

ZE511/ZE521

Industrial Print Engine

Quick Reference Guide



ZEBRA

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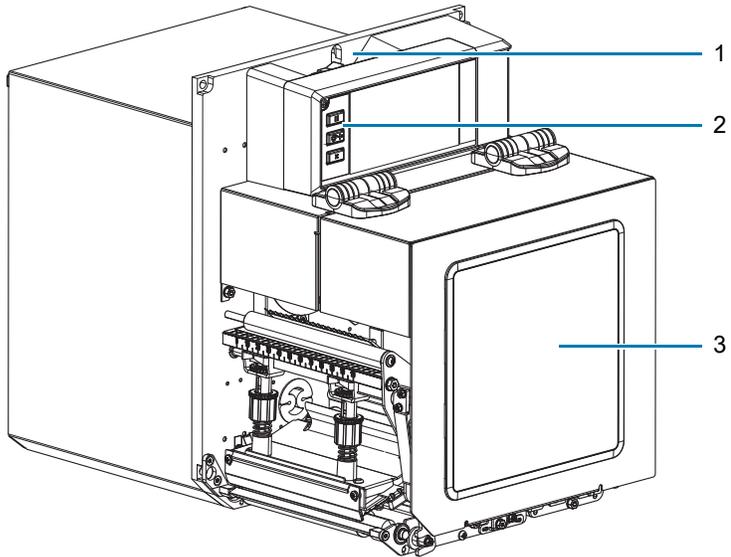
Publication Date

November 4, 2021

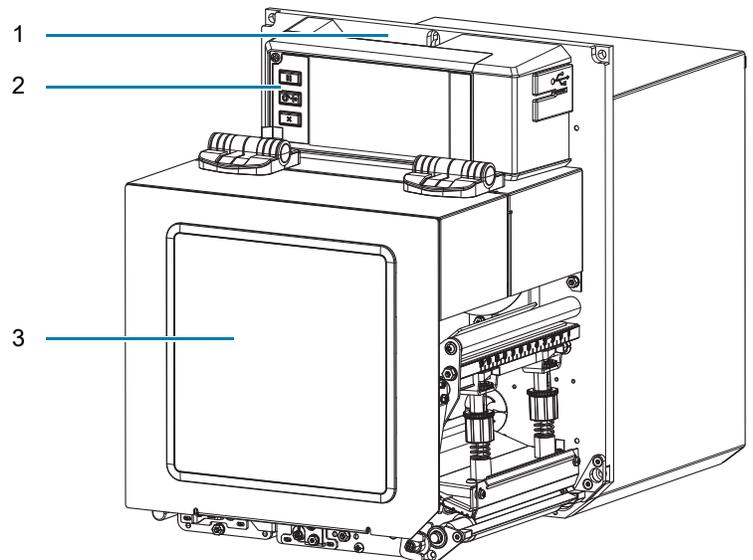
Print Engine Orientation

The ZE511 and ZE521 print engines are available in a left-hand configuration (the print mechanism is on the left) and a right-hand configuration (the print mechanism is on the right).

Left-hand (LH) print engine



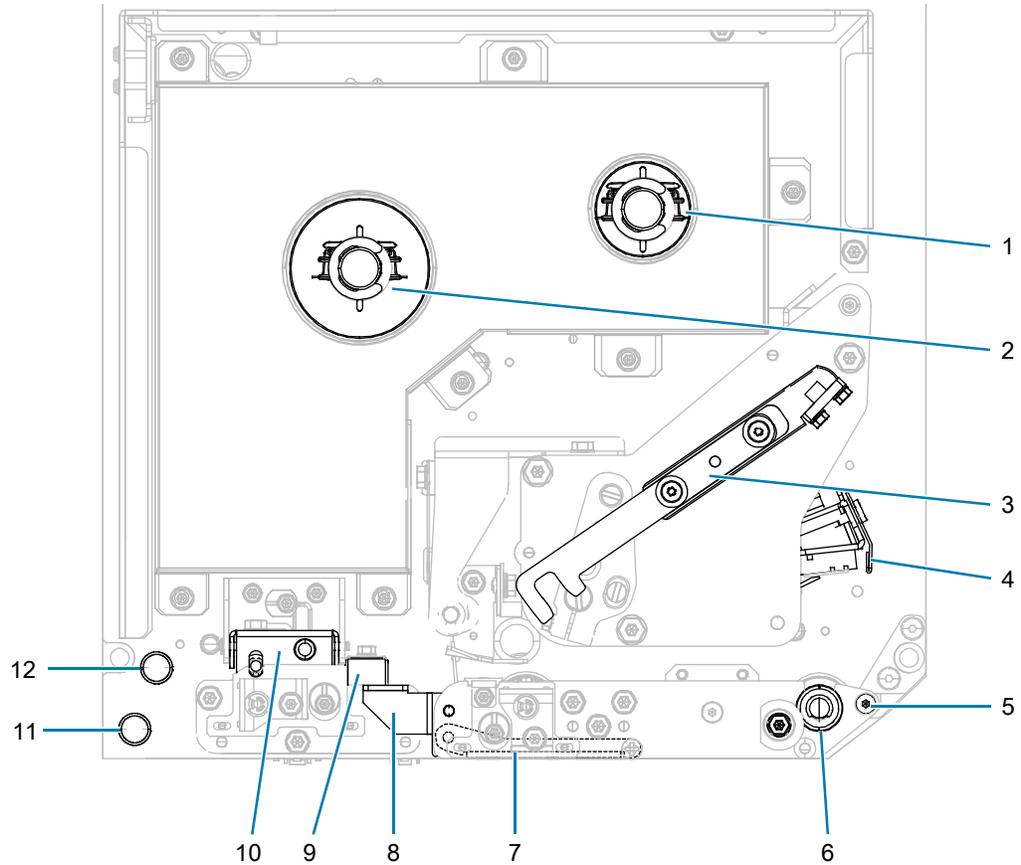
Right-hand (RH) print engine



1	Power switch location
2	Control panel
3	Media cover

Print Engine Components

The following shows the components inside the media compartment of a right-hand (RH) print engine. A left-hand (LH) unit contains a mirror image of these components. Familiarize yourself with these components before continuing.

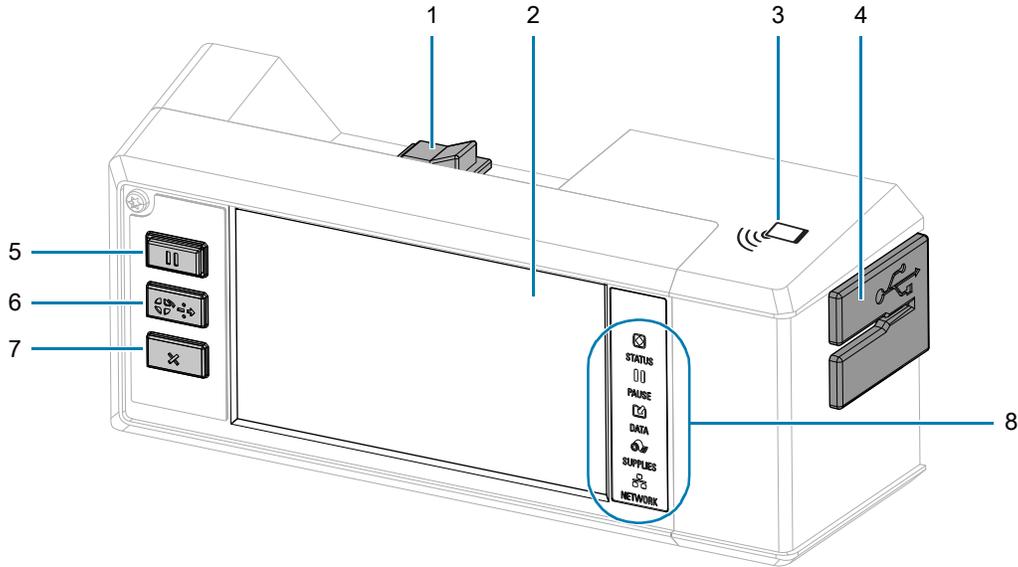


1	Ribbon take-up spindle
2	Ribbon supply spindle
3	Printhead-release latch
4	Printhead assembly (shown open)
5	Peel bar
6	Platen roller

7	Peel roller assembly (hidden when closed)
8	Peel roller latch
9	Media guide
10	Pinch roller assembly
11	Lower guide post
12	Upper guide post

Control Panel

All controls and indicators for the print engine are located on the control panel.



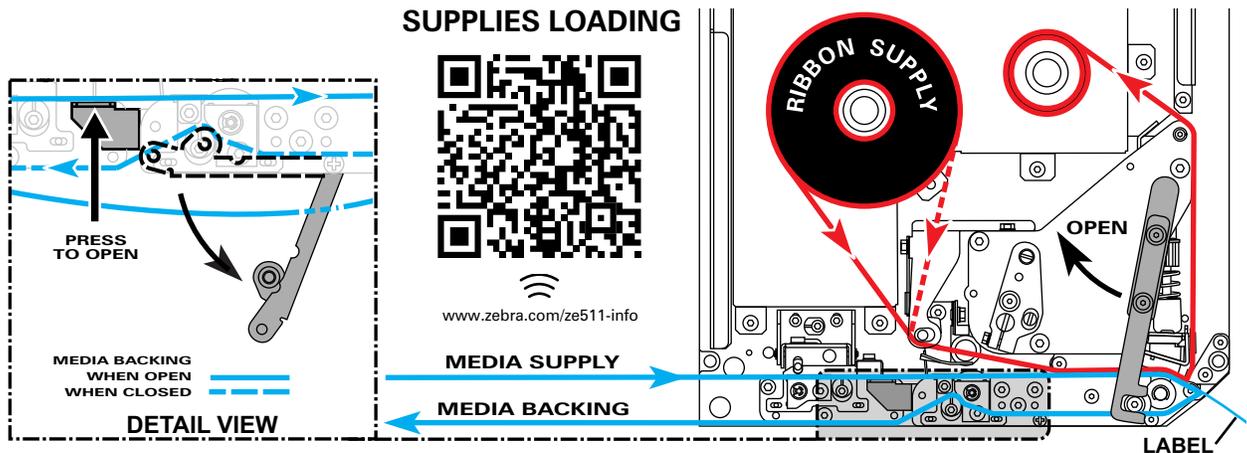
1	Power switch	Toggles the print engine on/off.
2	Display	Shows the print engine's operating status and allows the user to navigate the menu system.
3	NFC logo	Used for the Print Touch feature.
4	USB host ports	Allows you to connect USB devices such as memory sticks, keyboards, or handheld scanners to the printer.
5	PAUSE button	Starts or stops print engine operation when pressed.
6	FEED button	Forces the print engine to feed one blank label each time the button is pressed.
7	CANCEL button	Cancel print jobs when the print engine is paused.
8	Indicator lights	Communicate the printer's status. For more information, see Indicator Lights on page 20 .

