to the stay then tighten screw [A].
 - If the right corner of the board is low [D], lower the jogger shaft [B] until the edge is parallel then tighten the screw [A].
12. Reassemble the finisher.
13. Print three booklet sets of 2 or 3 sheets each.

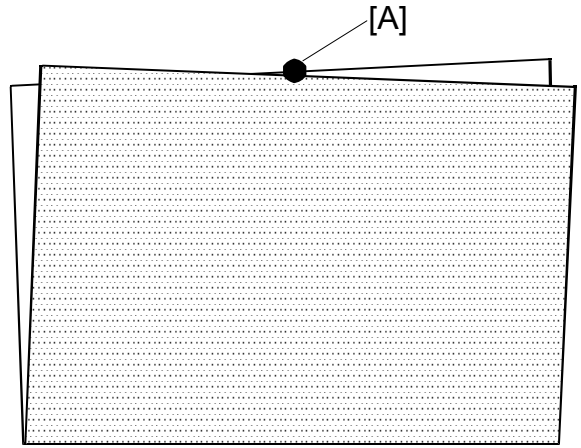


14. To check for skew, measure from the edges of the innermost sheet and make sure that the amount of skew is less than 2 mm for ①, ②, ③, ④.

If ①, ②, ③, or ④ is more than 2 mm, do the following procedure.

- (1) Insert a screwdriver into the door switch then push in the stapler unit.
- (2) Scan and print 3 booklet sheets in book mode from the platen (do not scan the originals with the ADF).
- (3) Once the paper is fed into the stapler unit and the machine stops, pull the stapler unit out.
- (4) Press the Ⓢ key on the operation panel, then remove the screwdriver from the door switch as soon as the jogger fences come close to the paper edges (about 10 mm wider than the paper width).
- (5) Measure the gaps between the edges and fences on both sides.
Paper/Fence gap (top + bottom) = 0 to 0.5 mm
- (6) If the gaps are too wide or too narrow, do SP6120 (Staple Jogger Adjustment) to adjust the gap for the paper size.

15. Repeat Step 14. If ①, ②, ③, or ④ is still more than 2 mm, go to Step 16.



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16. Use SP6902 (Fold Position Adjustment) until the two edges intersect in the middle at [A]. This minimizes vertical fold skewing by bringing the leading and trailing edges of the sheets closer together.

NOTE: B140 copiers: First adjust SP 6902. Then if the same problem occurs when single sheets are folded, adjust SP 6903. See the SP tables in the B140 service manual for how to use SP 6903.

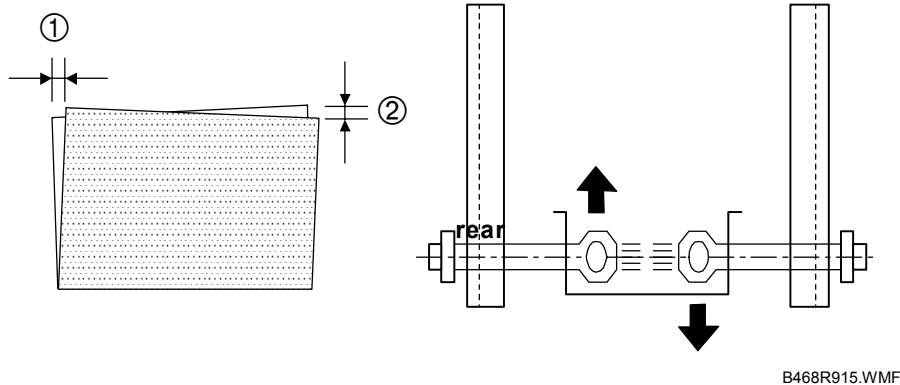
17. Repeat Step 15. If ①, ②, ③, or ④ is still more than 2 mm, go to Step 18.

NOTE: Although the fences may be parallel and within range of the distance from the paper edges (0 to 0.5 mm), they may not be perpendicular to the folding mechanism. Step 14 corrects this.

18. Do the following procedures.

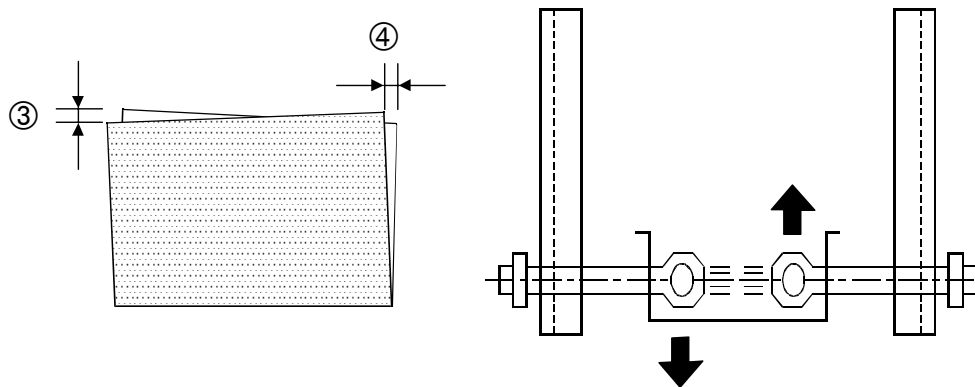
① or ② Over 2 mm

- (1) Loosen the rear jogger fence shaft screw, raise the rear jogger fence shaft then tighten the screw.
- (2) Loosen the screw of the front jogger fence shaft, lower the shaft to bring the front jogger fence flush against the paper, then tighten the screw.



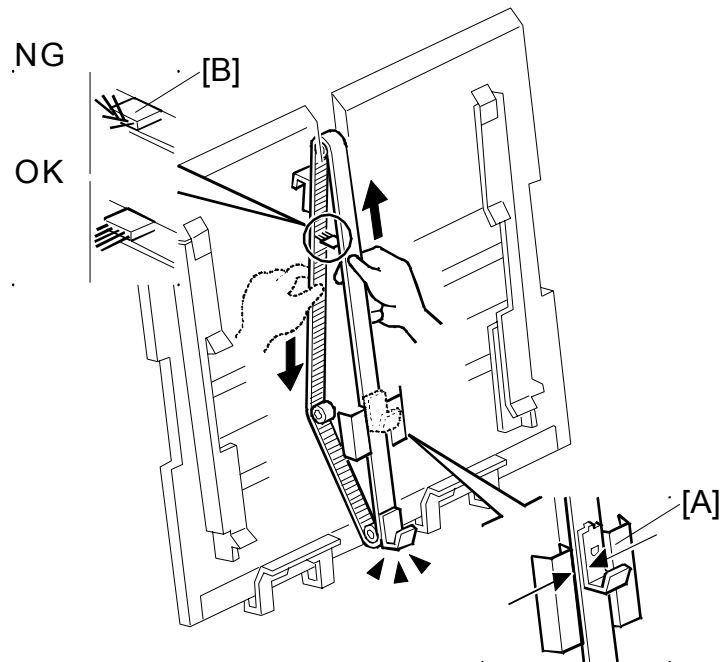
③ or ④ Over 2 mm

- (1) Loosen the rear jogger fence screw, lower the rear jogger fence shaft, then tighten the screw.
- (2) Loosen the screw of the front jogger fence shaft, raise the shaft to bring the front jogger fence flush against the paper, then tighten the screw.



NOTE: Be sure to raise or lower both shafts by the same number of marked increments.

