



ZE500™ Series Print Engines

Maintenance Manual



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DECLARATION OF CONFORMITY

ZEBRA TECHNOLOGIES CORPORATION

Declares that the following Information Technology Equipment
Zebra ZE500-4 and ZE500-6
complies with the following applicable directives and standards for the
ITE: Heavy Industry environment

Applicable Directives and Supporting Standards:

2004/108/EC EMC Directive, EN55022:2010 Class A,
EN55024:2010EN61000-3-2:2006 + A2:2009, EN61000-3-3:2008,
2006/95/EC LVD Directive, EN60950-1:2006 (2nd Edition) +A11:2009 +A1:2010+A12:2011,
CB Scheme

RLAN Enabled (if equipped)

Applicable Directives and Supporting Standards:

99/5/EC R&TTE Directive, EN 301 489-17 V1.3.2:2008, EN 300 328 V1.8.1:2012

Manufactured for Zebra Technologies Corporation by:

Jabil Circuit (Guangzhou) Ltd No. 1 Branch Company
Lianyun Road 388, Eastern Zone,
Guangzhou Economic & Technological Development District
Guangdong Province, China

The equipment specified conforms to all Directives and Standards listed above effective as of the date below.

Effective Date: 11 July 2012

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.

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.

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Advanced User Information

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Routine Maintenance

This section provides routine cleaning and maintenance procedures.

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Cleaning Schedule

Cleaning your print engine regularly maintains print quality and may extend the life of the print engine. The recommended cleaning schedule is shown in [Table 1](#). 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 print engine.

Table 1 • Recommended Print Engine Cleaning Schedule

Area	Method	Interval
Printhead	Solvent*	Perform these procedures at the following times: <ul style="list-style-type: none"> • 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*	
Pinch roller	Solvent*	
Peel roller	Solvent*	
Transmissive media sensor	Air blow	
Reflective media sensor	Air blow	
Media path	Solvent*	
Ribbon sensor	Air blow	
Door-open sensors	Air blow	
Tear-off/peel-off bar	Solvent*	

* Use Preventative Maintenance kit (part number 47362) or a solution of 90% isopropyl alcohol and 10% deionized water.

Clean the Exterior

Clean the outside surfaces of the print engine with a lint-free cloth. Use a mild detergent solution or desktop cleaner sparingly, as needed.

Caution • Do not use harsh or abrasive cleaning agents or solvents.

Clean the Media Compartment

Remove any accumulated dirt and lint from the interior of the print engine using a soft bristle brush and/or vacuum cleaner. This area should be inspected every time a new ribbon is loaded.

Clean the Printhead and Rollers

Clean the printhead, platen roller, pinch roller, and peel roller according to the schedule in [Table 1 on page 24](#). Clean the printhead more often if you see inconsistent print quality, such as voids or light print. Clean the rollers if you see media movement problems.

To clean the printhead and rollers, complete these steps:



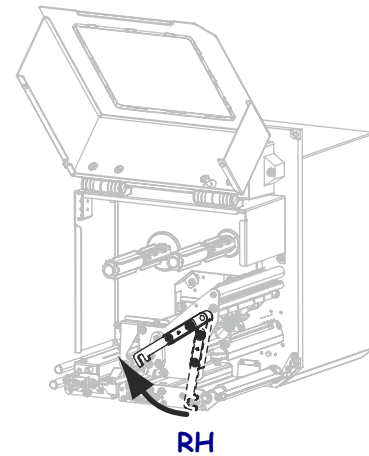
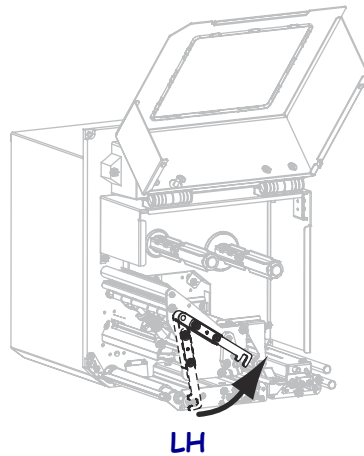
Caution • Observe proper electrostatic safety precautions when handling any static-sensitive components such as circuit boards and printheads.

1. Turn Off (O) the print engine.



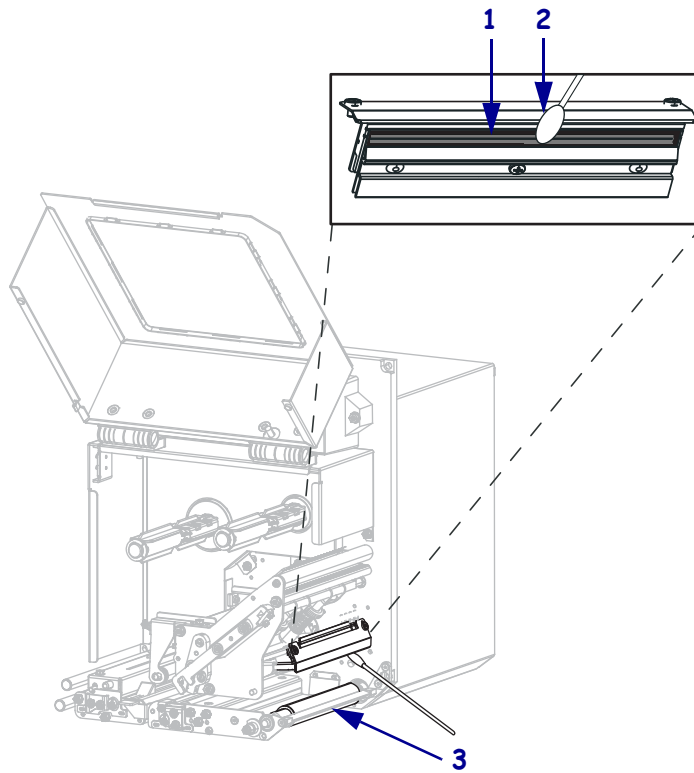
2. **Caution** • The printhead may be hot and could cause severe burns. Allow the printhead to cool.

Rotate the printhead-release latch to the open position.



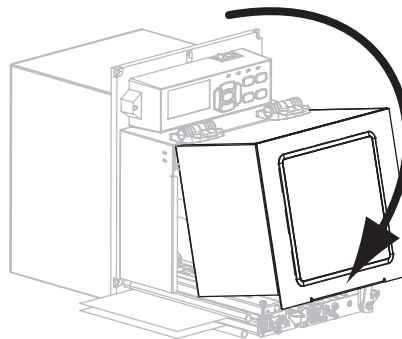
3. Remove the media and ribbon from the print engine.

- 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.



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

- Use a lint-free cloth moistened with alcohol to clean the platen roller, pinch roller, and peel roller. Rotate the rollers while cleaning.
- Reload the ribbon and media (if used).
- Close the media door.



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.

Calibrate the Ribbon and Media Sensors

Use the procedure in this section to calibrate the printer, which adjusts the sensitivity of the media and ribbon sensors.



Important • Follow the calibration procedure exactly as presented. All of the steps must be performed even if only one of the sensors requires adjustment. You may press and hold CANCEL at any step in this procedure to cancel the process.

To perform sensor calibration, complete these steps:

1. With the printer in the Ready state, initiate media and ribbon calibration through the print engine's display:
 - a. Navigate to the following parameter. For instructions on modifying printer parameters, refer to the *User Guide*.



- b. Press **RIGHT SELECT** to select START.

The printer does the following:

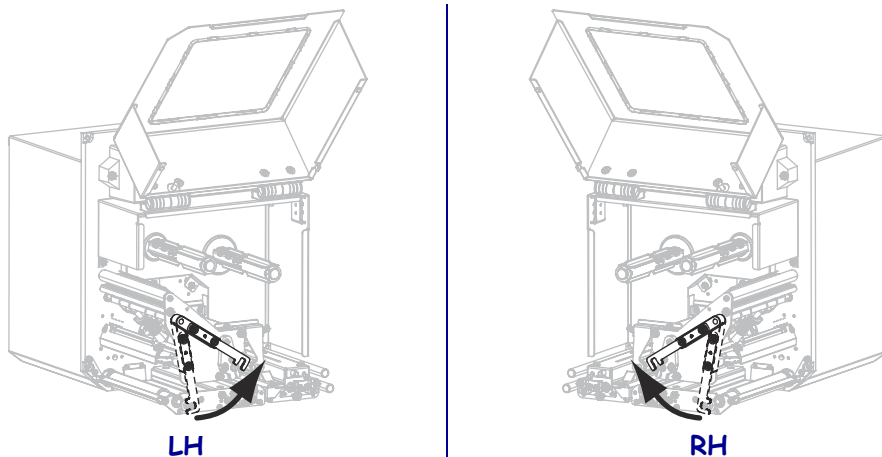
- The **STATUS light** and **SUPPLIES light** flash yellow once.
- The **PAUSE light** blinks yellow.
- The control panel displays:

LOAD BACKING

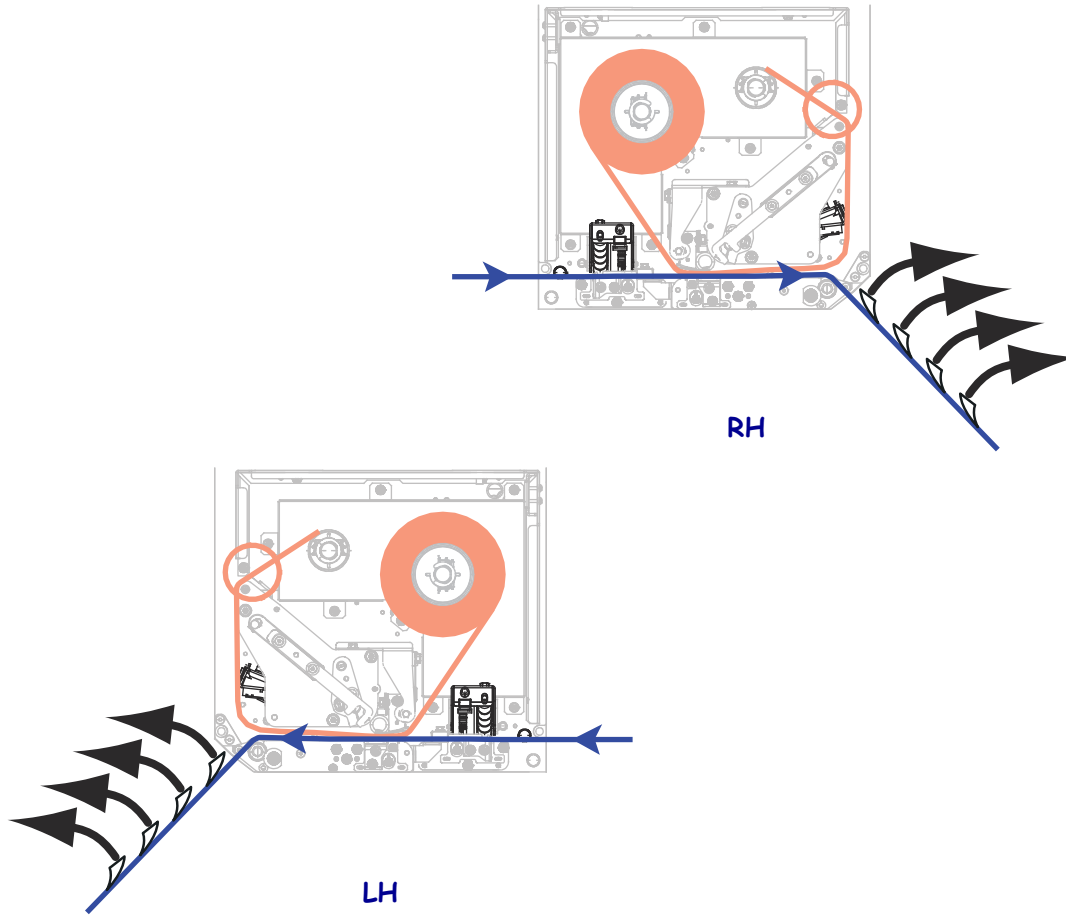
2. **Caution** • The printhead may be hot and could cause severe burns. Allow the printhead to cool.



Rotate the printhead-release latch to the open position.

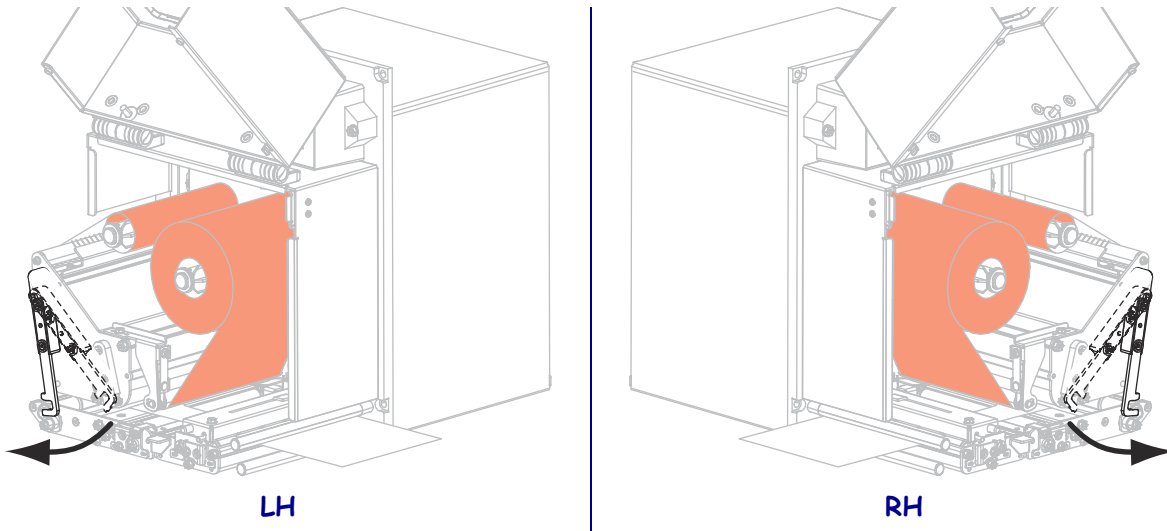


3. Extend approximately 8 in. (203 mm) of media past the peel bar. Remove and discard the labels from the liner on this exposed media.



4. Pull the media back into the print engine so that only the liner is between the media sensors.
5. Press **PLUS (+)** to continue.
The control panel displays:
REMOVE RIBBON
6. Remove the ribbon (if used).

7. Rotate the printhead-release latch to the closed position, and close the media door.



8. Press **PAUSE** to begin the media calibration process.

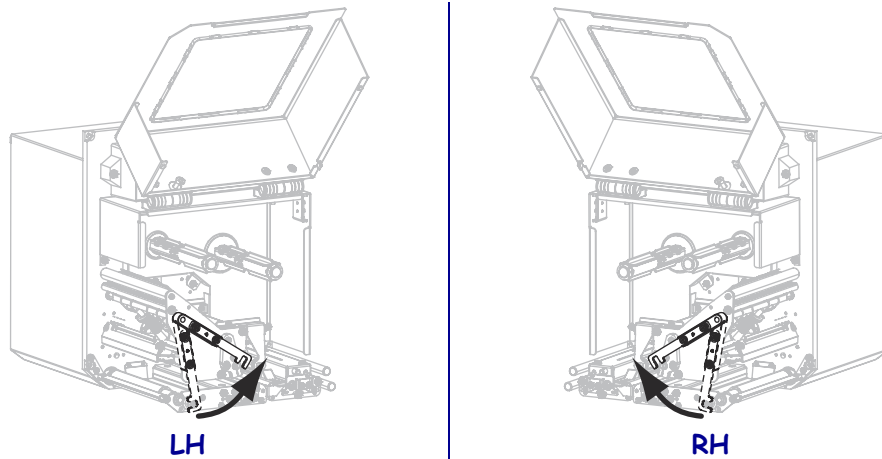
The control panel displays:

**CALIBRATING
PLEASE WAIT**

When the process is complete, the control panel displays:

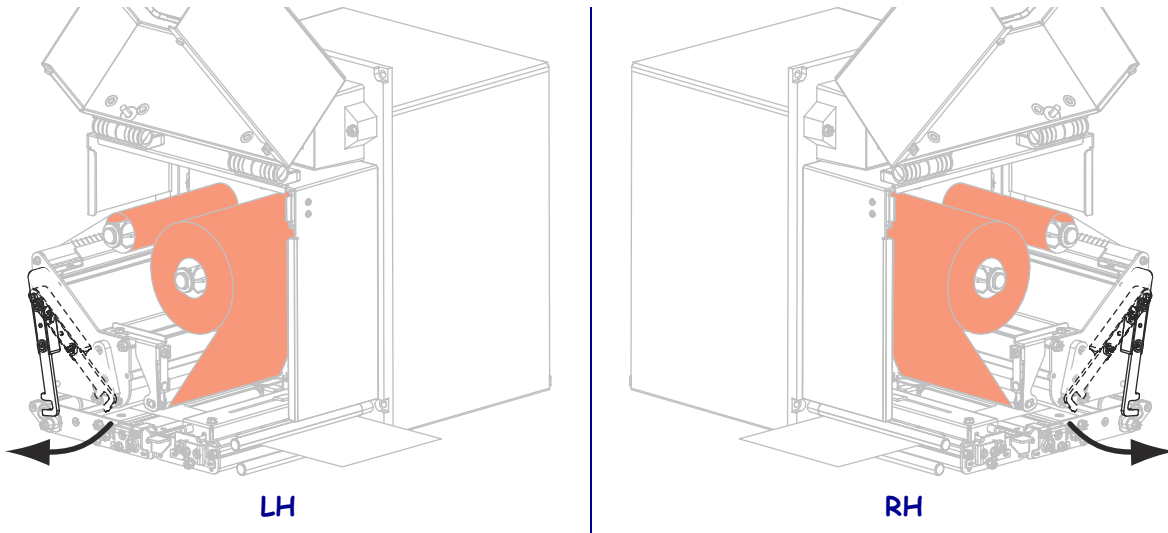
RELOAD ALL

9. Rotate the printhead-release latch to the open position.

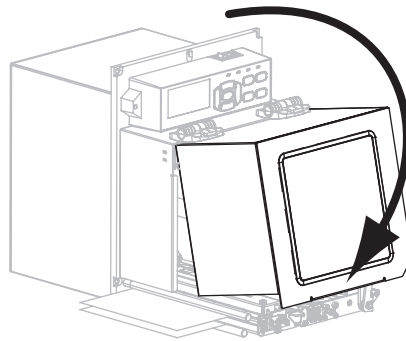


10. Reload the media and ribbon (if used).

11. Rotate the printhead-release latch to the closed position.



12. Close the media door.



13. Press **PAUSE** to enable printing.

Adjust the Sensors

This section describes how to adjust the sensors.

Transmissive Media Sensor

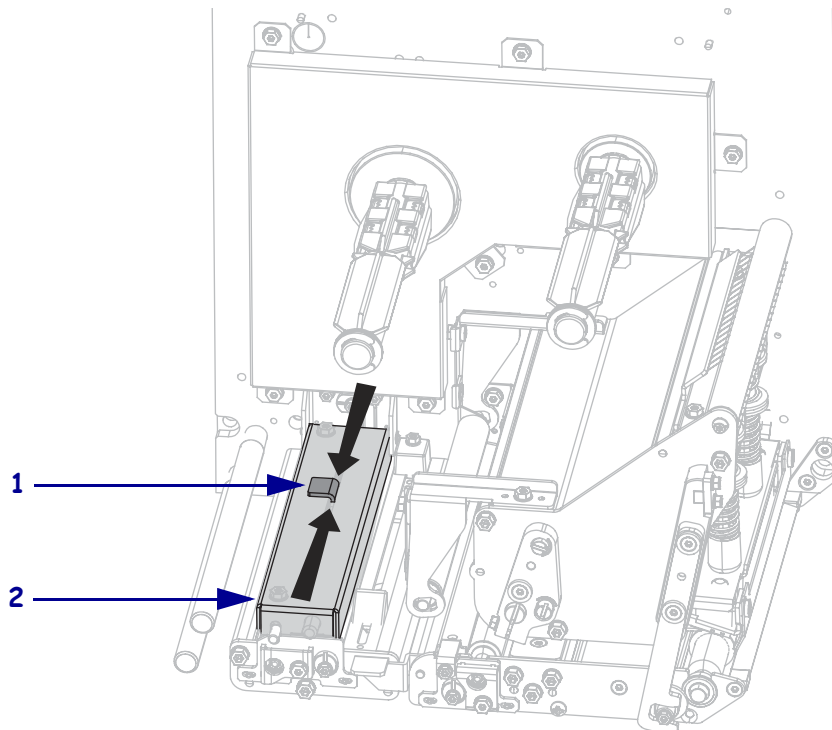
The transmissive media sensor finds “start of label” indicators, such as notches or holes in the media or interlabel gaps. This sensor consists of a light source (positioned below the media) and a light sensor (positioned above the media).

To position the sensor, complete these steps:

1. Refer to [Figure 1](#). Slide the sensor position indicator on the pinch roller assembly to move the media sensor.
2. How does the current media indicate the start of labels?

If the media...	Then...
Has notches or holes between labels	Align the sensor with the notch or hole in the media.
Uses interlabel gaps	Position the sensor approximately at the center of the media width.

Figure 1 • Media Sensor Adjustment (Right-Hand Unit Shown)



1	Sensor position indicator
2	Pinch roller assembly

Reflective Media Sensor

Some types of media have black marks printed on the underside of the media liner, which act as “start of label” indicators. The reflective media sensor senses these black marks. The position of this sensor is not adjustable. If you use this type of media, refer to the media specifications for your print engine for information about black mark requirements.

Ribbon Sensor

The ribbon sensor is mounted in a fixed position, and no adjustment is required.

Toggle Positioning

Proper toggle positioning is important for proper print quality.



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

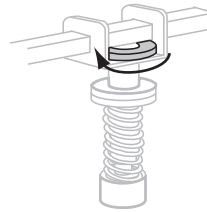
To adjust the toggles, complete these steps:

1. Print some labels at 2 in. (51 mm) per second by running the PAUSE Self Test (see [PAUSE Self Test on page 59](#)).
2. While printing labels, use the control panel to lower the darkness setting until the labels are printing gray instead of black. For instructions on modifying printer parameters, refer to the *User Guide*.

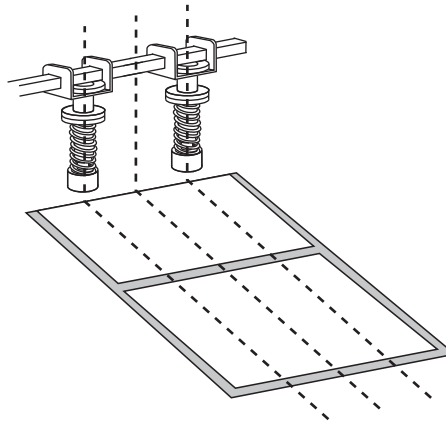


3. **Caution** • The printhead may be hot and could cause severe burns. Allow the printhead to cool.

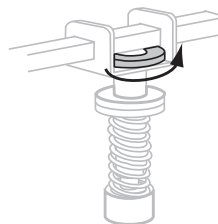
Loosen the locking nut at the top of each toggle assembly.



4. Position the toggles approximately 1/4 of the way in from each edge of the media.



5. Tighten the locking nuts.



6. Print additional labels at 2 in. (51 mm) per second by again running the PAUSE Self Test. (Press and hold PAUSE while turning on (I) the printer.)
7. Do both sides of the label print at the same level of gray?

If...	Then...
Yes	The toggles are positioned correctly. Increase the darkness setting to the optimum level for the media being used.
No	<ol style="list-style-type: none">a. Readjust the position of the toggle or toggles toward the side that printed lighter.b. Print additional labels at 2 in. (51 mm) per second by again running the PAUSE Self Test. (Press and hold PAUSE while turning on (I) the printer.)c. Repeat this step until both sides of the label print at the same level of gray.d. Increase the darkness setting to the optimum level for the media being used.

Printhead Pressure Adjustment

Before adjusting the printhead pressure, check that the toggles are positioned correctly. See [Toggle Positioning on page 33](#).

Printhead life and drive system life (belts and bearings) can be maximized by using the lowest pressure that produces the desired print quality without allowing the ribbon or media to slip. You may need to adjust the printhead pressure in the following instances:

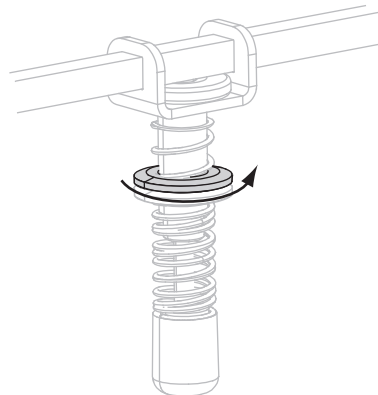
- if there is noticeable bleed or swelling in the printed image (too much pressure)
- if there are voids (too little pressure)
- if the darkness setting (burn duration) is set properly, but printing is too light (too little pressure)
- if the ribbon slips (too little pressure)



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

To adjust printhead pressure, complete these steps:

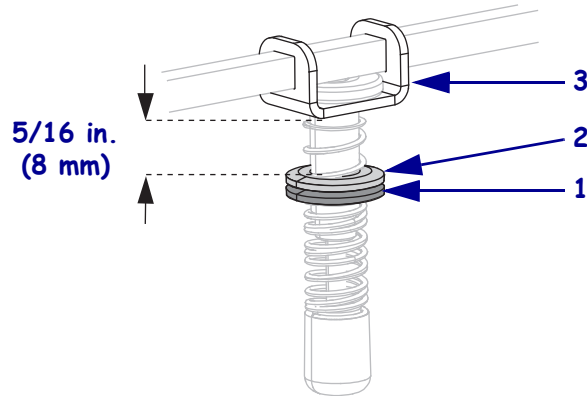
1. As needed throughout this procedure, refer to the [PAUSE Self Test on page 59](#) to print test labels.
2. Set the darkness value (burn duration) appropriately for your media and ribbon. For instructions on modifying printer parameters, refer to the *User Guide*.
3. Loosen the locking nut on the toggle assembly.



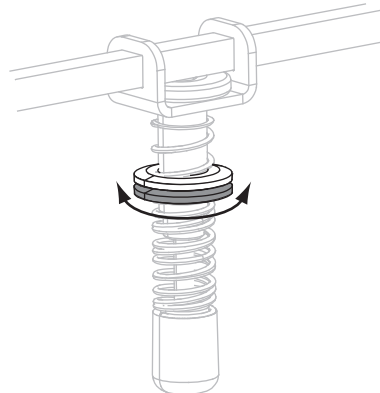


4. **Caution** • The printhead may be hot and could cause severe burns. Allow the printhead to cool.

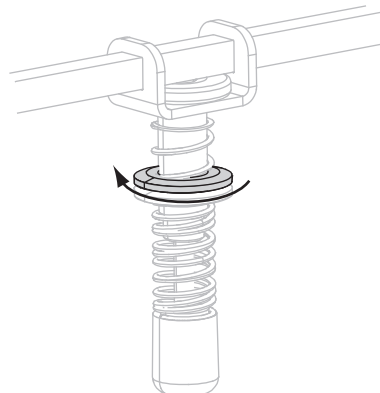
As a starting point for adjustment, set the position of the adjusting nut (1) and the locking nut (2) so that when the locking nut is tightened, it is approximately 5/16 in. (8 mm) from the yoke (3).



5. Move the adjusting nut until the print quality is acceptable. Use the lowest pressure that provides the desired print quality.
- To increase printhead pressure, move the adjusting nut downward.
 - To decrease printhead pressure, move the adjusting nut upward.



6. To lock the toggle pressure, tighten the locking nut against the adjusting nut.



Print Line, Balance, and Skew Adjustment



Note • Before making these adjustments, space the toggles evenly over the media being used. For the best results, adjust the darkness or toggle pressure as needed to make the print somewhat light before proceeding.

