Finisher SR3010
Machine Code: B792

SERVICE MANUAL

Apr. 21st, 2006
Subject to change

Read This First

Safety and Symbols

Replacement Procedure Safety

⚠CAUTION

- Turn off the main power switch and unplug the machine before beginning any of the replacement procedures in this manual.

Symbols Used in this Manual

This manual uses the following symbols.

☛: See or Refer to

: Screws

: Connector

: Clip ring

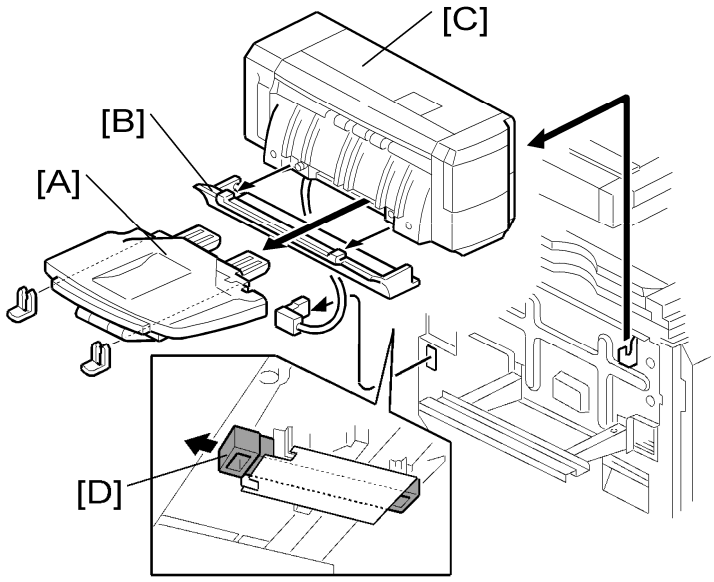
: E-ring

Table of Contents

1. Replacement and Adjustment

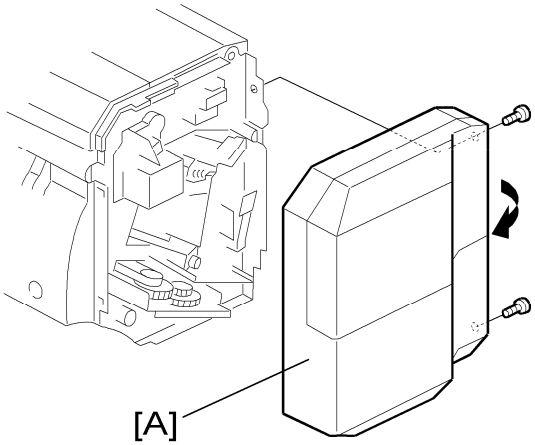
Exterior

Main Frame



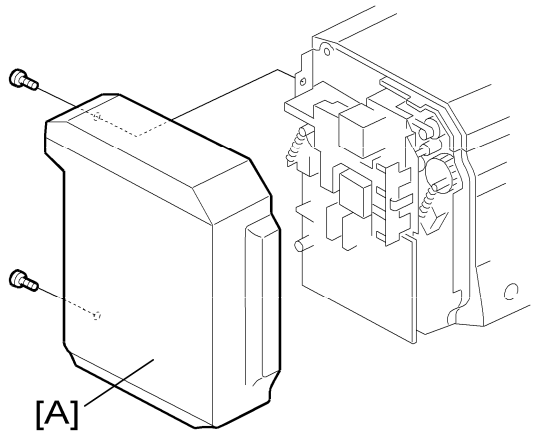
1. **Plug out the 500-sheet finisher.**
2. **Output tray [A] (x 2)**
3. **Bracket cover [B]**
4. **Remove the 500-sheet finisher [C] while pulling the lock lever [D].**

Front Cover



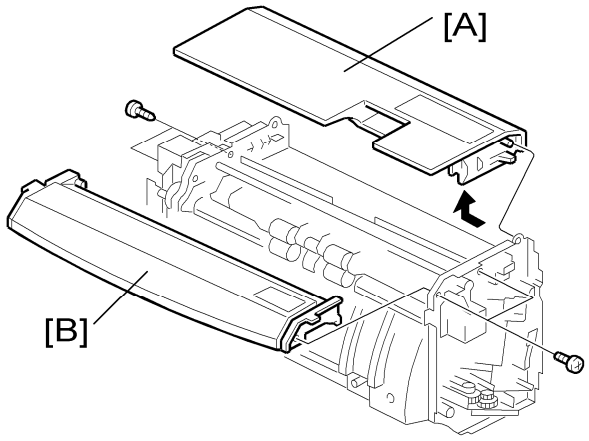
1. **Front cover (x 2)**

Rear Cover



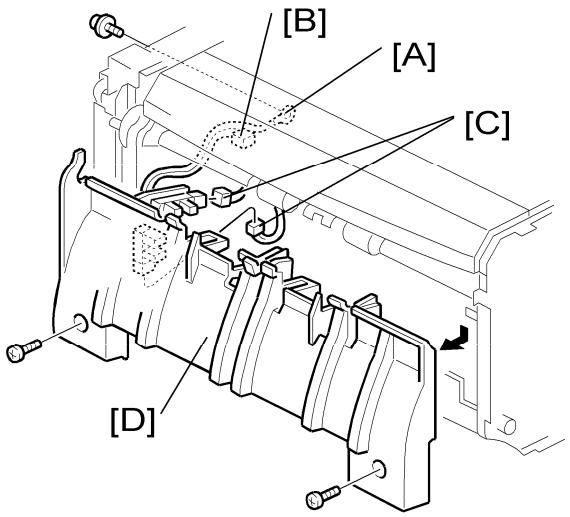
1. **Rear cover [A] (x 2)**

Top Cover



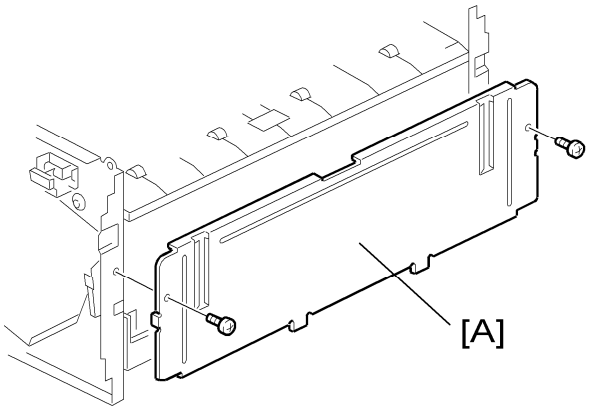
1. **Front cover ("Front Cover")**
2. **Rear cover ("Rear Cover")**
3. **Top cover [A]**
4. **Top left cover [B] (x 4)**

