3,000-SHEET FINISHER
(Machine Code: A697)

1. OVERALL MACHINE INFORMATION

1.1 SPECIFICATIONS

The punch unit is an option for this machine.

Paper Size:

No punch mode
- Shift Tray: A3 to B5/DLT to LT (B6 lengthwise in no shift mode and no staple mode)
- Upper Tray: A3 to A6 lengthwise/DLT to HLT

Punch mode
- 2 holes: A3 to A5/DLT to LT
- 3 holes: A3, B4, A4 sideways, B5 sideways DLT, LT sideways

Paper Weight:

No punch mode
- No staple mode: 52 g/m^2 ~ 157 g/m^2, 14 ~ 42 lb
- Staple mode: 64 g/m^2 ~ 80 g/m^2, 17 ~ 21 lb

Punch mode
- 2 holes: 52 g/m^2 ~ 128 g/m^2, 14 ~ 34 lb
- 3 holes: 52 g/m^2 ~ 105 g/m^2, 14 ~ 28 lb

Paper Capacity:

Shift tray/no staple mode (80 g/m^2, 20 lb):

	Punch mode	No punch mode
A4 sideways LT sideways	2,500 sheets	3,000 sheets
Other sizes	1,500 sheets	1,500 sheets

Shift tray/staple mode/punch mode (80 g/m^2, 20 lb):

	Pages/set	Sets
B5, A4 lengthwise LT lengthwise	2 to 9	150
	10 to 40	150 to 37
A4 sideways LT sideways	2 to 9	150
	10 to 40	250 to 63
Other sizes	2 to 9	100
	10 to 25	150 to 60

Shift tray/staple mode/no punch mode (80 g/m^2, 20 lb):

	Pages/set	Sets
B5, A4 lengthwise LT lengthwise	2 to 9	150
	10 to 50	150 to 30
A4 sideways LT sideways	2 to 9	150
	10 to 50	300 to 60
Other sizes	2 to 9	100
	10 to 30	150 to 50

Upper tray (80 g/m^2, 20 lb):

	Punch mode	No punch mode
A4/LT or smaller	200 sheets	250 sheets
Larger than A4/LT	50 sheets	50 sheets

Stapler Capacity (pages/set, 80 g/m^2, 20 lb paper):

	Punch mode	No punch mode
A4/LT or smaller	40 sheets	50 sheets
Larger than A4/LT	25 sheets	30 sheets

Staple Position: 4 positions
1 staple: 3 positions
(Front, Rear, Rear-Oblique)
2 staple: 1 position

Staple Replenishment: Cartridge (5,000 staples)

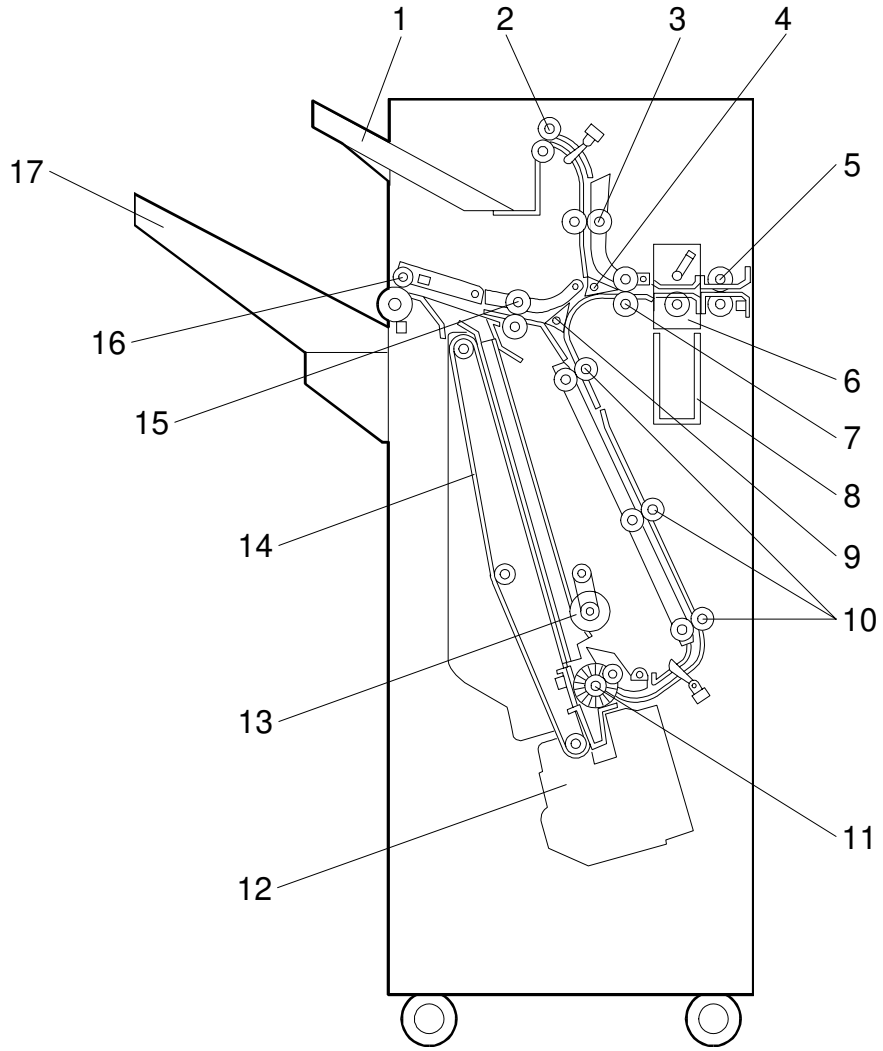
Power Source: 24 Vdc (from copier)

Power Consumption: 48 W

Weight: 45 kg

Size (W x D x H): 625 mm x 545 mm x 960 mm

1.2 MECHANICAL COMPONENT LAYOUT



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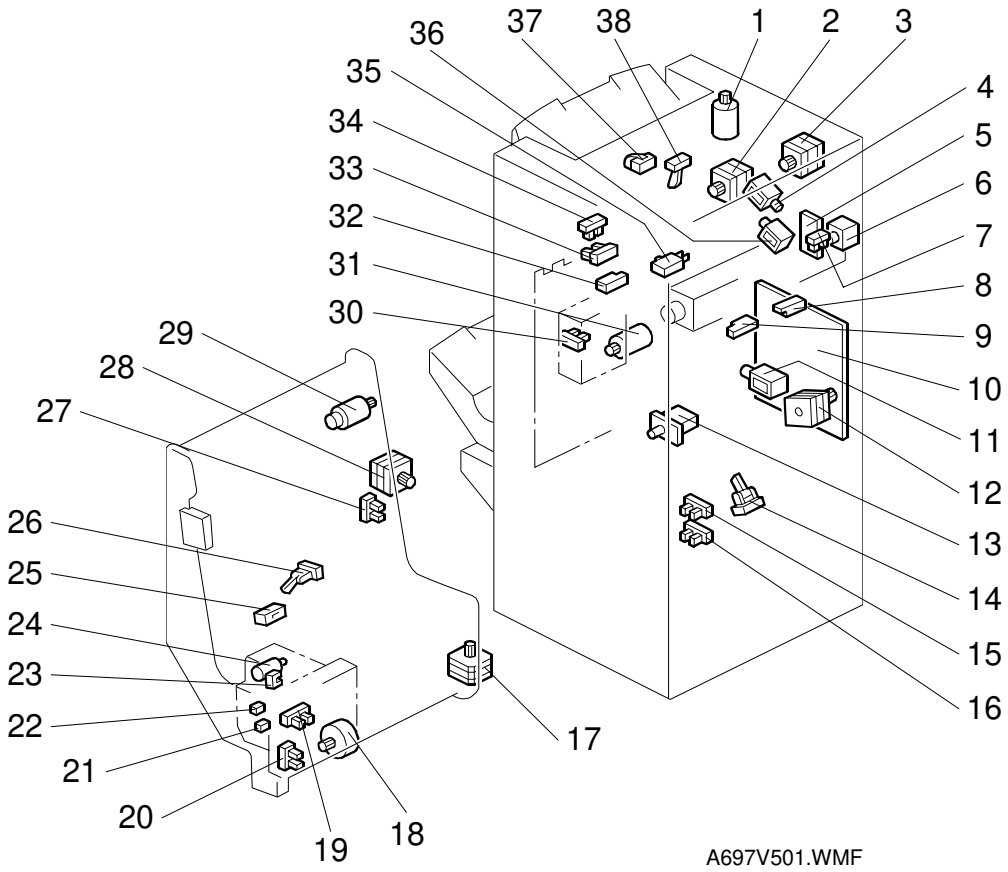
1. Upper Tray
2. Upper Tray Exit Roller
3. Upper Transport Roller
4. Tray Junction Gate
5. 1st Entrance Roller
6. Punch Unit
7. 2nd Entrance Roller
8. Punch Waste Hopper
9. Stapler Junction Gate
10. Lower Transport Rollers
11. Alignment Brush Roller
12. Stapler
13. Positioning Roller
14. Stack Feed-out Belt
15. Middle Transport Roller
16. Shift Tray Exit Roller
17. Shift Tray

1.3 ELECTRICAL COMPONENT LAYOUT



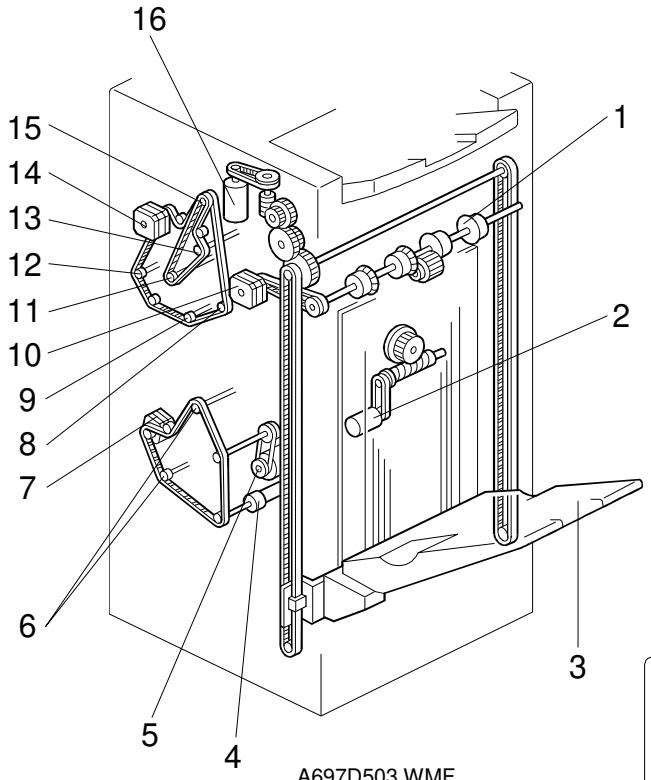
1. Shift Tray Lift Motor
2. Shift Tray Exit Motor
3. Upper Transport Motor
4. Tray Junction Gate Solenoid
5. Punch Board
6. Punch Motor
7. Punch HP Sensor
8. Hopper Sensor
9. Entrance Sensor
10. Main Board
11. Positioning Roller Solenoid
12. Lower Transport Motor
13. Front Door Safety Switch
14. Stapler Tray Entrance Sensor
15. Shift Tray Lower Limit 1 Sensor
16. Shift Tray Lower Limit 2 Sensor
17. Stapler Motor
18. Stapler Rotation Motor
19. Stapler Rotation HP Sensor
20. Stapler HP Sensor
21. Staple End Switch
22. Cartridge Set Switch
23. Staple Hammer HP Sensor
24. Staple Hammer Motor
25. Stapler Tray Paper Sensor
26. Stack Feed-out Belt HP Sensor
27. Jogger Fence HP Sensor
28. Jogger Motor
29. Stack Feed-out Motor
30. Shift Tray Half-turn Sensor
31. Shift Motor
32. Shift Tray Exit Sensor
33. Stack Height 2 Sensor
34. Stack Height 1 Sensor
35. Shift Tray Upper Limit Switch
36. Stapler Junction Gate Solenoid
37. Upper Tray Paper Limit Sensor
38. Upper Tray Exit Sensor