Ribbon and Media Loading

Use the instructions in this section to load ribbon (if used) and media in a ZE511/ZE521 print engine.



NOTE: The majority of the graphics in this section show a right-hand (RH) unit with ribbon that is coated with ink on the outside. Graphics for other options are included in some places for clarity.



Loading Ribbon

Do I need to use ribbon? The media itself determines if you need to use ribbon. Thermal Transfer media requires ribbon while Direct Thermal media does not.

How can I tell if media is Direct Thermal or Thermal Transfer? The easiest way is to scratch the surface of the media rapidly with your fingernail. If a black mark appears where you scratched, the media is Direct Thermal, and you do not need to use ribbon.

What kind of ribbon can I use? Ribbon can be wound with the coated side on the inside or outside. This print engine can use either type. Contact your authorized Zebra reseller for ordering information.

Ink on the Outside



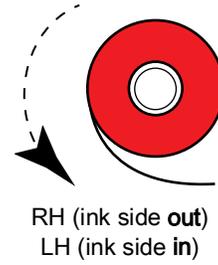
Ink on the Inside



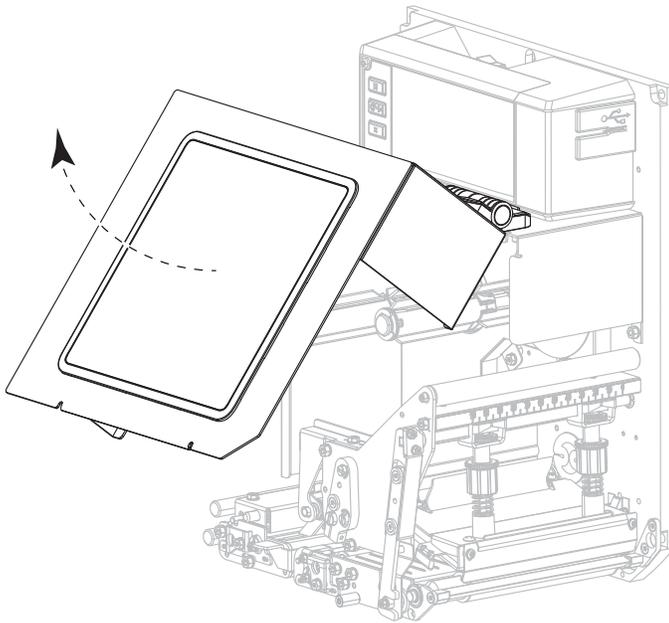
How can I tell which side of the ribbon is coated? Press a corner of the sticky side of a label to the outer surface of the roll of ribbon, and then peel the label off of the ribbon. If ink particles adhere to the label, the outer side of the roll is coated. Repeat this test with the inner surface if necessary to confirm the coated surface.

An alternate method is to unroll a short length of ribbon, place the outer surface against a piece of paper, and scratch the inner surface of the ribbon with your fingernail. Lift the ribbon and check for marks on the paper. If the ribbon left a mark, the outer side is coated.

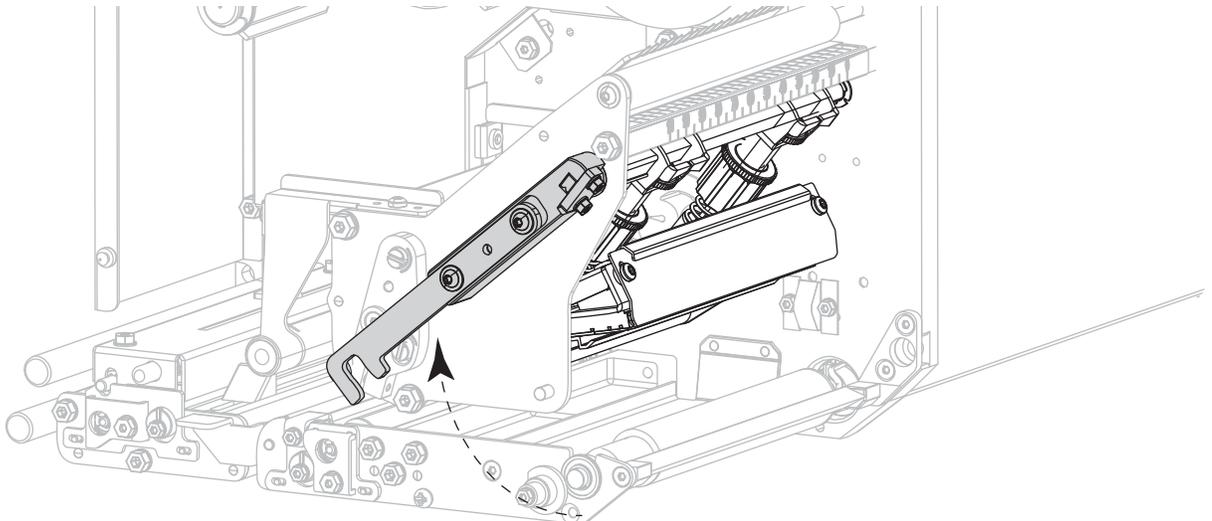
1. Determine which side of the ribbon is coated with ink, and then position the ribbon roll with the loose end unrolling in the direction shown.



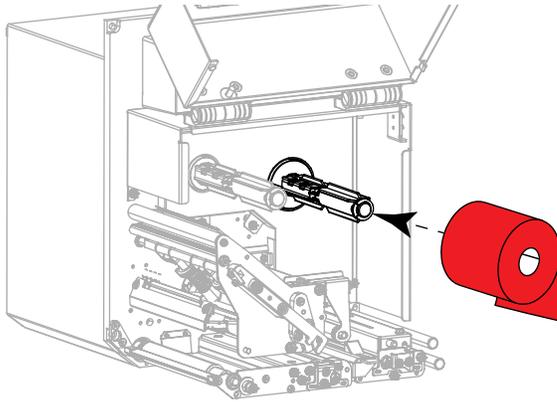
2. If necessary, update the ribbon ink side setting (touch **Print** > **Print Quality** > **Ribbon Tension**).
3. Open the media cover.



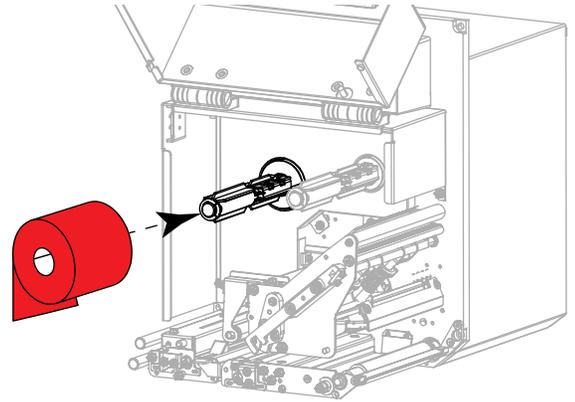
4. Release the printhead assembly.



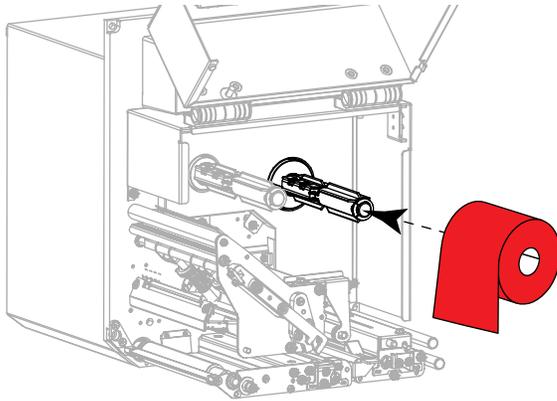
5. Place the roll of ribbon on the ribbon supply spindle. Push the roll back as far as it will go.



