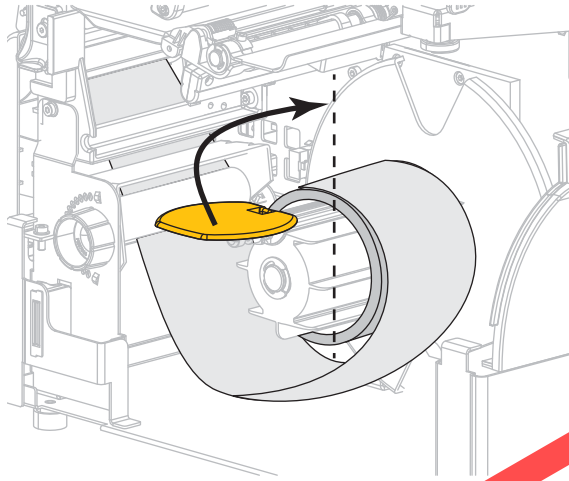
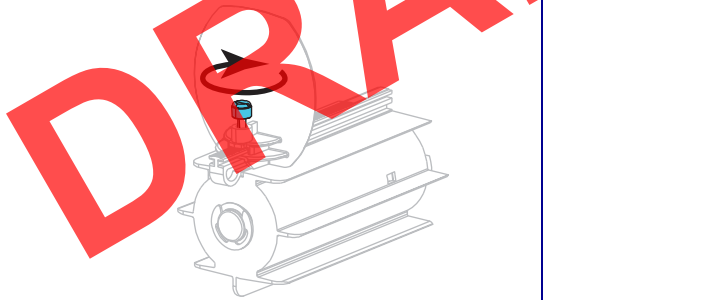


Rewind Option (Continued)

- 5-g. Fold up the rewind media guide, and then slide it in until it touches the liner.



- 5-h. Tighten the thumbscrew on the rewind media guide.

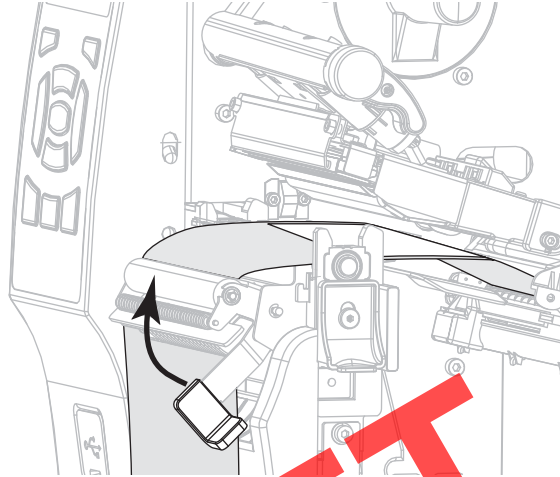


- 5-i. Loading of the liner is complete. Continue with [step 6](#).

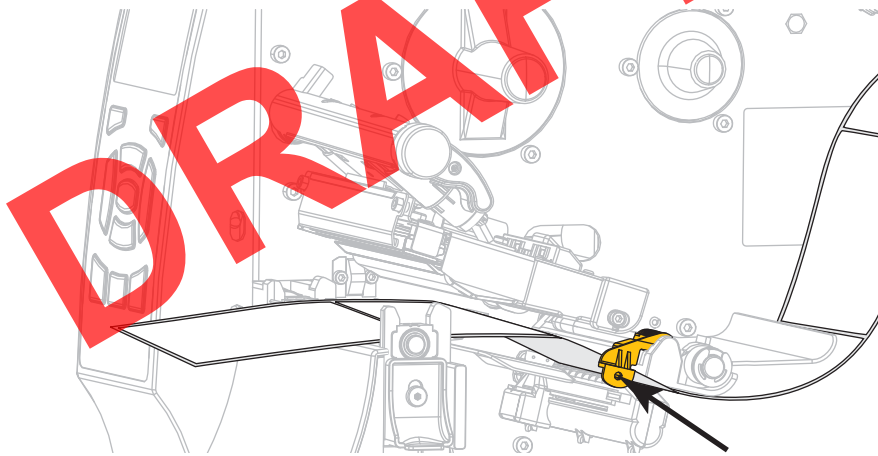


6. **Caution** • Use the peel release lever and your right hand to close the peel assembly. Do not use your left hand to assist in closing. The top edge of the peel roller/assembly could pinch your fingers.

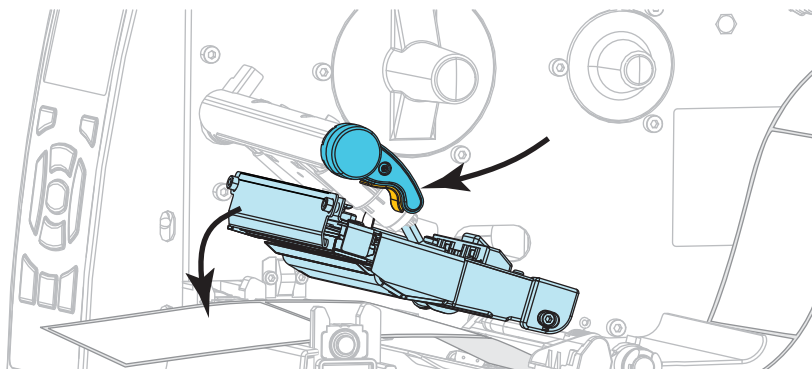
Close the peel assembly using the peel-off mechanism release lever.



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



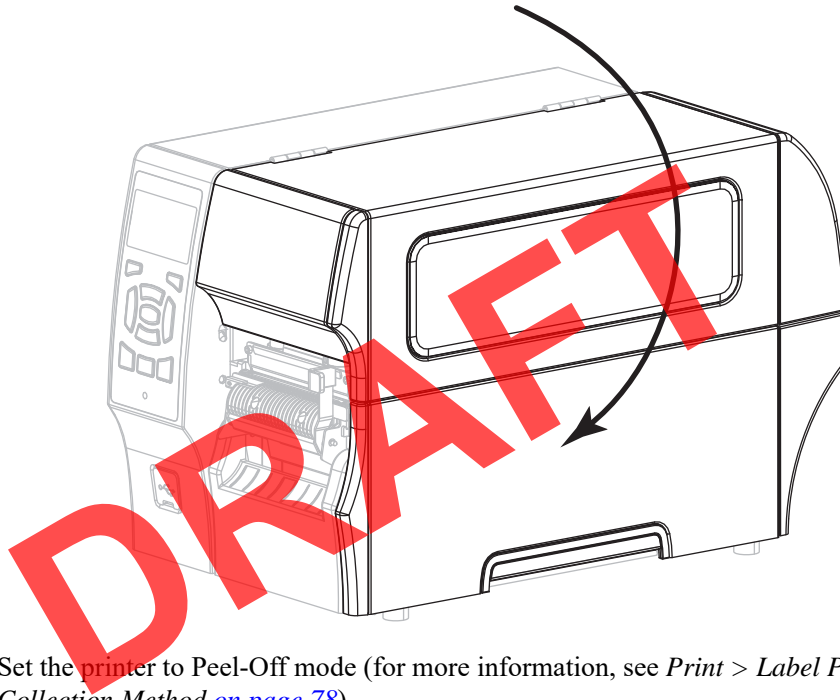
8. Rotate the printhead-open lever downward until it locks the printhead in place.



9. Does the media that you are using require ribbon for printing? If you are not sure, see [Ribbon on page 11](#).

If using...	Then...
Direct Thermal media (no ribbon needed)	Continue with step 10 .
Thermal Transfer media (ribbon needed)	<ol style="list-style-type: none"> a. If you have not already done so, load ribbon in the printer. See Load the Ribbon on page 43. b. Continue with step 10.

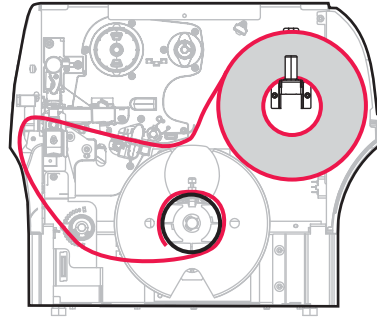
10. Close the media door.



