ZT411/ZT421

Industrial Printer

DRAFT

Color Touch User Guide

ZEBRA

P1106464-001

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Declaration of Conformity

We have determined that the Zebra printers identified as the

ZT411 and ZT421

manufactured by:

Zebra Technologies Corporation
3 Overlook Point
Lincolnshire, Illinois 60069 U.S.A.

Have been shown to comply with the applicable technical standards of the FCC

For Home, Office, Commercial, and Industrial use

If no unauthorized change is made in the equipment,
and if the equipment is properly maintained and operated.

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Compliance Information

FCC Compliance Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

Note • This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

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FCC Radiation Exposure Statement (for printers with RFID encoders)

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator and your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Canadian DOC Compliance Statement

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

1

Printer Setup

This section assists a user with initial setup and operation of the printer.

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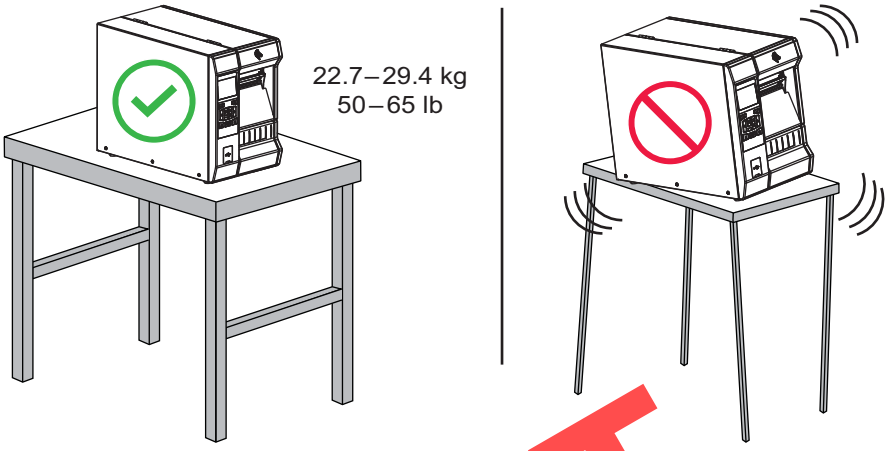
Select a Location for the Printer

Select a location for the printer that meets these conditions:

- **Surface:** The surface where the printer will be located must be solid, level, and of sufficient size and strength to hold the printer.



- **Space:** The area where the printer will be located must include enough space for ventilation and for accessing the printer components and connectors. To allow for proper ventilation and cooling, leave open space on all sides of the printer.

Caution • Do not place any padding or cushioning material behind or under the printer because this restricts air flow and could cause the printer to overheat.

- **Power:** The printer should be within a short distance of an appropriate power outlet that is easily accessible.
- **Data communication interfaces:** The printer must be within range of your WLAN radio (if applicable) or within an acceptable range for other connectors to reach your data source (usually a computer). For more information on maximum cable lengths and configuration, see *General Specifications* on page 184.
- **Operating conditions:** Your printer is designed to function in a wide range of environmental and electrical conditions, including a warehouse or factory floor. Table 1 shows the temperature and relative humidity requirements for the printer when it is operating.

Table 1 • Operating Temperature and Humidity

Mode	Temperature	Relative Humidity
Thermal Transfer	40° to 104°F (5° to 40°C)	20 to 85% non-condensing
Direct Thermal	32° to 104°F (0° to 40°C)	

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Order Supplies and Accessories

The following things that you will need do NOT come with the printer:

- Communication/network cables (such as USB, serial, parallel, wired Ethernet)
- Media
- Ribbon (if your printer has a thermal transfer option)

Media

For optimal printing quality and proper printer performance across our product line, Zebra strongly recommends the use of Zebra Certified Supplies as part of the total solution. A wide range of paper, polypropylene, polyester, and vinyl stock has been specifically engineered to enhance the printing capabilities of the printer and to prevent premature printhead wear. To purchase supplies, go to http://www.zebra.com/supplies.

The *Glossary* on page 193 includes terms associated with media, such as black mark media, gap/notch media, RFID media, fanfold media, and roll media. Use these terms to help determine which type of media will be best for your needs.

Ribbon

Do I need to use ribbon? The media itself determines if you will 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 printer can only use ribbon that is coated on the **outside** unless you purchase and install the optional spindle that allows ribbon that is coated on the inside. Contact your authorized Zebra reseller for ordering information.

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.

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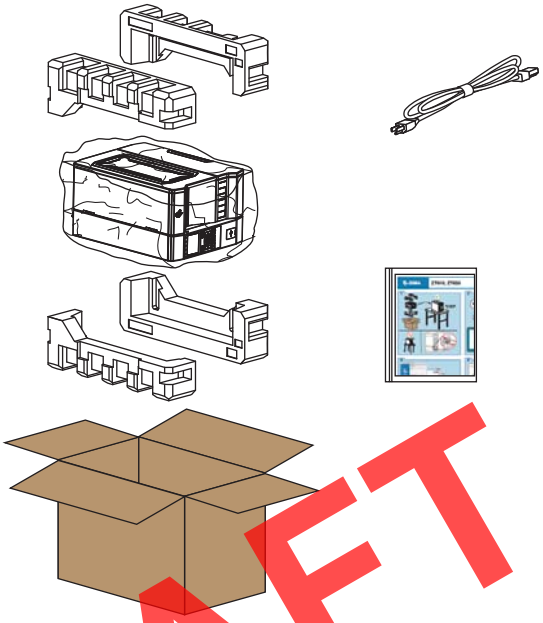
Inspect the Contents of the Box

When you receive the printer, do the following:

1. Verify that the following items are included in the box with the printer:



Additional items may be included, depending on the options ordered with the printer.

2. If anything is missing, notify your authorized Zebra reseller.
3. Immediately unwrap the printer and inspect for shipping damage.
   - Save all packing materials.
   - Check all exterior surfaces for damage.
   - Raise the media door, and inspect the media compartment for damage to components.
4. If you discover shipping damage upon inspection:
   - Immediately notify the shipping company and file a damage report.
   - Keep all packaging material for shipping company inspection.
   - Notify your authorized Zebra reseller

Important • Zebra Technologies is not responsible for any damage incurred during the shipment of the equipment and will not repair this damage under warranty.

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Install Label Software

Select and install the software that you will use to create label formats for your printer. One option is ZebraDesigner™, which you can download from www.zebra.com.

Install Printer Drivers and Connect the Printer to Your Devices

After you have set up the printer, verified that it can print a test label, and made adjustments to the print quality, you are ready to connect the printer to your device (such as a computer, phone, or tablet).