19. Repeat Step 18 until the gaps are all less than 2 mm.



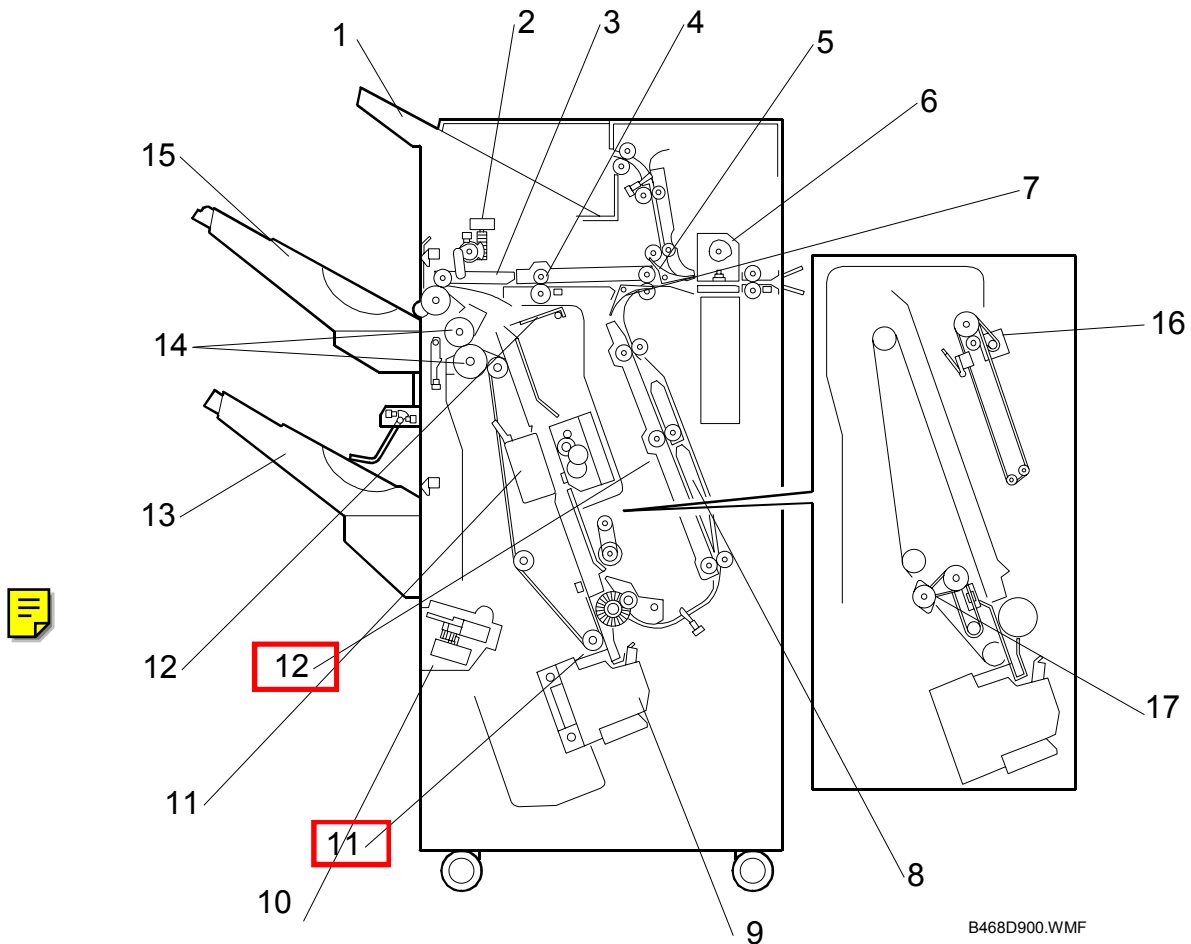
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20. Position the belt hook [A] as shown.

21. If the charge removal brush [B] is turned up, push down the fibers so that are perpendicular to the belt.

2. DETAILS

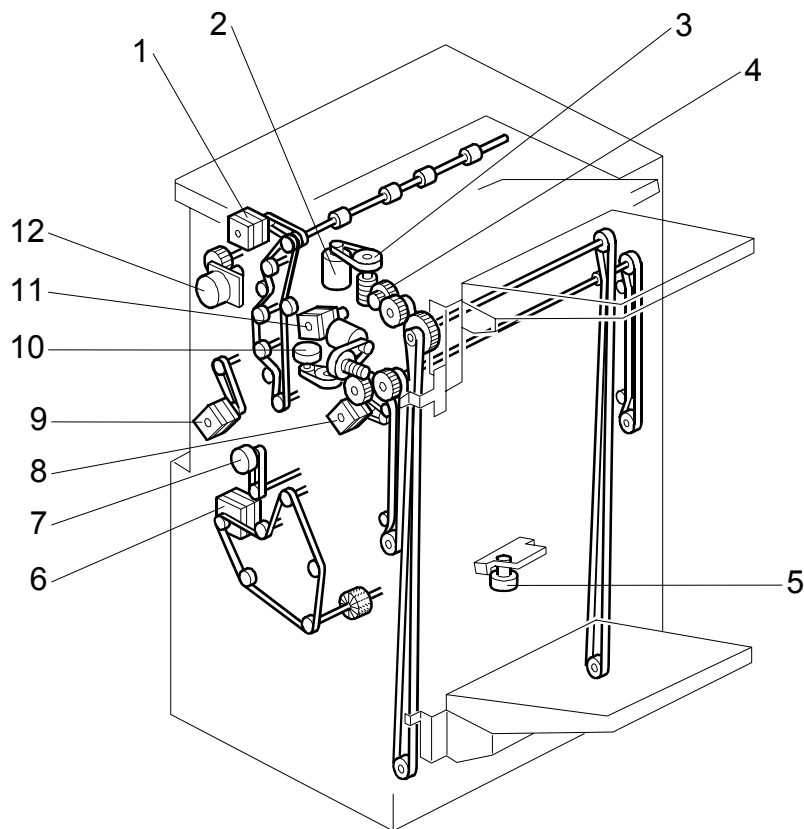
2.1 OVERVIEW



- | | |
|--------------------------|---------------------------------|
| 1. Proof Tray | 9. Stapler Unit |
| 2. Guide Plate Motor | 10. Pressure Plate Unit* |
| 3. Guide Plate | 11. Saddle Stitch Stapler* |
| 4. Shift Roller | 12. Folder Plate* |
| 5. Tray Junction Gate | 13. Lower Tray* |
| 6. Punch Unit | 14. Folder Rollers* |
| 7. Stapler Junction Gate | 15. Upper Tray |
| 8. Pre-Stack Tray | 16. Jogger Top Fence Motor** |
| | 17. Jogger Bottom Fence Motor** |

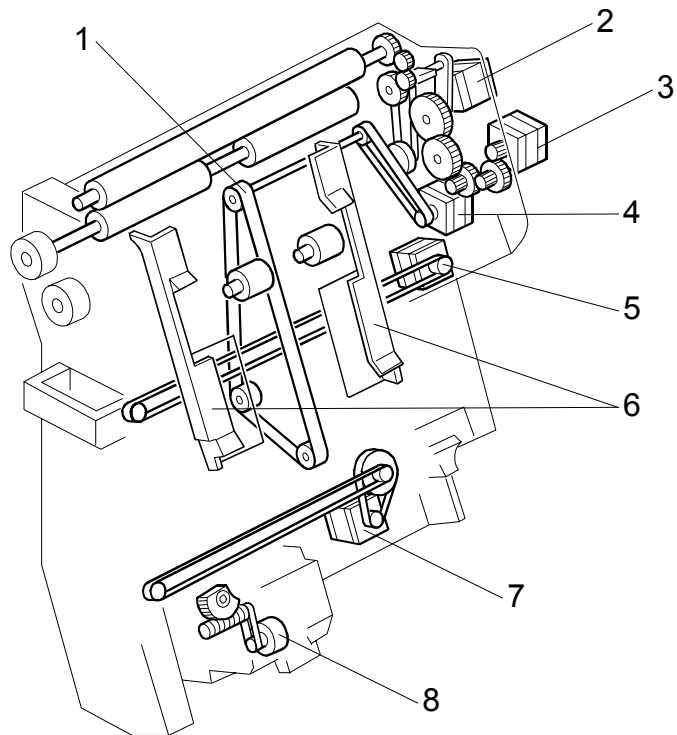
* B468/B674 Only ** B674 Only

2.2 DRIVE LAYOUT



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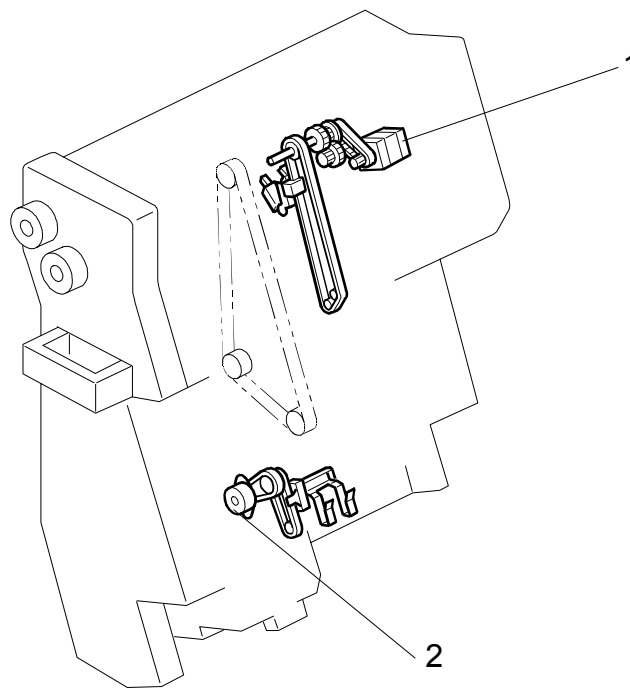
- | | |
|----------------------------|------------------------|
| 1. Proof Tray Motor | 7. Pre-Stack Motor |
| 2. Lower Tray Lift Motor | 8. Exit Motor |
| 3. Lower Tray Encoder Disk | 9. Entrance Motor |
| 4. Upper Tray Lift Motor | 10. Shift Roller Motor |
| 5. Pressure Plate Motor | 11. Shift Drive Motor |
| 6. Stapler Transport Motor | 12. Punch Motor |



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- | | |
|------------------------|---------------------------|
| 1. Stack Feed Out Belt | 5. Jogger Fence Motor |
| 2. Folder Roller Motor | 6. Jogger Fences |
| 3. Folder Plate Motor* | 7. Stapler Movement Motor |
| 4. Feed Out Belt Motor | 8. Stapler Rotation Motor |

