170*PAX*4 Quick Reference Guide

This guide provides basic instructions to load and operate your print engine. For additional information, refer to the User Guide.

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57517L-002 Rev. A
6/28/07

Print Engine Exterior View

Print engines are available in a right-hand configuration (media moves from left to right, Figure 27) and a left-hand configuration (media moves from right to left, Figure 28).

Figure 27 • Right-Hand (RH) Print Engine

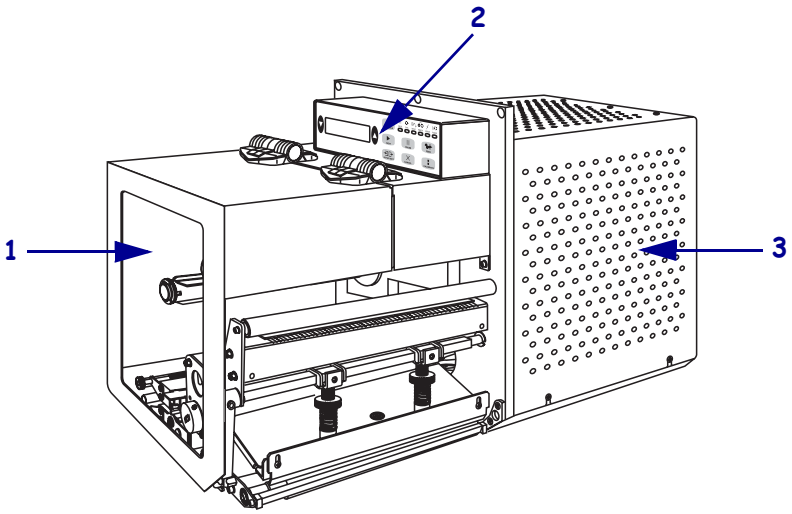
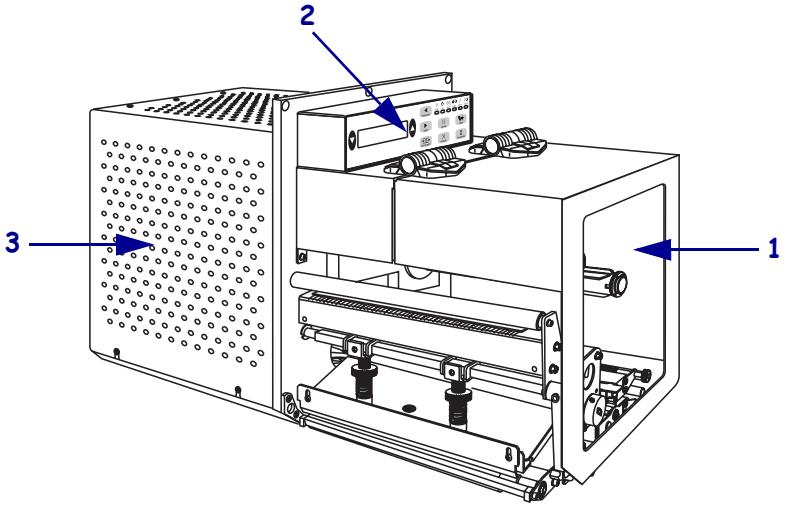


Figure 28 • Left-Hand (LH) Print Engine

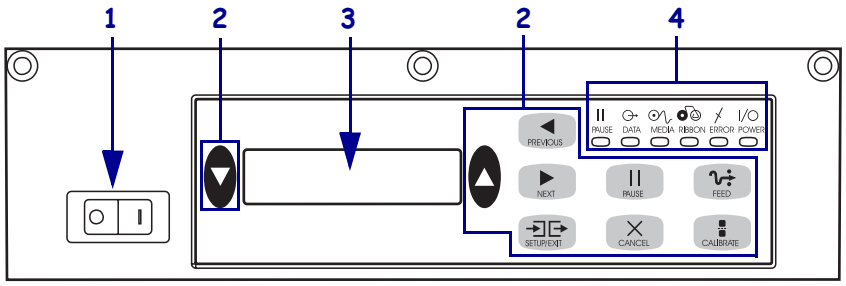


1	Media door
2	Control panel
3	Electronics cover

Control Panel

All controls and indicators for the print engine are located on the control panel (Figure 29). The power switch is located to the side of the control panel.

Figure 29 • Control Panel (Right Hand)



1	Power switch
2	Buttons
3	Liquid Crystal Display (LCD)
4	Lights/LEDs

Control Panel Buttons

The control panel buttons are described in Table 7.

Table 7 • Control Panel Buttons

Button	Description/Function
BLACK OVALS	The two black ovals are used to change parameter values for a parameter being displayed on the LCD. Common uses include increasing or decreasing a value, answering yes or no, indicating ON or OFF, and scrolling through choices.
PREVIOUS	Scrolls the LCD to the previous parameter.
NEXT	Scrolls the LCD to the next parameter.
SETUP/EXIT	Enters and exits configuration mode.
PAUSE	Stops and restarts the printing process or removes error messages and clears the LCD. If a label is printing, it is completed before the printing process stops. When the print engine is paused, the PAUSE light is ON.
CANCEL	CANCEL functions only in Pause mode. Pressing CANCEL has these effects: • Cancels the label format that is currently printing. • If no label format is printing, the next one to be printed is canceled. • If no label formats are waiting to be printed, CANCEL is ignored. To clear the print engine's entire label format memory, press and hold CANCEL until the DATA light turns off.

Table 7 • Control Panel Buttons (Continued)

Button	Description/Function
FEED	Feeds a blank label. • If the print engine is idle or paused, the label is fed immediately. • If the print engine is printing, the label is fed after the current batch prints.
CALIBRATE	CALIBRATE functions only in Pause mode. Press CALIBRATE to recalibrate for proper media length, to set media type (continuous/non-continuous), and to set print method (direct thermal/thermal transfer).

Control Panel Indicator Lights (LEDs)

The control panel lights are described in Table 8.

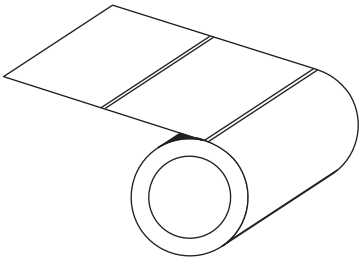
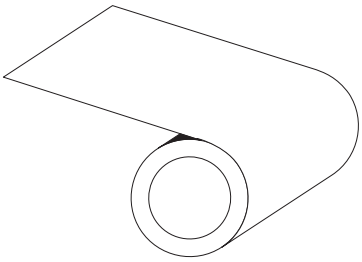
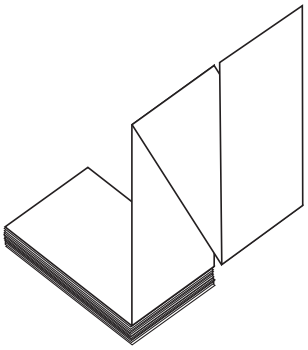
Table 8 • Control Panel Lights

LED	OFF Indicates	ON Indicates	FLASHING Indicates
POWER (Green)	Print engine is OFF, or no power to print engine.	Power switch is ON, and power is being supplied to print engine.	—
PAUSE (Yellow)	Normal operation.	One of the following: • Print engine is paused because of an error condition (printhead, ribbon, or paper error). Usually occurs in conjunction with another LED. • PAUSE was pressed. • A pause was requested from the Applicator Port. • A pause was received as part of the label format.	—
DATA (Green)	No data being received or processed.	Data is processing or printing is taking place. No data is being received.	Print engine is receiving data from or sending status information to the host computer.
MEDIA (Yellow)	Normal operation. Media properly loaded.	Out of media. (Print engine is paused, LCD displays error message, and PAUSE light is ON).	—
RIBBON (Yellow)	Normal operation. Ribbon properly loaded.	Ribbon in when print engine is in direct thermal mode, or no ribbon in when print engine is in thermal transfer mode. Print engine is paused, LCD displays error message, and PAUSE light is ON.	—
ERROR (Orange)	No print engine errors.	—	Print engine error exists. Check the LCD for status.

Media

The print engine can use various types of media (Table 9).