Connect to a Computer

If you have not already done so, install the Zebra Setup Utilities program (www.zebra.com/setup) before connecting the printer to a computer. Your computer will not install the correct printer drivers if you connect the printer to it without the Zebra Setup Utilities program.

Run the Zebra Setup Utilities program. This utility will walk you through the process for connecting your printer to your computer. For step-by-step instructions, see *Install the Printer Driver and Connect to a Computer* on page 147.

Connect to a Phone or Tablet

Use the Zebra Printer Setup Utility app for Android devices (available for free from Google Play™ at http://play.google.com/store/apps/details?id=com.zebra.printersetup).

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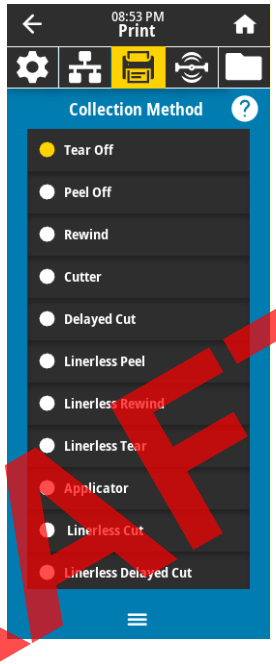
Determine the Label Collection Method

Use a label collection method that matches the media being used and the printer options available (see Table 2 and Figure 1 on page 16). The media path is the same for roll and fanfold media.

To select the label collection method, complete these steps:

1. On the Home screen, touch **Menu > Print > Label Position > Collection Method**.



2. Select a collection method that is compatible with the options available on your printer.
3. Touch the home icon to return to the Home screen.

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Table 2 • Collection Methods and Printer Options

Collection Method	Required Printer Option	Description
`Tear Off`	Can be used with any printer option and most media types.	The printer prints label formats as it receives them. The printer operator can tear off the printed labels when the printer stops.
`Peel-off`	Rewind option	The printer peels the label from the liner during printing and then pauses until the label is removed. The backing is wound on the rewind spindle without using the rewind plate.
`Rewind`	Rewind option	The printer prints without pausing between labels. The media is wound onto a core after printing. The rewind plate is used to keep the labels from separating from the backing.
`Cutter`	Cutter option	The printer cuts between labels after each one is printed.

Table 2 • Collection Methods and Printer Options (Continued)

Collection Method	Required Printer Option	Description
Delayed Cut	Cutter option	The printer waits for a delayed cut ZPL command (~JK) before it cuts the last printed label.
Applicator	This mode is for use with a machine that applies labels.	The printer prints when it receives a signal from the applicator. Refer to the Advanced User Information section of the Maintenance Manual for additional information about the applicator interface.
Linerless Peel*	* Reserved for future use.	
Linerless Rewind*		
Linerless Tear*		
Linerless Cut*		
Linerless Delayed Cut*		

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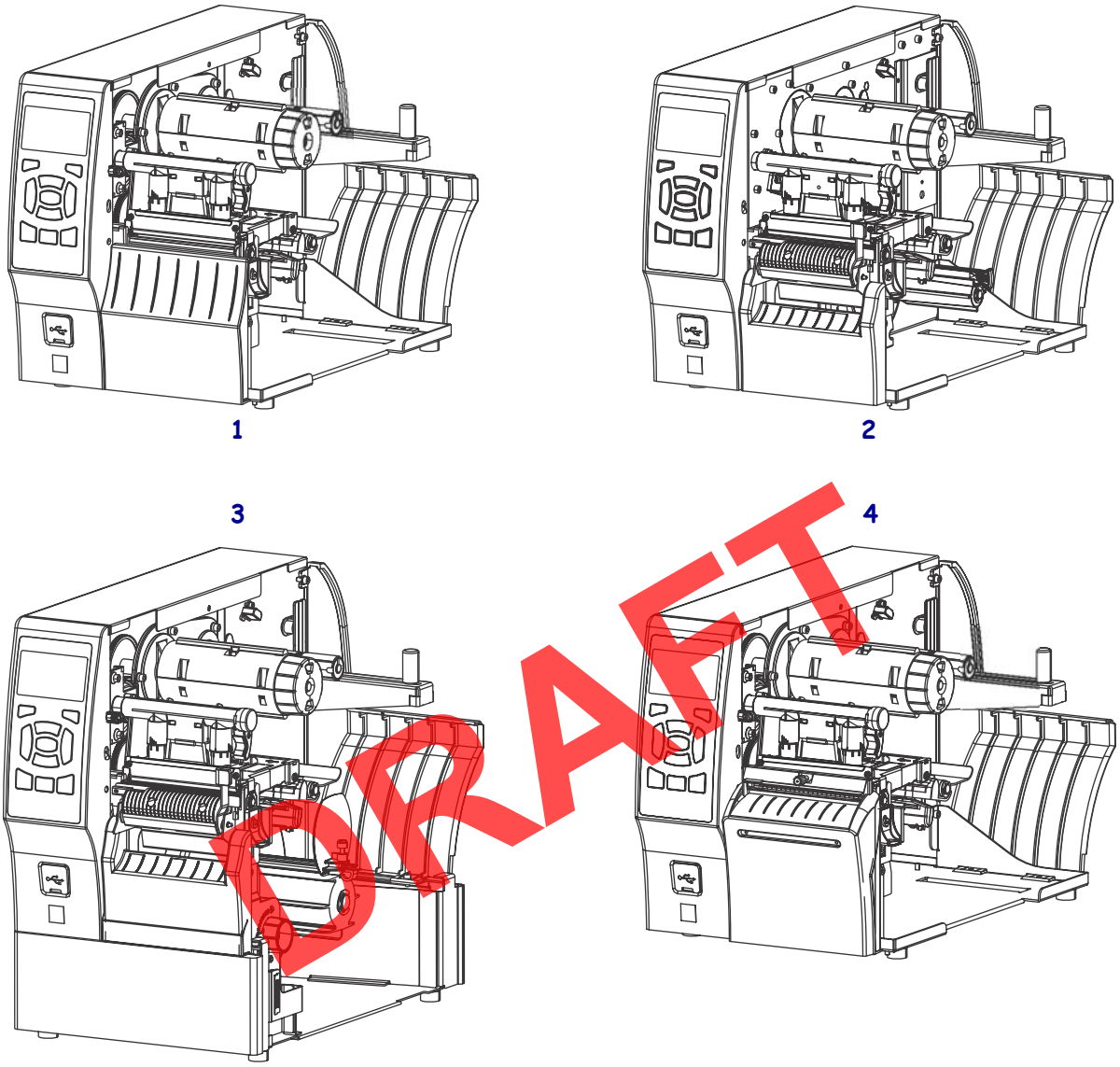
Figure 1 • Printer Options