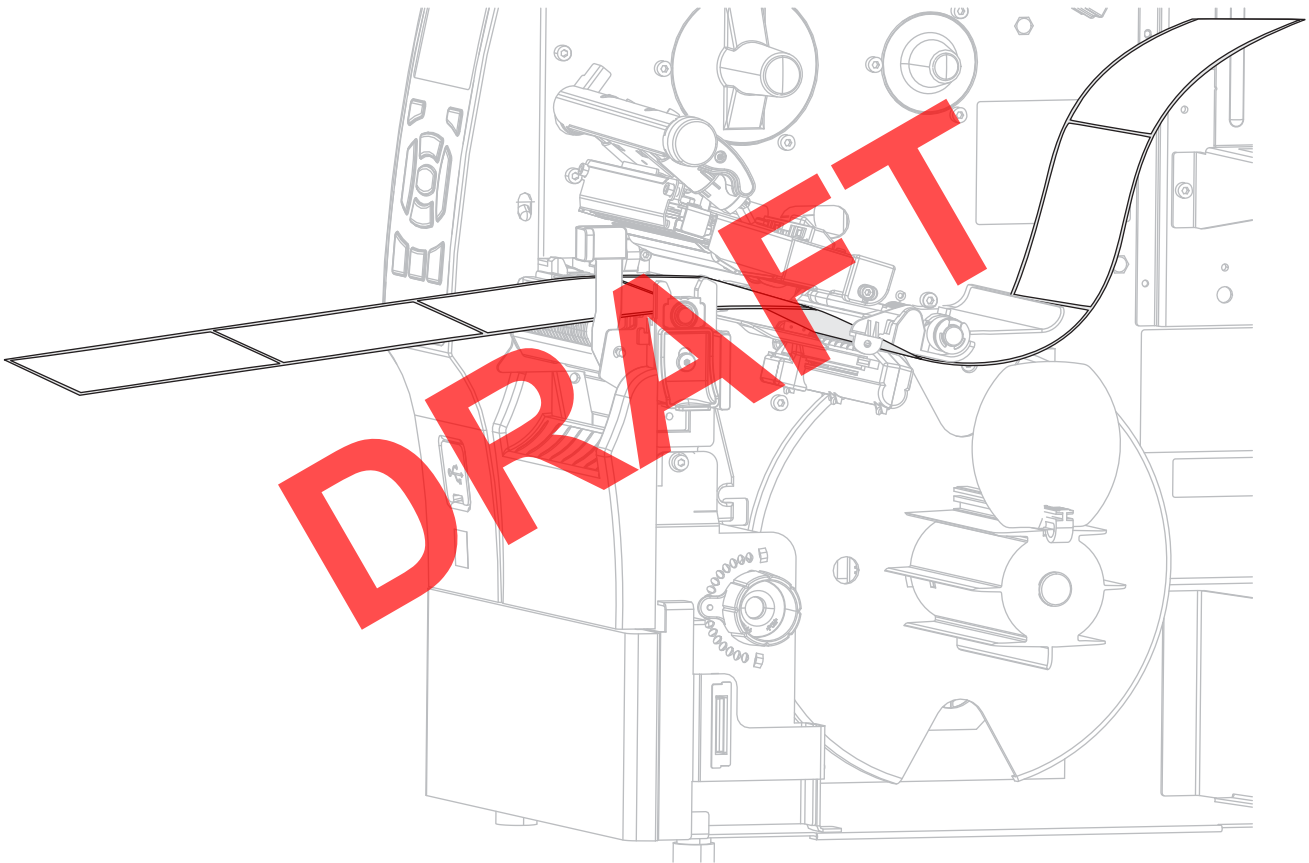
11. Set the printer to Peel-Off mode (for more information, see *Print > Label Position > Collection Method on page 78*).
12. Press PAUSE to exit pause mode and enable printing.
The printer may perform a label calibration or feed a label, depending on your settings.
13. For best results, calibrate the printer. See *Print > Sensors > Manual Calibration on page 81*.

Media loading in Peel-Off mode is complete.

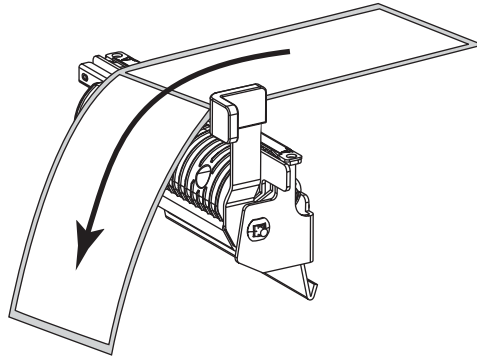
Final Steps for Rewind Mode



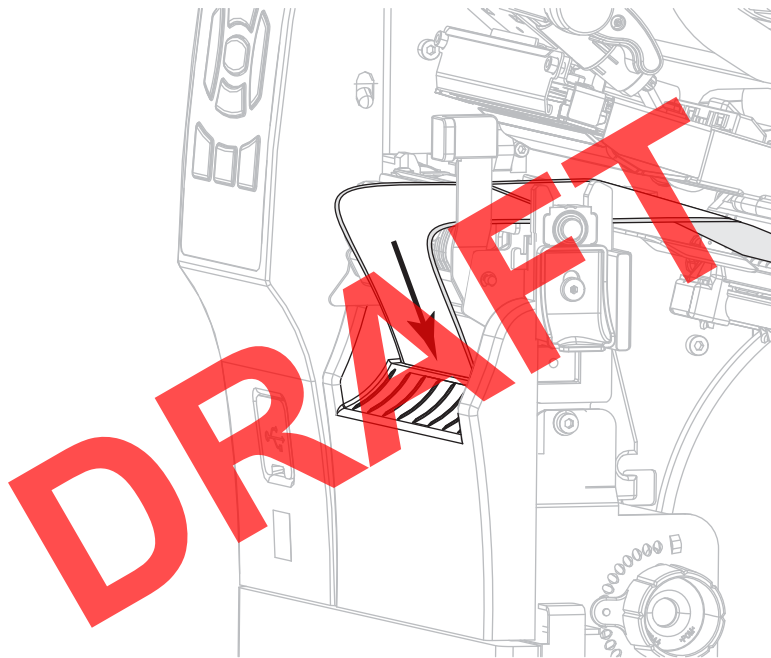
1. Extend the media approximately 18 in. (500 mm) out of the printer.



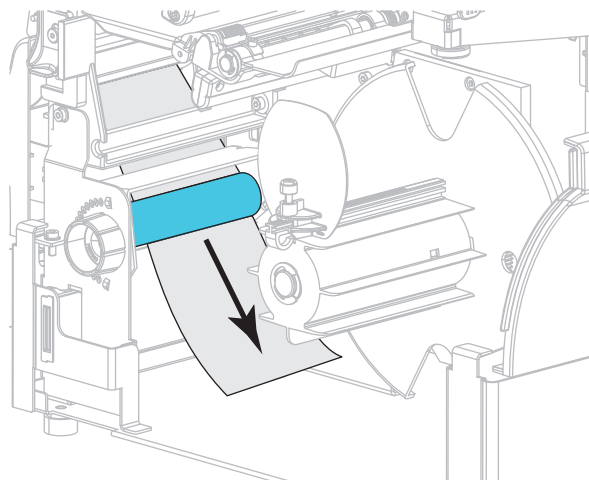
2. Feed the media over the peel assembly.



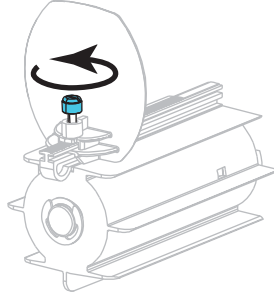
3. Thread the media into the slot below the peel assembly.



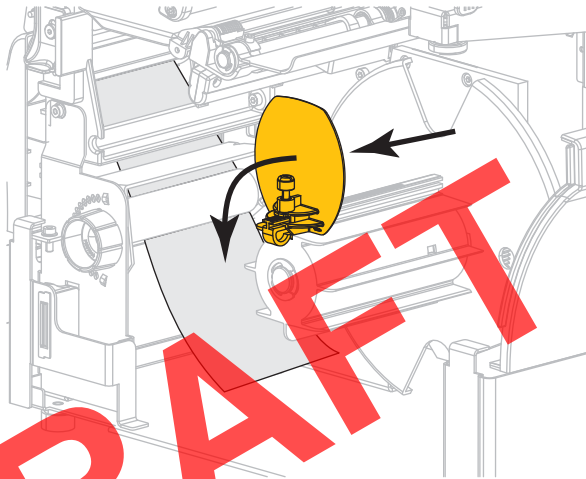
4. Feed the media under the media alignment roller.