To adjust print line, balance, and skew, it is recommended that you initiate a PAUSE self test. During this test, the print engine prints multiple copies of a sample label (Figure 2). As the labels print, you can adjust the following:

- the location of the print line, to ensure proper positioning of the label image on the media
- the darkness balance, to make sure that labels print with equal darkness from one side of the label to the other
- the skew, to make sure that any vertical lines on the label print perfectly perpendicular to horizontal lines

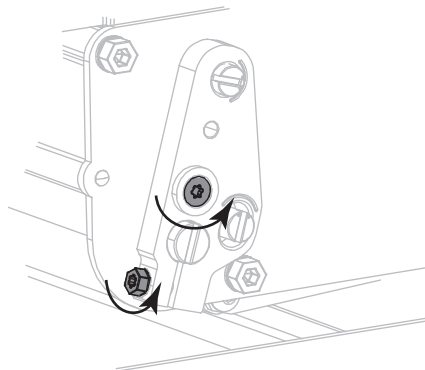
If any one of the above items is set correctly, you do not need to adjust it. You may opt to print your own label format instead of using the PAUSE self test.

Figure 2 • Sample PAUSE Self Test Label



To make print line, balance, and skew adjustments, complete these steps:

1. Using a Torx wrench, loosen the two adjustment screws.



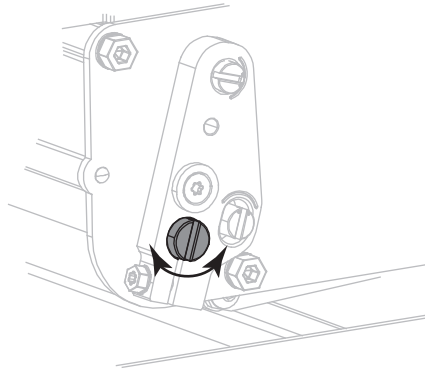
2. Initiate a PAUSE self test.
 - a. Turn off **(O)** the print engine.
 - b. Press and hold **PAUSE** while turning on **(I)** the print engine.
 - c. Hold **PAUSE** until the first control panel light turns off.



- Note** • At any time during the PAUSE self test,
- Press PAUSE to print 15 additional labels.
 - Press CANCEL to change the print speed.
 - Press and hold CANCEL to exit the self test.

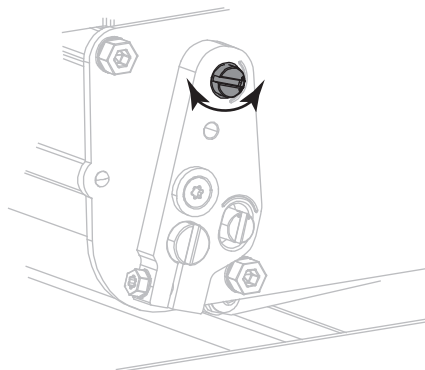
Adjust the Print Line

3. While PAUSE self test labels are printing, use a flat-blade screwdriver to rotate the print line adjuster. Adjust the print line forward/backward until the print line is correct.



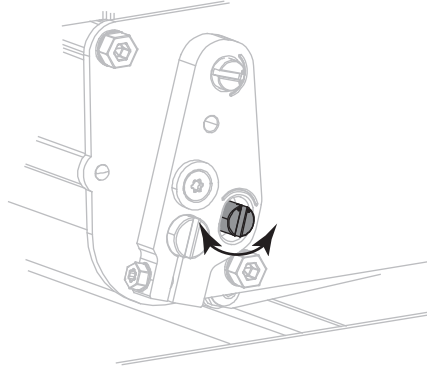
Adjust the Balance

4. While PAUSE self test labels are printing, use a flat-blade screwdriver to rotate the balance adjuster. Adjust the balance until the print is even across the width of the printhead.



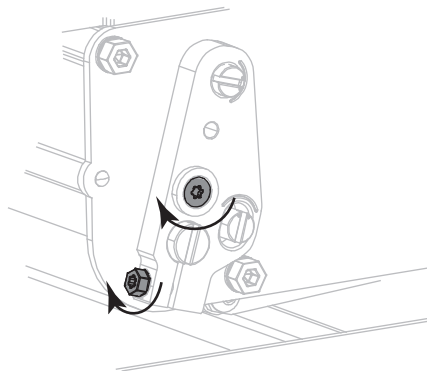
Adjust the Skew

5. While PAUSE self test labels are printing, use a flat-blade screwdriver to rotate the skew adjuster. Adjust the skew until the vertical lines on the PAUSE self test label print parallel to the edges of the label the label (not at a diagonal).



Return Print Engine to Operating State

6. Press and hold **CANCEL** to exit the PAUSE self test.
7. Using a Torx wrench, tighten the two adjustment screws.



Replacing Print Engine Components

Some print engine components, such as the printhead and platen roller, may wear out over time and can be replaced easily. Regular cleaning may extend the life of some of these components. See [Cleaning Schedule on page 24](#) for the recommended cleaning intervals.

Ordering Replacement Parts

For optimal printing quality and proper printer performance across our product line, Zebra strongly recommends the use of genuine Zebra™ supplies as part of the total solution. Specifically, the ZE500 print engines are designed to work only with genuine Zebra™ printheads, thus maximizing safety and print quality.

Recycling Print Engine Components



The majority of this print engine's components are recyclable. The print engine's main logic board may include a battery that you should dispose of properly.

Do not dispose of any print engine components in unsorted municipal waste. Please dispose of the battery according to your local regulations, and recycle the other print engine components according to your local standards. For more information, see <http://www.zebra.com/environment>.

Lubrication

No lubrication is needed for this print engine.

Caution • Some commercially available lubricants will damage the finish and the mechanical parts if used on this print engine.

Contacts

Technical Support via the Internet is available 24 hours per day, 365 days per year.

Web Site: www.zebra.com

E-mail Back Technical Library:

E-mail address: emb@zebra.com

Subject line: Emaillist

Self Service Knowledge Base: www.zebra.com/knowledgebase

Online Case Registration: www.zebra.com/techrequest

Which Department Do You Need?	The Americas	Europe, Middle East, and Africa	Asia Pacific and India
Regional Headquarters	Zebra Technologies Corporation 475 Half Day Road, Suite 500 Lincolnshire, IL 60069 USA T: +1 847 634 6700 Toll-free +1 866 230 9494 F: +1 847 913 8766	Zebra Technologies Europe Limited Dukes Meadow Millboard Road Bourne End Buckinghamshire, SL8 5XF United Kingdom T: +44 (0) 1628 556000 F: +44 (0) 1628 556001	Zebra Technologies Asia Pacific Pte. Ltd. 120 Robinson Road #06-01 Parakou Building Singapore 068913 T: +65 6858 0722 F: +65 6885 0838
Technical Support For questions on the operation of Zebra equipment and software, please call your distributor. For additional assistance, contact us. <i>Please have your model and serial numbers available.</i>	T: +1 877 ASK ZEBRA (275 9327) F: +1 847 913 2578 Hardware: ts1@zebra.com Software: ts3@zebra.com <i>Kiosk printers:</i> T: +1 866 322 5202 E: kiosksupport@zebra.com	T: +44 (0) 1628 556039 F: +44 (0) 1628 556003 E: Tseurope@zebra.com	T: +65 6858 0722 F: +65 6885 0838 E: <i>China:</i> tschina@zebra.com <i>All other areas:</i> tsasiapacific@zebra.com
Repair Service Department For back-to-base service and repair.	T: +1 877 ASK ZEBRA (275 9327) F: +1 847 821 1797 E: repair@zebra.com To request a repair in the U.S., go to www.zebra.com/repair .	T: +44 (0) 1772 693069 F: +44 (0) 1772 693046 New requests: ukrma@zebra.com Status updates: repairupdate@zebra.com	T: +65 6858 0722 F: +65 6885 0838 E: <i>China:</i> tschina@zebra.com <i>All other areas:</i> tsasiapacific@zebra.com
Technical Training Department For Zebra product training courses.	T: +1 847 793 6868 T: +1 847 793 6864 F: +1 847 913 2578 E: ttamerica@zebra.com	T: +44 (0) 1628 556000 F: +44 (0) 1628 556001 E: Eurtraining@zebra.com	T: +65 6858 0722 F: +65 6885 0838 E: <i>China:</i> tschina@zebra.com <i>All other areas:</i> tsasiapacific@zebra.com
Inquiry Department For product literature and distributor and dealer information.	T: +1 877 ASK ZEBRA (275 9327) E: inquiry4@zebra.com	T: +44 (0) 1628 556037 F: +44 (0) 1628 556005 E: mseurope@zebra.com	E: <i>China:</i> GCmarketing@zebra.com <i>All other areas:</i> APACChannelmarketing@zebra.com
Customer Service Department (US) Internal Sales Department (UK) For printers, parts, media, and ribbon, please call your distributor or contact us.	T: +1 877 ASK ZEBRA (275 9327) E: clientcare@zebra.com	T: +44 (0) 1628 556032 F: +44 (0) 1628 556001 E: cseurope@zebra.com	T: +65 6858 0722 F: +65 6885 0836 E: <i>China:</i> order-csr@zebra.com <i>All other areas:</i> csasiapacific@zebra.com

Key: T: Telephone
F: Facsimile
E: E-mail



Notes • _____

Troubleshooting

This section provides information about errors that you might need to troubleshoot. Assorted diagnostic tests are included.

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Printing Issues

Table 2 identifies possible issues with printing or print quality, the possible causes, and the recommended solutions.

Table 2 • Printing Issues

Issue	Possible Cause	Recommended Solution
General print quality issues	The print engine is set at the incorrect print speed.	For optimal print quality, set the print speed to the lowest possible setting for your application via control panel, the driver, or the software. You may want to perform the <i>FEED Self Test</i> on page 60 to determine the optimal settings for your print engine. Refer to the <i>User Guide</i> for information about changing the print speed.
	You are using an incorrect combination of labels and ribbon for your application.	<ol style="list-style-type: none"> 1. Switch to a different type of media or ribbon to try to find a compatible combination. 2. If necessary, consult your authorized Zebra reseller or distributor for information and advice.
	The print engine is set at an incorrect darkness level.	For optimal print quality, set the darkness to the lowest possible setting for your application. You may want to perform the <i>FEED Self Test</i> on page 60 to determine the ideal darkness setting. Refer to the <i>User Guide</i> for information about changing the darkness setting.
	The printhead is dirty.	Clean the printhead and platen roller. See <i>Clean the Printhead and Rollers</i> on page 25.
	Incorrect or uneven printhead pressure.	<ol style="list-style-type: none"> 1. Position the printhead toggles correctly. See <i>Toggle Positioning</i> on page 33. 2. Set the printhead pressure to the minimum needed for good print quality. See <i>Printhead Pressure Adjustment</i> on page 35.
Loss of printing registration on labels. Excessive vertical drift in top-of-form registration.	The platen roller is dirty.	Clean the printhead and platen roller. See <i>Clean the Printhead and Rollers</i> on page 25.
	Media guides are positioned improperly.	Ensure that the media guides are properly positioned. Refer to the media loading section in the <i>User Guide</i> for information about adjusting the media guides.
	The media type is set incorrectly.	Set the print engine for the correct media type (gap/notch, continuous, or mark). Refer to the <i>User Guide</i> for information about changing the media type.
	The media is loaded incorrectly.	Load media correctly. Refer to the <i>User Guide</i> for instructions for loading ribbon and media.

Table 2 • Printing Issues (Continued)

Issue	Possible Cause	Recommended Solution
Long tracks of missing print on several labels	Print element damaged.	Replace the printhead. See <i>Printhead Maintenance Kit</i> on page 103.
	Wrinkled ribbon.	See wrinkled ribbon causes and solutions in <i>Ribbon Problems</i> on page 47.
Intermittent and diagonal voids across several labels	Wrinkled ribbon.	See wrinkled ribbon causes and solutions in <i>Ribbon Problems</i> on page 47.
Fine, angular gray lines on blank labels	Wrinkled ribbon.	See wrinkled ribbon causes and solutions in <i>Ribbon Problems</i> on page 47.
Printing too light or too dark over the entire label	The media or ribbon is not designed for high-speed operation.	Replace supplies with those recommended for high-speed operation.
	You are using an incorrect combination of media and ribbon for your application.	<ol style="list-style-type: none"> 1. Switch to a different type of media or ribbon to try to find a compatible combination. 2. If necessary, consult your authorized Zebra reseller or distributor for information and advice.
	You are using ribbon with direct thermal media.	Direct thermal media does not require ribbon. Refer to the <i>User Guide</i> for information about when to use ribbon.
	Incorrect or uneven printhead pressure.	<ol style="list-style-type: none"> 1. Position the printhead toggles correctly. See <i>Toggle Positioning</i> on page 33. 2. Set the printhead pressure to the minimum needed for good print quality. See <i>Printhead Pressure Adjustment</i> on page 35.
Smudge marks on labels	The media or ribbon is not designed for high-speed operation.	Replace supplies with those recommended for high-speed operation.
Misregistration/skips labels	The print engine is not calibrated.	Calibrate the print engine. See <i>Calibrate the Ribbon and Media Sensors</i> on page 27.
	Improper label format.	Check your label format and correct it as necessary.
Misregistration and misprint of one to three labels	The platen roller, pinch roller, or peel roller is dirty.	Clean the printhead and rollers. See <i>Clean the Printhead and Rollers</i> on page 25.
	Media does not meet specifications.	Use media that meets specifications. Refer to the <i>User Guide</i> for media specifications.
Vertical drift in top-of-form position	The print engine is out of calibration.	Calibrate the print engine. See <i>Calibrate the Ribbon and Media Sensors</i> on page 27.
	The platen roller, pinch roller, or peel roller is dirty.	Clean the printhead and rollers. See <i>Clean the Printhead and Rollers</i> on page 25.

Table 2 • Printing Issues (Continued)

Issue	Possible Cause	Recommended Solution
Vertical image or label drift	The print engine is using non-continuous labels but is configured in continuous mode.	Set the print engine for the correct media type (gap/notch, continuous, or mark) and calibrate the printer, if necessary (see Calibrate the Ribbon and Media Sensors on page 27). Refer to the <i>User Guide</i> for information on changing the media type.
	The media sensor is calibrated improperly.	Calibrate the print engine. See Calibrate the Ribbon and Media Sensors on page 27 .
	The platen roller, pinch roller, or peel roller is dirty.	Clean the printhead and platen roller. See Clean the Printhead and Rollers on page 25 .
	Incorrect or uneven printhead pressure.	<ol style="list-style-type: none"> 1. Position the printhead toggles correctly. See Toggle Positioning on page 33. 2. Set the printhead pressure to the minimum needed for good print quality. See Printhead Pressure Adjustment on page 35.
	The media or ribbon is loaded incorrectly.	Ensure that the media and ribbon are loaded correctly. Refer to the <i>User Guide</i> for instructions for loading ribbon and media.
	Incompatible media.	You must use media that meets the printer specifications. Ensure that the interlabel gaps or notches are 2 to 4 mm and consistently placed. Refer to the <i>User Guide</i> for media specifications.
The bar code printed on a label does not scan.	The bar code is not within specifications because the print is too light or too dark.	Perform the FEED Self Test on page 60 . Adjust the darkness or print speed settings as necessary.
	There is not enough blank space around the bar code.	Leave at least 1/8 in. (3.2 mm) between the bar code and other printed areas on the label and between the bar code and the edge of the label.
Auto Calibrate failed.	The media or ribbon is loaded incorrectly.	Ensure that the media and ribbon are loaded correctly. Refer to the <i>User Guide</i> for instructions for loading ribbon and media.
	The sensors could not detect the media or ribbon.	Calibrate the print engine. See Calibrate the Ribbon and Media Sensors on page 27 .
	The sensors are dirty or positioned improperly.	Ensure that the sensors are clean and properly positioned.
	The media type is set incorrectly.	Set the print engine for the correct media type (gap/notch, continuous, or mark). Refer to the <i>User Guide</i> for information about changing the media type.

Ribbon Problems

Table 3 identifies problems that may occur with ribbon, the possible causes, and the recommended solutions.

Table 3 • Ribbon Problems

Problem	Possible Cause	Recommended Solution
Broken or melted ribbon	Darkness setting too high.	<ol style="list-style-type: none"> 1. Reduce the darkness setting. Refer to the <i>User Guide</i> for information about changing the darkness setting. 2. Clean the printhead thoroughly. See Clean the Printhead and Rollers on page 25.
	The ribbon is coated on the wrong side and cannot be used in this print engine.	Replace the ribbon with one coated on the correct side. Refer to the <i>User Guide</i> for information about determining the coated side of ribbon.
Ribbon slips or does not advance correctly	Ribbon tension is set incorrectly.	See the ZE500 User Guide for more information on ribbon tension.
The printer does not detect when the ribbon runs out. In thermal transfer mode, the printer did not detect the ribbon even though it is loaded correctly.	The printer may have been calibrated without ribbon. Later, ribbon was inserted without the user recalibrating the printer or loading printer defaults.	Calibrate the printer, this time using ribbon, or load printer defaults. See Calibrate the Ribbon and Media Sensors on page 27 or refer to the <i>User Guide</i> for information about loading printer defaults.
The printer indicates that ribbon is out, even though ribbon is loaded correctly.	The print engine was not calibrated for the label and ribbon being used.	Calibrate the print engine. See Calibrate the Ribbon and Media Sensors on page 27 .

Table 3 • Ribbon Problems (Continued)

Problem	Possible Cause	Recommended Solution
Wrinkled ribbon	Ribbon was loaded incorrectly.	Load the ribbon correctly. Refer to the <i>User Guide</i> for instructions for loading ribbon and media.
	Incorrect burn temperature.	For optimal print quality, set the darkness to the lowest possible setting for your application. You may want to perform the <i>FEED Self Test</i> on page 60 to determine the ideal darkness setting. Refer to the <i>User Guide</i> for information about changing the darkness setting.
	Incorrect or uneven printhead pressure.	Set the printhead pressure to the minimum needed for good print quality. See <i>Printhead Pressure Adjustment</i> on page 35.
	Media not feeding properly; “walking” from side to side.	<ol style="list-style-type: none"> 1. Make sure that media is snug by adjusting the media guide. 2. Check that the toggle pressure is the same on both toggles and that both toggles are evenly distributed across the width of the media. 3. Check the media tracking adjustments. See <i>Adjust Media Tracking</i> on page 439.
	The printhead or platen roller may be installed incorrectly.	Check that the printhead and platen roller are installed correctly. See <i>Printhead Maintenance Kit</i> on page 103 and <i>Platen Roller Maintenance Kit</i> on page 685.
	Strip plate is improperly adjusted.	Adjust the strip plate so that it is parallel to the media path and maintains equal tension across the ribbon and media.
	Ribbon dancer is improperly adjusted.	Adjust the dancer bracket so that it is parallel to the media path and maintains equal tension across the ribbon.

Error Messages

The control panel displays messages when there is an error. See [Table 4](#) for LCD errors, the possible causes, and the recommended solutions. For instructions on modifying printer parameters or loading ribbon and media, refer to the *User Guide*.

Table 4 • Error Messages





Display/ Print Engine Condition	Possible Cause	Recommended Solution
 ERROR CONDITION INVALID HEAD The ERROR light flashes.	The printhead was replaced with one that is not a genuine Zebra™ printhead.	Install a genuine Zebra™ printhead.
 WARNING CLEAN PRINTHEAD	The Early Warning for Maintenance feature is enabled, and the printhead has reached the end of the specified interval for cleaning. See the ZE500 User Guide for more information on the Early Warning for Maintenance feature.	<ol style="list-style-type: none"> 1. Clean the printhead. 2. On the control panel, go to the HEAD CLEANED? menu item. 3. Press PLUS to select YES to reset the Early Warning for Maintenance printhead cleaning counter.
 ERROR CONDITION HEAD OPEN The print engine stops; the ERROR light flashes.	<p>The printhead is not fully closed.</p> <p>The head open sensor is not working properly.</p>	<p>Close printhead completely.</p> <p>Replace the sensor. See Printhead-Open Sensor Maintenance Kit on page 402.</p>
 ERROR CONDITION PAPER OUT The print engine stops; the MEDIA light is on; the ERROR light flashes.	<p>The media is not loaded or is loaded incorrectly.</p> <p>Misaligned media sensor.</p> <p>The print engine is set for noncontinuous media, but continuous media is loaded.</p>	<p>Load media correctly.</p> <p>Check position of the media sensor.</p> <p>Install proper media type, or reset print engine for current media type and perform calibration.</p>

Table 4 • Error Messages (Continued)

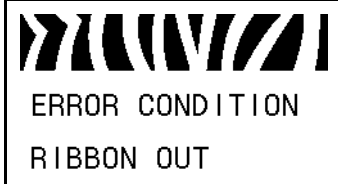
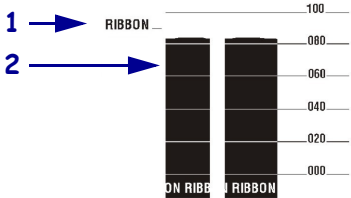
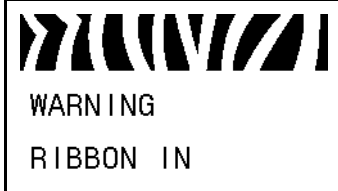
Display/ Print Engine Condition	Possible Cause	Recommended Solution
 <p>ERROR CONDITION RIBBON OUT</p>	<p>In thermal transfer mode, ribbon is not loaded or incorrectly loaded.</p>	<p>Load ribbon correctly.</p>
<p>The print engine stops; the RIBBON light is on; the ERROR light flashes.</p>	<p>In thermal transfer mode, the ribbon sensor is not detecting ribbon.</p>	<ol style="list-style-type: none"> 1. Load ribbon correctly. 2. Calibrate the print engine. See Calibrate the Ribbon and Media Sensors on page 27.
	<p>In thermal transfer mode, media is blocking the ribbon sensor.</p>	<ol style="list-style-type: none"> 1. Load media correctly. 2. Calibrate the print engine. See Calibrate the Ribbon and Media Sensors on page 27.
	<p>In thermal transfer mode, the print engine did not detect the ribbon even though it is loaded correctly.</p>	<ol style="list-style-type: none"> 1. Print a sensor profile. See Sensor Profile on page 65. The ribbon out threshold (1) is likely too high, above the black area that indicates where the ribbon is detected (2).  <p>The diagram shows a vertical scale from 000 to 100. Two black bars represent the ribbon detection area. Arrow 1 points to the top of the first bar at approximately 080. Arrow 2 points to the top of the second bar at approximately 060. Labels 'ON RIBBON' and 'RIBBON' are at the bottom of the bars.</p> <ol style="list-style-type: none"> 2. Calibrate the print engine (see Calibrate the Ribbon and Media Sensors on page 27) or load print engine defaults.
<p>If you are using direct thermal media, the print engine is waiting for ribbon to be loaded because it is incorrectly set for Thermal Transfer mode.</p>		<p>Set the print engine for Direct Thermal mode.</p>
 <p>WARNING RIBBON IN</p> <p>The RIBBON light is on; the ERROR light flashes.</p>	<p>Ribbon is loaded, but the print engine is set for direct thermal mode.</p>	<p>Ribbon is not required with direct thermal media. If you are using direct thermal media, remove the ribbon. This error message will not affect printing.</p> <p>If you are using thermal transfer media, which requires ribbon, set the print engine for Thermal Transfer mode.</p>

Table 4 • Error Messages (Continued)


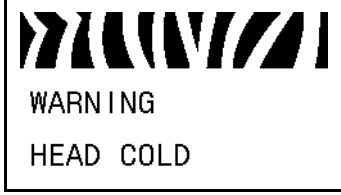



Display/ Print Engine Condition	Possible Cause	Recommended Solution
 The ERROR light flashes.	The printhead has a faulty thermistor.	Replace the printhead. See <i>Printhead Maintenance Kit</i> on page 103.
 The print engine prints while the ERROR light flashes.	 Caution • An improperly connected printhead data or power cable can cause this error message. The printhead may be hot enough to cause severe burns. Allow the printhead to cool.	
	The printhead temperature is approaching its lower operating limit.	Continue printing while the printhead reaches the correct operating temperature. If the error remains, the environment may be too cold for proper printing. Relocate the print engine to a warmer area.
	The printhead data cable is not properly connected.	Caution • Turn off (O) the print engine before performing this procedure. Failure to do so can damage the printhead. <ol style="list-style-type: none"> 1. Turn off (O) the print engine. 2. Disconnect and reconnect the data cable to the printhead. 3. Ensure that the cable connector is fully inserted into the printhead connector. 4. Turn on (I) the print engine.
	The printhead has a faulty thermistor.	Replace the printhead. See <i>Printhead Maintenance Kit</i> on page 103.
 The print engine stops; the ERROR light flashes.	 Caution • The printhead may be hot enough to cause severe burns. Allow the printhead to cool.	
	The printhead is over temperature.	Allow the print engine to cool. Printing automatically resumes when the printhead elements cool to an acceptable operating temperature.

Table 4 • Error Messages (Continued)









Display/ Print Engine Condition	Possible Cause	Recommended Solution
 WARNING HEAD COLD	 Caution • An improperly connected printhead data or power cable can cause these error messages. The printhead may be hot enough to cause severe burns. Allow the printhead to cool.	
 THERMISTOR FAULT	The printhead data cable is not properly connected.	Caution • Turn off (O) the print engine before performing this procedure. Failure to do so can damage the printhead. <ol style="list-style-type: none"> 1. Turn off (O) the print engine. 2. Disconnect and reconnect the data cable to the printhead. 3. Ensure that the cable connector is fully inserted into the printhead connector. 4. Turn on (I) the print engine.
 ERROR CONDITION HEAD ELEMENT BAD The print engine stops; the ERROR light is on; the print engine cycles through these three messages.	The printhead has a faulty thermistor.	Replace the printhead. See Printhead Maintenance Kit on page 103.
 DEFRAGMENTING DO NOT POWER OFF The print engine stops.	The print engine is defragmenting memory.	Caution • Do NOT turn off the print engine power during defragmenting. Doing so can damage the print engine. Allow the print engine to finish defragmenting. If you get this error message frequently, check your label formats. Formats that write to and erase memory frequently may cause the printer to defragment often. Using properly coded label formats usually minimizes the need for defragmenting. If this error message does not go away, contact Technical Support. The print engine requires service.

Table 4 • Error Messages (Continued)

Display/ Print Engine Condition	Possible Cause	Recommended Solution
 OUT OF MEMORY CREATING BITMAP	There is not enough memory to perform the function specified on the second line of the error message.	Free up some of the print engine's memory by adjusting the label format or print engine parameters. One way to free up memory is to adjust the print width to the actual width of the label instead of leaving the print width set to the default.
 OUT OF MEMORY BUILDING FORMAT		Ensure that the device, such as a FLASH memory card, is installed and not write protected or full.
 OUT OF MEMORY STORING GRAPHIC		Ensure that the data is not directed to a device that is not installed or is unavailable.
 OUT OF MEMORY STORING FORMAT		
 OUT OF MEMORY STORING BITMAP		
 OUT OF MEMORY STORING FONT		

Communications Problems

Table 5 identifies problems with communications, the possible causes, and the recommended solutions.

Table 5 • Communications Problems

Problem	Possible Cause	Recommended Solution
A label format was sent to the print engine but was not recognized. The DATA light does not flash.	The communication parameters are incorrect.	Check the print engine driver or software communications settings (if applicable).
		If you are using serial communication, check the serial port settings.
		If you are using serial communication, make sure that you are using a null modem cable or a null modem adapter.
		Check the printer's handshake protocol setting. The setting used must match the one being used by the host computer.
		If a driver is used, check the driver communication settings for your connection.
A label format was sent to the print engine. Several labels print, then the print engine skips, misplaces, misses, or distorts the image on the label.	The serial communication settings are incorrect.	Ensure that the flow control settings match.
		Check the communication cable length. See the <i>User Guide</i> for requirements.
		Check the print engine driver or software communications settings (if applicable).
A label format was sent to the print engine but was not recognized. The DATA light flashes but no printing occurs.	The prefix and delimiter characters set in the print engine do not match the ones in the label format.	Verify the prefix and delimiter characters.
	Incorrect data is being sent to the print engine.	Check the communication settings on the computer. Ensure that they match the print engine settings.
		If the problem continues, check the label format.

