Z Series and S4M
Ribbon/Head Open Sensor Assembly

Installation Instructions

This kit includes the parts and documentation necessary to install the ribbon/head open sensor assembly into the following printers: Z Series® (Z4M™, Z6M™, Z4Mplus™, Z6Mplus™) and S4M™. Read these instructions thoroughly before attempting to install this kit.

Caution • Turn Off (O) the printer and disconnect it from the power source before performing the following procedure.

Caution • A qualified service technician must perform this installation.

Prepare for Installation

Parts List

Before proceeding, verify that your kit contains the items for your printer listed below.

<table>
<thead>
<tr>
<th>Item</th>
<th>Qty</th>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ref</td>
<td>1</td>
<td>77767M</td>
<td>Ribbon/Head Open Assembly Maintenance Kit</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>77762-000</td>
<td>Ribbon/Head Open Assembly</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>HW77237</td>
<td>Screw, M4 × 0.7 × 10 (available in quantities of 5)</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
<td>HWQ06020</td>
<td>Cable Tie, 0.09 × 3.62 (available in quantities of 25)</td>
</tr>
</tbody>
</table>

Bold = Part available for purchase.
Italic = Part not available for purchase, listed and shown for reference only.
Reference Materials

The following manuals and CDs may be helpful references while performing this procedure.

- S4M User Guide
- S4M User Guide CD
- S4M Maintenance Manual (contact your authorized Zebra reseller for purchasing information)
- S4M Maintenance Manual CD
- Z4M/Z6M User Guide
- Z4M/Z6M Maintenance Manual
- Z4Mplus/Z6Mplus User Guide
- Z4Mplus/Z6Mplus Maintenance Manual (contact your authorized Zebra reseller for purchasing information)
- Z Series User CD
- Z Series® Maintenance Manual CD

Tools Required

Tools • You need these tools to complete this procedure:

- Phillips Screwdriver Set
- Metric Nutdriver Set
- Anti-Static Wriststrap and Mat
- Metric and inch Feeler Gauges, must include: 0.060 in. (1.5mm)
Remove the Electronics Cover

**Note** • Retain all parts removed during disassembly, unless otherwise directed.

1. **Caution** • Observe proper electrostatic safety precautions when handling static-sensitive components such as circuit boards and printheads.

   Connect yourself to an antistatic device.

2. Turn Off (O) the printer and disconnect the AC power cord and all data cables.

3. Open the media door and remove media and ribbon.

4. Which printer do you have?

<table>
<thead>
<tr>
<th>If...</th>
<th>Then...</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Z Series</strong></td>
<td>a. See Figure 2. Remove the electronics cover mounting screw(s).</td>
</tr>
<tr>
<td></td>
<td>b. See Figure 3 on page 4. Close the media door and remove the electronic cover.</td>
</tr>
<tr>
<td><strong>S4M</strong></td>
<td>a. See Figure 4 on page 5. Remove the electronics cover mounting screw and washer and then close the media door.</td>
</tr>
<tr>
<td></td>
<td>b. See Figure 5 on page 6. Remove the four remaining mounting screws securing the electronics cover.</td>
</tr>
<tr>
<td></td>
<td>c. Remove the electronics cover by lifting straight up on the bottom lip of the electronics cover.</td>
</tr>
</tbody>
</table>
Ribbon/Head Open Sensor Assembly
Remove the Electronics Cover

Figure 2 • Remove the Mounting Screw(s)

A Z4Mplus/Z6Mplus and Z4M/Z6M Later Version
B Z4M/Z6M Earlier Version
1 Electronics Cover
2 Media Door
3 Upper Flange
4 Mounting Screw
5 Lock Washer
6 Lower Flange

Figure 3 • Remove and Install the Electronics Cover

Z4Mplus/Z6plus and Z4M/Z6M Later version
Z4M/Z6M Early Version
Figure 4 • Remove the Mounting Screw (S4M)

<table>
<thead>
<tr>
<th></th>
<th>Media Door</th>
<th>Electronics Cover Upper Flange</th>
<th>Electronics Cover Mounting Screw</th>
<th>Washer</th>
</tr>
</thead>
</table>
Figure 5 • Electronics Cover Removal (S4M)

