Booklet Finisher SR5020 Machine Code: D434 Service Manual

20th January, 2009 Subject to change

Safety, Conventions, Trademarks

Conventions

Common Terms

Symbol	What it means
CII	Core Tech Manual
Ĩ	Screw
E	Connector
C	E-ring
\bigcirc	C-ring
	Harness clamp
FFC	Flexible Film Cable
JG	Junction Gate
LE	Leading Edge of paper
LEF	Long Edge Feed
SEF	Short Edge Feed
TE	Trailing Edge of paper
S31E	The "Emitter" sensor of a sensor pair
S31R	The "Receptor" sensor of a sensor pair

This is a list of symbols and abbreviations used in this manual.



The notations "SEF" and "LEF" describe the direction of paper feed, with the arrows indicating paper feed direction.

Warnings, Cautions, Notes

In this manual, the following important symbols and notations are used.

WARNING

• A Warning indicates a potentially hazardous situation. Failure to obey a Warning could result in death or serious injury.

• A Caution indicates a potentially hazardous situation. Failure to obey a Caution could result in minor or moderate injury or damage to the finisher or other property.

🔂 Important

• Obey these guidelines to avoid problems such as misfeeds, damage to originals, loss of valuable data and to prevent damage to the machine.

Note

• This information provides tips and advice about how to best service the machine.

General Safety Instructions

For your safety, please read this manual carefully before you use this product. Keep this manual handy for future reference.

Safety Information

Always obey the following safety precautions when using this product.

Safety During Operation

In this manual, the following important symbols and notations are used.

Switches and Symbols

Where symbols are used on or near switches on machines for Europe and other areas, the meaning of each symbol conforms with IEC60417.



Responsibilities of the Customer Engineer

Reference Material for Maintenance

- Maintenance shall be done using the special tools and procedures prescribed for maintenance of the machine described in the reference materials (service manuals, technical bulletins, operating instructions, and safety guidelines for customer engineers).
- In regard to other safety issues not described in this document, all customer engineers shall strictly obey procedures and recommendations described the "CE Safety Guide".
- Use only consumable supplies and replacement parts designed for use of the machine.

Before Installation, Maintenance

Power

- Always disconnect the power plug before doing any maintenance procedure. After switching off the machine, power is still supplied to the main machine and other devices. To prevent electrical shock, switch the machine off, wait for a few seconds, then unplug the machine from the power source.
- Before you do any checks or adjustments after turning the machine off, work carefully to avoid injury. After removing covers or opening the machine to do checks or adjustments, never touch electrical components or moving parts (gears, timing belts, etc.).
- After turning the machine on with any cover removed, keep your hands away from electrical components and moving parts. Never touch the cover of the fusing unit, gears, timing belts, etc.

Installation, Disassembly, and Adjustments

- After installation, maintenance, or adjustment, always check the operation of the machine to make sure that it is operating normally. This ensures that all shipping materials, protective materials, wires and tags, metal brackets, etc., removed for installation, have been removed and that no tools remain inside the machine. This also ensures that all release interlock switches have been restored to normal operation.
- Never use your fingers to check moving parts causing spurious noise. Never use your fingers to lubricate moving parts while the machine is operating.

Special Tools

- Use only standard tools approved for machine maintenance.
- For special adjustments, use only the special tools and lubricants described in the service manual. Using tools incorrectly, or using tools that could damage parts, could damage the machine or cause injuries.

During Maintenance

General

- Before you begin a maintenance procedure: 1) Switch the machine off, 2) Disconnect the power plug from the power source, 3) Allow the machine to cool for at least 10 minutes.
- Avoid touching the components inside the machine that are labeled as hot surfaces.

Safety Devices

WARNING

- Never remove any safety device unless it requires replacement. Always replace safety devices immediately.
- Never do any procedure that defeats the function of any safety device. Modification or removal of a safety device (fuse, switch, etc.) could lead to a fire and personal injury. Always test the operation of the machine to ensure that it is operating normally and safely after removal and replacement of any safety device.
- For replacements use only the correct fuses or circuit breakers rated for use with the machine. Using replacement devices not designed for use with the machine could lead to a fire and personal injuries.

Organic Cleaners

- During preventive maintenance, never use any organic cleaners (alcohol, etc.) other than those described in the service manual.
- Make sure the room is well ventilated before using any organic cleaner. Use organic solvents in small
 amounts to avoid breathing the fumes and becoming nauseous.
- Switch the machine off, unplug it, and allow it to cool before doing preventive maintenance. To avoid fire or explosion, never use an organic cleaner near any part that generates heat.
- Wash your hands thoroughly after cleaning parts with an organic cleaner to contamination of food, drinks, etc. which could cause illness.
- Clean the floor completely after accidental spillage of silicone oil or other materials to prevent slippery surfaces that could cause accidents leading to hand or leg injuries. Use "My Ace" Silicone Oil Remover (or dry rags) to soak up spills. For more details, please refer to Technical Bulletin "Silicone Oil Removal" (A024-50).

Ozone Filters

- Always replace ozone filters as soon as their service life expires (as described in the service manual).
- An excessive amount of ozone can build up around machines that use ozone filters if they are not replaced at the prescribed time. Excessive ozone could cause personnel working around the machine to feel unwell.

Power Plug and Power Cord

WARNING

- Before servicing the machine (especially when responding to a service call), always make sure that the power plug has been inserted completely into the power source. A partially inserted plug could lead to heat generation (due to a power surge caused by high resistance) and cause a fire or other problems.
- Always check the power plug and make sure that it is free of dust and lint. Clean it if necessary. A dirty plug can generate heat which could cause a fire.
- Inspect the length of the power cord for cuts or other damage. Replace the power cord if necessary. A frayed or otherwise damaged power cord can cause a short circuit which could lead to a fire or personal injury from electrical shock.
- Check the length of the power cord between the machine and power supply. Make sure the power cord is not coiled or wrapped around any object such as a table leg. Coiling the power cord can cause excessive heat to build up and could cause a fire.
- Make sure that the area around the power source is free of obstacles so the power cord can be removed quickly in case of an emergency.
- Make sure that the power cord is grounded (earthed) at the power source with the ground wire on the plug.
- Connect the power cord directly into the power source. Never use an extension cord.
- When you disconnect the power plug from the power source, always pull on the plug, not the cable.

After Installation, Servicing

Disposal of Used Items

• Always dispose of used items (developer, toner, toner cartridges, OPC drums, etc.) in accordance with the local laws and regulations regarding the disposal of such items.

• To protect the environment, never dispose of this product or any kind of waste from consumables at a household waste collection point. Dispose of these items at one of our dealers or at an authorized collection site.

Points to Confirm with Operators

At the end of installation or a service call, instruct the user about use of the machine. Emphasize the following points.

- Show operators how to remove jammed paper and troubleshoot other minor problems by following the procedures described in the operating instructions.
- Point out the parts inside the machine that they should never touch or attempt to remove.
- Confirm that operators know how to store and dispose of consumables.
- Make sure that all operators have access to an operating instruction manual for the machine.
- Confirm that operators have read and understand all the safety instructions described in the operating instructions.
- Demonstrate how to turn off the power and disconnect the power plug (by pulling the plug, not the cord) if any of the following events occur: 1) something has spilled into the product, 2) service or repair of the product is necessary, 3) the product cover has been damaged.
- Caution operators about removing paper fasteners around the machine. They should never allow paper clips, staples, or any other small metallic objects to fall into the machine.

Safety Instructions for this Machine

- 1. The installation must be done by trained service technicians.
- 2. This machine weighs 316 kg. (695 lb.). At least four persons are required to remove the machine from its pallet and position it for installation.
- 3. To prevent fire hazards never use flammable solvents around the machine.
- 4. Never place any object on the machine.
- 5. If anything falls into the machine, turn off the main power switch on the right side of the machine, then disconnect the power cord from the power source.
- 6. Locate the machine on a sturdy flat surface where it will not be exposed to excessive vibration.
- 7. To avoid fire hazard, confirm that the ventilation ports are not blocked, so air can flow freely.
- 8. Gas generated by the molten glue can irritate the eyes, throat, and nose. The machine should always be used in a well ventilated room.
- 9. To avoid the dangers of fire and electrical shock, make sure that the machine is never exposed to:
 - Excessive high temperatures and/or humidity

- Dust
- Water
- Direct sunlight
- Open flame
- Corrosive gases

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1. Replacement and Adjustment

Common Procedures

Overview



d434r101



- [A] Open the front door open
- [B] Adjustable caster
- [C] Pull the stack/stapler unit out (pull handle **Rb12**)



d434r103

- 1. Inner covers:
 - [A] Upper: **Rb2**, **Rb8**
 - [B] Center: **Rb14**, **Rb16**
 - [C] Lower Rb10, Rb11

Covers

Rear Upper Cover





1. Rear upper cover (🖗 x5)

Important

• The rear upper cover must be removed before the rear lower cover.

Rear Lower Cover

Preparation

• Rear upper cover



d434r105

1. Rear lower cover (🖗 x4)

The screw near the power connection point is difficult to see.

Re-installation



d434r106

1. Engage both tabs on the bottom of the rear lower cover before fastening the screws.

Lower Inner Cover: Rb10, Rb11



d434r107

- 1. Remove handles **Rb11**, **Rb12** (${
 earrowsin x1}$ each, Pin x1 each)
- 2. Make sure that the pins [A] are removed and stored with the screws.



d434r108

• Remove the cover ($\hat{\mathscr{F}}$ x2, Tabs x2)

Center Inner Cover: Rb14, Rb16

Preparation

• Lower inner cover



d434r109

- 1. Remove:
 - [A] **Rb16**
 - [B] **Rb 14** (🐼 x1)
 - [C] Cover (🖗 x4)

Upper Inner Cover: **Rb2**, **Rb8**



d434r110

1. Remove:

[A] Rb2, Rb8.

If these tab releases are stiff, use the point of a sharp tool to release these knobs, then pull them off. Work carefully to avoid breaking the tab releases.

[B] Cover (🖗 x5)

Front Door



d434r111

- 1. Remove [A] (🖗 x1)
- 2. Raise the hinge pin and bracket [B] out of the top of the door and pull the door away.
- 3. Lift the door off its bottom post.

Corner Strip Cover





- 1. Remove the top and bottom screws [1], [2] ($\hat{\beta}^2 \times 2$).
- 2. Disconnect the tabs at the top and bottom.
- 3. Twist the cover away from the corner.

Top Rear Cover



d434r113

1. Remove screws from the cover [A] ($\hat{\beta}^2 x^2$).



d434r114

2. Slowly disconnect the tabs of cover [A].

Shift Tray Jogger Unit



- 1. Remove:
 - [A] Jogger unit cover (∦ x2)
 - [B] Jogger unit screws (∦ x2)



d434r116

- 2. At the left rear corner, disconnect the jogger unit ① and emergency shift tray stop switch ② (≌ x2, ⊑≝ x2).
- 3. Lift the jogger unit [A] off (Hooks x2).

Left Upper Cover

Preparation

- Shift tray jogger unit cover
- Shift tray jogger unit



d434r117

- 1. At the rear corner, make sure that the connector [A] of the harness running through the cover is disconnected.
- 2. Remove the cover [B] ($\hat{\beta}^2 x^2$),.

Proof Tray

Preparation

- Shift tray jogger unit cover
- Shift tray jogger unit
- Left upper cover



d434r118

1. Remove proof tray [A] (🖗 x2)

Top "L" Cover

Preparation

- Shift tray jogger unit cover
- Shift tray jogger unit
- Left upper cover
- Proof tray



d434r119

1. Top tray screws [A] (⋛ x4)



d434r120

- 2. Disengage tabs:
 - [A] Front
 - [B] Right

Right Upper Panel





d434r117a

1. Remove the right upper panel [A] ($\hat{\beta}$ x4)

Right Lower Panel



d434r121

- The right lower panel covers the PSU, which retains residual voltage after the system is switched off.
- Before removing the right lower panel for any procedure, switch the machine off and wait 30 min. for the charge on the PSU to discharge.
- 1. Remove right lower panel [A] (🖗 x6)

Shift Tray



d434r122

- 1. While supporting the tray with one hand, pull gear [A] toward you to release the tray.
- 2. Lower the tray [B] slowly until it stops, then remove it. ($\hat{\not}^2$ x4)

Booklet Tray



d434r123

1. Just lift and pull the booklet tray [A] away from the side.

Booklet Unit

Booklet Stapler

The booklet stapler weighs about 3 kg (6.6 lb.)