Table 9 • Types of Media

Media Type	How It Looks	Description
Non-Continuous Roll Media		The media is wound on a core. Individual labels are separated by a gap, notch, hole, or black mark, which enables you to see where one label ends and the next one begins. When using media that has holes or notches, position the media sensor directly over a hole or notch.
Continuous Roll Media		The media is wound on a core and is without gaps, holes, notches, or black marks. This allows the image to be printed anywhere on the label.
Fanfold Media		The media is folded in a zigzag pattern.

Ribbon

Ribbon is a thin film that is coated on one side with wax or wax resin, which is transferred to the media during the thermal transfer process.

When To Use Ribbon

Thermal transfer media requires ribbon for printing while direct thermal media does not. To determine if ribbon must be used with a particular media, perform a media scratch test.

To perform a media scratch test, complete these steps:

1. Scratch the print surface of the media with your fingernail.
2. Did a black mark appear on the media?

If a black mark...	Then the media is...
Does not appear on the media	**Thermal transfer**. A ribbon is required.
Appears on the media	**Direct thermal**. No ribbon is required, though ribbon may be used to help protect the printhead from abrasion with the media.

Coated Side of Ribbon

Ribbon can be wound with the coated side on the inside or outside (Figure 30). This print engine can only use ribbon that is coated on the outside.

Figure 30 • Ribbon Coated on Outside or Inside

To determine which side of a ribbon is coated, 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.

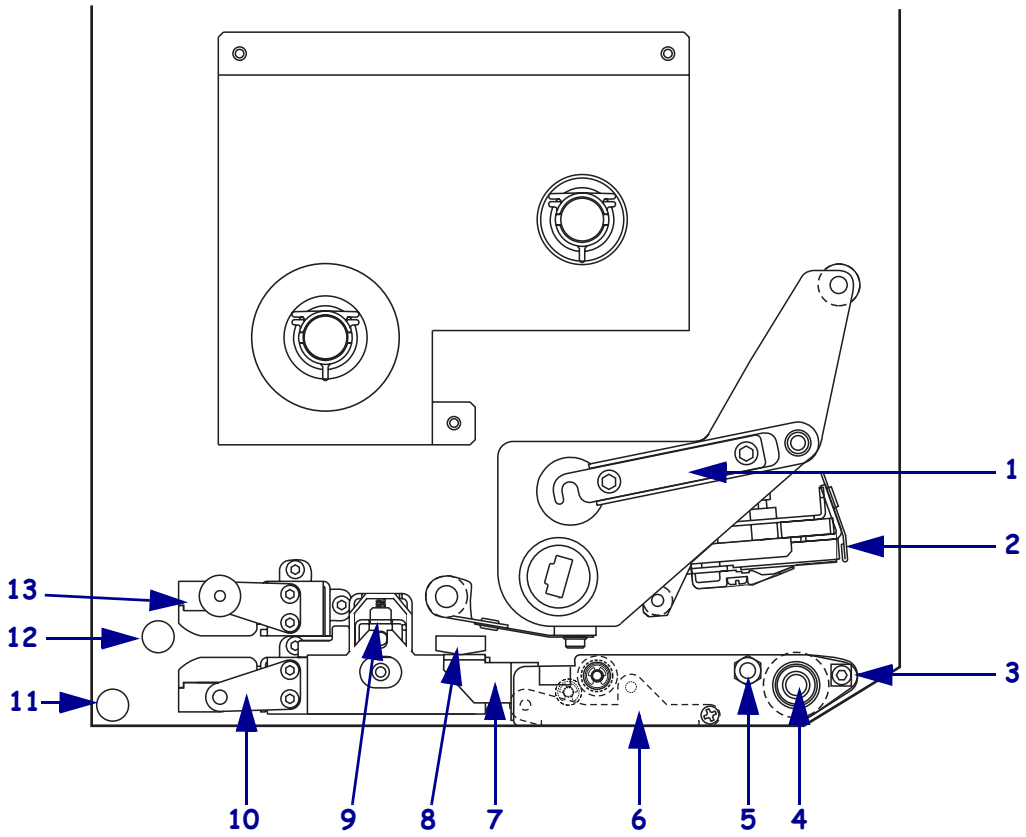
4. Observe the results. Did flakes or particles of ink from the ribbon adhere to the label?

If ink from the ribbon...	Then...
Adhered to the label	The ribbon is coated on the **outer** surface.
Did not adhere to the label	The ribbon is coated on the **inner** surface. To verify this, repeat the test on the inner surface of the roll of ribbon.

Load Media

Figure 31 identifies the media-handling components of a right-hand print engine. A left-hand unit contains a mirror image of these components. Figure 32 on page 9 shows both print engines with media loaded.

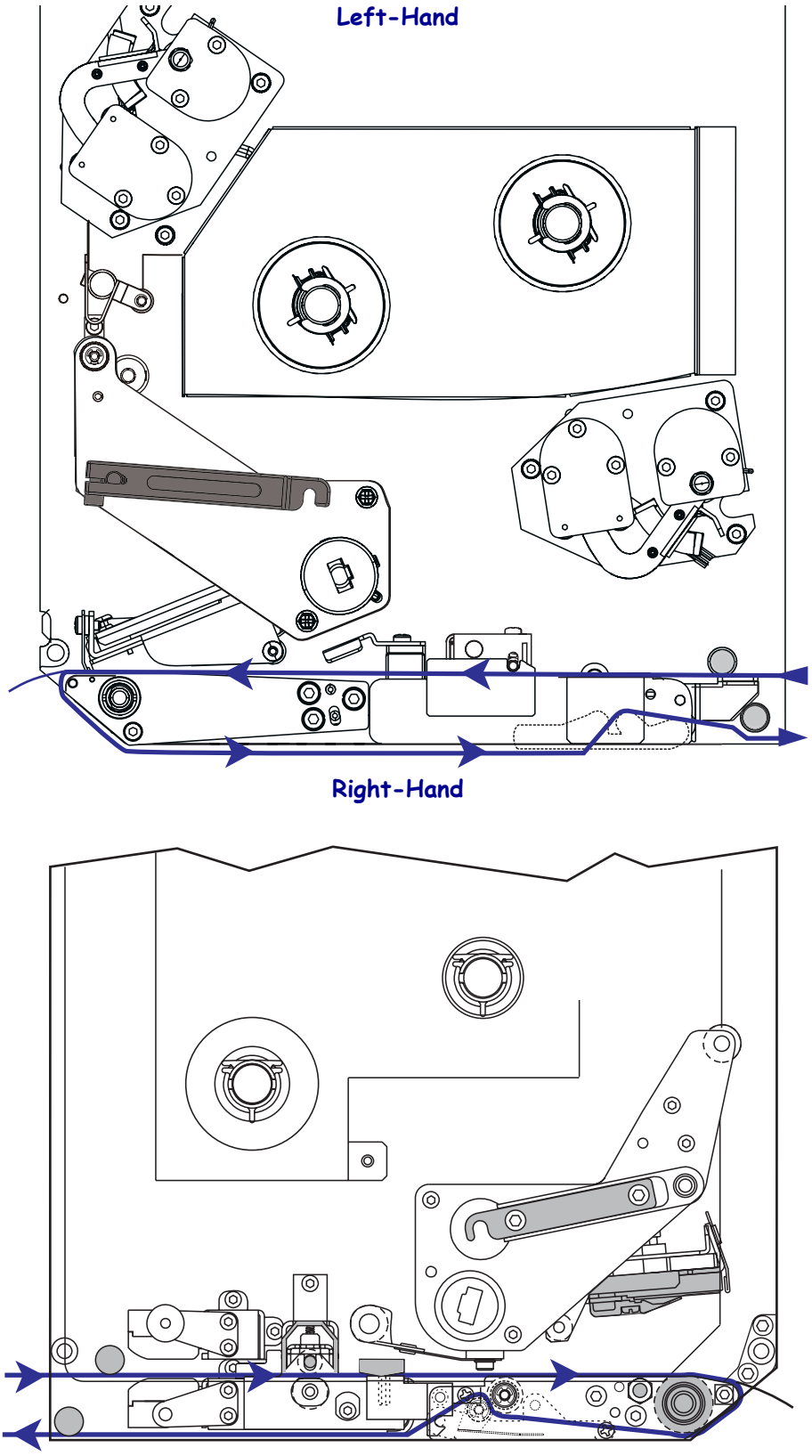
Figure 31 • Components for Media Loading (Right-Hand)