Exit Lower Guide



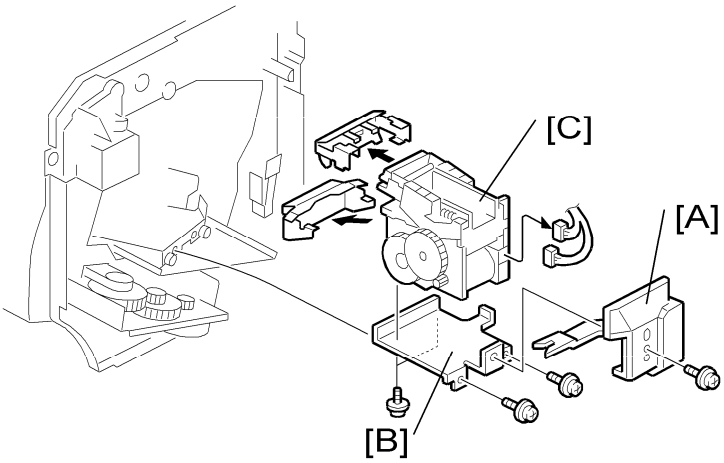
1. **Output tray (☛ "Main Frame")**
2. **Front cover (☛ "Front Cover")**
3. **Rear cover (☛ "Rear Cover")**
4. **Right cover (☛ "Right Cover")**
5. **Remove the ground terminal [A] (🔩 x 1)**
6. **Disconnect the harness of the stack height lever solenoid [B].**
7. **Disconnect two sensor cables [C].**
8. **Exit lower guide [D] (🔩 x 2)**

Right Cover



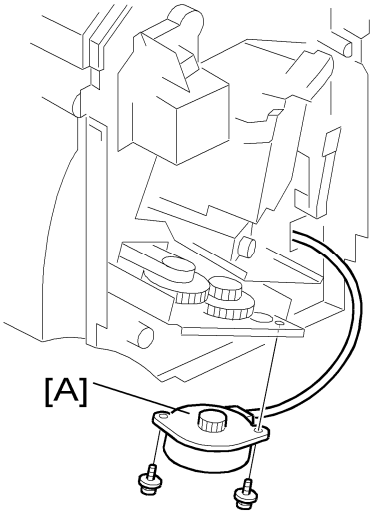
1. **Front cover (☛ "Front Cover")**
2. **Rear cover (☛ "Rear Cover")**
3. **Right cover [A] (🔩 x 2)**

Stapler Unit



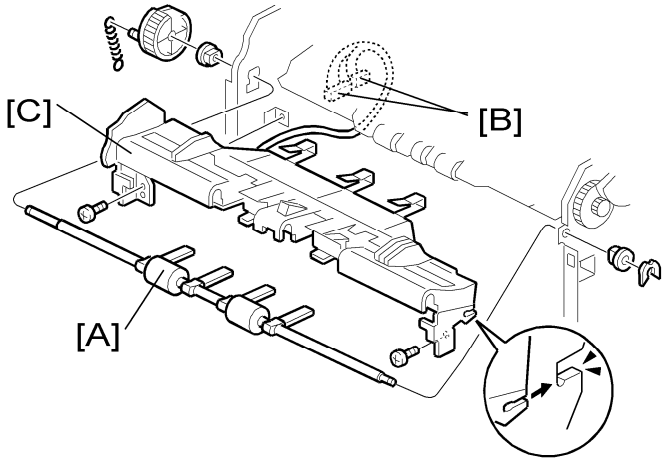
1. **Front cover (☛ "Front Cover")**
2. **Harness cover [A] (x 1)**
3. **Stapler unit bracket [B] (x 2, x 2)**
4. **Stapler unit (x 2)**

Stapler Unit Movement Motor



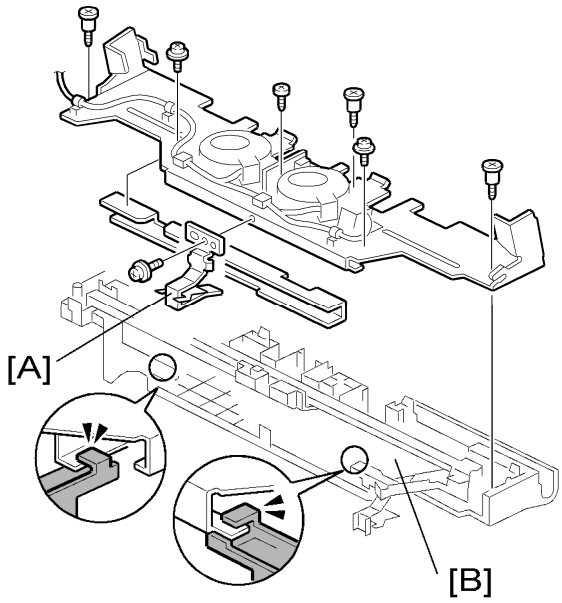
1. **Front cover (☛ "Front Cover")**
2. **Stapler unit movement motor [A] (x 2, x 1, x 1)**