1.4 ELECTRICAL COMPONENT DESCRIPTION

Symbol	Name	Function	Index No.
Motors			
M1	Upper Transport	Drives the entrance rollers, the middle and upper transport rollers, and upper tray exit roller.	3
M2	Lower Transport	Drives the lower transport rollers, the alignment brush roller, and the positioning roller.	11
M3	Jogger	Moves the jogger fence.	28
M4	Stapler	Moves the staple unit from side to side.	17
M5	Stapler Rotation	Rotates the stapler 45 degrees.	18
M6	Staple Hammer	Drives the staple hammer.	24
M7	Stack Feed-out	Drives the stack feed-out belt.	29
M8	Shift Tray Exit	Drives the exit roller for the shift tray.	2
M9	Shift	Moves the shift tray from side to side.	31
M10	Shift Tray Lift	Moves the shift tray up or down.	1
M11	Punch	Drives the punch shaft and roller.	6
Sensors			
S1	Entrance	Detects the copy paper entering the finisher and checks for misfeeds.	9
S2	Stapler Tray Entrance	Detects the copy paper entering the staple tray and checks for misfeeds.	14
S3	Jogger Fence HP	Detects the home position of the jogger fence.	27
S4	Stapler Tray Paper	Detects the copy paper in the staple tray.	25
S5	Stapler HP	Detects the home position of the staple unit for side-to-side movement.	20
S6	Stapler Rotation HP	Detects the home position of the stapler unit for 45-degree rotation.	19
S7	Staple Hammer HP	Detects the home position of the staple hammer.	23
S8	Stack Feed-out Belt HP	Detects the home position of the stack feed-out belt.	26
S9	Shift Tray Exit	Checks for misfeeds at the shift tray.	32
S10	Stack Height 1	Detects when the top of the copy paper stack in the shift tray is at the correct position.	34
S11	Stack Height 2	Detects when the top of the copy paper stack in the shift tray has become too high.	33
S12	Upper Tray Exit	Checks for misfeeds at the upper tray.	38
S13	Upper Tray Paper Limit	Detects when the paper stack height in the upper tray is at its upper limit.	37
S14	Shift Tray Half-turn	Detects the return position for side-to-side movement of the shift tray.	30

Symbol	Name	Function	Index No.
S15	Shift Tray Lower Limit 1	Detects when the shift tray is nearly at its lower limit.	15
S16	Shift Tray Lower Limit 2	Detects when the shift tray is at its lower limit.	16
S17	Hopper	Detects when the punch waste hopper is full and detects when the punch tray is set.	8
S18	Punch HP	Detects the home position of the punch shaft and roller.	7
Switches			
SW1	Front Door Safety	Cuts the dc power when the front door is opened.	13
SW2	Shift Tray Upper Limit	Cuts the power to the shift tray lift motor when the shift tray position is at its upper limit.	35
SW3	Staple End	Detects the staples in the cartridge.	21
SW4	Cartridge Set	Detects the staple cartridge in the stapler.	22
Solenoids			
SOL1	Tray Junction Gate	Drives the tray junction gate.	4
SOL2	Stapler Junction Gate	Drives the stapler junction gate.	36
SOL3	Positioning Roller	Moves the positioning roller against the stapling tray.	12
PCBs			
PCB1	Main	Controls the finisher and communicates with the copier.	10
PCB2	Punch	Passes signals between the punch unit and the finisher main board.	5

1.5 DRIVE LAYOUT



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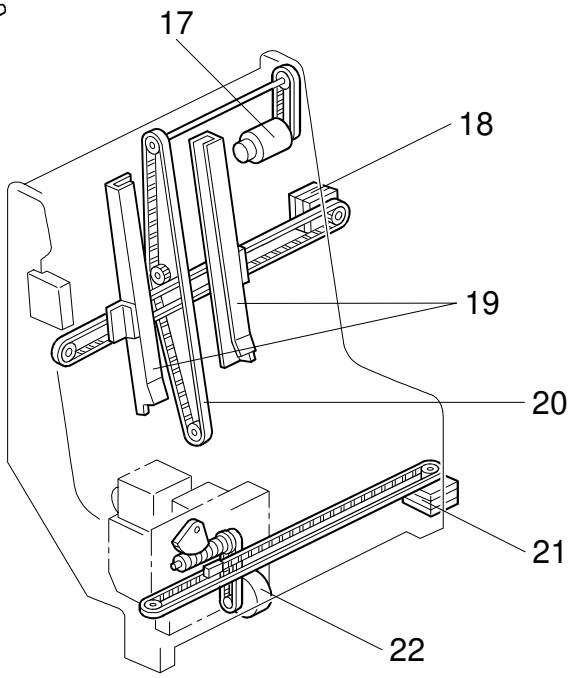

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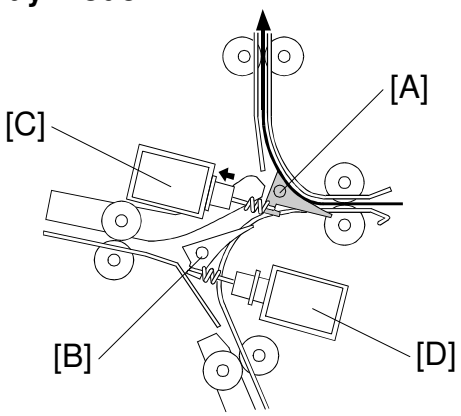
1. Shift Tray Exit Roller
2. Shift Motor
3. Shift Tray
4. Alignment Brush Roller
5. Positioning Roller
6. Lower Transport Rollers 2 and 3
7. Lower Transport Motor
8. Middle Transport Roller
9. Lower Transport Roller 1
10. Shift Tray Exit Motor
11. 2nd Entrance Roller
12. 1st Entrance Roller
13. Upper Transport Roller
14. Upper Transport Motor
15. Upper Tray Exit Roller
16. Shift Tray Lift Motor
17. Stack Feed-out Motor
18. Jogger Motor
19. Jogger Fence
20. Stack Feed-out Belt
21. Stapler Motor
22. Stapler Rotation Motor

2. DETAILED DESCRIPTIONS

2.1 TRAY AND STAPLER JUNCTION GATE MECHANISM

- Upper tray mode -



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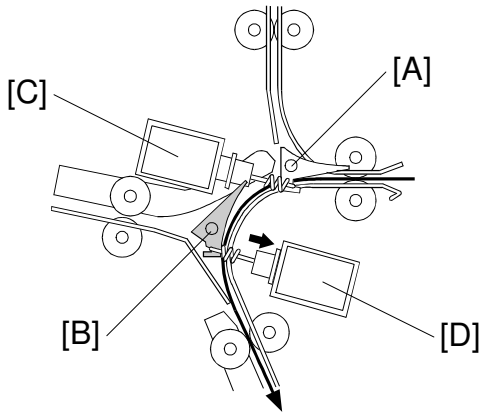
- Staple mode -



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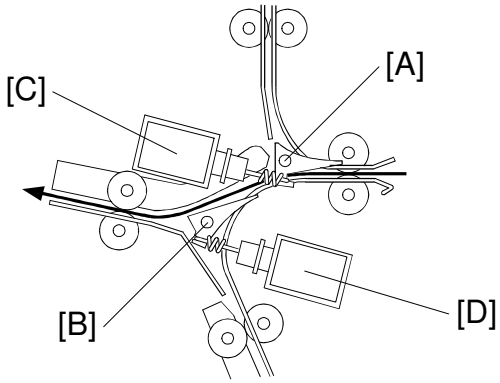
- Sort/stack mode -



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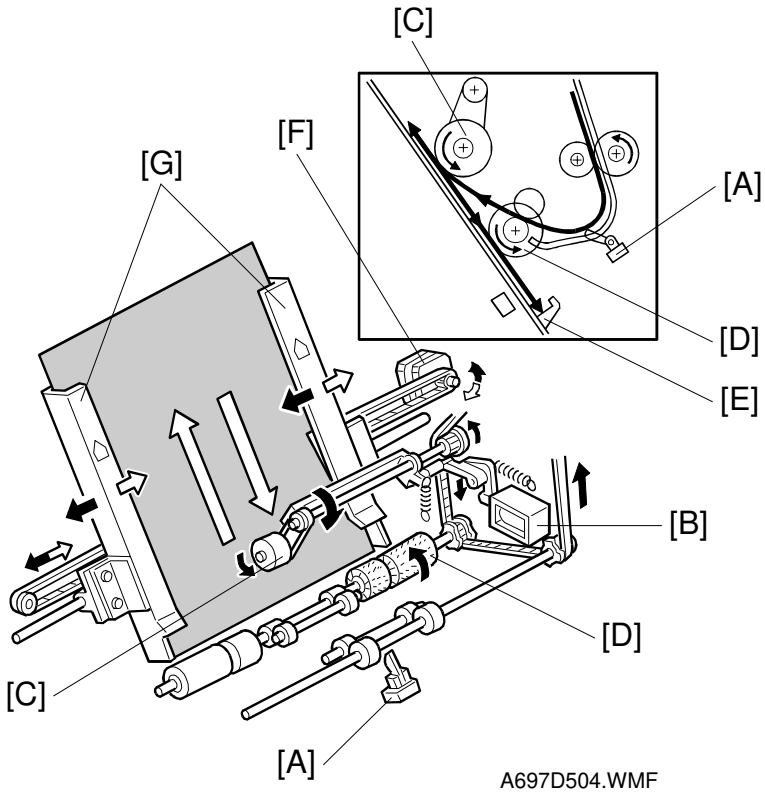
Depending on the finishing mode, the copies are directed up, straight through, or down by the combination of the tray junction gate [A] and stapler junction gate [B]. These gates are controlled by the tray junction gate solenoid [C] and stapler junction gate solenoid [D].

Upper tray mode
The tray junction gate solenoid turns on. The copies go up to the upper tray.

Sort/stack mode
The tray junction gate solenoid and the stapler junction gate solenoid remain off. The copies are sent to the shift tray directly.

Staple mode
The tray junction gate solenoid remains off and the stapler junction gate solenoid turns on. The copies go downwards to the jogger unit.

2.2 JOGGER UNIT PAPER POSITIONING MECHANISM



In staple mode, each sheet of copy paper is vertically and horizontally aligned when it arrives in the jogger unit.