1	Printhead latch
2	Printhead assembly
3	Peel bar
4	Platen roller
5	Printhead locking pin
6	Peel roller assembly
7	Peel roller latch

8	Media guide
9	Pinch roller assembly
10	Label guide shelf assembly
11	Lower guide post
12	Upper guide post
13	Top media sensor track assembly

Figure 32 • Loaded Media



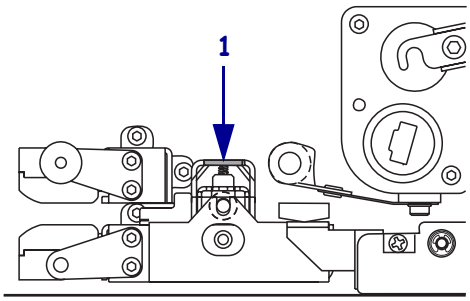
Caution • When you are loading media or ribbon, remove all jewelry that could come into contact with the printhead or other printer parts.

To load media, complete these steps:

1. Load media on the media supply reel of the applicator (refer to the applicator's user guide).
2. Open the media door.
3. See Figure 33. Press down on the pinch roller release latch.

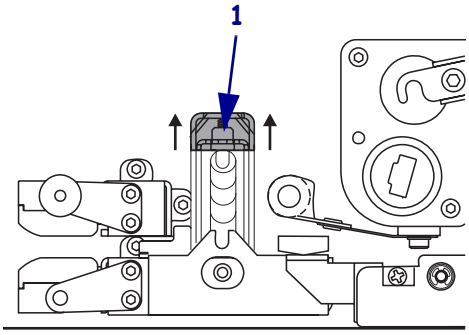
   The pinch roller assembly springs up (Figure 34).

Figure 33 • Pressing the Pinch Roller Release Latch



1	Pinch roller release latch

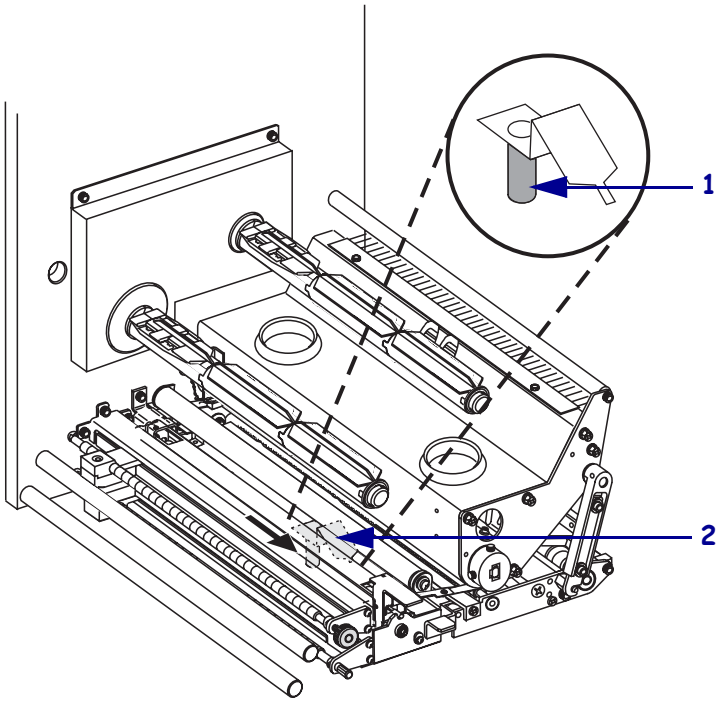
Figure 34 • Opened Pinch Roller Assembly



1	Pinch roller assembly

4. See Figure 35. Under the print engine, grasp the brass thumb nut of the outer media guide, and slide the outer media guide all the way out.

Figure 35 • Sliding the Outer Media Guide

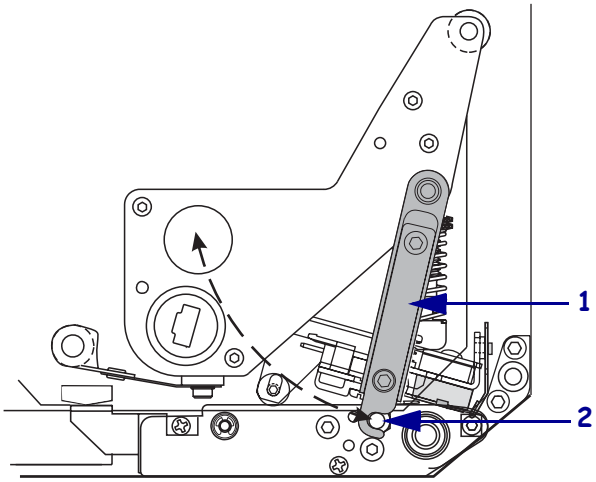


1	Brass thumb nut
2	Outer media guide

5. See Figure 36. Open the printhead assembly by unlatching the printhead latch from the locking pin.

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

Figure 36 • Opening the Printhead Assembly

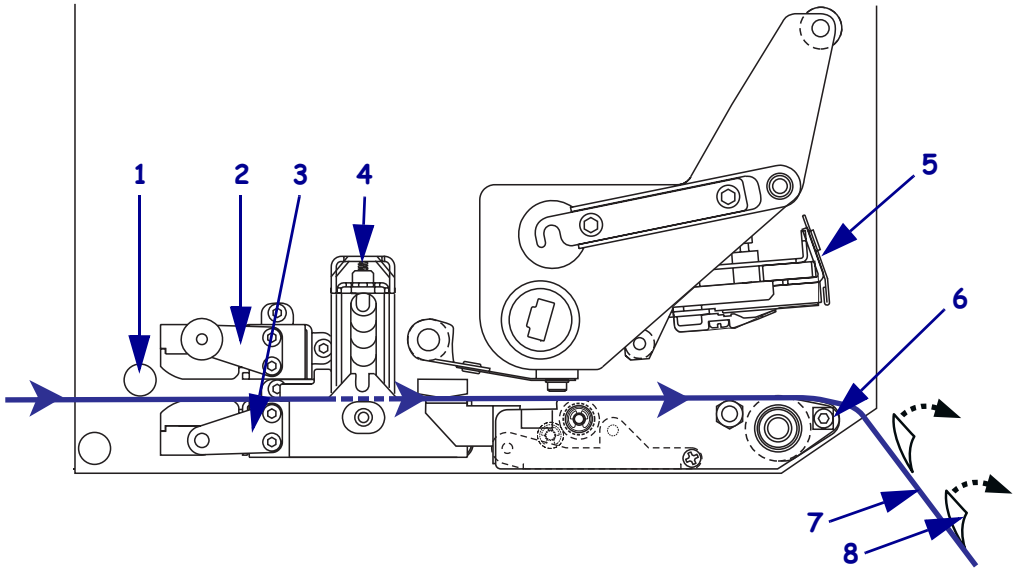


1	Printhead latch
2	Locking pin

6. See Figure 37. Thread the media through the upper media path as follows:
   a. Under the upper guide post
   b. Between the top media sensor track assembly and the label guide shelf assembly
   c. Below the pinch roller assembly
   d. Under the printhead assembly

7. See Figure 37. Extend approximately 30 in. (75 cm) of media past the peel bar. Remove and discard the labels from this exposed media.