Jogger Tray Unit

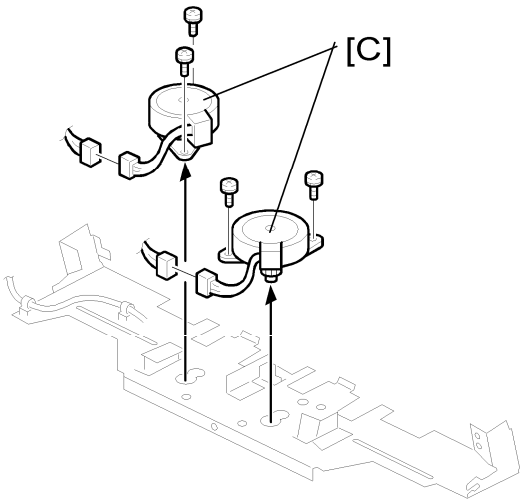


1. **Front cover (☛ "Front Cover")**
2. **Rear cover (☛ "Rear Cover")**
3. **Exit lower guide (☛ " Exit Lower Guide ")**
4. **Pick-up roller contact motor bracket (☛ " Pick-up Roller Contact Motor ")**
5. **Paddle roller [A] (gear x 1, spring x 1, snap ring x1, bushing x 2)**
6. **Disconnect the two jogger motor harnesses [B]**
7. **Jogger tray unit [C] (🔩 x 2)**

Jogger Motors

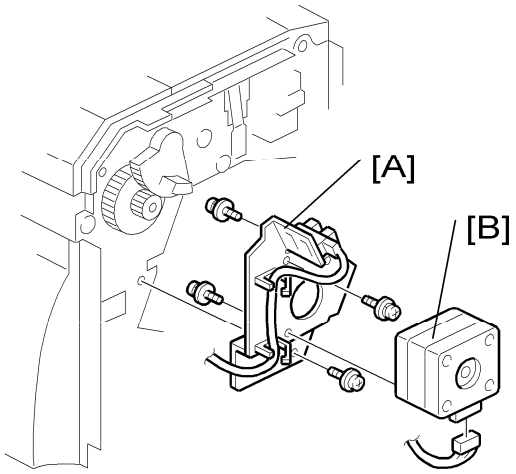


1. **Jogger tray unit ("Jogger Tray Unit")**
2. **Stack bracket [A] (x 1)**
3. **Jogger tray cover [B] (x 6)**



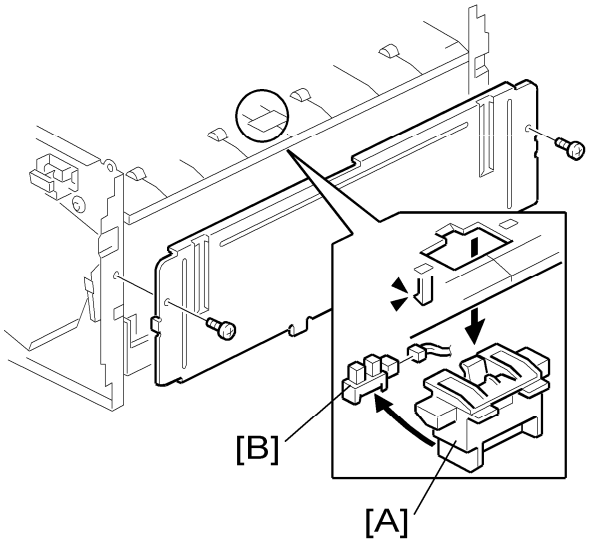
4. **Jogger motors [C] (x 2, x 1 each)**

Pick-up Roller Contact Motor



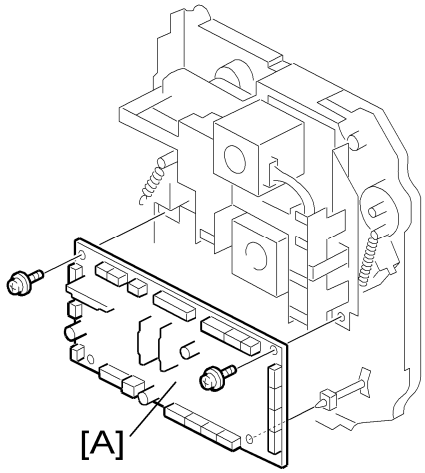
1. **Front cover ("Front Cover")**
2. **Pick-up roller contact motor bracket [A] (x 2, x 1)**
3. **Pick-up roller contact motor [B] (x 2)**

Paper Exit Sensor



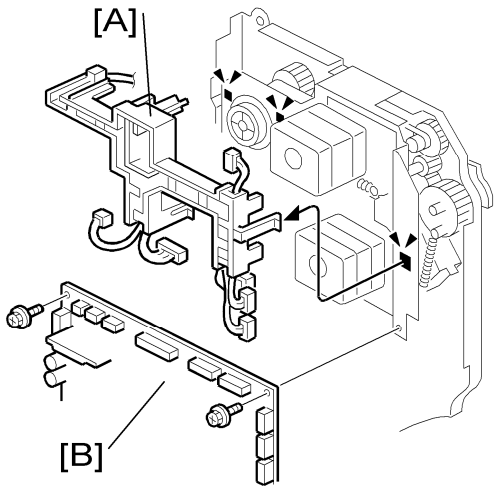
1. **Right cover ("Right Cover")**
2. **Paper exit sensor holder [A] (hook x 2)**
3. **Paper exit sensor [B] (x 1)**