Vertical Paper Alignment

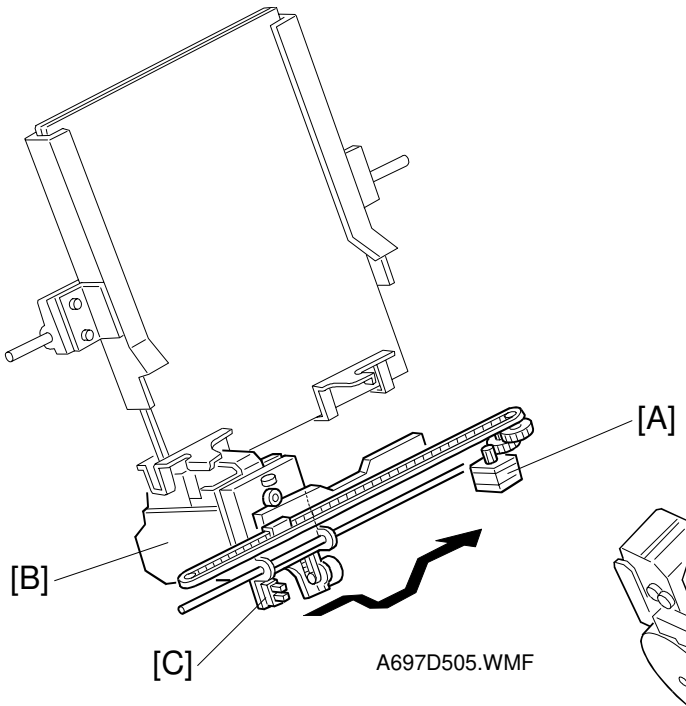
After the trailing edge of the copy passes the stapler tray entrance sensor [A], the positioning roller solenoid [B] is energized for 280 ms to push the positioning roller [C] into contact with the paper. The positioning roller and alignment brush roller [D] rotate to push the paper back and align the 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 waiting position, which is 7 mm wider on both sides than the selected paper.

When the trailing edge of the paper passes the staple unit entrance sensor, the jogger motor turns on for approximately 70 ms to move the jogger fences 5 mm towards the paper. After a short time, the jogger motor turns on again approximately for 60 ms for the horizontal paper alignment then goes back to the waiting position.

2.3 STAPLER UNIT MOVEMENT MECHANISM



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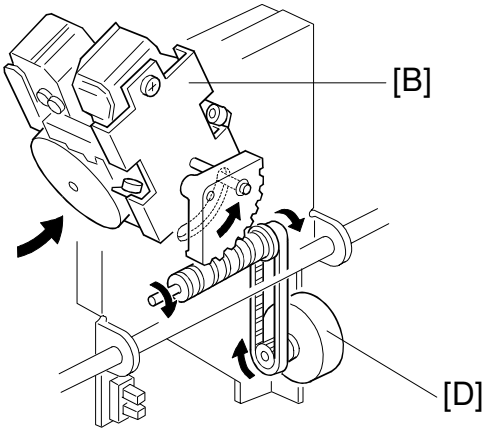

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Side-to-side:

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.

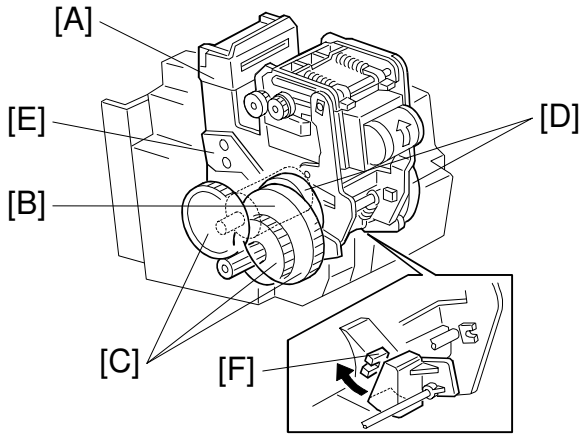
If two-staple-position mode is selected, the stapler moves to the front stapling position first, then moves to the rear stapling position. However, for the next copy set, it staples in the reverse order (at the rear side first then at the front side).

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

Rotation:

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

2.4 STAPLER



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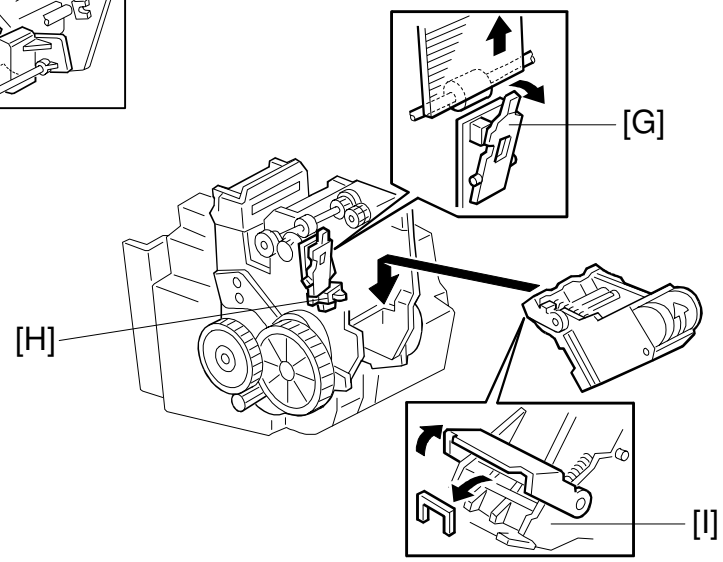

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The staple hammer [A] is driven by the staple hammer motor [B] via gears [C], two cams [D], and two links [E].

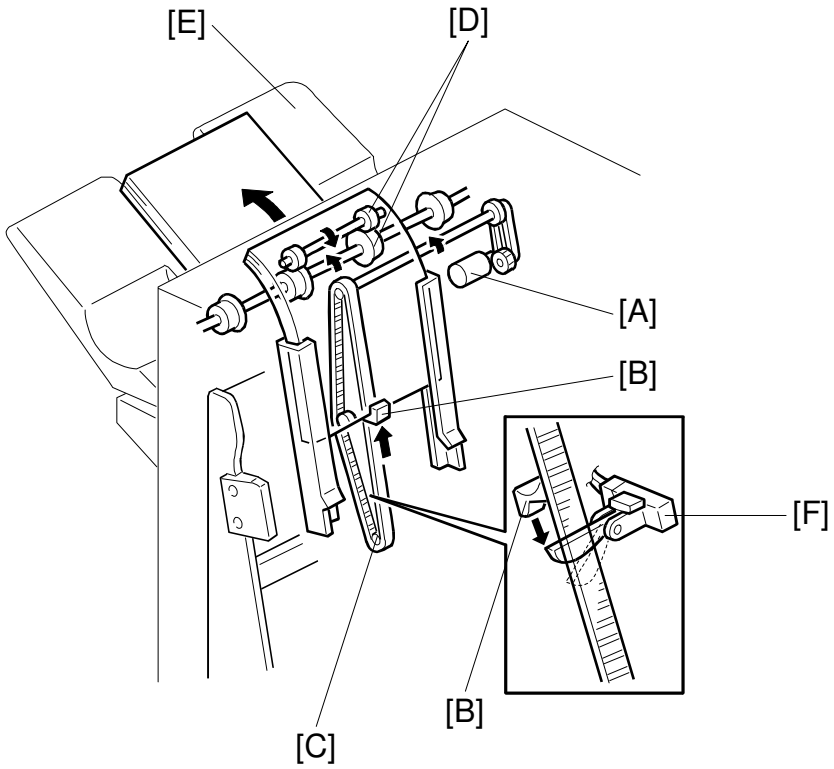
When the aligned copies are brought to the stapling position by the positioning roller, alignment brush roller and jogger fences, the staple hammer motor starts. When the cams complete one rotation, the staple hammer home position sensor [F] turns on, detecting the end of the stapling operation. The staple hammer motor then stops.

There are two sensors in the stapler. One is the staple end switch [G] for detecting staple end conditions (it detects when there is only one sheet of staples left in the cartridge). The other is the cartridge set switch [H] for detecting whether a staple cartridge is installed.

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, but the copy job will not stop.

The staple cartridge has a clinch area [I], in which jammed staples are left. Operators can remove the jammed staples from this area.

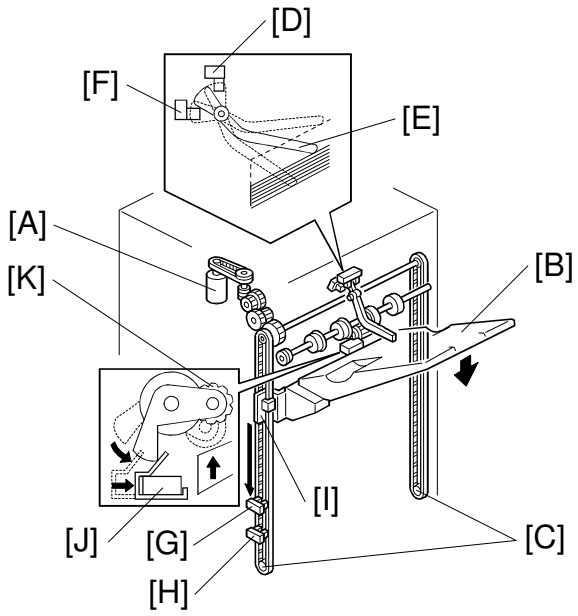
2.5 FEED-OUT MECHANISM



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 exit roller [D]. The shift tray exit roller [D] takes over the stack feed-out after the leading edge reaches this roller.

Just before the stapled copies pass through the shift tray exit sensor, the stack-feed-out motor turns off 600 ms to wait until the exit rollers have completely fed the stapled stack out to the shift tray [E]. Then, the stack-feed-out motor turns on again until the pawl actuates the stack feed-out belt home position sensor [F].

2.6 SHIFT TRAY UP/DOWN MECHANISM



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The shift tray lift motor [A] controls the vertical position of the shift tray [B] through gears and timing belts [C]. When the main switch is turned on, the tray is initialized at the upper position. The tray is moved up until stack height sensor 1 [D] is de-actuated.

During copying, the actuator feeler [E] gradually rises as the copy stack grows, and the actuator gradually moves towards stack height sensor 2 [F].

In sort/stack mode, if stack height sensor 2 is actuated for 3 seconds, the shift tray lift motor lowers the shift tray for 15 ms.

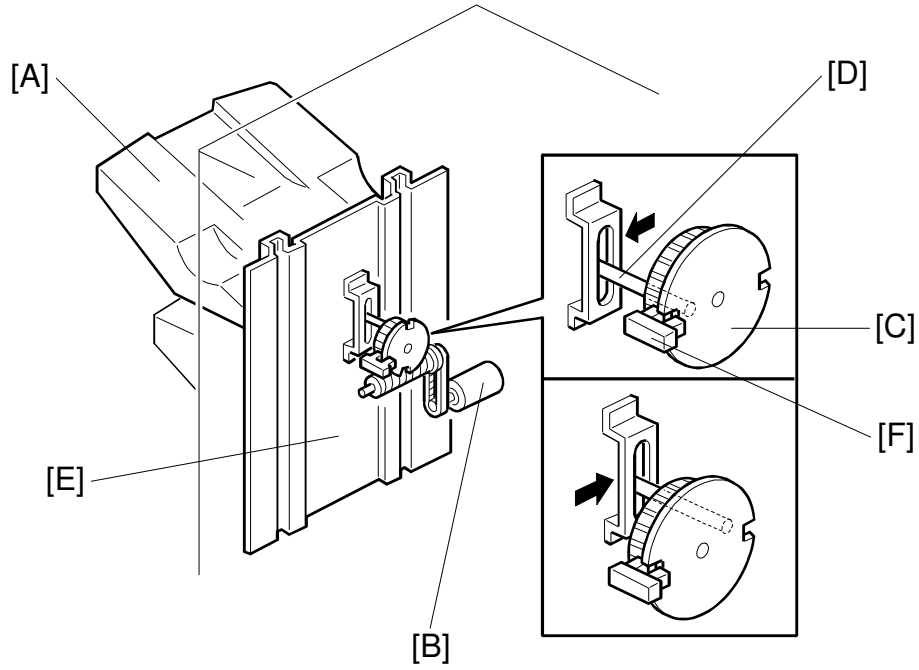
In staple mode, when the stack feed-out motor starts, the tray is moved down until stack height sensor 1 is actuated and then moved up until stack height sensor 1 is de-actuated. This corrects the current tray position. Then, the tray is moved down again until stack height sensor 1 is actuated to make space for the coming set of copies and then moved up until stack height sensor 1 is de-actuated. This means the tray lowers earlier in staple mode, to prevent the next copy suddenly exceeding the space currently available on the tray.