Figure 37 • Threading the Media

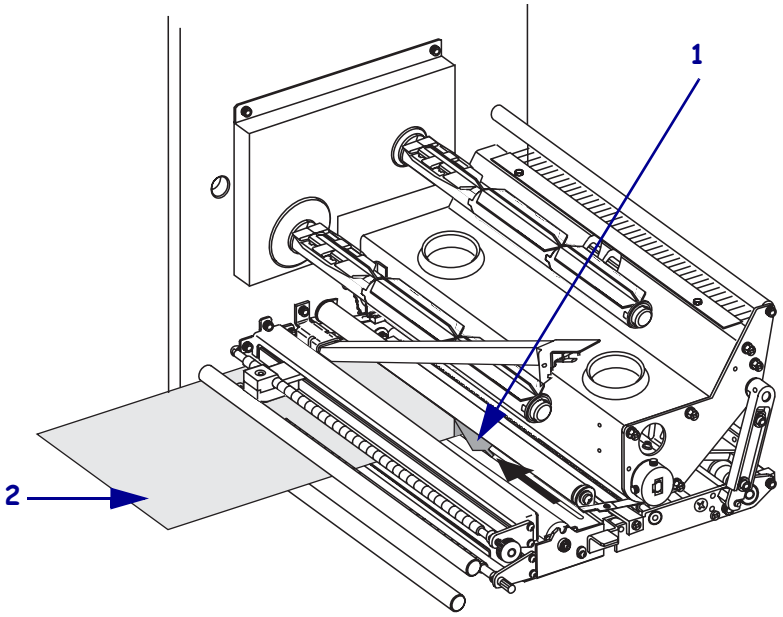


1	Upper guide post
2	Top media sensor track assembly
3	Label guide shelf assembly
4	Pinch roller assembly
5	Printhead assembly
6	Peel bar
7	Liner
8	Label

8. See Figure 38. Position the media so that it is aligned with and just touching the inner media guide.

9. See Figure 38. Under the print engine, grasp the brass thumb nut of the outer media guide, and position the outer media guide so that it just touches the outer edge of the media.

Figure 38 • Adjusting the Outer Media Guide



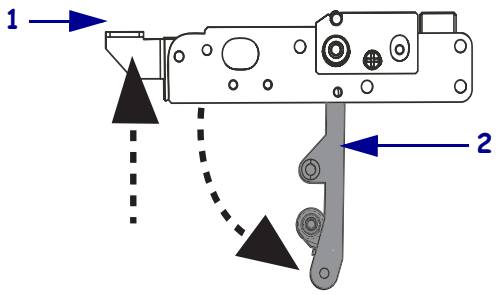
1	Outer media guide
2	Media

10. See Figure 33 on page 10. Press down on the pinch roller assembly until it locks closed.

11. See Figure 36 on page 12. Close the printhead assembly by rotating the printhead latch until it latches onto the locking pin.

12. See Figure 39. Raise the peel roller latch so that the peel roller assembly pivots downward.

Figure 39 • Releasing the Peel Roller Assembly

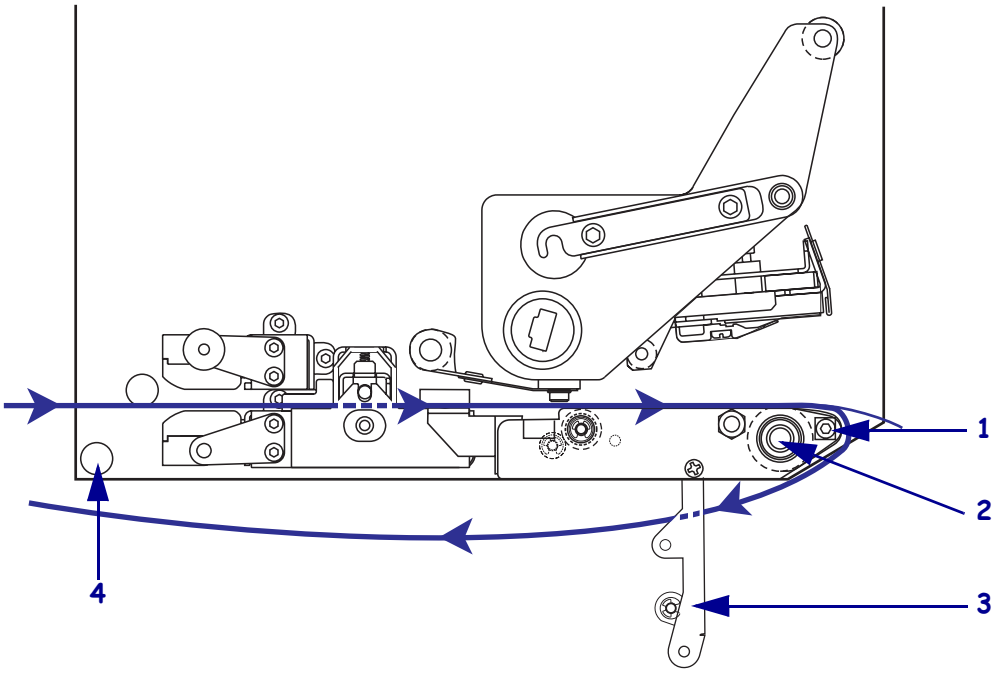


1	Peel roller latch
2	Peel roller assembly

13. See Figure 40. Thread the media liner around the peel bar, under the platen roller, and through the peel roller assembly.

Note • If the applicator has an air tube, route the media liner between the air tube and the peel bar. Do not thread the media liner over the air tube.

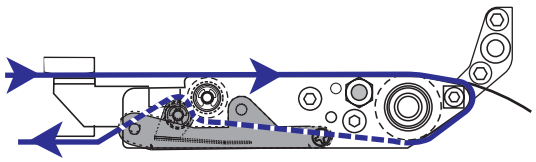
Figure 40 • Threading the Liner



1	Peel bar
2	Platen roller
3	Peel roller assembly
4	Lower guide post

14. See Figure 41. Rotate the peel roller assembly up until it locks into the closed position.

Figure 41 • Closed Peel Roller Assembly



15. See Figure 40. Thread the media liner under the lower guide post and around the take-up spindle of the applicator (refer to the applicator's user guide).

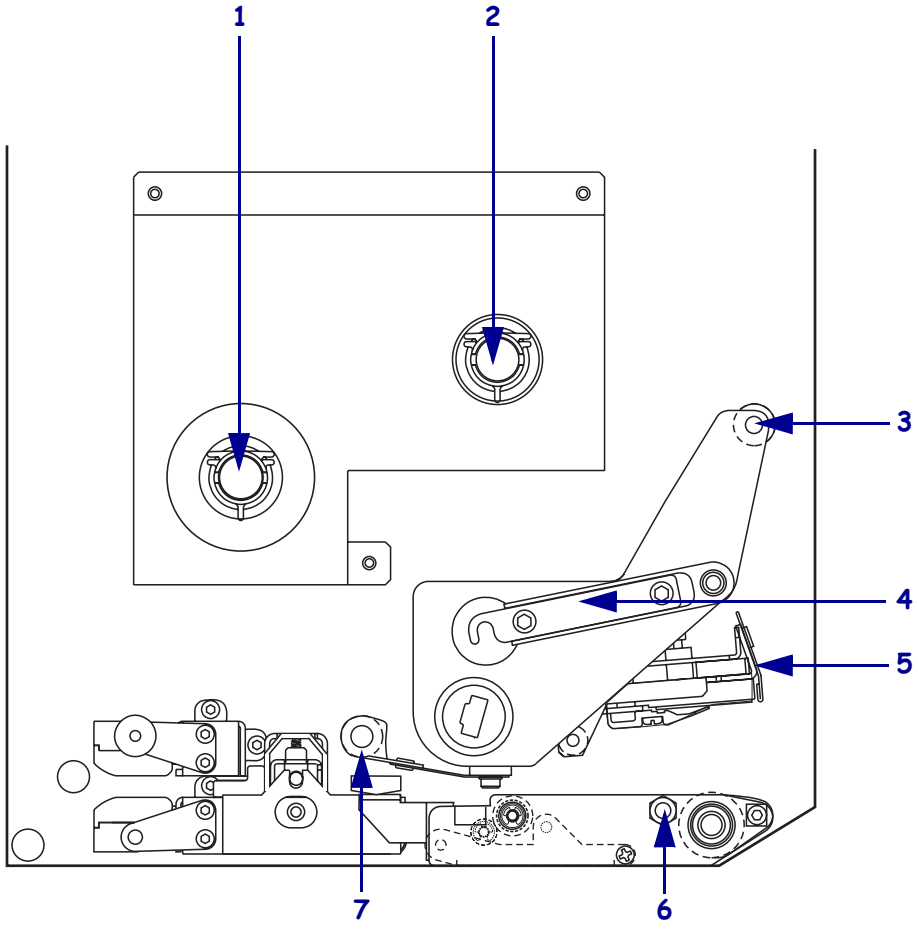
16. Close the media door.