Control Board

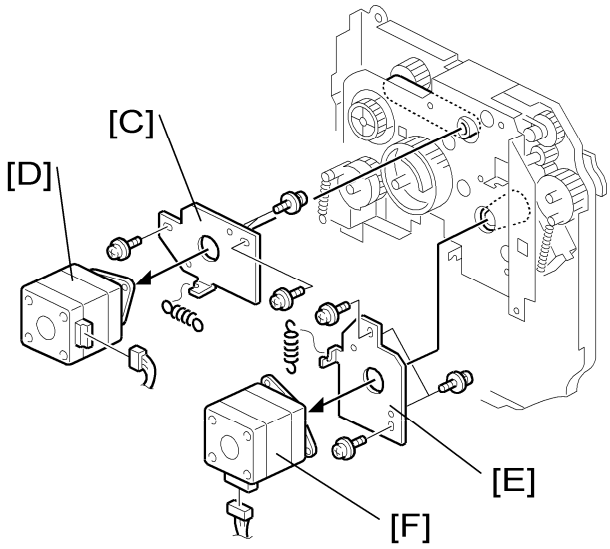


1. **Rear cover (☛ "Rear Cover")**
2. **Control board [A] (🔩 x 2)**

Paper Transport and Paper Reverse/Exit Motors

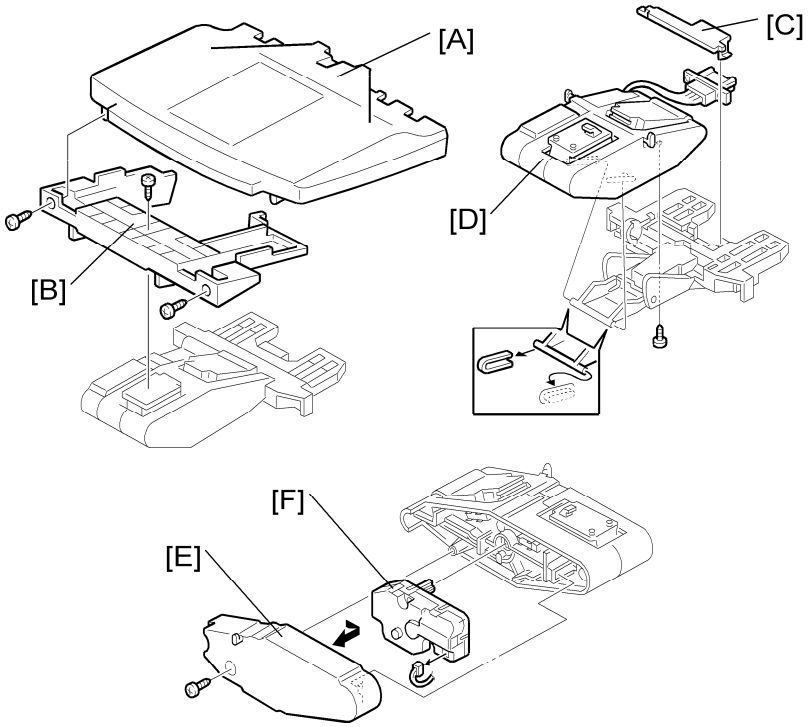


1. **Rear cover ("Rear Cover")**
2. **Harness guide [A] (hook x 3)**
3. **Control board [B] (x 2, All s)**

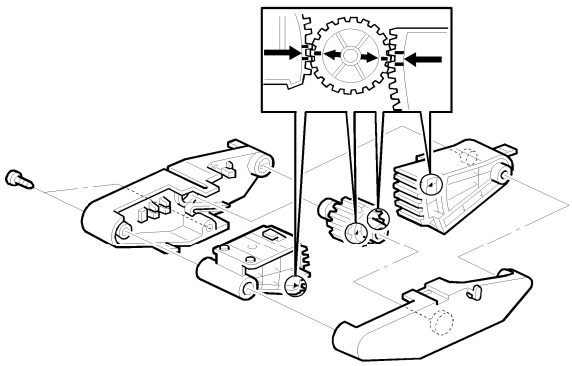


4. **Paper transport motor bracket [C] (x 2, spring x 1, x 1)**
5. **Paper transport motor [D] (x 2)**
6. **Paper reverse/exit motor bracket [E] (x 2, spring x 1, x 1)**
7. **Paper reverse/exit motor [F] (x 2)**

Output Tray Unit



1. **Output tray (☛ "Main Frame")**
2. **Output tray cover [A] (🔩 x 2)**
3. **Tray holder [B] (🔩 x 1)**
4. **Connector cover [C]**
5. **Output tray motor link unit [D] (🔩 x 1)**
6. **Rear cover [E] (🔩 x 1)**
7. **Output tray motor [F] (⚙ x 1)**



Note

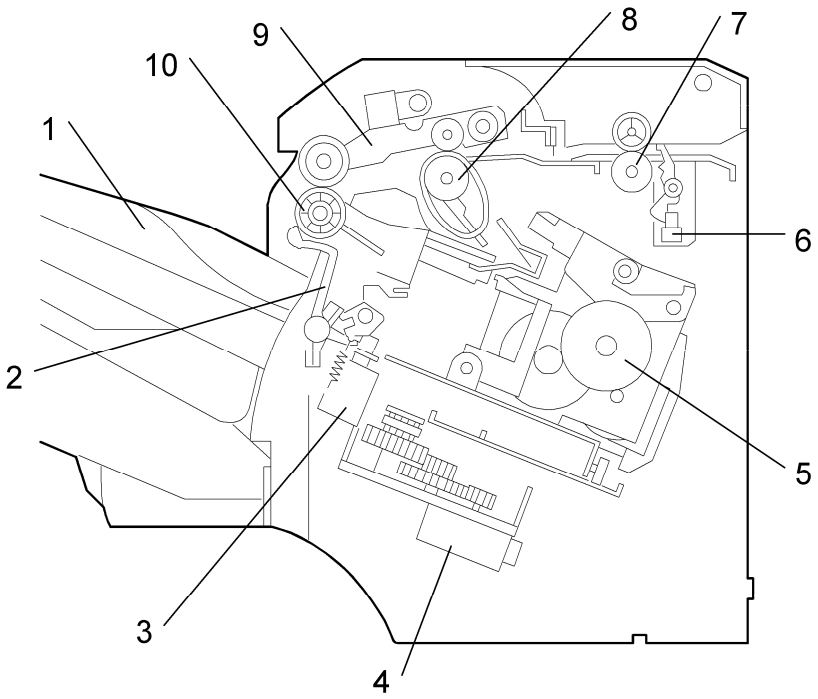
- When re-attaching the motor link unit, the arrows on each of the gears need to face each other as shown in the illustration.