Preparation

- Open the front door.
- Pull stack/stapler unit out with **Rb12**



d434r124

- 1. Remove both booklet staplers.
- 2. Remove booklet stapler unit cover [A] ($\hat{\mathscr{F}}^{i}$ x2)



d434r125

- 3. Remove stapler unit [A] (℡ x1, 🖗 x4)
- 4. Make sure connector [B] is disconnected.
- 5. Remove the stapler unit with its handle [C].



d434r126

Booklet Unit

Preparation

- Open the front door.
- Front door
- Corner strip cover
- Lower inner cover Rb10, Rb11
- Booklet stapler (recommended)

Note

- The booklet unit weighs about 18 kg (40 lb.) with the booklet stapler installed.
- The booklet stapler weighs about 3 kg (6.6 lb.)
- The booklet unit is lighter and easier to remove and re-install with the booklet stapler removed.







- 1. Make sure that the stack/staple unit is closed.
- 2. Locate the two motors attached to the rear of the stack/staple unit.



d434r128

- 3. Disconnect the two motors (1), (2) ($\mathbb{E}^{J}x2$).
- 4. Disconnect the connectors of the other harnesses attached to the rear of the stack/staple unit at ③,
 ④, ⑤(♀ x2, ⊑ x2).



d434r129

5. Push the stack/staple unit [A] out about halfway, until you can see the two black connectors.



d434r130

7. Pull the stack/staple unit out until it stops.



d434r131

8. Remove:

[A] Rear (🖗 x2)

[B] Front (⋛ x2)



d434r132

9. Grip the unit [A] at ${\rm (I)}$ and ${\rm (2)}$, slide it to the right, and set it down on the floor.

Handling and Moving the Booklet Unit



d434r901

- The metal edges of the booklet unit are sharp and can easily cut your hands or fingers. Always handle the unit carefully.
- 1. Always lift the booklet unit with your hands positioned at ① and ②.
- 2. Never attempt to lift the booklet unit by the edges (shown above by the red dotted lines).

Side Fence

Preparation

- Shift tray jogger unit.
- Pull stack/stapler unit out with handle **Rb12**.

Exit Roller Cover



d434r133

This is the exit roller cover [A].



d434r134

1. Remove:

[A] Rear (͡ቇ x2) [B] Front (͡ቇ x2)



d434r135

2. Remove the cover.

Shift Tray, Booklet Tray

1



d434r136

1. Remove the booklet tray [A].



d434r137

- 2. Support the shift tray with your hand.
- 3. At the left rear corner, pull the gear [A] toward to release the tray, then lower the tray.
- 4. Remove the screws [B] ($\hat{\beta}^2 x 3$)



d434r138

5. Support the tray [A] with your hand to prevent it from falling, then remove the last screw. ($\hat{\mathscr{F}} \times 1$)
Shift Tray Base



d434r139

This is the shift tray base [A].



d434r140

- 1. Rear cover [A] (🖗 x1).
- 2. Slide the cover off. You do not need to remove the screw.



d434r141

3. Front cover [A] (∅ x1)

4. Slide the cover off. You do not need to remove the screw.



d434r142

5. Front belt clamp [A] (🌶 x1)



d434r143

6. Rear belt clamp [A] (⋛ x1)



d434r144

7. At the front, pull the belt [A] out and set it behind the plate.



d434r145

8. Front base plate [A] (🖗 x2)





9. Disconnect the rear end of the base [A] from the side fence (you do not need to remove the plate).



Left Lower Cover, Booklet Tray Actuator Arm

d434r147

37

- 1.Half-turn sensor harness [A] (燈 x6, 閶 x1)

2. Rear cover [A] (🖗 x3)





3. Booklet tray actuator arm [A] (🖗 x2)

End Fence



d434r149

1. Disconnect:

P

[A] Motor (읖 x 1, 티비 x1) [B] Half-turn sensor (읖 x 1, 티비 x1)



d434r150

- 2. Rear:
 - [A] Top (🌮 x1)
 - [B] Center (곍 x1)
 - [C] Bottom (⋛ x1)



d434r151

- 3. Front:
 - [A] Top (⋛ x1)
 - [B] Center (𝔅 x1)
 - [C] Bottom (⋛ x1)

Re-installation



d434r152

- 1. When you re-attach the exit roller cover [A]:
 - Make sure the small mylar ${\rm \textcircled{I}}$ is set as shown above.
 - Make sure the large mylars 2 and 3 are set as shown above.

Drag Roller Unit

Preparation

• Side fence



d434r153

This is the drag roller unit [A].



d434r154

1. Harness connectors (🛱 x7)



d434r155

2. Connectors (x1, ☞ x2)



d434r156

3. Motor harnesses (🗊 x2)



d434r157

Remove:
 [A] Front (𝔅 x2)

[B] Rear (🖨 x2)



d434r158

5. Remove the drag roller unit [A].

1

Horizontal Paper Feed

1

Entrance Roller Motor

Preparation

Entrance

- Rear upper cover
- Rear lower cover
- Right upper panel
- Sub board



The entrance roller motor is under the entrance paper guide.



d434r910

Disconnect and remove the main board [A] (x4, Ground connectors x2, I x All, I x All) so you can access the motor bracket [B].



d434d911

2. Disconnect the motor bracket [A] ($\hat{\mathscr{F}}$ x2, Timing belt x1, Spring x1).



d434r912

3. From inside the unit, pull the bracket [A] (with the motor attached) through the hole.



d434r913

4. Remove the motor [A] from the bracket ($\hat{\not\!\!\!\!\!\!\!\!\!}^{R}$ x 2).

Entrance Sensor



d434r164

The entrance sensor port is above the paper guide.



d434r165

- 1. Remove:
 - [A] Sensor bracket (🖗 x1)
 - [B] Sensor (🗊 x1, Pawls x5)

Registration

Registration Motor

Preparation

- Rear upper cover
- Right upper panel

• Sub board



d434r166

The registration motor is behind the sub board.



d434r167

1. Disconnect motor bracket [A] (Ĝ² x2, ⊑¹ x1, Belt x1)



d434r168

2. Remove motor [A] (∅ x2)

Horizontal Transport Motor

Preparation

• Rear upper cover



d434r169

The horizontal transport motor is in the center.



d343r170

1. Disconnect motor [A] (⋛ x2)



d434r171

- 2. Disconnect the motor bracket:
 - [A] Left hook
 - [B] Right hook



d434r172

- 3. Disconnect motor [A] (Belt x1, ⊑ x1)
- 4. Remove bracket [B] (⋛ x2)

Exit

Shift Tray Exit Motor

Preparation

• Rear upper cover



d434r173



The shift tray exit motor is at the rear left corner.

d434r174

1. Disconnect motor [A] (곍 x2, x2)



d434r175

2. Disconnect motor bracket [A] (Hook x1, ⊑[™] x 1)

3. Motor bracket [A] (⋛ x2)

Punch Unit



Punch Motors and Sensors

Punch Movement Motor

Preparation

• Punch unit



d434r177

1. Punch movement motor bracket [A] (🖗 x1)



d434r178

2. Remove:

[A] Spring x1 [B] Bracket (ℱ x1)



d434r179

3. Disconnect motor [A] (⇔ x1, 🖼 x1)

Punch Unit HP Sensor

Preparation

• Punch unit



d434r180

1. Remove:

[A] Sensor bracket (⋛ x1)

[B] Sensor (☞ x1, Pawls x5)

Punch Drive Motor

Preparation

• Rear upper cover



d434r181

1. Disconnect:

[A] Motor (☆ x1, ば x1) [B] Bracket (ℱ x2)



d434r182

2. Remove motor [A].

Punch RPS Sensor

Preparation

• Rear upper cover



d434r183

1. Sensor [A] (≌ x1, 🗊 x1, Pawls x5)

Punch-out Hopper Full Sensor

Preparation

• Remove the right upper panel



d434r184

1. Sensor swing plate [A] (Spring x1, $\hat{\mathscr{F}}$ x1, $\stackrel{()}{\rightrightarrows}$ x1, $\stackrel{()}{\blacksquare}$ x1,



d434r184a

2. Sensor (⋛ x1)

1

Proof Tray

Proof Tray Motors

Proof Tray JG Motor

Preparation

- Rear upper cover
- Punch unit PCB



d434r185

The proof tray JG motor is located here.



d434r186

1. Disconnect motor [A] (党 x4, 印 x2)



d434r187



d434r188

3. Remove:

[A] Motor with bracket

[B] Bracket (🖗 x2)

Proof Tray Vertical Transport Motor







The proof tray vertical transport motor is located here, partially covered by the punch unit PCB.

Preparation

- Rear upper cover
- Top rear cover
- Punch unit PCB



d434r190

1. Bracket of the motor [A] ($\hat{\not}$ x2)



d434r191

2. Pull out motor [A] (Hook x1, Belt x1, ⊑[∭] x1)



d434r192

3. Remove bracket [A] (⋛ x2)

Proof Tray Exit Motor

Preparation

- Rear cover
- Top rear cover



d434r193

The proof tray exit motor is located here.



d434r194

1. Motor bracket [A] (⋛ x2, Hook x1)



d434r195

2. Remove the motor [A] and bracket (Belt x1, 🗊 x1. 🖗 x2)

Proof Tray Sensors

Proof Tray JG HP Sensor

Preparation

• Rear upper cover



d434r196

1. Remove sensor bracket [A] and sensor (₯ x1, ➡ x1, Pawls x5)

Re-installation



d434r197

1. Turn the proof JG motor [A] gear to move the actuator to the left if the sensor is difficult to re-install.

Proof Tray Exit Sensor, Proof Tray Full Sensor

Preparation

- Upper inner cover
- Rear top cover
- Shift tray jogger unit
- Left upper cover
- Proof tray



d434r198

These sensors are mounted on the same bracket under the paper path cover.



d434r199

- 1. At the front, disconnect the shaft [A] of plate Rb5. ($\langle \! t \rangle \! t$ x1)
- 2. Remove **Rb5** [B]



d434r200

3. Use a short screwdriver to remove bracket plate [A]. ($\hat{\mathscr{F}} \times 1$)



d434r201

- 4. Use a pencil or marker to mark the color and location of the harnesses.
- 5. Disconnect a standoff ① to create slack in the harnesses.

6. Disconnect the bracket and sensors [A] (☆ x4, ⊯ x2).



d434r202

- 7. Remove:
 - [A] Tray full sensor (⋛ x1)
 - [B] Tray exit sensor (Pawls x5)

Shift Tray

Shift Tray Side-to-Side Movement

Shift Motor

Preparation

• Side fence



d434r203

The shift motor is visible inside the machine, but the side fence must be removed for servicing this motor.



- 1. Lay the side fence on a flat surface.
- 2. Remove bracket [A] (🖗 x4, Hook x1)



d434r205

3. Turn the bracket over and remove the motor [A] ($\hat{\mathscr{F}}$ x2, Belt x1)

Shift Tray HP Sensors (Front, Rear)

These sensors are mounted on the same bracket as the shift motor.

Preparation

• Side fence



d434r206

1. Remove sensor bracket [A] (🖗 x1).

1



d434r207

2. Remove sensors (印 x2, 总 x3, Pawls 5 each)

Shift Tray Exit

Shift Tray Exit Motor

Preparation

• Rear upper cover



d434r173

The shift tray exit motor is at the rear left corner.



1. Disconnect motor [A] (倉 x2, 屶 x2)



d434r175

2. Disconnect motor bracket [A] (Hook x1)



d434r176

3. Motor bracket [A] (⋛ x2)
Shift Tray Exit Sensors (Long and Short)

Preparation

• Proof tray



d434r208

1. Lift arm [A] (🕅 x 1).



d434r209

2. At the front, remove the bushing (\mathbb{C} x1).



d434r209a

3. At the rear, remove:





d434r209b

- 4. At the rear, disconnect the sensor harness.
- 5. Pull it though the hole into the machine.



d434r209c

6. Pull the plate assembly out from the front of the machine.



d434r209d

- 7. Lay the assembly on a flat surface.
- 8. Remove the plate [A].



d434r209e

9. Remove:

- [A] Exit sensor (long) (Tab x1, 🗊 x1)
- [B] Exit sensor (short) (Tab x1, ⊑[™] x1))

Drag Roller Motors, Sensors

Drag Roller Motor



d434r210

The drag roller motor is visible inside the machine, but the side fence and drag roller unit must be removed to service this motor.

Preparation

- Side fence
- Drag roller unit



d434r211

- Disconnect motor bracket [A] (𝔅 x2).
- 2. Turn the drag roller unit over and remove the motor [B].



d434r212

3. Remove motor [A] (☆ x1, 邙 x1).

Drag Drive Motor





The drag roller motor is visible inside the machine, but the side fence and drag roller unit must be removed to service this motor.

Preparation

- Side fence
- Drag roller unit



d434r214

- 1. Turn the drag roller unit on its side with the face of the motor down.
- 2. Remove the motor [A] ($\hat{\mathscr{F}} \times 2$).



d434r215

Drag Roller HP Sensor

Preparation

- Side fence
- Drag roller unit



d434r215

1. Remove:

[A] Sensor bracket (⋛ x1)

[B] Sensor (🗊 x1, Pawls x5)

Shift Tray Jogger Unit

Shift Jogger Motor



d434r217

This motor is on top of the shift tray jogger unit, near the center.