Load Ribbon

Use ribbon with thermal transfer media (see *Ribbon* on page 6). The ribbon must be coated on the outside and wider than the media. If the ribbon is narrower than the media, areas of the printhead are unprotected and subject to premature wear.

Figure 42 identifies the ribbon system components inside the media compartment of a right-hand print engine. A left-hand unit contains a mirror image of these components. Figure 43 on page 17 shows the print engine with ribbon loaded.

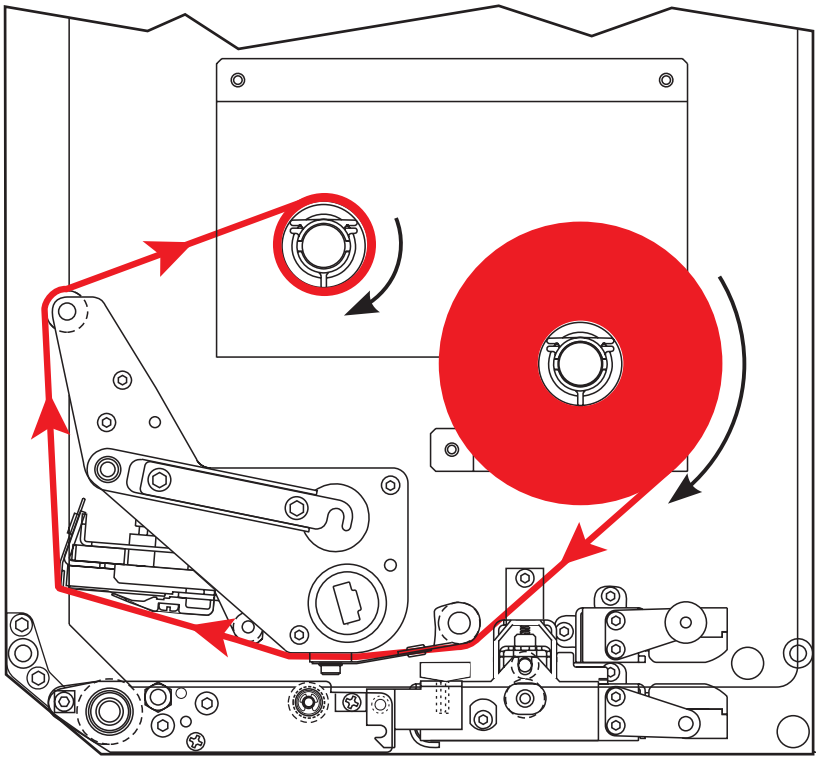
Figure 42 • Components for Ribbon Loading



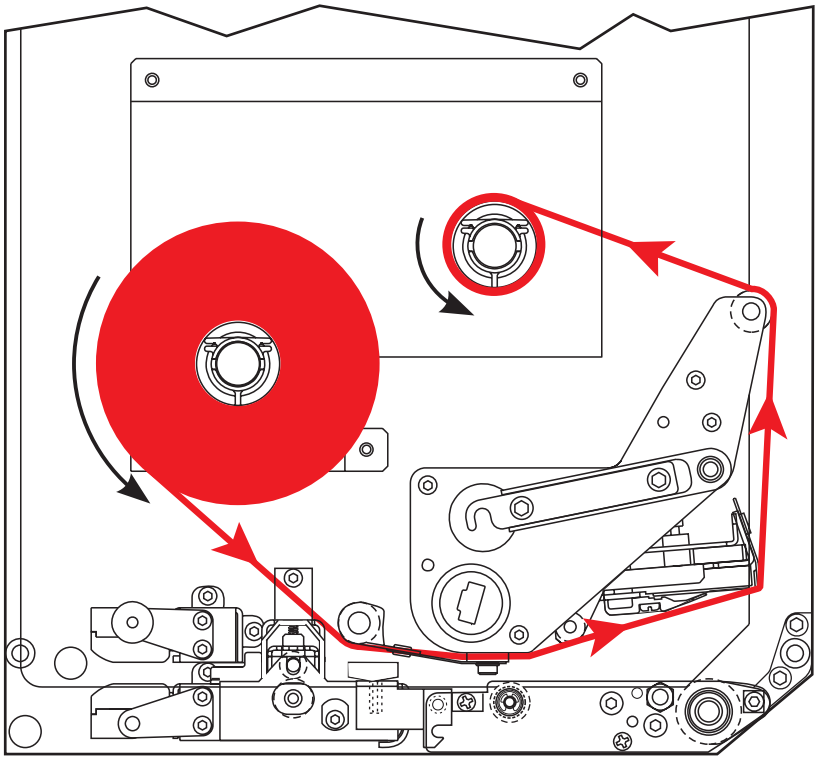
1	Ribbon supply spindle	5	Printhead assembly
2	Ribbon take-up spindle	6	Locking pin
3	Upper ribbon guide roller	7	Lower ribbon guide roller
4	Printhead latch		

Figure 43 • Loaded Ribbon

Left-Hand



Right-Hand

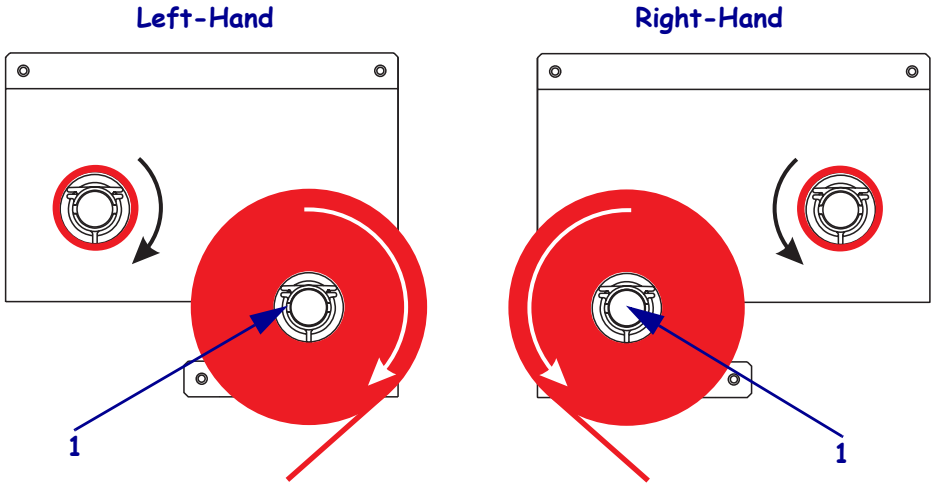


Caution • When you are loading media or ribbon, remove all jewelry that could come into contact with the printhead or other printer parts.

To load ribbon, complete these steps:

1. See Figure 44. Place a full ribbon roll onto the ribbon supply spindle so the ribbon rotates as shown, and then push the roll toward the print engine frame until it is fully seated.