2. Detailed Descriptions

Overall Machine Information

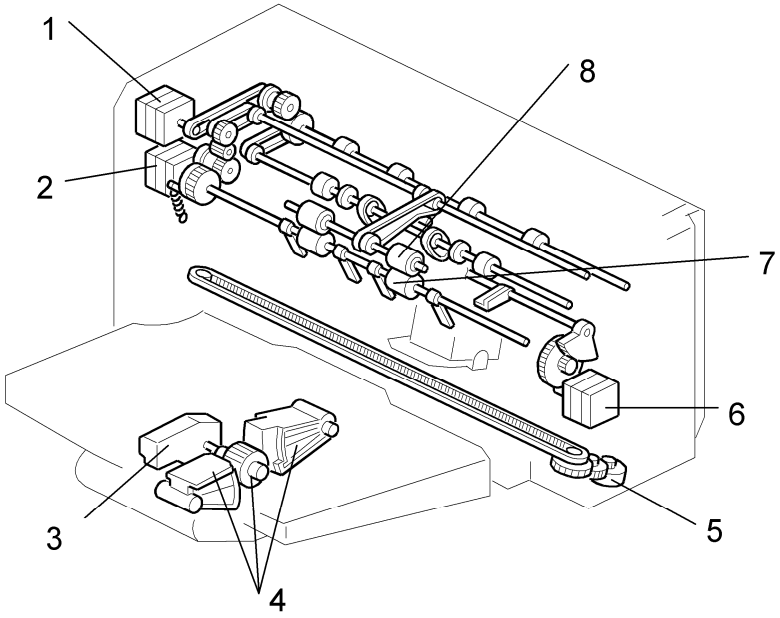
Component Layout

Mechanical Component Layout



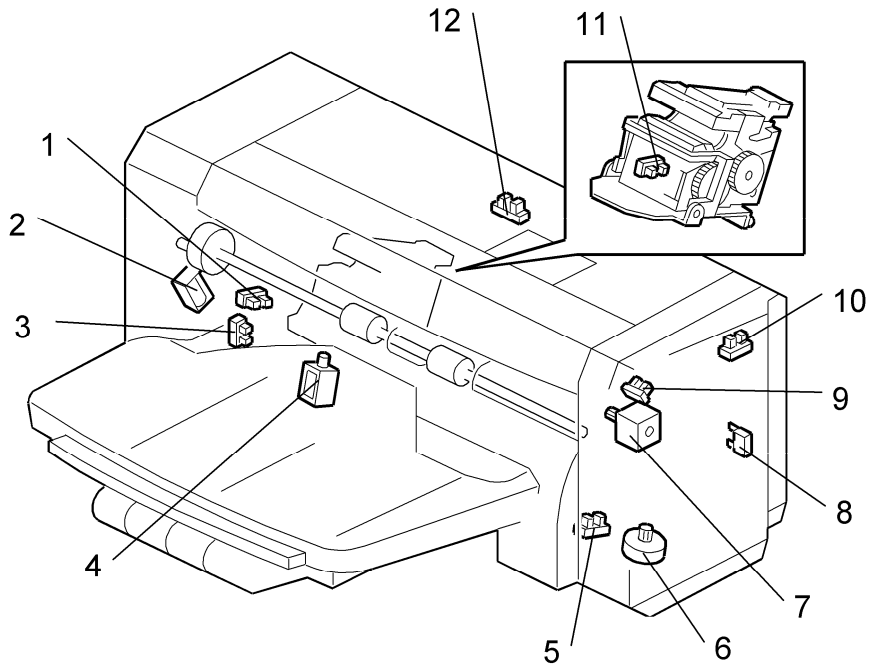
1. Output tray 2. Stack height detection lever 3. Stack height lever solenoid 4 .Stapler unit movement motor 5. Stapler unit	6. Entrance sensor 7. Entrance roller 8. Belt unit 9. Pick-up roller 10. Paddle roller

Drive Layout

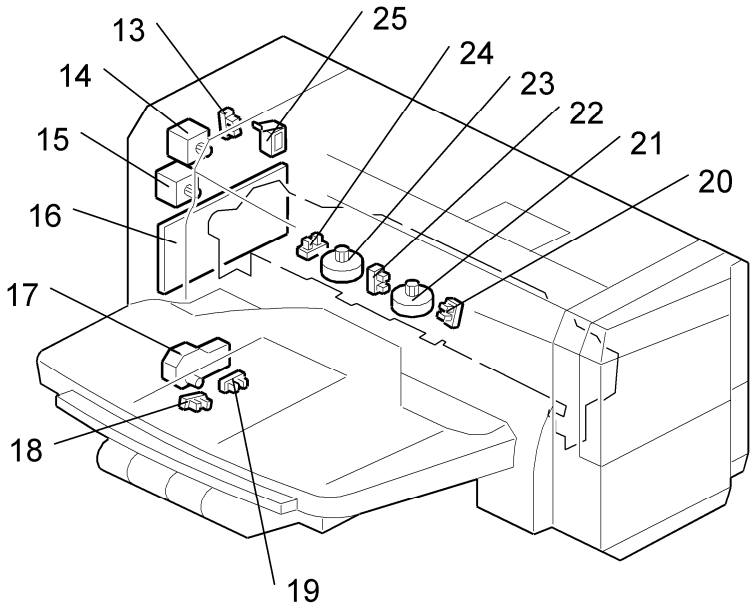


1. Paper transport motor 2. Pick-up roller motor 3. Output tray motor 4. Output tray link gears	5. Stapler unit movement motor 6. Pick-up roller contact motor 7. Paddle roller 8. Pick-up roller

Electrical Component Layout



1. Lever Sensor	7. Pick-Up Roller Contact Motor
2. Paddle Roller Solenoid	8. Cover Switch
3. Stack Height Sensor	9. Pick-Up Roller HP Sensor
4. Stack Height Lever Solenoid	10. Top Cover Sensor
5. Stapler Unit HP Sensor	11. Stapler Safety Sensor
6. Stapler Unit Movement Motor	12. Entrance Sensor