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1	Tear-Off (standard)
2	Peel with Liner Take-Up option
3	Rewind option
4	Cutter option

Load the Media

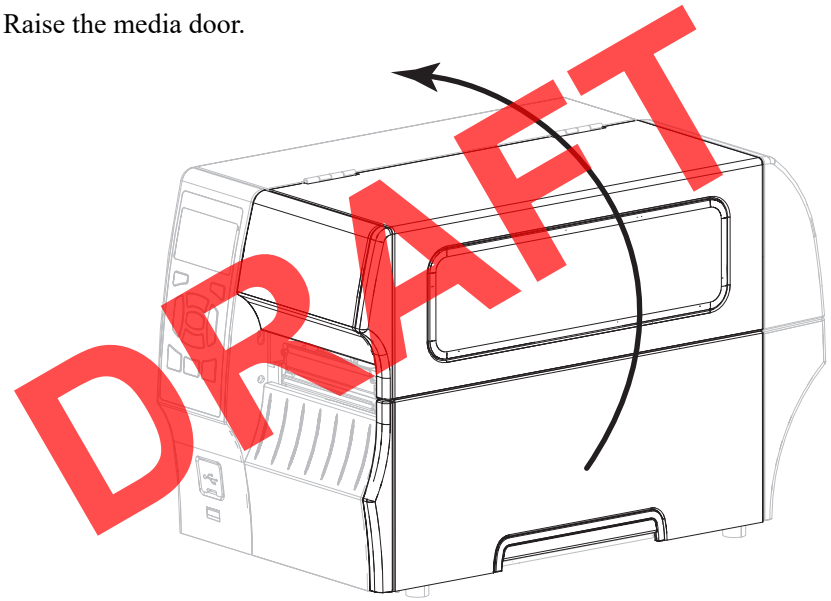
Use the instructions in this section for loading roll or fanfold media in the appropriate label collection method for your needs.

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.

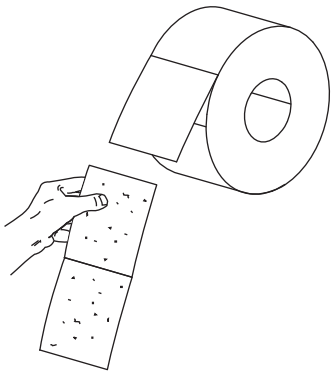
Insert the Media into the Printer

To load media, complete these steps:

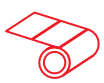
1. Raise the media door.



2. Remove and discard any tags or labels that are torn or dirty or that are held by adhesives or tape.

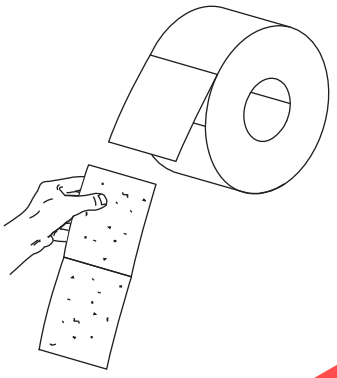


3. Insert roll or fanfold media into the printer. The media loading path is the same for both roll and fanfold media, so this is the only step that will be different.

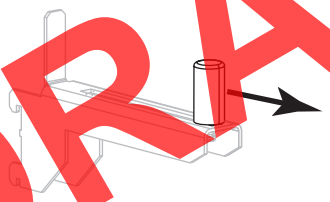


Roll Media

3-a. Remove and discard any tags or labels that are dirty or that are held by adhesives or tape.



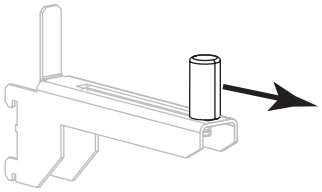
3-b. Pull out the media supply guide as far as it goes.



3-c. Place the roll of media on the media supply hanger. Push the roll back as far as it will go.

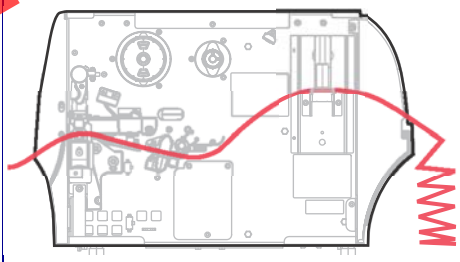
Fanfold Media

Pull out the media supply guide as far as it goes.

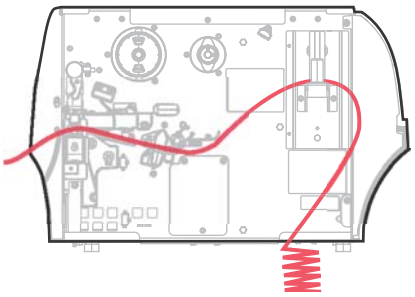


Feed the media through the rear or bottom access slot.

Rear Feed



Bottom Feed



Drape the media over the media supply hanger.

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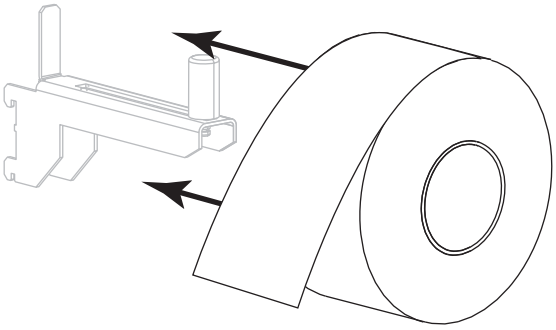
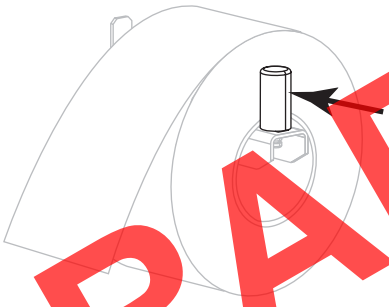
Roll Media (Continued)

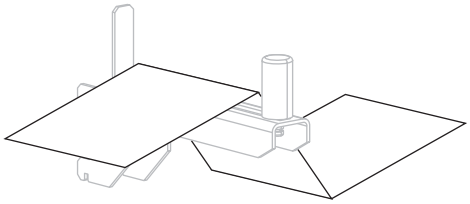


3-d. Slide in the media supply guide, until it touches the edge of the roll.

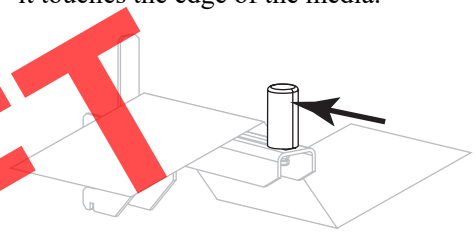


3-e. Continue with step 4.