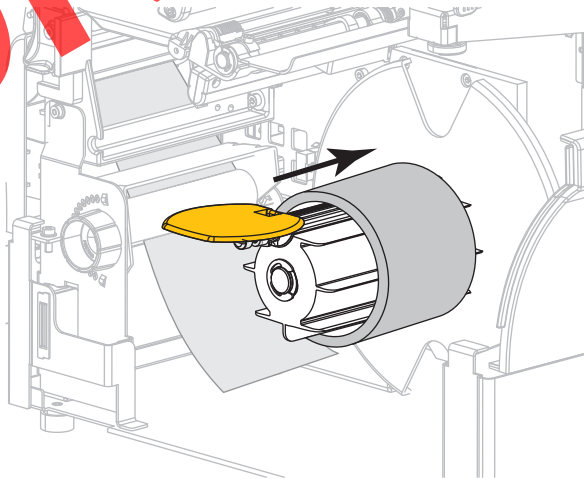
5. Loosen the thumbscrew on the rewind media guide.



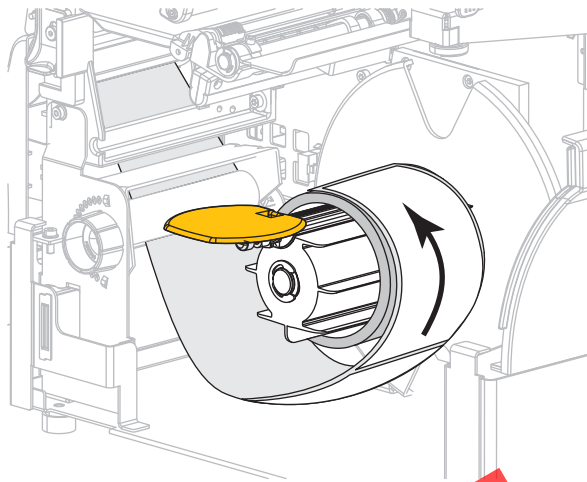
6. Slide the rewind media guide all the way out, and then fold it down.



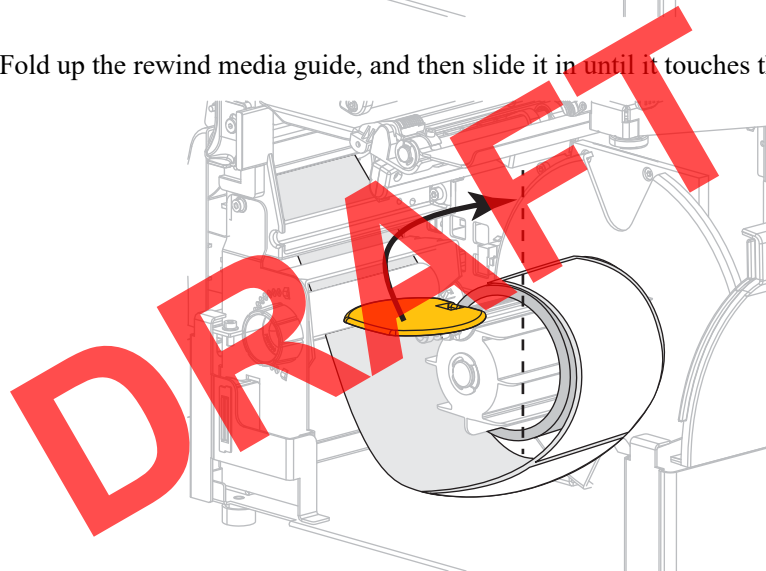
7. Slide an empty core onto the rewind spindle.



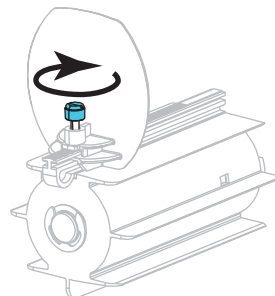
8. Wrap the media around the core as shown and turn the rewind spindle to tighten the media. Ensure that the edge of the media is flush against the backplate of the rewind spindle.



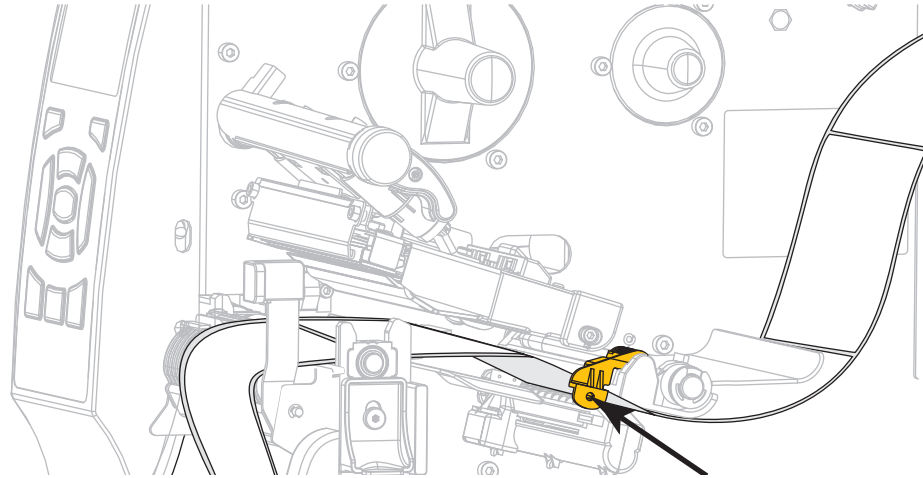
9. Fold up the rewind media guide, and then slide it in until it touches the media.



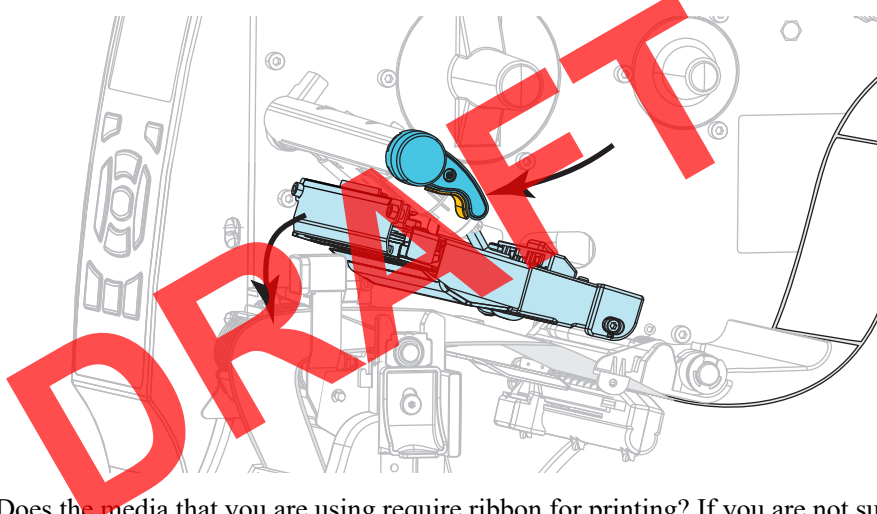
10. Tighten the thumbscrew on the rewind media guide.



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



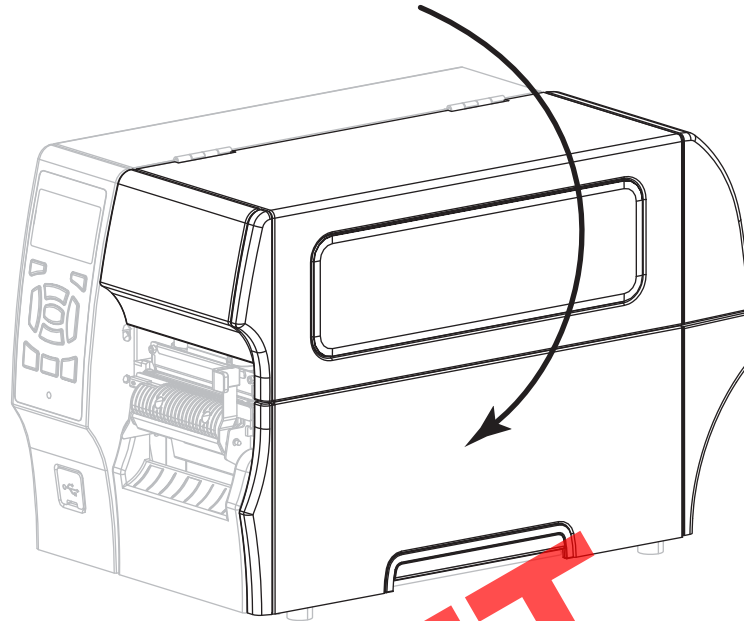
12. Rotate the printhead-open lever downward until it locks the printhead in place.



13. Does the media that you are using require ribbon for printing? If you are not sure, see [Ribbon on page 11](#).

If using...	Then...
Direct Thermal media (no ribbon needed)	Continue with step 14 .
Thermal Transfer media (ribbon needed)	a. If you have not already done so, load ribbon in the printer. See Load the Ribbon on page 43 . b. Continue with step 14 .