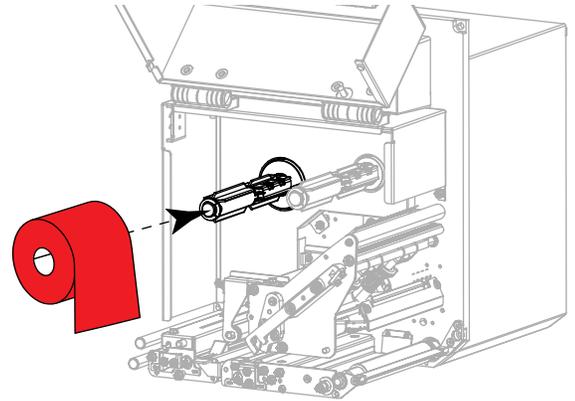
LH (ink side out)



RH (ink side out)

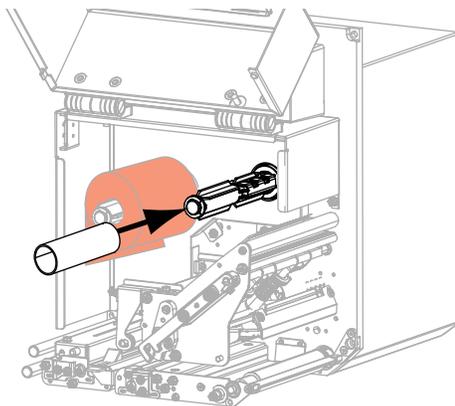


LH (ink side in)



RH (ink side in)

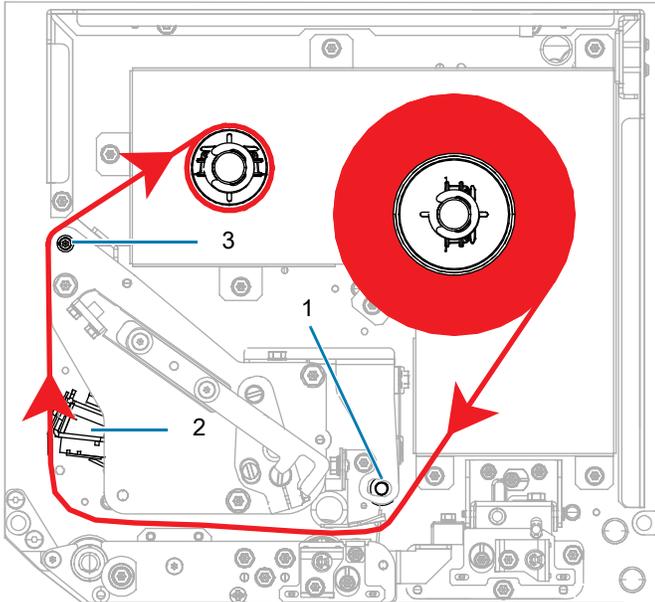
6. Place an empty ribbon core on the ribbon take-up spindle. Push the core back as far as it will go.



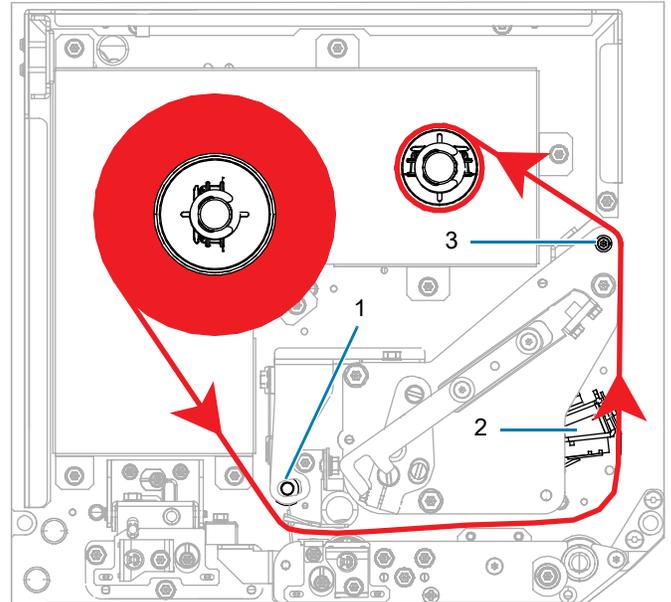


CAUTION—HOT SURFACE: The printhead may be hot and could cause severe burns. Allow the printhead to cool.

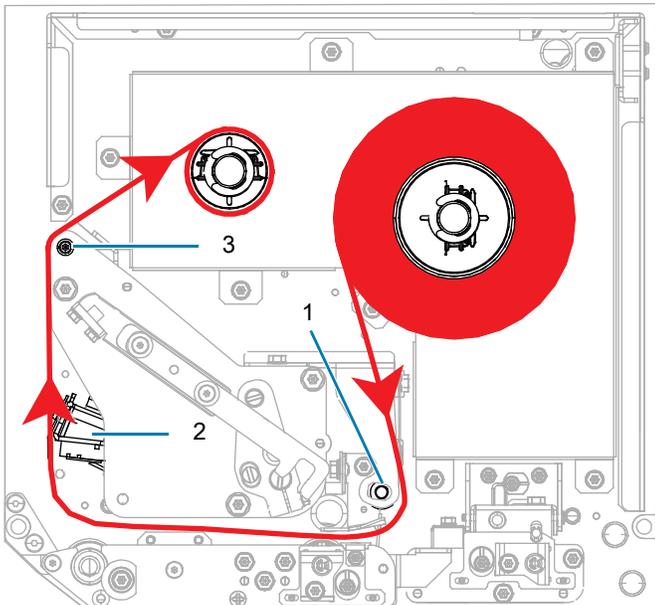
7. Thread the ribbon under the lower ribbon guide roller (1), under the printhead assembly (2), and then over the upper ribbon guide roller (3).



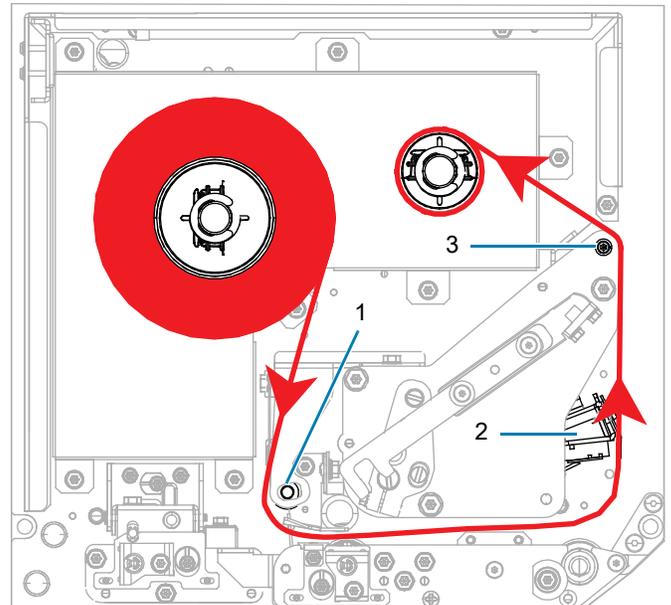
LH (ink side out)



RH (ink side out)

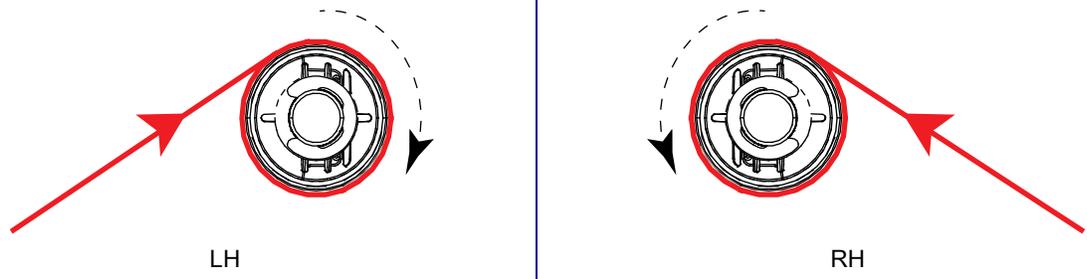


LH (ink side in)



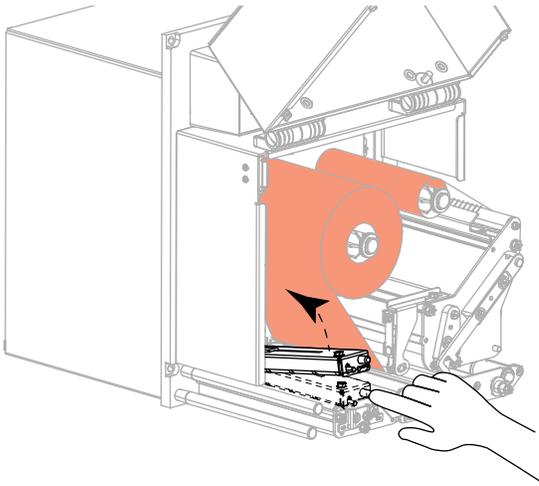
RH (ink side in)

8. Wind the ribbon around the core on the ribbon take-up spindle in the direction shown.

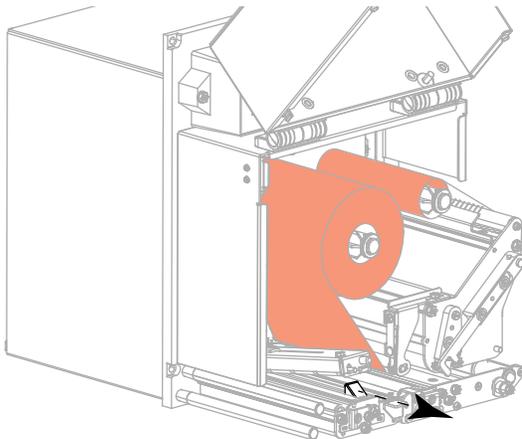


Loading Media

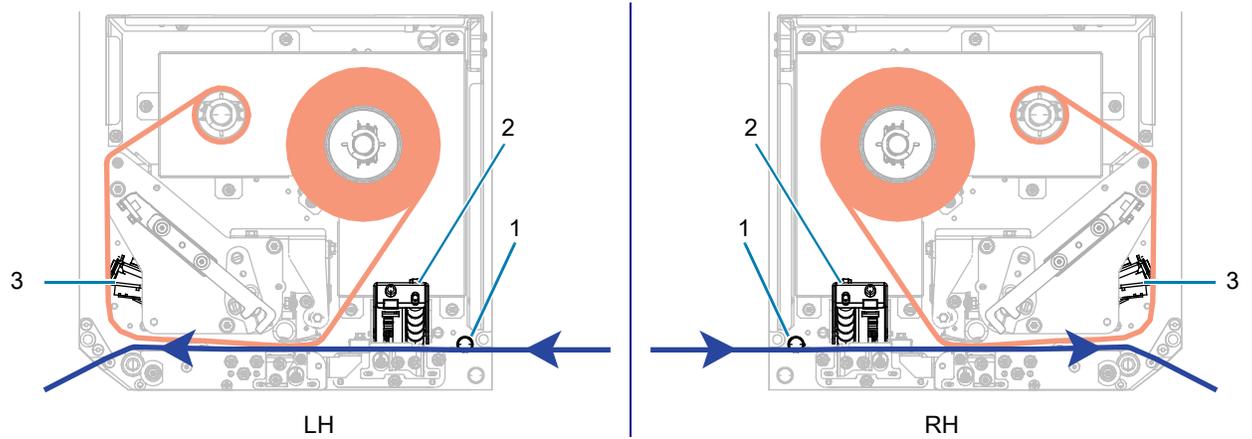
1. Load media on the media supply reel of the applicator (refer to the applicator's documentation for more information).
2. Press the release button on the pinch roller assembly. Allow the assembly to pivot upward.