Preparation

• Shift tray jogger unit



d434r218

This is the location of the motor with the shift jogger unit removed.



d434r219

1. Turn the unit over and disconnect the motor ($\hat{\beta}^2 x^2$, Belt x1).



d434r220

2. Disconnect motor [A] (⊑[∭] x1)

Shift Tray Jogger Fence HP Sensor

Preparation

• Shift tray jogger unit



d434r221

1. Remove sensor [A] (☞ x1, Pawls x5)

Shift Jogger Retraction Motor



d434r222

This is the motor on the end of the shift tray jogger unit.

Preparation

• Shift tray jogger unit



d434r223

1. Disconnect the motor harness [A] (x1, ≅ x1)





2. Disconnect the retraction HP sensor on the same bracket as the motor [A] ($\textcircled{\square} x1$)



d434r225

3. Disconnect motor bracket [A] (沪 x1, 斧 x2)

Shift Jogger Fence Retract HP Sensor

Preparation

• Shift tray jogger unit



d434r226

1. Remove sensor [A] (I x1, Pawls x5)

Note

• If it is difficult to remove the sensor directly from the frame (or re-install), do the procedure in the previous section to remove the shift jogger retraction motor bracket.

Shift Tray Operation

Shift Tray Lift Motor

Preparation

- Rear upper cover
- Rear top cover
- Proof tray



d434r227

The shift tray lift motor is near the left rear corner.



d434r228

1. Disconnect the motor drive board (⊑ x1).



d434r229

- 2. Remove:
 - [A] Rear (⋛ x1)
 - [B] Front (⋛ x1)



d434r230

3. Pull the motor and drive board motor out.

Paper Height Sensors 1, 2, 3 (Shift, Staple, Z-Fold)

Preparation

• Proof tray



d434r231

1. Remove the protector plate [A] ($\hat{\not}$ x1).



d434r232

2. Remove feeler [A] (🖗 x1).



d434r233

- 3. Remove sensor bracket [A] (ℰ x1, Standoffs x2)
- 4. Sensors (🗊 x1 each)
 - ① Paper Height Sensor 1: Staple Mode
 - ② Paper Height Sensor 2: Shift Mode

3 Paper Height Sensor 3: Z-Fold Mode

Paper Height Sensor (TE), Shift Tray Upper Limit Switch



The actuator [A] of the paper height sensor performs two functions:

- First, it rises and actuates the Paper Height Sensor (TE) [B] to detect tray full.
- Second, if the actuator rises far enough through the gap of the interrupt sensor (TE) it will trip the arm [C] of a micro-switch [D]. This is a fail-safe device to switch the finisher off if one or more other sensors fail.

Preparation

- Side fence
- Drag roller assembly

Paper Height Sensor (TE)



d434r235

1. Remove sensor plate [A] (⋛ x2, ⇔ x2)



d434r236

2. Sensor (⊑[™] x1, Pawls x5)

Shift Tray Upper Limit Switch



d434r237

1. Turn the drag roller unit [A] over so that you can see the micro-switch [B].



d434r238



d434r239

3. Disconnect the switch (⊑[™] x2)

Shift Tray Full Sensors 1, 2, 3, 4 (500)

The tray full sensors are all mounted on the same vertical stay at the left rear corner of the finisher:

- Shift Tray Full Sensor (500)
- Shift Tray Full Sensor (1000)
- Shift Tray Full Sensor (1500)
- Shift Tray Full Sensor (2500)

Preparation

- Rear upper cover
- Rear lower panel



d434r240

1. Remove the vertical stay cover ($\hat{\mathscr{F}} x3$).



d434r241

- - ② Shift Tray Full Sensor (1000)

- ③ Shift Tray Full Sensor (1500)
- ④ Shift Tray Full Sensor (2500)

Pre-Stacker

Pre-Stacker Motors



d434r242

With the right upper panel removed, the pre-stack motor is visible from the right side of the finisher below the lock bar.

Pre-Stack Motor

Preparation

- Rear upper cover
- Right upper panel
- Rear lower panel
- Sub board
- Main board
- Right lower plate

• The motor does not hang on a bracket. Work carefully and do not allow it to fall after you remove the last screw.



d434r243

- 1. Rear [A] (⋛ x2, Belt x1)
- 2. Front [B]: Remove the motor (⊑ x1)



d434r244

Pre-Stack Release Motor



d434r245

The pre-stack motor is only partially visible behind the sub board and main board.

Preparation

- Rear upper cover
- Right upper panel
- Rear lower panel
- Sub board
- Main board



d434r246

- 1. At the rear, disconnect the motor (☞ x1).
- 2. Disconnect the drive assembly cam and cam follower at [A] (Teflon gear x_1 , Cx_1 , Belt x_1).



d434r247

3. Remove the motor bracket ($\hat{\not{e}}$ x2).



d434r248

4. Remove motor [A] (⋛ x2)

Re-installation



d434r249

1. If the Teflon gear [A] will not lock in place, behind the frame pull the shaft of the pre-stack roller [B] toward the motor.

Pre-Stacker Sensors

Pre-stack Roller HP Sensor

Preparation

- Rear upper cover
- Rear lower panel
- Sub board
- Main board



d34r251

- 1. Disconnect sensor harness [A] (⊑[™] x1)
- 2. Remove sensor bracket [B] (🖗 x1)



d434r252

3. Sensor (Pawls x5)

Corner Stapler Unit

Corner Stapler Unit Entrance

Stapler JG Motor

1



d434r253

The stapler junction gate motor is behind the punch unit PCB.

1. Open the harness clamps of the motor [A] () x3)

Preparation

- Rear upper cover
- Punch unit PCB



d434r254



2. Disconnect the motor at [B] (🗊 x1)

d434r255

- 3. Remove motor bracket [A] (∲ x2)
 - Slowly, pull the bracket away.
 - Make sure the Teflon collar [B] does not fall off the end of the junction gate shaft. Remove it so that it does not accidentally slip off the end of the shaft.

Stapler JG HP Sensor

Preparation

- Rear upper cover
- Punch unit PCB



d434r256

- 1. Remove sensor bracket [A] (⊑[™] x1, 𝔅 x).
- 2. Sensor (Pawls x5).

Stapling Tray Entrance Sensor

Preparation

- Right lower panel
- Pull out the stack/staple unit





The stapling tray entrance sensor is under the bracket [A] at the right rear corner of the stack/staple unit.

1. .At the back of the stack/staple unit, disconnect the sensor at [B] (⊑[∭] x1)



d434r258

2. Remove bracket [A] (\$\$^2\$ x2)



d434r259

3. Remove sensor [A] (🗊 x1, 𝔅 x1)

Stapling Tray Entrance Motor



d434r260

The stapling tray entrance motor is on the back of the stack/staple unit.

Preparation

- Rear upper cover
- Rear lower panel
- Sub board
- Main board



d434r261

1. Remove motor [A] (⊑╝ x1, 🖗 x2)



d434r262

2. Remove motor [A] (🖗 x2).

Stapling Tray Paper Sensor

Preparation

• Remove the booklet unit (*r* p.27)

Comportant 🗋

- The stapling tray paper sensor shares the same bracket with the top fence HP sensor.
- Use a marker to mark one of the harnesses to prevent incorrect correction at re-installation.



d434r263

The stapling tray paper sensor is on bracket [A].



d434r264

1. Remove and disconnect bracket [A] (ℰ x, 🗟 x5, 🖼 x2)



d434r265

2. Remove the paper sensor [A] (the photosensor) ($\hat{\not}$ x1)

Note

• The other sensor is the top fence HP sensor.

Corner Stapler Side-to-Side Jogging

Front Jogger Fence Motor



d434r266

The front jogger fence motor is behind the front plate of the stack/staple unit.

Preparation

• Remove the booklet unit (🖝 p.27)



d434r267

- 1. Loosen screw [A] to release the belt tension ($\hat{\beta}^2 \times 1$).
- 2. Disconnect motor [B] (🛱 x1, 🗊 x1, ℱ x1)]



d434r268

3. Remove motor [A] (贮 x1, Belt 1).



d434r269

4. Disconnect motor [A] (⋛ x2)

Re-installation



d434r270

- 1. After re-installing the motor, be sure to re-tighten the belt screw.
 - Make sure the belt is tight.
 - The tension of the belt can be adjusted to compensate for stretching in the belt that may occur when it reaches the end of its service life.

Jogger Fence HP Sensor (Front)

Preparation

• Remove the booklet unit (🖝 p.27)



d434r271

- 1. Disconnect:
 - [A] Spring x1 [B] ⊑[∭] x1

[C] Pawls x5

Rear Jogger Fence Motor



d434r272

The rear jogger fence motor is mounted on the rear plate of the stack/staple unit.

Preparation

• Remove the booklet unit (🖝 p.27)





1. Loosen screw [A] to release the belt tension ($\hat{\beta}^2 \times 1$).



d434r274

2. Disconnect motor [A] (x1, ☞ x1, ∦ x2).





d434r275

3. Disconnect motor [A] (∲ x2)
Re-installation



d434r276

- 1. After re-installing the motor, be sure to re-tighten the belt screw.
 - Make sure the belt is tight.
 - The tension of the belt can be adjusted to compensate for stretching in the belt that may occur when it reaches the end of its service life.

Jogger Fence HP Sensor (Rear)

Preparation

• Remove the booklet unit (🖝 p.27)



d434r276a

- 1. Disconnect and remove the sensor:
 - ①╠xl
 - ② ∯ x1
 - 3 ⊑≓ x1

④ Pawls x5

Corner Stapling Bottom/Top Jogging

Positioning Roller Rotation Motor





The positioning roller rotation motor is under the motor cover on the right side of the stack/staple unit.

Preparation

- Open the front door
- Pull out the stack/staple unit with handle Rb12



d434r278

1. Remove motor cover [A] (𝔅 x2)



d434r279

2. Remove motor [A] (營 x1, ☜ x1, । x2)

Positioning Roller Motor





The positioning roller motor is under the motor cover on the right side of the stack/staple unit.

Preparation

- Open the front door
- Pull out the stack/staple unit with handle Rb12
- Right lower panel



d434r281

1. Remove motor cover [A] (ℰ x2)



d434r282

2. Remove motor [A] (ﷺ x1, ⅔ x2, Belt x1)

Positioning Roller HP Sensor

Preparation

- Open the front door
- Pull out the stack/staple unit with handle Rb12



d434r283



d434r284

2. Remove sensor [A] (🗊 x1, Pawls x5)

Corner Stapler Bottom Fence Motor



d434r285

The corner stapler bottom fence motor is near the center of the stack/staple unit.

Preparation

• Remove the booklet unit (🖝 p.27)



d434r286

1. Remove motor [A] (⊑^{IJ} x1, ℱ x2).



d434r287

2. Separate motor [A] from the bracket ($\hat{\beta}^2 x^2$).

Bottom Fence HP Sensor

Preparation

• Remove the booklet unit (🖝 p.27)

C Important

• The bottom fence HP sensor shares the same bracket with the stack feed-out belt HP sensor. Use a marker to mark one of the harnesses to avoid incorrect connection at re-installation.



d434r288

1. Remove bracket [A] (倉 x1, 端 x1)

113



d434r289

- 2. Disconnect the bottom fence HP sensor ① (⇔ x1, ∉ x2, Pawls x5).
- The bottom fence HP sensor (1) (the interrupt sensor without the feeler) is on the same bracket as the (2) (sensor with feeler attached).

Corner Stapler Top Fence Motor



d434r290

The corner stapler top fence motor is on the rear panel of the corner stapler unit.

Preparation

- Rear upper cover
- Rear lower cover
- Remove the booklet unit (🖝 p.27)



d434r291

- 1. Disconnect motor [A] (⊑ x1)
- 2. Push the stack/staple unit [B] into the finisher until it stops and locks.



- 3. Remove the belt ① and screw ②. (🖗 x1, Belt x1)
- 4. Loosen screw 3 slightly.

• Do not remove screw 31 The motor will fall if you remove this screw.



d434r293

5. While supporting the motor [A] with your right hand to prevent the motor from falling, remove the remaining screw from behind the panel ($\hat{\beta}^2 \times 1$).

Top Fence HP Sensor

Preparation

• Remove the booklet unit (🖝 p.27)



d434r294

The top fence HP sensor is on bracket [A].





1. Remove and disconnect bracket [A] (∦ x, 🗟 x5, 🗊 x2)





2. Remove the top fence HP sensor [A] (the photointerrupter sensor with the feeler ($\hat{\mathscr{F}}$ x1)

Note

• The other sensor is the stapling tray paper sensor.