For both modes, the shift tray will rise until stack height sensor 1 is de-actuated when the user takes the stack of paper from the shift tray.

This machine has two shift tray lower limit sensors 1 [G], 2 [H]. Shift tray lower limit sensor 1 detects the near lower limit and sensor 2 detects the lower limit. When the actuator [I] enters sensor 1, a message will be displayed and copying will continue. When the actuator enters sensor 2, a message will be displayed and copying will stop.

The shift tray upper limit switch [J] prevents the drive gear from being damaged if stack height sensor 1 fails. When the shift tray pushes up the shift tray positioning roller [K], the switch will cut the power to the shift tray lift motor.

2.7 SHIFT TRAY SIDE-TO-SIDE MECHANISM



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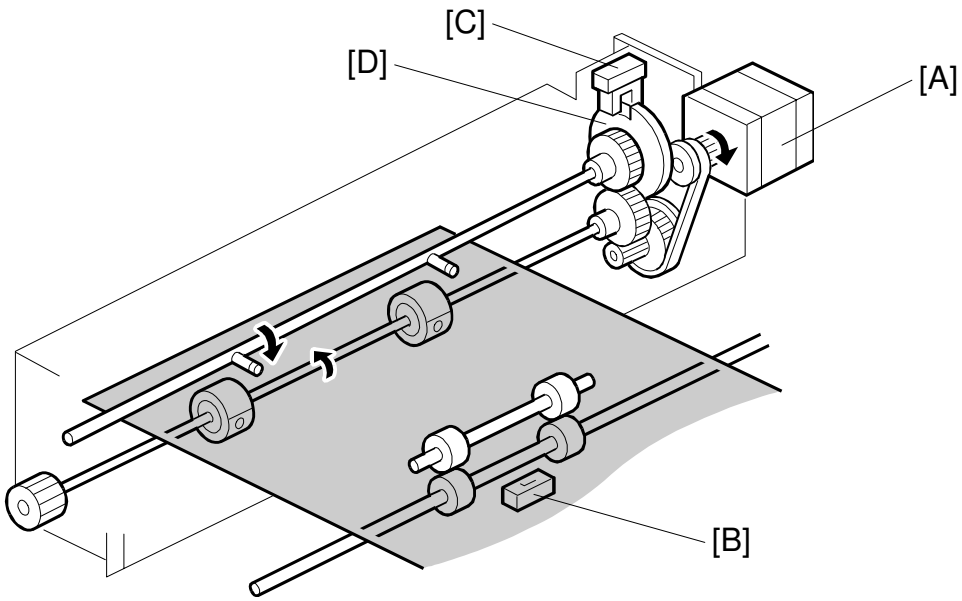
In sort/stack mode, the shift tray [A] moves from side to side to separate the sets of copies.

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.

2.8 PUNCH UNIT DRIVE MECHANISM



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The punch unit makes 2 or 3 holes (depending on the type of punch unit) at the trailing edge of the paper.

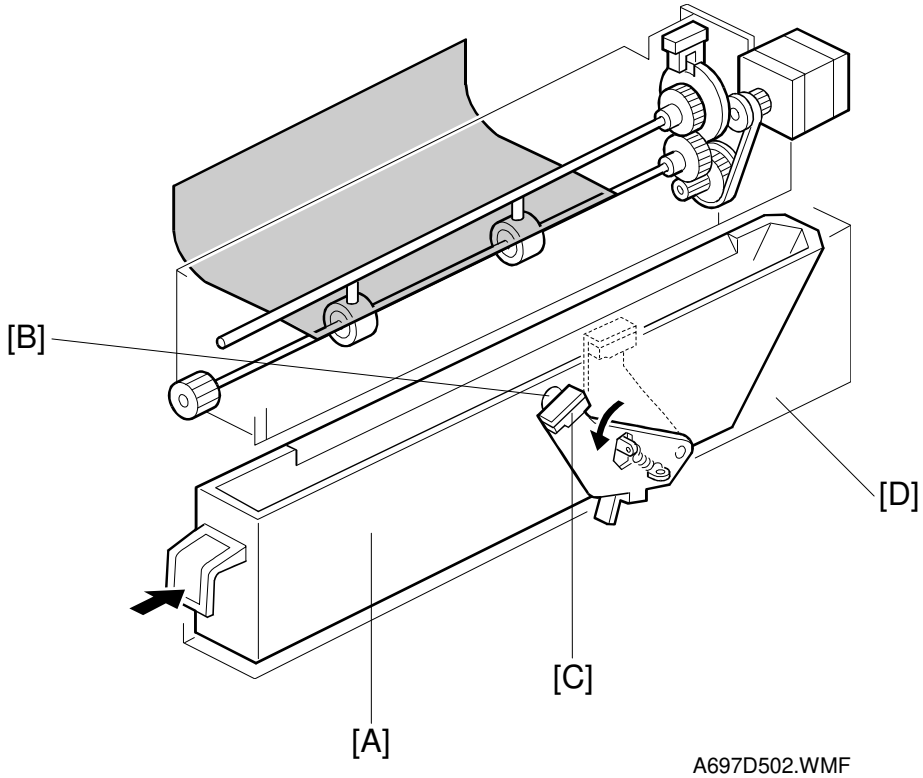
The punch unit is driven by the punch motor [A]. The punch motor turns on 78 ms after the trailing edge of the paper passes through the entrance sensor [B], and makes the punch holes.

The home position is detected by the punch HP sensor [C]. When the cut-out on the punch shaft gear disk [D] enters the punch HP sensor, the punch motor stops.

The punch position is adjusted as follows:

Right to left: SP mode
Front to rear: Spacers

2.9 PUNCH WASTE COLLECTION MECHNISM



The punch waste is collected in the punch waste hopper [A], which is under the punch unit.

When the punch waste covers the hole [B] in the hopper, the hopper sensor [C] turns on and a message will be displayed after the copy job finishes.

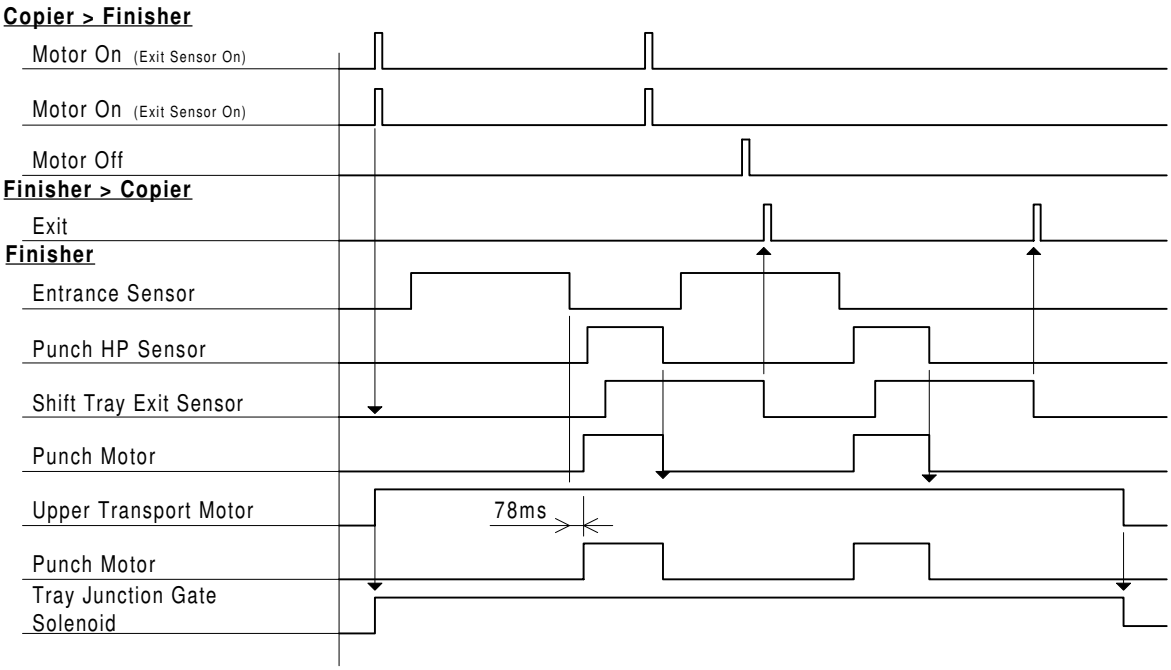
The hopper sensor also works as the hopper set sensor. If the punch waste hopper is not set, the hopper sensor moves away from the hole in the hopper holder [D] and a message is displayed. This message is the same as for the hopper full condition.

2.10 JAM CONDITIONS

1. The entrance sensor does not turn on within 450 ms after the copier exit sensor turns off.
2. The entrance sensor does not turn off within 1,325 ms after it turns on.
3. The upper tray exit sensor does not turn on within 1,630 ms after the entrance sensor turns on.
4. The upper tray exit sensor does not turn off within 1,325 ms after it turns on.
5. In sort/stack mode, the shift tray exit sensor does not turn on within 2,090 ms after the entrance sensor turns on.
6. In sort/stack mode, the shift tray exit sensor does not turn off within 1,325 ms after it turns on.
7. In staple mode, the stapler tray entrance sensor does not turn on within 3,700 ms after the entrance sensor turns on.
8. In staple mode, the stapler tray entrance sensor does not turn off within 1,325 ms after it turns 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 starts.
10. In staple mode, the shift tray exit sensor does not turn off within 1,260 ms after the stack feed-out motor starts.