Fanfold Media (Continued)



Slide in the media supply guide, until it touches the edge of the media.



Continue with step 4 and the remaining steps as shown for roll media.

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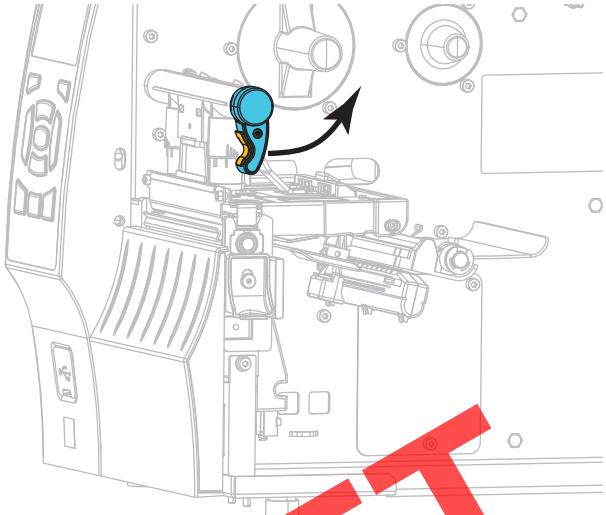
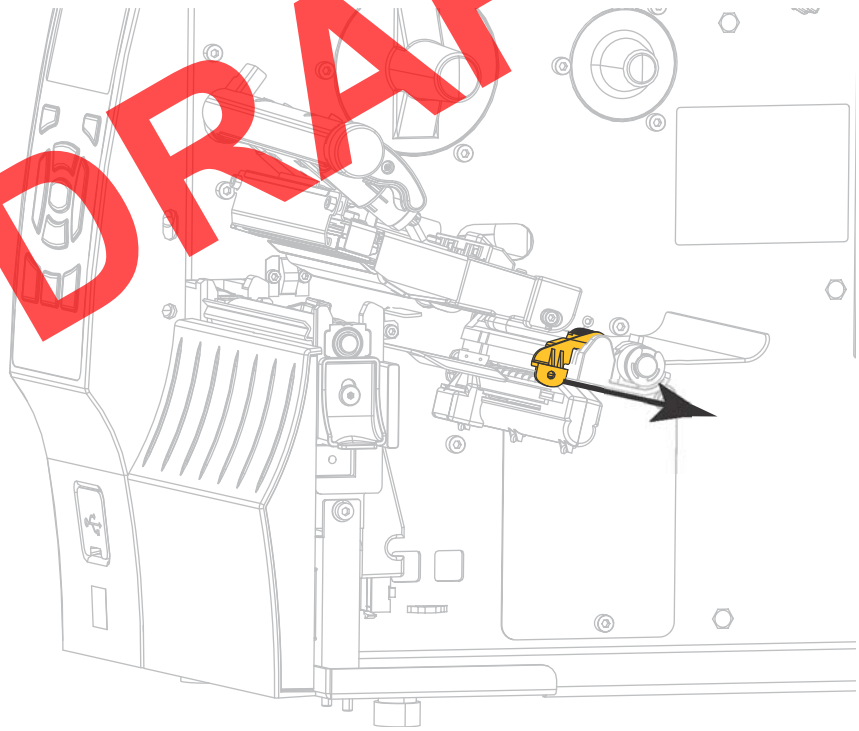
4. **Caution** • The printhead may be hot and could cause severe burns. Allow the printhead to cool.

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



5. Slide the media guide all the way out.



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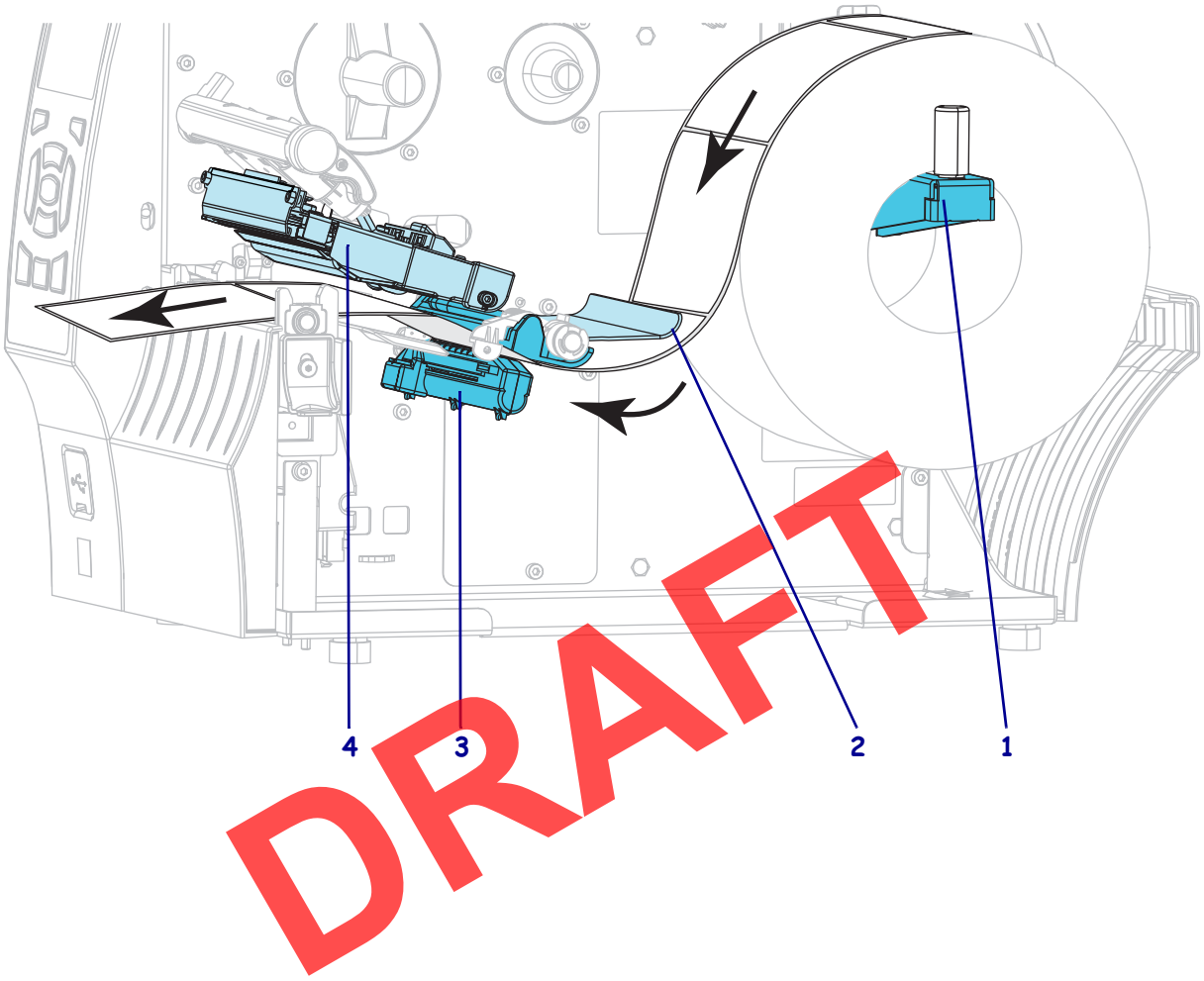
6. From the media hanger (**1**), feed the media under the dancer assembly (**2**), through the media sensor (**3**), and under the printhead assembly (**4**). Slide the media back until it touches the inside back wall of the media sensor.