*** B468/B674 Only**

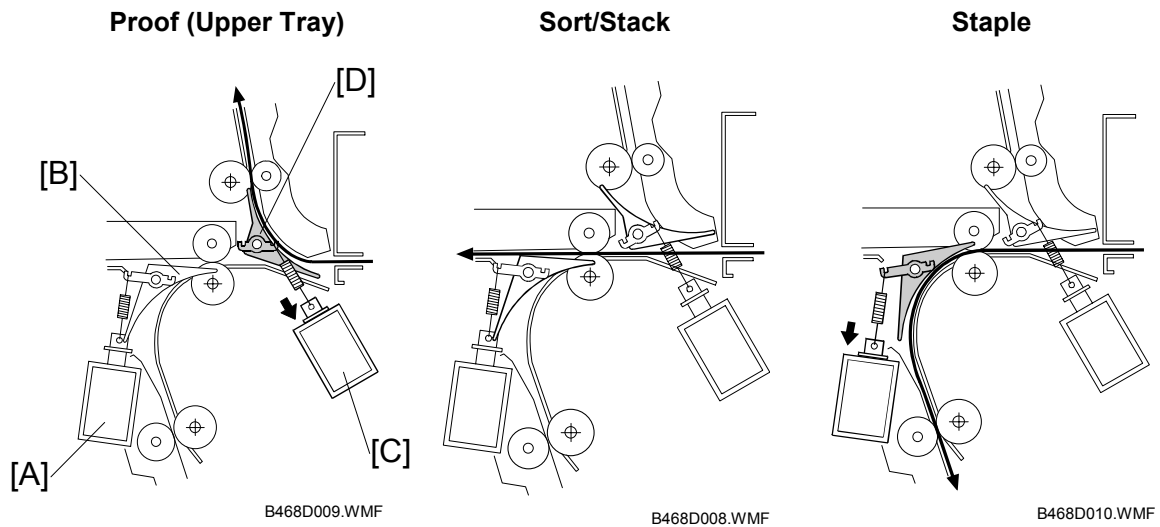


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1. Jogger Top Fence Motor**
2. Jogger Bottom Fence Motor**

**** B674 Only**

2.3 TRAY/STAPLER JUNCTION GATES

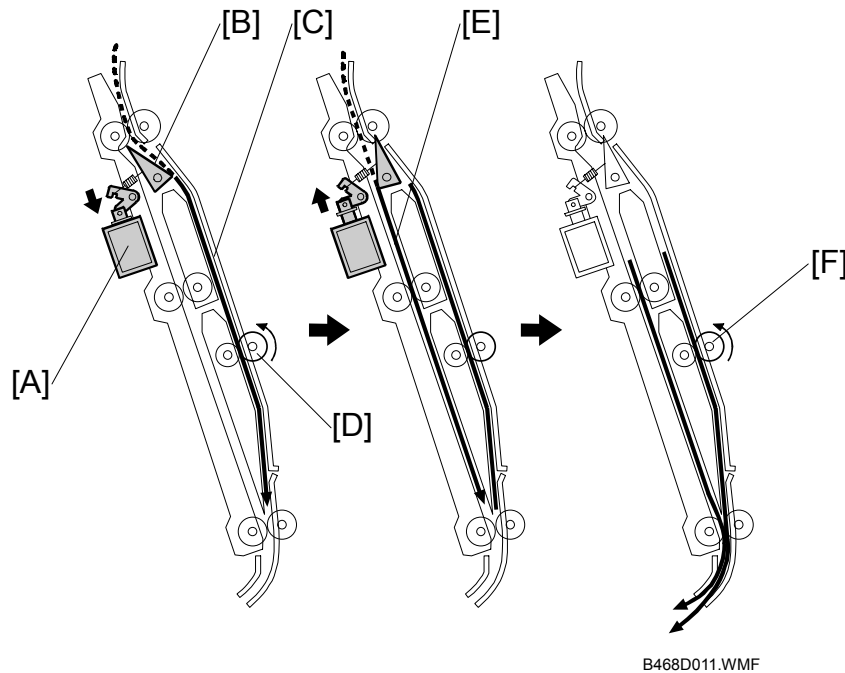


The finishing mode selected for the job determines the direction of the paper in the finisher.

- **Proof Tray (Top of the unit).** Paper is sent to the top tray.
- **Shift.** Paper is sent straight to the upper or lower tray.
- **Staple.** Paper is sent down to the stapler unit

Solenoid/Gate		Selected Operation Mode		
		Proof	Sort/Stack	Staple
[A]	Stapler junction gate solenoid	OFF	OFF	ON
[B]	Stapler junction gate	Closed	Closed	Open
[C]	Proof tray junction gate solenoid	ON	OFF	OFF
[D]	Proof tray junction gate	Open	Closed	Closed

2.4 PRE-STACKING



B468D011.WMF

During a multiple copy job selected for stapling, the pre-stacking mechanism delays the first two sheets of every set (after the first set) to allow enough time to staple the preceding stack on the stapler tray. Pre-stacking is performed with the first and second sheets for the second and all subsequent sets.

Shortly after the first sheet of the set enters the finisher, the pre-stack junction gate solenoid [A] switches on, opens the pre-stack junction gate [B] and shunts the first sheet to the paper pre-stack tray [C]. When the first sheet passes the pre-stack roller [D], the pre-stack motor switches off and the sheet stops.

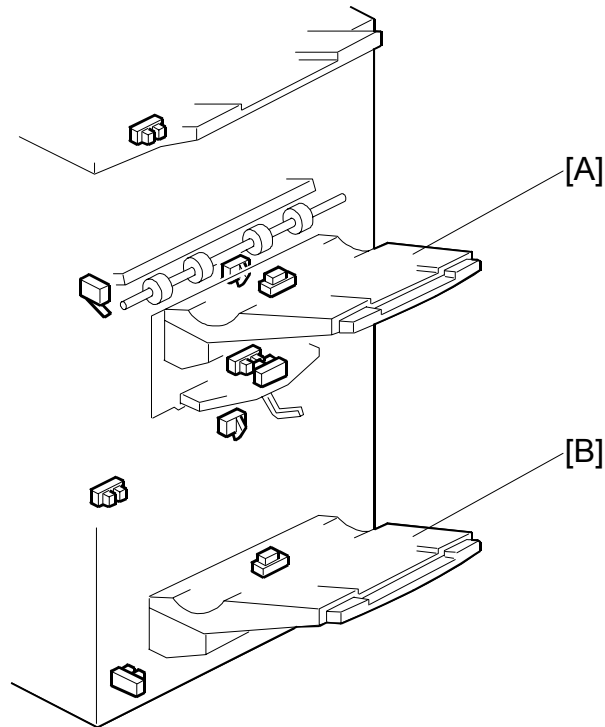
Shortly after the trailing edge of the first sheet enters the finisher, the solenoid switches off, and the junction gate closes. This allows the second sheet of the set to pass the closed junction gate and enter the main paper path [E].

At the prescribed time, the pre-stack motor switches on, and the pre-stack transport roller [F] rotates and sends the first sheet to the stapler tray at the same time as the second sheet arrives there.

All subsequent sheets of the same set are sent through the main paper path to the stapler tray for stapling.

2.5 VERTICAL LIFT MECHANISM

2.5.1 OVERVIEW



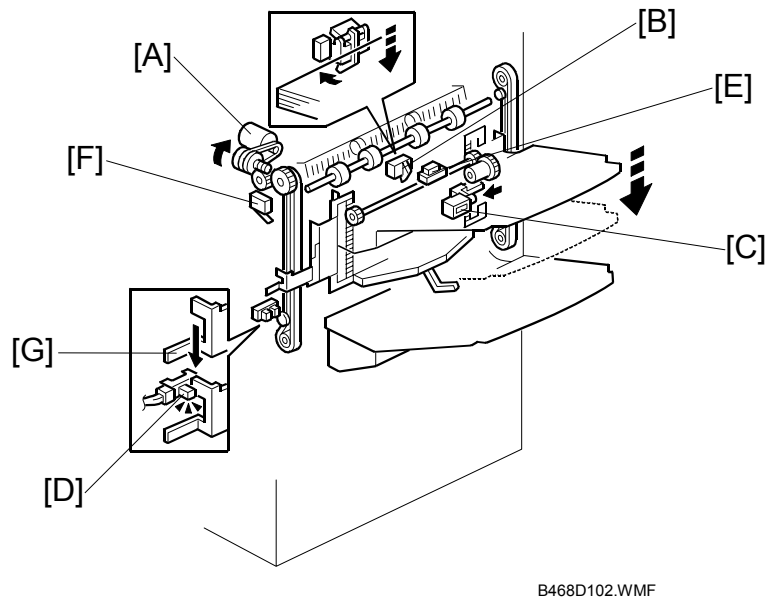
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At power on, both trays lower slightly, then the upper tray stops at the feed-out position. The machine is ready for feed out to the upper tray [A]

During printing, the upper [A] or lower tray [B] (whichever is selected) is repeatedly lowered until the stack reaches a certain height and then the job halts. The upper tray holds 500 sheets (A4 LEF), and the lower tray holds 2500 sheets.