2.11 TIMING CHARTS

2.11.1 A4 SIDEWAYS (2 SHEETS): NORMAL AND PUNCH MODE



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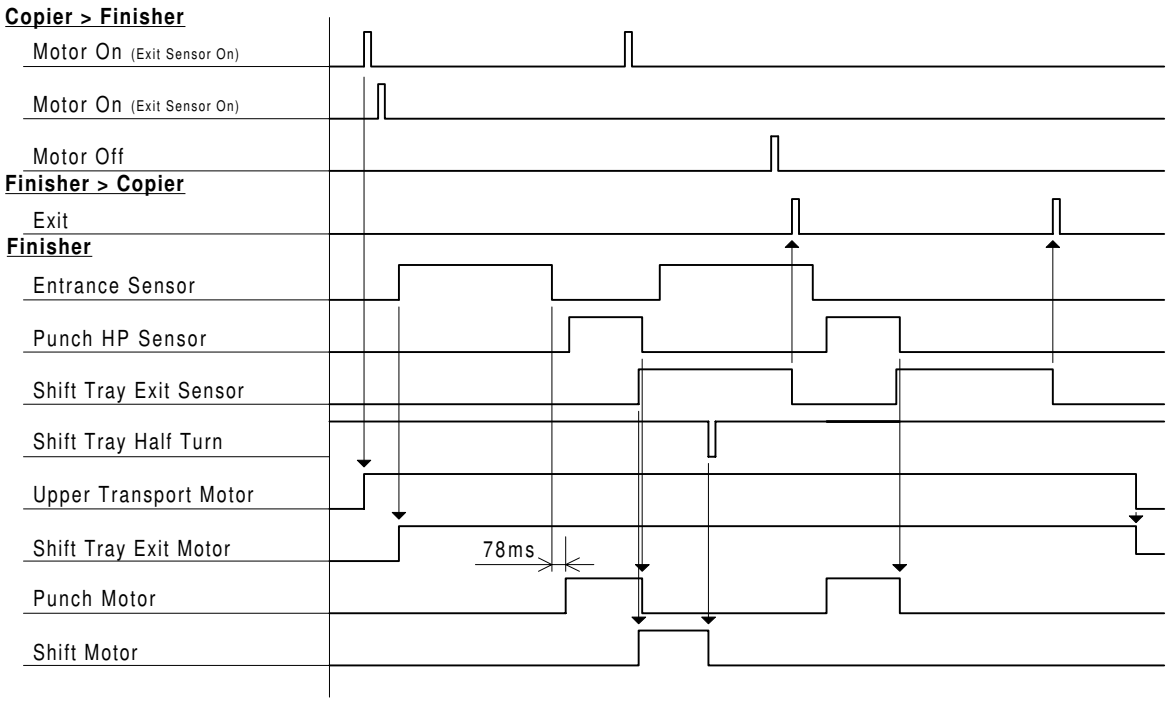
2.11.2 A4 SIDEWAYS (2 SHEETS): SORT/STACK AND PUNCH MODE



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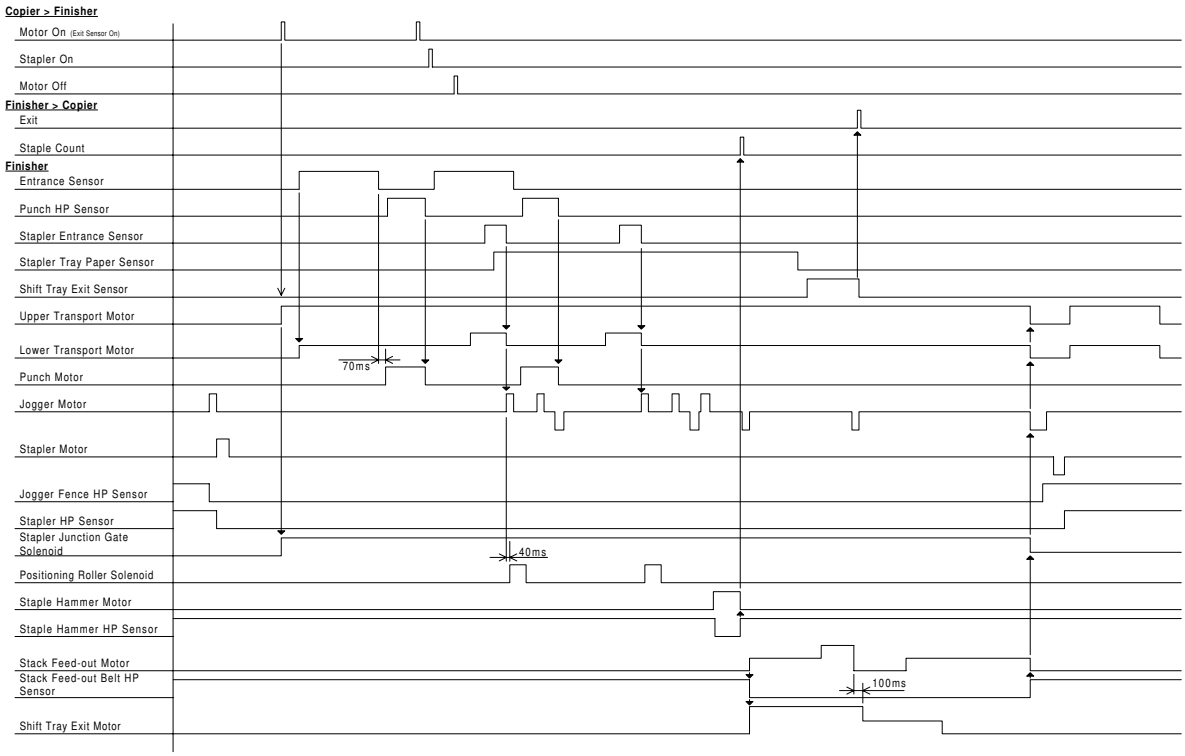
2.11.3 A4 SIDEWAYS (2 SHEETS): STAPLE AND PUNCH MODE



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3. SERVICE TABLES

3.1 DIP SWITCHES

DPS100				DPS101				Description
1	2	3	4	1	2	3	4	
0	0	0	0	0	0	0	0	Default
1	1	0	1	1	0	0	0	Stack feed-out motor on
1	1	1	0	0	1	0	0	Free run: sort/stack mode
1	1	1	0	0	0	1	0	Free run: one staple (front side)
1	1	1	0	0	0	0	1	Free run: two staples

NOTE: Do not use any other settings.

3.2 TEST POINTS

No.	Label	Monitored Signal
TP101	(GND)	Ground

3.3 LED

No.	Function
LED100	Monitors the stack feed-out motor speed.

3.4 VARIABLE RESISTORS

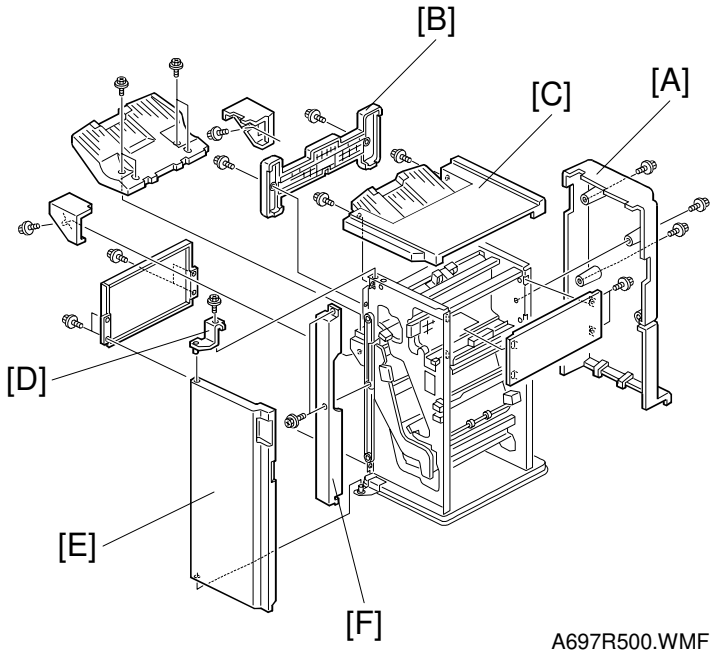
No.	Function
VR100	Adjust the stack feed-out motor speed.

3.5 FUSES

No.	Function
FU100	Protects 24 V.

4. REPLACEMENT AND ADJUSTMENT

4.1 COVER REPLACEMENT



Rear Cover

1. Remove the rear cover [A] (3 screws).

Upper Left Cover

1. Remove the upper left cover [B] (2 screws).

Upper Cover

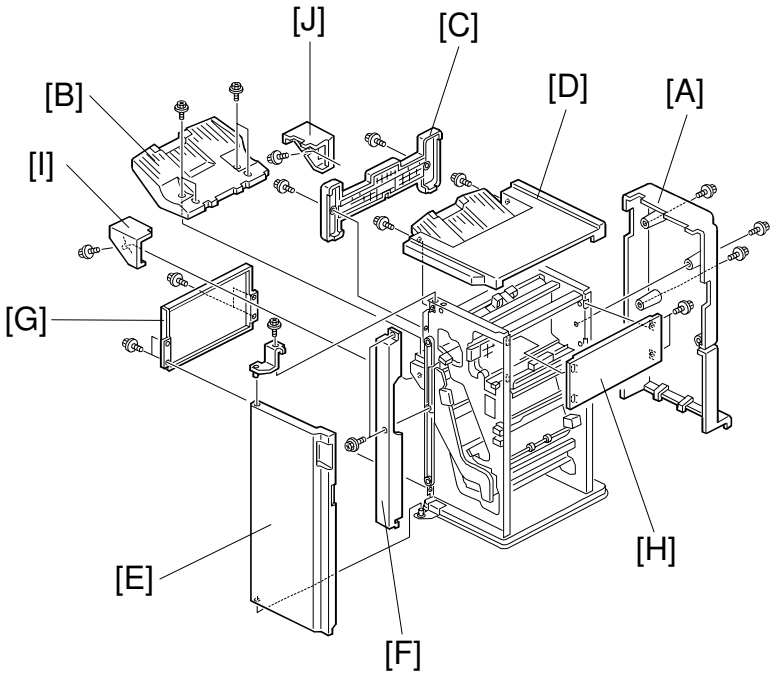
1. Remove the upper left cover.
2. Remove the upper cover [C] (2 screws).

Front Door

1. Remove the upper left cover.
2. Remove the upper cover.
3. Remove the upper bracket [D] (1 screw).
4. Remove the front door [E].

Left Front Cover

1. Remove the rear cover.
2. Remove the upper cover.
3. Remove the front door.
4. Remove the left front cover [F] (2 screws).



A697R500.WMF

Shift Tray

1. Remove the rear cover [A].
2. Rotate the shift tray lift motor and lower the shift tray [B].
3. Remove the shift tray (4 screws).

Lower Left Cover

1. Remove the shift tray.
2. Remove the upper left cover [C].
3. Remove the upper cover [D].
4. Remove the front door [E].
5. Remove the left front cover [F].
6. Remove the lower left cover [G] (4 screws).