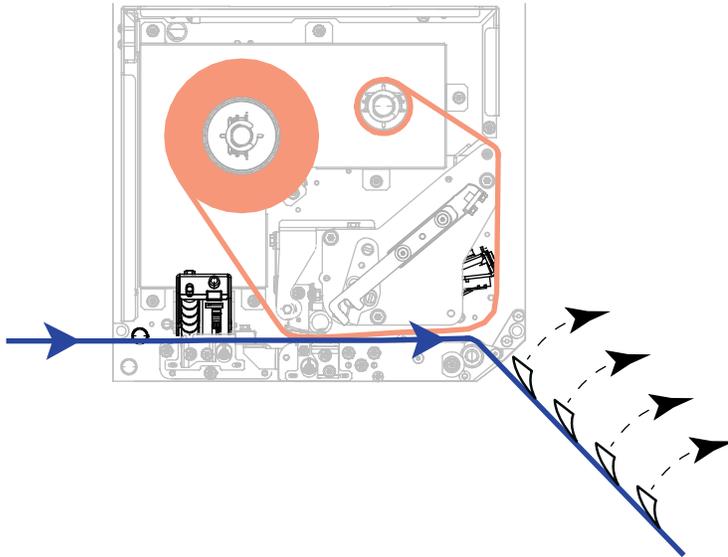
3. Slide the media guide all the way out.



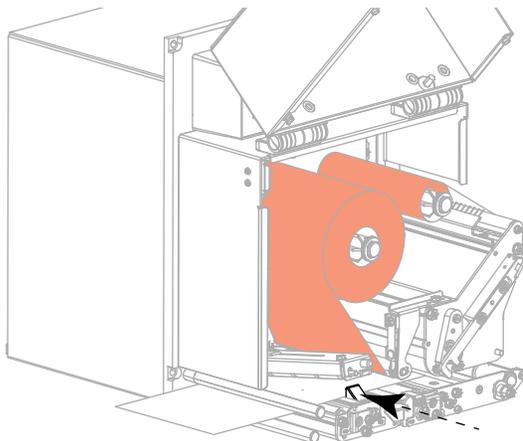
4. Thread the media under the upper guide post (1), below the pinch roller assembly (2), and under the printhead assembly (3).



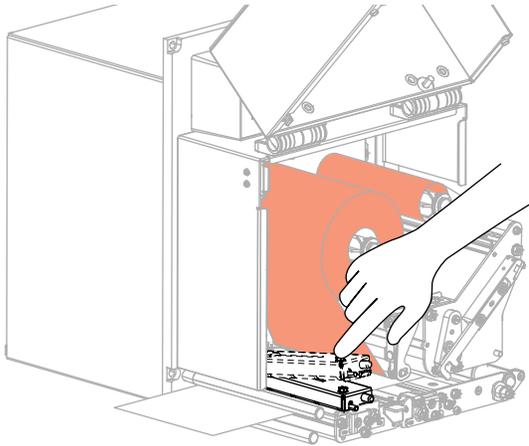
5. Extend approximately 30 in. (75 cm) of media past the peel bar. Remove and discard the labels from the liner on this exposed media.



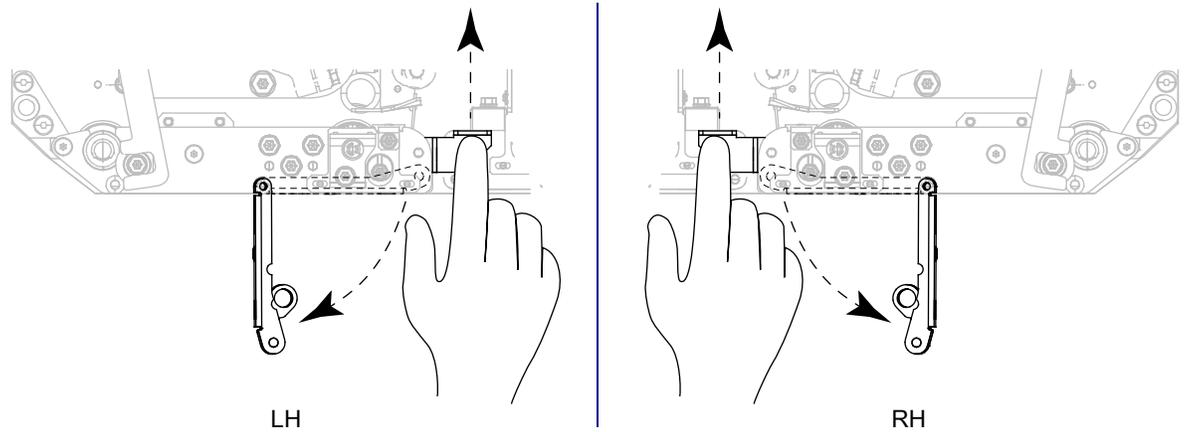
6. Slide in the media guide until it just touches the edge of the media.



- Press down on the pinch roller assembly until it locks closed.



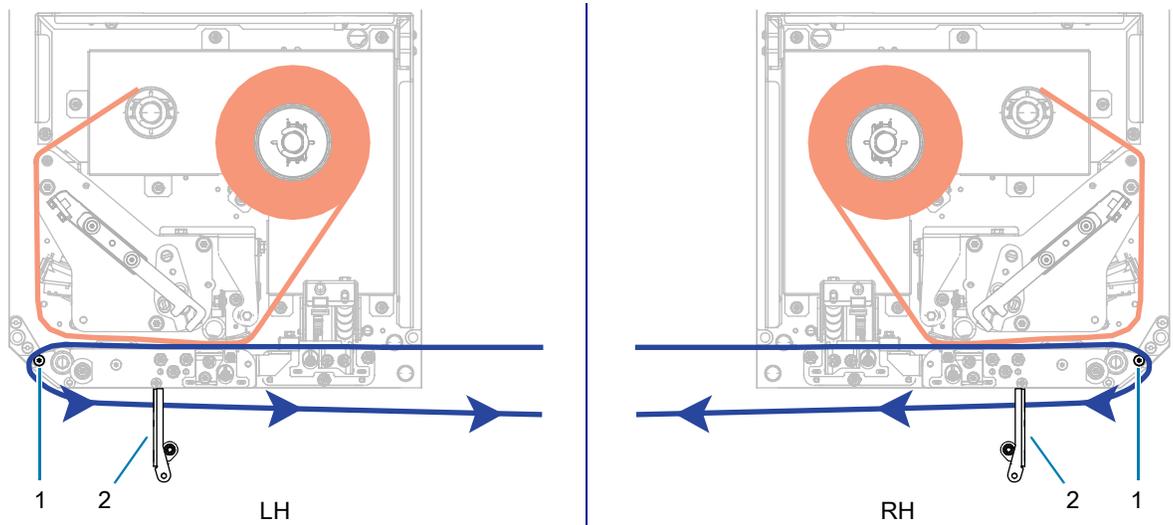
- Raise the peel roller latch so that the peel roller assembly pivots downward.



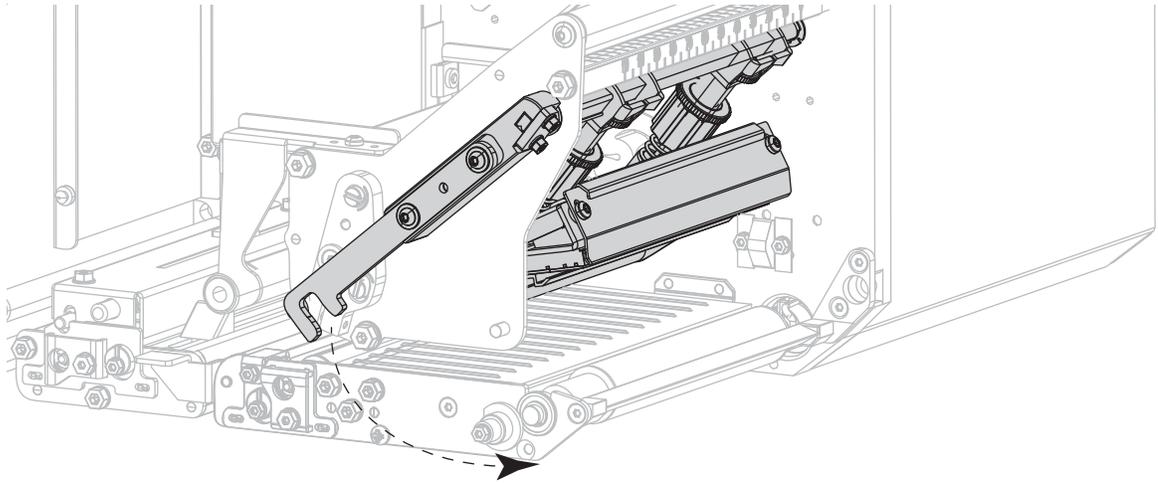
- Thread the liner around the peel bar (1) and through the peel roller assembly (2).