Miscellaneous Issues

Table 6 identifies miscellaneous issues with the print engine, the possible causes, and the recommended solutions.

Table 6 • Miscellaneous Print Engine Problems

Problem	Possible Cause	Recommended Solution
The control panel display shows a language that I cannot read	The language parameter was changed through the control panel or a firmware command.	<ol style="list-style-type: none"> 1. On the control panel display, press SETUP. 2. Press LEFT ARROW once to move to the LANGUAGE parameter. 3. Use PLUS (+) or MINUS (-) to scroll through the language selections. 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. 4. Select the language that you want to display.
The display is missing characters or parts of characters	The display may need replacing.	Replace the display. See <i>Control Panel Maintenance Kit</i> on page 802 or <i>Deported Control Panel Option Kit</i> on page 814.
Changes in parameter settings did not take effect	Some parameters are set incorrectly.	<ol style="list-style-type: none"> 1. Check the parameters and change or reset if necessary. 2. Turn the print engine off (O) and then on (I).
	A firmware command (such as <code>device.command_override</code>) turned off the ability to change the parameter.	Refer to the <i>Programming Guide for ZPL, ZBI, Set-Get-Do, Mirror, and WML</i> or call a service technician.
	A firmware command changed the parameter back to the previous setting.	
	If the problem persists, there may be a problem with the main logic board.	Replace the main logic board. See <i>Main Logic Board Maintenance Kit</i> on page 237.
Non-continuous labels are being treated as continuous labels.	The print engine was not calibrated for the media being used.	Calibrate the printer. See <i>Calibrate the Ribbon and Media Sensors</i> on page 27.
	The print engine is configured for continuous media.	Set the print engine for the correct media type (gap/notch, continuous, or mark). Refer to the <i>User Guide</i> for information about changing the media type.

Table 6 • Miscellaneous Print Engine Problems (Continued)

Problem	Possible Cause	Recommended Solution
All indicator lights are on, nothing is on the display (if the printer has a display), and the print engine locks up.	Internal electronic or firmware failure.	Turn the printer power off (O) and then on (I). If the printer locks up again, replace the main logic board. See Main Logic Board Maintenance Kit on page 237 .
The print engine locks up while running the Power-On Self Test.	Main logic board failure.	Replace the main logic board. See Main Logic Board Maintenance Kit on page 237 .

Print Engine Diagnostics

Self tests and other diagnostics provide specific information about the condition of the print engine. The self tests produce sample printouts and provide specific information that helps determine the operating conditions for the print engine.



Important • Use full-width media when performing self tests. If your media is not wide enough, the test labels may print on the platen roller. To prevent this from happening, check the print width, and ensure that the width is correct for the media that you are using.

Each self test is enabled by pressing a specific control panel key or combination of keys while turning on **(I)** the print engine power. Keep the key(s) pressed until the first indicator light turns off. The selected self test automatically starts at the end of the Power-On Self Test.



Note •

- When performing these self tests, do not send data to the print engine from the host.
- If your media is shorter than the label to be printed, the test label continues on the next label.
- When canceling a self test prior to its actual completion, always reset the print engine by turning it off **(O)** and then on **(I)**.

Power-On Self Test

A Power-On Self Test (POST) is performed each time the print engine is turned on **(I)**. During this test, the control panel lights (LEDs) turn on and off to ensure proper operation. At the end of this self test, only the STATUS LED remains lit. When the Power-On Self Test is complete, the media is advanced to the proper position.

To initiate the Power-On Self Test, complete these steps:

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

The POWER LED illuminates. The other control panel LEDs and the LCD monitor the progress and indicate the results of the individual tests. All messages during the POST display in English; however, if the test fails, the resulting messages cycle through the international languages as well.

CANCEL Self Test

The CANCEL self test prints a printer configuration label and a network configuration label. See the ZE500 User Guide for more information on other ways to print these labels.

To perform the CANCEL Self Test, complete these steps:

1. Turn off (O) the print engine.
2. Press and hold CANCEL while turning on (I) the print engine. Hold CANCEL until the first control panel light turns off.

The printer prints a printer configuration label (Figure 3) and then a network configuration label (Figure 4).

Figure 3 • Sample Printer Configuration Label

PRINTER CONFIGURATION	
Zebra Technologies ZTC ZE500-4 LA-300dpi ZPL ZBR4313234	
+0.0	DARKNESS
12 IPS	PRINT SPEED
12 IPS	SLEW SPEED
12 IPS	BACKFEED SPEED
*000	TEAR OFF
TEAR OFF	PRINT MODE
OFF	APPLICATOR PORT
PULSE MODE	START PRINT SIG
NON-CONTINUOUS	MEDIA TYPE
WEB	SENSOR TYPE
DIRECT-THERMAL	PRINT METHOD
122B	PRINT WIDTH
186B	LABEL LENGTH
39.01N 388MM	MAXIMUM LENGTH
MEDIA DISABLED	EARLY WARNING
MAINT. OFF	EARLY WARNING
NOT CONNECTED	USB COMM.
READY	EXTERNAL 5V
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
INACTIVE	COMMAND OVERRIDE
HIGH	RIBBON TENSION
CALIBRATION	MEDIA POWER UP
NO MOTION	HEAD CLOSE
AFTER	BACKFEED
-055	LABEL TOP
*000	LEFT POSITION
1430	HEAD RESISTOR
ENABLED	ERROR ON PAUSE
ENABLED	RIBBON LOW MODE
ACTIVE HIGH	RIB LOW OUTPUT
DISABLED	REPRINT MODE
038	WEB S.
084	MEDIA S.
073	RIBBON S.
050	MARK S.
000	MARK MED S.
020	TRANS GAIN
000	TRANS BASE
196	TRANS BRIGHT
220	RIBBON GAIN
006	MARK GAIN
DPCSWFXM	MODES ENABLED
124B 127MM	MODES DISABLED
V53.17.12V24	RESOLUTION
1.3	FIRMWARE
1.3	XML SCHEMA
V45	HARDWARE ID
CUSTOMIZED	CONFIGURATION
10840K	RAM
58392K	ONBOARD FLASH
NONE	FORMAT CONVERT
*** APPLICATOR	P31 INTERFACE
019 PAK170 RTS	P32 INTERFACE
009 POWER SUPPLY	P33 INTERFACE
FW VERSION	IDLE DISPLAY
05/12/12	RTC DATE
03:27	RTC TIME
ENABLED	ZBI
2.1	ZBI VERSION
READY	ZBI STATUS
122,482 IN	NONRESET CNTR
122,482 IN	RESET CNTR1
122,482 IN	RESET CNTR2
311,132 CH	NONRESET CNTR
311,132 CH	RESET CNTR1
311,132 CH	RESET CNTR2
SELECTED ITEMS	PASSWORD LEVEL
JUL02848.111210018	23630-02-R-JABTL
2012-05-10 08:26:11	TIME STAMP

Figure 4 • Sample Network Configuration Label

Network Configuration	
Zebra Technologies ZTC ZE500-6 LA-300dpi ZPL ZBR4313239	
Wired	PRIMARY NETWORK
NO	LOAD FROM EXT?
Internal Wired	ACTIVE PRINTSRVR
External Wired	
ALL	IP PROTOCOL
000.000.000.000	IP ADDRESS
255.255.255.000	SUBNET MASK
000.000.000.000	DEFAULT GATEWAY
000.000.000.000	WINS SERVER IP
YES	TIMEOUT CHECKING
300	TIMEOUT VALUE
000	ARP INTERVAL
9100	BASE RAW PORT
Internal Wired#	
ALL	IP PROTOCOL
010.003.005.206	IP ADDRESS
255.255.255.000	SUBNET MASK
010.003.005.001	DEFAULT GATEWAY
010.003.001.098	WINS SERVER IP
YES	TIMEOUT CHECKING
300	TIMEOUT VALUE
000	ARP INTERVAL
9100	BASE RAW PORT
00074d41d097	MAC ADDRESS
Wireless	
ALL	IP PROTOCOL
000.000.000.000	IP ADDRESS
255.255.255.000	SUBNET MASK
000.000.000.000	DEFAULT GATEWAY
000.000.000.000	WINS SERVER IP
YES	TIMEOUT CHECKING
300	TIMEOUT VALUE
000	ARP INTERVAL
9100	BASE RAW PORT
NO	CARD INSERTED
0000H	CARD MFG ID
0000H	CARD PRODUCT ID
00000000000000	MAC ADDRESS
YES	DRIVER INSTALLED
INFRASTRUCTURE	OPERATING MODE
125	ESSID
100	TX POWER
? Mb/s	CURRENT TX RATE
DIVERSITY	RECEIVE ANTENNA
DIVERSITY	XMIT ANTENNA
OPEN	WEP TYPE
NONE	WLAN SECURITY
1	WEP INDEX
020	POOR SIGNAL
LONG	PREAMBLE
NO	ASSOCIATED
ON	PULSE ENABLED
15	PULSE RATE
OFF	INTL. MODE
07FFH	CHANNEL MASK
FIRMWARE IN THIS PRINTER IS COPYRIGHTED	

PAUSE Self Test

This self test can be used to provide the test labels required when making adjustments to the print engine's mechanical assemblies or to determine if any printhead elements are not working. [Figure 5](#) shows a sample printout.

To perform a PAUSE self test, complete these steps:

1. Turn off (O) the print engine.
2. Press and hold **PAUSE** while turning on (I) the print engine. Hold **PAUSE** until the first control panel light turns off.
 - The initial self test prints 15 labels at the print engine's slowest speed, and then automatically pauses the print engine. Each time **PAUSE** is pressed, an additional 15 labels print. [Figure 5](#) shows a sample of the labels.

Figure 5 • PAUSE Test Label



- While the print engine is paused, pressing **CANCEL** alters the self test. Each time **PAUSE** is pressed, 15 labels print at 6 in. (152 mm) per second.
 - While the print engine is paused, pressing **CANCEL** again alters the self test a second time. Each time **PAUSE** is pressed, 50 labels print at the print engine's slowest speed.
 - While the print engine is paused, pressing **CANCEL** again alters the self test a third time. Each time **PAUSE** is pressed, 50 labels print at 6 in. (152 mm) per second.
 - While the print engine is paused, pressing **CANCEL** again alters the self test a fourth time. Each time **PAUSE** is pressed, 15 labels print at the print engine's maximum speed.
3. To exit this self test at any time, press and hold **CANCEL**.

FEED Self Test

Different types of media may require different darkness settings. This section contains a simple but effective method for determining the ideal darkness for printing bar codes that are within specifications.

During the FEED self test, labels are printed at different darkness settings at two different print speeds. The relative darkness and the print speed are printed on each label. The bar codes on these labels may be ANSI-graded to check print quality.

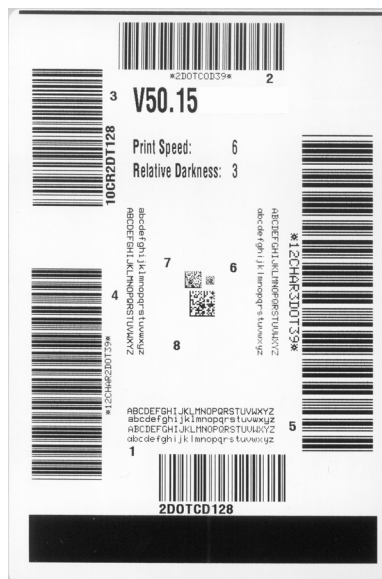
During this test, one set of labels is printed at 2 ips, and another set is printed at 6 ips. The darkness value starts at three settings lower than the print engine's current darkness value (relative darkness of -3) and increase until the darkness is three settings higher than the current darkness value (relative darkness of +3).

To perform a FEED self test, complete these steps:

1. Print a configuration label to show the print engine's current settings.
2. Turn off (O) the print engine.
3. Press and hold **FEED** while turning on (I) the print engine. Hold **FEED** until the first control panel light turns off.

The print engine prints a series of labels (Figure 6) at various speeds and at darkness settings higher and lower than the darkness value shown on the configuration label.

Figure 6 • FEED Test Label



4. See Figure 7 and Table 7. Inspect the test labels and determine which one has the best print quality for your application. If you have a bar code verifier, use it to measure bars/spaces and calculate the print contrast. If you do not have a bar code verifier, use your eyes or the system scanner to choose the optimal darkness setting based on the labels printed in this self test.

Figure 7 • Bar Code Darkness Comparison

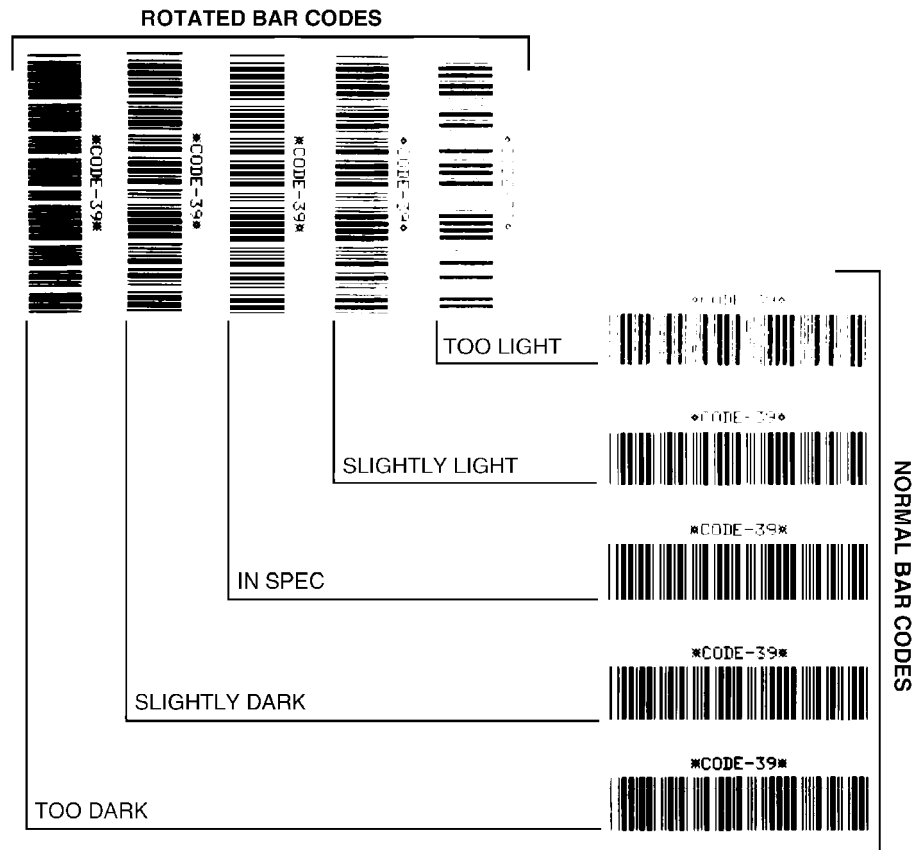


Table 7 • Judging Bar Code Quality

Print Quality	Description
Too dark	<p>Labels that are too dark are fairly obvious. They may be readable but not “in-spec.”</p> <ul style="list-style-type: none"> • The normal bar code bars increase in size. • The openings in small alphanumeric characters may fill in with ink. • Rotated bar code bars and spaces run together.
Slightly dark	<p>Slightly dark labels are not as obvious.</p> <ul style="list-style-type: none"> • The normal bar code will be “in-spec.” • Small character alpha numerics will be bold and could be slightly filled in. • The rotated bar code spaces are small when compared to the “in-spec” code, possibly making the code unreadable.

Table 7 • Judging Bar Code Quality (Continued)

Print Quality	Description
“In-spec”	<p>The “in-spec” bar code can only be confirmed by a verifier, but it should exhibit some visible characteristics.</p> <ul style="list-style-type: none"> • The normal bar code will have complete, even bars and clear, distinct spaces. • The rotated bar code will have complete, even bars and clear, distinct spaces. Although it may not look as good as a slightly dark bar code, the bar code will be “in-spec.” • In both normal and rotated styles, small alphanumeric characters look complete.
Slightly light	<p>Slightly light labels are, in some cases, preferred to slightly dark ones for “in-spec” bar codes.</p> <ul style="list-style-type: none"> • Both normal and rotated bar codes will be in spec, but small alphanumeric characters may not be complete.
Too light	<p>Labels that are too light are obvious.</p> <ul style="list-style-type: none"> • Both normal and rotated bar codes have incomplete bars and spaces. • Small alphanumeric characters are unreadable.

5. Note the relative darkness value and the print speed printed on the best test label.
6. Add or subtract the relative darkness value from the darkness value specified on the configuration label. The resulting numeric value is the best darkness value for that specific label/ribbon combination and print speed.
7. If necessary, change the darkness value to the darkness value on the best test label.
8. If necessary, change the print speed to the same speed as on the best test label.

FEED + PAUSE Self Test

Performing this self test temporarily resets the print engine configuration to the factory default values. These values are active only until power is turned off unless you save them permanently in memory. If the factory default values are permanently saved, a sensor calibration procedure must be performed. (See *Calibrate the Ribbon and Media Sensors* on page 27.)

To perform a FEED and PAUSE self test, complete these steps:

1. Turn off (O) the print engine.
2. Press and hold **FEED + PAUSE** while turning on (I) the print engine.
3. Hold **FEED + PAUSE** until the first control panel light turns off.

The print engine configuration is reset to the factory default values. No labels print at the end of this test.

CANCEL + PAUSE Self Test

Performing this self test temporarily resets the network configuration to the factory default values. These values are active only until power is turned off unless you save them permanently in memory.

To perform a CANCEL and PAUSE self test, complete these steps:

1. Turn off (O) the print engine.
2. Press and hold **CANCEL + PAUSE** while turning on (I) the print engine.
3. Hold **CANCEL + PAUSE** until the first control panel light turns off.

The printer's network configuration is reset to the factory default values. No labels print at the end of this test.

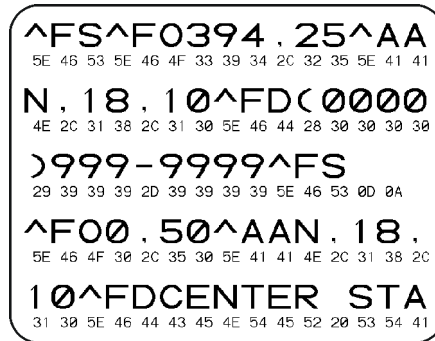
Communication Diagnostics Test

The communication diagnostics test is a troubleshooting tool for checking the interconnection between the print engine and the host computer. When the printer is in diagnostics mode, it prints all data received from the host computer as straight ASCII characters with the hex values below the ASCII text. The print engine prints all characters received, including control codes such as CR (carriage return). [Figure 8](#) shows a typical test label from this test.



Note • The test label prints upside-down.

Figure 8 • Communication Diagnostics Test Label



To use communication diagnostics mode, complete these steps:

1. Set the print width equal to or less than the label width being used for the test. See the ZE500 User Guide for more information on print width.
2. Set the DIAGNOSTICS MODE option to ENABLED. See the ZE500 User Guide for more information on methods to set Communication Diagnostics Mode.

The printer enters diagnostics mode and prints any data received from the host computer on a test label

3. Check the test label for error codes. For any errors, check that your communication parameters are correct.

Errors show on the test label as follows:

- FE indicates a framing error.
- OE indicates an overrun error.
- PE indicates a parity error.
- NE indicates noise.

4. Turn the print engine off (O) and then back on (I) to exit this self test and return to normal operation.

Sensor Profile

Use the sensor profile image (which will extend across several actual labels or tags) to troubleshoot the following situations:

- The printer experiences difficulty in determining gaps (web) between labels.
- The printer incorrectly identifies preprinted areas on a label as gaps (web).
- The printer cannot detect ribbon.

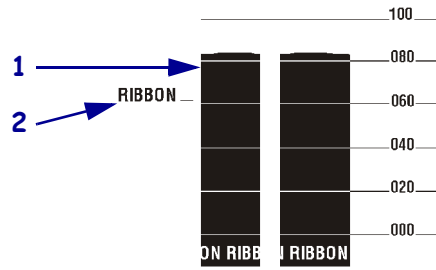
With the printer in the Ready state, print a sensor profile in one of these ways:

Using the buttons on the control panel	<ol style="list-style-type: none"> Turn off (O) the print engine. Press and hold FEED + CANCEL while turning on (I) the print engine. Hold FEED + CANCEL until the first control panel light turns off.
Using ZPL	<ol style="list-style-type: none"> Send the ~JG command to the printer. See the <i>Zebra Programming Guide</i> for more information about this command.
Using the control panel menu items	<ol style="list-style-type: none"> On the control panel display, navigate to the following item. See the ZE500 User Guide for more information on the Control Panel Display. <div> </div> Press PLUS (+) to select PRINT.

Compare your results to the examples shown in this section. If the sensitivity of the sensors must be adjusted, calibrate the printer (see [Calibrate the Ribbon and Media Sensors on page 27](#)).

Ribbon Sensor Profile (Figure 9) The bars (1) on the sensor profile indicate the ribbon sensor readings. The ribbon sensor threshold setting is indicated by the word RIBBON (2). If the ribbon readings are below the threshold value, the print engine does not acknowledge that ribbon is loaded.

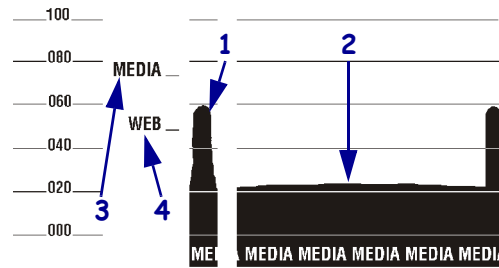
Figure 9 • Sensor Profile (Ribbon Section)



Media Sensor Profile (Figure 10) The media sensor readings are shown as bars and flat areas on the sensor profile (Figure 10). The bars (1) indicate gaps between labels (the web), and the low areas (2) indicate where labels are located. If you compare the sensor profile printout to a blank length of your media, the bars should be the same distance apart as the gaps on the media. If the distances are not the same, the print engine may be having difficulty determining where the gaps are located.

The media sensor threshold settings are shown by the words MEDIA (3) for the media threshold and WEB (4) for the web threshold. Use the numbers to the left of the sensor readings to compare the numeric readings to the sensor settings.

Figure 10 • Sensor Profile (Media Section)



Data Ports

This section describes the standard communication ports available to connect the print engine to your computer or network.

Contents

Serial Data Port	70
Hardware Control Signal Descriptions	70
Pin Configuration	70
RS-232 Interface Connections	71
Parallel Data Port	68
Parallel Cabling Requirements	68
Parallel Port Interconnections	68
USB 2.0 Port	74

Parallel Data Port

The parallel data interface supports IEEE 1284 bidirectional parallel communications in nibble mode. The parallel interface provides a means of communication that typically is faster than the serial interface methods. In this method, the bits of data that make up a character are sent all at one time over several wires in the cable, one bit per wire.

When communicating via the parallel port, the values selected on the print engine must be the same as those used by the host equipment connected to the print engine. Port selection for status information is determined by the channel sending the request. The parallel port can be set for bidirectional or unidirectional communication. The default setting is bidirectional.

Parallel Cabling Requirements

A standard 36-pin parallel connector is available on the back of the print engine for connection to the data source. An IEEE-1284 compatible bidirectional parallel data cable is required when this communication method is used. The required cable must have a standard 36-pin parallel connector on one end that is plugged into the mating connector located at the rear of the print engine. The other end of the cable connects to the print engine connector at the host computer. Port selection for status information is determined each time the print engine is turned on.

Parallel Port Interconnections

Table 8 shows the pin configuration and function of a standard computer-to-printer parallel cable.

Table 8 • Parallel Cable Pin Configuration


36-Pin Connectors	Description
1	nStrobe/HostClk
2–9	Data Bits 1–8
10	nACK/PtrClk
11	Busy/PtrBusy
12	PError/ACKDataReq
13	Select/Xflag
14	nAutoFd/HostBusy
15	Not used
16, 17	Ground
18	+5 V at 750 mA The maximum current draw may be limited by option configuration.
	 To enable this capability, a qualified service technician must install a jumper on the print engine's main logic board on JP1, pins 2 and 3.
19–30	Ground

Table 8 • Parallel Cable Pin Configuration (Continued)

36-Pin Connectors	Description
31	nInit
32	nFault/NDataAvail
33, 34	Not used
35	+5 V through a 1.8 K Ω Resistor
36	NSelectin/1284 active

Serial Data Port

To communicate using the serial data port of the print engine, you must choose the number of data bits, parity, and handshaking. Parity applies only to data transmitted by the print engine because the parity of received data is ignored.

The values selected must be the same as those used by the host equipment connected to the print engine. Default print engine settings are 9600 baud, 8 data bits, no parity, and XON/XOFF. The print engine will accept any host setting for stop bits.

Hardware Control Signal Descriptions

For all RS-232 input and output signals, the print engine follows both the Electronics Industries Association (EIA) RS-232 and the Consultative Committee for International Telegraph and Telephone (CCITT) V.24 standard signal level specifications.

When DTR/DSR handshaking is selected, the Data Terminal Ready (DTR) control signal output from the print engine controls when the host computer may send data. DTR ACTIVE (positive voltage) permits the host to send data. When the print engine places DTR in the INACTIVE (negative voltage) state, the host must not send data.



Note • When XON/XOFF handshaking is selected, data flow is controlled by the ASCII Control Codes DC1 (XON) and DC3 (XOFF). The DTR Control lead has no effect.

Request To Send (RTS) is a control signal from the print engine that is connected to the Clear To Send (CTS) input at the host computer.

Pin Configuration


Connect the serial data cable to the female DB-9 connector on the back of the print engine. For all RS-232 connections through a DB-25 cable, use a DB-9 to DB-25 interface module (see [DB-9 to DB-25 Connections on page 72](#)).

Table 9 shows the pin configuration of the serial data connector.

Table 9 • Serial Connector Pin Configuration

Pin No.	Name	Description
1	–	Unused and unterminated
2	RXD	Receive data—data input to print engine
3	TXD	Transmit data—data output from print engine
4	DTR	Data terminal ready—output from print engine
5	SG	Signal ground
6	DSR	Data set ready—input to print engine
7	RTS	Request to send—output from print engine

Table 9 • Serial Connector Pin Configuration (Continued)

Pin No.	Name	Description
8	CTS	Clear to send—input to print engine
9	+5 VDC	+5 VDC at 750 mA The maximum current draw may be limited by option configuration.  Important • To enable this capability, a qualified service technician must install a jumper on the print engine's main logic board on JP1, pins 2 and 3.

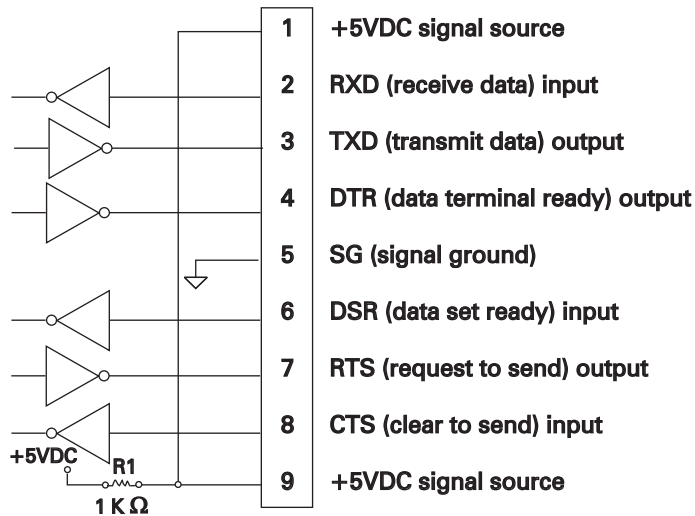
RS-232 Interface Connections

The print engine is configured as Data Terminal Equipment (DTE). [Figure 11](#) shows the internal connections of the print engine's RS-232 connector.