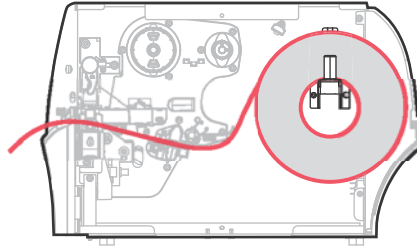
14. Close the media door.



15. Set the printer to Rewind mode (for more information, see *Print > Label Position > Collection Method on page 78*).
16. Press PAUSE to exit pause mode and enable printing.
The printer may perform a label calibration or feed a label, depending on your settings.
17. For best results, calibrate the printer. See *Print > Sensors > Manual Calibration on page 81*.

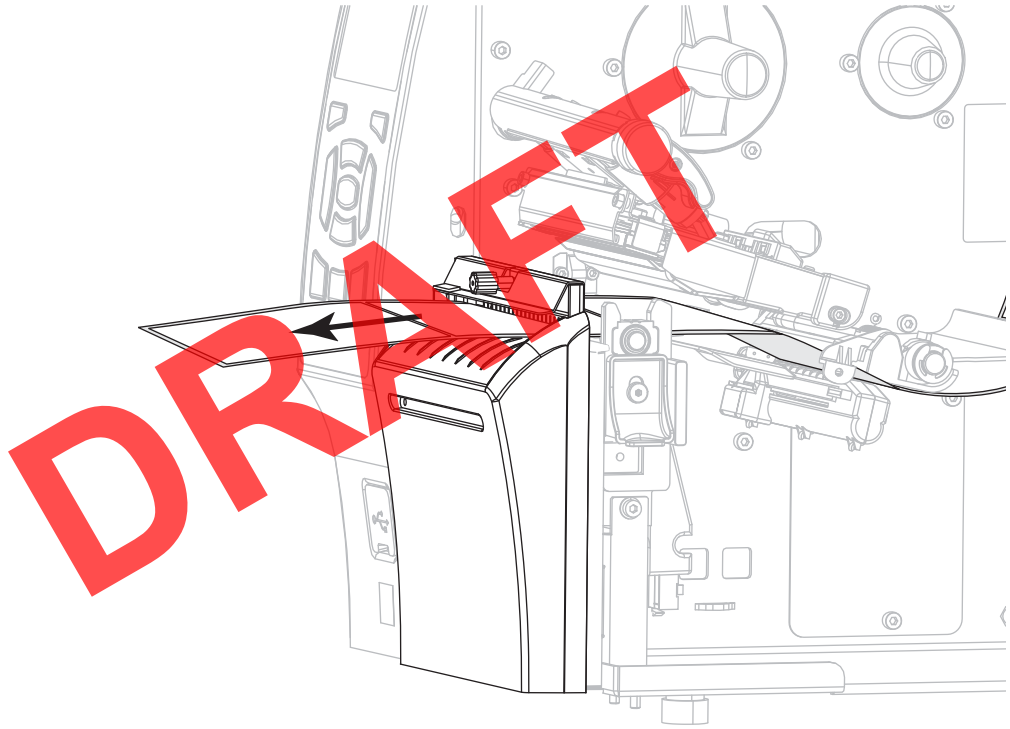
Media loading in Rewind mode is complete.

Final Steps for Cutter Mode

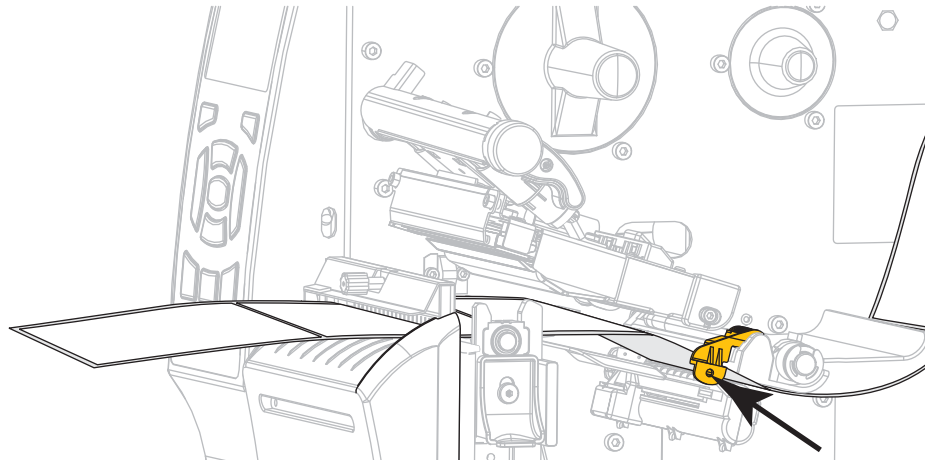


1. **Caution** • The cutter blade is sharp. Do not touch or rub the blade with your fingers.

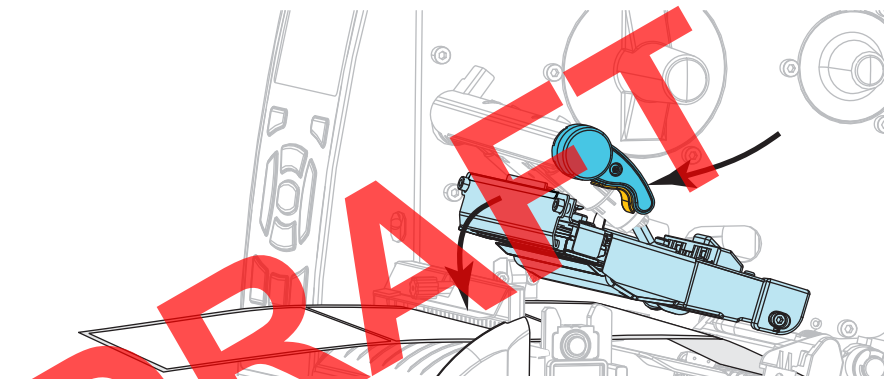
Feed the media through the cutter.



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



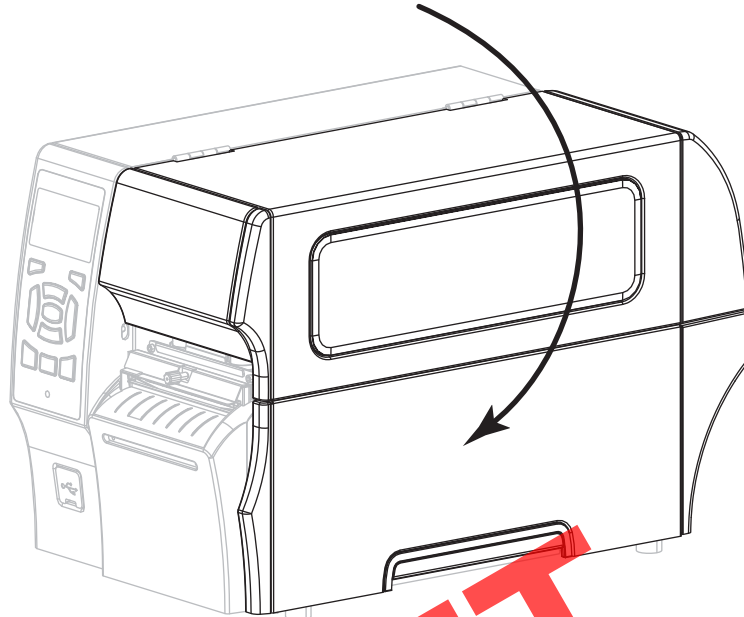
- Rotate the printhead-open lever downward until it locks the printhead in place.



- Does the media that you are using require ribbon for printing? If you are not sure, see [Ribbon on page 11](#).

If using...	Then...
Direct Thermal media (no ribbon needed)	Continue with step 5 .
Thermal Transfer media (ribbon needed)	<ol style="list-style-type: none"> If you have not already done so, load ribbon in the printer. See Load the Ribbon on page 43. Continue with step 5.

5. Close the media door.



6. Set the printer to Cutter mode (for more information, see *Print > Label Position > Collection Method* on page 78).
7. Press PAUSE to exit pause mode and enable printing.
The printer may perform a label calibration or feed a label, depending on your settings.
8. For best results, calibrate the printer. See *Print > Sensors > Manual Calibration* on page 81.

Media loading in Cutter mode is complete.

Load the Ribbon





Note • This section applies only to printers that have the Thermal Transfer option installed.

What kind of ribbon can I use? If you are unsure which side of a particular roll of ribbon is coated, perform an adhesive test or a ribbon scratch test to determine which side is coated.

Adhesive Test If you have labels available, perform the adhesive test to determine which side of a ribbon is coated. This method works well for ribbon that is already installed.