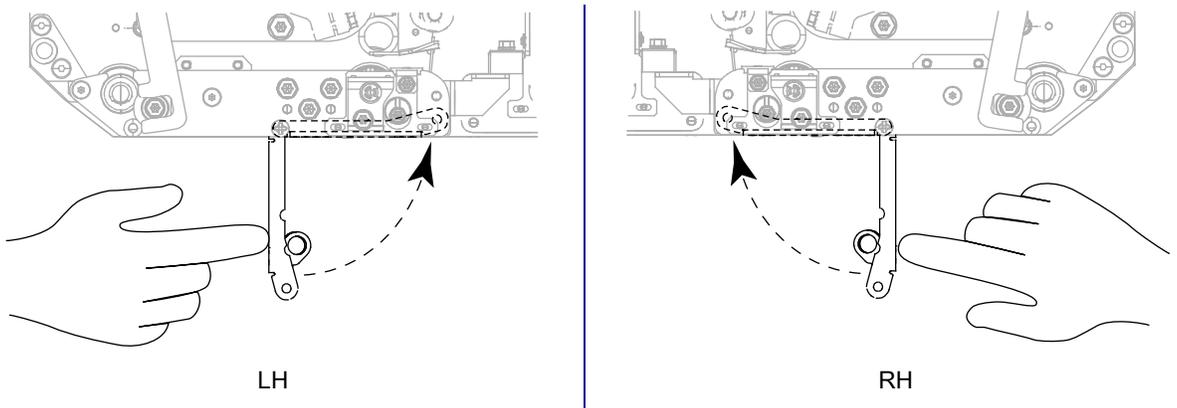
IMPORTANT: If the applicator has an air tube, route the liner between the air tube and the peel bar. Do not thread the liner over the air tube.



10. Lock the printhead assembly.

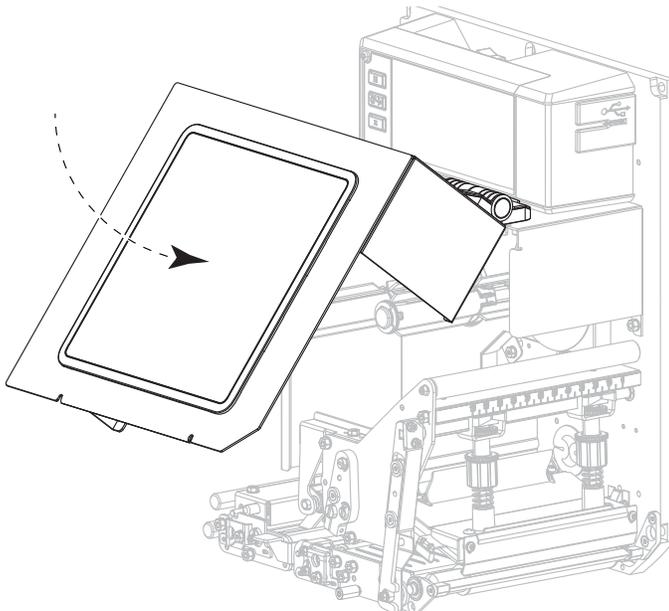


11. Rotate the peel roller assembly up until it locks into the closed position.



12. Thread the liner around the take-up spindle of the applicator (refer to the applicator's documentation for more information).

13. Close the media cover.

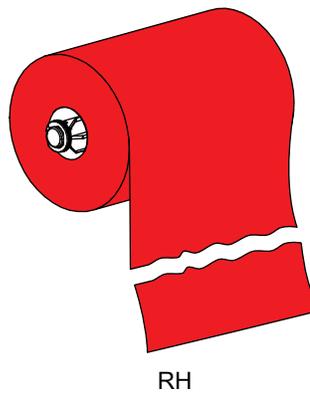
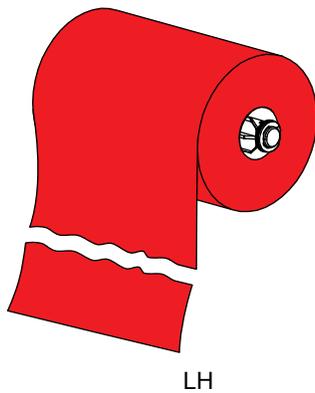


Removing Used Ribbon

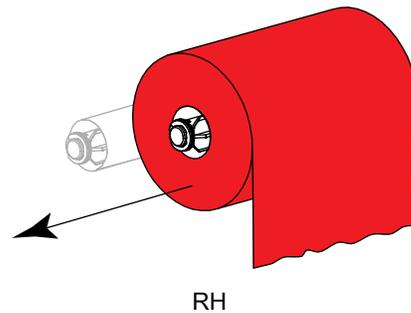
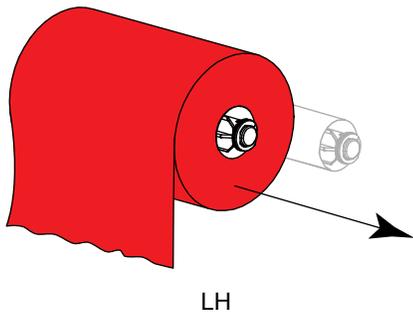
Remove used ribbon from the ribbon take-up spindle each time you change the roll of ribbon.

1. Has the ribbon run out?

- Yes—Continue with [step 2](#).
- No—Cut or break the ribbon before the ribbon take-up spindle.



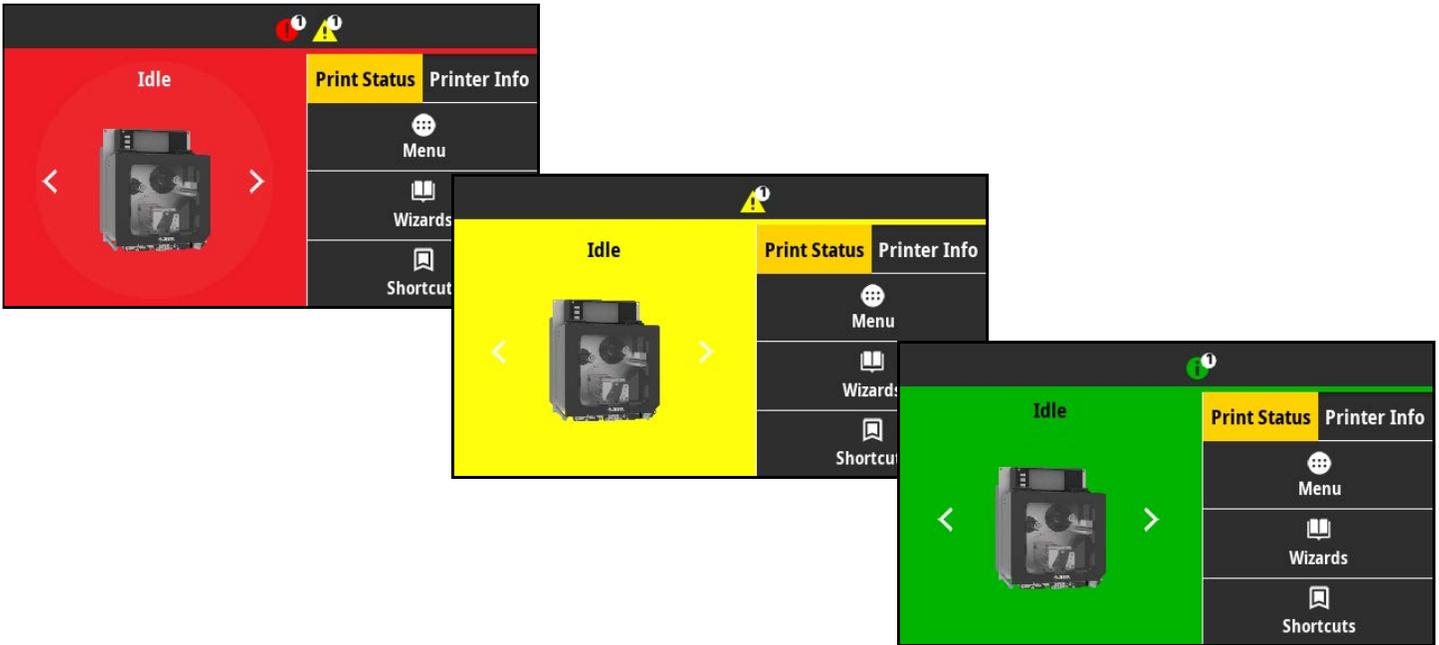
2. Slide the core with the used ribbon off of the ribbon take-up spindle.