1 Electronics Cover
2 Mounting Screws (4)
Remove the Old Sensor

1. Which printer do you have?

<table>
<thead>
<tr>
<th>If you have…</th>
<th>Then…</th>
</tr>
</thead>
</table>
| Z4M/Z6M      | a. See Figure 6. Disconnect the ribbon/head open sensor assembly cable from the main logic board (P4).  
   **Note** • Take note of the location of all cables removed. You will need to replace them.  
   b. Cut any cable ties securing the sensor cable.  
   c. Remove sensor assembly.  
   d. Continue to step 2 on page 10. |
| Z4Mplus/Z6Mplus | a. See Figure 7 on page 8. Disconnect the ribbon/head open sensor assembly cable from the main logic board (P4).  
   b. Remove the sensor wires from the ferrite ring.  
   c. Remove the nut securing the cable clamp and then remove the sensor cable from the clamp.  
   d. Continue to step 2 on page 10. |
| S4M          | a. Figure 9 on page 10. Disconnect the sensor cable from the MLB (P4).  
   b. Remove the cable wires from the protective wrap.  
   c. Continue to step 2 on page 10. |

**Figure 6 • Disconnect the Ribbon/Head Open Sensor (Z4M, Z6M)**

1. Ribbon/Head Open Sensor Connector
2. Main Logic Board (MLB)
3. MLB Connector (P4)
4. Access Hole
Note • Take note on how the wires are wrapped around the ferrite ring.

Figure 7 • Disconnect the Ribbon/Head Open Sensor (Z4Mplus/Z6Mplus)

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Main Logic Board (MLB)</td>
</tr>
<tr>
<td>2</td>
<td>MLB Connector (P4)</td>
</tr>
<tr>
<td>3</td>
<td>Ribbon/Head Open Sensor Connector</td>
</tr>
<tr>
<td>4</td>
<td>Ferrite Ring</td>
</tr>
<tr>
<td>5</td>
<td>Cable Clamp</td>
</tr>
<tr>
<td>6</td>
<td>Access Hole</td>
</tr>
</tbody>
</table>
Figure 8 • Disconnect the Ribbon/Head Open Sensor (S4M)

1  Main Logic Board (MLB)
2  MLB Connector (P4)
3  Protective Wrap
4  Access Hole
2. See Figure 9. Remove the screw securing the ribbon/head open sensor assembly.

3. Pull the ribbon sensor cable and connector through the main frame.
### Install the New Ribbon/Head Open Sensor Assembly

1. Which printer do you have?

<table>
<thead>
<tr>
<th>If you have a...</th>
<th>Then...</th>
</tr>
</thead>
</table>
| **Z4M/Z6M**      | a. See Figure 6 on page 7. Route the sensor wires, with connector, through the access hole in the printer mainframe.  
      | b. See Figure 9 on page 10. Install the ribbon/head open sensor to the mainframe with the new screw. Do not tighten it at this time.  
      | c. Connect the ribbon/head open sensor connector to the MLB (P4).  
      | d. Install cable ties you removed previously.  |
| **Z4Mplus/Z6Mplus** | a. See Figure 7 on page 8. Route the sensor wires, with connector, through the access hole in the printer mainframe.  
      | b. Thread and wrap the sensor cable wires through and around the ferrite the same as the wires you removed.  
      | c. See Figure 9 on page 10. Install the ribbon/head open sensor to the mainframe with the new screw. Do not tighten it at this time.  
      | d. Connect the media sensor cable to the main logic board at P4.  
      | e. Install the sensor cable wires in the cable clamp and then secure the clamp using the nut removed previously.  |
| **S4M**          | a. Figure 9 on page 10. Route the sensor wires, with connector, through the access hole in the printer mainframe.  
      | b. Place the sensor cable wires back into the protective wrap.  
      | c. Connect the media sensor cable to the main logic board at P4.  
      | d. See Figure 9 on page 10. Install the ribbon/head open sensor to the mainframe with the new screw. Do not tighten it at this time.  |
2. See Figure 10. Using a 0.060 ± 0.015 inch (1.5 mm) feeler gauge, check the distance between the ribbon/head open sensor assembly and the printhead mechanism assembly. Once this distance is achieved, tighten the mounting screw.