To perform an adhesive test, complete these steps:

1. Peel a label from its liner.
2. Press a corner of the sticky side of the label to the outer surface of the roll of ribbon.
3. Peel the label off of the ribbon.
4. Observe the results. Did flakes or particles of ink from the ribbon adhere to the label?



If ink from the ribbon...	Then...
Adhered to the label	The ribbon is coated on the outside and can be used in this printer. 
Did not adhere to the label	The ribbon is coated on the inside and cannot be used in the standard printer. An optional ribbon spindle is available to use ribbon that is coated on the inside. Contact your authorized Zebra reseller for ordering information.  To verify this result, repeat the test on the other surface of the roll of ribbon.

Ribbon Scratch Test Perform the ribbon scratch test when labels are unavailable.

To perform a ribbon scratch test, complete these steps:

1. Unroll a short length of ribbon.
2. Place the unrolled section of ribbon on a piece of paper with the outer surface of the ribbon in contact with the paper.
3. Scratch the inner surface of the unrolled ribbon with your fingernail.
4. Lift the ribbon from the paper.

5. Observe the results. Did the ribbon leave a mark on the paper?

If the ribbon...	Then...
Left a mark on the paper	The ribbon is coated on the outside and can be used in this printer. 
Did not leave a mark on the paper	The ribbon is coated on the inside and cannot be used in the standard printer. An optional ribbon spindle is available to use ribbon that is coated on the inside. Contact your authorized Zebra reseller for ordering information.  To verify this result, repeat the test on the other surface of the roll of ribbon.

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How to Load Ribbon



Note • This section applies only to printers that have the Thermal Transfer option installed.

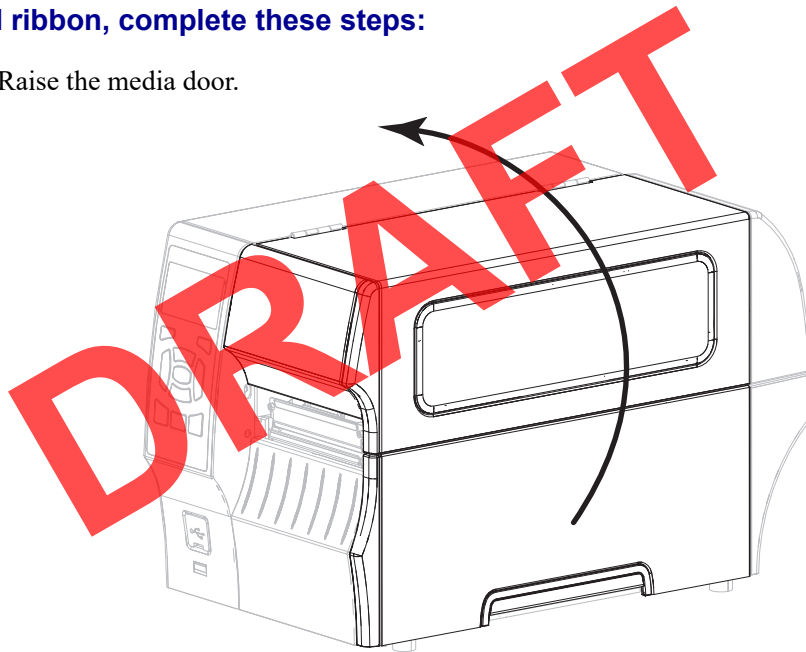
Caution • While performing any tasks near an open printhead, remove all rings, watches, hanging necklaces, identification badges, or other metallic objects that could touch the printhead. You are not required to turn off the printer power when working near an open printhead, but Zebra recommends it as a precaution. If you turn off the power, you will lose all temporary settings, such as label formats, and you must reload them before you resume printing.



Important • Use ribbon that is wider than the media to protect the printhead from wear. Ribbon must be coated on the outside.

To load ribbon, complete these steps:

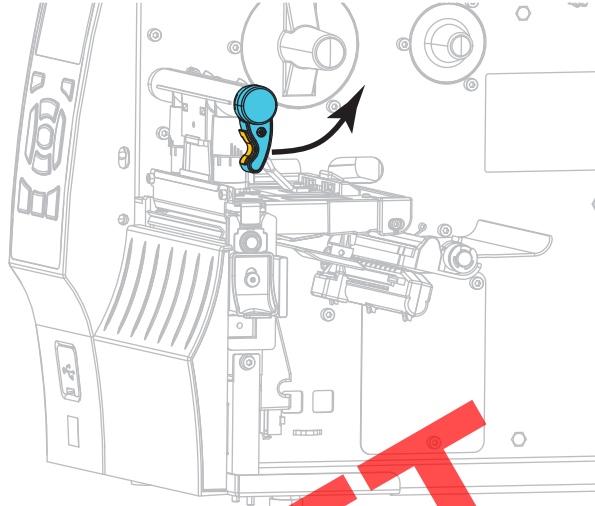
1. Raise the media door.



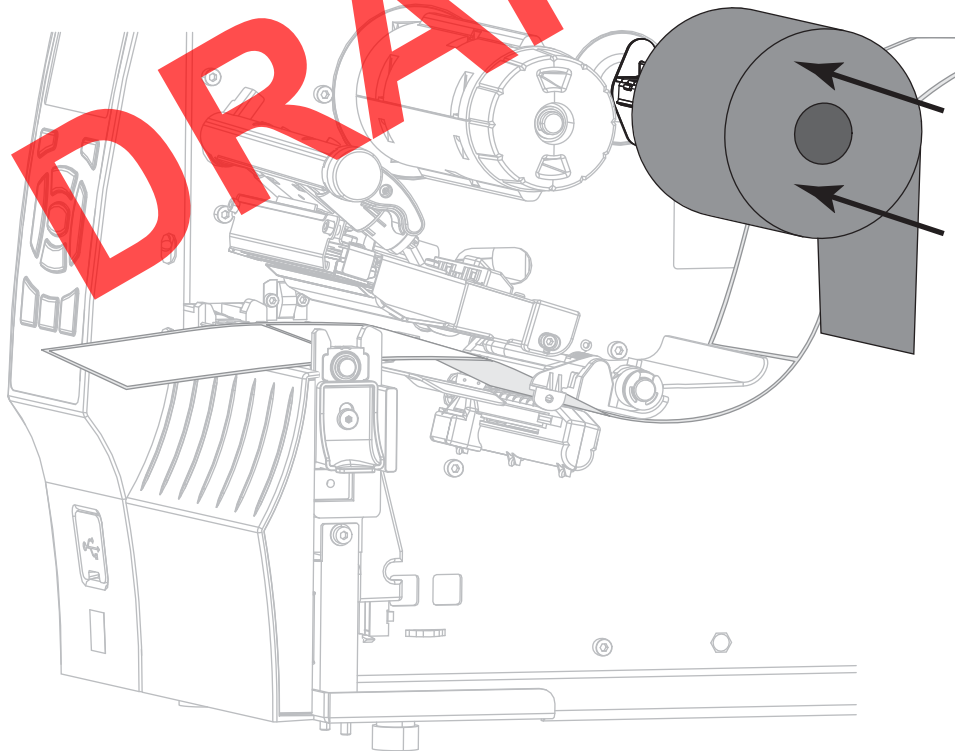


2. **Caution** • The printhead may be hot and could cause severe burns. Allow the printhead to cool.

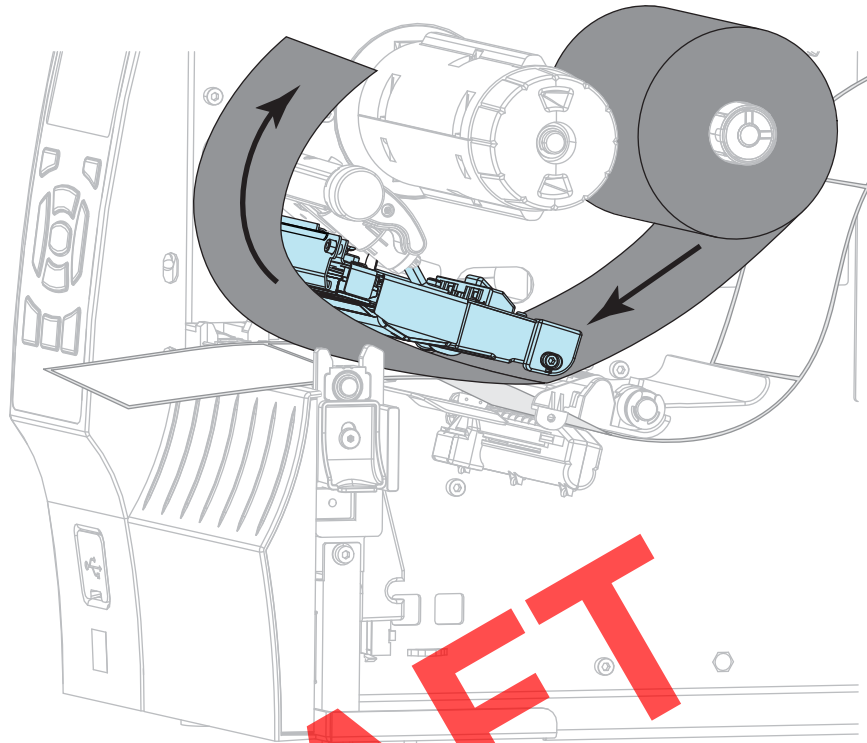
Open the printhead assembly by rotating the printhead-open lever.