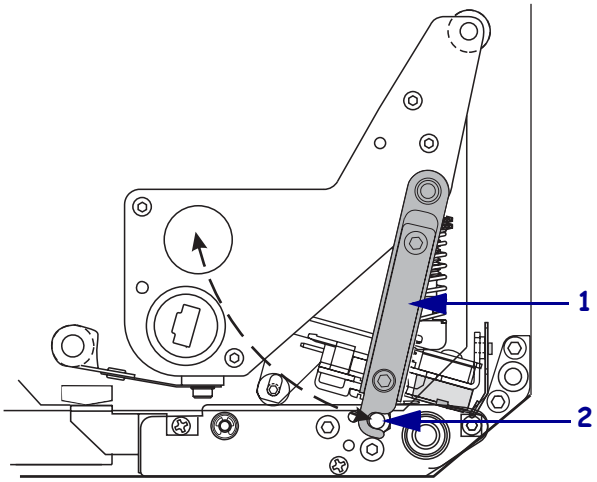
Figure 44 • Placing Ribbon on the Ribbon Supply Spindle



1	Ribbon supply spindle with ribbon

2. See Figure 45. Open the printhead assembly by unlatching the printhead latch from the locking pin.

Figure 45 • Opening the Printhead Assembly

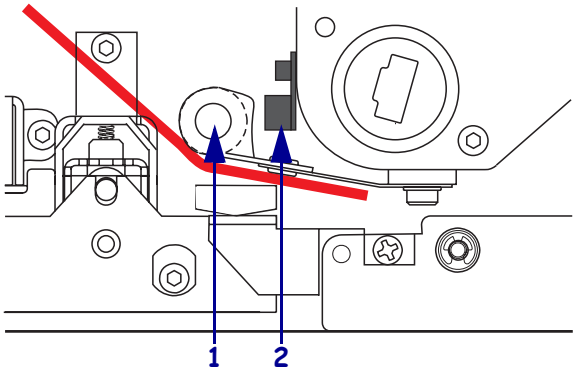


1	Printhead latch
2	Locking pin

3. See Figure 46. Thread the ribbon under the lower ribbon guide roller.

4. See Figure 46. Make sure that the ribbon passes directly below the ribbon sensor, which is located near the back wall of the print engine.

Figure 46 • Threading Ribbon under the Ribbon Sensor

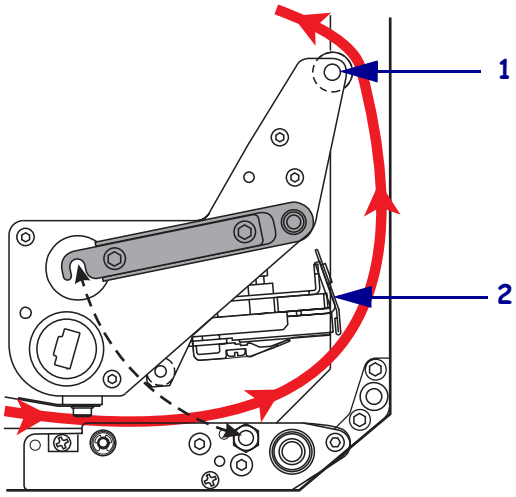


1	Lower ribbon guide roller
2	Ribbon sensor

5. See Figure 47. Thread the ribbon under the printhead assembly and then around the upper ribbon guide roller.

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

Figure 47 • Threading Ribbon under the Printhead Assembly

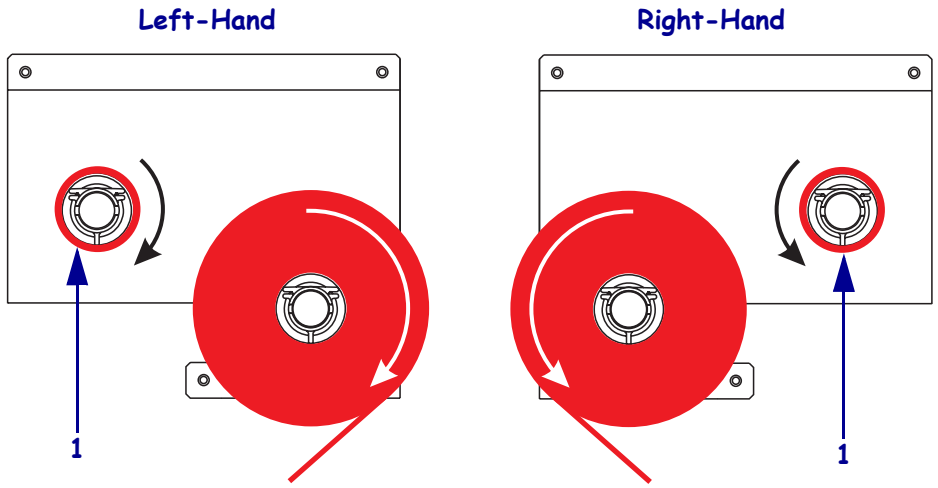


1	Upper ribbon guide roller
2	Printhead assembly

6. See Figure 48. Place an empty ribbon core onto the ribbon take-up spindle, and then push the core toward the print engine frame until it is fully seated.

7. See Figure 48. Attach the end of the ribbon to the empty ribbon core with adhesive tape or a label, and wind for several turns in the direction shown. Ensure that the ribbon winds evenly on the spindle.

Figure 48 • Loading Ribbon on the Ribbon Take-Up Spindle



1	Ribbon take-up spindle with empty ribbon core

8. See Figure 45 on page 19. Close the printhead assembly by pivoting the printhead latch onto the locking pin.

9. Close the media door.

Remove Used Ribbon

To remove used ribbon, complete these steps:

1. Open the media door.
2. Did the ribbon run out?

If...	Then...
Yes	**a.** Remove the empty core from the ribbon supply spindle. Save the core to use on the ribbon take-up spindle when you load ribbon. **b.** Remove the used ribbon and core from the ribbon take-up spindle. **c.** Install new ribbon following the instructions in *Load Ribbon* on page 16.
No	**a.** Cut the ribbon near the ribbon take-up spindle. **b.** Remove the used ribbon and core from the ribbon take-up spindle. **c.** Locate an empty ribbon core. If necessary, remove and discard the used ribbon from the core removed in the previous step. **d.** See Figure 48 on page 21. Install the empty ribbon core onto the ribbon take-up spindle, and push the core toward the print engine frame until it is fully seated. **e.** Thread the remaining ribbon on the ribbon supply spindle following the instructions in *Load Ribbon* on page 16. **f.** See Figure 48 on page 21. Attach the end of the ribbon to the empty ribbon core with adhesive tape or a label, and wind for several turns in the direction shown. Ensure that the ribbon winds evenly on the spindle.

Configure the Print Engine

After you have installed the media and ribbon, you may set print engine parameters for your application using the control panel.

Important • Certain printing conditions may require you to adjust printing parameters, such as print speed, darkness, or print mode. These conditions include (but are not limited to):

- printing at high speeds
- peeling the media
- the use of extremely thin, small, synthetic, or coated labels

Because print quality is affected by these and other factors, run tests to determine the best combination of printer settings and media for your application. A poor match may limit print quality or print rate, or the print engine may not function properly in the desired print mode.

To enter Setup Mode, complete these steps:

1. On the control panel, press SETUP/EXIT.
2. Press either NEXT or PREVIOUS to scroll through the parameters.

To leave Setup Mode, complete these steps:

1. Press SETUP/EXIT.

   The LCD displays **SAVE CHANGES**.

2. Press the left or right oval to display the save options (Table 10).

Table 10 • Save Options When Leaving Setup Mode

LCD	Description
PERMANENT	Stores values in the print engine even when power is turned off.
TEMPORARY	Saves the changes until power is turned off.
CANCEL	Cancels all changes from the time you pressed SETUP/EXIT except for any made to the darkness and tear-off settings.
LOAD DEFAULTS	Restores all parameters other than the network settings back to the factory defaults. **Note •** Loading factory defaults causes the print engine to auto-calibrate.
LOAD LAST SAVE	Loads values from the last permanent save.
DEFAULT NET	Restores the wired and wireless network settings back to factory defaults.

3. Press NEXT to select the displayed choice.

   When the configuration and calibration sequence is done, **PRINTER READY** displays.

Print a Configuration Label

When you have loaded the media and ribbon (if necessary), print a configuration label as a record of your print engine's current settings. Keep the label to use when troubleshooting printing problems.

To print a configuration label, complete these steps:

1. On the control panel, press SETUP/EXIT.
2. Press NEXT or PREVIOUS to scroll through the parameters until you reach `LIST SETUP`.
3. Press the right oval to confirm printing.

   A configuration label prints (Figure 49).