Both trays can be used for the normal, shift, and staple modes. However, only the lower tray can be used for the booklet binding (saddle-stitch mode).

2.5.2 UPPER TRAY



- [A]: Upper tray lift motor
- [B]: Upper tray paper height sensor
- [C]: Upper tray lift solenoid
- [D]: Upper tray full sensor
- [E]: Upper tray paper sensor
- [F]: Upper limit switch (upper tray)

Just After the Power is Switched on

At power on, the motor [A] moves the upper tray to the start position just under the feed-out slot. The motor stops when the paper height sensor [B] detects the tray.

Height Adjustment During Feed-Out

The upper tray moves up and down on a rack and pinion on a movable side fence that remains locked in place during copying.

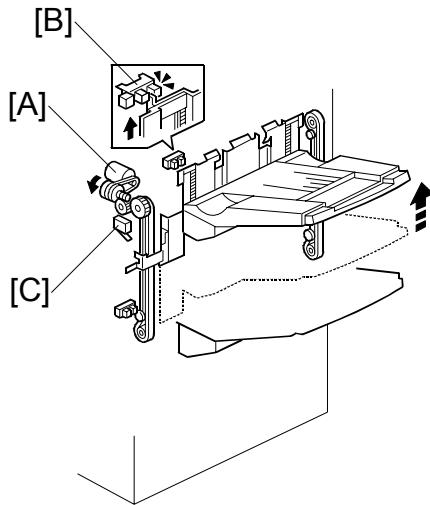
When the top of the stack actuates the sensor [B], a solenoid [C] inside the upper tray releases a locked one-way clutch long enough to lower the upper tray a short distance on its track to allow more pages to feed out. This process repeats until the tray is full.

Upper Tray Full

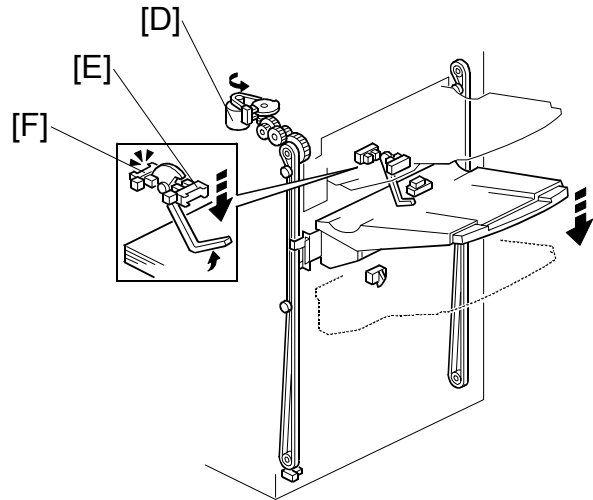
When the tray is full, a metal actuator [G] on the side of the upper tray frame actuates the upper tray full sensor [D] and the job stops.

The paper sensor [E] inside the upper tray detects when the stack is removed from the tray, and the tray returns to the initial position at the feed-out slot. The upper limit switch [F] (a micro-switch) is a backup if sensor [B] fails to stop the tray.

2.5.3 LOWER TRAY



B468D103.WMF



B468D104.WMF

- [A]: Upper tray lift motor
- [B]: Upper tray upper limit sensor
- [C]: Upper limit switch (upper tray)
- [D]: Lower tray lift motor
- [E]: Lower tray paper height sensor 1
- [F]: Lower tray paper height sensor 2

Just After the Power is Switched on

At power on, the upper tray moves to the start position under the feed-out slot, as described previously.

Positioning the Lower Tray for Feed-out

If the lower tray is selected for a job, the upper tray is moved away from the feed-out slot at the start of the job. The motor [A] lifts the side fence and upper tray to upper limit sensor [B], which stops the motor. The upper tray remains locked in position on the side fence (by the upper tray lift solenoid) while the lower tray is in use.

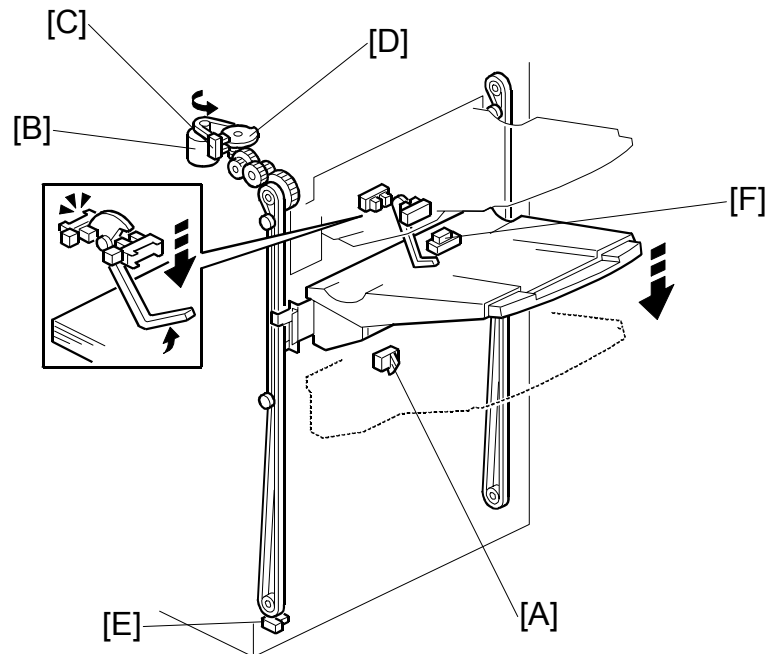
If sensor [B] fails, switch [C] stops the tray.

While the upper tray is being raised, motor [D] lifts the lower tray to the feed-out slot. The motor stops when the upper tray paper height sensor detects the tray.

Lower Tray Height Adjustment During Feed-out

Two sensors and a long feeler that contacts the top of the stack control the lower tray height during feed-out.

When the top of the stack is low, the feeler drops and the actuator swings up and actuates height sensor 1 [E]. As the stack grows higher, the feeler is pushed up until it actuates height sensor 2 [F]. After height sensor 2 remains active for 3 seconds, the lift motor [D] switches on and lowers the tray a short distance. This process repeats until the tray is full.

Lower Tray Full

B468D104.WMF

- [A]: Lower tray full sensor (sort/shift mode)
- [B]: Lower tray lift motor
- [C]: Lower tray encoder sensor
- [D]: Encoder disk
- [E]: Lower tray full sensor (saddle-stitch mode)
- [F]: Lower tray paper sensor

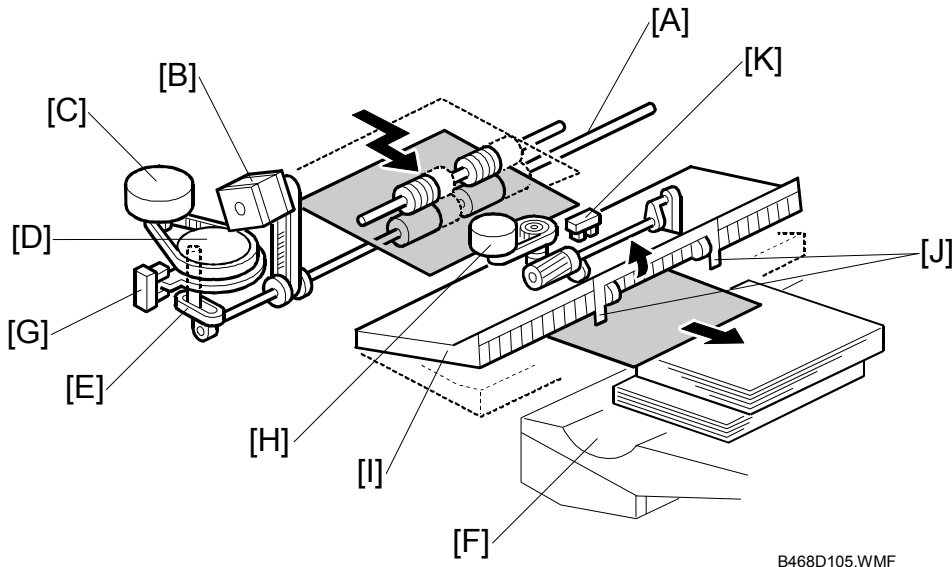
The sensor that is used depends on which mode the user has selected.

Normal sorting/stapling, without saddle stitching: When the bottom of the tray actuates sensor [A], the lift motor [B] continues to rotate for a certain number of rotations. The rotations are detected using sensor [C] and encoder disk [D]. Then printing stops. If sensor [C] fails, the upper limit switch (lower tray) stops the motor. This switch (not shown in the diagram) is next to the plastic foam roller at the feed-out slot.

Saddle-stitch mode: Sensor [A] is not used. The tray is lowered until the actuator on the side of the tray actuates sensor [E]. Then printing stops.