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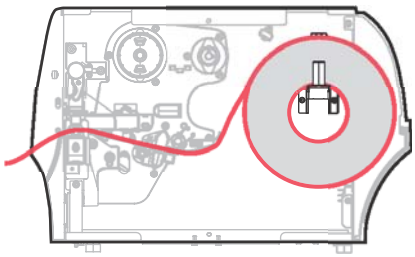
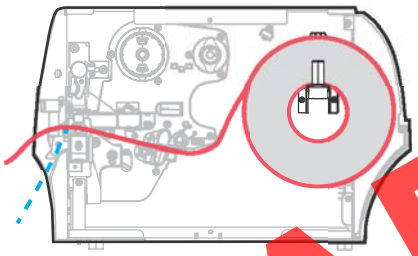
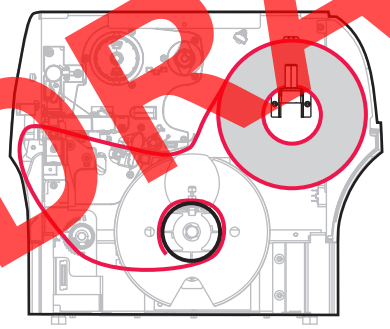
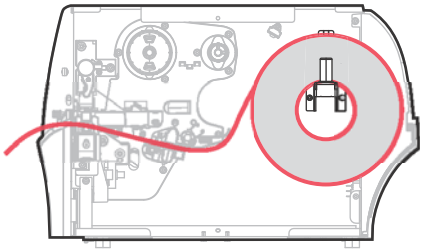
7. Which label collection method will you be using? (For more information on print modes, see *Determine the Label Collection Method* on page 14.)

If using…	Then…
Tear-Off mode 	Continue with *Final Steps for Tear-Off Mode* on page 23.
Peel-Off mode (with or without Liner Take-Up) 	Continue with *Final Steps for Peel-Off Mode (with or without Liner Take-Up)* on page 25.
Rewind mode 	Continue with *Final Steps for Rewind Mode* on page 34.
Cutter mode 	Continue with *Final Steps for Cutter Mode* on page 40.

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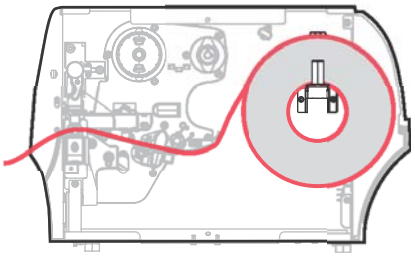
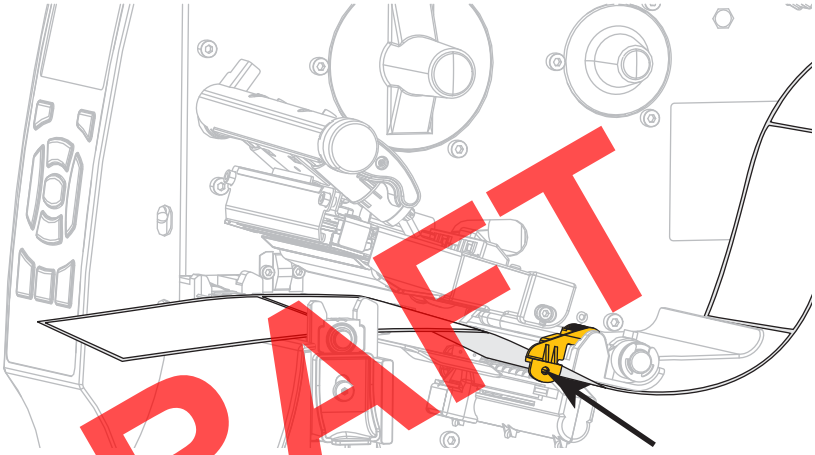
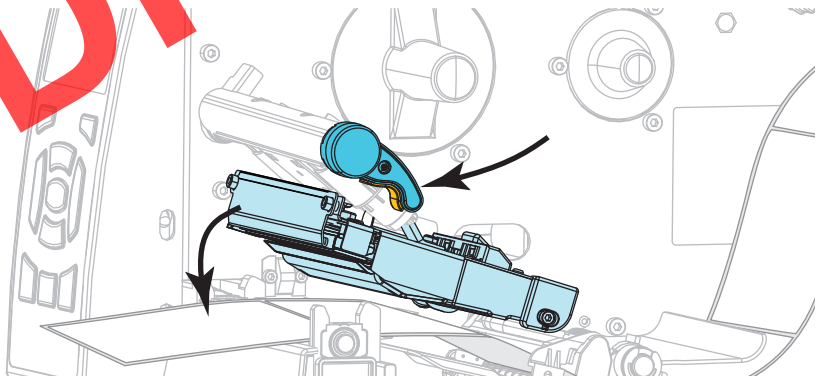
Final Steps for Tear-Off Mode



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



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



3. 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 4.
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 4.

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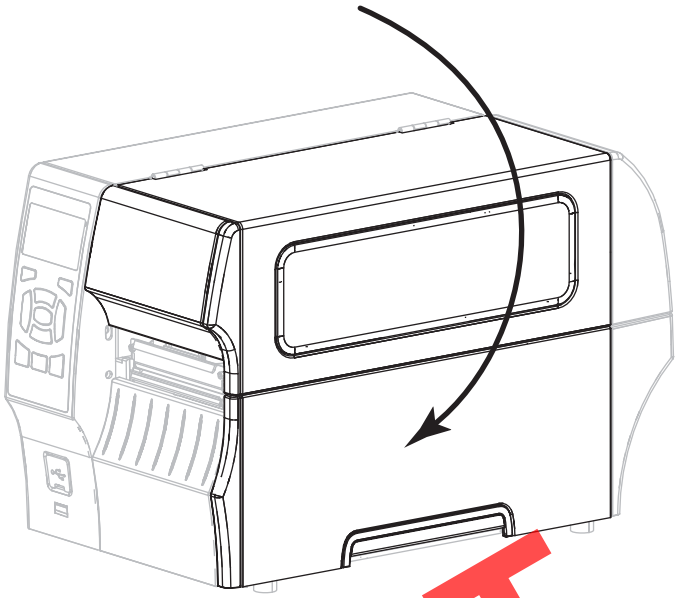
4. Close the media door.