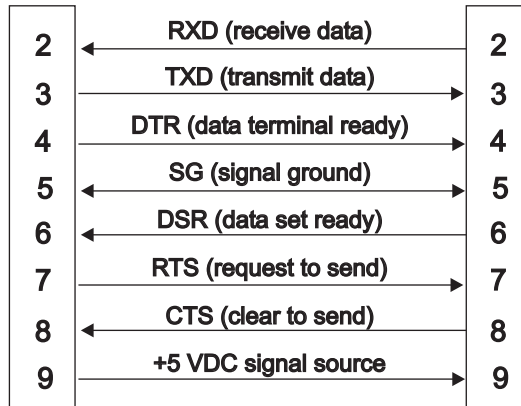
Note • Use a null modem (crossover) cable to connect the print engine to a computer or any other DTE device.

Figure 11 • RS-232 DB9 MLB Connections



When the print engine is connected via its RS-232 interface to Data Communication Equipment (DCE) such as a modem, use a standard RS-232 (straight-through) interface cable. [Figure 12](#) illustrates the connections required for this cable.

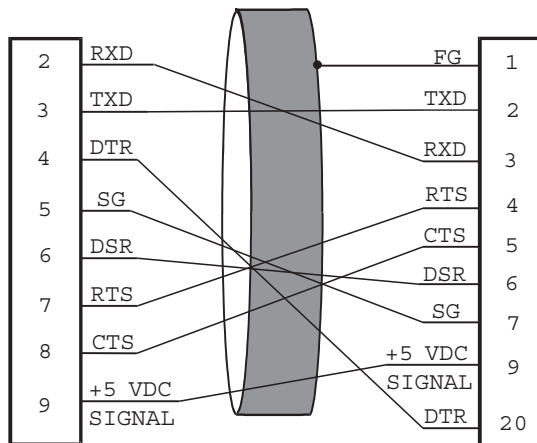
Figure 12 • RS-232 to DCE Cable Connectors



DB-9 to DB-25 Connections

To connect the print engine's RS-232 DB-9 interface to a DB-25 connector, an interface adapter is required. A generic DB-25 adapter can be used, although the +5 VDC signal source would not be passed through the adapter. Figure 13 shows the connections required for the DB-9 to DB-25 interface.

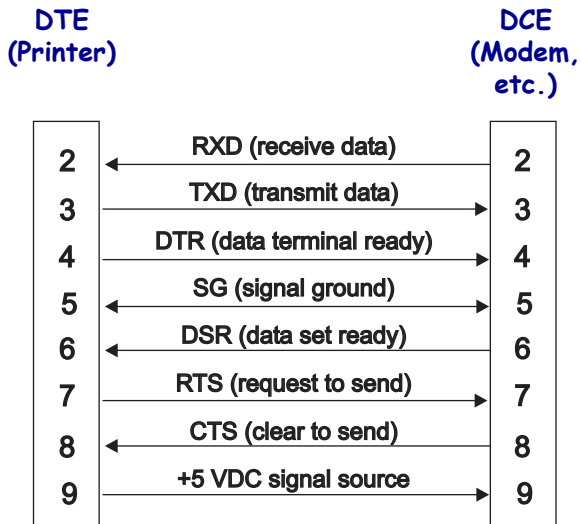
Figure 13 • DB-9 to DB-25 Cable Connections



Modem Connection

When the print engine is connected via its RS-232 interface to Data Communication Equipment (DCE) such as a modem, use a standard RS-232 (straight-through) interface cable. Figure 14 shows the connections required for this cable.

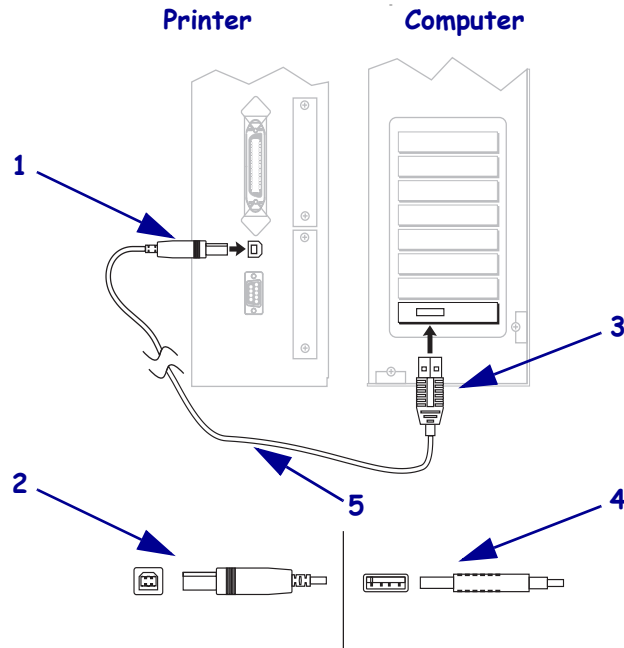
Figure 14 • RS-232 Cable Connections



USB 2.0 Port

A USB 2.0 port (which is USB 1.1 and 1.0 compatible) is available to connect your printer to the host equipment. The industry-standard USB cable has an A-male connector on one end and a B-male connector on the other end as shown in [Figure 15](#).

Figure 15 • USB Connectors



1	“B” male connector, attaching to printer
2	“B” male connector, detail
3	“A” male connector, attaching to computer
4	“A” male connector, detail
5	Maximum cable length = 16.4 ft. (5 m)

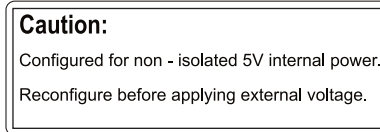


Note • Use a USB 2.0-certified compliant cable no longer than 16.4 ft (5 m) long. A cable that meets these requirements is available from Zebra (part number 33011).

Applicator Interface Connector

An external DB-15 connector is present on the rear panel of the print engine for communication with a customer applicator. An optional DB-15 to DB-9 adapter cable (Zebra part number 49609) is available to accommodate existing DB-9 interfaces.

The print engine ships with the following caution label over the optional applicator port:



- For +5V non-isolated mode (internal power), no configuration is necessary.
- For +5V to +28V isolated mode (external power), the jumpers on the applicator interface board must be reconfigured. Follow the instructions in [Applicator Interface Board Reconfiguration on page 83](#).

Applicator Signals

The print engine communicates with a customer applicator through a series of signals on the pins in the DB-15 connector. Each pin causes different things to happen when the signal is active (asserted) or not active (deasserted). [Applicator Interface Connector Pin Configuration on page 77](#) provides additional information about each pin and signal.

The following timing diagrams show how applicator signals function in each applicator mode during the stages of printing a label.

Figure 16 • Applicator Signals (Mode 1)

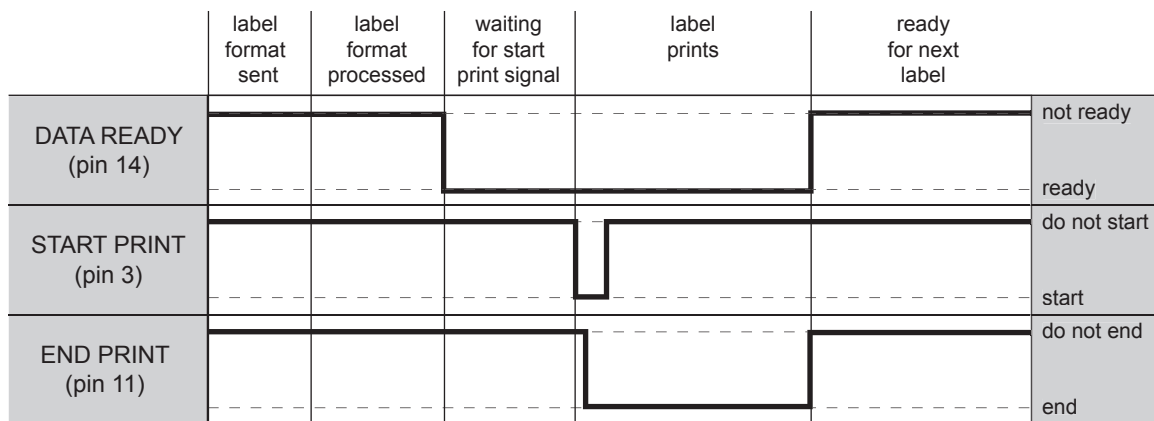


Figure 17 • Applicator Signals (Mode 2)

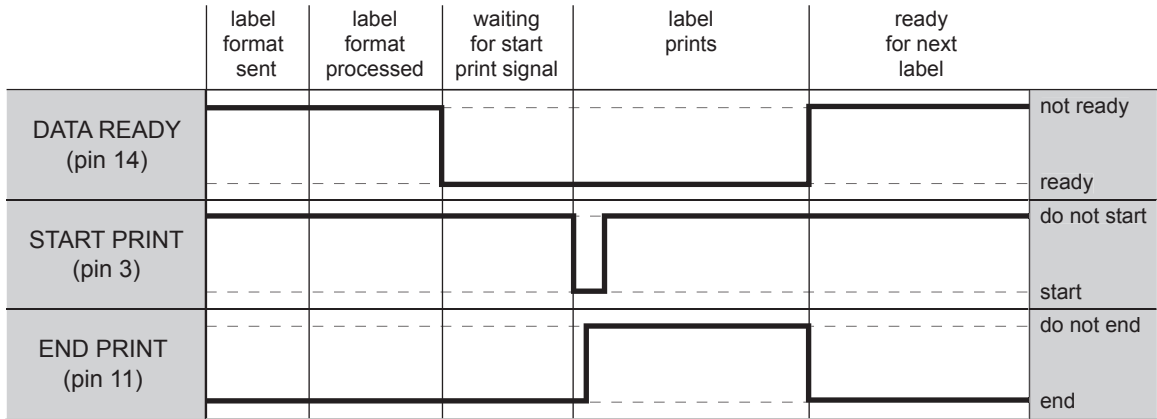


Figure 18 • Applicator Signals (Mode 3)

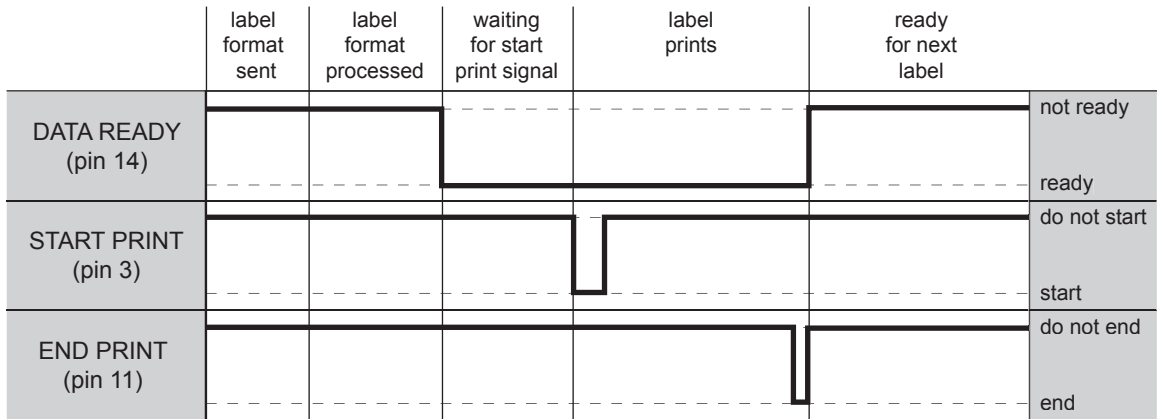
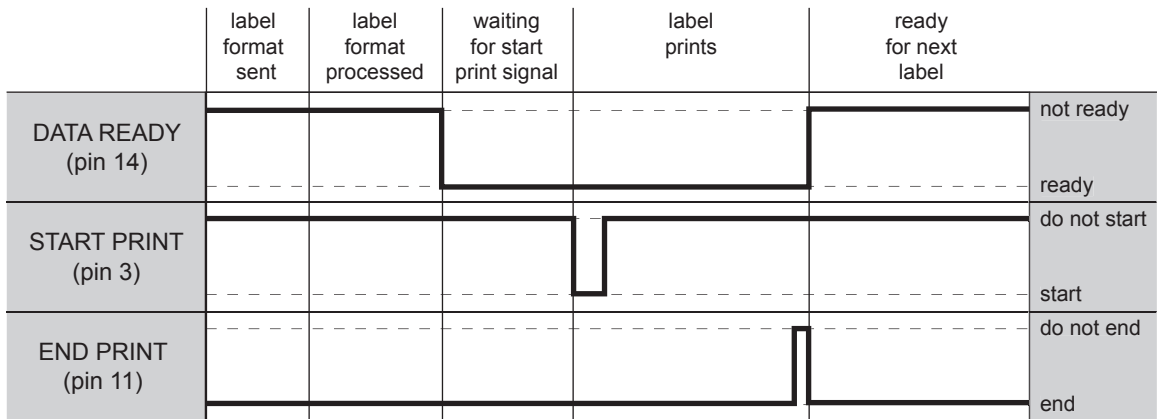


Figure 19 • Applicator Signals (Mode 4)



Applicator Interface Connector Pin Configuration

The Applicator Interface Assembly is available in two versions: a +5 V I/O and a +24–28 V I/O. [Table 10](#) lists the pin configurations and functions of the applicator interface connector for both +5 V and +24–28 V operation.

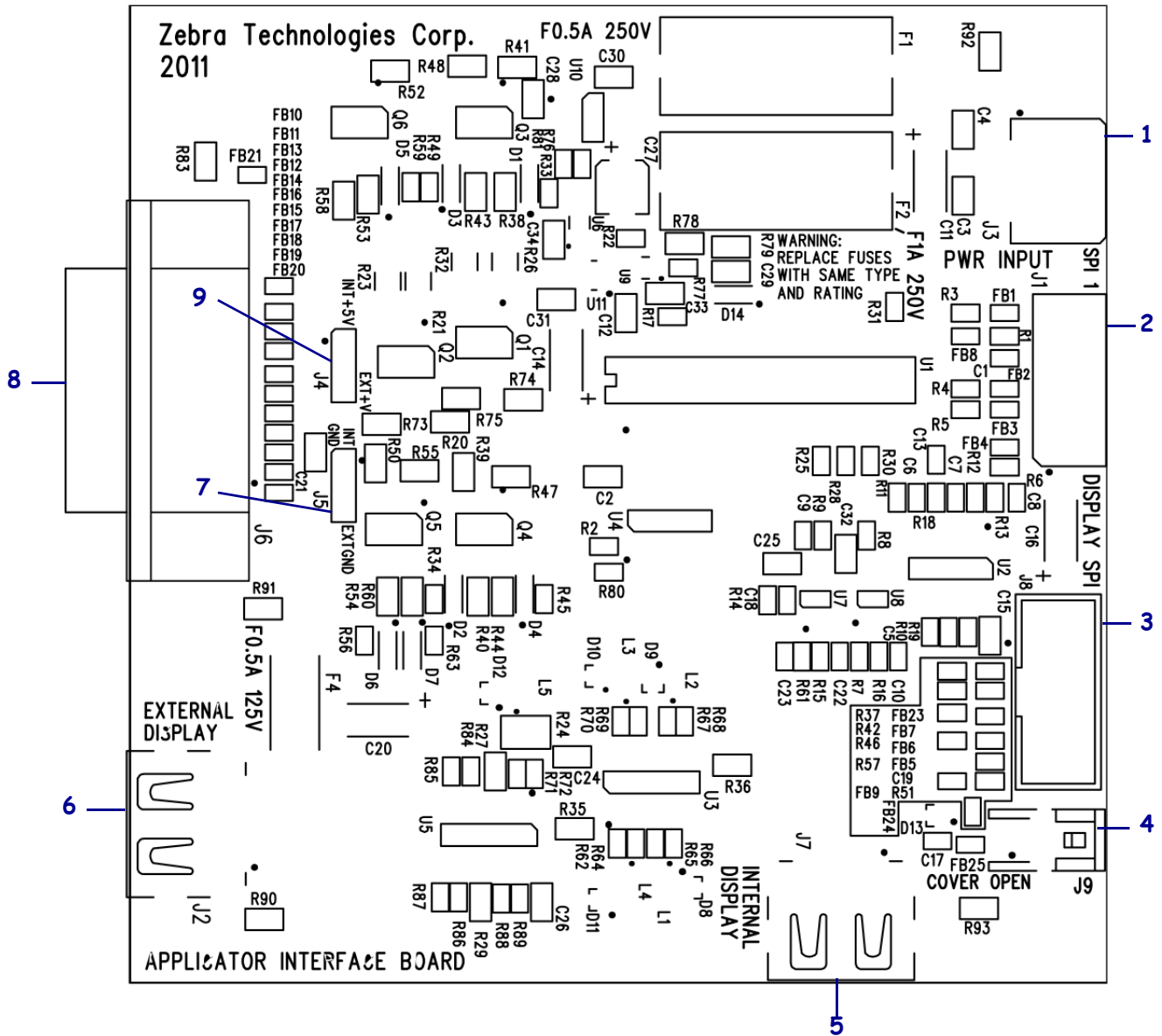
Table 10 • Applicator Interface Connector Pin Configuration

Pin No.	Signal Name	Signal Type	Description
1	I/O SIGNAL GROUND	I/O Signal Ground	Using jumper J5, this pin can be configured as isolated or non-isolated. When in non-isolated mode, the printer's +5V ground is connected to this pin. See Figure 20 on page 79 for location of jumpers.
2	I/O SIGNAL POWER	Power	Using jumper J4, this pin can be configured as isolated or non-isolated. When in non-isolated mode, the printer's +5V power supply is used and fused at 1 Amp. See Figure 21 on page 80 and Figure 22 on page 81 . Note • Replace the fuse with one of the same type and rating only.
3	START PRINT	Input	<ul style="list-style-type: none"> • Pulse Mode—The label printing process begins on the HIGH to LOW transition of this signal if a format is ready. De-assert this signal HIGH to inhibit printing of a new label. • Level Mode—Assert LOW to enable the print engine to print if a label format is ready. When de-asserted HIGH, the print engine completes the label that is printing then stops and waits for this input to be reasserted LOW.
4	FEED	Input	When the print engine is idle or has been paused, assert this input LOW to trigger repeated feeding of blank labels. De-assert HIGH to stop feeding blank labels and register to the top of the next label.
5	PAUSE	Input	To toggle the current Pause state, this input must be asserted LOW for 200 milliseconds, or until the SERVICE REQUIRED output (pin 10) changes state.
6	REPRINT	Input	<ul style="list-style-type: none"> • If the Reprint feature is enabled, this input must be asserted LOW to cause the print engine to reprint the last label. • If the Reprint feature is disabled, this input is ignored.
7	+28 V (Fused at 0.5A) Note • Replace the fuse with one of the same type and rating only.	Power	The Interface Power Supply. Supplies power to external sensors as required. Note • If operating with +28V signals, pin 7 may be used to supply power to pin 2. However, this creates a non-isolated mode of operation with +28V signals.

Table 10 • Applicator Interface Connector Pin Configuration (Continued)

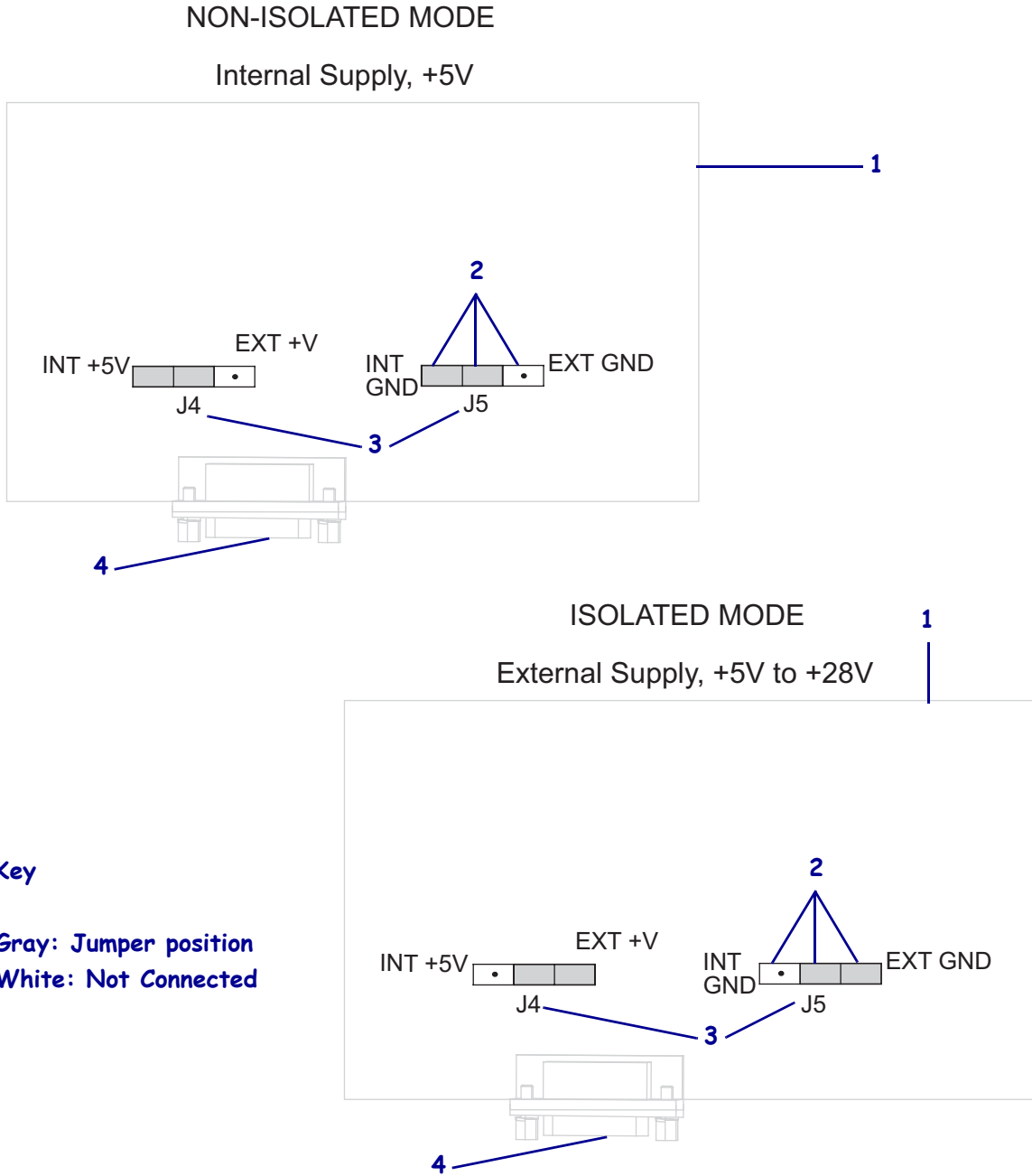
Pin No.	Signal Name	Signal Type	Description
8	POWER GROUND (+28 V DC Return)	Power Ground	The Interface Power Ground. Note • If pin 7 is used to supply power to pin 2, use this pin to supply ground to pin 1. However, this creates a non-isolated mode of operation.
9	RIBBON LOW	Output	Asserted LOW if the Supplies Warning feature is enabled and the amount of ribbon remaining on the supply spindle is below the threshold level.
10	SERVICE REQUIRED	Output	Asserted LOW in the following circumstances: <ul style="list-style-type: none"> • the printhead is open • the ribbon or media is out • the print engine is paused • an operational fault occurs • a Resynch error occurs while the applicator Resynch mode is set to Error mode
11	END PRINT	Output	<ul style="list-style-type: none"> • MODE 0—The applicator port is OFF. • MODE 1—Asserted LOW only while the print engine is moving the label forward; otherwise deasserted HIGH. • MODE 2—Asserted HIGH only while the print engine is moving the label forward; otherwise deasserted LOW. • MODE 3—(Default) Asserted LOW for 20 milliseconds when a label is completed and positioned. Not asserted during continuous printing. • MODE 4—Asserted HIGH for 20 milliseconds when a label is completed and positioned. Not asserted during continuous printing.
12	MEDIA OUT	Output	Asserted LOW while there is no media in the print engine.
13	RIBBON OUT	Output	Asserted LOW while there is no ribbon in the print engine.
14	DATA READY	Output	<ul style="list-style-type: none"> • Asserted LOW when sufficient data has been received to begin printing the next label. • Deasserted HIGH whenever printing stops after the current label, due to either a pause condition or the absence of a label format.
15	SPARE	Output	Unassigned.