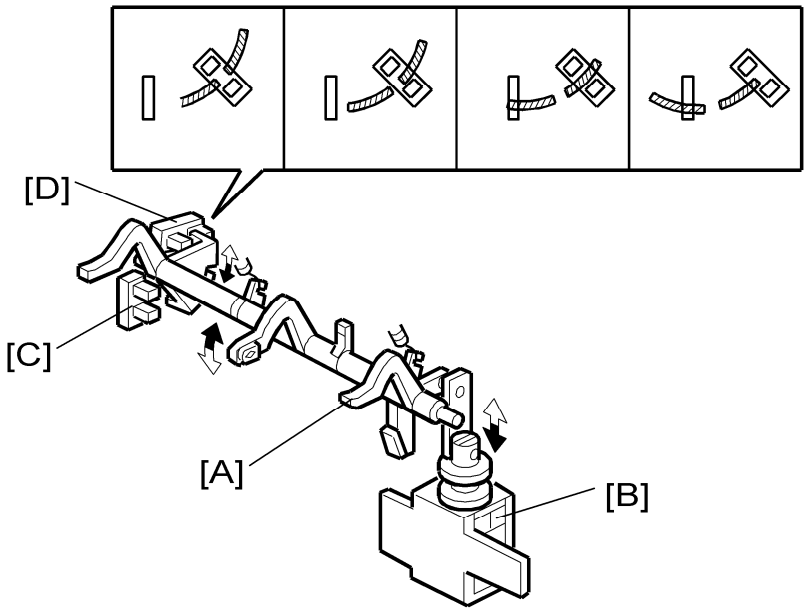


13. Belt Lift Sensor 14. Paper Transport Motor 15. Pick-up Roller Motor 16. Control Board 17. Output Tray Motor 18. Stack Near-limit Sensor 19. Tray Upper Limit Sensor	20. Front Jogger Fence HP Sensor 21. Front Jogger Motor 22. Rear Jogger Fence HP Sensor 23. Rear Jogger Motor 24. Jogger Position Sensor 25. Belt Lift Solenoid

Detailed Section Descriptions

Output Tray Mechanism

Stack Height Detection



Stack height detection lever [A]: Driven by stack height lever solenoid [B].

Two sensors detect the height of the stack in the output tray: the stack height [C] and lever [D] sensors.

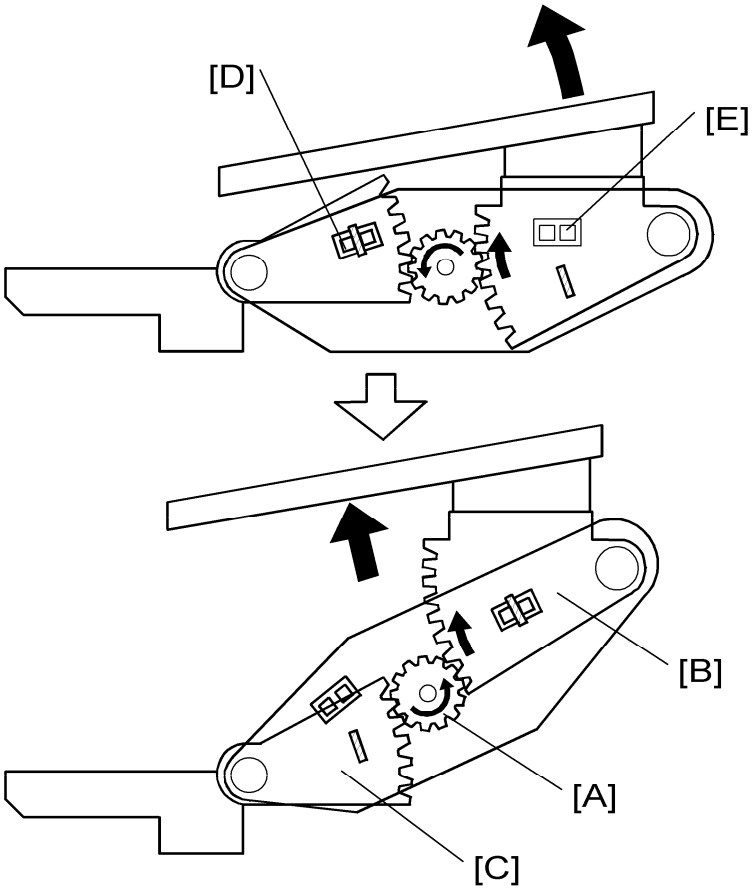
Stack height sensor	Lever sensor	Status
Off	Off	The stack height is below the target. The output tray is then lifted to the target position.
Off	On	Target stack height position
On	On	The stack height is above the target. The output tray is then lowered to the target position.
On	Off	The stack height detection lever is at home position.

Off: Actuator not in sensor

At the start of a print job, the solenoid turns off. The stack height detection lever comes down, to detect the current stack level.

When a sheet of paper is being fed out, the solenoid turns on and the lever goes back up to home position (inside the unit). After paper has been fed out, the solenoid turns on again, and the lever detects the level of the stack.

Output Tray Up/Down Mechanism



Overview

The output tray motor gear [A] lifts/lowers the tray if the stack height is not at the target position.

Gears [B] and [C] keep the angle of the tray constant at any tray position.

Output Tray Downward Movement

The top of the paper stack is checked after every page (or set of pages) has been fed out. If the top of the stack is higher than the target level, the output tray motor moves the tray down.