Right Cover

1. Remove the right cover [H] (2 screws).

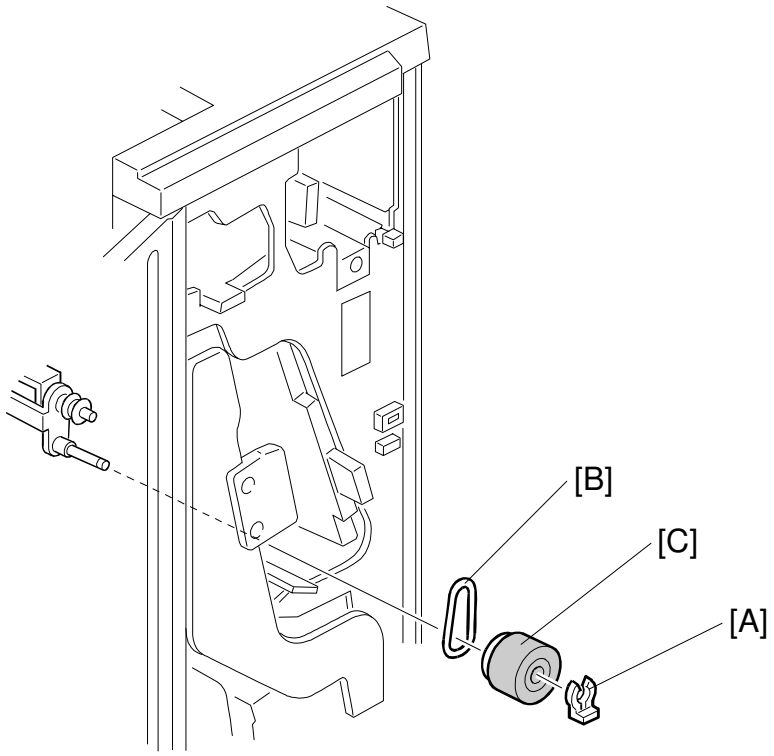
Front Shift Tray Cover

1. Remove the front shift tray cover [I] (1 screw).

Rear Shift Tray Cover

1. Remove the rear shift tray cover [J] (1 screw).

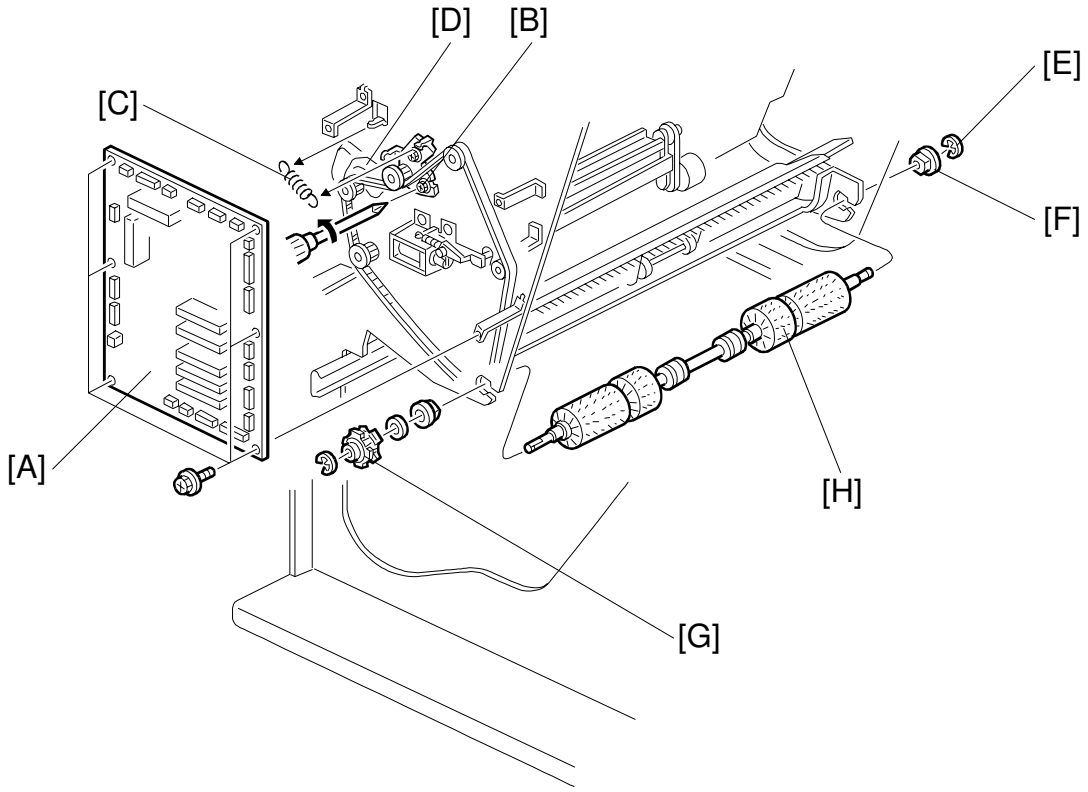
4.2 POSITIONING ROLLER REPLACEMENT



A697R501.WMF

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

4.3 ALIGNMENT BRUSH ROLLER REPLACEMENT

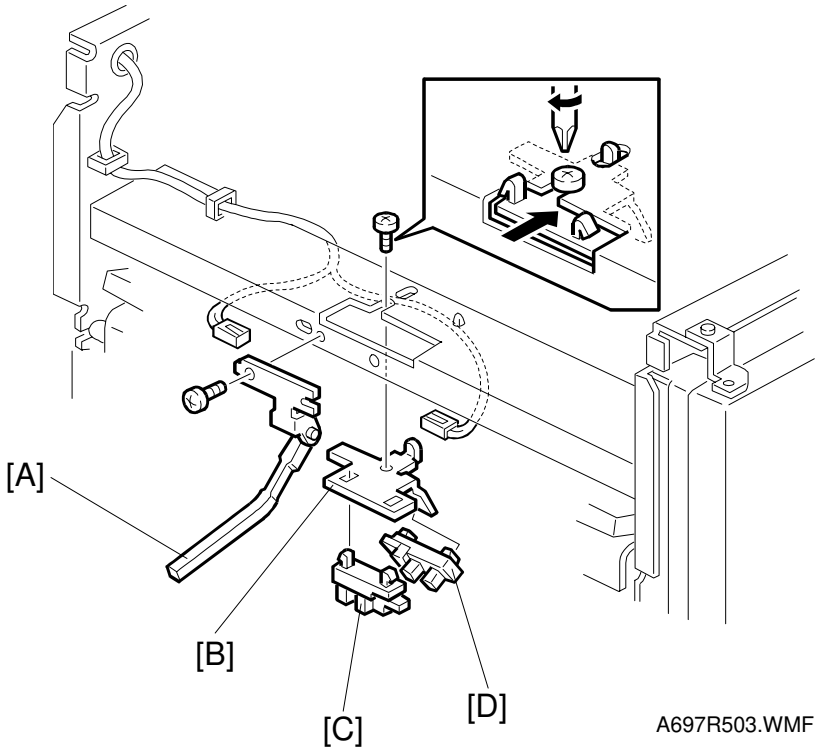


A697R502.WMF

1. Open the front door and pull out the jogger unit.
2. Remove the rear cover.
3. Remove the main board [A] (6 screws, all connectors).
4. Remove a screw [B] and a tension spring [C] for the tension bracket [D], and release the tension of the timing belt.
5. Remove the front side E-ring [E] and bushing [F].
6. Remove the alignment brush roller assembly.
7. Remove the timing pulley [G] (1 E-ring).
8. Replace the alignment brush roller [H] (1 spacer, 1 bushing).

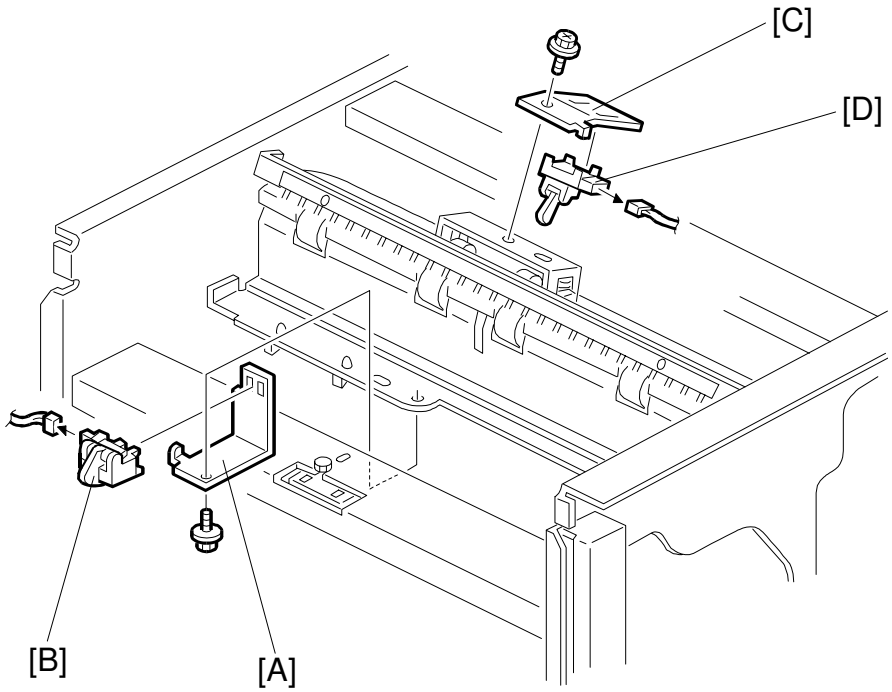
4.4 SENSOR REPLACEMNT

4.4.1 STACK HEIGHT SENSOR 1 AND 2



1. Remove the upper left cover.
2. Remove the upper cover.
3. Remove the sensor feeler [A] (1 screw, 1 connector).
4. Remove the sensor bracket [B] (1 screw).
5. Replace the stack height sensor 1 [C] or 2 [D].