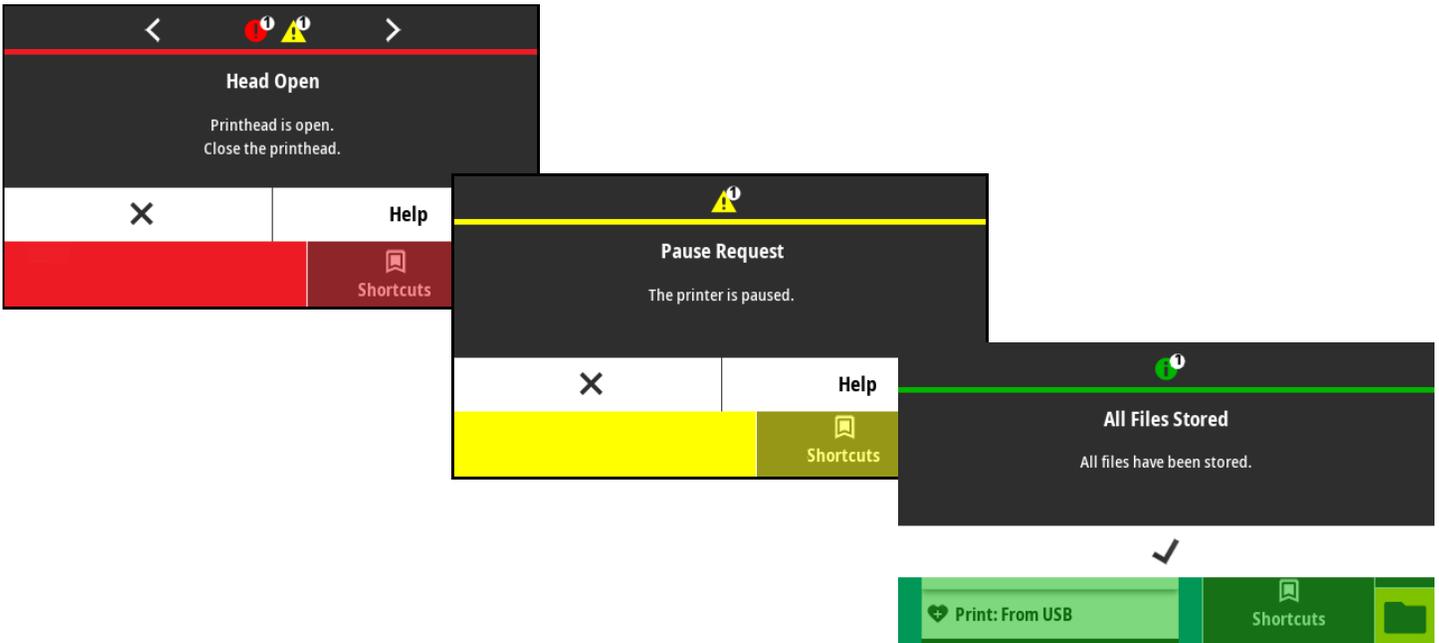
3. Discard the used ribbon. Reuse the empty core from the ribbon supply spindle by moving it to the ribbon take-up spindle.

Alert and Error States

If the background color of the Home screen changes, you may need to take an action to restore the printer to a Ready status. Red and yellow backgrounds typically halt printing until the issue is resolved. Informational messages with a green background usually disappear without user intervention, and printing continues as normal.

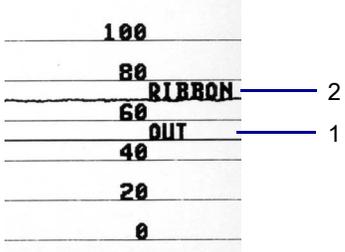


Touch the icons in the bar at the top of the Home screen to view the error, alert, or informational message. See [Alerts and Error Messages on page 16](#) for recommended actions.



Alerts and Error Messages

Display/Indicator Lights	Possible Causes	Recommended Solutions
<p>Head Open</p> <p>Printhead is open. Close the printhead.</p>	The printhead is not fully closed.	Close the printhead completely.
	The printhead open sensor is not working properly.	Call a service technician to replace the sensor.
<p>Media Out</p> <p>Media is out. Load additional media.</p>	The media is not loaded or is loaded incorrectly.	Load media correctly. See Ribbon and Media Loading on page 6 .
	Misaligned media sensor.	Check the position of the media sensor.
	The print engine is set for noncontinuous media, but continuous media is loaded.	<ol style="list-style-type: none"> 1. Install the proper media type, or reset print engine for the current media type. 2. Calibrate the printer. On the control panel, touch Print > Sensors > Manual Calibration to initiate calibration.
<p>Paper Jam</p> <p>Media jammed. Check the media.</p>	There is an issue with the media in the media path.	<ol style="list-style-type: none"> 1. Check for media that is loaded incorrectly or stuck to components in the media path. 2. Check if media is wrapped around the platen roller. Carefully remove any labels. 3. If necessary, clean the platen roller to remove adhesive. See Cleaning the Printhead and Rollers on page 23.

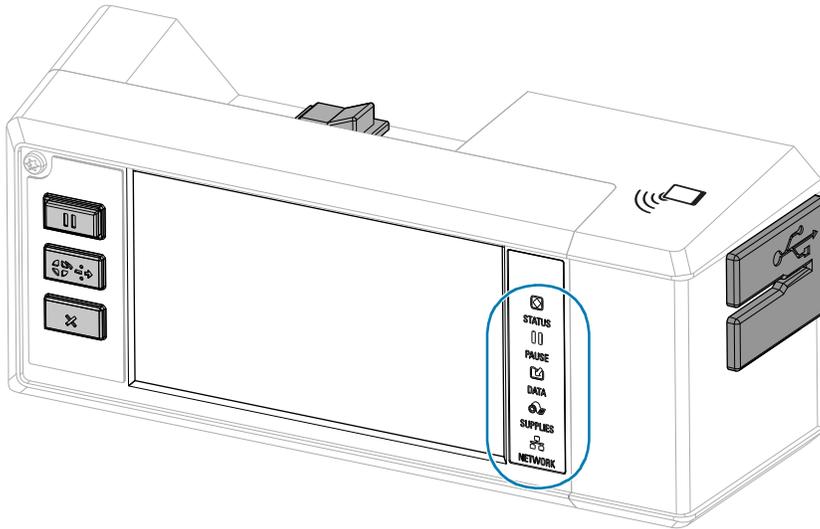
Display/Indicator Lights	Possible Causes	Recommended Solutions
<div style="background-color: black; color: white; padding: 10px; text-align: center;"> <p>Ribbon Out</p> <p>Ribbon is out. Replace the ribbon.</p> </div>	<p>In thermal transfer mode:</p> <ul style="list-style-type: none"> • ribbon is not loaded • ribbon is loaded incorrectly • the ribbon sensor is not detecting ribbon • media is blocking the ribbon sensor 	<ol style="list-style-type: none"> 1. Load ribbon correctly. See Ribbon and Media Loading on page 6. 2. Calibrate the printer. On the control panel, touch Print > Sensors > Manual Calibration to initiate calibration.
	<p>In thermal transfer mode, the print engine did not detect the ribbon even though it is loaded correctly.</p>	<ol style="list-style-type: none"> 1. Touch Print > Sensors > Print: Sensor Profile to print a sensor profile image (which extends across several actual labels or tags). The ribbon out threshold (1) is likely too high, above the line that indicates where the ribbon is detected (2).  <ol style="list-style-type: none"> 2. Calibrate the printer or load print engine defaults. On the control panel, touch Print > Sensors > Manual Calibration to initiate calibration, or touch System > Settings > Restore Defaults > Restore Printer to load print engine defaults
	<p>If you are using direct thermal media, the print engine is waiting for ribbon to be loaded because it is incorrectly set for thermal transfer mode.</p>	<p>Set the print engine for Direct Thermal mode. Touch Print > Print Quality > Print Type > Direct Thermal.</p>

Display/Indicator Lights	Possible Causes	Recommended Solutions
<p style="text-align: center;">Ribbon In</p> <p>Ribbon was detected in Direct Thermal mode. Remove the ribbon.</p>	<p>Ribbon is loaded, but the print engine is set for direct thermal mode.</p>	<p>Ribbon is not required with direct thermal media. If you are using direct thermal media, remove the ribbon. This error message will not affect printing.</p> <p>If the message persists with no ribbon in the printer, calibrate the printer. On the control panel, touch Print > Sensors > Manual Calibration to initiate calibration.</p> <p>If you are using thermal transfer media, which requires ribbon, set the print engine for Thermal Transfer mode. Touch Print > Print Quality > Print Type > Thermal Transfer.</p>
<p style="text-align: center;">Head Identification Failed</p> <p>Printhead is not a Zebra Certified Product Replace the Printhead</p>	<p>The printhead was replaced with one that is not a genuine Zebra printhead.</p>	<p>Install a genuine Zebra printhead.</p>
<p style="text-align: center;">Head Element Out</p> <p>A printhead element failed. The printhead may need to be replaced.</p>	<p>A printhead element is no longer working.</p>	<p>If the location of the failed element affects printing, replace the printhead.</p>
<p style="text-align: center;">Replace Printhead</p> <p>Replace the printhead.</p>	<p>The printhead is nearing the end of its life and should be replaced.</p>	<p>Replace the printhead.</p>
<p style="text-align: center;">Head Maintenance Needed</p> <p>Clean the printhead.</p>	<p>The printhead needs to be cleaned.</p>	<p>Clean the printhead. See Cleaning the Printhead and Rollers on page 23.</p>

Display/Indicator Lights	Possible Causes	Recommended Solutions
<p>Head Over Temp</p> <p>Printhead is too hot. All printing is halted.</p>	 <p>CAUTION—HOT SURFACE: The printhead may be hot enough to cause severe burns. Allow the printhead to cool.</p>	
	<p>The printhead is over temperature.</p>	<p>Allow the print engine to cool. Printing automatically resumes when the printhead elements cool to an acceptable operating temperature.</p> <p>If this error persists, consider changing where the printer is located or using a slower print speed.</p>
<p>Head Under Temp</p> <p>Printhead is too cold. All printing is halted.</p> <p>Head Thermistor Fault</p> <p>Faulty thermistor detected. Replace the printhead.</p> <p>The print engine shows one of these messages or cycles between them.</p>	 <p>CAUTION—HOT SURFACE: An improperly connected printhead data or power cable can cause these error messages. The printhead may be hot enough to cause severe burns. Allow the printhead to cool.</p>	
	<p>The printhead data cable is not properly connected.</p>	<p>Make sure that the printhead is fully seated. If necessary, call a service technician to check the cable.</p>
	<p>The printhead has a faulty thermistor.</p>	<p>Replace the printhead.</p>
<p>Head Under Temp</p> <p>Printhead is too cold. All printing is halted.</p>	 <p>CAUTION—HOT SURFACE: An improperly connected printhead data or power cable can cause this error message. The printhead may be hot enough to cause severe burns. Allow the printhead to cool.</p>	
	<p>The printhead temperature is approaching its lower operating limit.</p>	<p>Continue printing while the printhead reaches the correct operating temperature. If the error remains, the environment may be too cold for proper printing. Relocate the print engine to a warmer area.</p>
	<p>The printhead data cable is not properly connected.</p>	<p>Make sure that the printhead is fully seated. If necessary, call a service technician to check the cable.</p>
	<p>The printhead has a faulty thermistor.</p>	<p>Replace the printhead.</p>
<p>Out of Memory Storing XXX</p> <p>XXX not stored. Out of memory.</p>	<p>There is not enough memory to perform the function specified.</p>	<p>Free up some of the print engine's memory by adjusting the label format or print engine parameters. One way to free up memory is to adjust the print width to the actual width of the label instead of leaving the print width set to the default.</p> <p>Ensure that the data is not directed to a device that is not installed or is unavailable.</p> <p>If the problem persists, call a service technician.</p>

Indicator Lights

The indicator lights communicate the printer's status.