5. Set the printer to Tear-Off mode (for more information, see *Print* > *Label Position* > *Collection Method* *on page 78*).
6. Press PAUSE to exit pause mode and enable printing.

   The printer may perform a label calibration or feed a label, depending on your settings.
7. For best results, calibrate the printer. See *Print* > *Sensors* > *Manual Calibration* *on page 81*.

Media loading in Tear-Off mode is complete.

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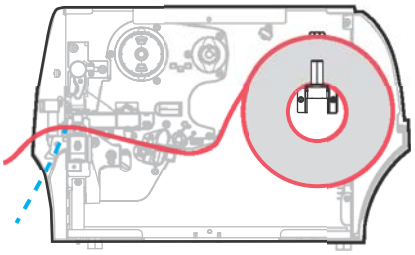
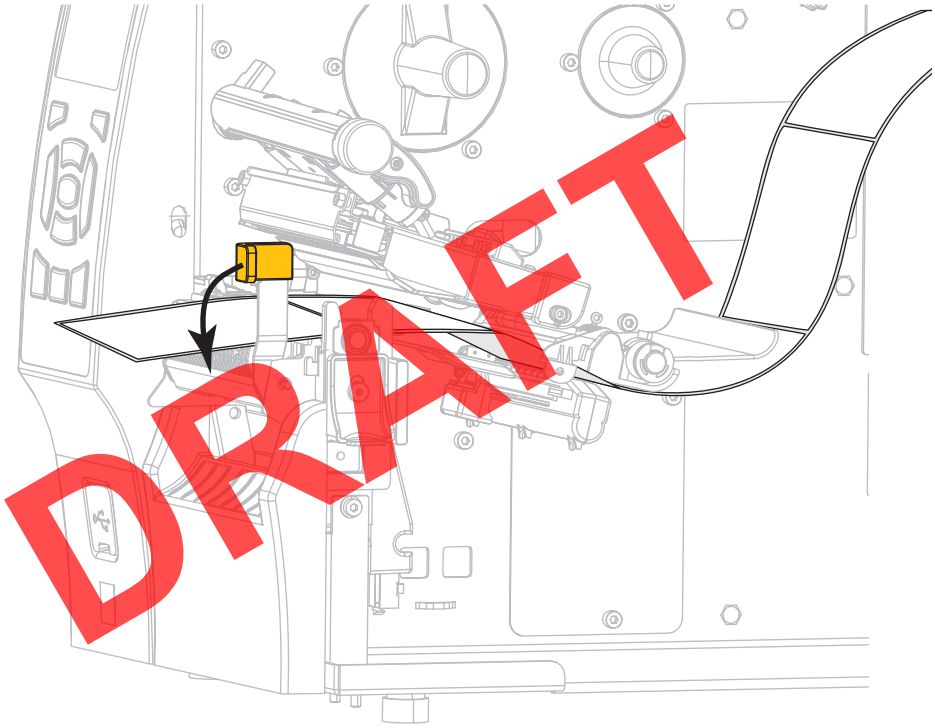
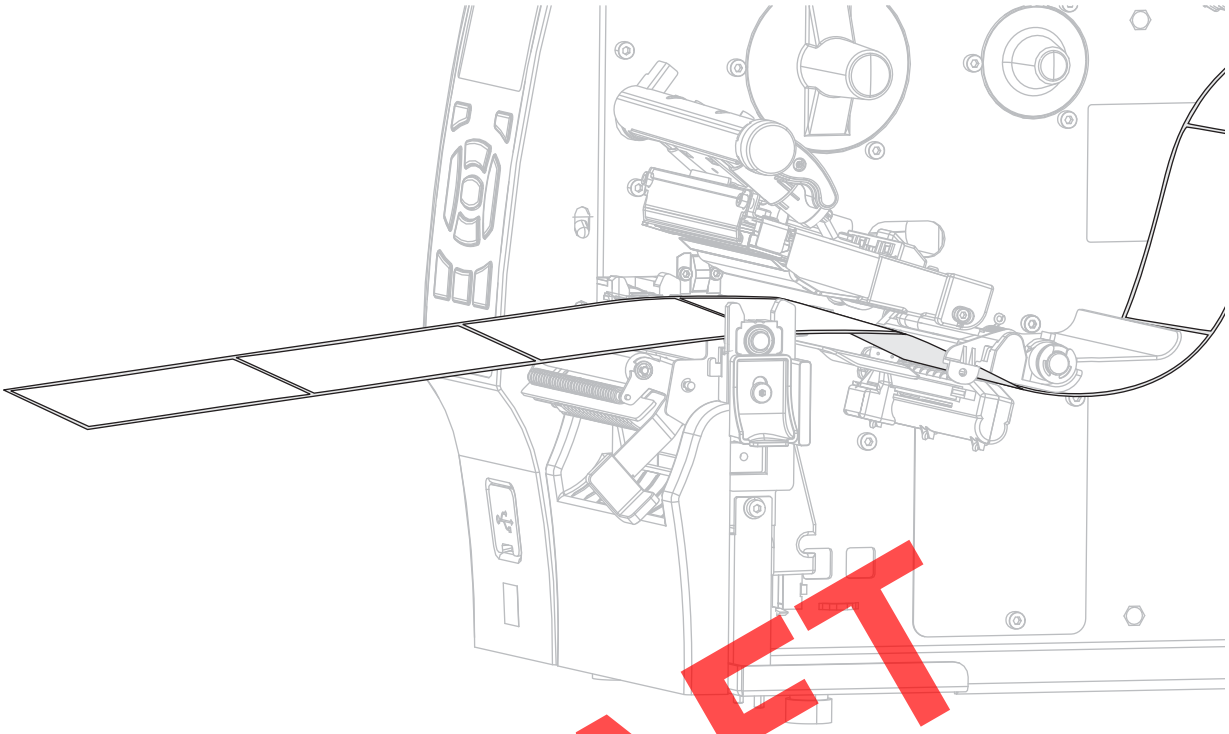
Final Steps for Peel-Off Mode (with or without Liner Take-Up)