In both modes, when the stack is removed from the tray, sensor [F] de-actuates and returns the lower tray to the initial position at the feed-out slot.

2.6 SHIFT MECHANISM



B468D105.WMF

The same shift mechanism is used for the upper tray and lower tray.

Shift Roller Rotation

The shift roller [A] is turned by the shift roller motor [B].

Shift Roller Horizontal Movement

The shift roller is moved from left to right by the shift motor [C] and shift gear disk [D].

When the trailing edge of the copy passes the upper transport roller, the shift motor switches on, moving the shift roller to the left or right via the shift gear disk [D] and the link [E].

After the paper is delivered to the tray [F], the shift roller moves to the home position, detected by the shift HP sensor [G].

The process is repeated for every page of the same set, when the trailing edge of the page passes the transport roller.

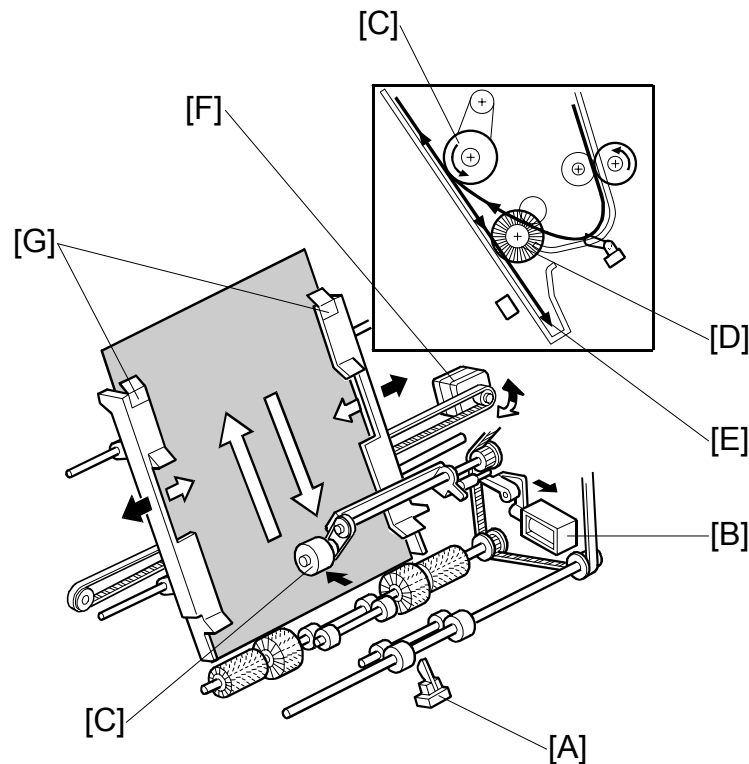
For the next set, the shift motor rotates the gear disk in the opposite direction to shift every page of the next stack to the opposite side.

Exit Guide Plate

The guide plate motor [H] (a stepper motor) controls the opening and closing of the guide plate [I], via a cam and pin mechanism. The guide plate opens for each sheet to allow the shift, then closes to keep the sheet in the correct position for feed out. Two mylars [J] above the feed-out slot keep the copies straight in the feed path.

The guide plate position sensor [K] detects whether the guide plate is open or closed.

2.7 PAPER POSITIONING



B468D014.WMF

Vertical Alignment

When the trailing edge of the copy passes the stapler tray entrance sensor [A], the positioning roller solenoid [B] switches on long enough for the selected paper size and pushes the positioning roller [C] onto the paper. The positioning roller and alignment brush roller [D] rotate to push the paper and align the trailing edge of the paper with the stack stopper [E].

The stapler transport motor (not shown in this diagram) drives rollers [C] and [D].

Horizontal alignment

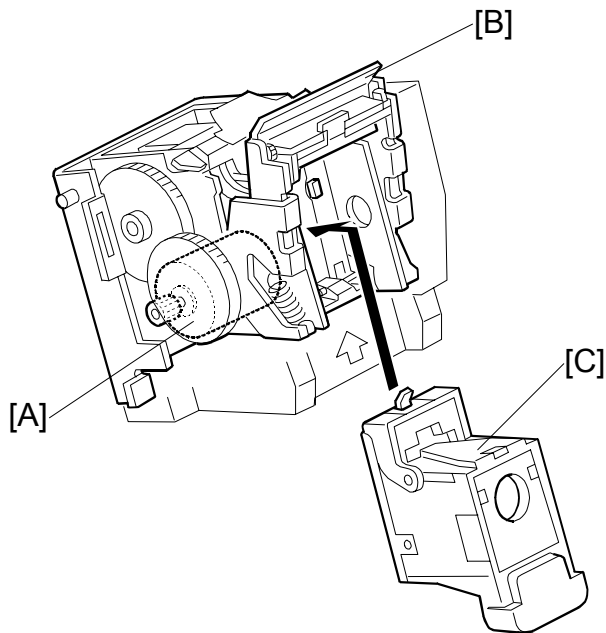
When the Start key is pressed, the jogger motor [F] switches on and opens the jogger fences 10 mm wider than the selected paper size.

When the leading edge of the sheet passes the staple unit entrance sensor, for the initial alignment, the jogger motor switches on for the prescribed time and closes the jogger fences 4 mm (2 mm closer to either side of the paper)

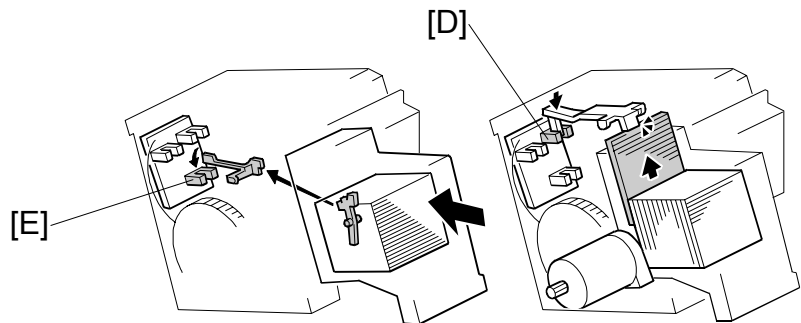
Next, the jogger motor switches on again for the prescribed time for the horizontal alignment to close the jogger fences 6 mm (3 mm to the sides of the paper) for the final alignment correction. The jogger motor switches on again and the fences return to the wait position 10 mm wider than the selected paper size.

2.8 STAPLER

2.8.1 STAPLING MECHANISM



B468D015.WMF



B468D106.WMF

Staple firing is driven by the stapler motor [A] inside the stapler unit. The stapler hammer [B] fires the stapler [C].

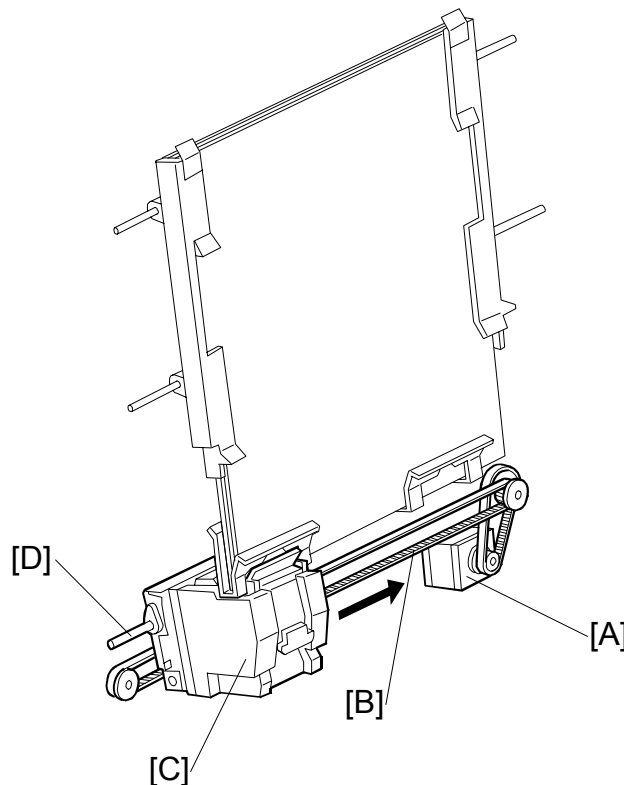
The cartridge set sensor [D] detects the cartridge at the correct position, or logs an SC if the stapler unit is not at the correct position.

The stapler end sensor [E] detects the staple end condition and logs an SC.

2.8.2 STAPLER MOVEMENT

The stapler performs horizontal and rotational movement in each of the four staple modes.