Corner Stapling Edge Press Before Stapling

Edge Press Motor/Sensor Plate

C Important

• The removal of this motor/sensor plate is a common procedure for the next three procedures below.

Preparation

- Open the front door
- Pull out the stack/staple unit with handle Rb12

• Right lower panel

1



d434r297

1. Remove cover [A] (∲ x1)



d434r298

2. At the back, disconnect the motors and sensors (1), (2), (3) (x3, (2) x3 (x3,



d434r299

3. Remove:

[A] Rear (⋛ x2) [B] Front (⋛ x2)



d434r300

- 4. Remove the plate [A] and set it on a flat surface.
 - ① Front motor, sensor, plunger
 - 2 Center motor, sensor, plunger
 - ③ Rear motor, sensor, plunger

Stack Plate Motor, Stack Plate HP Sensor (Rear)



d344r301

The rear stack plate motor is under the motor cover with the front and center stack motor.

Preparation

• Edge Press Motor/Sensor Plate

Stack Plate Motor (Rear)



d434r302

- 1. Depress plunger [A] to see the other screw.
- 2. Remove both screws ($\hat{\mathscr{F}} x2$).
- 3. Turn the plate over.
- 4. Remove motor [B] (☞ x1, 🛱 x1)



d434r303

Stack Plate HP Sensor (Rear)



d434r304

- 1. Rotate the gear and belt to move actuator [A] out of the gap of the sensor [B]
- 2. Turn the plate over.



d434r305

- 3. Disconnect the sensor at [A] (⊑[™] x1).
- 4. Turn the plate over.
- 5. Remove sensor [B] (Pawls x5).



Stack Plate Motor, Stack Plate HP Sensor (Center)

d344r301

The center stack plate motor is under the motor cover with the front and rear stack motors.

Preparation

• Edge Press Motor/Sensor Plate

Stack Plate Motor (Center)



d434r306

- 1. Rotate the gear clockwise to raise the plunger [A] and relieve the tension on the spring [B].
- 2. Remove spring [B].

1



d434r307

3. Disconnect shafts (1) and (2) and slide them out ($\hat{\not\!\!\!\!/} x2).$



d434r308

- 4. Turn the plate over.
- 5. Remove the screws (🖗 x2).



d434r309

6. Remove the motor (⇔ x1, ≅ x1).

Stack Plate HP Sensor (Center)



- 1. Rotate the gear to move actuator [A] out of the gap [B].
- 2. Turn the plate over.
- 3. Disconnect the sensor at [C]



d434r311

4. Remove sensor [A] (Pawls x5)

Stack Plate Motor, Stack Plate HP Sensor (Front)



d344r301

Preparation

• Edge Press Motor/Sensor Plate

Stack Plate Motor (Front)



d434r312

- 1. Depress plunger [A] so you can see the screw.
- 2. Remove the screws. (🖗 x2)



d434r313

3. Remove motor [A] (x1, ☞ x1, Belt x1).

Stack Plate HP Sensor (Front)



d434r314

- 1. Rotate the gear to move plunger [A] out of the gap of the sensor [B].
- 2. Turn the plate over.



d434r315

- 3. Disconnect the sensor at [A] (⊑[™] x1).
- 4. Remove sensor [B] Pawls x5).

Corner Stapling

Corner Stapler

Preparation

• Pull the stack/staple unit with handle **Rb12**



d434r316

1. Remove the stapler cartridge [A].



d434r317

2. Remove cover [A] (𝔅 x2)



d434r318

- 3. Disconnect the stapler [A] (⊑[™] x2).
- 4. Lift the stapler off its posts but do NOT pull it away.

Comportant 🔁

• This is still one harness connected inside the stapler.



d434r319

5. Disconnect harness [A] (☆ x3, ⊄ x1)

Corner Stapler Movement Motor



d434r320

The corner stapler movement motor is at the bottom of the corner stapler unit.

Preparation

• Remove the booklet unit (🖝 p.32)



d434r321

- 1. On the left [A], disconnect the motor (${\rm Im} x1$).
- 2. On the right [B], remove the motor ($\hat{\mathscr{F}}$ x2, Belt x1)



d434r322

Stapler Rotation Motor



You can see the stapler rotation motor on the bottom of the corner stapler unit next to the corner stapler.

Preparation

- Open the front door
- Pull out the stack/staple unit with handle Rb12



d434r324

- 1. Disconnect the motor at [A] (⊑[™] x1).
- 2. Remove the motor at [B] ($\hat{\beta}^2 x^2$, Belt x1).



d434r325

Staple Trimmings Hopper Full/Set Sensors

Preparation

- Open the front door
- Pull out the stack/staple unit with handle **Rb12**
- Rear upper cover
- Rear lower panel

Trimmings Hopper Unit



d434r326

1. Remove the staple trimmings hopper.



d434r327

2. Free the harness [A] and disconnect it from the main board [B] (♀ x11, ♥ x1).



d434r328

- 3. Gather the disconnected harness [A].
- 4. Disconnect the trimmings collection unit [B] ($\hat{\not}^3$ x2).



d434r329

5. Disconnect tab [A] (Tab x1, 🛱 x2).

- 6. Release hinge shaft [B] ($\overline{(3)} \times 1$).
- 7. Open the unit.



d434r330

8. Detach:

① Hopper set sensor (Pawls x5)

2 Hopper full sensor

Stapler Movement Sensors

Common procedures

- Corner Stapler HP Sensor
- Corner Stapler Rotation HP Sensor (Rear)
- Corner Stapler Rotation HP Sensor (Front)

Preparation

- Pull out the stack/staple unit with handle **Rb12**.
- Corner stapler



d434r331

- 1. Push the stapler to the rear [A].
- 2. Remove the screw of the stapler guide rail [B] ($\hat{\beta}$ x1).
- 3. Push the guide rail [C] to the rear and remove it.



d434r332

- 4. Remove spring [A].
- 5. Loosen screw [B] (do not remove it).
- 6. Rotate the plate down to relieve tension on the belt.



d434r333

- 7. Disconnect the belt at the front and back.
- 8. Lift the stapler mount [A] off its rails and turn it toward the rear so you can see the back of the mount. The mount is on two steel rollers ① and ② that rest on the bottom rail of the corner stapler unit.



d434r334

9. Remove sensor bracket [A] (\$\$\vec{A}\$ x2).

Three sensors are on this bracket:

- Rotation HP sensor (rear) (⊑[™] x1, Pawls x5)
- ② Rotation HP sensor (front) (⊑^J x1, Pawls x5)
- ③ Stapler HP sensor (⊑[™] x1, Pawls x5)

Re-installation



d434r335

1. When you set the stapler mount on its rails, make sure the belt [A] is not tangled and above the two rollers.

Corner Stapled Stack Feed Out

Stack Transport Unit HP Sensor

Preparation

- Rear upper cover
- 1. Remove the stacker transport motor



d434r336

- 2. Remove sensor bracket and sensor [A] ($\hat{\beta}^2 \times 1$).
- 3. Remove the sensor (⊑ x1, Pawls x5)

Stack Transport Motor

Preparation

- Rear upper cover
- Rear lower cover





d434r355

1. Remove motor [A] (潧 x3, ☞ x1, ⅔ x2)



2. Separate motor [A] from the bracket ($\hat{\mathscr{F}}$ x2).

Stack Feed-Out Belt Motor



d434r337

The stack feed-out belt motor is behind the front plate of the corner stack/staple unit.

Preparation

• Remove the booklet unit (🖝 p.27)



d434r338

- 1. Behind the front plate [A], disconnect the motor (⊑[∭] x1).
- 2. On the face of the front plate [B], remove the screws ($\hat{\not}$ x2)



d434r339

- 3. Remove the motor (Belt x1).
- 4. Separate the bracket and motor [A] ($\hat{\beta}^2 x^2$).

Stack Feed-Out Belt HP Sensor

Preparation

• Remove the booklet unit (🖝 p.27)



d434r288

1. Remove bracket [A] (倉 x1, 屶 x1)





- 2. Disconnect the stack feed-out belt HP sensor ② (⇔ x1, ⊑ x2, Pawls x5).
- The bottom fence HP sensor ① (the photointerrupter without the feeler) is on the same bracket as the stack feed-out belt HP sensor ② (sensor with feeler attached).

Stack Junction Gate Motor



d434r340

The stack junction gate motor is on the back of the finisher.

Preparation

• Rear upper cover



d434r341

1. Remove motor [A] (⊑^{IJ} x1, ∲ x2).



d434r342

2. Separate the bracket and motor [A] ($\hat{\beta}^2 x^2$).

Stack JG HP Sensor

Preparation

• Rear upper cover


d434r343

- 1. If the actuator [A] is in the gap of the sensor, rotate gear and belt [B] until the actuator is out of the gap.
- 2. Remove sensor bracket [C] (🖗 x1).



d434r344

3. Remove sensor [A] (⊑[⊥] x1, Pawls x5).

Corner Stapled Stacks Exit to Shift Tray

Exit Guide Motor



d434r345

The exit guide motor assembly is at the left rear corner of the finisher.

Preparation

• Proof tray



d434r346

1. Disconnect the harnesses (⅔ x2, 🗊 x1).



d434r347

2. Disconnect sensor harness [A] (≌ x3, 🗊 x1)



d434r348

3. Disconnect and remove rocker arm [A] ($\overline{(3)}$ x1).



d434r349

4. Remove the exit guide plate assembly [A] ($\hat{\not}$ x2).



d434r350

- 6. Separate the motor [B] and bracket ($\hat{\beta}$ x2).

Exit Guide HP Sensor

Preparation

- Proof tray
- 1. Remove the exit guide motor assembly (see the previous procedure)



d434r351

- 1. Remove sensor bracket [A] (ℱ x1, ☜ x1)
- 2. Remove sensor [B] (Pawls x5).

Booklet Unit

Booklet Stapler

Preparation

• Remove the booklet unit (🖝 p.27).

Vote

- This procedure describes removal of the booklet stapler after the booklet unit has been removed.
- Actually, the booklet stapler can be easily removed before removing the booklet unit.
- Removing the booklet stapler from the booklet stapler unit is recommended. This makes the booklet unit lighter and easier to handle.



d434r352

- 1. Remove cover [A] (⋛ x2).
- Remove the stapler unit [B] (²/₂ x4, ⊑¹/₂ x1)



d434r353

- 3. Lift the stapler unit [A] out with its handle.
- 4. Four sensors are behind the stapler unit:
 - 1 Rear jogger fence HP sensor
 - ^② Front jogger fence HP sensor
 - 3 Bottom fence HP sensor

4 Folder unit entrance sensor

Booklet Unit Transport, Entrance

Fold Unit Entrance Sensor

Preparation

- Remove the booklet unit (🖝 p.27).
- Booklet stapler



d434r354

- 1. Remove sensor bracket [A] (🖗 x1).
- 2. Remove sensor [B] (🗊 x1, Pawls x5)

Booklet Side-to-Side Jogging

Booklet Stapler Side Fence Motor



The booklet stapler side fence motor is on the back of the booklet unit.

Preparation

• Remove the booklet unit (🖝 p.27).



d434r358

1. Remove motor [A] (x1, ☞ x1, ℱ x2)



d434r359

2. Separate motor [A] from the bracket ($\hat{\beta}$ x2).

Booklet Stapler Side Fence HP Sensor (Front)

Preparation

- Remove the booklet unit (🖝 p.27).
- Booklet stapler



d434r360

- 1. Remove:
 - [A] Sensor bracket (⋛ x1)
 - [B] Sensor (⊑[™] x1, Pawls x5)

Booklet Stapler Jogger HP Sensor (Rear)

Preparation

- Remove the booklet unit (🖝 p.27).
- Booklet stapler



d434r361

- 1. Remove:
 - [A] Sensor bracket (⋛ x1)
 - [B] Sensor (🗊 x1, Pawls x5)

Booklet Bottom/Top Jogging

Booklet Stapler Bottom Fence Motor



The booklet stapler bottom fence motor is on the back of the booklet unit.

Preparation

• Remove the booklet unit (🖝 p.27).



d434r363

1. Remove motor [A] (∲ x2, ⊯ x1).



d434r364

2. Separate the motor [A] from the bracket ($\hat{\beta}^2 x^2$).

Booklet Stapler Bottom Fence HP Sensor

Preparation

- Remove the booklet unit (• p.27).
- Booklet stapler



d434r365

The bottom fence HP sensor is fastened to the right plate of the booklet unit.





- 1. On the right side, remove brace [A] so that you can see the sensor pawls ($\hat{\mathscr{F}}$ x2).
- 2. Release the pawls [B] and push them through the plate (Pawls x5).



d434r367

3. Disconnect the sensor ($1 \le x \ge 1$).

Booklet Stapler Top Fence Motor



d434r368

The top fence motor and sensor are on top of the booklet unit.