4.4.2 UPPER TRAY PAPER LIMIT AND EXIT SENSOR



A697R504.WMF

1. Remove the upper left cover.
2. Remove the upper cover.

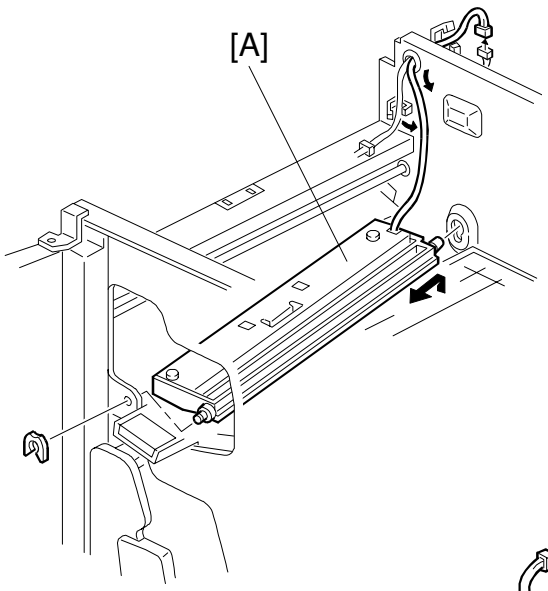
Upper Tray Paper Limit Sensor

3. Remove the sensor bracket [A] (1 screw).
4. Replace the upper tray paper limit sensor [B] (1 connector).

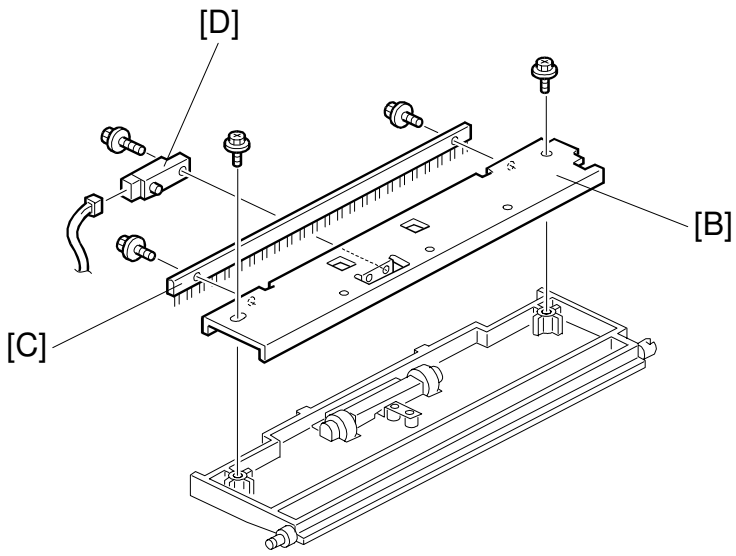
Upper Tray Exit Sensor

3. Remove the sensor bracket [C] (1 screw).
4. Replace the upper tray exit sensor [D] (1 connector).

4.4.3 SHIFT TRAY EXIT SENSOR



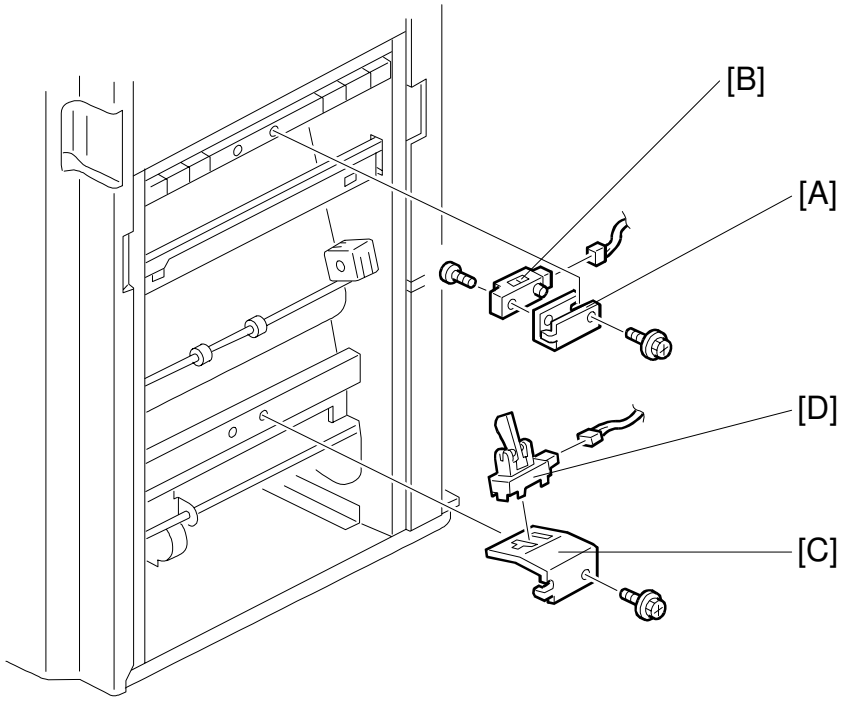
A697R505.WMF



A697R506.WMF

1. Remove the rear cover.
2. Remove the upper left cover.
3. Remove the upper cover.
4. Open the front door and remove the upper exit guide [A] (1 plastic clip).
5. Remove the guide stay [B] (2 screws).
6. Remove the discharge brush [C] (2 screws).
7. Replace the shift tray exit sensor [D] (1 screw, 1 connector).

4.4.4 ENTRANCE AND STAPLER TRAY ENTRANCE SENSOR



A697R507.WMF

1. Remove the finisher from the copier.

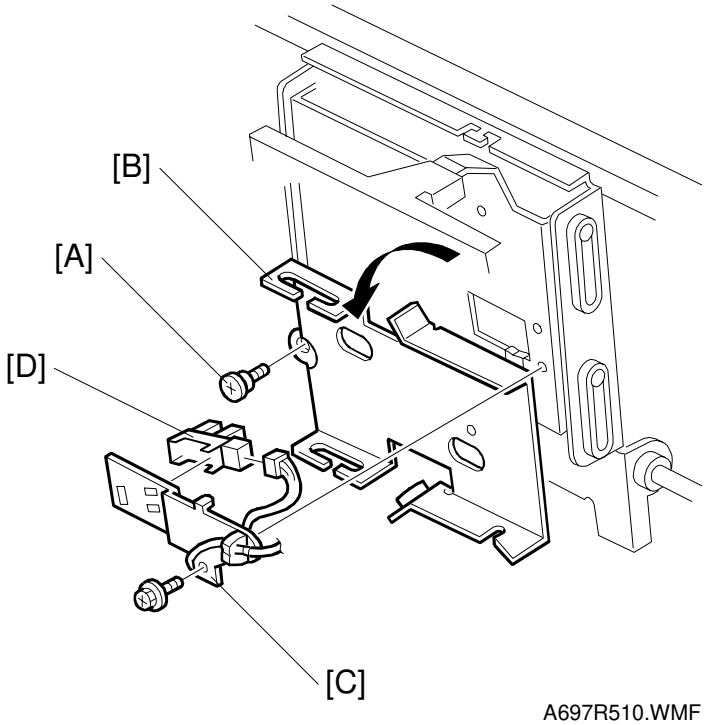
Entrance Sensor

2. Remove the sensor bracket [A] (1 screw).
3. Replace the entrance sensor [B] (1 screw, 1 connector).

Stapler Tray Entrance Sensor

2. Remove the sensor bracket [C] (1 screw).
3. Replace the stapler tray entrance sensor [D] (1 screw, 1 connector).

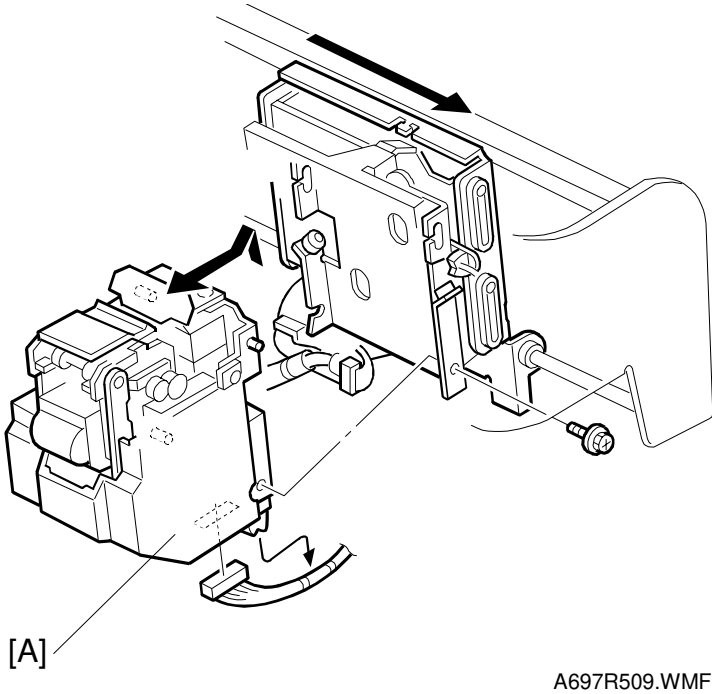
4.4.5 STAPLER ROTATION HP SENSOR



A697R510.WMF

1. Remove the stapler unit.
2. Remove the screw [A] and rotate the stapler bracket [B].
3. Remove the sensor bracket [C] (1 screw).
4. Replace the stapler rotation HP sensor [D] (1 connector).

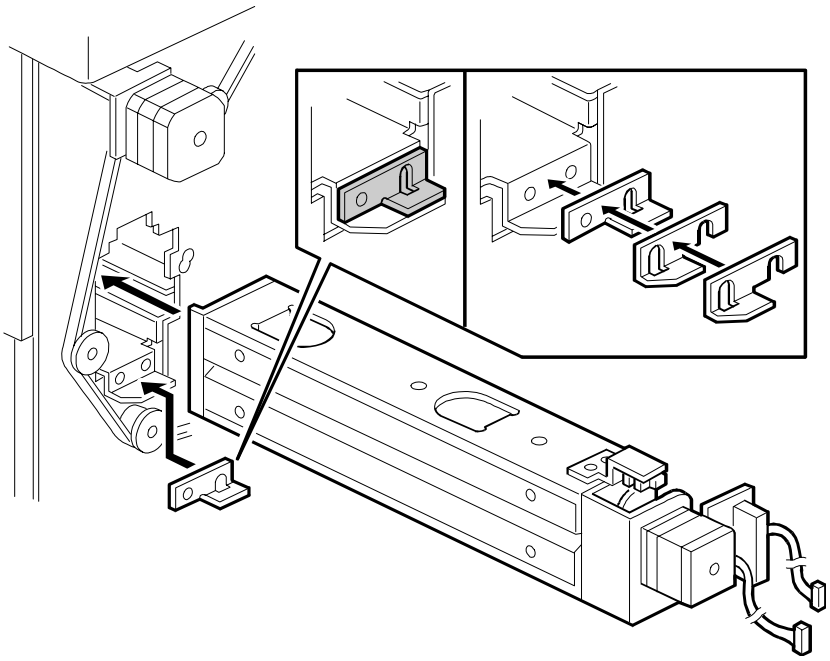
4.5 STAPLER REMOVAL



A697R509.WMF

1. Open the front door and pull out the jogger unit.
2. Move the stapler to the front.
3. Remove the stapler [A] (1 screw, 1 connector).

4.6 PUNCH POSITION ADJUSTMENT



A697R508.WMF

Right to left

This position is adjusted by SP modes.

Front to rear

The optional punch units have the following 3 spacers as accessories.

1 mm thickness: 2 pcs
2 mm thickness: 1 pc

The punch position can be adjusted by up to 4 mm by combinations of the 3 spacers.

4.7 STACK FEED-OUT MOTOR SPEED ADJUSTMENT

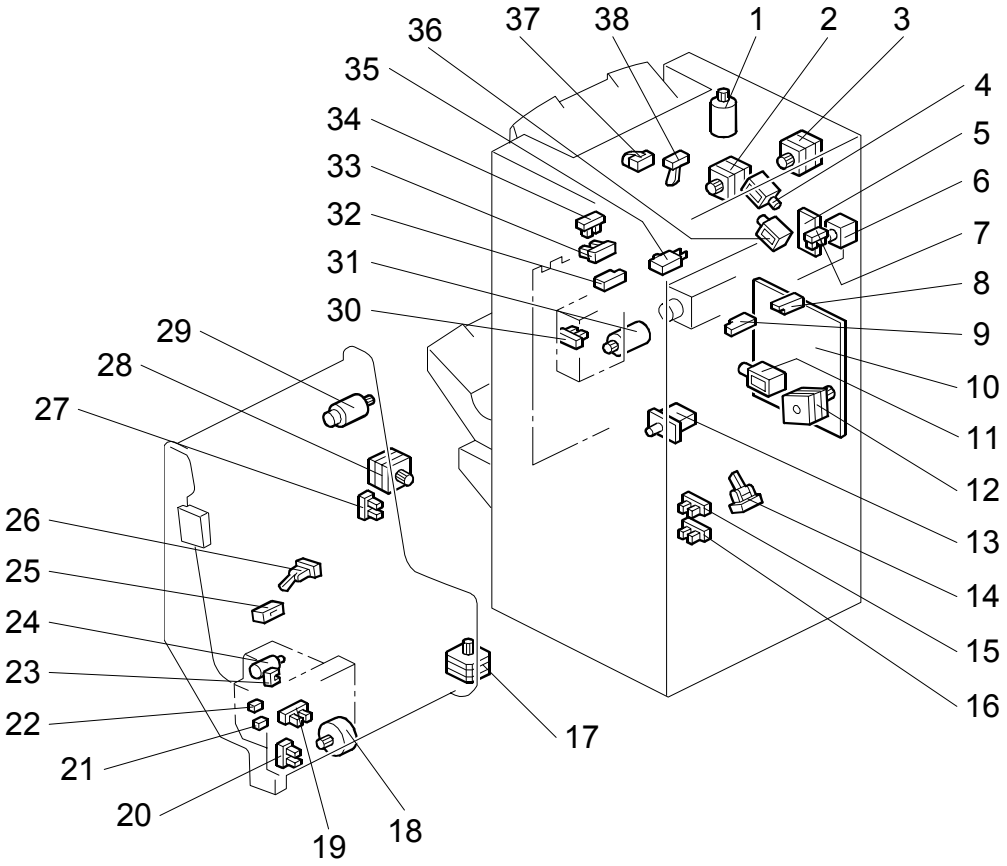
NOTE: This adjustment is required after replacing the main board.