	STATUS light
	PAUSE light
	DATA light
	SUPPLIES light
	NETWORK light

Table 1 Status of Printer As Shown by Indicator Lights

<p>STATUS PAUSE DATA SUPPLIES NETWORK</p>	<ul style="list-style-type: none"> • STATUS light steady green (other lights steady yellow for 2 seconds during printer power-up) <p>The printer is ready.</p>
<p>STATUS PAUSE DATA SUPPLIES NETWORK</p>	<ul style="list-style-type: none"> • PAUSE light steady yellow. <p>The printer is paused.</p>
<p>STATUS PAUSE DATA SUPPLIES NETWORK</p>	<ul style="list-style-type: none"> • STATUS light steady red • SUPPLIES light steady red <p>The media supply is out. The printer needs attention and cannot continue without user intervention.</p>
<p>STATUS PAUSE DATA SUPPLIES NETWORK</p>	<ul style="list-style-type: none"> • STATUS light steady red • SUPPLIES light flashing red <p>The ribbon supply is out. The printer needs attention and cannot continue without user intervention.</p>

Table 1 Status of Printer As Shown by Indicator Lights (Continued)

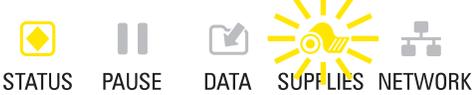
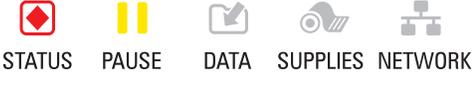
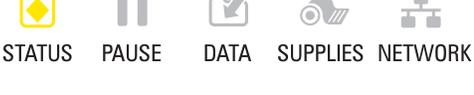
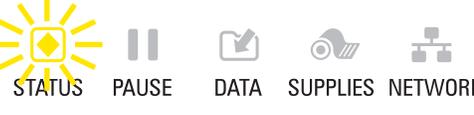
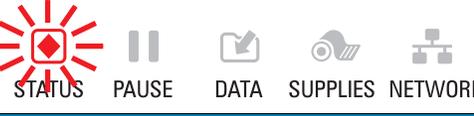
 <p>STATUS PAUSE DATA SUPPLIES NETWORK</p>	<ul style="list-style-type: none"> • STATUS light steady yellow • SUPPLIES light flashing yellow <p>The printer is in Direct Thermal mode, which does not require ribbon; however, ribbon is installed in the printer.</p>
 <p>STATUS PAUSE DATA SUPPLIES NETWORK</p>	<ul style="list-style-type: none"> • STATUS light steady red • PAUSE light steady yellow <p>The printhead is open. The printer needs attention and cannot continue without user intervention.</p>
 <p>STATUS PAUSE DATA SUPPLIES NETWORK</p>	<ul style="list-style-type: none"> • STATUS light steady yellow <p>The printhead is over temperature.</p> <p> CAUTION—HOT SURFACE: The printhead may be hot and could cause severe burns. Allow the printhead to cool.</p>
 <p>STATUS PAUSE DATA SUPPLIES NETWORK</p>	<ul style="list-style-type: none"> • STATUS light flashing yellow <p>One of the following:</p> <ul style="list-style-type: none"> • The printhead is under temperature. • The power supply is over temperature. • The main logic board (MLB) is over temperature.
 <p>STATUS PAUSE DATA SUPPLIES NETWORK</p>	<ul style="list-style-type: none"> • STATUS light steady red • PAUSE light steady red • DATA light steady red <p>The printhead was replaced with one that is not a genuine Zebra™ printhead. Install a genuine Zebra™ printhead to continue.</p>
 <p>STATUS PAUSE DATA SUPPLIES NETWORK</p>	<ul style="list-style-type: none"> • STATUS light flashing red <p>The print engine is unable to read the dpi setting of the printhead.</p>
Printers with a ZebraNet wired Ethernet option	
 <p>STATUS PAUSE DATA SUPPLIES NETWORK</p>	<ul style="list-style-type: none"> • NETWORK light off <p>No Ethernet link is available.</p>
 <p>STATUS PAUSE DATA SUPPLIES NETWORK</p>	<ul style="list-style-type: none"> • NETWORK light steady green <p>A 100 Base-T link was found.</p>
 <p>STATUS PAUSE DATA SUPPLIES NETWORK</p>	<ul style="list-style-type: none"> • NETWORK light steady yellow <p>A 10 Base-T link was found.</p>
 <p>STATUS PAUSE DATA SUPPLIES NETWORK</p>	<ul style="list-style-type: none"> • NETWORK light steady red <p>An Ethernet error condition exists. The printer is not connected to your network.</p>

Table 1 Status of Printer As Shown by Indicator Lights (Continued)

Printers with a ZebraNet wireless option				
	<ul style="list-style-type: none"> • NETWORK light off A radio was found during power-up. The printer is attempting to associate with the network. The light flashes red while the printer associates with the network. The light then flashes yellow while the printer is authenticating with the network. 			
	<ul style="list-style-type: none"> • NETWORK light steady green The radio is associated with your network and authenticated, and the WLAN signal is strong. 			
	<ul style="list-style-type: none"> • NETWORK light flashing green The radio is associated with your network and authenticated, but the WLAN signal is weak. 			
	<ul style="list-style-type: none"> • NETWORK light steady red A WLAN error condition exists. The printer is not connected to your network. 			

Cleaning the Printhead and Rollers

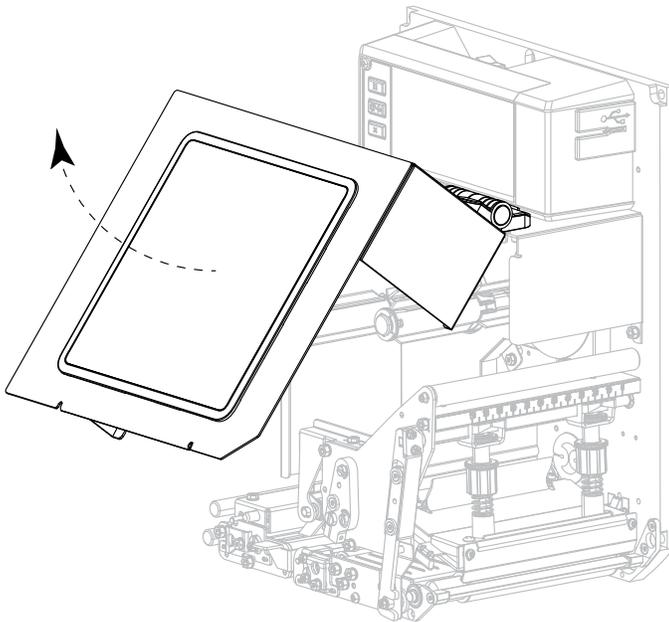
Inconsistent print quality, such as voids in the barcode or graphics, may indicate a dirty printhead. Clean the printhead and rollers at these intervals:

- **Direct Thermal Mode:** After every roll of media (or 500 feet of fanfold media).
- **Thermal Transfer Mode:** After every roll of ribbon.

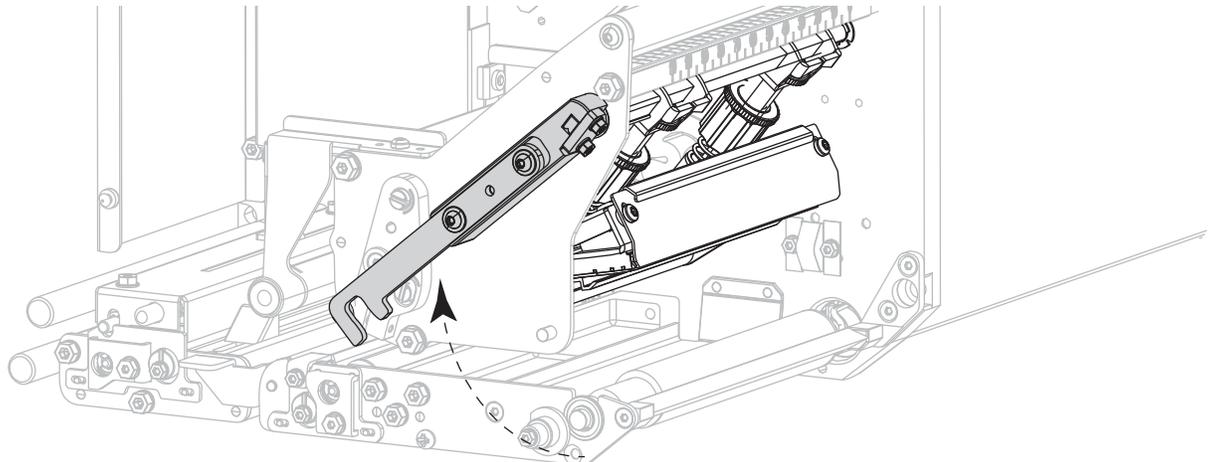


CAUTION—ESD: Before touching the printhead assembly, discharge any built-up static electricity by touching the metal printer frame or by using an anti-static wriststrap and mat.