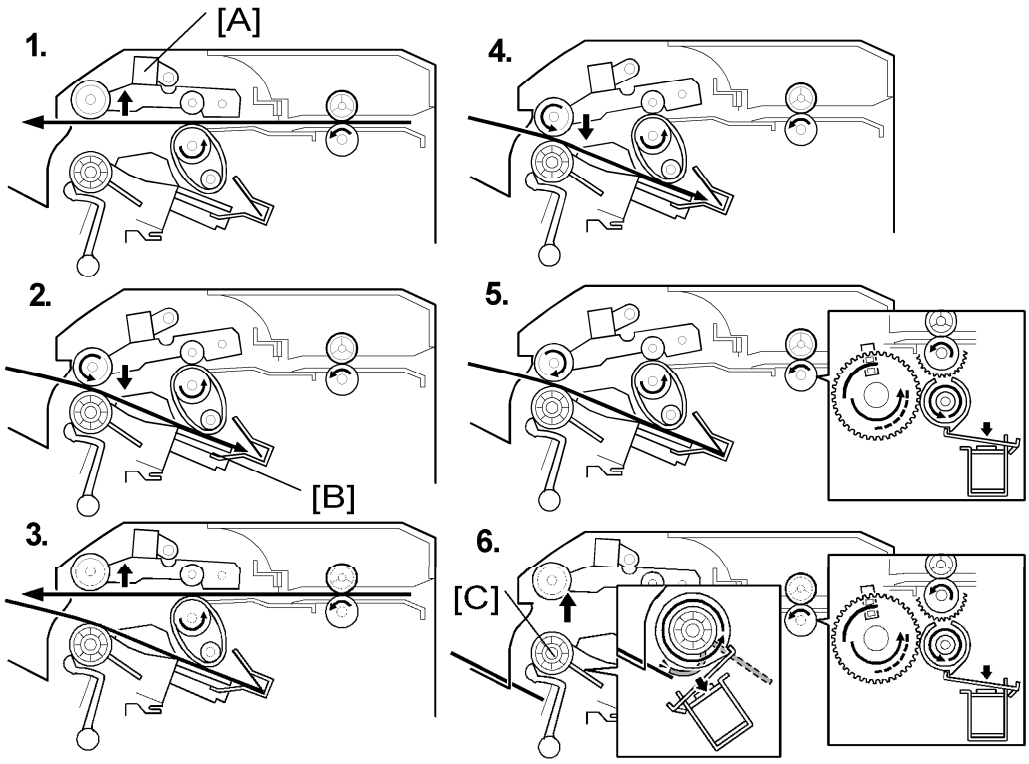
When the stack near-limit sensor [D] detects the actuator on gear [C], a stack near-limit signal is transferred to the main frame. The tray cannot move any lower. The next time the top of the stack height is above the target level, printing stops.

Output Tray Upward Movement

If paper is removed from the stack, the top of the stack will be lower than the target level, and the output tray motor moves the tray up.

When the tray upper limit sensor [E] detects the actuator on gear [B], the tray cannot be moved up any more, so the motor stops.

Paper Feed



When a sheet of paper is fed, it is transported through the 500-sheet finisher as shown in these drawings.

To feed paper straight through the finisher, the pick-up roller [A] stays up.

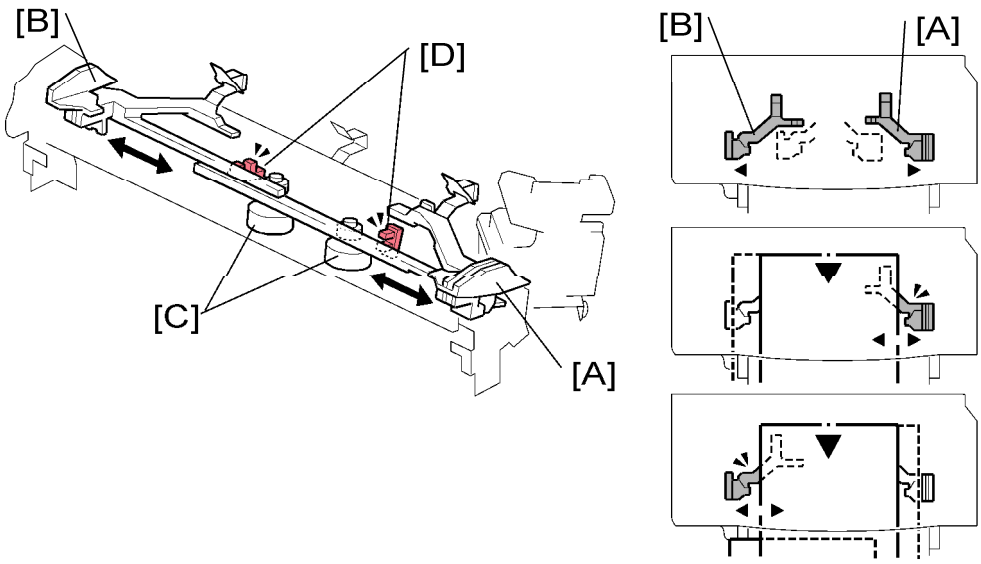
To send the paper to the jogger tray [B], when the trailing edge is almost out of the finisher, the pick-up roller moves down until the reverse/exit roller in the pick-up roller pushes the paper against the paddle roller [C]. The reverse/exit roller feeds the paper to the jogger tray.

The pick-up roller is lifted up and down by the pick-up roller contact motor.

The pick-up roller feeds the paper out after stapling, sorting, or stacking.

The reverse/exit motor controls the reverse/exit motor. The other rollers do not change direction, and are controlled by the paper transport motor.

Jogger Movement



The jogger tray unit consists of the front [A] and rear [B] jogger fences, two jogger motors [C] and two jogger fence HP sensors [D].

Standby mode:

The jogger fences are placed at home position.

Sort mode:

The joggers move alternate sets to the front and rear, to separate the sets for the users.

At the start of the job, the jogger fences move to the front and rear sides.

When the first set of the job is fed to the jogger tray, the front jogger fence moves towards the rear to stack the paper neatly.

When the second set of the job is fed, the rear jogger fence moves towards the front to stack the paper neatly.