Preparation

1

• Remove the booklet unit (🖝 p.27).



d434r369

1. Remove sensor bracket [A] (∦ x1, ⊑ x1)



d434r370

2. Separate motor [A] from the bracket ($\hat{\beta}$ x2)

Booklet Top Fence HP Sensor

Preparation

• Remove the booklet unit (🖝 p.27).



d434r371

- 1. Remove sensor bracket [A] (🖗 x1).
- 2. Remove sensor [B] (☆ x1, ⊄ x1, Pawls x5)

Booklet Press for Stapling



Booklet Stapler Clamp Roller Motor, Booklet Unit Exit Sensor

d434r372

The clamp roller motor ${f 1}$ and exit sensor ${f 2}$ cannot be removed until the motor base has been removed.

Preparation

• Remove the booklet unit (🖝 p.27).

Motor Base Plate



d434r373

1. Remove cover [A] (⋛ x2).



d434r374



d434r375

3. Disconnect motor harness [A] (x6, 🗊 x1).



d434r376

- 4. Pull belt ① until you can see through the hole ② that the edge of the actuator ③ below the hole is aligned as shown.
 - The edge of the actuator and the line on the left side of the hole must be aligned.
 - This releases the clamp roller so that there is no pressure on the base plate.



d434r377

5. Remove:

[A] Rear (⋛ x2) [B] Front (⋛ x3)



d434r378

- 6. Remove base plate [A].
- 7. Remove end-piece [B].

Exit Sensor



d434r379

A guide shaft blocks access to the exit sensor bracket [A].



d434r380

- 1. Remove guide shaft screw [A] (\$ x1).
- 2. Rotate then slide the guide shaft [B] to the rear until you have enough space to remove the bracket screw. (The guide does not need to be removed.)



d434r381

- 3. Use a short screwdriver to remove the exit sensor bracket [A] (\mathscr{F} x1).
- 4. Disconnect the exit sensor [B] (⊑[™] x1, Pawls x5).

Clamp Roller Motor

Preparation

• Motor base plate





1. Lay the motor base plate [A] on a flat surface.



d434r383

2. Turn the base plate over.

3. Remove motor [A] (⋛ x2, Belt x1).

Re-installation



d434r376

• To make sure there is no pressure on the base plate, pull belt ① until you can see through the hole ② that the edge of the actuator ③ below the hole is aligned as shown.



d434r384

• Turn gear [A] so that you can see the cut-out. The post of the linkage must be re-inserted here when the motor base plate is re-installed.



d434r385

• After the motor base plate [A] has been re-installed, the linkage will not be straight. It will slant slightly from rear to front. This is normal.





• Confirm that the ends of the vertical shafts fit correctly through the holes in the motor base plate before you re-attach any screws.



d434r387

• Re-attach end-piece [A] at the front before you re-attach any other screws.

Booklet Stapler Clamp Roller Sensor

Preparation

• Remove the booklet unit (🖝 p.27).



d434r388

1. Remove cover [A] (∲ x2)





d434r389

2. Remove sensor bracket [A] ($\hat{\mathscr{F}}$ x1).



d434r390

3. Remove sensor [A] (℡ x1, Pawls x5).

Booklet Folding

Fold Plate Motor



The fold plate motor is on the back of the booklet unit, below the fold roller motor.

Preparation

• Remove the booklet unit (🖝 p.27).



d434r392

1. Remove motor [A] (🖗 x2, Belt x1)



d434r393

Fold Plate Cam HP Sensor

Preparation

- Remove the booklet unit (🖝 p.27).
- Fold roller motor (described in the previous section)



d434r394

- 1. Remove sensor bracket [A] (⋛ x1, x1, ⊑ x1).
- 2. Sensor (Pawls x5)

Fold Plate HP Sensor

Preparation

• Remove the booklet unit (🖝 p.27).



d434r395

1. Remove:

[A] Rear (⋛ x2) [B] Front (⋛ x2)



d434r396

2. Remove cross-brace [A] (x2, ☞ x1)



d434r397

3. Sensor [A] (Pawls x5)

Booklet Exit, Booklet Tray

Fold Roller Motor



The fold roller motor is on the back of the booklet unit, above the fold plate motor.

Preparation

• Remove the booklet unit (p.147 "Booklet Stapler").



d434r399

1. Remove motor [A] (🖗 x2, Belt x1)



d434r400

Booklet Stapler Exit Sensor

See "Booklet Stapler Clamp Roller Motor, Booklet Unit Exit Sensor" (🖝 p.27).

Booklet Staple Tray Full Sensors (Upper/Lower)

These sensors are on the same bracket.

Preparation

- Open the front door
- Pull out the stack/staple unit with handle **Rb12**.
- Right lower panel
- Rear upper tray



d434r401

- 1. Raise the shift tray if it is down.
- 2. At the top of the left rear corner, pull gear [A] out while supporting the tray [B] with your other hand, then push the tray up.



- 3. Remove the booklet tray [A].
- 4. Remove the left lower cover [B] ($\hat{\not{P}}$ x3).



d434r403

5. Remove the booklet tray actuator arm [A] ($\hat{\beta}$ x2).



d434r404

6. Inside the finisher, open one or two clamps to create some slack in the harness. ($\stackrel{()}{\rightarrowtail}$ x2)



d434r405

- 7. Remove sensor bracket [A] (🖗 x2)
 - ① Upper sensor (양 x2, 티 x1)
 - ② Lower sensor (☆ x1, ⊈ x1)

Boards

Sub Board

The sub board can be removed without removing the main board.

Preparation

• Rear upper cover



d34r406

- 1. Disconnect the harnesses (⊑[™] x10).
- 2. Remove the sub board:
 - Screws ①, ② (斧 x2)
 - Standoffs x3, 3, 4, 5
- 3. Raise the board (6) and disconnect it from the main board below.

Main Board

Preparation

- Rear upper cover
- Rear lower panel
- Sub board





- 1. The sub board 1 and main board 2 are on the back of the finisher.
- 2. Remove the sub board.
- 3. Disconnect the main board harnesses (🗊 x38).



d434r408



d434r409

- 5. Open harness clamps:
 - [A] Top (忌 x3) [B] Bottom (忌 x5)



434r410

6. Remove the board bracket:

[A] Left (͡ x2) [B] Top (͡ x1) [C] Right (͡ x1)



d434r411

7. Separate the board from the bracket ($\hat{\beta} x 8$)

Punch Unit PCB



d434r412

1. Remove the punch unit PCB (⊑[™] x6, Standoffs x4).

Shift Tray Jogger Unit PCB

Preparation

• Shift tray jogger unit



d434r413

- 1. Lay the shift jogger unit [A] on a flat surface.
- 2. Disconnect motor [B]. (⊑^{IJ} x1)



d434r414

3. Remove PCB [A] (≝ x5, ∦ x2).

PSU

Preparation

- Switch the system off.
- Disconnect the finisher from its power source.
- Wait at least 30 minutes for the PSU to cool.
- Right lower panel



d434r415

1. Remove the PSU board (♂ x6, 🗊 x4)
Switches

Front Door Switch

Preparation

- Open the front door
- Upper inner cover



- 1. Locate the door switch [A] on the front.
- 2. Inside the finisher, disconnect switch [B] (\mathbf{E} x4).



d434r417

3. Pinch both sides of the switch and push it out.

Breaker Switch

Preparation

- Switch the system off.
- Disconnect the finisher from its power source.
- Rear upper cover
- Rear lower cover



d434r418

- 1. Remove mounting bracket [A] ($\hat{\mathscr{F}}^{i} x3$).
- 2. Disconnect breaker switch [B] (⊑[™] x4)



d434r419

3. Remove breaker switch [A] ($\hat{\beta}^2 x^2$)

Emergency Shift Tray Stop Switch

Preparation

- Shift tray jogger unit cover
- Shift tray jogger unit
- Left upper cover



d434r420

The switch [A] is on the front end of the left upper cover.



d434r421

- 1. Turn the cover over.
- 2. Remove the switch [A] ($\mathscr{F} x2$, $\mathfrak{W} x1$).

Rollers and Brushes

Rollers

Drag Roller



d434r422

1. Replace:

[A] Rear (⑦ x1, Belt x1) [B] Front (⑦ x1, Belt x1)

Positioning Roller

Preparation

- Open the front door
- Pull out the stack/staple unit with handle **Rb12**



d434r423

1. Remove motor cover [A] ($\hat{\not}^2 x2$).



d434r424

Alignment Brush Roller

Preparation

- Open the front door
- Lower inner cover Rb10, Rb11
- Center inner cover Rb14, Rb 16
- Right lower panel

Rear



d434r425

- 1. Remove gear [A].
- 2. Remove gear and bushing (Gear x1, Belt x1, Bushing x1)

Front



d434r426

- 1. Remove the bushing [A] (C x1).
- 2. Remove the alignment brush roller.



d434r427

Re-installation



d434r428

1. The end of the shaft with the flat bevel is the rear end of the shaft where the gear and belt must be reattached.

Discharge Brushes

Shift Tray Exit



d434r429

Remove discharge brush [A] (𝔅 x2).

Corner Stapler Entrance

Preparation

- Open the front door
- Pull out the stack/staple unit with handle **Rb12**



d434r423



d434r430

- 2. Raise **Rb13** [A].
- 3. Remove discharge brush [B] (🌮 x2)

Booklet Unit Exit

Preparation

• Remove booklet unit (🖝 p.27).



d434r431

The discharge brush [A] is on the left side of the booklet unit.



d434r432

1. Remove:

[A] Rear (⋛ x2) [B] Front (⋛ x2)



d434r433

Special Adjustments

Horizontal Skew

The booklet unit is adjusted for optimum performance before the finisher is shipped from the factory. Do this adjustment only if the edges of folded booklets are not even.

- 1. Run a fold/staple job through the booklet unit with A3 (or DLT) paper.
- 2. Hold the folded sheet with the creased side pointing down and face-up (the same way that it came out of the finisher).



Front Fence Low

d434r434

- 3. Referring to the diagram above, determine if the skew is [A] or [B].
 - [A] indicates that the rear fence is low and must be raised.
 - [B] indicates that the front fence is low and must be raised.

Preparation

- Pull the stack/staple unit out with handle Rb12
- Remove the lower inner cover **Rb10**, **Rb11**



d434r434a

- 1. Before doing any adjustment:
 - Rotate the knob counter-clockwise ① so that it is loose.
 - Rotate the knob clockwise ② until you feel some resistance, then stop.



d434r435

2. Remove the screw.

Comportant)

- There is only one screw to remove. Check both holes.
- The screw may be at the front or at the rear, depending on where it was attached before shipping from the factory.

[A] Adjustment: Rear Fence Low



d434r436

1. For **[A] type skew**, turn the adjustment screw on the front of the booklet unit to the **left** (**clockwise**) to raise the rear fence.

C Important

• Every notch adjusts the height 0.1 mm.



d434r437

Turning the adjustment screw to the right may the rear fence so the holes at the rear will no longer be aligned.

2. Re-attach the screw in the front hole where the holes are aligned.

[B] Adjustment: Front Fence Low



d434r438

1. For **[B] type skew**, turn the adjustment screw on the front of the booklet unit to the **right** (**clockwise**) to raise the front fence.



d434r439

2. Re-attach the screw at the front hole.

Vertical Skew

The booklet unit is adjusted for optimum performance before the finisher is shipped from the factory. Do this adjustment only if the edges of folded booklets are not even.

1. Switch the main machine and do a test run for booklet folding with either A3 or DLT paper

Comportant)

• This procedure shows you how to test and adjust vertical skew for A3/DLT paper.

• This same adjustment can be done for other paper sizes as well with SP6201.

2. Look at the paper and determine what kind of skew (if any is present).





- 3. Referring to the diagram, determine if the skew is positive or negative.
- 4. Measure the amount of skew.
- 5. Enter the SP mode
 - Europe, Asia: Use SP6201-1 (this is for A3 paper).
 - North America: Use SP 6201-7 (this is for DLT paper).

Comportant 🗋

- The illustration above shows the effects of +/- adjustment with SP6201.
- The vertical arrows show the direction of paper feed.
- 6. Enter one-half the measured amount of skew.
 - Example: If the measure amount of skew is -1.2 mm, enter -0.6 mm
 - The range for measurement is -2.0 mm to +2.0 mm in 0.2 mm steps for every notch adjustment.
- 7. Exit the SP mode, do another test print and repeat the adjustment procedure if necessary.

Bottom Fence Replacement

Before You Begin

- The bottom fences can be replaced together or together.
- Only replacement of the front fence is described here. The replacement procedure for the rear bottom fence is the same.