Horizontal Stapler Movement



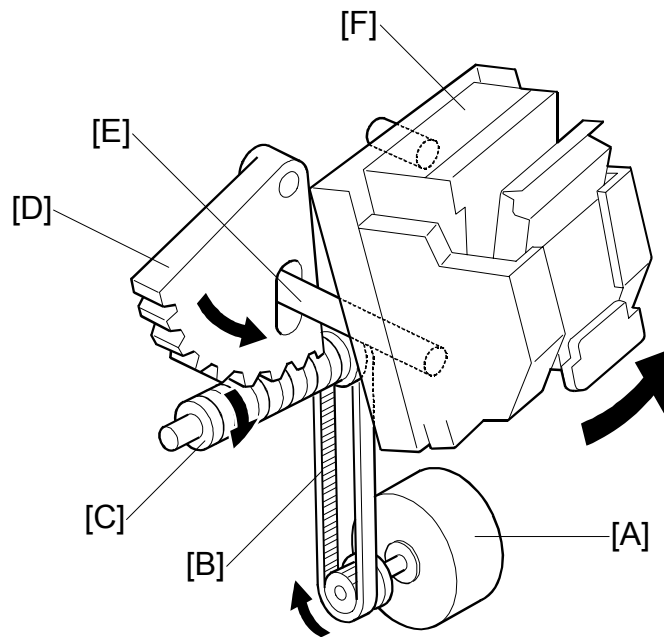
B468D016.WMF

The stapler movement motor [A] drives the timing belt [B] which moves stapler [C] left and right on a support bar [D].

When the Start key is pressed, the jogger fences move to the wait position 10 mm wider than the selected paper size, the stapler motor switches on and moves the stapler to the staple position and then switches off. The motor switches on and off for the time needed to position the stapler for the paper size selected for the job.

If the stack is to be stapled at two locations, the stapler moves to the front position first, staples, moves to the back position, staples, and then returns to the home position.

NOTE: SP6120 001~011 (Staple Jogger Adjustment). Use this SP to fine adjust the staple unit jogger fences for different paper sizes. For details, see section “5. Service Tables”.

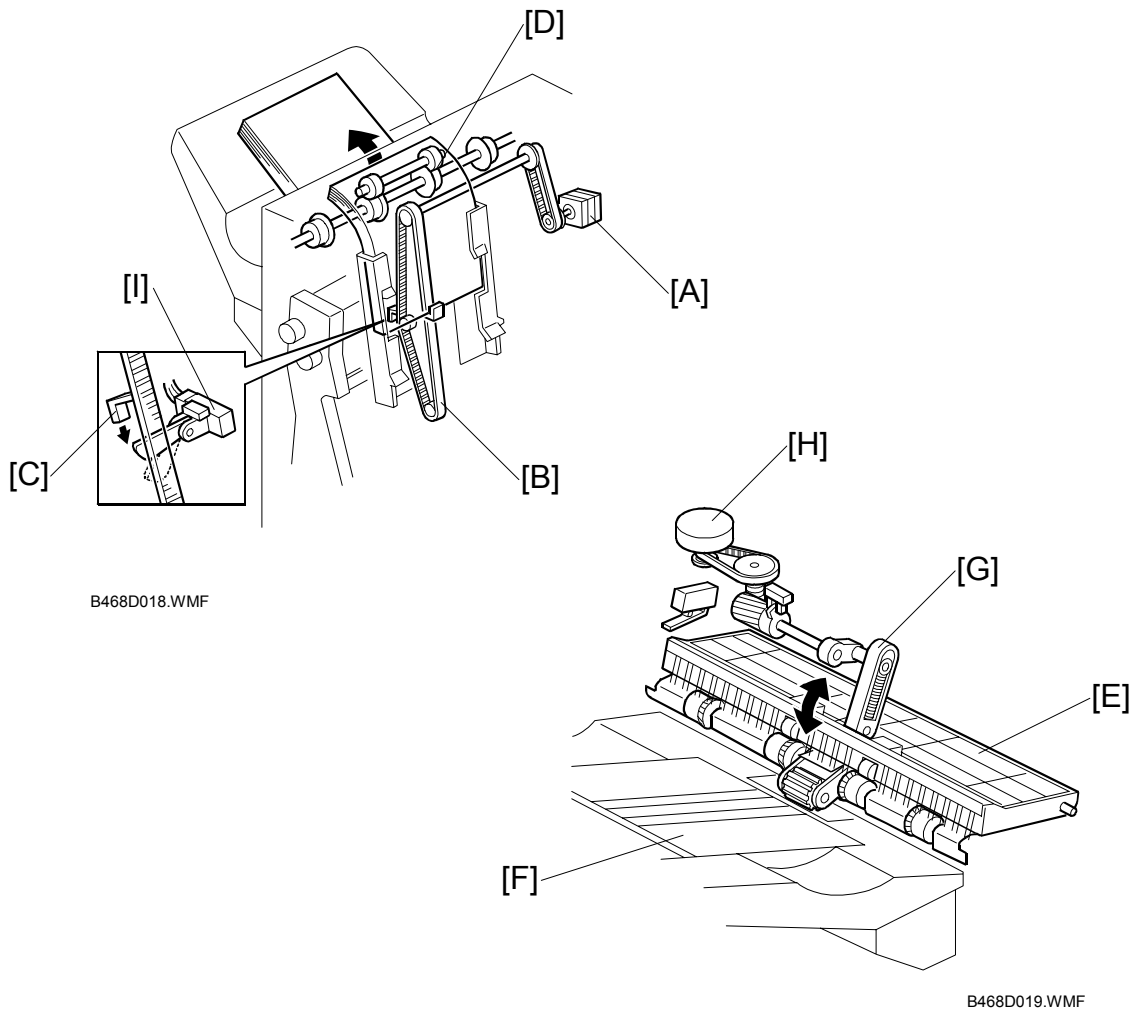
Rotational Stapler Movement

B468D017.WMF

When the user has selected oblique stapling at one position, first the stapler motor switches on and off for the amount of time needed to move the stapler to the stapling position for the selected paper size.

At the correct time, the stapler rotation motor [A] switches on and via the timing belt [B] rotates the worm gear [C]. The worm gear drives the gear [D] and the lift arm [E], which lifts and positions the stapler unit [F] so the stapler can fire the staple at a 45 degree angle.

2.8.3 FEED OUT



After a set has been stapled, the stack feed out motor [A] switches on and drives the stack feed out belt [B]. The pawl [C] on the belt lifts the stapled stack and transports it to the exit rollers [D]. There are two pawls on the belt, to increase productivity.

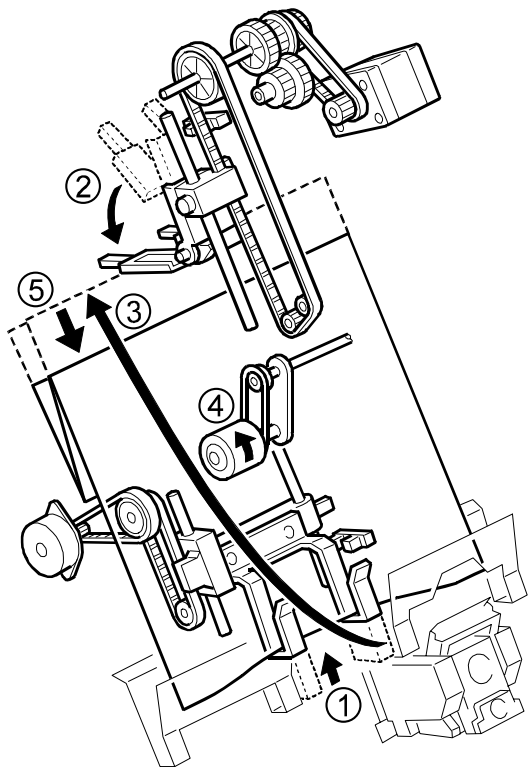
The exit guide plate [E] remains open until the leading edge of the stapled sheets has passed the prescribed distance from the tray exit rollers, then the exit guide plate closes, and the stapled sheets feed out to the tray [F].

A cam and pin [G], powered by the guide plate motor [H], opens and closes the guide plate.

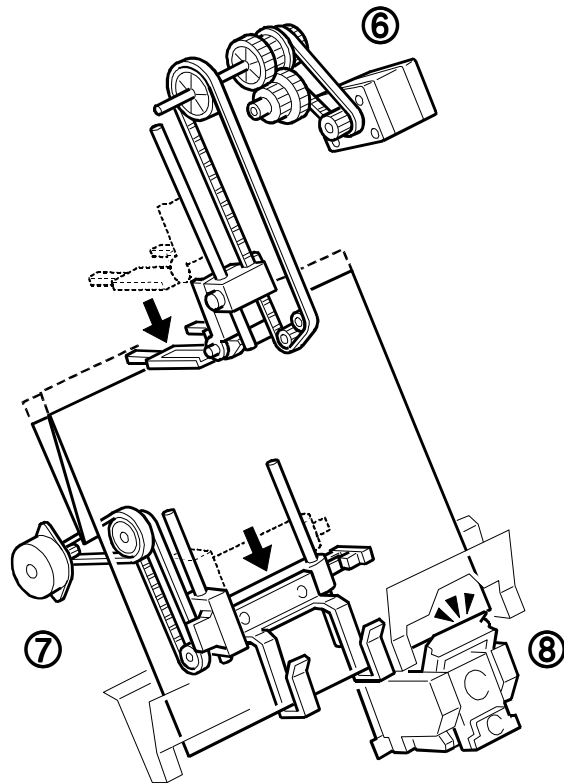
The stack feed out motor stops for 300 ms to allow the exit rollers to feed out the stapled sheets to the output tray. This pause prevents the copies from pushing out too far onto the tray.