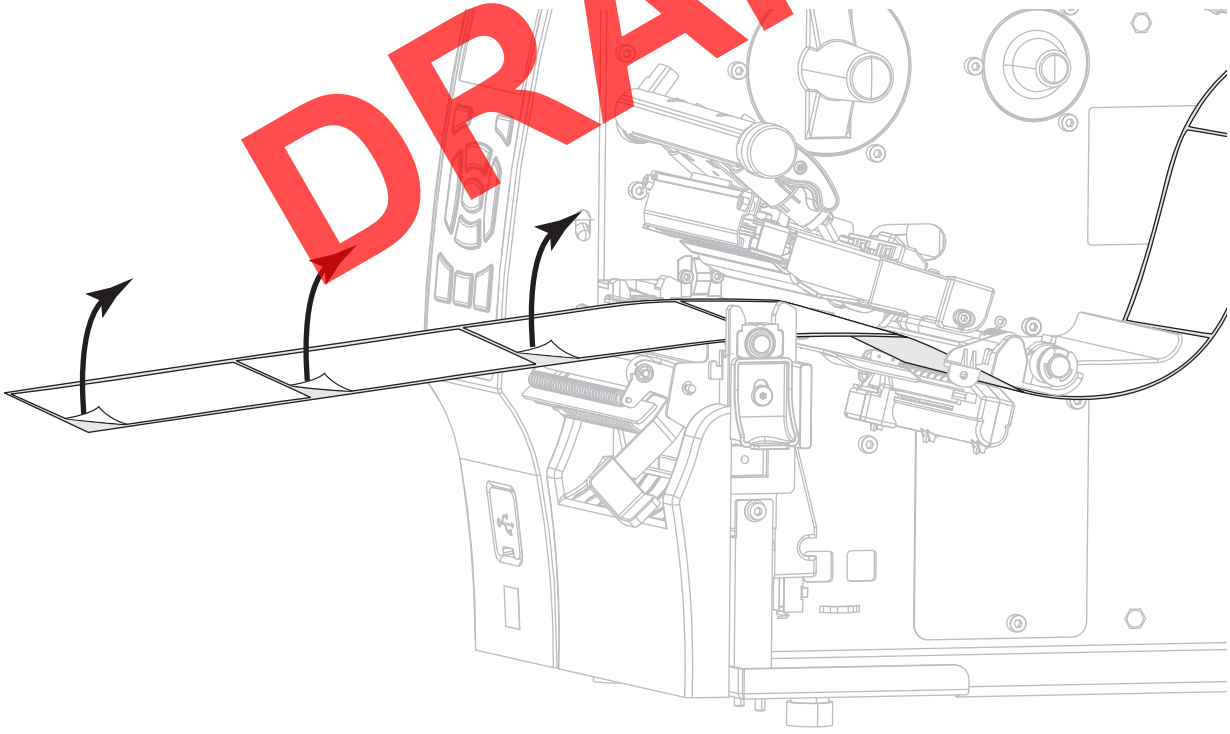
1. Push down the peel-off mechanism release lever to open the peel assembly.



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



3. Remove the exposed labels so that only the liner remains.



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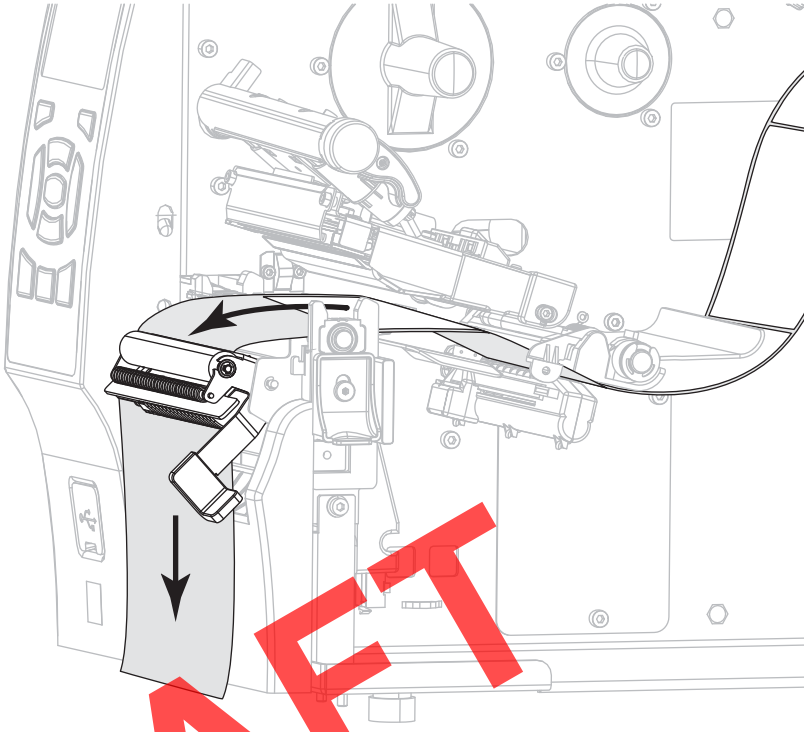
4. Feed the liner behind the peel assembly. Make sure that the end of the liner falls outside of the printer.



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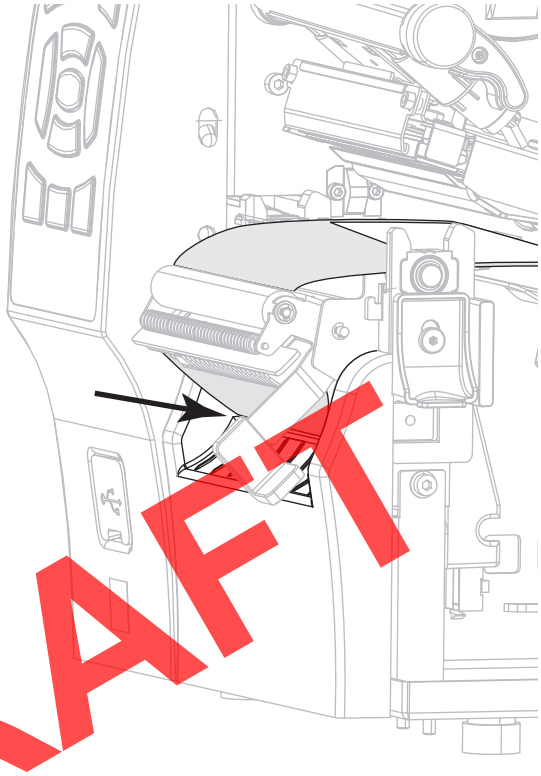
5. Complete this step only if you want to use Peel-Off mode with Liner Take-Up. Your printer must have the Liner Take-Up option or the Rewind option installed. Follow the instructions for your printer option. If you are not using Liner Take-Up, continue with step 6.