**Figure 10 • Gap Measurement between Print Mechanism and Sensor**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Gap</td>
</tr>
<tr>
<td>2</td>
<td>Mounting Screw</td>
</tr>
</tbody>
</table>
Reinstall the Electronics Cover

1. Which printer do you have?

<table>
<thead>
<tr>
<th>If you have a…</th>
<th>Then…</th>
</tr>
</thead>
</table>
| Z4M, Z6M,      | a. See Figure 3 on page 4. Reinstall the electronics cover by setting the lower flange in the base and pushing the top of the cover toward the main frame.  
   b. See Figure 2 on page 4. Open the media door and reinstall the mounting screws to secure the electronics cover. |
| Z4Mplus, Z6Mplus | a. See Figure 3 on page 4. Install the electronics cover by aligning it and sliding down, ensuring the lower flange is inside the base and the upper flange is between the main frame and the media door.  
   b. See Figure 2 on page 4. Open the media door and install the mounting screw and lock washer to secure the electronics cover. |
| S4M            | a. See Figure 5 on page 6. Install the new cover by aligning it and sliding down, ensuring the lower tabs are inside the base and the upper flanges is between the main frame and the media door.  
   b. Install the four mounting screws on the back of the printer.  
   c. See Figure 4 on page 5. Reopen the media door and install the mounting screw and washer. |

2. Install media and ribbon.

3. Reconnect AC power cord and data cables.

4. Turn On (I) the printer.

5. After the Power-on Self Test (POST), unlatch the printhead mechanism. Look at the front panel to ensure the error/alert LED flashes and the LCD displays **ALERT HEAD OPEN**.

6. Close the printhead.
Calibrate the Printer

What printer do you have?

<table>
<thead>
<tr>
<th>If you have a...</th>
<th>Then...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z Series</td>
<td>Continue to Calibrate the Z Series.</td>
</tr>
<tr>
<td>S4M</td>
<td>Go to Calibrate the S4M.</td>
</tr>
</tbody>
</table>

Calibrate the Z Series

1. Press SETUP/EXIT to enter the Setup Mode.
2. Press PLUS (+) until MEDIA AND RIBBON CALIBRATE is displayed.
3. Press SELECT.
4. Press PLUS (+), LOAD BACKING is displayed.
5. Open the printhead.
6. Remove approximately 8 in. (203 mm) of labels from the backing, and pull the media into the printer so that only the backing is between the media sensors.
7. Close the printhead.
8. Press PLUS (+) to continue, REMOVE RIBBON is displayed.
9. Open the printhead.
10. Remove the ribbon from the print mechanism.
11. Close the printhead.
12. Press PLUS (+) to continue, CALIBRATING PLEASE WAIT displays.
13. After calibration is complete, LOAD ALL displays.
14. Open the printhead and reload the ribbon and media.
15. Close the printhead.
16. Press SETUP/EXIT two times to permanently save the calibration and return to PRINTER READY.

Calibrate the S4M

Perform only if thermal transfer option is installed.

1. Press MENU to enter the Setup Mode.
2. Press ▶ until ADVANCED SETUP 3 is displayed.
3. Press ENTER, the printer displays PASSWORD and the number 0000.
4. Enter the four-digit password for the password level displayed, the factory default password is 1234.

5. The left and right arrows change the selected digit position.

6. The up and down arrows change the value of the selected digit.

7. After entering the password, press .

8. If you entered a valid password, additional parameters are displayed.

9. Press ▶ until MEDIA/RIBBON CALIBRATE is displayed.

10. Press ENTER to start the calibration procedure.

11. The LOAD BACKING/REMOVE RIBBON prompt displays.

12. Open the printhead.

13. Remove approximately 8 in. (203 mm) of labels from the backing, and pull the media into the printer so that only the backing is between the media sensors.

14. Remove the ribbon.

15. Close the printhead.

16. Press ENTER to continue.

17. CALIBRATING PLEASE WAIT displays.

18. The printer adjusts the scale (gain) of the signals that it receives from the media and ribbon sensors based on the specific media and ribbon combination being used. On the sensor profile, this essentially corresponds to moving the peak of the graph up or down to optimize the readings for your application.

19. When calibration is complete, RELOAD ALL displays.

20. Open the printhead and pull the media forward until a label is positioned under the media sensor.

21. Reload the ribbon (if used) and close the printhead.

22. Press ENTER to continue.

23. The printer performs an auto-calibration. During this process, the printer checks the readings for the media and ribbon based on the new scale established, determines the label length, and determines the print mode. To see the new readings on the new scale, print a sensor profile.

24. After the auto-calibration is complete, MEDIA/RIBBON CALIBRATE is displayed.

25. Press MENU, SAVE CHANGES is displayed.

26. Select YES by pressing either ▲ or ▼ and then press ENTER to permanently save the calibration and return to PRINTER READY.