Figure 20 • Applicator Interface Board Connections



1	J3: Applicator interface power cable
2	J1: Locking SP comm cable
3	J8: Control panel SPI extension (ribbon) cable
4	J9: Door-open sensor cable
5	J7: Internal HDMI connector for control panel
6	J2: External HDMI connector for deported control panel
7	J5: Jumper
8	J6: Applicator interface cable
9	J4: Jumper

Figure 21 • Jumper Placement



1	Simulated applicator interface board
2	Pins
3	Labels on the applicator interface board
4	Applicator port

Figure 22 • Applicator Board Pinouts

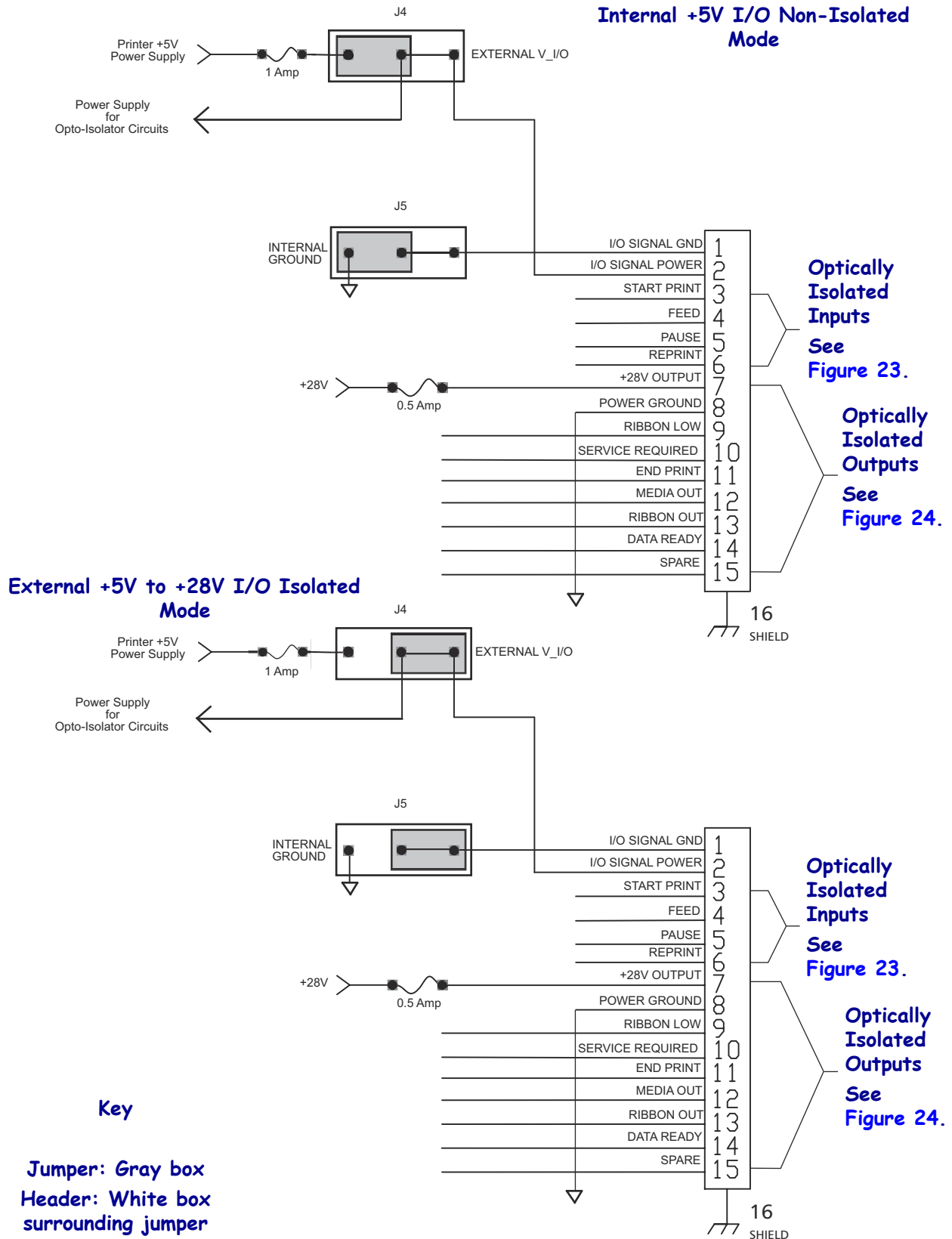


Figure 23 • Input Signal Circuit

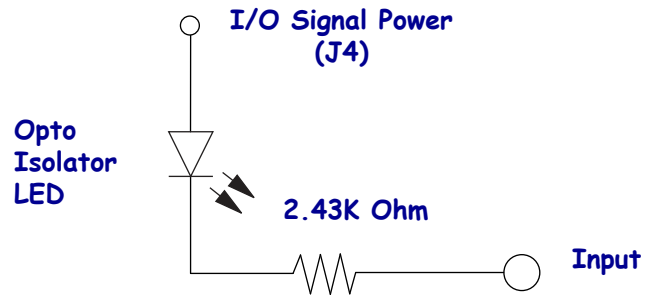
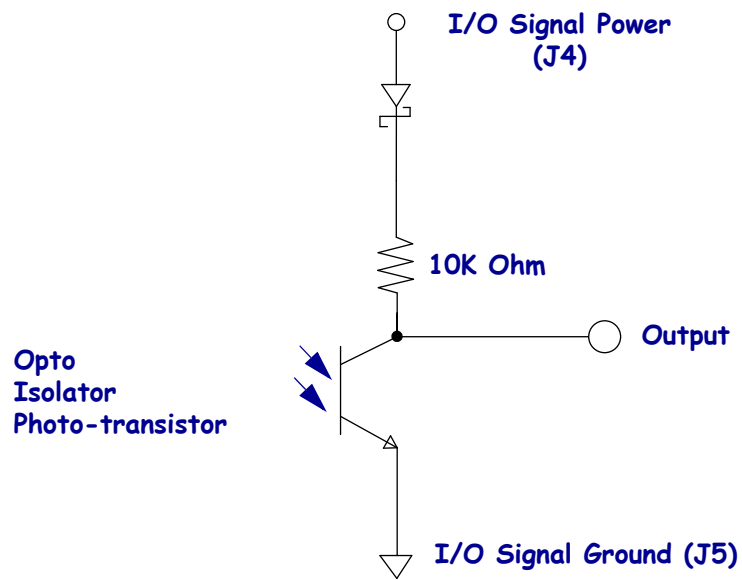
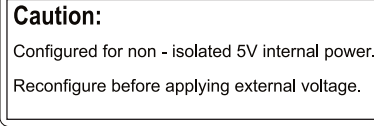


Figure 24 • Output Signal Circuit



Applicator Interface Board Reconfiguration

The print engine ships with the following caution label over the optional applicator port:



- For +5V non-isolated mode (internal power), no configuration is necessary.
- For +5V to +28V isolated mode (external power), the jumpers on the applicator interface board must be reconfigured. Follow the instructions in this section.



Caution • Do not remove the caution label or apply external power until after the applicator interface board is reconfigured for isolated mode. Applying external power when the print engine is configured for internal power will damage your print engine.



Note • The graphics and steps in this procedure are for the right-hand (RH) print engine. Steps for a left-hand (LH) print engine may be slightly different.

Tools Required



Tools • You may need these tools to complete this procedure:

- | | |
|------------------------------------------------------------|---------------------------------------------|
| <input type="checkbox"/> Phillips Screwdriver Set | <input type="checkbox"/> Needle-nose pliers |
| <input type="checkbox"/> Metric Hex Key (Allen Wrench) Set | <input type="checkbox"/> Torx Key Set |
| <input type="checkbox"/> Antistatic Wriststrap and Mat | <input type="checkbox"/> Flashlight |

Changing Jumper Settings for Isolated Mode



Caution • This installation must be performed by a qualified service technician.

To change from non-isolated mode (internal power) to isolated mode (external power), complete these steps:

Remove Power and Data Cables



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

Connect yourself to an antistatic device.




2. **Caution** • Turn off (O) the print engine and disconnect it from the power source before performing the following procedure.

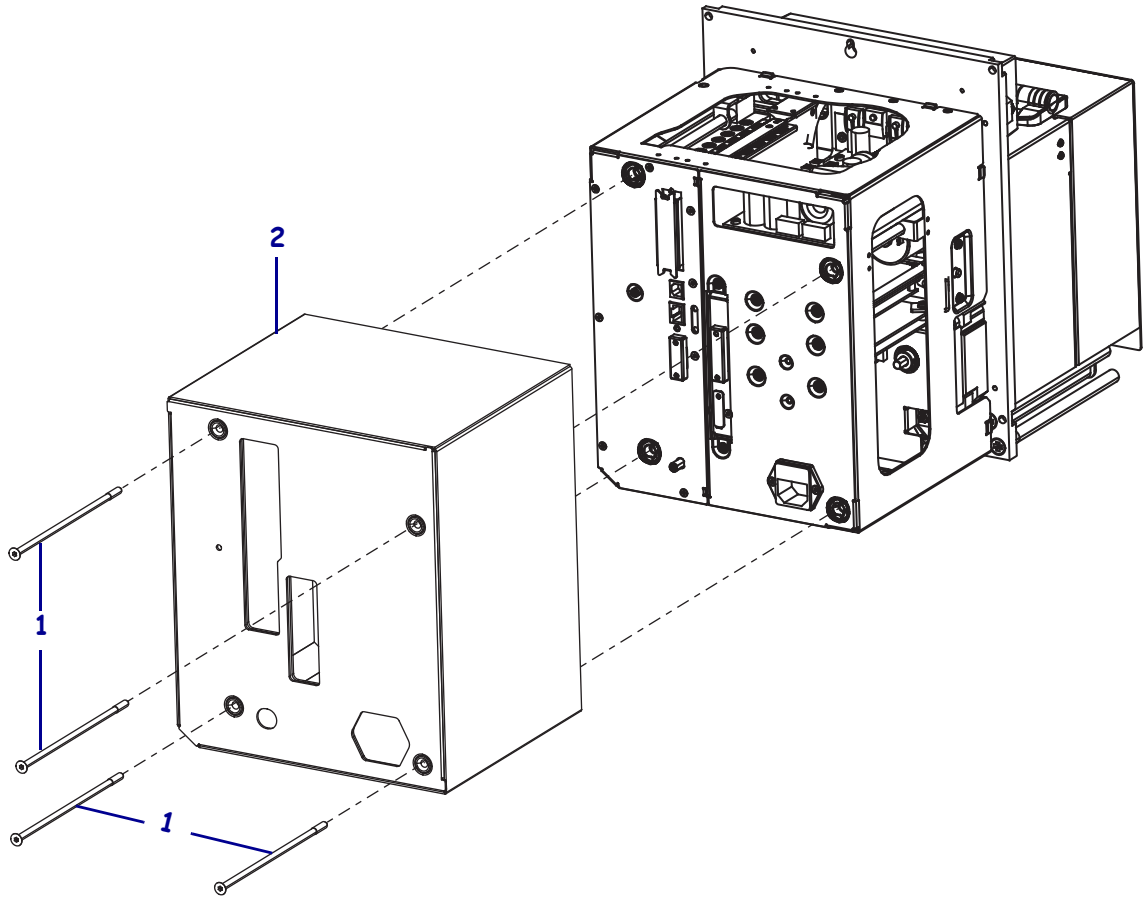
Turn off (O) the printer and disconnect the AC power cord and all data cables.

Access the Electronics Compartment and Remove the Applicator Interface Board

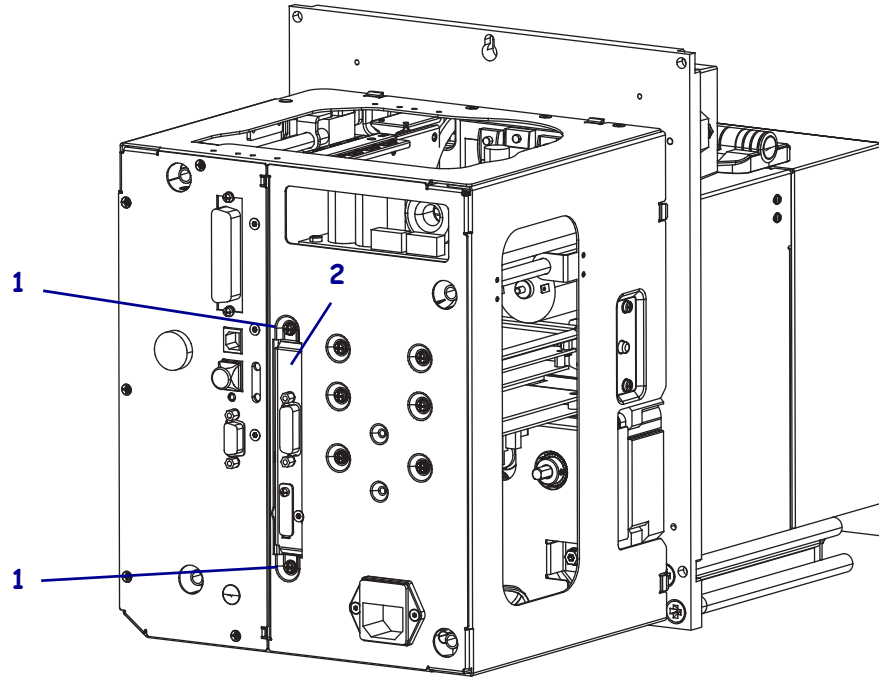
3. Does your applicator (or stand) permit open access to the rear of the print engine?

If you have...	Then...
Open access	<p>You may swing the print engine open and work on it without removing the unit from the applicator.</p> <p>If you wish to remove the unit from the stand at any time, follow the instructions listed for the <i>Obstructed access</i> type applicator shown in this table.</p> <ol style="list-style-type: none"> a. Go to step 4.
Obstructed access	<p>You must remove the print engine from the applicator before you work on it.</p> <ol style="list-style-type: none"> a. Remove the four corner mounting screws securing the print engine to the applicator. b. Loosen the center mounting bolt, but do not remove it. <p> Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.</p> <ol style="list-style-type: none"> c. Lift the print engine off the center mounting bolt and place on a workbench.

4. Remove the four long mounting screws (1) that secure the electronics cover, and then slide the electronics cover (2) off of the print engine.



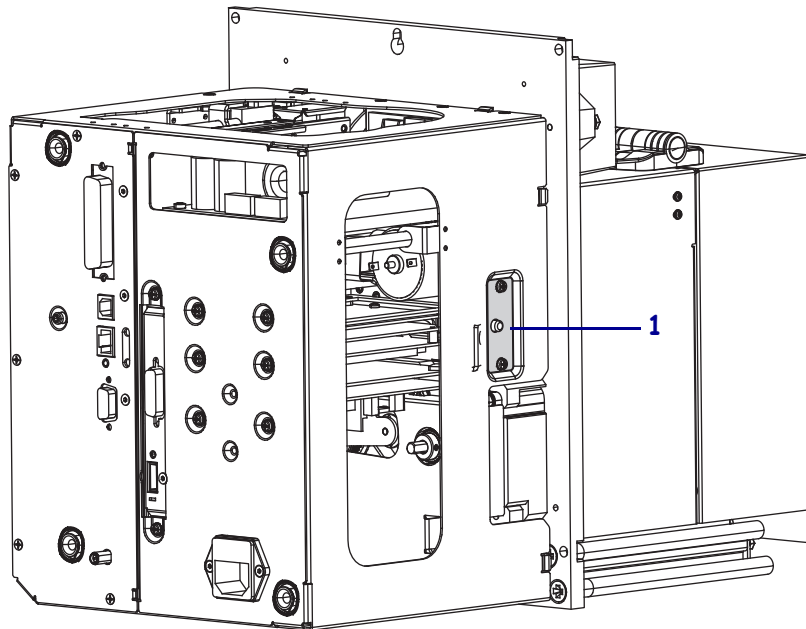
5. On the back of the applicator interface board, remove the two mounting screws (1) that secure the applicator interface board (2) to the back plane of the print engine.



6. Locate the latch (1) on the side of the print engine.

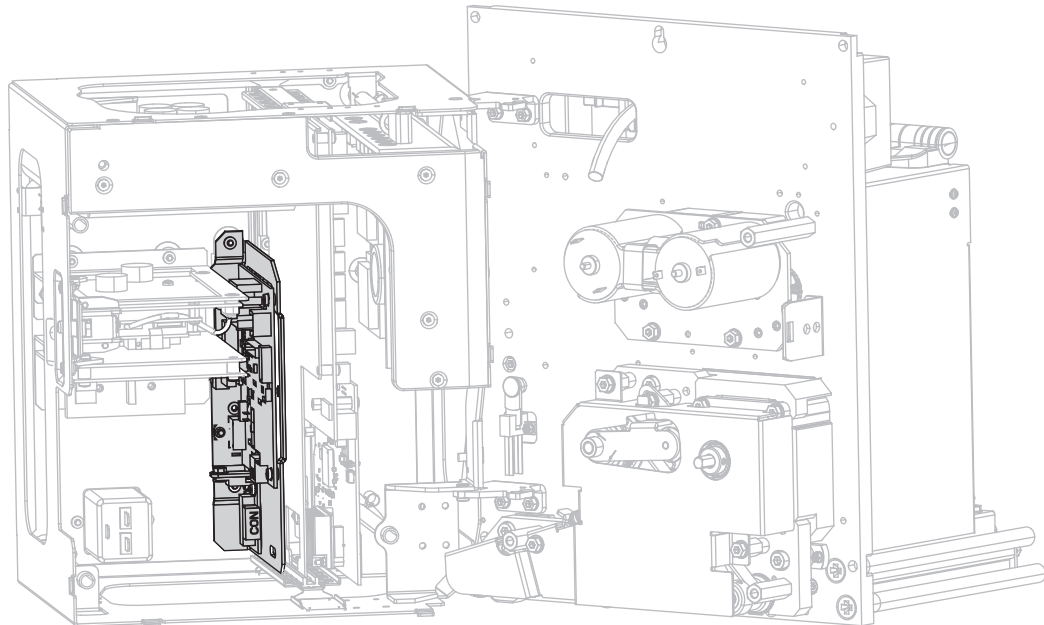


Note • For right-hand models, the latch is on the right side when you are facing the back of the print engine. For left-hand models, the latch is on the left side.

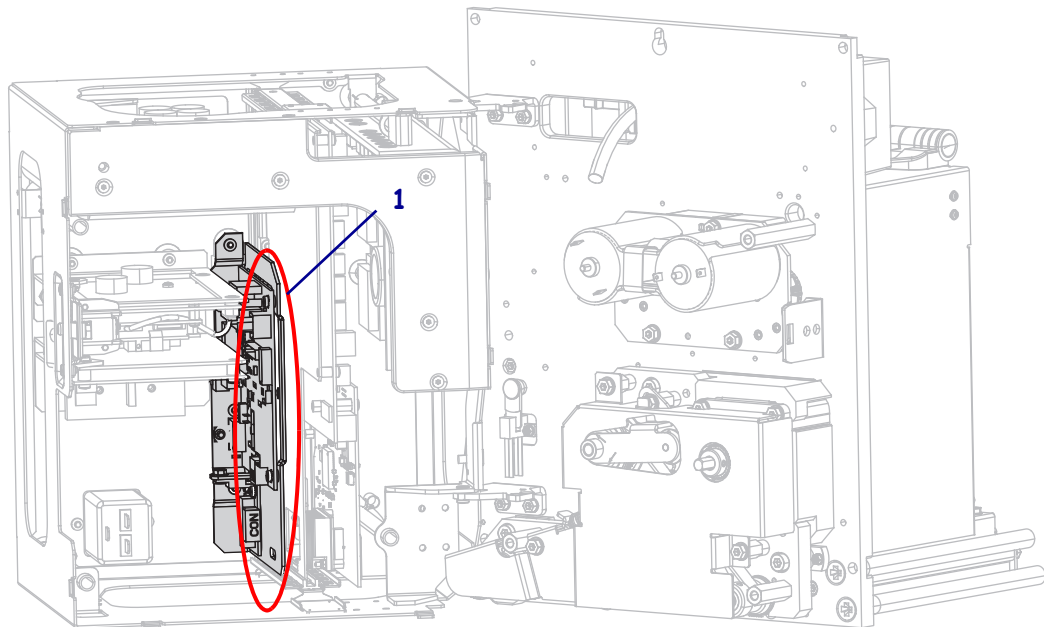


7. Press the latch, and then swing the electronics enclosure open.

8. Inside the print engine, locate the applicator interface board.



9. Disconnect the connectors (1) along the accessible edge of the applicator interface board. Note how the connectors are attached to assist with reattachment later in this procedure.

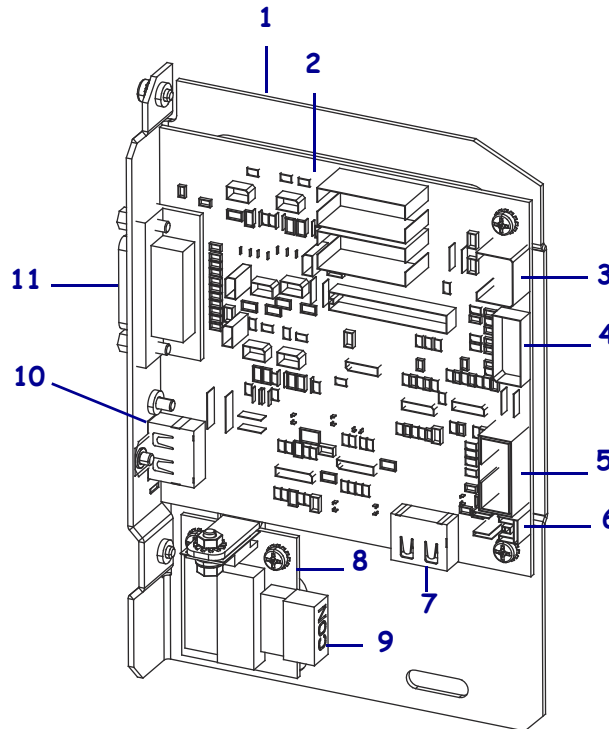


10. Gently pull the applicator interface board partially away from the back plane of the print engine.



Note • Avoid disconnecting or pinching any cables inside the electronics enclosure.

11. Disconnect the remaining connectors on the applicator interface board and the attached voltage regulator board.



1	Applicator interface board mounting plate	7	J7: Internal HDMI connector for control panel
2	Applicator interface board	8	Voltage regulator board
3	J3: Applicator interface power cable	9	J1 (on voltage reg. board): Power cable
4	J1: Locking SP comm cable	10	J2: External HDMI connector for deported control panel
5	J8: Control panel SPI extension (ribbon) cable	11	J6: Applicator interface cable
6	J9: Door-open sensor cable		

12. Remove the applicator interface board from the print engine.

Adjust Jumper Placement for +5V to +28V Isolated Mode

13. Locate the areas marked J4 and J5.

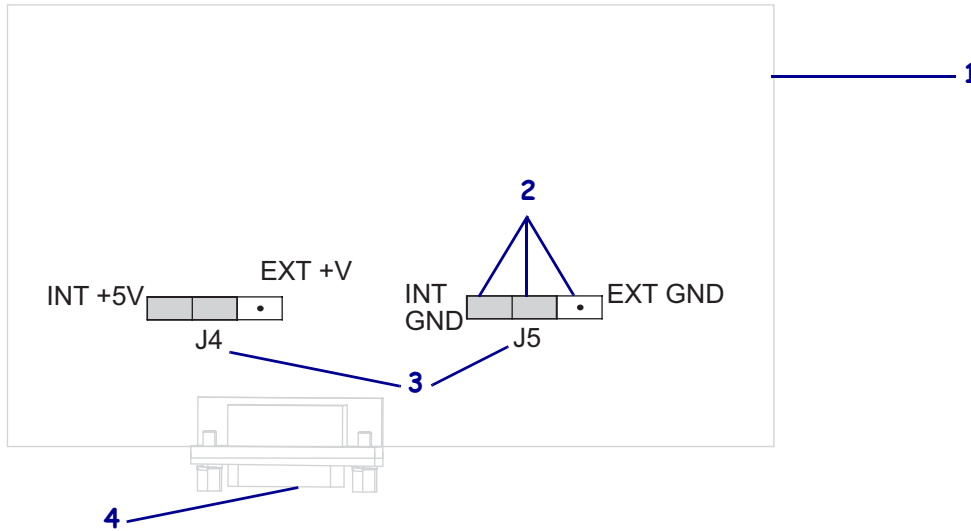


14. **Caution** • Do not apply external power until after the board is reconfigured for Isolated Mode.

Move the jumpers on both J4 and J5 to cover the pins as shown from the default of Non-Isolated Mode to Isolated Mode. You may use needle-nose pliers, if necessary.

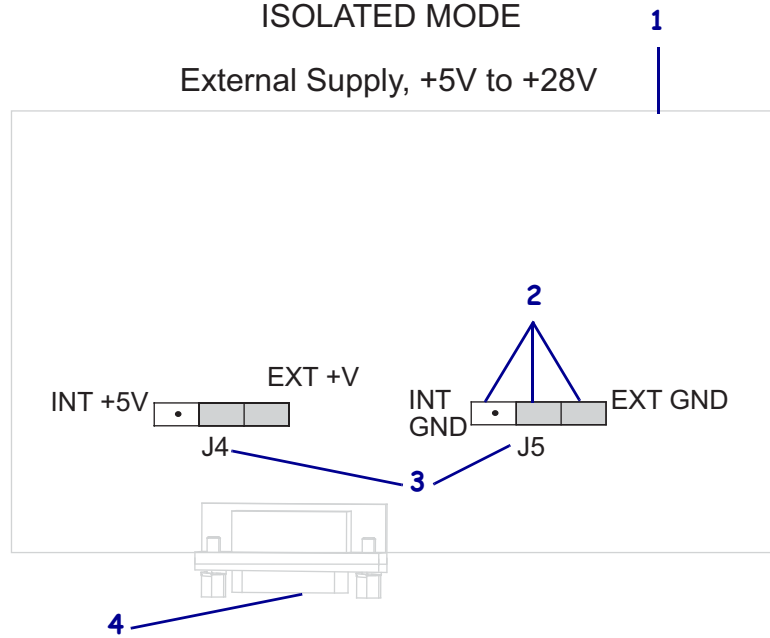
NON-ISOLATED MODE

Internal Supply, +5V



ISOLATED MODE

External Supply, +5V to +28V



Key

Gray: Jumper position
 White: Not Connected

1	Simulated applicator interface board
2	Pins
3	Labels on the applicator interface board
4	Applicator port

Reinsert and Reconnect the Applicator Interface Board

15. Gently insert the applicator interface board into the print engine, and slide it toward the back plane.



Note • Avoid disconnecting or pinching any cables inside the electronics enclosure.

16. Reconnect the cables that were disconnected in [step 9](#) and [step 11](#). See [Figure 25 on page 91](#) for most of the connector locations.

- a. Reconnect the control panel.
 Which type of control panel are you using?

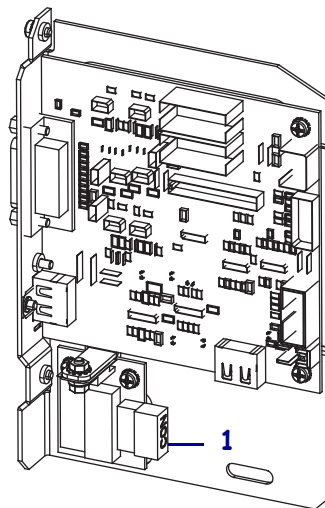
If your control panel is...	Then...
Standard (attached to the top of the print engine)	<ol style="list-style-type: none"> 1. Connect the HDMI cable to J7 on the applicator interface board. 2. Continue with step b.
Deported (attached away from the print engine)	<ol style="list-style-type: none"> 1. Reconnect the HDMI cable to J2 on the applicator interface board. This connector is accessible from the back plane. 2. Continue with step b.

- b. Connect the locking SP comm cable to J1 on the applicator interface board.



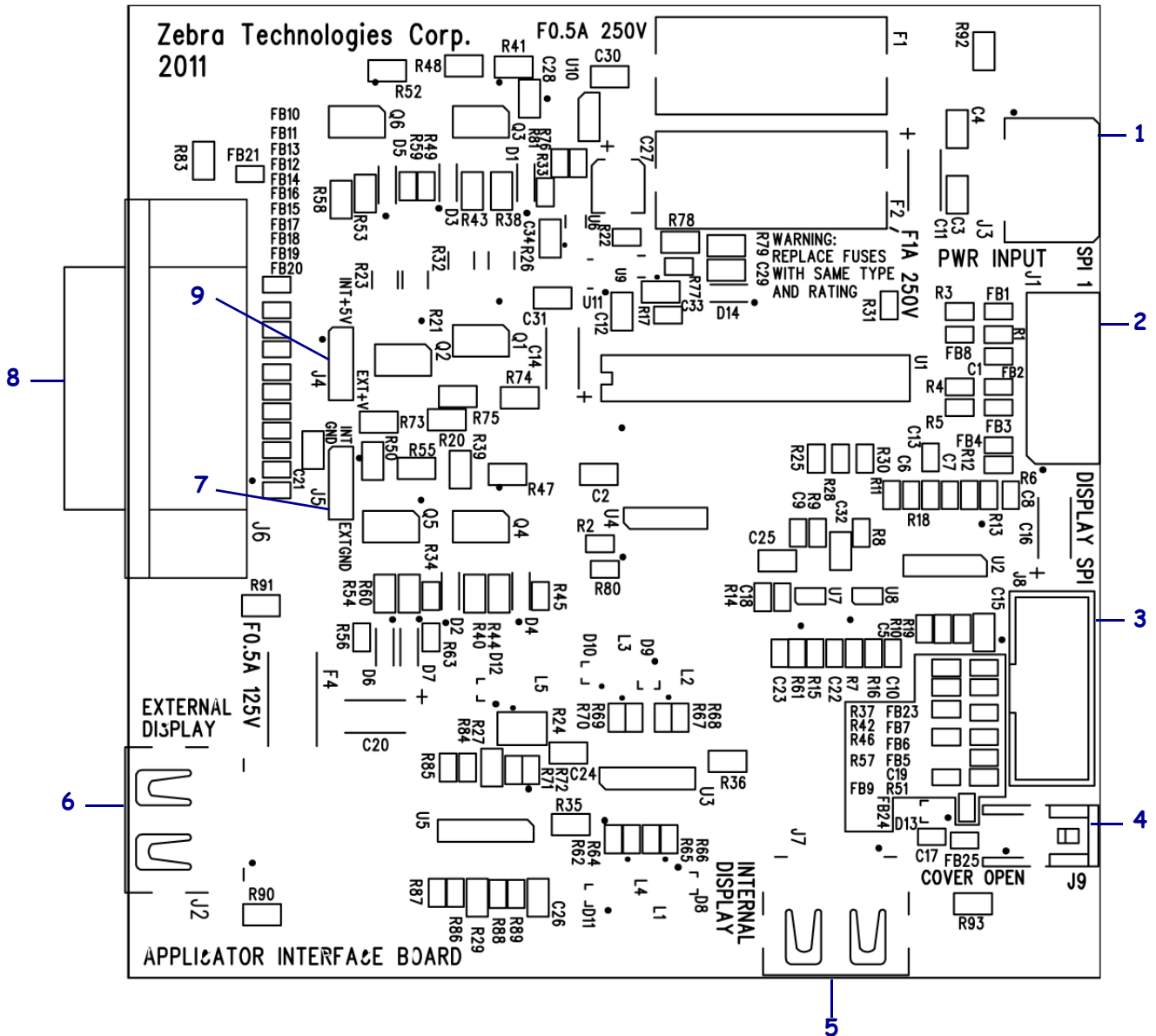
Important • This applicator interface board requires the use of an SP comm cable with a ferrite. The locking connector is the one closest to the ferrite.