Figure 49 • Configuration Label

```
PRINTER CONFIGURATION

Zebra Technologies
ZTC 170PAX4 RH-200dpi
ZBR2325570

00.0............... DARKNESS
2 IPS.............. PRINT SPEED
2 IPS.............. SLEW SPEED
2 IPS.............. BACKFEED SPEED
-016............... TEAR OFF
APPLICATOR......... PRINT MODE
CONTINUOUS......... MEDIA TYPE
WEB................ SENSOR TYPE
THERMAL-TRANS...... PRINT METHOD
2 094/203 IN....... PRINT WIDTH
1600............... LABEL LENGTH
39.0IN   988MM..... MAXIMUM LENGTH
MEDIA DISABLED..... EARLY WARNING
MAINT. OFF......... EARLY WARNING
BIDIRECTIONAL...... PARALLEL COMM.
RS232.............. SERIAL COMM.
9600............... BAUD
8 BITS............. DATA BITS
NONE............... PARITY
XON/XOFF........... HOST HANDSHAKE
NONE............... PROTOCOL
000................ NETWORK ID
NORMAL MODE........ COMMUNICATIONS
<~>  7EH........... CONTROL PREFIX
<^>  5EH........... FORMAT PREFIX
<,>  2CH........... DELIMITER CHAR
ZPL II............. ZPL MODE
HIGH............... RIBBON TENSION
CALIBRATION........ MEDIA POWER UP
CALIBRATION........ HEAD CLOSE
BEFORE............. BACKFEED
+015............... LABEL TOP
+0020.............. LEFT POSITION
0000............... HEAD TEST COUNT
0615............... HEAD RESISTOR
MODE 1............. APPLICATOR PORT
PULSE MODE......... START PRINT SIG
FEED MODE.......... RESYNCH MODE
25M................ RIBBON LOW MODE
DISABLED........... REPRINT MODE
046................ WEB S.
079................ MEDIA S.
071................ RIBBON S.
050................ MARK S.
000................ MARK MED S.
081................ MEDIA LED
035................ RIBBON LED
009................ MARK LED
+10................ LCD ADJUST
DPSWFXM............ MODES ENABLED
.................. MODES DISABLED
1344 8/MM FULL..... RESOLUTION
V60.13.0.5 ->...... FIRMWARE
V30 33037 56....... HARDWARE ID
CUSTOMIZED......... CONFIGURATION
NONE.............A: COMPACT FLASH
11776k...........R: RAM
NONE.............B: MEMORY CARD
2048k............E: ONBOARD FLASH
NONE............... FORMAT CONVERT
*** APPLICATOR..... P30 INTERFACE
005 DISPLAY........ P31 INTERFACE
007 POWER SUPPLY... P32 INTERFACE
017 PAX170 RTS..... P34 INTERFACE
FW VERSION......... IDLE DISPLAY
09/30/04........... RTC DATE
09:30.............. RTC TIME
115740 IN.......... NONRESET CNTR
115740 IN.......... RESET CNTR1
115740 IN.......... RESET CNTR2
293691 CM.......... NONRESET CNTR
293691 CM.......... RESET CNTR1
293691 CM.......... RESET CNTR2
46855 LABLS........ NONRESET CNTR
46855 LABLS........ RESET CNTR1
46855 LABLS........ RESET CNTR2
HW 12418.04JDR080120.57340.D.VH1....

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```

Print a Network Configuration Label

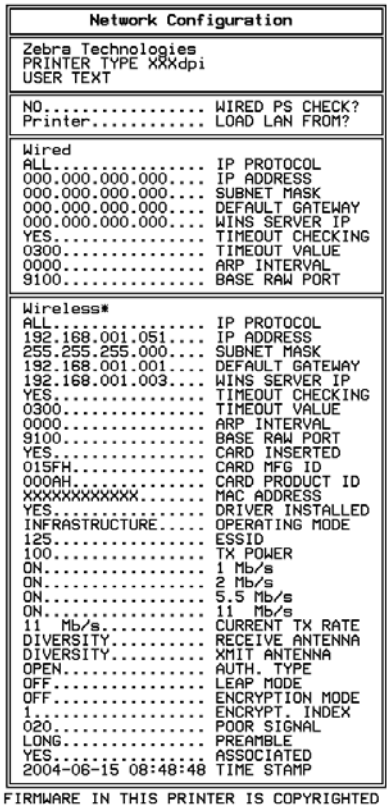
If you are using a print server, you can print a network configuration label after the printer is connected to the network.

To print a network configuration label, complete these steps:

1. On the control panel, press SETUP/EXIT.
2. Press NEXT or PREVIOUS to scroll through the parameters until you reach LIST NETWORK.
3. Press the right oval to confirm printing.

   A network configuration label prints (Figure 50). If no wireless print server is installed, the wireless portion of the label does not print.

Figure 50 • Network Configuration Label



View or Change Parameters

Table 11 shows a subset of the print engine parameters in the order in which they are displayed when you press NEXT after entering setup mode. Throughout this process, press NEXT to continue to the next parameter, or press PREVIOUS to return to the previous parameter in the cycle. When a parameter is changed, an asterisk (*) is shown in the upper left corner of the display to indicate that the value is different from the one currently active in the print engine.

Table 11 • Print Engine Parameters

Parameter	Action/Explanation
DARKNESS –■■■■ 4.0 +	**Adjusting Print Darkness** If printing is too light or if there are voids in printed areas, increase the darkness. If printing is too dark or if there is spreading or bleeding of printed areas, decrease the darkness. Darkness settings also may be changed by the driver or software settings. **Important** • Set the darkness to the lowest setting that provides good print quality. If the darkness is set too high, the ink may smear, the ribbon may burn through, or the printhead may wear prematurely. • Press the right oval to increase darkness. • Press the left oval to decrease darkness. **Default:** +4.0 **Range:** 00.0 to +30.0
PRINT SPEED 2 IPS	**Adjusting Print Speed** • Press the right oval to increase value. • Press the left oval to decrease value. **Default:** 2 IPS **Range:** 2 to 12 IPS for 203 dpi, 2 to 8 IPS for 300 dpi
SLEW SPEED 6 IPS	**Adjusting Slew Speed** • Press the right oval to increase value. • Press the left oval to decrease value. **Default:** 6 IPS **Range:** 1 to 12 IPS
BACKFEED SPEED 2 IPS	**Adjusting Backfeed Speed** • Press the right oval to increase value. • Press the left oval to decrease value. **Default:** 2 IPS **Range:** 1 to 12 IPS

Table 11 • Print Engine Parameters (Continued)

Parameter	Action/Explanation
TEAR OFF +000 –■■■■■ +	**Adjusting the Tear-Off Position** Establishes the position of the media over the tear-off/peel-off bar after printing. Positive numbers move the media out and negative numbers move the media in. Each press of an oval adjusts the tear-off position by four dot rows. • Press the right oval to increase value. • Press the left oval to decrease value. **Default:** +0 **Range:** –120 to +120
PRINT MODE ◄— TEAR-OFF —►	**Selecting Print Mode** Print mode settings tell the print engine the method of media delivery that you wish to use. • Press either oval to display choices. **Default:** TEAR-OFF **Selections:** TEAR-OFF, REWIND, APPLICATOR
MEDIA TYPE ◄ NON-CONTINUOUS ►	**Setting Media Type** Tells the print engine the type of media that you are using. When you select non-continuous media, the print engine feeds media to calculate label length (the distance between two recognized registration points of the interlabel gap or alignment notch or hole). When you select continuous media, you must include a label length instruction in your label format (^LLxxxx if you are using ZPL or ZPL II). • Press either oval to display choices. **Default:** NON-CONTINUOUS **Selections:** CONTINUOUS, NON-CONTINUOUS
SENSOR TYPE ◄— WEB —►	**Setting the Sensor Type** Tells the print engine whether you are using media web media (label separations indicated by a gap, notch, or hole) or media with black registration marks printed on the back. • Press either oval to display other choices. **Default:** WEB **Selections:** WEB, MARK