5-a. Thread the liner into the slot below the peel assembly.



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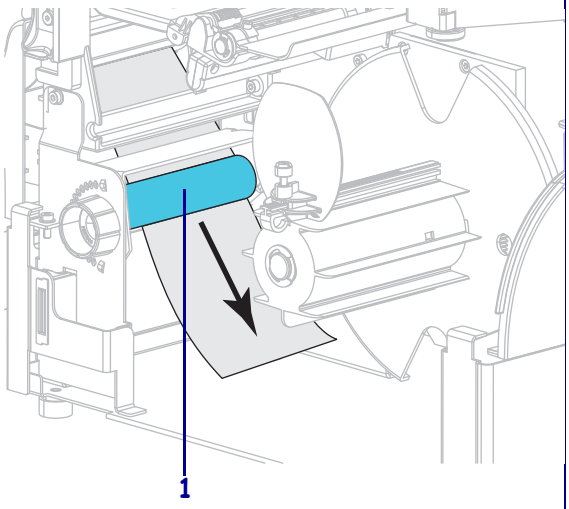
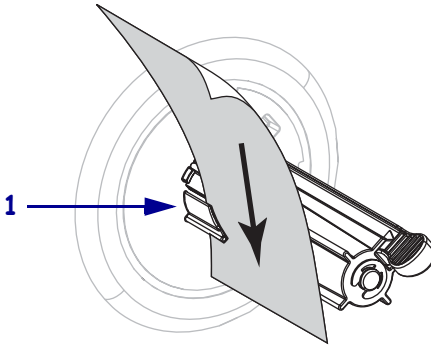
Rewind Option

5-b. Feed the liner under the media alignment roller (**1**).



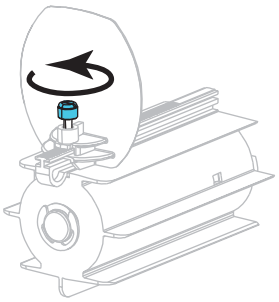
Liner Take-Up Option

Slide the liner into the slot in the liner take-up spindle (**1**).

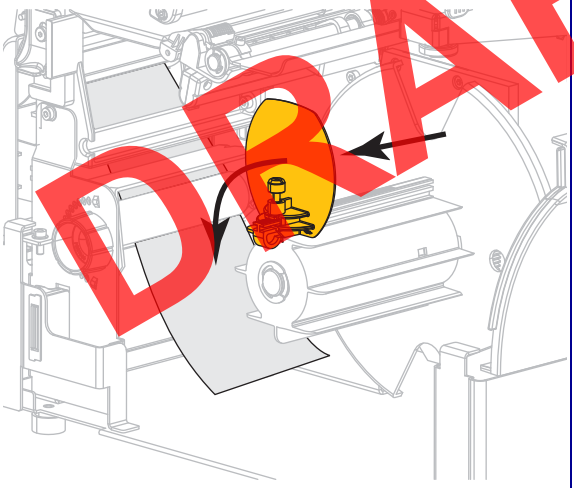


Rewind Option (Continued)

5-c. Loosen the thumbscrew on the rewind media guide.

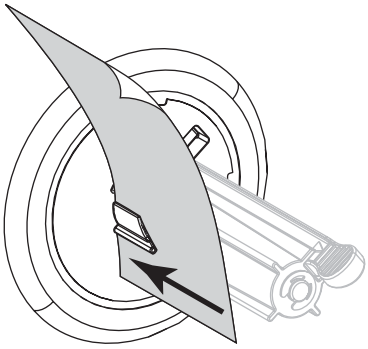


5-d. Slide the rewind media guide all the way out, and then fold it down.

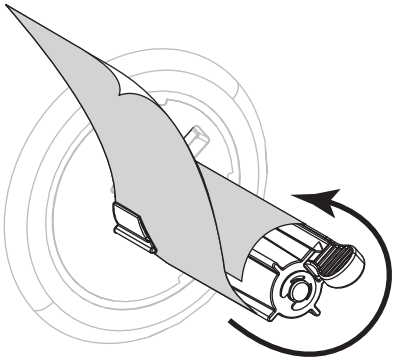


Liner Take-Up Option (Continued)

Push the liner back until it touches the back plate of the liner take-up spindle assembly.



Wrap the liner around the liner take-up spindle and turn the spindle counterclockwise to tighten the liner.



For the Liner Take-Up option, loading of the liner is complete. Continue with step 6.

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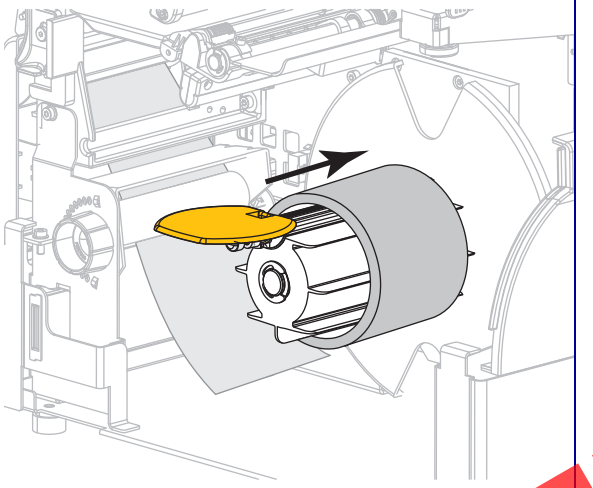
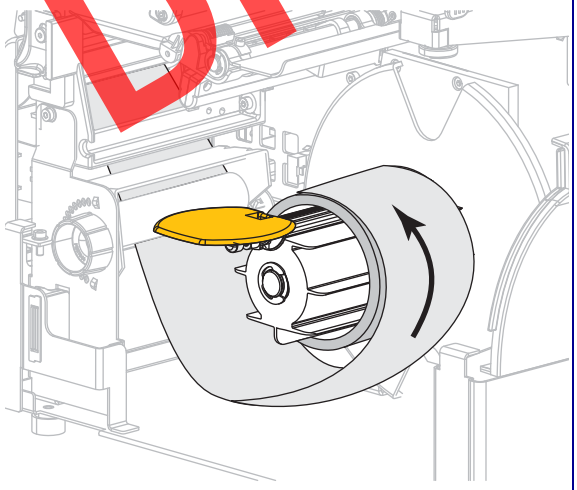
Rewind Option (Continued)

5-e. Slide an empty core onto the rewind spindle.



5-f. Wrap the liner around the core as shown, and then turn the rewind spindle to tighten the media. Ensure that the edge of the media is flush against the backplate of the rewind spindle.



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