- c. Connect the six-pin connector for the power cable to J3 on the applicator interface board.
- d. Connect the four-pin connector (arranged in a line) for the power cable to J1 (1) on the voltage regulator board.



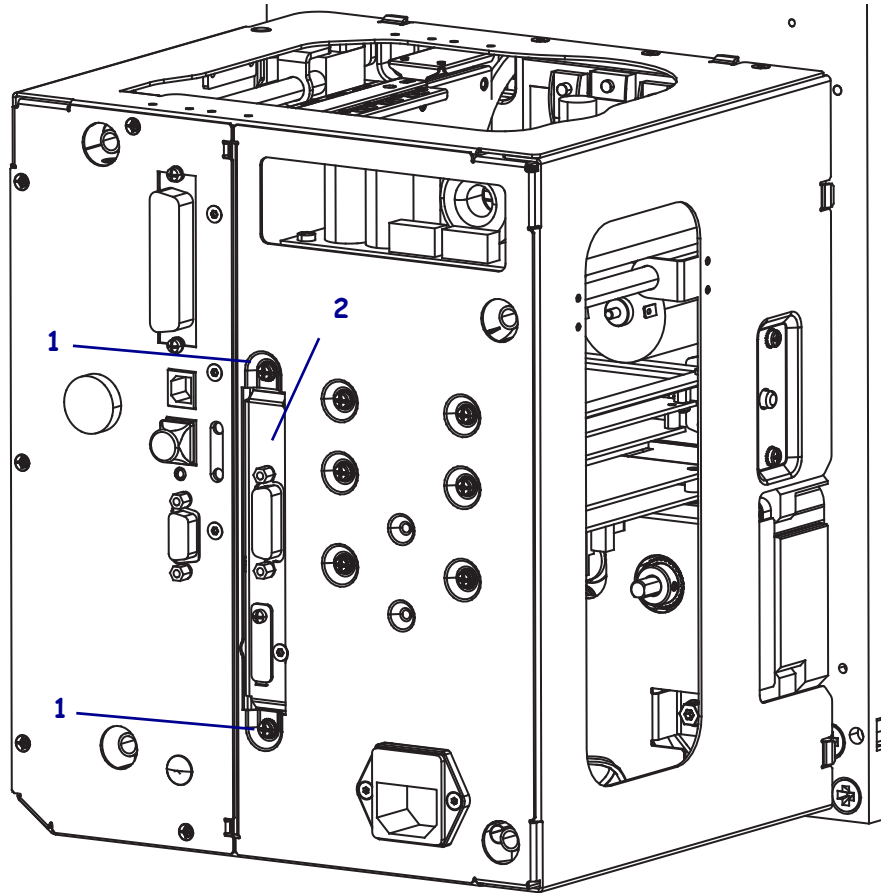
- e. Connect the door-open sensor to J9 on the applicator interface board.

Figure 25 • Applicator Interface Board Connections



1	J3: Applicator interface power cable
2	J1: Locking SP comm cable
3	J8: Control panel SPI extension (ribbon) cable
4	J9: Door-open sensor cable
5	J7: Internal HDMI connector for control panel
6	J2: External HDMI connector for deported control panel
7	J5: Jumper
8	J6: Applicator interface cable
9	J4: Jumper

17. Align the mounting holes in the applicator interface board with the holes in the back plane of the print engine.
18. Reinstall the two mounting screws (1) to secure the applicator interface board (2) to the back plane of the print engine.



Close the Electronics Enclosure

19. Ensure that all wires are routed properly and are not causing any obstructions, and then carefully swing the electronics enclosure closed.
20. Slide the electronics cover onto the print engine.
21. Reinstall the four electronics cover mounting screws.

Reinstall the Print Engine in the Applicator (If Applicable)

22. To reinstall the print engine into the applicator, carefully place the keyhole on the center mounting bolt.



Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.

23. Replace the four corner mounting screws securing the print engine to the applicator.
24. Tighten the center mounting bolt.

Resume Printer Operation

25. Reconnect the AC power cord and interface cables.
26. Turn on (I) the print engine.

The installation is complete.



Notes • _____

Parts and Assembly Drawings

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Print Mechanism Replacements

Contents

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Figure 26 • Print Mechanism Overview

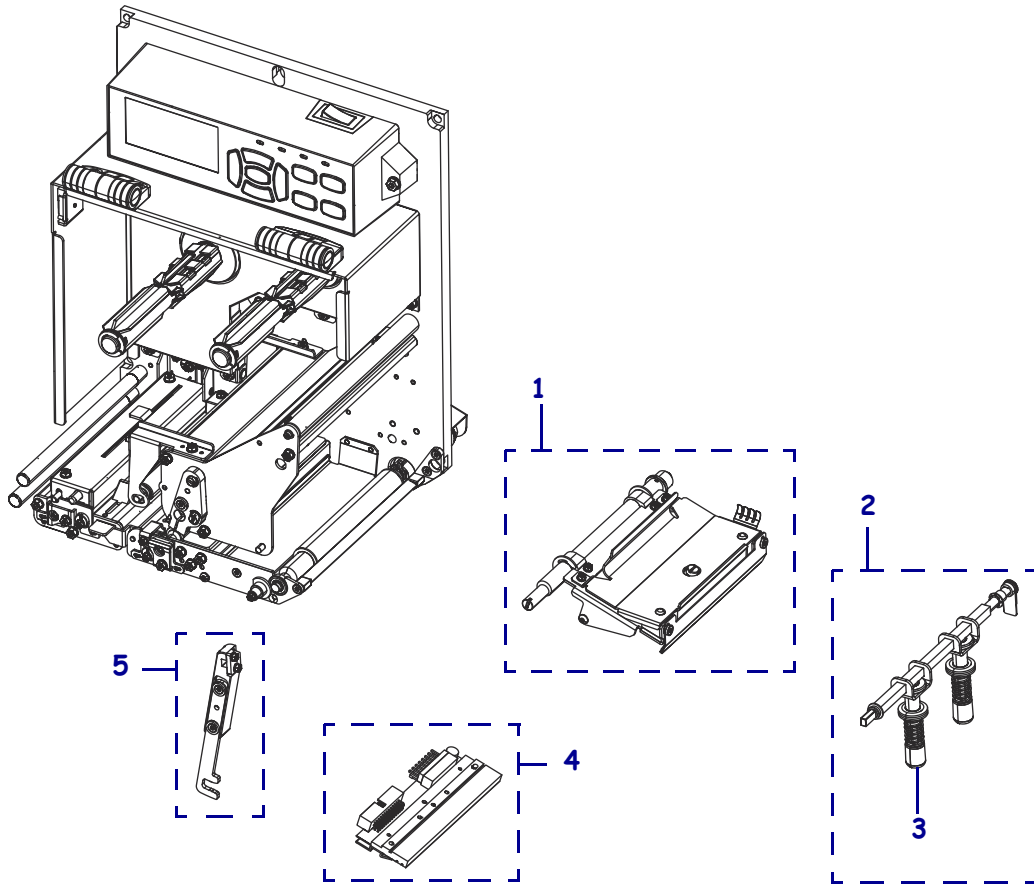


Table 11 • Print Mechanism Overview

Item	Part Number	Description
1	P1046696-012	ZE500-4 Print Mechanism Maintenance Kit, RH, see Table 12 on page 101 .
	P1046696-013	ZE500-4 Print Mechanism Maintenance Kit, LH, see Table 12 on page 101 .
	P1046696-014	ZE500-6 Print Mechanism Maintenance Kit, RH, see Table 12 on page 101 .
	P1046696-015	ZE500-6 Print Mechanism Maintenance Kit, LH, see Table 12 on page 101 .
2	P1046696-009	ZE500-4 Toggle Bar and Toggles Maintenance Kit, RH/LH, see Table 12 on page 101 .
	P1046696-010	ZE500-6 Toggle Bar and Toggles Maintenance Kit, RH/LH, see Table 12 on page 101 .
3	P1046696-011	ZE500 Series Toggle Assembly Maintenance Kit, see Table 12 on page 101 .
4	P1046696-099	ZE500-4 Printhead Kit (203 dpi), see Table 12 on page 101 .
	P1046696-016	ZE500-4 Printhead Kit (300 dpi), see Table 12 on page 101 .
	P1004236	ZE500-6 Printhead Kit (203 dpi), see Table 12 on page 101 .
	P1004237	ZE500-6 Printhead Kit (300 dpi), see Table 12 on page 101 .
5	P1046696-008	ZE500 Series Printhead Latch Maintenance Kit, see Table 12 on page 101 .
N/S	P1046696-007	ZE500 Series Printhead Cables Maintenance Kit, see Table 12 on page 101 .
N/S	P1046696-003	ZE500-4 203 to 300 DPI Conversion Maintenance Kit RH/LH, see Table 12 on page 101 .
	P1046696-004	ZE500-4 300 to 203 DPI Conversion Maintenance Kit RH/LH, see Table 12 on page 101 .
	P1046696-005	ZE500-6 203 to 300 DPI Conversion Maintenance Kit RH/LH, see Table 12 on page 101 .
	P1046696-006	ZE500-6 300 to 203 DPI Conversion Maintenance Kit RH/LH, see Table 12 on page 101 .
N/S = Not Shown		

Figure 27 • Print Mechanism Kits

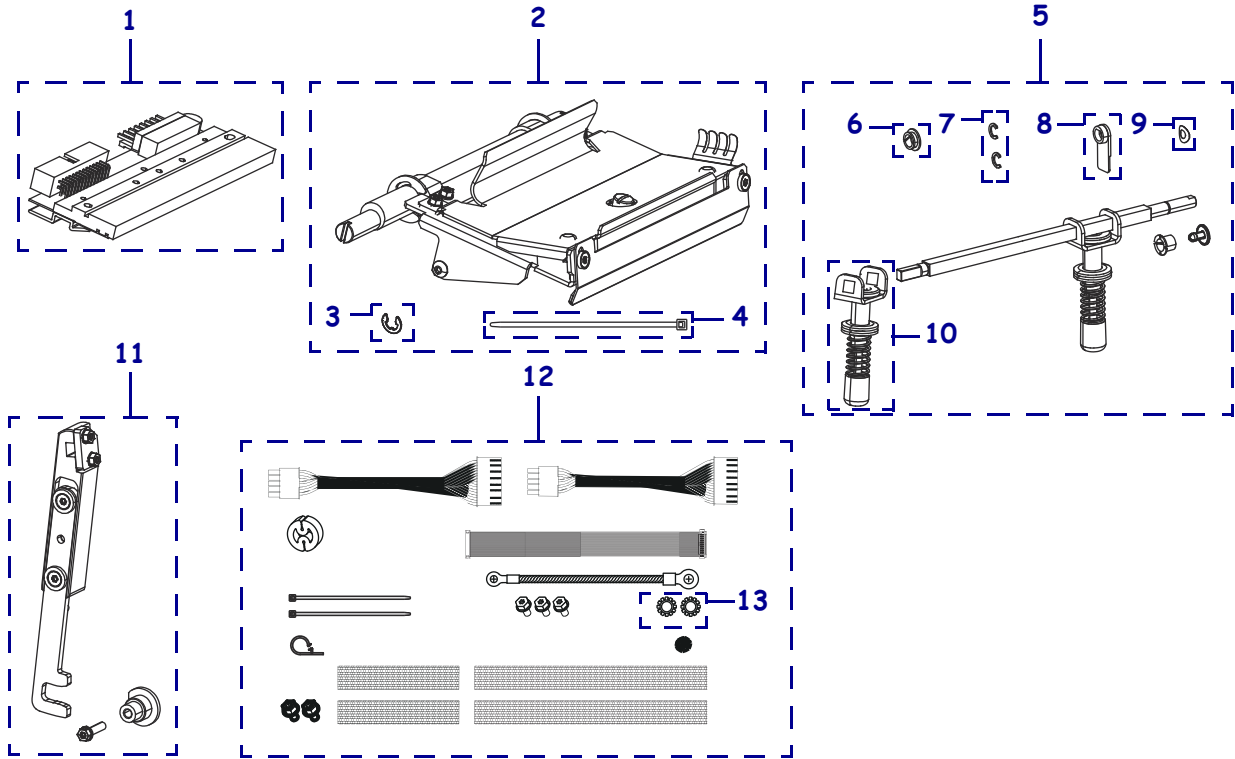


Table 12 • Print Mechanism Kits Parts List

Item	Part Number	Description
1	P1046696-099	ZE500-4 Printhead Kit (203 dpi) See Printhead Maintenance Kit on page 103 .
	P1046696-016	ZE500-4 Printhead Kit (300 dpi) See Printhead Maintenance Kit on page 103 .
	P1004236	ZE500-6 Printhead Kit (203 dpi) See Printhead Maintenance Kit on page 103 .
	P1004237	ZE500-6 Printhead Kit (300 dpi) See Printhead Maintenance Kit on page 103 .
2	P1046696-012	ZE500-4 Print Mechanism Maintenance Kit, RH See Print Mechanism Maintenance Kit on page 168 .
	P1046696-013	ZE500-4 Print Mechanism Maintenance Kit, LH See Print Mechanism Maintenance Kit on page 168 .
	P1046696-014	ZE500-6 Print Mechanism Maintenance Kit, RH See Print Mechanism Maintenance Kit on page 168 .
	P1046696-015	ZE500-6 Print Mechanism Maintenance Kit, LH See Print Mechanism Maintenance Kit on page 168 .
3	HW06250	E-Ring, Ext 0.312 Yel (Qty. of 25)
4	HWQ06020	Cable Tie, 0.09 × 3.62 (sold in quantities of 20)
5	P1046696-009	ZE500-4 Toggle Bar and Toggles Maintenance Kit, RH/LH See Toggle Bar and Toggles Maintenance Kit on page 206 .
	P1046696-010	ZE500-6 Toggle Bar and Toggles Maintenance Kit, RH/LH See Toggle Bar and Toggles Maintenance Kit on page 206 .
6	HW30105	Bearing, Nylon 0.212 × 0.251 (Qty. of 25)
7	HW33810	C-Ring, External 0.250 (Qty. of 100)
8	HW46352	Flag, Sensor (Qty. of 50)
9	HW40194	Washer, Curved 0.344 × 0.172 × 0.006 (Qty. of 25)
10	P1046696-011	ZE500 Series Toggle Assembly Maintenance Kit See Toggle Assembly Maintenance Kit on page 219 .
11	P1046696-008	ZE500 Series Printhead Latch Maintenance Kit See Printhead Latch Maintenance Kit on page 163 .
12	P1046696-007	ZE500 Series Printhead Cables Maintenance Kit See Printhead Cables Maintenance Kit on page 126 .
13	HW78827	Washer, External Lock (Qty. of 25)

Table 12 • Print Mechanism Kits Parts List

Item	Part Number	Description
N/S	P1046696-003	ZE500-4 203 to 300 DPI Conversion Maintenance Kit RH/LH See DPI Conversion Maintenance Kit on page 110 .
	P1046696-004	ZE500-4 300 to 203 DPI Conversion Maintenance Kit RH/LH See DPI Conversion Maintenance Kit on page 110 .
	P1046696-005	ZE500-6 203 to 300 DPI Conversion Maintenance Kit RH/LH See DPI Conversion Maintenance Kit on page 110 .
	P1046696-006	ZE500-6 300 to 203 DPI Conversion Maintenance Kit RH/LH See DPI Conversion Maintenance Kit on page 110 .



Printhead Maintenance Kit

Installation Instructions

This kit includes the parts and documentation necessary to install a printhead into the ZE500™ Series Print Engines.

Read these instructions thoroughly before attempting to install this kit.



Note • For optimal printing quality and proper printer performance across our product line, Zebra strongly recommends the use of genuine Zebra™ supplies as part of the total solution. Specifically, the ZE500 print engines are designed to work only with genuine Zebra™ printheads, thus, maximizing safety and print quality.

Parts List

Each kit contains only one printhead and these installation instructions.

Figure 28 • Kit Contents

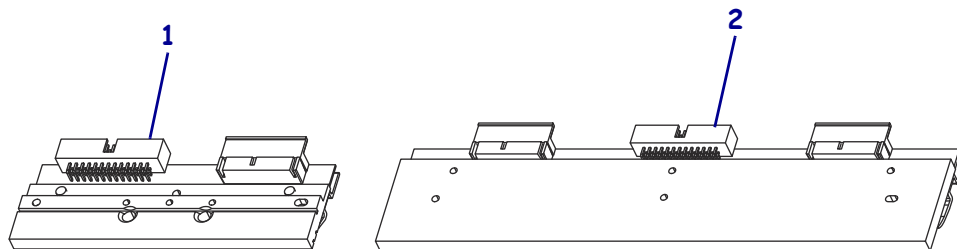


Table 13 • Kit Parts List

✓	Item	Qty	Part Number	Description
	1	1	P1046696-099	Printhead Kit ZE500-4 (203 dpi)
	1	1	P1046696-016	Printhead Kit ZE500-4 (300 dpi)
	1	1	P1004236	Printhead Kit ZE500-6 (203 dpi)
	1	1	P1004237	Printhead Kit ZE500-6 (300 dpi)

Tools Required



Tools • You need these tools to complete this procedure:

- Flatblade Screwdriver Set
- Antistatic Mat and Wrist Strap
- 47362* Zebra Preventive Maintenance Kit

* In place of the Preventive Maintenance Kit, you may use a clean swab dipped in a solution of isopropyl alcohol (minimum 90%) and deionized water (maximum 10%).



Note • For best print quality replace the platen roller.



Caution • Turn off (O) the print engine/print engine and disconnect it from the power source before performing the following procedure.

Remove the Printhead

1. **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.

Remove the media and ribbon.



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

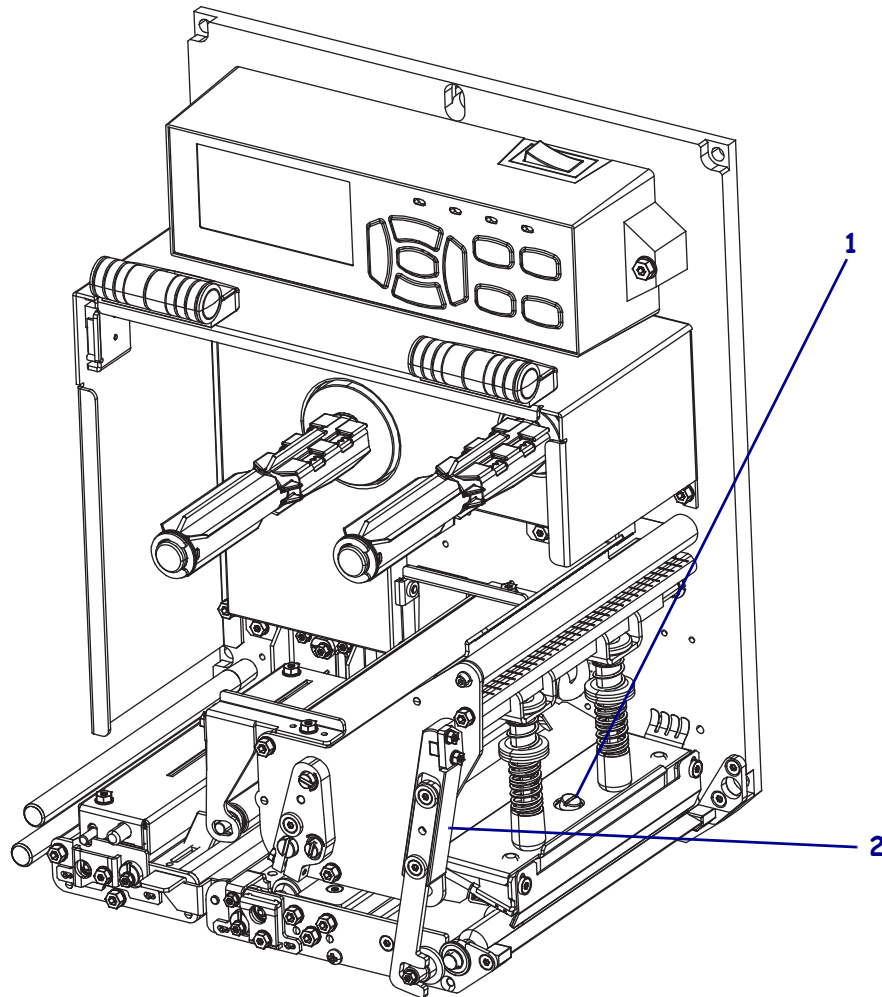
Slide the printhead toggles away from the printhead mounting screw area.



3. **Caution** • Before touching the printhead assembly, discharge any built-up static electricity by touching the metal printer frame or by using an anti-static wriststrap and mat.

See [Figure 29](#). Loosen the printhead mounting screw and then lift the printhead release lever.

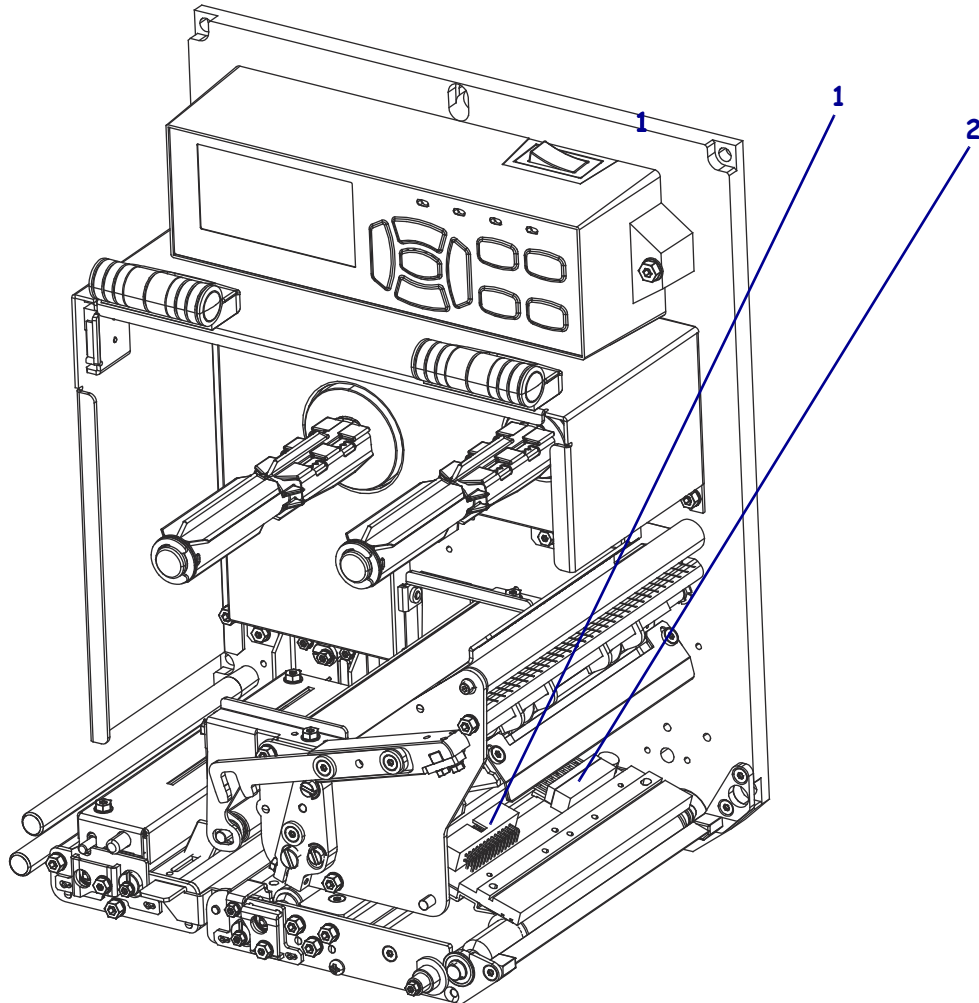
Figure 29 • Loosen the Printhead



1	Printhead mounting screw
2	Printhead release lever

4. See [Figure 30](#). While supporting the printhead, disconnect the power connector and the printhead data connector.

Figure 30 • Remove the Printhead



1	Printhead data cable
2	Printhead power cable

Install the Printhead

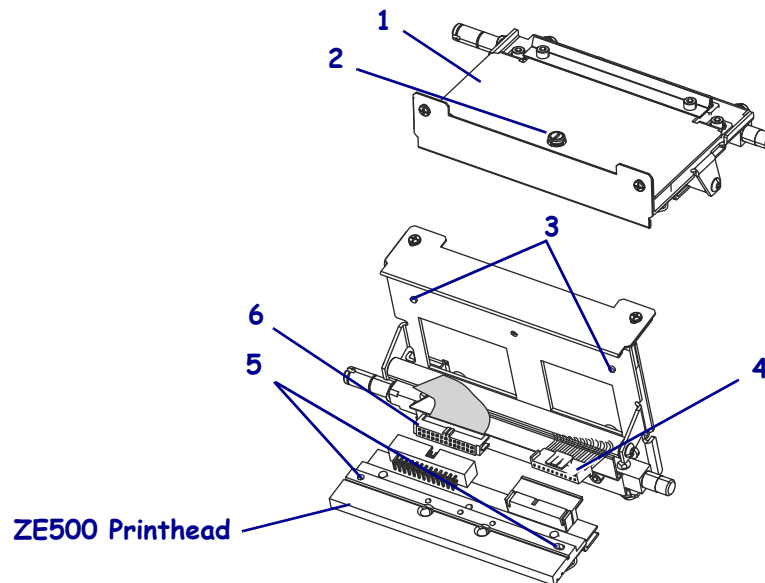


1. **Caution** • An improperly connected printhead data or power cable may cause the printhead to generate excessive heat and/or a false HEAD COLD message to display while the printhead is hot enough to cause severe burns. Allow the printhead to cool.

See [Figure 31](#). Reconnect the printhead power cable and the data cable to their appropriate connectors on the printhead. Seat both connectors firmly in place.

2. Fit the printhead into the mounting bracket by aligning the printhead alignment posts into the printhead alignment holes.