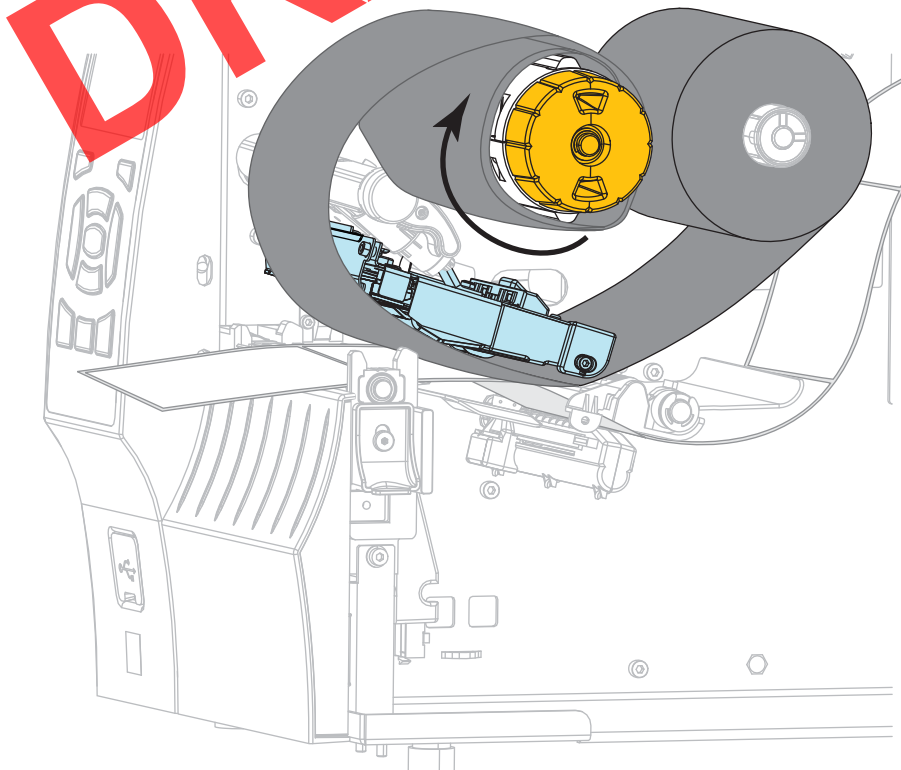
3. Place the roll of ribbon on the ribbon supply spindle with the loose end of the ribbon unrolling as shown. Push the roll back as far as it will go.



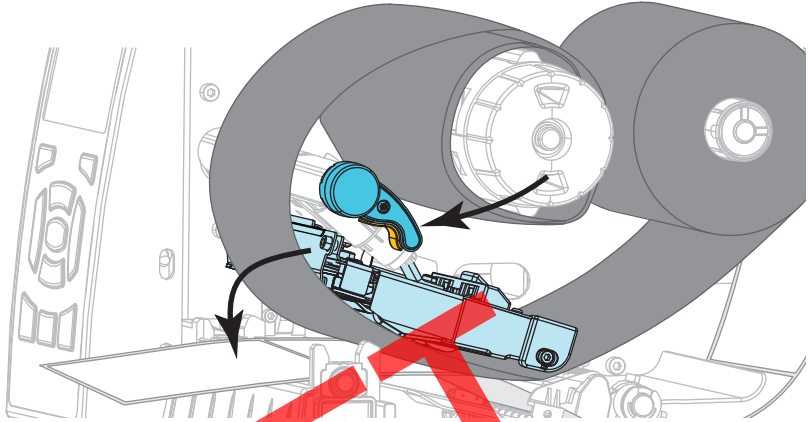
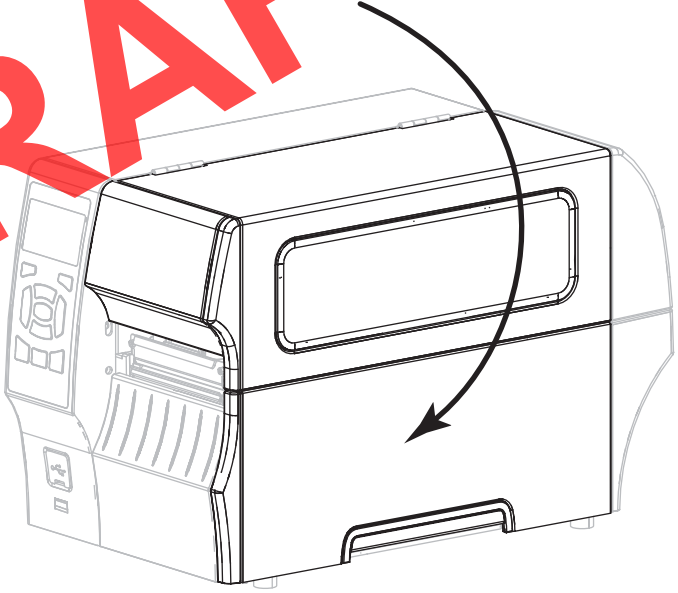
4. Bring the ribbon under the printhead assembly and around its left side, as shown.



5. With the ribbon tracking as far back as it can under the printhead assembly, wrap the ribbon around the ribbon take-up spindle. Rotate the spindle several turns in the direction shown to tighten and align the ribbon.



6. Is media already loaded in the printer?

If...	Then...
No	Continue with <i>Insert the Media into the Printer</i> on page 17 to load media in the printer.
Yes	<p data-bbox="626 405 1333 468">a. Rotate the printhead-open lever downward until it locks the printhead in place.</p>  <p data-bbox="626 919 911 951">b. Close the media door.</p>  <p data-bbox="626 1612 1170 1644">c. If necessary, press PAUSE to enable printing.</p>

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Run the Print Wizard and Print a Test Label

The Print Wizard configures the printer, prints test labels, and adjusts print quality based on the results of the test labels.



Important • When using the Wizards, do not send data to the printer from the host.

For best results, use full-width media running the **Print Wizard** or **Set All Wizard**. If the media is smaller than an image to be printed, the results may be truncated or print across multiple labels.

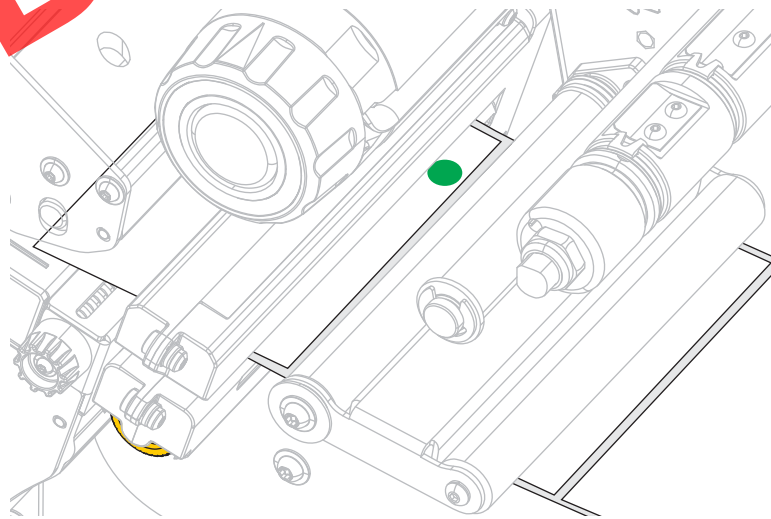
After you have completed the printer setup procedures and run the printer setup wizard, use this section to print a test label. Printing this label allows you to see if your connection is working and if you need to adjust any of the print settings.

To print a test label and adjust the printer (if necessary), complete these steps:

1. On the Home screen, touch **Wizards > Print > Start Print**.
2. Follow the prompts to specify the following information:
 - print type (Thermal Transfer or Direct Thermal)
 - label type (Continuous, Gap/Notch, or Mark)
 - label width
 - collection method (tear off, peel-off, rewind, cutter, delayed cut, linerless peel, linerless rewind, linerless tear, or applicator)

After you have specified these, the wizard instructs you to load media and then to place a label over the media sensor.