Preparation

- Pull out the stack/staple unit with handle Rb12
- Remove the booklet unit (p.147 "Booklet Stapler")



d434r441

- 1. Look at the corner staple unit from the left side:
 - [A] Rear bottom fence
 - [B] Front bottom fence



d434r442

1

2. Use a socket wrench or socket driver to remove the bottom fence [A] ($\hat{\mathscr{F}} \times 1$).

• Note

• These screws are very tight, so we recommend use of a socket wrench or socket driver to avoid damaging the screw heads.



d434r443

This shows the front bottom fence removed.



d434r444

The mount where the new bottom fence will be attached has a scale on each side ① and ②.

- 1. Attach both the rear and front screws.
 - Do not tighten the front screw.
 - Align the rear screw with the center line of the rear scale ${f I}$ and tighten it slightly.
 - Leave the front screw loose.



d434r445

2. On the right side, set a sheet of A3 (or DLT) paper in the tray.



3. Look under the unit to confirm that the edge of the paper is flat and level on the side fence.



d434r447

- 4. Align the front end of the fence at @ with the center line of its scale and tighten the front screw.
- 5. Check the alignment of the paper again.
- 6. If the paper is slightly out of alignment, adjust the front of the bottom fence to the paper and tighten the front screw.

Paper Path



Straight-Through

Paper enters the finisher at ①, continues past both closed junction gates, and exits the finisher onto the shift tray ②.

Proof Tray

Paper enters the finisher at ①. The staple tray junction gate remains closed, the proof tray junction gate opens and guides the paper into the vertical paper path. The paper exits the finisher onto the proof tray ③.

Corner Stapling

Paper enters the finisher at ①. The staple tray junction gate opens and guides the paper down to the prestacker ④. Paper (up to 5 sheets) is held in the pre-stacker long enough for the downstream stack to be stapled. The paper enters the corner stapling unit ⑤ where it is aligned (by the top fence, bottom fence, and side fences) and then stapled. The feed-out belt raises the stack. The exit rollers feed the stack onto the shift tray ⁽²⁾.

Booklet Folding, Stapling

Paper enters the finisher at ①. The staple tray junction gate opens and guides the paper down to the prestacker ④. Paper (up to 5 sheets) is held in the pre-stacker long enough for the downstream stack to be jogged and stapled. The paper enters the corner stapling unit ⑤ where it is aligned by the top fence, bottom fence, and side fences. The feed-out belt raises the stack. The stack junction gate opens and guides to the stack to the booklet unit ⑥. The booklet unit staples and folds the paper in the center. The booklet unit exit rollers feed the paper onto the booklet tray ⑦.



Proof Tray, Stapler Junction Gates

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

Motor/Gate		Selected Operation Mode		
		Proof tray	Shift	Staple
[A]	Proof tray JG motor	ON	Off	Off
[B]	Proof tray junction gate	OPEN	Closed	Closed
[C]	Stapler junction gate	Closed	Closed	OPEN
[D]	Stapler JG motor	Off	Off	ON

Punch Unit

Punch Unit Drive



The punch unit movement motor moves the punch unit above the paper (centered in the paper path) to the correct punch position.

The optimum position is determined by input from the side-to-side registration sensor mounted above the paper path. This sensor unit is equipped with a CIS (Contact Image Sensor) mechanism.

While it is not in use the punch unit resides 7.5 mm to the front of center. This is the standy position (home position) of the punch unit. When the CIS unit detects a sheet of paper in the paper path below, it signals the punch unit PCB which switches on the punch movement motor and moves the punch unit far enough to

compensate for any diffence between the present position of the paper and the correct position for punching.

Next, the punch unit, a straight punch (not a rotator punch) punches the paper. The punch hammers are driven by the punch drive motor.

After it punches the paper the punch movement motor returns the punch unit to its home position. The punch unit HP sensor detects the actuator on the side of the punch unit and switches off the punch movement motor when the unit reaches its home position. The punch unit waits here for the next sheet.

The following diagram summarizes operation of the punch unit above the paper path.



d434d905

Punch-out Collection



Punch-outs are collected in the punch-out hopper [A] positioned under the punch unit.

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

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

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

Pre-Stacking

In the staple mode paper is guided from the horizontal feed path to the corner staple unit below by the the stapler junction gate. But before the first sheets of paper reach the stapling tray, they are stopped and shunted into the pre-stacker where they are held long enough for the stack ahead to be aligned and stapled.





The first sheet (red line in the drawing above) is directed in the pre-stack paper path by the staple junction gate. The sheet brushes past the spring loaded pre-stack junction gate. The weight of the paper allows it to push past the junction gate and then the spring attached to the gate pulls it closed.

The pre-stack paper sensor detects each sheet of paper that enters the pre-stack paper path. The sensor switches on the pre-stack motor that rotates the 1st and 2nd pre-stack rollers to feed the leading edge of the paper the prescribed distance (a).

The motor stops, reverseses, and the rollers feed the paper under the pre-stacker junction gate and into the shunt of the pre-stacker unit where the leading edge of the paper stops at the nip of the 1st pre-stack rollers (b).

Next, the 2nd sheet (blue line in the drawing above) feeds (c). When it reaches the 1st pre-stack rollers, the pre-stack roller motor switches on and the 1st and 2nd sheets feed together (d). The pre-stack motor reverses again and both sheets are fed up into the shunt. This cycle can repeat up to 5 times until finally, after one additional sheet feeds, all 6 of the sheets are fed together to the corner stapling tray.

- Up to 4 sheets are held in the pre-stack unit for stapling at one corner.
- Up to 5 sheets are held in the pre-stack unit for stapling at two places on the edge of the stack.

Paper Sizes B4 and Larger

The sequence of events in the pre-stacker unit for large paper sizes is the same as that for A4 and smaller sizes with one important exception.



Before large paper sizes are fed in staple mode, the pre-stack release motor switches on and pulls the drive roller of the 1st pre-stack roller pair away from its idle roller (a). The forward and reverse feeding is performed by the pre-stack motor driving the 2nd pre-stack rollers and feeding the paper only as far as the nip of the 2nd pre-stack rollers. The nip of the 1st pre-stack rollers remains open.

Reverse feeding the leading edges as far as the 2nd pre-stack rollers saves time. (Reverse and forward feeding the leading edges as far as the 1st pre-stack rollers would require more time.)

Jogger Unit Paper Positioning



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

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

Horizontal Paper Alignment: When the jog starts the jogger motor [F] turns on and the jogger fences [G] move to the wait position slightly wider than the selected paper size on both sides. When the trailing edge of the paper passes the staple tray entrance sensor, the jogger motor moves the jogger fences closer to the paper. Next, the jogger motor turns on, both jogger fences move against the sides of thestack to align it, then side fences return to the wait position.

Paper Stack Correction: After the paper is aligned in the stapler tray, the left [H], center [I], and right [J] stack plate motors switch on briefly and drive the front stack, center stack, and rear stack plates against the edge of the stack to flatten the edge completely against the staple tray for stapling. When the next copy

paper turns on the stapler entrance sensor, the stack plate motors turn on and return to their home positions. The home positions are detected by stack plate HP sensors **1**, **2**, **3**.



Here is the operation sequence for jogging and stapling:

1	Paper enters the tray from the pre-stacker.	
2	Bottom fence rises to catch the paper.	
3	Top fence descends as far as the edge of the paper.	
4	Positioning roller starts rotating and descends, feeding each sheet down.	
5	Alignment roller (a brush roller) also feeds the paper toward the bottom fence to align the edge.	
6	The bottom fence motor lowers the aligned stack to the stapling position.	
7	The corner stapler staples the stack.	

Stapler Unit Movement



Side-to-Side

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

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

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

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



Rotation (1)

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

Rotation (2)

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

Once the staples have been installed, and the front door closed, the stapler unit returns to its home position.

Sensors

Two sensors [D] and [E] detect the angle of the stapler. There are three positions: horizontal, 45 degrees, 75 degrees.

Stapler



When the staple cartridge is locked and in position, actuator [A] deactivates the cartridge set sensor [B] and the stapler is ready for operation.

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

During stapling, the stapler trims off the excess length of the staples. This length of the trimmings depends on the number of copies in the set. They will be very small for a stack containing 100 sheets.

The staple trimmings drop into the trap door [D] inside the stapler. When the stapler unit returns to its home position, solenoid [E] energizes opens the trap door.

The staple trimmings drop into the staple trimmings hopper [F].

The staple trimmings hopper descends as it fills, until actuator [G] activates the staple trimmings hopper full sensor [H]. A message asks the user to empty the staple trimmings.

2



The stapler has a staple end sensor [A] and cartridge set sensor [B]. When the staple cartridge is inserted, it pushes the actuator [C] into the gap of the cartridge set sensor. This tells the machine the stapler is ready for operation.

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

The staple cartridge has a clinch area [D] where jammed staples collect. The operator can remove the jammed staples from the clinch area by raising and lowering bracket lever [E].

Feed-Out



After the copies have been stapled, the stack feed-out motor [A] starts.

The pawl [B] on the stack feed-out belt [C] transports the set of stapled copies up and feeds it to the shift tray exit roller [D].

When stapling starts, the exit guide motor [E] opens the upper exit guide [F], which includes the upper shift tray exit roller [G], in order to feed out the leading edge of the copy set smoothly.

The exit guide motor turns on again at the prescribed time after stapling finishes, and the upper exit guide plate is lowered. Then the shift tray exit roller takes over the stack feed-out.

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

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

Paper Exit



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

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

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

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

Overview



The movement of the shift tray is controlled by four sensors **0**, **2**, **3**, and **3** and a feeler [A] with two actuators [B] and [C].

- The notched actuator [B] is used with sensors ① and ②.
- The flat actuator [C] is used with sensor **③**.
- Sensor ④ is provided with its own actuator [D].

The operation mode determines which sensor is used to control the movement of the shift tray.

Sensor Names

No.	Name
0	Paper Height Sensor – Staple Mode
0	Paper Height Sensor – Standby Mode
6	Paper Height Sensor – Z-Fold Full

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Sensors and Operation Modes

Mode	Function	
Shift	Sensor I detects the amount of paper on the shift tray in shift mode to control operation of the tray lift motor. Sensor I detects the amount of paper on the shift tray in staple mode to control the tray lift motor.	
Staple		
	When the machine is turned on, Sensor 2 is used to position the tray at the standby position and keep it there when the shift is not in use or when the proof tray (proof tray) is used.	
Standby	If the shift tray is not attached to the machine (if it has been removed for servicing, for example), if the machine is switched on the tray mount will push up the feeler and switch off Sensor @ to switch off the tray lift motor. (Sensor @ cannot operate if the tray has been removed.)	

Z-Fold, Z-Fold	Sensor G detects the height of the tray when the output includes Z-folded sheets with and without stapling.
Staple	Sensor ③ detects when the tray is full when the output includes Z-folded sheets with and without stapling.

Shift Tray Operation: Stand-by Mode



Standby Mode

When the machine is switched on:

- 1. The shift tray lift motor switches on and lowers the tray.
- 2. The feeler [A] descends and raises the hooked actuator [B] out of the gap of Sensor @.
- 3. When Sensor **2** cannot detect the actuator this reverses the shift tray motor.
- The shift tray lift motor raises the shift tray and pushes up the feeler, the actuator descends into the gap of Sensor ❷.
- 5. When Sensor @ detects the actuator this stops the shift tray lift motor with the shift tray at the standby position.

This sequence repeats every time the machine is powered on.

Sensor **2** also switches off the shift tray lift motor:

- When the machine is switched on with the shift tray removed for servicing.
- When the machine is switched on without the shift tray attached to the side of the finisher:
- 1. The shift tray mount will push the feeler [A] up until the actuator [B] enters the gap of Sensor @.
- 2. When Sensor @ detects the actuator this switches the shift tray motor OFF and stops the tray.
- Note
 - Sensor **3** cannot operate with the shift tray removed so Sensor **2** is used to switch off the shift tray motor and stop the shift tray mount.

Shift Tray Operation: Shift Mode



Sensor ④ and its feeler [A] and actuator [B] control the movement of the shift tray when paper is output in the shift mode:

- 1. Paper is output to the tray.
- 2. As the height of the stack increases, this pushes up the feeler [A].
- 3. When Sensor **O** detects the actuator [B] of the ascending feeler, this switches the tray lift motor ON.
- 4. The tray lift motor lowers the tray until the feeler descends far enough to raise the actuator out of the gap of Sensor ④.
- 5. When Sensor @ can no longer detect the actuator, this switches the motor OFF, and stops the tray.

The sequence repeats until the end of the job or until the tray becomes full.

Shift Tray Operation: Staple Mode



Sensor $\mathbf{0}$, feeler [A] and its notched actuator [B] control the movement of the shift tray when paper is output to the shift tray in the staple mode:

- 1. A stapled stack is output to the tray.
- 2. The tray lift motor switches ON and lowers the tray the prescribed distance.
- 3. Next, the tray lift motor raises the tray and feeler [A] until actuator [B] leaves the gap of Sensor **1**.
- 4. When the actuator [b] leaves the gap of sensor **0**, and the sensor can no longer detect the actuator this switches the tray lift motor OFF and stops the tray.