The stack feed out motor switches on again until the pawl actuates the stack feed out belt HP sensor [I].

2.9 STAPLING Z-FOLDED PAPER (B674 ONLY)



B468D904.WMF



B468D905.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.

2.10 BOOKLET FINISHING

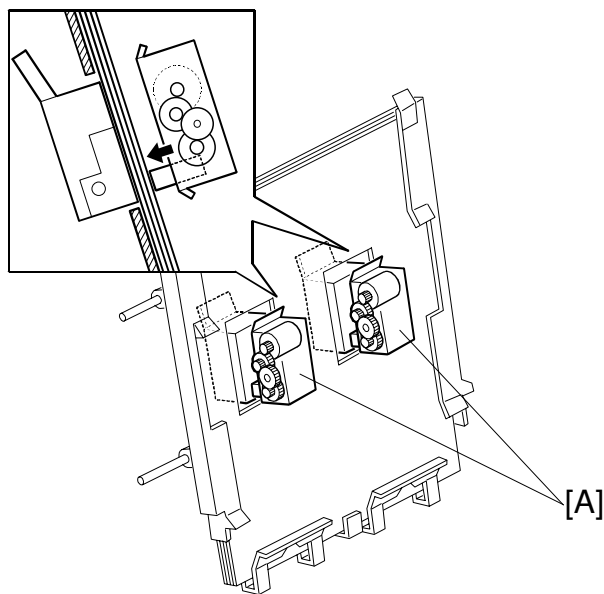
2.10.1 OVERVIEW

Stapling: Two booklet staplers are used. These are about half way up the stack feed-out path. The stack feed-out belt moves the stack to the correct position for stapling.

Folding: This is done in two phases: initial folding and final folding.

- **Initial folding:** At the top of the stack feed-out belt, a plate pushes the centre of the copy (at the stapled place) through a pair of rollers to give the booklet an initial fold. However, this fold is only a partial fold.
- **Final folding:** The partially folded copy drops to the lower tray, where it is caught by a pressure plate mechanism, which completes the fold in the booklet before letting it drop onto the lower tray.

2.10.2 BOOKLET STAPLING AND FOLDING



B468D020.WMF

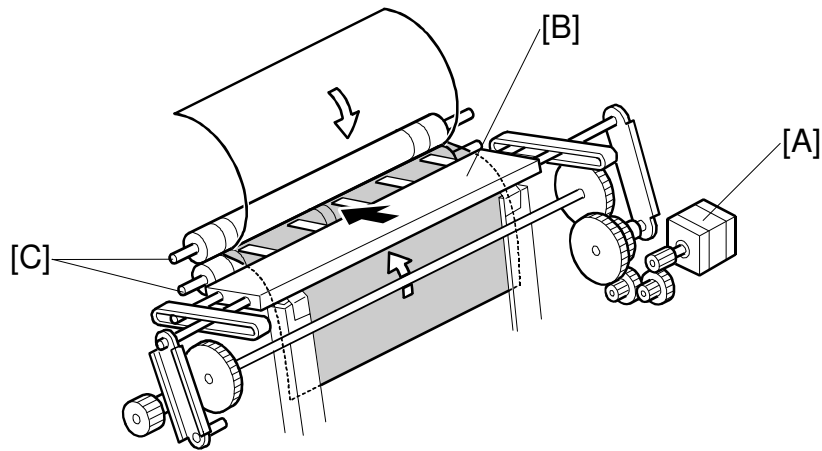
Peripherals

The sheets are aligned by the jogger fences before stapling. (☛ 2.7)

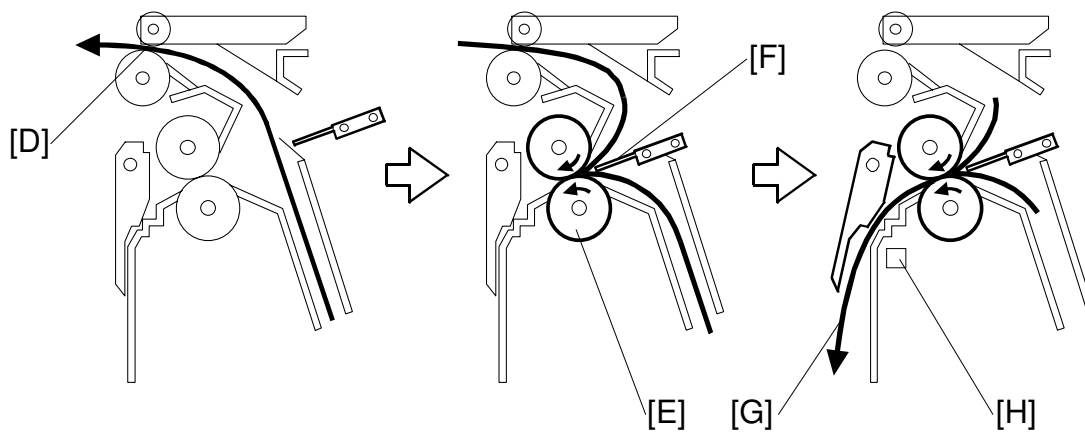
The aligned sheets are sent to the booklet stapler unit and positioned below the booklet staplers [A] for stapling at two locations in the center of the paper.

The stack feed-out belt lifts the booklet until two pawls on the folder plate mechanism (see the next page) catch the staples to position the booklet for folding.

2.10.3 INITIAL FOLDING



B468D021.WMF



B468D022.WMF

The folder plate motor [A] switches on and drives the folder plate [B] forward to push the center of the booklet into the nip of the folder rollers [C], giving the booklet a partial fold.

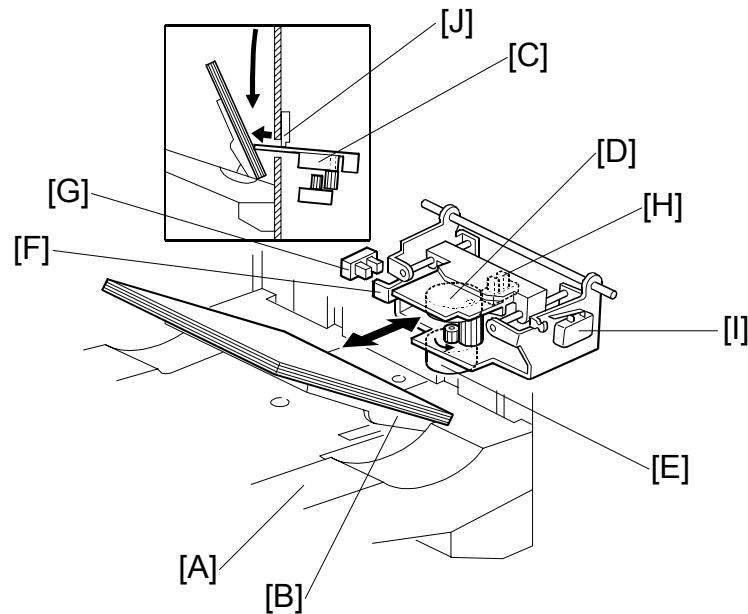
This is a detailed cross-section of the operation described above. The timing of the sequence depends on the size of the paper selected for the job.

The stack feed-out belt transports the booklet toward the paper exit [D] and stops when the center of the booklet is opposite the nip of the folder rollers [E].

The folder roller motor starts to turn and the folder rollers [E] start rotating. Then the folder plate motor switches on and pushes the folder plate [F] into the center of the booklet, driving the booklet between the rotating rollers. The booklet [G] (partially folded) then feeds out between the folder rollers.

The booklet exit sensor [H] detects the booklet when it leaves the folder rollers. This sensor triggers the mechanism for the next phase of the operation.

2.10.4 FINAL FOLDING AND FEED-OUT



B468D023.WMF

When the finisher is ready to feed out the first stapled booklet, the lower tray [A] descends past the pressure plate slot [J], the spring-loaded arms inside the lower tray snap into the grooves on the side fence, and the springs push the arms against the bottom of the support wing [B] to raise it.

Then, before the first stapled booklet falls from the slot above, the pressure plate motor [E] (stepper motor) rotates the gear and cam [D] counter-clockwise to extend the pressure plate [C]. The lower tray then raises and pushes the pressure plate up until the actuator [F] actuates the pressure plate lift sensor [G] and switches off the lower tray lift motor.

Then, the folded and stapled booklet comes out of the booklet exit slot, actuates the booklet exit sensor, and falls onto the pressure plate below. The actuated booklet exit sensor switches on the pressure plate motor, which rotates the gear and cam clockwise to retract the pressure plate. The motor rotates until the actuator on the rim of the cam actuates the pressure plate HP sensor [H] and stops the motor. Retracting the pressure plate allows the stapled booklet to fall past the pressure plate slot onto the stack below.