3. Load media so that a label is over the green light from the media sensor, and then touch the check mark.



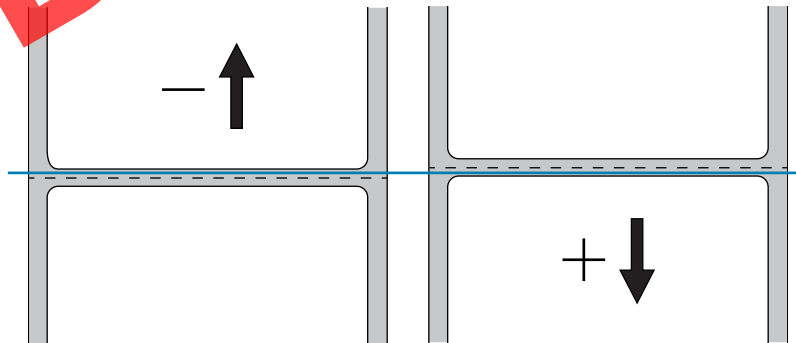
4. At the prompt, close the printhead, and then touch the next check mark.
The printer calibrates and then asks if you would like to print a test label.
5. Follow the prompts until the printer completes auto calibration.

6. When asked to print a test label, touch the check mark.

A test label similar to this one prints. If your labels are smaller than the image, only a portion of the test label will print.



7. Examine the position of the label over the tear bar. If necessary, shift the position of the media over the tear-off bar after printing.
- If the space between labels falls on the tear bar, continue with the next step.
 - If the space between labels does not fall directly on the tear bar, shift the position of the media over the tear bar after printing. Lower numbers move the media into the printer by the specified number of dots (the tear line moves closer to the edge of the label just printed). Higher numbers move the media out of the printer (the tear line moves closer to the leading edge of the next label).



8. Examine the quality of the image on the test label. Is the quality of the barcode and text on the test label acceptable? See [Judging Barcode Quality on page 118](#) for assistance.
- If yes, touch the check mark, and then continue with [step 13](#).
 - If no, adjust the print quality manually by changing darkness and speed settings through the printer's menu system, or continue with this procedure to run the Print Quality Assistance wizard.

Print Quality Assistance Wizard

9. Touch Print Quality Assistance.

The printer prompts for the number of test labels to print. The more labels you choose to print, the more choices that you will have available to decide on label quality. In general, if your test label from the previous wizard was acceptable, a lower number of test labels in this step will probably suffice.

10. Select a number of test labels to print.

The printer prints the specified number of test labels and prompts you for the best test label.

11. Decide which test label is the best quality. See [Judging Barcode Quality on page 118](#) for assistance. If none of the labels are acceptable, use the arrow to back up a screen in the wizard, and select a larger number of test labels.

12. In the list on the display, select the identifier for the test label with the best quality, and then touch the check mark.

The printer changes the darkness and speed to the levels used on the best test label.

13. If necessary, see [Printing or Print Quality Issues on page 131](#) to see what other issues may be affecting your print quality.

The print setup procedure is complete.

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Printer Configuration and Adjustment

This section assists you with configuration of and adjustments to the printer.

Contents

Calibrate the Ribbon and Media Sensors	192
Adjust the Printhead Pressure and Toggle Position	202
Adjust the Sensor Position	208

Home Screen

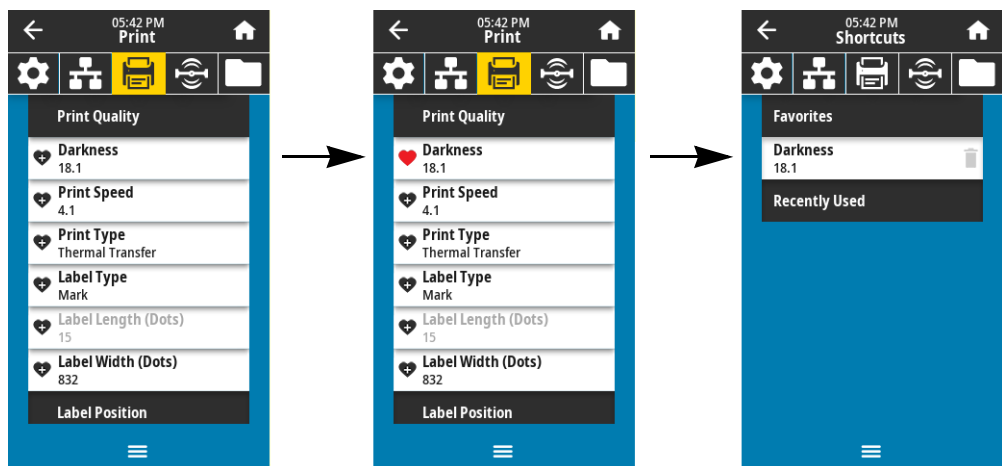
The printer's Home screen shows you the printer's current status and allows you to access the printer's menus. You can rotate the image of the printer 360 degrees to view it from all angles.



If the background color of the Home screen is yellow or red, the printer is in an alert or error state. For more information, see [Alert and Error States on page 125](#).

The following items are located on the Home screen Print Status tab:

- **Menu**—Allows you to change the printer settings. See [User Menus on page 56](#).
- **Wizards**—Allows you to change printer settings by going through prompts. See [Printer Wizards on page 55](#).
- **Shortcuts**—Allows you to quickly access the most recent menu items and to save your favorites. Touch the darkened heart icon next to a menu item to save it to your list of favorites. Items in the favorites are shown in the order in which they were saved.



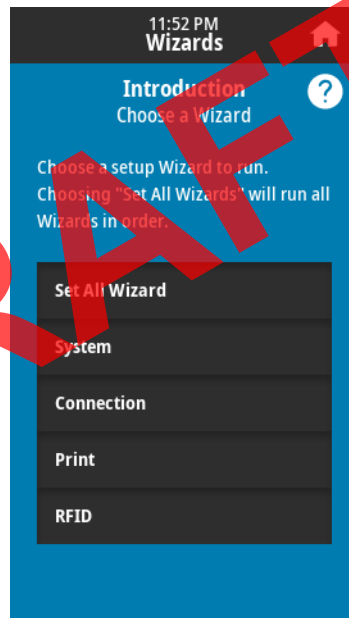
Printer Wizards

The printer Wizards can assist you by walking you through the setup process for various printer settings and features.

The following wizards are available:

- **Set All Wizard**—runs all the Wizards in sequence.
- **System Wizard**—sets up non-print related operating system settings.
- **Connection Wizard**—configures the printer's connectivity options.
- **Print Wizard**—configures key printing parameters and features. See [Run the Print Wizard and Print a Test Label on page 49](#).
- **RFID Wizard**—sets up the RFID subsystem's operations.

On the Home screen, touch **Wizards** to see the available options. For more information about individual settings set by any of the wizards, see [User Menus on page 56](#).



Important • When using the Wizards, do not send data to the printer from the host.

For best results, use full-width media running the Print or Set All Wizards. If the media is shorter than an image to be printed, the image may be truncated or print across multiple labels.

User Menus

The printer's user menus can be used to configure the printer.



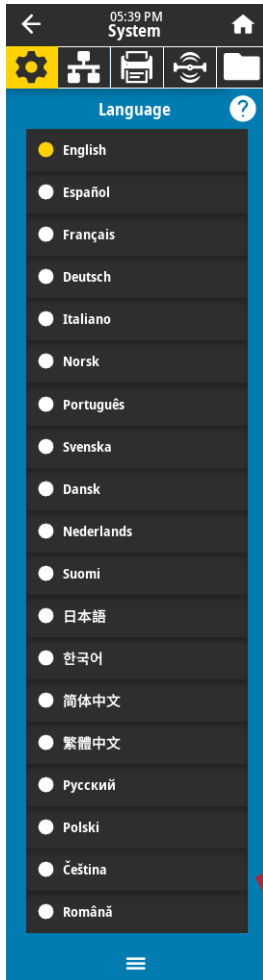
See the following sections:

- [System Menu](#) on page 57
- [Connection Menu](#) on page 64
- [Print Menu](#) on page 76
- [RFID Menu](#) on page 84
- [Storage Menu](#) on page 90

The user menu descriptions include the following other ways to change the same settings, when other options exist. You can also use the printer's wizards to change some of the settings. (See [Printer Wizards](#) on page 55.)

- **ZPL and Set/Get/Do (SGD) commands.** See the *Zebra Programming Guide* at <http://www.zebra.com/manuals> for more information.
- The printer's **web pages**, for when the printer has an active wired or wireless print server connection. See the *ZebraNet Wired and Wireless Print Servers User Guide* at <http://www.zebra.com/manuals> for more information.