PRINT METHOD ◄ THERMAL-TRANS. ►	**Selecting Print Method** Tells the print engine the method of printing to use: thermal transfer (ribbon required) or direct thermal (no ribbon). • Press either oval to display choices. **Default:** Thermal transfer **Selections:** Thermal transfer, direct thermal **Note** • Selecting direct thermal when using ribbon creates a print engine error condition, but printing continues.

Table 11 • Print Engine Parameters (Continued)

Parameter	Action/Explanation
PRINT WIDTH → 168 0/8 MM +	**Setting Print Width** Determines the printable area across the width of the label given the resolution of the print engine. To change value shown: **1.** Press the left oval to move the cursor. **2.** Press the right oval to increase the value of the digit. To change the unit of measurement: **1.** Press the left oval until the unit of measurement is active. **2.** Press the right oval to toggle to a different unit of measure (mm, inches, or dots). **Default:** 168 0/8 mm for 203 dpi print engines; 168 0/12 mm for 300 dpi print engines **NOTE:** Setting the width too narrow can result in portions of the label not being printed on the media. Setting the width too wide wastes formatting memory and can cause printing off the label and on the platen roller. This setting can affect the horizontal position of the label format if the image was inverted using the ^POI ZPL II command.
MAXIMUM LENGTH -39.0 IN 988 MM+	**Setting Maximum Label Length** The maximum label length is used during the calibration process. Interlabel gap is considered part of the label length. Always set a value that is at least 1 in. (25.4 mm) longer than the length of the label you are using. For example, if the label length is 5 in. (126 mm) including the interlabel gap, set the parameter for 6.0 in. (152 mm). If the value is set to a smaller value than the label length, the print engine assumes that continuous media is loaded, and the print engine cannot calibrate. • To increase the value, press the right oval. • To decrease the value, press the left oval. **Default:** 39.0 in. (988 mm). **Range:** Values are adjustable in 1 in. (25.4 mm) increments.
LIST FONTS PRINT	**List Fonts** • Press the right oval to print a label that lists the standard fonts and any optional fonts in stored in the print engine's RAM, Flash memory, or optional PCMCIA font cards.
LIST BAR CODES PRINT	**List Bar Codes** • Press the right oval to print a label that lists the available bar codes in the print engine. Bar codes may be stored in RAM, Flash memory, or optional PCMCIA cards.
LIST IMAGES PRINT	**List Images** • Press the right oval to print a label that lists the available images stored in the print engine's RAM, Flash memory, or optional memory card.

Table 11 • Print Engine Parameters (Continued)

Parameter	Action/Explanation
LIST FORMATS PRINT	**List Formats** • Press the right oval to print a label that lists the available formats stored in the print engine's RAM, Flash memory, or optional memory card.
LIST SETUP PRINT	**List Setup** • Press the right oval to print a configuration label, which lists the current print engine configuration.
LIST NETWORK PRINT	**List Network Settings** • Press the right oval to print a network configuration label, which lists the settings for any print servers that are installed.
LIST ALL PRINT	**List All** • Press the right oval to print labels that list the available fonts, bar codes, images, formats, and the current print engine and network configurations.
LANGUAGE ◄— ENGLISH —►	**Selecting the Display Language** This parameter allows you to change the language displayed on the control panel LCD. • Press the right or left oval to display other choices. **Default:** ENGLISH **Selections:** ENGLISH, SPANISH, FRENCH, GERMAN, ITALIAN, NORWEGIAN, PORTUGUESE, SWEDISH, DANISH, SPANISH 2, DUTCH, FINNISH, CUSTOM

Cleaning Schedule

The recommended cleaning schedule is shown in Table 12. See the following pages for specific procedures.

Caution • Use only the cleaning agents indicated. Zebra is not responsible for damage caused by any other fluids being used on this printer.

Table 12 • Recommended Printer Cleaning Schedule

Area	Method	Interval
Printhead	Solvent*	Perform these procedures at the following times: • When CLEAN HEAD NOW appears. • **Direct Thermal Print Mode:** After every roll of labels or 500 ft (150 m) of fanfold labels. • **Thermal Transfer Print Mode:** After every roll (1500 ft or 450 m) of ribbon.
Platen roller	Solvent*	
Transmissive media sensor	Air blow	
Reflective media sensor	Air blow	
Media path	Solvent*	
Ribbon sensor	Air blow	
Door-open sensors	Air blow	Monthly
Tear-off/peel-off bar	Solvent*	

* Use Zebra's Preventative Maintenance kit, part number 47362, or a solution of 90% isopropyl alcohol and 10% deionized water.

Clean the Printhead and Platen Roller

Clean the printhead and platen roller according to the schedule in Table 12 on page 30. Clean the printhead more often if you see inconsistent print quality, such as voids or light print. Clean the platen roller if you see media movement problems.

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

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

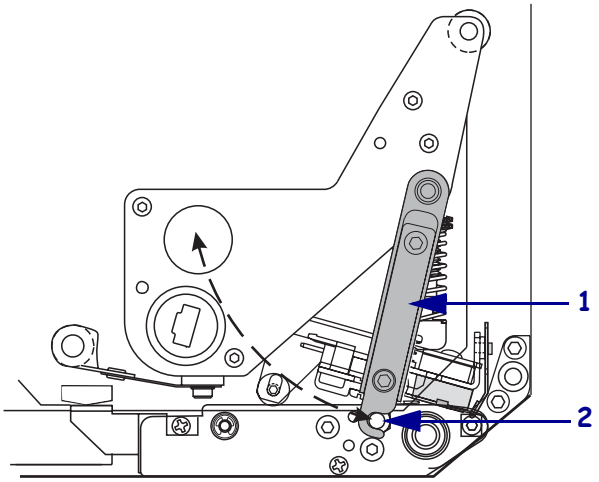
Caution • When you are loading media or ribbon, remove all jewelry that could come into contact with the printhead or other printer parts.

To clean the printhead and platen roller, complete these steps:

1. Turn off (**O**) the print engine.

2. See Figure 51. Open the printhead assembly by unlatching the printhead latch from the locking pin.

Figure 51 • Opening the Printhead Assembly

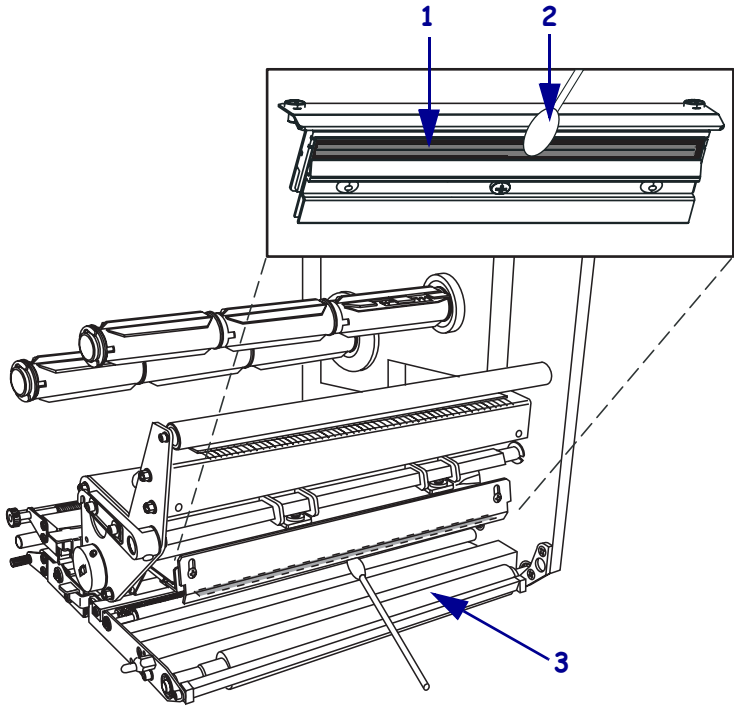


1	Printhead latch
2	Locking pin

3. Remove the media and ribbon from the print engine.

4. See Figure 52. Using Preventative Maintenance Kit (part number 47362) or a solution of 90% isopropyl alcohol and 10% deionized water on a cotton swab, wipe the print elements from end to end. Allow the solvent to evaporate.

Figure 52 • Printhead and Platen Roller Cleaning (Right-Hand Unit Shown)



1	Printhead elements (gray strip)
2	Cotton swab
3	Platen Roller

5. Use a lint-free cloth moistened with alcohol to clean the platen roller and other rollers. Rotate the rollers while cleaning.

6. Reload the ribbon and media (if used).

7. Turn on (**I**) the print engine.

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