Figure 31 • Printhead and Bracket Alignment



1	Printhead mechanism assembly
2	Printhead mounting screw
3	Printhead alignment posts
4	Printhead power connector
5	Printhead alignment slots
6	Printhead data connector

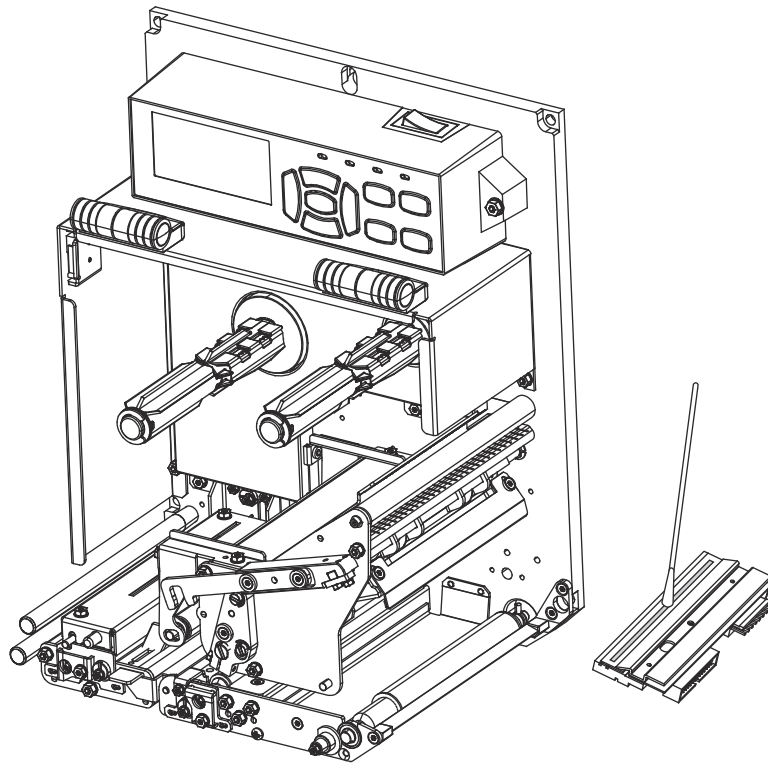
3. Verify that the printhead is seated properly. Carefully guide the printhead mounting screw into the printhead's aluminum body. After the screw is aligned properly, tighten it until snug.

Do not over-tighten.

Clean the Printhead

1. See [Figure 32](#). Clean the new printhead elements using Zebra's Preventive Maintenance Kit, part number 47362. You may use a clean swab dipped in a solution of isopropyl alcohol (minimum 90%) and deionized water (maximum 10%).

Figure 32 • Cleaning the Printhead



1	Printhead elements (gray area)
2	Printhead

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

Reinstall the media and ribbon.

3. Ensure that the printhead toggles are positioned evenly across the width of the media.
4. Close the media cover.
5. Reconnect the AC power cord and data cables.
6. Press and hold PAUSE while turning on (I) the print engine.
7. Press PAUSE to pause the printer and check the labels for proper print quality. If the print quality is not correct, refer to the *User Guide* and the *Maintenance Manual*.

The installation is complete.

DPI Conversion Maintenance Kit

Installation Instructions

This kit includes the parts and documentation necessary to install the DPI Conversion Maintenance Kit in the ZE500™ Series Print Engines. Read these instructions thoroughly before installing this kit.



Caution • This installation must be performed by a qualified service technician.

Parts List

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

Figure 33 • Kit Contents

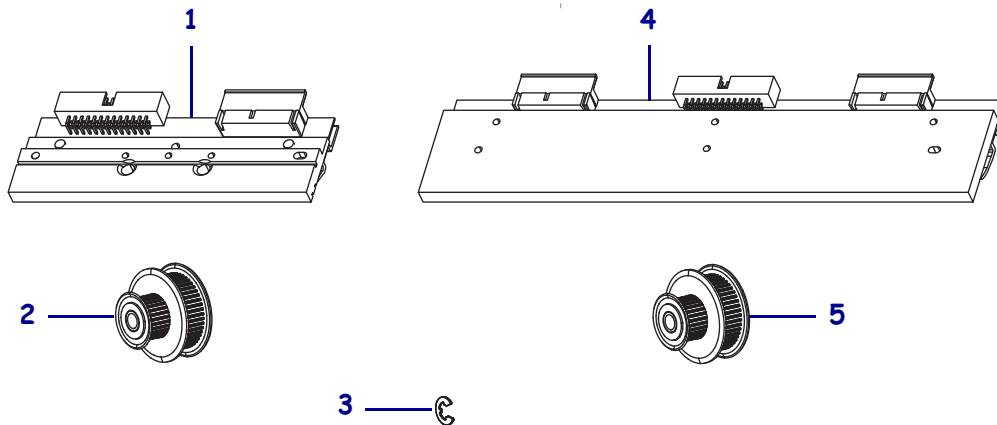


Table 14 • Parts List

✓	Item	Qty	Part Number	Description
	Ref	1	P1046696-003	ZE500-4 203 to 300 DPI Conversion Maintenance Kit RH/LH
	1	1	N/A	Printhead, 110-300 dpi Programmable
	2	1	N/A	Pulley, Idler 300 DPI 48/28G
	3	1	N/A	E-Ring, 6mm
	Ref	1	P1046696-004	ZE500-4 300 to 203 DPI Conversion Maintenance Kit ZE500-4 RH/LH
	1		N/A	Printhead, 110-203 dpi Programmable
	5		N/A	Pulley, Idler 203 DPI 48/21G
	3		N/A	E-Ring, 6mm
	Ref	1	P1046696-005	ZE500-6 203 to 300 DPI Conversion Maintenance Kit RH/LH
	4		N/A	Printhead, 170-300 dpi Programmable
	2		N/A	Pulley, Idler 300 DPI 48/28G
	3		N/A	E-Ring, 6mm
	Ref	1	P1046696-006	ZE500-6 300 to 203 DPI Conversion Maintenance Kit RH/LH
	4		N/A	Printhead, 170-203 dpi Programmable
	5		N/A	Pulley, Idler 203 DPI 48/21G
	3		N/A	E-Ring, 6mm

N/A = Not available as a separate part (listed for identification purposes only).

Tools Required



Tools • You need these tools to complete this procedure:

- Phillips Screwdriver Set
- Metric Hex Key (Allen Wrench) Set
- C-Clip Pliers
- Flat-blade Screwdriver Set
- Anti-Static Wrist Strap and Mat
- Safety Goggles

Remove Power and Data Cables, Ribbon, and Media



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

Connect yourself to an antistatic device.



2. **Caution** • Turn off (O) the print engine and disconnect it from the power source before performing the following procedure.

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


3. **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.

Open the media door, the printhead latch, and remove media and ribbon from the print engine.

4. Close the printhead latch, and then close the media door.

Remove Print Engine from Applicator

1. Does your applicator (or stand) permit open access to the rear of the print engine?

If you have an...	Then...
Open access	<p>You may swing the print engine open and work on it without removing the unit from the applicator.</p> <p>If you wish to remove the unit from the stand at any time, follow the instructions listed for the <i>Obstructed access</i> type applicator shown in this table.</p> <ol style="list-style-type: none"> a. Go to <i>Remove the Electronics Cover</i>.
Obstructed access	<p>You must remove the print engine from the applicator before you work on it.</p> <ol style="list-style-type: none"> a. Remove the four corner mounting screws securing the print engine to the applicator. b. Loosen the center mounting bolt, but do not remove it. <p> Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.</p> <ol style="list-style-type: none"> c. Lift the print engine off the center mounting bolt and place on a workbench.

Remove the Printhead



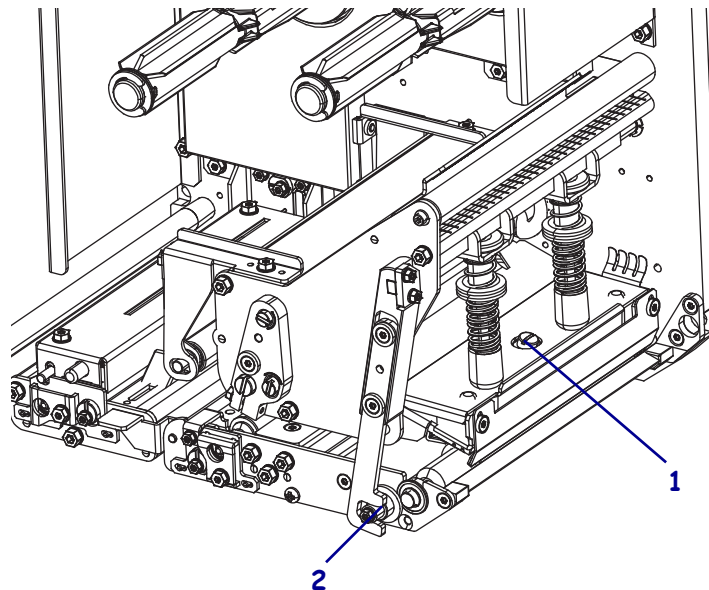
Caution • The printhead may be hot and could cause severe burns. Allow the printhead to cool.



1. **Caution** • Before touching the printhead assembly, discharge any built-up static electricity by touching the metal printer frame or by using an anti-static wriststrap and mat.

See [Figure 34](#). Loosen the printhead mounting screw.

Figure 34 • Printhead Mounting Screw

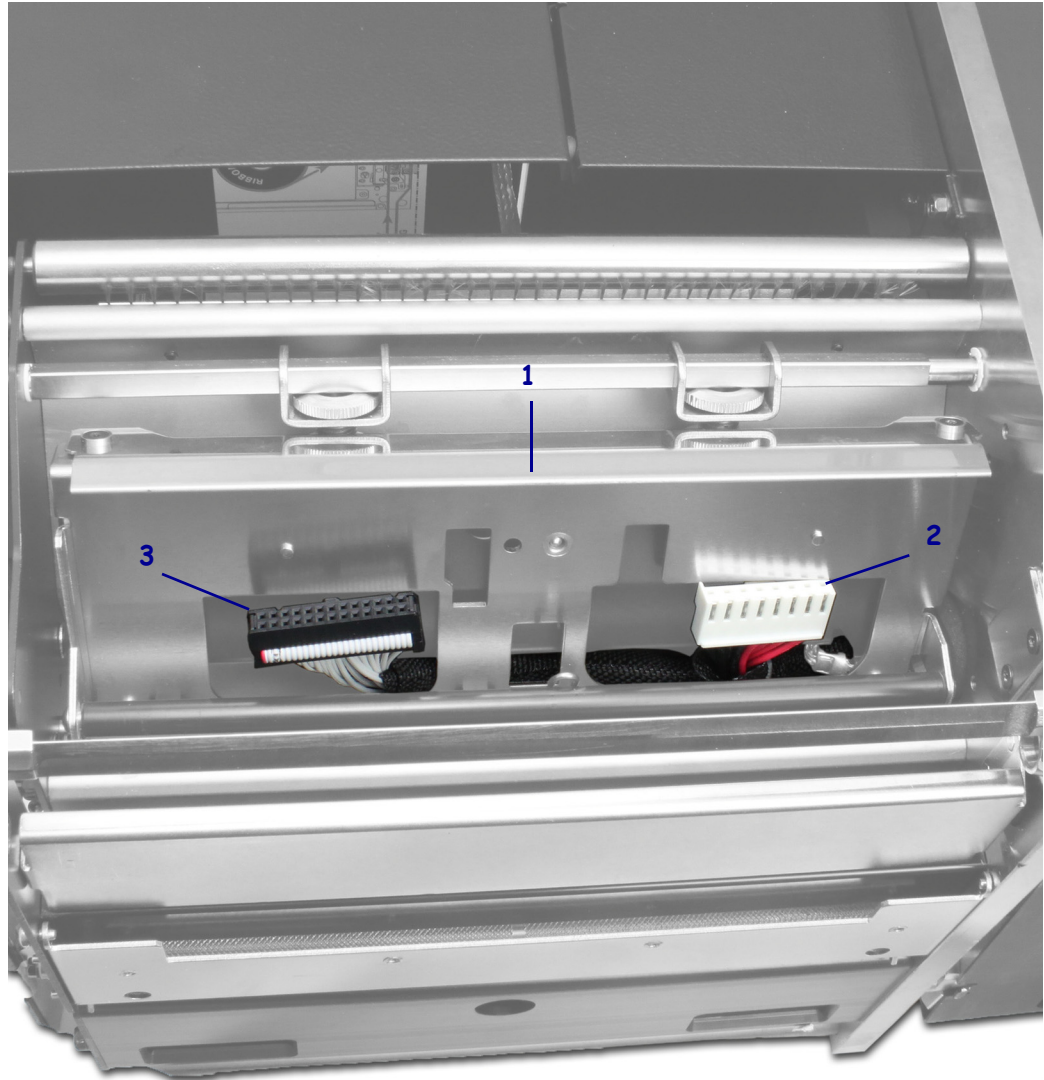


1	Printhead mounting screw
2	Printhead latch

2. Open the printhead latch.

3. See [Figure 35](#). While supporting the printhead, disconnect the power connector and the printhead data connector.

Figure 35 • Printhead Cables



1	Printhead mounting bracket
2	Printhead power connector
3	Printhead data connector (ribbon cable)

4. Remove the printhead.

Install the Printhead

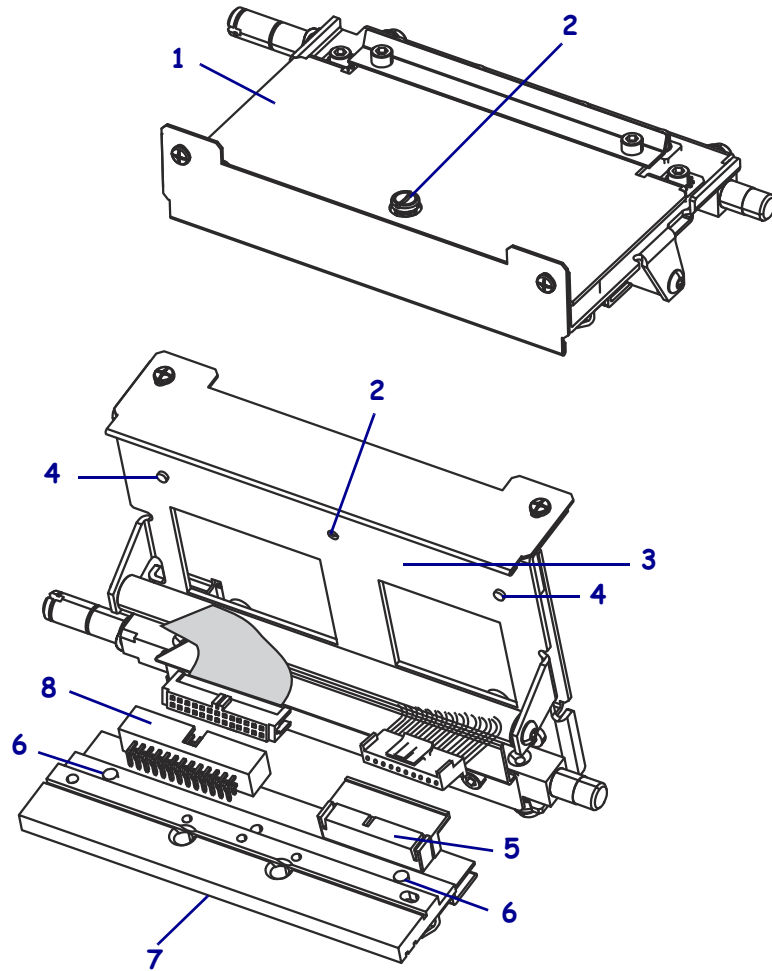


-
1. **Caution** • An improperly connected printhead data or power cable may cause the printhead to generate excessive heat and/or a false HEAD COLD message to display while the printhead is hot enough to cause severe burns. Allow the printhead to cool.
-

See [Figure 36](#). Reconnect the printhead power cable and the data cable to their appropriate connectors on the printhead. Seat both connectors firmly in place.

2. Fit the printhead into the mounting bracket by aligning the printhead alignment posts into the printhead alignment holes.
3. Verify that the printhead is seated properly. Carefully guide the printhead mounting screw into the printhead's aluminum body. After the screw is aligned properly, tighten it until snug.
Do not over-tighten.
4. Position the toggles so that they are evenly distributed across the width of the media and adjusted to provide equal pressure to the pressure bar mounting bracket.

**Figure 36 • Printhead and Bracket Alignment
(LH Version Shown)**



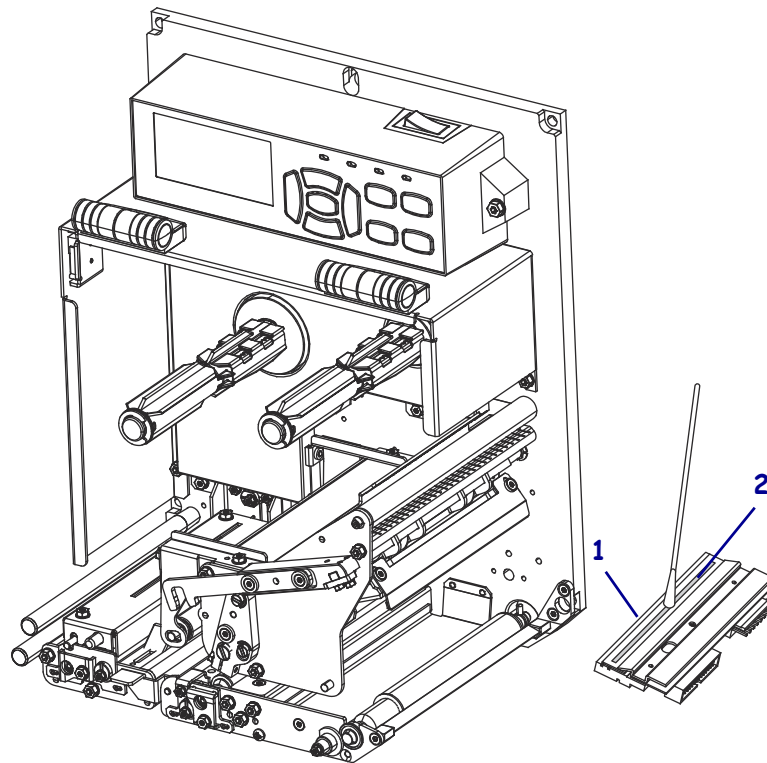
1	Print mechanism assembly
2	Printhead mounting screw
3	Printhead assembly mounting bracket
4	Printhead alignment post (2)
5	Printhead power connector
6	Printhead alignment hole (2)
7	Printhead
8	Printhead data connector

Clean the Printhead

1. See [Figure 37](#). Using the Zebra Preventive Maintenance Kit* (p/n: 47362), apply the cleaning solution to the cotton swab and clean the print element (gray area) of the new printhead.

*In place of the Preventive Maintenance Kit, you may use a clean swab dipped in a solution of isopropyl alcohol (minimum 90%) and deionized water (maximum 10%).

Figure 37 • Cleaning the Printhead

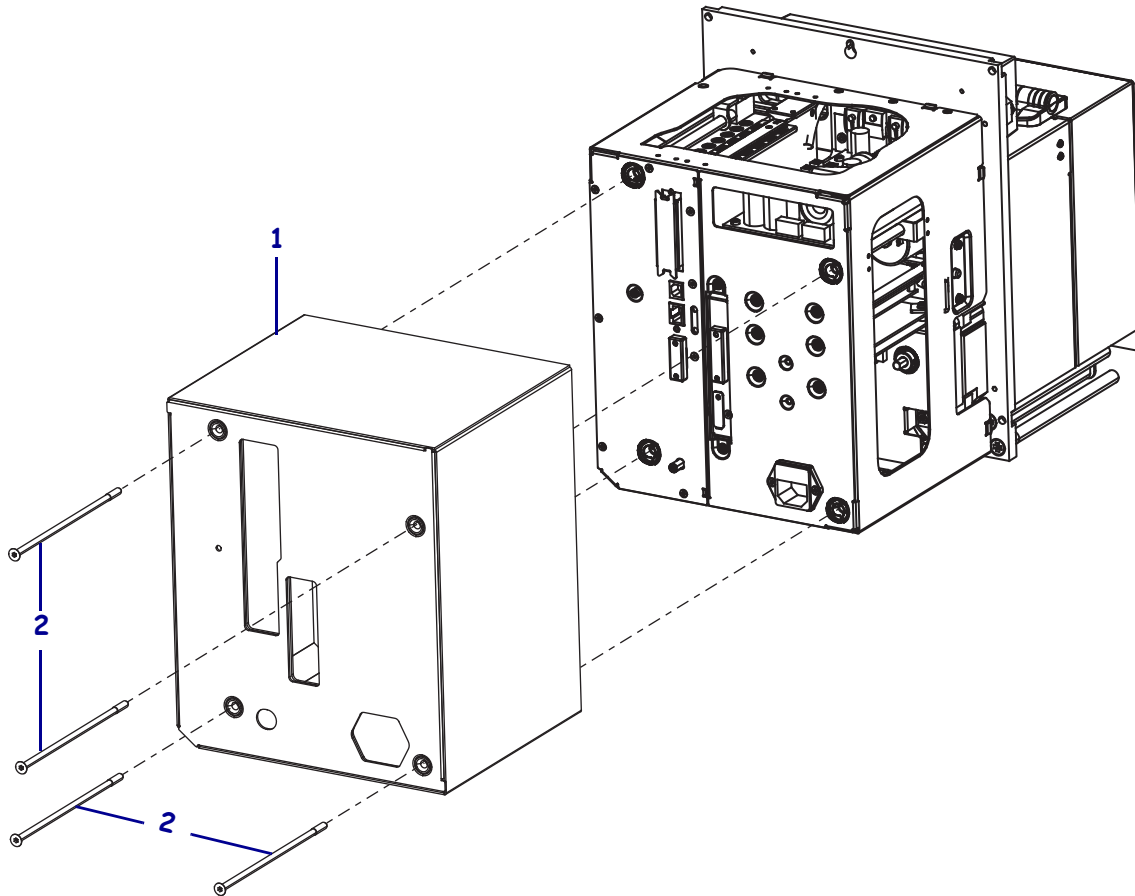


1	Printhead
2	Printhead elements (gray area)

Remove the Electronics Cover

1. See [Figure 38](#). Remove the four long mounting screws securing the electronics cover.

Figure 38 • Electronics Cover



1	Electronics cover
2	Electronics cover mounting screws (4)

2. Slide the electronics cover off of the print engine.

Open the Electronics Enclosure

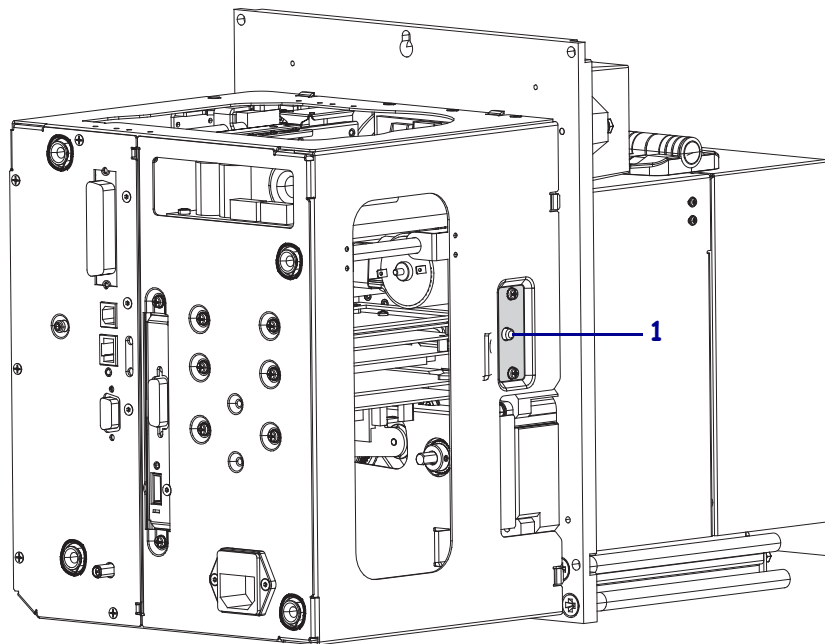
1. See [Figure 39](#). Locate the latch.



Note • For right-hand models, the latch is on the right side when looking from the back of the print engine. For left-hand models, the latch is on the left side.

2. Press the latch and swing the electronics enclosure open.

Figure 39 • Locate the Latch



1	Latch
----------	-------

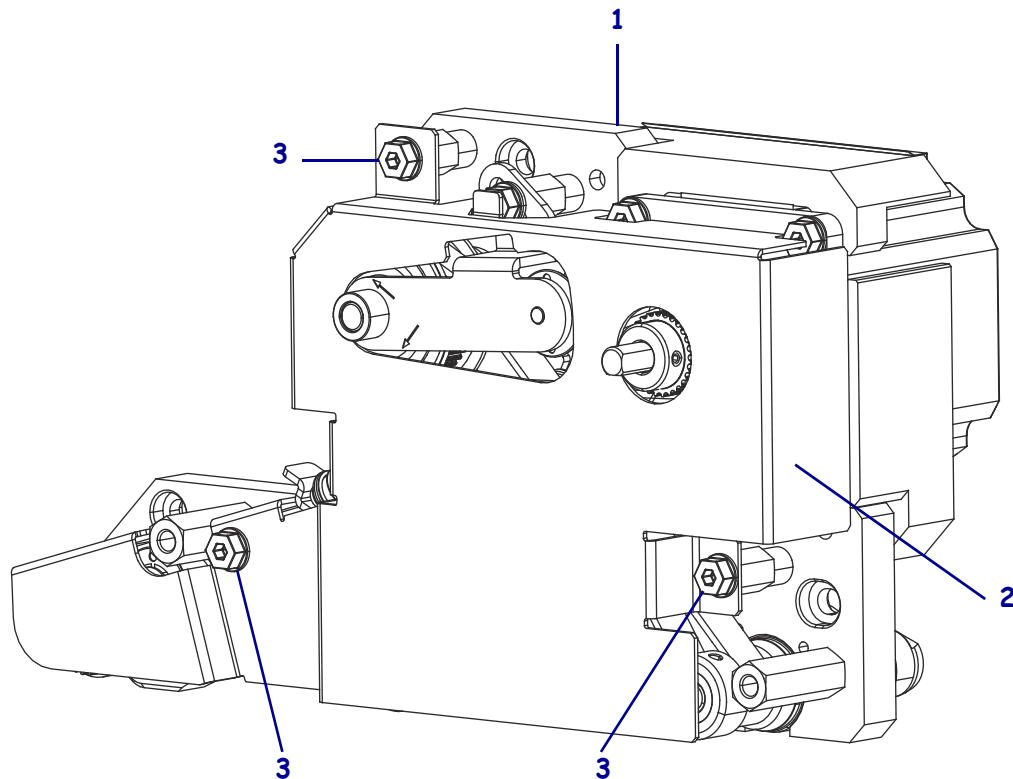
Remove the Drive System Cover

1. See [Figure 40](#). To remove the cover, loosen the three mounting screws.



Note • The three mounting screws are captive.