1. Set the DIP switches on the finisher main board as follows.

DIP SW	1	2	3	4
DIP100	On	On	Off	On
DIP101	On	Off	Off	Off

2. If LED100 remains lit, turn VR100 counterclockwise until LED100 starts blinking.
3. Turn VR100 clockwise until the LED stops blinking and remains lit.

3,000-SHEET FINISHER (A697) ELECTRICAL COMPONENT LAYOUT



Symbol	Index No.	Description	P to P
Motors			
M1	3	Upper Transport	B13
M2	11	Lower Transport	C13
M3	28	Jogger	L13
M4	17	Stapler	N13
M5	18	Stapler Rotation	O13
M6	24	Staple Hammer	Q13
M7	29	Stack Feed-out	H13
M8	2	Shift Tray Exit	G13
M9	31	Shift	I13
M10	1	Shift Tray Lift	E13
M11	6	Punch	S2
Sensors			
S1	9	Entrance	E2
S2	14	Stapler Tray Entrance	F2
S3	27	Jogger Fence HP	N2
S4	25	Stapler Tray Paper	N2
S5	20	Stapler HP	O2
S6	19	Stapler Rotation HP	P2
S7	23	Staple Hammer HP	R13
S8	26	Stack Feed-out Belt HP	M2
S9	32	Shift Tray Exit	H2
S10	34	Stack Height 1	I2
S11	33	Stack Height 2	J2
S12	38	Upper Tray Exit	F2
S13	37	Upper Tray Ppaer Limit	G2
S14	30	Shift Tray Half-turn	L2
S15	15	Shift Tray Lower Limit 1	J2
S16	16	Shift Tray Lower Limit 2	K2
S17	8	Hopper	R2
S18	7	Punch HP	Q2

Symbol	Index No.	Description	P to P
Switches			
SW1	13	Front Door Safety	D2
SW2	35	Shift Tray Upper Limit	J13
SW3	21	Staple End	R13
SW4	22	Cartridge Set	Q13
Solenoids			
SOL1	4	Tray Junction Gate	E13
SOL2	36	Stapler Junction Gate	J13
SOL3	12	Positioning Roller	K13
PCBs			
PCB1	10	Main	T6
PCB2	5	Punch	Q4

POINT TO POINT DIAGRAM (FINISHER 3,000: A697)

Copier
CN101-1 [24] 24V
-2 [24] 24V
-3 [24] 24V
-4 [0] GND1
-5 [0] GND1
-6 [0] GND1
CN102-2 [0] GND2
-3 RXD
-4 [0] GND2
-5 TXD

Front Door Safety Switch
SW1
CN103-1 [24] 24V
-2 [▲24] Front Door Safety Switch → (A)

Entrance Sensor — S1
CN254-1 [0] GND2
-2 CN104-6 -5 [▼5] Entrance Sensor
-3 -4 [5] 5V

Stapler Tray Entrance Sensor — S2
CN204-1 [5] 5V
-2 CN104-3 -2 [▼5] Stapler Tray Entrance Sensor
-3 -1 [0] GND2

Upper Tray Exit Sensor — S12
CN205-1 [5] 5V
-2 CN105-3 -2 [0] GND2
-3 -1 [▼5] Upper Tray Exit Sensor

Upper Tray Paper Limit Sensor — S13
CN366-1 CN266-1 CN106-13 [0] GND2
-2 -2 -12 [▼5] Upper Tray Paper Limit Sensor
-3 -3 -11 [5] 5V

Shift Tray Exit Sensor — S9
CN356-1 CN256-1 CN106-10 [0] GND2
-2 -2 -9 [▼5] Shift Tray Exit Sensor
-3 -3 -8 [5] 5V

Paper Height 1 Sensor — S11
CN316-1 CN206-1 CN106-6 [5] 5V
-2 -2 -5 [0] GND2
-3 -3 -4 [▲5] Paper Height 1 Sensor

Paper Height 2 Sensor — S10
CN306-1 CN206-4 CN106-3 [5] 5V
-2 -5 -2 [0] GND2
-3 -6 -1 [▲5] Paper Height 2 Sensor

Shift Tray Lower Limit 1 Sensor — S15
CN267-1 [5] 5V
-2 CN107-9 -8 [▲5] Shift Tray Lower Limit 1 Sensor
-3 -7 [0] GND2

Shift Tray Lower Limit 2 Sensor — S16
CN257-1 [5] 5V
-2 CN107-6 -5 [▲5] Shift Tray Lower Limit 2 Sensor
-3 -4 [0] GND2

Shift Tray Half-turn Sensor — S14
CN307-1 CN207-1 CN107-3 [5] 5V
-2 -2 -2 [▲5] Shift Tray Half-turn Sensor
-3 -3 -1 [0] GND2

Stack Feed-out Belt HP Sensor — S8
CN268-1 [5] 5V
-2 CN108-9 -8 [0] GND2
-3 -7 [▲5] Stack Feed-out Belt HP Sensor

Jogger Fence HP Sensor — S3
CN258-1 [5] 5V
-2 CN108-6 -5 [▲5] Jogger Fence HP Sensor
-3 -4 [0] GND2

Stapler Tray Paper Sensor — S4
CN208-1 [0] GND2
-2 CN108-3 -2 [▲5] Stapler Tray HP Sensor
-3 -1 [5] 5V

Stapler HP Sensor — S5
CN259-1 [5] 5V
-2 CN109-6 -5 [▲5] Stapler HP Sensor
-3 -4 [0] GND2

Stapler Rotation HP Sensor — S6
CN309-1 CN209-1 CN109-3 [5] 5V
-2 -2 -2 [▲5] Stapler Rotation HP Sensor
-3 -3 -1 [0] GND2

Punch HP Sensor — S18
CN650-1 CN620-6 CN600-1 CN121-11 [▲5] Hopper Sensor
-2 -5 -2 -10 [▼5] Punch Unit Installed
-3 -4 -3 -9 [▲5] Punch HP Sensor

Hopper Sensor — S17
CN630-1 CN620-3 -4 -8 [▼24→0/24] Punch Motor B̄
-2 -2 -5 -7 [▼24→0/24] Punch Motor Ā
-3 -1 -6 -6 [▼24→0/24] Punch Motor B
-7 -5 [▼24→0/24] Punch Motor A
-8 -4 [0] GND2
-9 -3 [5] 5V
-10 -2 [0] GND1
-11 -1 [24] 24V ← (A)

Punch Motor — M11
CN610-1 -2 -4 -5 -6 -7
Punch Board (PCB2)

Main Board (PCB1)

Upper Transport Motor — M1
(A) 24V(A) [24] CN110-1 CN210-7
24V(B) [24] -2 -6
Upper Transport Motor : A [▼24→0/24] -4 -4
Upper Transport Motor : Ā [▼24→0/24] -5 -3
Upper Transport Motor : B [▼24→0/24] -6 -2
Upper Transport Motor : B̄ [▼24→0/24] -7 -1

Lower Transport Motor — M2
(A) 24V(A) [24] CN111-1 CN211-7
24V(B) [24] -2 -6
Lower Transport Motor : A [▼24→0/24] -4 -4
Lower Transport Motor : Ā [▼24→0/24] -5 -3
Lower Transport Motor : B [▼24→0/24] -6 -2
Lower Transport Motor : B̄ [▼24→0/24] -7 -1

Shift Tray Lift Motor — M10
(A) Shift Tray Lift Motor : + [▼24] CN112-1 CN212-2
Shift Tray Lift Motor : - [▼24] -2 -1

Tray Junction Gate Solenoid — SOL 1
(A) 24V [24] CN112-4 CN222-2
Tray Junction Gate Sol. [▼24] -5 -1

Shift Tray Exit Motor — M8
(A) 24V(A) [24] CN113-1 CN213-7
24V(B) [24] -2 -6
Shift Tray Exit Motor : A [▼24→0/24] -4 -4
Shift Tray Exit Motor : Ā [▼24→0/24] -5 -3
Exit Motor : B [▼24→0/24] -6 -2
Exit Motor : B̄ [▼24→0/24] -7 -1

Stack Feed-out Motor — M7
(A) Stack Feed-out Motor : + [▼24] CN114-1 CN214-5
Stack Feed-out Motor : - [▼24] -2 -4
Stack Feed-out Motor F.S. [0/12] -4 -2
Stack Feed-out Motor F.S. [0/12] -5 -1

Shift Motor — M9
Shift Motor [▼24] CN115-1 CN215-4 CN315-2
(A) 24V [24] -2 -3 -1

Shift Tray Upper Limit Switch — SW2
24V [24] CN115-3 CN215-2 SW2
Shift Tray Upper Limit Switch [▲24] -4 -1

Stapler Junction Gate Solenoid — SOL 2
(A) 24V [24] CN116-1
Stapler Junction Gate Sol. [▼24] -2

Positioning Roller Solenoid — SOL 3
(A) 24V [24] CN117-1
Positioning Roller Sol. [▼24] -2

Jogger Motor — M3
(A) 24V(A) [24] CN118-1 CN218-7
24V(B) [24] -2 -6
Jogger Motor : A [▼24→0/24] -4 -4
Jogger Motor : Ā [▼24→0/24] -5 -3
Jogger Motor : B [▼24→0/24] -6 -2
Jogger Motor : B̄ [▼24→0/24] -7 -1

Stapler Motor — M4
(A) 24V(A) [24] CN118-8 CN228-7
24V(B) [24] -9 -6
Stapler Motor : A [▼24→0/24] -11 -4
Stapler Motor : Ā [▼24→0/24] -12 -3
Stapler Motor : B [▼24→0/24] -13 -2
Stapler Motor : B̄ [▼24→0/24] -14 -1

Stapler Rotation Motor — M5
(A) 24V(A) [24] CN119-1 CN219-7
24V(B) [24] -2 -6
Stapler Rotation Motor : A [▼24→0/24] -4 -4
Stapler Rotation Motor : Ā [▼24→0/24] -5 -3
Stapler Rotation Motor : B [▼24→0/24] -6 -2
Stapler Rotation Motor : B̄ [▼24→0/24] -7 -1

Stapler — M6, SW4, SW3, S7
(A) Staple Hummer Motor : + [▼24] CN120-12 CN220-1
Staple Hummer Motor : + [▼24] -11 -2
Staple Hummer Motor : - [▼24] -9 -4
Staple Hummer Motor : - [▼24] -8 -5
Cartridge Set Switch [▲5] -6 -7
Staple End Switch [▼5] -5 -8
Staple Hammer Sensor [▲5] -4 -9
Stapler Installed [▼5] 3 -10
GND2 [0] -2 -11
5V [5] -1 -12

SYMBOL TABLE
—— DC Line
- - - - Pulse Signal
——→ Signal Direction
▲ Active High
▼ Active Low
[ ] Voltage