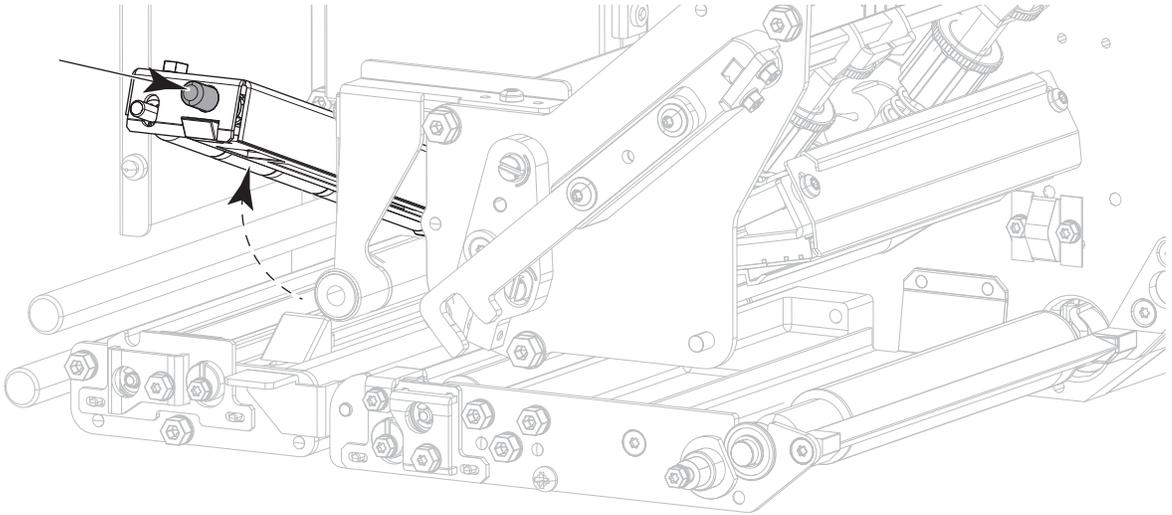
1. Turn Off (O) the print engine.
2. Open the media cover.



3. Remove the media and ribbon.
4. Release the printhead assembly.

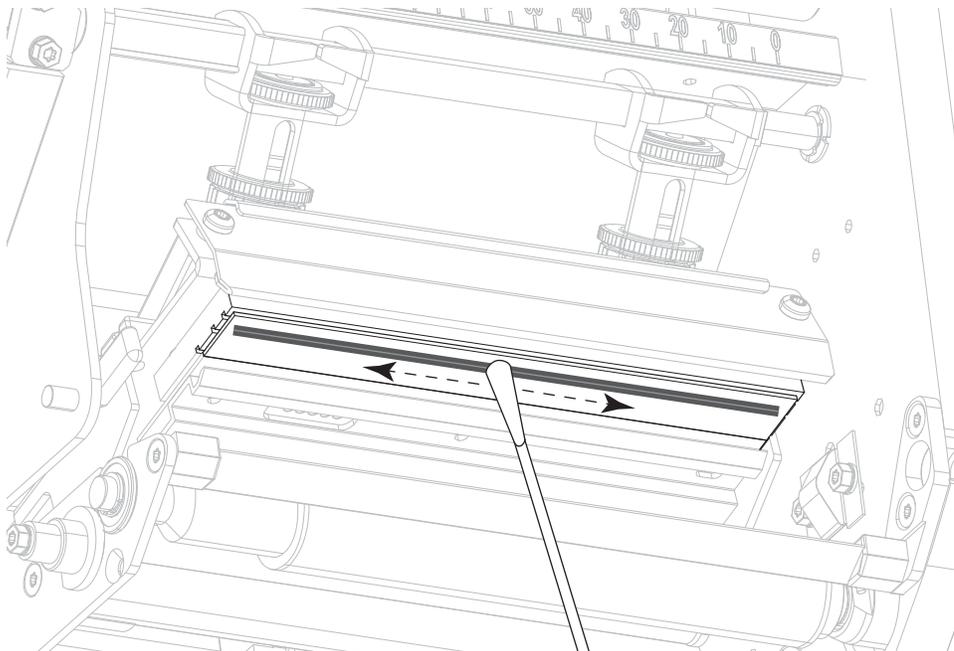


5. Press the release button on the upper pinch roller assembly, and allow the assembly to pivot upward.

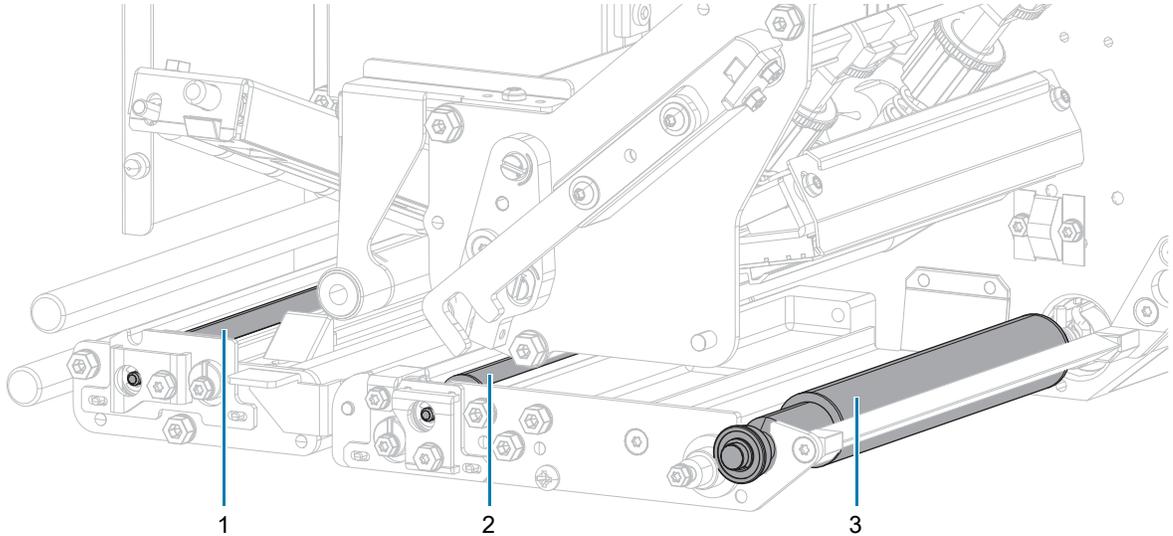


CAUTION—HOT SURFACE: The printhead may be hot and could cause severe burns. Allow the printhead to cool.

6. Clean the printhead.
 - a. Using the swab from the Preventive Maintenance Kit (p/n 47362 or p/n 105950-035 for a multipack), wipe the print elements (gray strip) from end to end. In place of this kit, use a lint-free cloth dipped in 99.7% isopropyl alcohol.
 - b. Allow the solvent to evaporate.

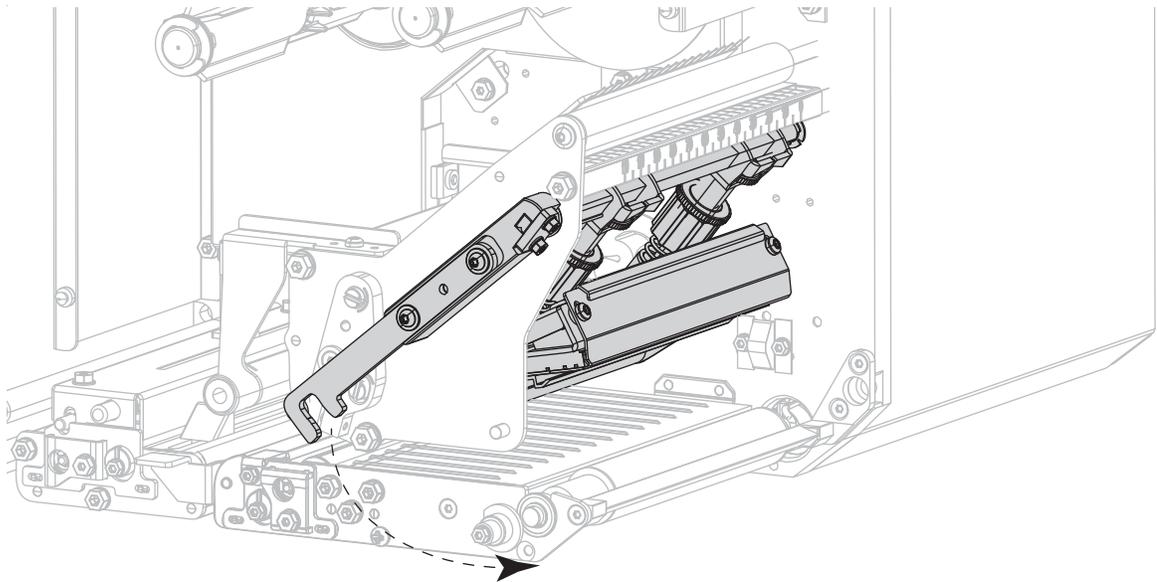


7. Clean the rollers.
 - a. Use the swab or the lint-free cloth to clean the pinch roller (1), peel roller (2), and platen roller (3). Rotate the rollers while cleaning them.
 - b. Allow the solvent to evaporate.



NOTE: If print quality does not improve after you perform this procedure, clean the printhead with Zebra's Save-a-Printhead cleaning film. Call your authorized Zebra distributor for more information.

8. Reload the ribbon and media (if used).
9. Close the upper pinch roller assembly.
10. Lock the printhead assembly.



11. Close the media cover.