This sequence repeats every time a stack is output to the tray until the end of the job or until the tray becomes full.

Shift Tray Operation: Z-Folded Paper



Sensor ④ and its feeler [A] and actuator [B], and Sensor ④ with its feeler [C] and flat actuator [D] control the movement of the shift tray when Z-folded paper is output to the shift tray.

- 1. Z-folded paper is output to the tray.
- 2. As the height of the stack increases, this pushes up feeler [A] of Sensor ④.
- 3. When the actuator [B] of the ascending feeler enters the gap of Sensor **4**, this switches the tray lift motor ON.
- The tray lift motor lowers the tray until the feeler descends far enough to raise the actuator out of the gap of Sensor .
- 5. When the actuator leaves the gap of Sensor **4**, this switches the motor OFF, and stops the tray.
- 6. Steps 1 to 5 repeat until the top of the paper stack pushes feeler [C] up and actuator [C] into the gap of Sensor **3**.
- 7. When the actuator enters the gap of Sensor ③, this signals that the tray is full and stops the job.

Shift Tray Paper Height Sensors



This machine has four shift tray full sensors mounted near the left rear rail of the shift tray. When the actuator enters the gap of the sensor assigned to the paper size in use, this signals approximately how much paper is on the tray.

Shift Tray Full Sensor	Detects Tray Full For:
1 500	A5, HLT paper (500 sheets).
© 1000	SR_A3 (320 x 450 mm) paper (1000 sheets).
3 1500	A3, DLT paper (1500 sheets).
④ 2500	A4, LT paper (2500 sheets).

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Shift Tray Side-To-Side Movement

In shift mode, the shift tray [A] moves from side to side between sets to stagger the sets to make them easier to separate.

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.

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.

The disk is rotated alternately clockwise and counter-clockwise through an arc of 180 degrees.

The notches cut into the shift gear disk control the operation of the shift motor, using shift tray half-turn sensors [F] and [G].

If the job ends with the disk at **0** with only one sensor deactivated, the motor rotates the disk to the **2** position where both sensors are deactivated. This is the home position.

Shift Tray Jogger Unit

Jogger Unit Mechanical Layout



- 1. Shift Tray Jogger Retraction Motor
- 2. Shift Tray Jogger Motor Timing Belt
- 3. Shift Tray Jogger Motor
- 4. Shift Tray Jogger Fence Timing Belt
- 5. Shift Tray Jogger Fences
- 6. Shift Tray Jogger HP Sensor
- 7. Shift Tray Jogger Retract HP Sensor

Jogger Unit Drive



After the first sheet exits, the shift tray jogger motor [A] switches on and rotates the jogger timing belt [B], gear [C] and jogger fence timing belt [D]. This closes the jogger fences [E] against the sides of the first sheet to align it and stops. Next, the motor reverses to open the fences for the next sheet. The jogger motor alternates its direction of rotation to open and close the jogger fences. The timing is prescribed by the width of the paper selected for the job.

At the end of the job, the actuator [F] activates the shift tray jogger HP sensor [G] which shuts off the jogger motor and starts the jogger fence retraction motor [H].

The jogger fence retraction motor rotates the shaft which raises the jogger fences and lowers the actuator [1] into the slot of the jogger fence retraction HP sensor [J]. The activated sensor turns off the jogger fence retraction motor and the jogger fences remain at the raised position.

Booklet Unit

Overview



Booklet top fence	Rotates up, descends and tamps the top of the stack to align the stack vertically against the bottom fence.
Booklet side fences	(Not shown) Align the sides of the stack (front-to-rear).
Booklet bottom fence	Bottom fence catches the stack. Aligns the stack vertically with the top fence. Also lowers and raises the stack to the stapling position and folding postion after stapling.
Clamp roller pair	Feed the stack into the booklet unit. After the stack is in the booklet unit the clamp roller releases the booklet so it can be positioned for stapling and folding.

Booklet stapler unit	Staples the booklet with two staples at the center fold.
Fold plate	Pushes the fold plate into the center of the stack toward the nip of the fold rollers.
Fold rollers	Fold the stack along its spine after stapling.
Crease roller	The crease roller runs rear to front, then front to rear to sharpen the crease in the fold created by the fold plate and fold rollers.
Exit rollers	Feed the booklet out of the booklet unit onto the booklet tray.

Sensors

0	Corner stapler entrance sensor
	Detects the stack when it enters the corner stapling tray. This triggers positioning and top/bottom jogging on the corner stapling tray before the stack is sent to the booklet unit.
0	Stack feed-out belt HP sensor
	Detects the home position of the stack feed-out belt that feeds the stack from the corner stapling tray into the booklet unit.
0	Booklet top fence sensor
	Detects the home position of the booklet top fence.
4	Fold unit entrance sensor
	Detects each stack as it enters the booklet unit.
6	Fold plate HP sensor
	Detects when the fold plate is in and out of its home position.
6	Booklet bottom fence HP sensor
	Detects when the bottom fence is in and out of its home position.
Ø	Exit sensor
	Detects each folding and stapled booklet as it leaves the booklet unit.

Folding, Stapling Operation



The stack is fed onto the stapling tray of the corner stapler unit where the sides of the stack are aligned by the side fences and the top and bottom aligned by the top and bottom fences [A]. The stack feed-out belt motor turns on and swings the stack feed-out belt pawl [B] up between the bottom fences and catches the edge of the stack and raises it upward.

The stack JG motor switches on and closes the stack junction gate just before the top of the stack reaches the top of the stapling tray. This guides the stack into the vertical path of the booklet unit.



The booklet unit entrance sensor detects the stack in the booklet unit and triggers the following sequence.

- After the stack enters the booklet unit the stack JG motor reverses and opens the stack junction gate.
- The bottom fence motor switches on and lowers the bottom fence to the stapling position. The stapling position is prescribed by the size of the paper.
- The clamp rollers feed the booklet down to the bottom fence. The stack transport motor stops and the clamp rollers stop.

The booklet unit bottom fence [A] stops stack here for stapling.



- The clamp roller motor switches on and retracts the clamp roller [A] to open the nip of the clamp rollers.
- The booklet stapler side fence motor switches on and aligns the sides of the stack (not shown above).
- The top fence motor switches on and the top fence [B] rotates up, swings down, and tamps the top of the stack to align the top and bottom edge.
- The booklet stapler staples the stack in the center [C] at two locations.



- The top fence motor reverses and returns the top fence to its home position [A]. The top fence HP sensor detects the top fence and switches off the top fence motor.
- The bottom fence motor switches on and raises the stapled stack to the folding position, centering the stack on the edge of the fold plate. Once again, this position is prescribed by the size of the paper.



- The fold plate motor and fold roller motors switch on.
- The fold plate motor pushes the center [A] of the stack into the nip of the rotating folder rollers [B].



- The fold roller motor and fold rollers [A] (controlled by a cam) rotate long enough to feed the folded edge as far as the crease roller.
- The fold rollers retract, the fold plate returns to its home position, and the bottom plate returns to its home position.
- The crease roller motor switches on and drives the crease roller [B] along the length of the fold from rear to front, reverses, and drives the roller front to rear. The motor switches off after the crease roller returns to its home position at the rear.



Here is a side view of the crease roller mechanism.

The spring loaded crease roller mounted on a steel guide shaft applies pressure to the stapled and folded edge as it is driven rear to front and the front to rear.



Finally, the fold rollers [A] once again clamp the booklet and together with the exit rollers [B] feed the booklet out of the booklet unit onto the booklet tray.

Electrical Components

General Layout



1.	Proof Tray	11.	Feed-Out Belt
2.	Vertical Paper Path	12.	Corner Stapler
3.	Proof Tray Junction Gate	13.	Trimmings Hopper Unit
4.	Staple Tray Junction Gate	14.	Booklet Unit
5.	Finisher Entrance	15.	Booklet Bottom Fence
6.	Pre-Stack Tray	16.	Booklet Tray
7.	Corner Stapler Unit	17.	Fold Rollers
8.	Corner Staple Tray	18.	Booklet Top Fence
9.	Positioning Roller	19.	Shift Tray

Motors

Main Motors

These are the main motors, viewed from the rear with the rear covers removed.



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1.	Registration Motor	5.	Horizontal Transport Motor
2.	Proof Tray Vertical Transport Motor	6.	Pre-Stack Motor
3.	Proof Tray Exit Motor	7.	Entrance Roller Motor
4.	Shift Tray Exit Motor		

Paper Transport Motors



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1.	Entrance Roller Motor	10.	Booklet Stapler Clamp Roller Motor
2.	Registration Motor	11.	Fold Roller Motor
3.	Horizontal Transport Motor	12.	Fold Plate Motor
4.	Proof Tray Vertical Transport Motor	13.	Booklet Side Fence Motors (x2)
5.	Proof Tray Exit Motor	14.	Booklet Bottom Fence Motor
6.	Shift Tray Exit Motor	15.	Stack Feed-Out Belt Motor
7.	Stack Transport Motor	16.	Stapling Tray Entrance Motor
8.	Stack JG Motor	17.	Pre-Stack Motor
9.	Booklet Stapler Top Fence Motor	18.	Positioning Roller Rotation Motor

Operation Motors



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1.	Stapler JG Motor	9.	Stack Transport Motor
2.	Proof Tray JG Motor	10.	Shift Motor
3.	Stack JG Motor	11.	Stapler Movement Motor
4.	Tray Lift Motor	12.	Stapler Rotation Motor
5.	Shift Jogger Motor	13.	Edge Press Motors (x3)
6.	Shift Jogger Retraction Motor	14.	Positioning Roller Motor
7.	Drag Roller Drive Motor	15.	Pre-Stack Release Motor
8.	Drag Roller Motor		

Sensors

Paper Path Sensors





1.	Entrance Sensor	5.	Proof Tray Exit Sensor
2.	Pre-Stack Paper Sensor	6.	Proof Tray Full Sensor
3.	Stapler JG HP Sensor	7.	Shift Tray Exit Sensor: Short
4.	Proof Tray HP JG Sensor	8.	Shift Tray Exit Sensor: Long



Sensors around the Shift Tray, Trimmings Hopper

1.	Tray Lift Motor	9.	Shift Motor
2.	Drag Drive Motor	10.	Shift Tray Full Sensor (500)
3.	Drag Roller Motor	11.	Shift Tray Full Sensor (1000)
4.	Drag Roller HP Sensor	12.	Shift Tray Full Sensor (1500)
5.	Shift Tray Upper Limit Switch	13.	Shift Tray Full Sensor (2500)
6.	Paper Height Sensor (TE)	14.	Trimmings Hopper Set Sensor
7.	Shift Tray HP Sensor: Front	15.	Trimmings Hopper Full Sensor
8.	Shift Tray HP Sensor: Rear		

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Shift Tray Jogger Unit





1.	Shift Tray Jogger Retraction Motor	
2.	Shift Tray Jogger HP Sensor	
3.	Shift Tray Jogger Retract HP Sensor	
4.	Shift Tray Jogger Unit PCB	
5.	Shift Tray Jogger Motor	

Corner Stapler



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1.	Stack JG HP Sensor	6.	Top Fence HP Sensor
2.	Stack JG Motor	7.	Corner Stapler Top Fence Motor
3.	Stack Transport Motor	8.	Stapling Tray Paper Sensor
4.	Stack Transport Unit HP Sensor	9.	Feed-Out Belt HP Sensor
5.	Stack Transport Motor	10.	Stack Feed-Out Belt Motor

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1.	Positioning Roller Rotation Motor	7.	Stack Plate Motor: Rear
2.	Positioning Roller Motor	8.	Stack Plate HP Sensor: Center
3.	Positioning Roller HP Sensor	9.	Stack Plate Motor: Rear
4.	Stapling Tray Entrance Motor	10.	Stack Plate Motor HP Sensor: Front
5.	Stapling Tray Entrance Sensor	11.	Stack Plate Motor: Front
6.	Stack Plate HP Sensor: Rear		



1.	Bottom Fence Motor	7.	Stapler Rotation Motor
2.	Rear Jogger Fence HP Sensor	8.	Stapler HP Sensor
3.	Rear Jogger Fence Motor	9.	Rotation HP Sensor: Front
4.	Bottom Fence HP Sensor	10.	Rotation HP Sensor: Rear
5.	Corner Stapler Movement Motor	11.	Front Fence Jogger Motor
6.	Trimmings Trap Door Solenoid	12.	Front Fence HP Sensor

Booklet Stapler



1.	Bottom Fence Motor	9.	Clamp Roller Motor
2.	Booklet Stapler Side Fence Motor	10.	Side Fence HP Sensor: Rear
3.	Fold Plate Motor	11.	Booklet Stapler (S2)
4.	Fold Roller Motor	12.	Booklet Unit Entrance Sensor
5.	Side Fence HP Sensor: Rear	13.	Booklet Stapler (S2)
6.	Top Fence Sensor	14.	Booklet Stapler Tray Full Sensor: Upper
7.	Bottom Fence HP Sensor	15.	Booklet Stapler Tray Full Sensor: Lower
8.	Top Fence Motor	16.	Booklet Unit Exit Sensor

Punch Unit



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1.	Punch Unit PCB	6.	Punch Blade HP Sensor
2.	Punch RPS Sensor	7.	Punch Registration Sensor
3.	Punch Drive Motor	8.	Punch-out Hopper Full Sensor
4.	Punch Unit HP Sensor	9.	CIS
5.	Punch Movement Motor		

Boards, Switches



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1.	Main Board
2.	Sub Board
3.	Front Door Switch
4.	Emergency Shift Tray Stop Switch
5.	PSU
6.	Breaker Switch

Electrical Component Summary

Motors					
M36	Proof Tray Vertical Transport Motor	Drives the transport rollers in the vertical paper path from the proof tray junction gate to the proof tray exit.			