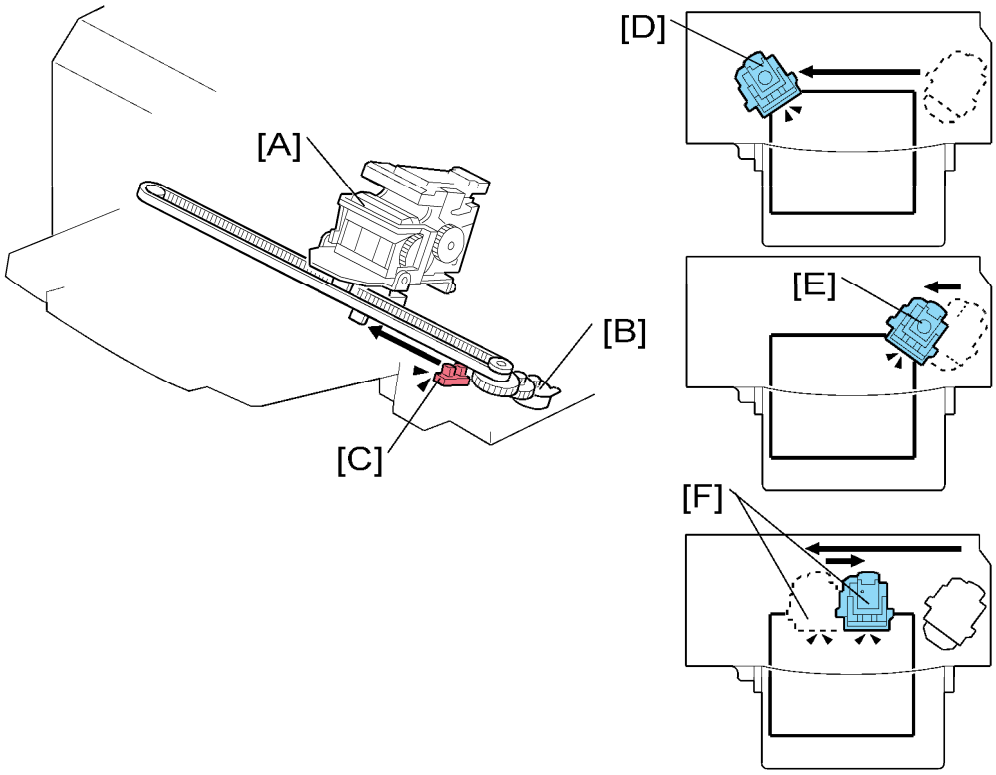
The front and rear fences continue to operate like this for alternate sets, until the end of the job.

Staple mode:

Only the front jogger fence moves in staple mode.

Stapler Unit Movement

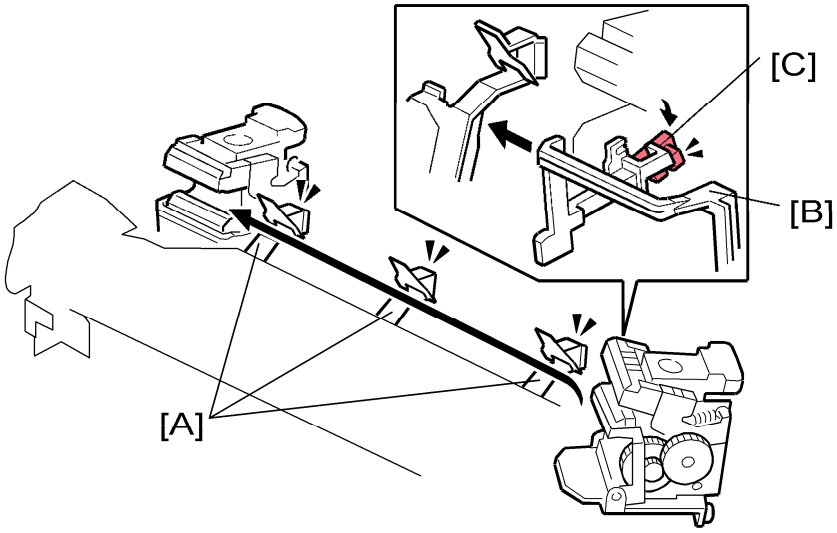
Overview



The stapler unit [A] is driven by the stapler unit movement motor [B]. The stapler unit HP sensor [C] detects when the stapler is at home position. The stapler unit stays at its home position in stand-by mode.

This finisher has three types of stapling. The stapler unit moves as shown: one staple at the rear corner [D], one staple at the front corner [E] and two staples [F].

Disabling the Stapling Mechanism



The stapler unit moves from front to rear. But there are three end fences [A] on the jogger tray unit in the stapler unit path. In order not to staple these fences, the stapler unit has the end fence detection sensor [C]. When the stapler unit passes the end fence, the end fence pushes the actuator [B], and then the sensor detects the end fence. While this sensor detects the end fence, stapling is disabled.

Jam Conditions

	Sensors	**Conditions**
Remaining paper detection	Entrance Exit	Either the entrance or exit sensor detects paper just after the unit is initialized.
Non-feed at the entrance	Entrance	The entrance sensor is not activated within a certain period after the paper exit sensor detects paper.
Jamming at the entrance	Entrance	The entrance sensor is not de-activated after paper is fed 1.3 times the length of the paper.
Non-feed inside the unit (Straight feed out mode only)	Exit	The exit sensor is not activated within a certain period after the entrance sensor detects paper.
Jamming at the exit	Exit	The exit sensor is not de-activated after paper is fed for a certain period.
Jogger tray	Exit	The exit sensor is de-activated during paper shifting or stapling.

Error Detection

	Conditions
Jogger motor error	The jogger home position sensor does not shut off after the jogger motor starts.
Jogger motor home position detection error	The jogger home position sensor does not turn on after paper shifting.
Stapler error	The stapler home position sensor (inside the stapler unit) does not turn on after stapling.
Output tray upper limit error	The tray upper limit sensor is activated.
Output tray motor error	The output tray is away from the target position for more than 10 seconds.
Stack height detection error	The stack height detection lever does not return to its home position before going to detect the stack height.

Note

- The above errors are indicated as “Finisher jam” at the first occurrence.
- If the same error happens again in the next job, “finisher error” is indicated.