Next, the pressure plate motor switches on again to extend the pressure plate, while the lower tray raises and pushes the folded and stapled edges of the booklets up against the pressure plate until the actuator [F] actuates the pressure plate lift sensor [G] and switches off the lower tray lift motor. The booklets remain pressed between the extended pressure plate and lower tray until the next booklet is fed out.

The pressure plate limit switch [I] switches off the lower tray lift motor if the pressure plate lift sensor fails.

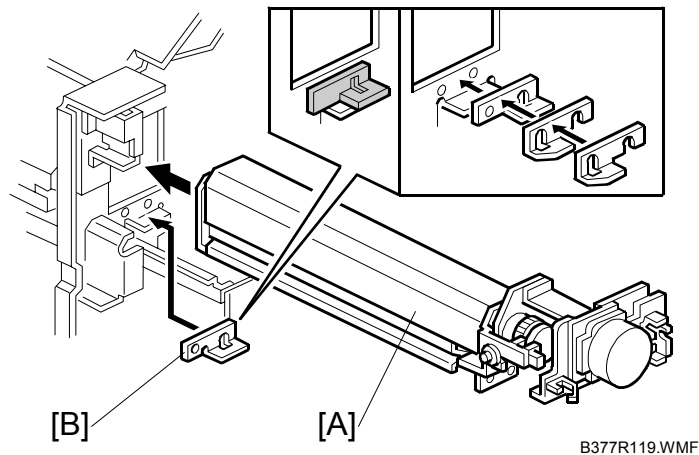
PUNCH UNIT
(Machine Code: B377)

1. REPLACEMENT AND ADJUSTMENT

1.1 PUNCH POSITION ADJUSTMENT

To adjust the position of the punch holes in the paper feed direction, use SP6113 (Punch Hole Adjustment).

The punch position can be adjusted by up to 4 mm using combinations of the 3 spacers provided with the finisher. To adjust the horizontal position of the holes, use the spacers provided with the punch unit.



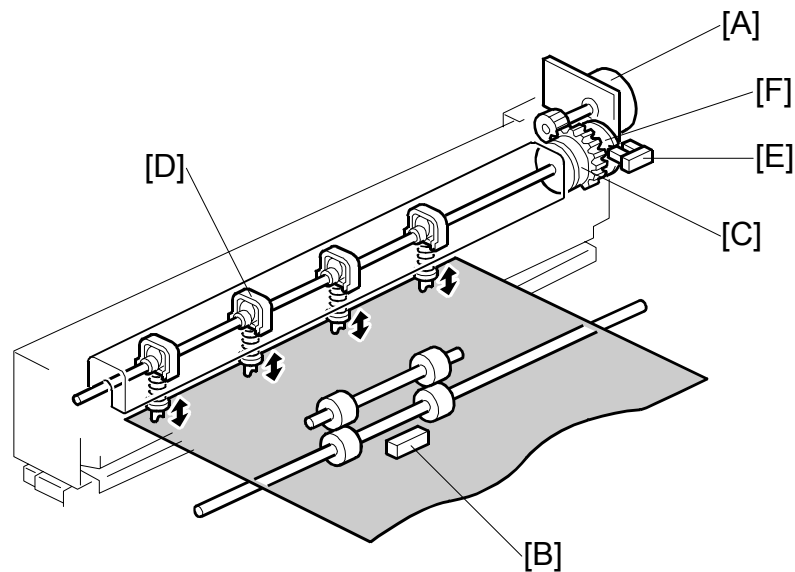
1. Rear cover (🔩 x 4)
2. Punch unit [A] (🔩 x 3, 📏 x 5)
3. Spacers [B]

2. DETAILS

The punch unit punches holes in printed sheets, one by one. The punch unit is provided with a new punch mechanism to improve the accuracy of punching.

NOTE: The illustrations below show the unit for Europe for 2/4 hole punching. The North American unit has five holes for 2/3 hole punching.

2.1 PUNCH DRIVE MECHANISM

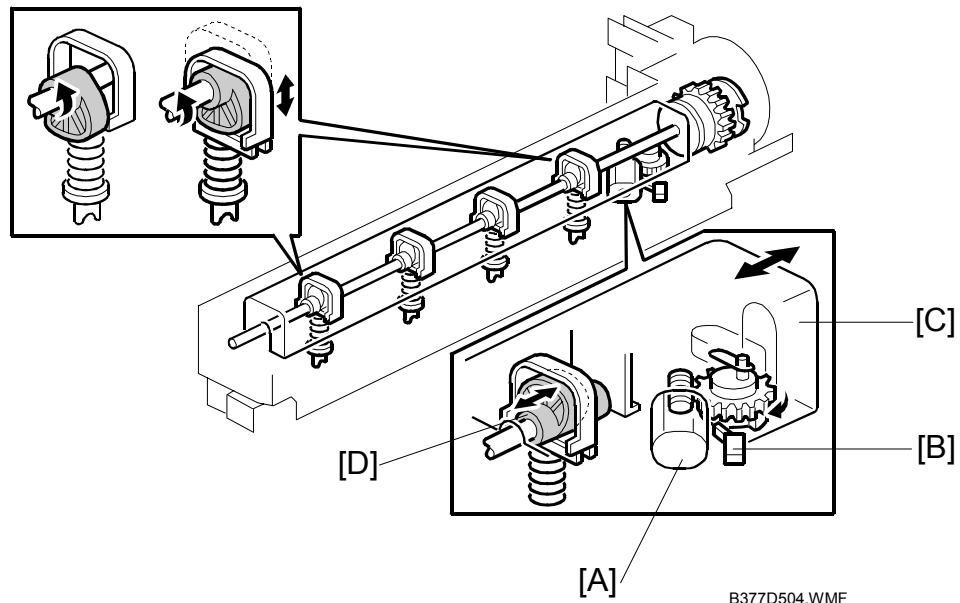


B377D505.WMF

The punch motor [A] drives the punch mechanism. At the correct time after the trailing edge of the paper passes the finisher entrance sensor [B], the punch motor turns on and the paper stops. The punch clutch [C] turns and drives the punch heads [D].

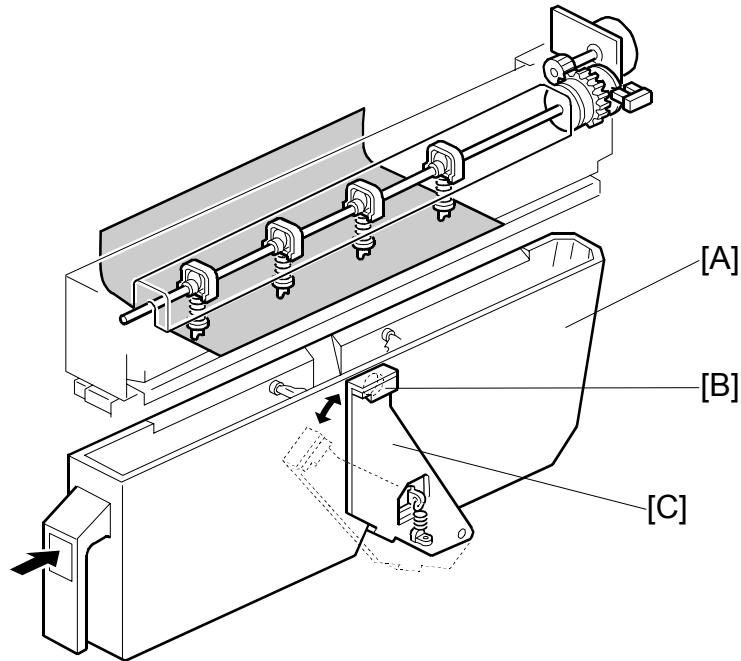
The punch HP sensor [E] detects the home position for the actuator. The punch unit switches off when the cut-out in the punch shaft disk [F] enters the punch HP sensor.

NOTE: SP6113 (Punch Hole Adjustment) adjusts the punch hole position in the sub scan direction for two holes (001 2-Hole) or for three holes (002 3-Hole). Use the spacers provided with the punch unit to adjust the position of the punch in the main scan direction. For details, refer to the installation of the punch unit in section “1. Installation”).



When the finisher has received the command that changes the number of punch holes for the job, the punch hole motor [A] turns on until the actuator disk changes the status of the punch hole switch [B] (until it switches on or off). This indicates that the cover [C] and the punch cam [D] have moved to one side or the other to determine which punchers are used.

2.2 PUNCH WASTE COLLECTION



B377D506.WMF

Waste punchouts are collected in the punch waste hopper [A] below the punch unit inside the finisher.

When the top of the punchout waste in the hopper reaches and actuates the hopper sensor [B], a message will be displayed on the operation panel after the current job is completed.

This sensor also detects whether the punch waste hopper is installed. When the waste hopper is taken out, the arm [C] moves down and this will actuate the sensor and display a message in the operation panel. This message is the same as for the hopper full condition.