M43 Punch Switch Motor Switches the pu punching. (EU		Switches the punch mechanism for number of holes selected for punching. (EU punch unit only.)
M11	Shift Motor	Drives the crank mechanism that moves the shift tray to the rear and front.
M6	Shift Tray Exit Motor	Drives the shift tray exit rollers.
M7	Shift Jogger Motor	Moves the shift jogger fences forward and back during alignment of the front and back edges of the stack on the shift tray.
M8	Shift Jogger Retraction Motor	Rotates the shift jogger fences up during alignment of the front and back edges of the stack on the shift tray.
M10	Drag Roller Motor	Rotates the drag roller.
M9	Drag Drive Motor	Moves the drag roller left and right.
M1	Shift Tray Lift Motor	Raises and lowers the shift tray.
М3	Stapler JG Motor	Operates the junction gate that guides paper to the shift tray or to the stapler unit.
M23	Stapling Tray Entrance Motor	Drives the rollers that feed paper into the stapling tray.
M17	Front Jogger Fence Motor	Operates the front jogger fence when the paper stack is aligned (front/back) on the stapling tray.
M16	Rear Jogger Fence Motor	Operates the rear jogger fence when the paper stack is aligned (front/back) on the stapling tray.
M21	Positioning Roller Rotation Motor	Drives the rotation of the positioning roller above the stapling tray.
M22	Positioning Roller Motor	Operates the position roller above the stapling tray.
M30	Booklet Stapler Bottom Fence Motor	Operates the jogger fence at the leading edge to align the leading edge of the stack in the direction of paper feed for stapling in the booklet stapler unit.
M12	Bottom Fence Lift Motor	Operates the bottom fence that lifts the stack on the stapling tray.
M18	Stack Plate Motor (Rear)	Operates the pressure plate that presses against trailing edge of the stack on the stapling tray just before the stack is stapled.
M20	Stack Plate Motor (Center)	Operates the pressure plate that presses against trailing edge of the stack on the stapling tray just before the stack is stapled.

2. Details	

M19	Stack Plate Motor (Front)	Operates the pressure plate that presses against trailing edge of the stack on the stapling tray just before the stack is stapled.
M27	Corner Stapler Movement Motor	Moves the corner stapler toward the rear (and to the front?).
M26	Stapler Rotation Motor	Rotates the corner stapling for diagonal stapling.
M14	Stack Feed-Out Belt Motor	Drives the feed-out belt that feeds corner stapled paper to the shift tray.
M4	Exit Guide Motor	Opens and closes the exit guide.
M24	Stack JG Motor	Operates the junction gate that guides paper into the booklet stapler.
M25	Stack Transport Motor	Drives the transport rollers that feed stacks into the booklet stapler feed path.
M13	Stack Transport Unit Motor	Lifts and releases rollers that feed the stack to the booklet stapler.
M31	Booklet Stapler Side Fence Motor	Operates the jogger fences that align the front and back edges of the stack for stapling in the booklet stapler unit.
M32	Booklet Stapler Bottom Fence Motor	Operates the jogger fence that aligns the trailing edge of the stack for stapling in the booklet stapler unit.
M15	Booklet Stapler Top Fence Motor	Operates the top fence that aligns the leading edge of the paper stack on the stapling tray.
M33	Fold Plate Motor	Operates the fold plate pushed into the center of the stack to start center folding.
M34	Fold Roller Motor	Operates the roller that folds the stack into halves during center folding in the folder unit.
M38	Entrance Roller Motor	Drives the entrance roller.
M37	Registration Motor	Drives the registration roller.
M5	Horizontal Transport Motor	Drives the transport roller on the downstream side of the punch unit.
M41	Punch Movement Motor	Operates the left/right and front/back movement of the punch unit.
M42	Punch Drive Motor	Drives the paper punch mechanism inside the punch unit.

M2	Proof Tray JG Motor	Operates the junction gate that guides paper to the shift tray or to the upper tray.
M35	Proof Tray Exit Motor	Operates the rollers that feed paper to the proof tray.
M40	Pre-Stack Motor	Drives the pre-stack roller.
M39	Pre-Stack Release Motor	Moves the pre-stack roller to relieve feed (transport) pressure on the stack.
м	Corner Stapler Motor: CN411	This is the relay connector to the harness of the stapling mechanism of the corner stapler.
м	Corner Stapler Motor: CN413	This is the relay connector to the signal harness of the corner stapler.
M29	Booklet Stapler Clamp Roller Motor	Moves the booklet stapler transport roller to release pressure on the stack. Also drives the horizontal fold roller.

Boards		
PCB1	Main Board	Performs overall control of the finisher.
PCB4	Sub Board	Controls paper feed system motors and booklet stapling motors.
PCB5	Punch Control Board	The board that contains the drive circuitry to control the punch unit.
PCB2	PSU	Steps down power source voltage to 24V power supply.
PCB3	Shift Tray Jogger Unit PCB	Controls the shift jogger fence motors.
PCB6	CRB	This is the relay board between CIS and punch control board.

Sensors		
S58	Punch RPS Sensor	The encoder that detects the number of rotations of the punch drive motor.
S30	Shift Tray HP Sensor (Front)	The HP sensor that detects the tray at its front HP position.
\$31	Shift Tray HP Sensor (Rear)	The HP sensor that detects the tray at its rear HP position.
S5	Shift Tray Exit Sensor (Long)	Detects paper as it is fed to the shift tray in staple mode.

S6	Shift Tray Exit Sensor (Short)	Detects paper as it is fed to the shift tray.
S11	Shift Tray Jogger HP Sensor	Detects the actuator on the rear shift jogger fence and switches off the shift jogger motor and signals to turn on the shift jogger left motor to raise the fences at the end of a job.
\$12	Shift Jogger Fence Retract HP Sensor	Detects the home positions of the shift jogger fences after they raised up during alignment of the front and back edges of the stack on the shift tray.
S29	Drag Roller HP Sensor	Detects when the drag roller at the shift tray exit is in or out of its home position.
S8	Paper Height Sensor (Shift)	Functions as the paper height sensor in shift mode to adjust height of the shift tray. Used in shift mode only.
S9	Paper Height Sensor (Staple)	Functions as the paper height sensor in staple mode to adjust height of the shift tray. Used in staple mode only.
S28	Paper Height Sensor (TE)	Detects the height of the stack on the shift tray.
S10	Paper Height Sensor (Z- Fold)	Used in combination with two other paper height sensors (shift and staple paper height sensors) to detect the height of the stacked paper on the shift tray.
\$33	Shift Tray Full Sensor (500)	Detects when the shift tray is full of A5, HLT paper (500 sheets).
\$32	Shift Tray Full Sensor (1000)	Detects when the shift tray is full of SR_A3 paper (1000 sheets).
S24	Shift Tray Full Sensor (1500)	Detects when the shift tray is full of A3, DLT paper (1500 sheets).
S25	Shift Tray Full Sensor (2500)	Detects when the shift tray is full of A4, LT paper (2500 sheets).
\$35	Stapler JG HP Sensor	Detects when the stapling junction gate (shift tray/stapling tray) is in or out of its home position.
S43	Stapling Tray Entrance Sensor	Detects each sheet of paper as it passes the entrance to the stapling tray.
S42	Stapling Tray Paper Sensor	Detects paper in the stapling tray.
S49	Positioning Roller HP Sensor	Detects when the positioning roller above the stapling tray is at its home position.
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S38	Bottom Fence HP Sensor	Detects when the bottom fence that holds the trailing edge at the bottom of the stapler unit is in or out of its home position.
S41	Top Fence HP Sensor	Detects when the top fence that jogs the leading edge of the stack in the stapling tray is in or out of its home position.
S46	Stack Plate HP Sensor (Rear)	At the rear of the bottom fence of the stapling tray, detects when the bottom fence is in or out of its home position.
S45	Stack Plate HP Sensor (Center)	At the center of the bottom fence of the stapling tray, detects when the bottom fence is in or out of its home position.
S44	Stack Plate HP Sensor (Front)	At the front of the bottom fence of the stapling tray, detects when the bottom fence is in or out of its home position.
\$52	Stapler Rotation HP Sensor (Rear)	Detects when the corner stapler is rotated to its home position at the rear.
\$51	Stapler Rotation HP Sensor (Front)	Detects when the corner stapler is in its home position at the front.
\$13	Staple Trimmings Hopper Full Sensor	Detects when the staple trimmings hopper is full.
S14	Staple Trimmings Hopper Set Sensor	Detects when the staple trimmings hopper is set and removed.
S47	Stack Transport Unit HP Sensor	Detects when the transport unit is at its home position.
\$37	Stack Feed-Out Belt HP Sensor	Detects when the pawl on the stack feed-out belt is in or out of its home position.
S48	Stack JG HP Sensor	Detects when the stack JG plate is at its home position.
S23	Fold Unit Entrance Sensor	Detects when a stack arrives in the booklet stapler.
\$15	Booklet Stapler Side Fence HP Sensor (Front)	Detects when the front jogger fence that aligns the front edge of the stack for booklet stapling is in or out of its home position.
S17	Booklet Stapler Jogger HP Sensor (Rear)	Detects when the rear jogger fence that aligns the trailing edge of the stack for booklet stapling is in or out of its home position.

S16	Booklet Stapler Bottom Fence HP Sensor	Detects when the trailing edge fence that aligns the trailing edge of the stack on the booklet stapling tray is in or out of its home position.
\$19	Booklet Top Fence HP Sensor	Detects when the pawl that aligns the stack in the booklet stapler in the direction of paper feed is in or out of its home position.
S22	Fold Plate Cam HP Sensor	Detects when the cam that operates the fold plate is in or out of its home position.
S18	Fold Plate HP Sensor	Detects when the fold plate in the booklet stapler unit is in or out of its home position.
S21	Booklet Stapler Exit Sensor	Detects when paper passes between the fold roller and the booklet stapler exit.
S3	Entrance Sensor	
S7	Exit Guide HP Sensor	Detects when the exit guide plate is at its home position.
S57	Punch Blade HP Sensor	Detects when the punch blade in or out of its home position.
S55	Punch Vertical Registration Sensor	Mounted above the paper path in the punch unit, detects the passing of the paper below.
\$53	Punchout Hopper Full Sensor	Detects when the punch-out hopper is full and when the hopper is out of the finisher.
S34	Proof Tray JG HP Sensor	Detects when the proof tray junction gate (proof tray/shift tray) is in or out of its home position.
S1	Proof Tray Exit Sensor	Detects each sheet of paper as it exits onto the proof tray.
S2	Proof Tray Full Sensor	Detects when the proof tray is full.
S36	Pre-Stack Paper Sensor	Detects paper at the pre-stack position.
S50	Corner Stapler HP Sensor	Detects when the corner stapler is at its home position.
S20	Booklet Stapler Clamp Roller HP Sensor	Detects when the booklet stapler transport roller has been moved to release pressure on the stack.
S27	Booklet Tray Full Sensor (Lower)	Operates with the upper booklet tray full sensor to detect when the booklet output tray is full.
S26	Booklet Tray Full Sensor (Upper)	Operates with the lower booklet tray full sensor to detect when the booklet output tray is full.

Solenoid				
SOL1	Shutter Solenoid	Operates the shutter that opens and closes the chute where staple trimmings drop to the staple trimmings hopper below.		

Switches				
SW5	Punch Switch	Changes the type and number of punch holes, based on the selection.		
SW1	Shift Tray Upper Limit Switch	Cuts the power to the shift tray lift motor if the shift tray reaches its maximum height (due to a malfunction).		
SW3	Front Door Switch	Cuts the 24V power supply to the finisher when the front door is opened.		
SW4	Breaker Switch	Trips and shuts off power immediately if a short circuit occurs in the finisher.		
SW2	Emergency Stop Switch	Stops the shift tray and lowers it.		

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