System Menu



System > Language

If necessary, change the language that the printer displays. This change affects the words shown on the following:

- the Home screen
- the user menus
- error messages
- the printer configuration label, the network configuration label, and other labels that you can select to print through the user menus

<i>Accepted values:</i>	ENGLISH, SPANISH, FRENCH, GERMAN, ITALIAN, NORWEGIAN, PORTUGUESE, SWEDISH, DANISH, DUTCH, FINNISH, CZECH, JAPANESE, KOREAN, ROMANIAN, RUSSIAN, POLISH, SIMPLIFIED CHINESE, TRADITIONAL CHINESE
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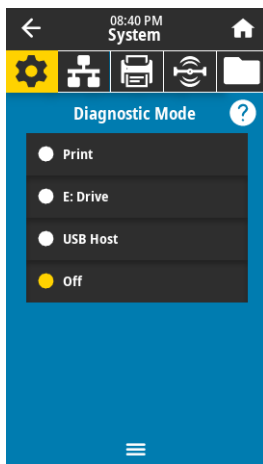


Note • The selections for this parameter are displayed in the actual languages to make it easier for you to find one that you are able to read.

<i>Related ZPL command(s):</i>	^KL
--------------------------------	-----

<i>SGD command used:</i>	display language
--------------------------	------------------

<i>Printer web page:</i>	View and Modify Printer Settings > General Setup > Language
--------------------------	---



System > Program Language > Diagnostic Mode

Use this diagnostics tool to cause the printer to output the hexadecimal values for all data received by the printer. For more information, see [Communication Diagnostics Mode on page 123](#).

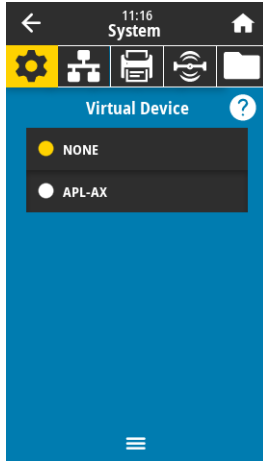
<i>Accepted values:</i>	<ul style="list-style-type: none"> • DISABLED • ENABLED
-------------------------	---

<i>Related ZPL command(s):</i>	~JD to enable, ~JE to disable
--------------------------------	-------------------------------

<i>SGD command used:</i>	device.diagnostic_print
--------------------------	-------------------------

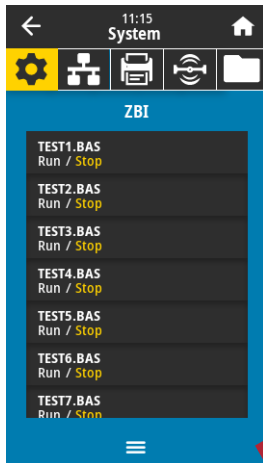
<i>Control panel key(s):</i>	Hold PAUSE + FEED for 2 seconds when the printer is in the Ready state.
------------------------------	---

System > Program Language > Virtual Device



If any Virtual Device apps are installed on your printer, you may view or enable/disable them from this user menu. For more information about Virtual Devices, go to the User Guide for the appropriate Virtual Device, or contact your local reseller.

System > Program Language > ZBI

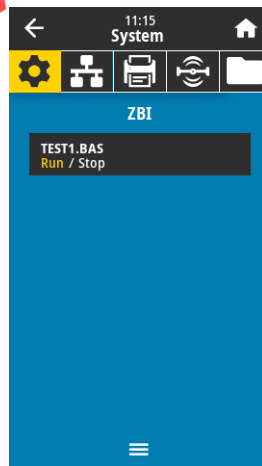


Zebra Basic Interpreter (ZBI 2.0™) is a programming option that may be purchased for your printer. If you would like to purchase this option, contact your Zebra reseller for more information.

If ZBI programs have been downloaded to your printer, you may select one to run using this menu item. If no program exists on your printer, NONE is listed.

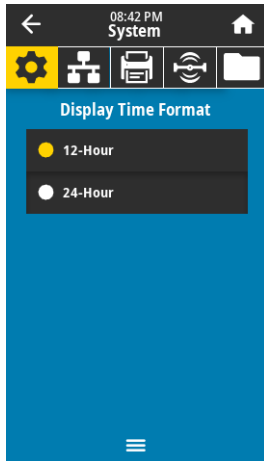
When ZBI programs have been downloaded but none are running, the printer lists all available programs. To run one of them, touch **Run** (highlighted in white) under the program name.

After a program is running, only that program is listed. Touch **Stop** (highlighted in white) to end the program.



SGD command used:

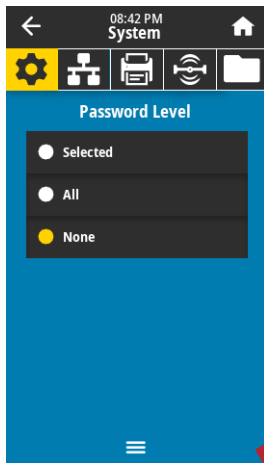
zbi.key (identifies if the ZBI 2.0 option is enabled or disabled on the printer)



System > Settings > Display Time Format

Select the time format shown on the printer's display when the printer is idle.

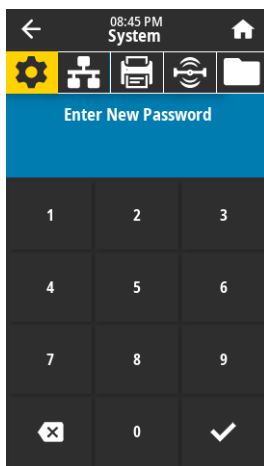
<i>Accepted values:</i>	<ul style="list-style-type: none"> • 12-Hour • 24-Hour
<i>SGD command used:</i>	device.idle_display_value



System > Settings > Password Level

Select the level of password protection for user menu items.

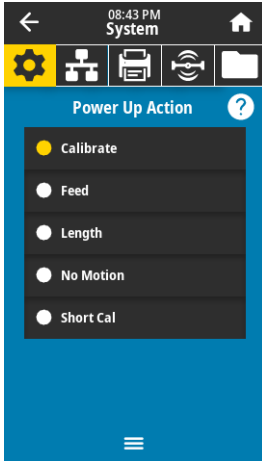
<i>Accepted values:</i>	<ul style="list-style-type: none"> • NONE • SELECTED • ALL
<i>Related ZPL command(s):</i>	^KP (to change the printer password)



System > Settings > Set Password

Set a new printer password for menu items protected by the previous parameter. The default printer password is 1234.

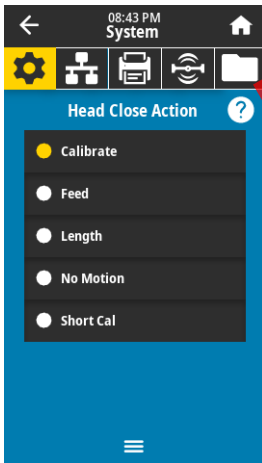
<i>Accepted values:</i>	<ul style="list-style-type: none"> • NONE • SELECTED • ALL
<i>Related ZPL command(s):</i>	^KP



System > Settings > Power Up Action

Set the action for the printer to take during the power-up sequence.

<i>Accepted values:</i>	<ul style="list-style-type: none"> • CALIBRATE—Adjusts sensor levels and thresholds, determines the label length, and feeds the media to the next web. • FEED—Feeds the labels to the first registration point. • LENGTH—Determines the label length using current sensor values, and feeds the media to the next web. • NO MOTION—Tells the printer not to move the media. You must manually ensure that the web is positioned correctly, or press feed to position the next web. • SHORT CAL—Sets the media and web thresholds without adjusting sensor gain, determines the label length, and feeds the media to the next web.
<i>Related ZPL command(s):</i>	^MF
<i>SGD command used:</i>	ezpl.power_up_action
<i>Printer web page:</i>	View and Modify Printer Settings > Calibration



System > Settings > Head Close Action

Set the action for the printer to take when you close the printhead.

<i>Accepted values:</i>	<ul style="list-style-type: none"> • CALIBRATE—Adjusts sensor levels and thresholds, determines the label length, and feeds the media to the next web. • FEED—Feeds the labels to the first registration point. • LENGTH—Determines the label length using current sensor values, and feeds the media to the next web. • NO MOTION—Tells the printer not to move the media. You must manually ensure that the web is positioned correctly, or press feed to position the next web. • SHORT CAL—Sets the media and web thresholds without adjusting sensor gain, determines the label length, and feeds the media to the next web.
<i>Related ZPL command(s):</i>	^MF
<i>SGD command used:</i>	ezpl.power_up_action
<i>Printer web page:</i>	View and Modify Printer Settings > Calibration