Figure 40 • Drive System Cover and Mounting Screws



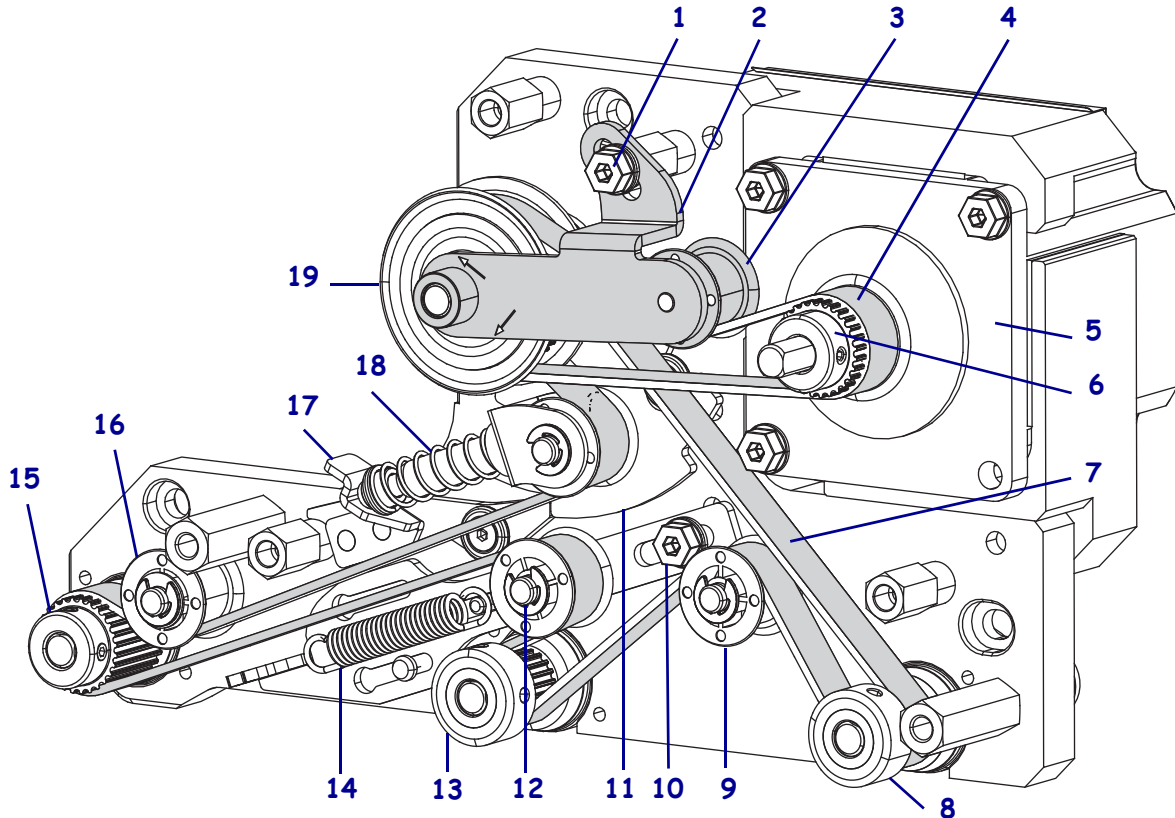
1	Drive system
2	Drive system cover
3	Cover mounting screws (3)

2. Lift off the drive system cover.

Remove the Belts

1. See [Figure 41](#). Note the location of the screw and washer in the stepper motor belt tensioner bracket.
2. Remove the mounting screw and washer securing the stepper motor belt tensioner bracket and slide the bracket assembly off of the compound pulley shaft.

Figure 41 • Drive System and Belt Path



1	Mounting screw and washer for stepper motor belt tensioner bracket
2	Stepper motor belt tensioner bracket (shaded)
3	Stepper motor idler (shaded)
4	Stepper motor belt (shaded)
5	Stepper motor
6	Stepper motor pulley
7	Platen belt
8	Pinch pulley
9	Pinch idler
10	Mounting screw for locking tensioner

11	Dynamic tensioner mounting plate
12	Locking tensioner idler
13	Peel pulley
14	Locking tensioner spring
15	Platen pulley
16	Platen idler
17	Dynamic tensioner latch
18	Dynamic tensioner
19	Compound pulley

3. Remove the stepper motor belt.
4. Loosen the mounting screw on the locking tension idler.
5. While pushing the locking tension idler toward the platen pulley (and against the spring), tighten the mounting screw on the locking tension idler.
6. Compress and swing the dynamic tensioner up slightly and out of its home position.
7. Push up on the dynamic tensioner latch to disengage the dynamic tensioner mounting plate. Swing the idler bracket to release the platen belt.
8. Remove the platen belt from all pulleys and idlers.

Remove the Compound Pulley



1. **Caution** • Wear protective eyewear when installing or removing E-rings, C-clips, snap rings, springs, and mounting buttons. These are under tension and could fly off.

Remove the E-ring from the compound pulley shaft.

2. Slide the compound pulley off of the shaft.



Note • Save the old printhead and compound pulley for reverse conversion.

Replace the Compound Pulley

1. Slide the compound pulley on its shaft.



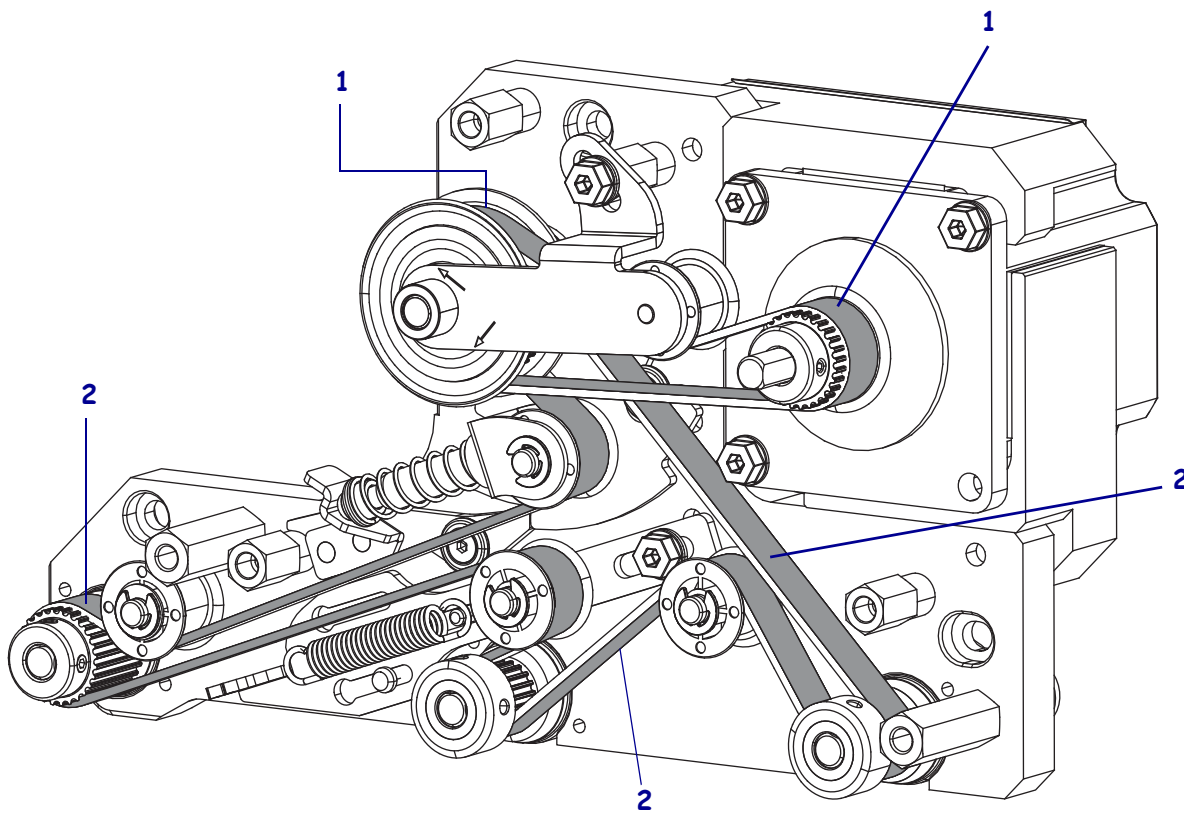
2. **Caution** • Wear protective eyewear when installing or removing E-rings, C-clips, snap rings, springs, and mounting buttons. These are under tension and could fly off.

Reinstall the E-ring from the compound pulley shaft.

Replace the Belts

1. Replace the platen belt on the compound pulley.
2. See [Figure 42](#). Thread the platen belt around all of the pulleys and idlers.

Figure 42 • Path for Drive Belts



1	Stepper motor belt (rests on the larger 48 groove pulley)
2	Platen belt (rests on the smaller 28 groove pulley)

3. Swing the dynamic tensioner down as you compress the spring until the end is resting on the latch (home position).

4. Rotate the dynamic tensioner mounting plate while pushing down on the dynamic tensioner latch to ensure that the latch is locked in place and tension is applied to the platen belt.
5. Loosen the mounting screw on the locking tension idler.
The locking tensioner is self-adjusting and will return to its normal tension.
6. Tighten the mounting screw on the locking tension idler.
7. Replace the stepper motor belt on the compound pulley and the stepper motor pulley.
8. Align the stepper motor belt tensioner bracket assembly on the compound pulley shaft.
Ensure that the idler rides on top of the stepper motor belt and that the belt is seated evenly on the stepper motor pulley.
9. Replace the mounting screw and washer for the stepper motor belt tensioner bracket.
10. Reset the stepper motor belt tensioner bracket to its original location and tighten the screw.



Important • The lower section of the stepper motor belt should be slightly taut. The middle of the belt should deflect upward approximately halfway to the bracket pulley under moderate finger pressure.

11. Turn the stepper motor pulley several times to confirm that all belts are seated and threaded correctly.

Replace the Drive System Cover

1. Align the drive system cover over the three mounting holes.
2. Reinstall the three mounting screws to secure the drive system cover.

Close the Electronics Enclosure

1. Ensure that all wires are routed properly and are not causing any obstructions, and then carefully swing the electronics enclosure closed.
2. Adjust the wire clips for the parallel port until they are touching the parallel port.
3. Slide the electronics cover onto the print engine.
4. Reinstall the four electronics cover mounting screws.

Reinstall the Print Engine in the Applicator

1. To reinstall the print engine into the applicator, carefully place the keyhole on the center mounting bolt.



Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.

2. Replace the four corner mounting screws securing the print engine to the applicator.
3. Tighten the center mounting bolt.

Resume Printer Operation

1. Open the front cover.
2. **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.

Unlatch the printhead lever, reinstall the media and ribbon, and close and latch the printhead lever.

3. Ensure that the printhead toggles are positioned evenly across the width of the media.
4. Reconnect the AC power cord and interface cables.
5. Turn on (I) the print engine.

The installation is complete.



Printhead Cables Maintenance Kit

Installation Instructions

This kit includes the parts and documentation necessary to install the Printhead Cables Maintenance Kit in the ZE500™ Series Print Engines. Read these instructions thoroughly before installing this kit.



Caution • This installation must be performed by a qualified service technician.



Note • The graphics and steps in this procedure are for the right-hand (RH) print engine. Steps for a left-hand (LH) print engine may be slightly different.

Parts List

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

Figure 43 • Kit Contents

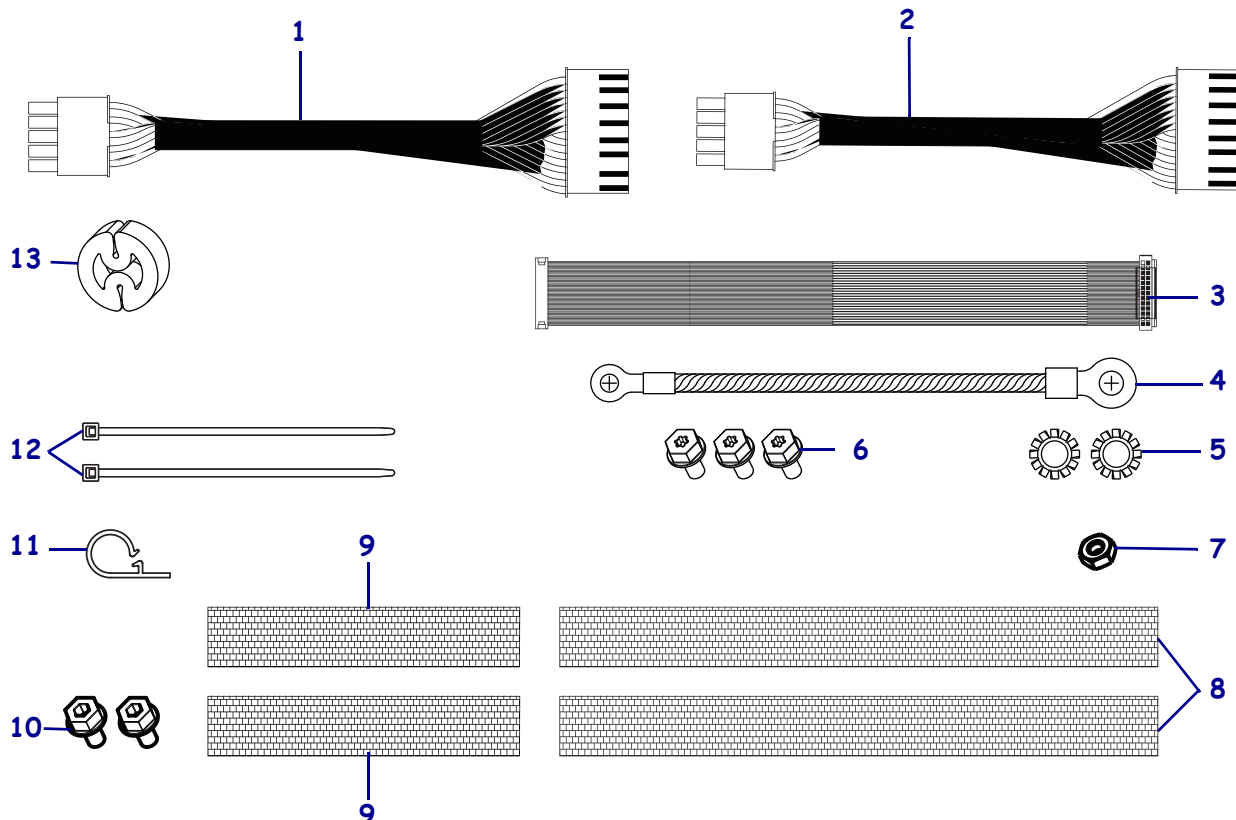


Table 15 • Parts List

✓	Item	Qty	Part Number	Description
	Ref	1	P1046696-007	ZE500 Series Printhead Cables Maintenance Kit
	1	1	N/A	Cable, Printhead Power (25 in.)
	2	1	N/A	Cable, Printhead Power ZE500-6 LH (27 in.)
	3	1	N/A	Cable, Printhead Data
	4	1	N/A	Cable, Braid 4 in.
	5	3	HW78827	Washer, External Lock (Qty. of 25)
	6	3	N/A	Screw, M3 × 8 Hx Tx Ni Flng
	7	1	N/A	Nut, 1/4-36 Uns-2B Hex
	8	2	N/A	Cauterized Wrap Protection
	9	2	N/A	Cauterized Wrap Protection (Short)
	10	2	N/A	Screw, M3 × 8 Hx So Zn (Qty. of 25)
	11	1	N/A	Cable Clamp, Screw Mount
	12	2	N/A	Cable Tie
	13	1	N/A	Plug, Printhead Sealing
N/A = Not available as a separate part (listed for identification purposes only).				

Tools Required



Tools • You need these tools to complete this procedure:

- Metric Hex Key (Allen Wrench) Set
- Torx Key Set
- Anti-Static Wriststrap and Mat
- 47362* Zebra Preventive Maintenance Kit
- Flat-blade Screwdriver Set
- Phillips Screwdriver Set
- Diagonal Cutter

* In place of the Preventive Maintenance Kit, you may use a clean swab dipped in a solution of isopropyl alcohol (minimum 90%) and deionized water (maximum 10%).

Remove Power and Data Cables, Ribbon, and Media



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

Connect yourself to an antistatic device.



2. **Caution** • Turn off (O) the print engine and disconnect it from the power source before performing the following procedure.

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


3. **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.

Open the media door, the printhead latch, and remove media and ribbon from the print engine.

4. Close the printhead latch, and then close the media door.

Remove Print Engine from Applicator

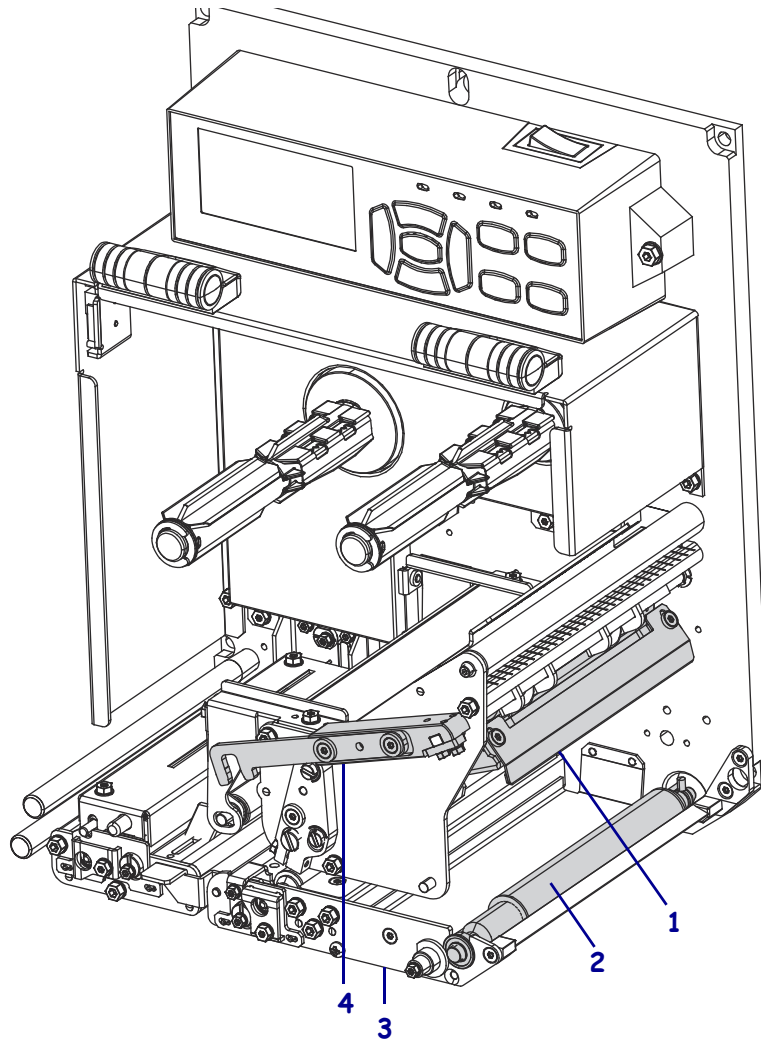
1. Does your applicator (or stand) permit open access to the rear of the print engine?

If you have an...	Then...
Open access	<p>You may swing the print engine open and work on it without removing the unit from the applicator.</p> <p>If you wish to remove the unit from the stand at any time, follow the instructions listed for the <i>Obstructed access</i> type applicator shown in this table.</p> <p>a. Go to <i>Remove the Electronics Cover</i>.</p>
Obstructed access	<p>You must remove the print engine from the applicator before you work on it.</p> <p>a. Remove the four corner mounting screws securing the print engine to the applicator.</p> <p>b. Loosen the center mounting bolt, but do not remove it.</p> <p> Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.</p> <p>c. Lift the print engine off the center mounting bolt and place on a workbench.</p>

Remove the Platen Roller

1. See [Figure 44](#). Using the printhead latch, open the printhead and press up until secured in the open position.

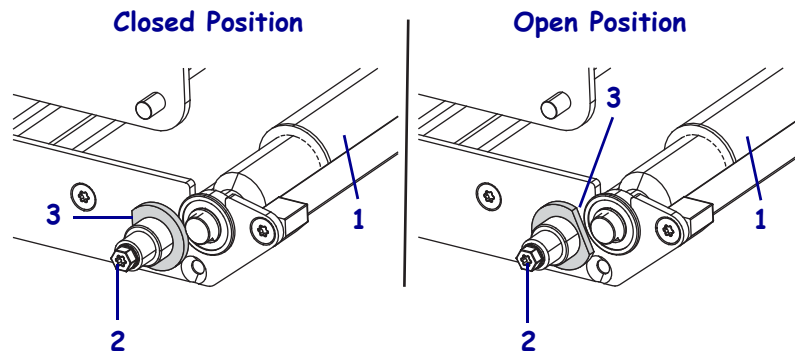
Figure 44 • Open Printhead



1	Printhead (shaded and shown in open position)
2	Platen roller (shaded)
3	Platen roller support plate
4	Printhead latch (shaded and shown in open position)

2. See [Figure 45](#). Using a Torx key, loosen the screw on the latch pin, and rotate the latch pin to the open position.

Figure 45 • Latch Pin



1	Platen roller
2	Latch pin screw
3	Latch pin (shaded)

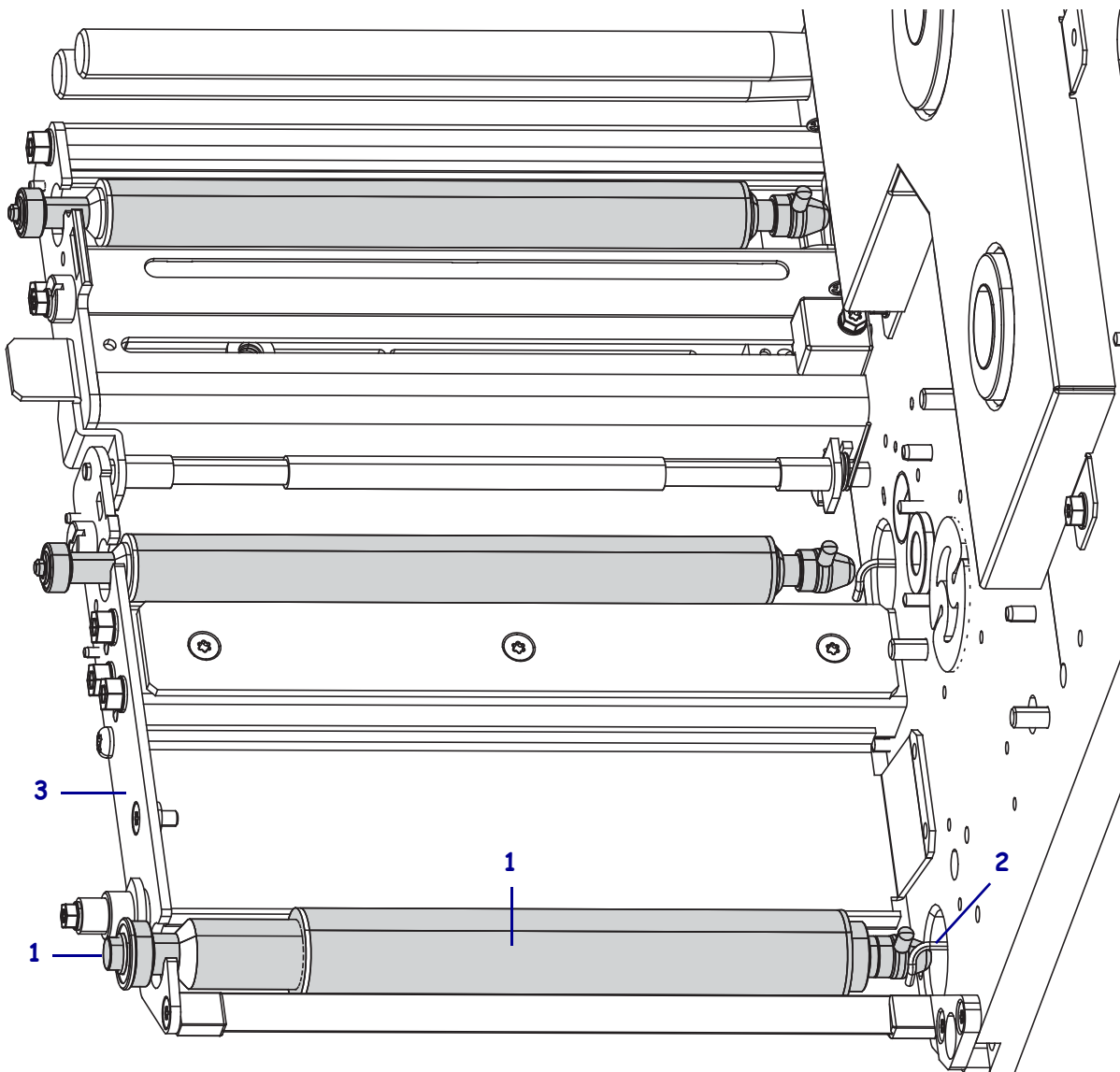
- See [Figure 46](#). Grasp the platen roller tightly and pull it toward the platen roller support plate to release the pin secured in the platen roller coupler.
 The outboard bearing will extend past the end of the platen roller support plate.



Note • You may have to turn the roller slightly to be able to remove the roller.

- Lift the platen roller out of the print engine.

**Figure 46 • Roller Locations
 (Top View with Subsystems Removed)**



1	Platen roller (shaded)
2	Platen roller coupler
3	Platen roller support plate

Remove the Peel Roller

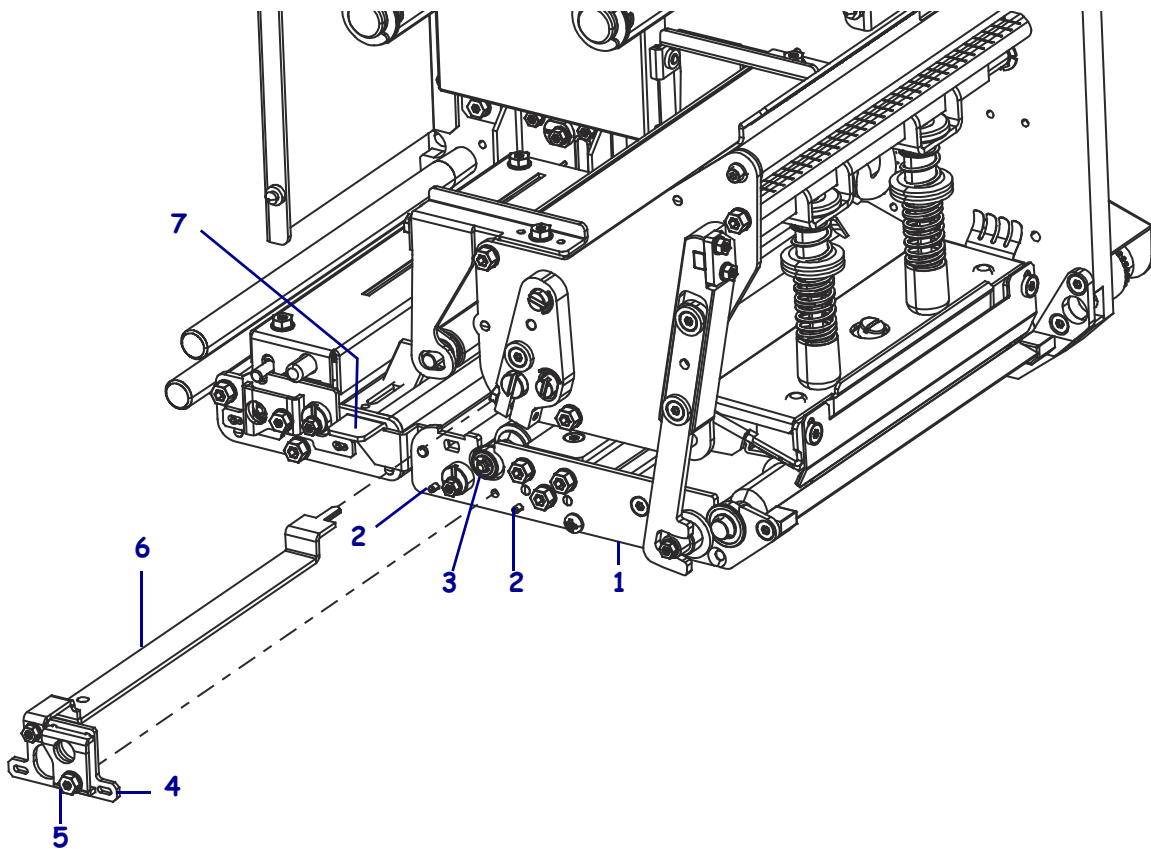
1. To open the peel roller bracket, push up on the latch.
2. See [Figure 47](#). To remove the peel roller cam plate, loosen the center mounting screw to release it from the platen roller support plate.



Note • The center mounting screw is captive within the peel roller cam plate.

3. Pull the peel roller cam plate (with the deflector plate attached) off of the two support pins on the platen roller support plate. Set the cam plate aside.

Figure 47 • Peel Roller



1	Platen roller support plate
2	Support pins
3	Peel roller
4	Peel roller cam plate
5	Peel roller cam plate center mounting screw
6	Peel roller deflector plate
7	Peel roller latch

4. Grasp the peel roller tightly and pull the peel roller toward the platen roller support plate to release the pin secured in the peel roller coupler.

The outboard bearing will extend past the end of the platen roller support plate.



Note • You may have to turn the roller slightly to be able to remove the roller.

5. Lift the peel roller out of the print engine.

Remove the Pinch Roller

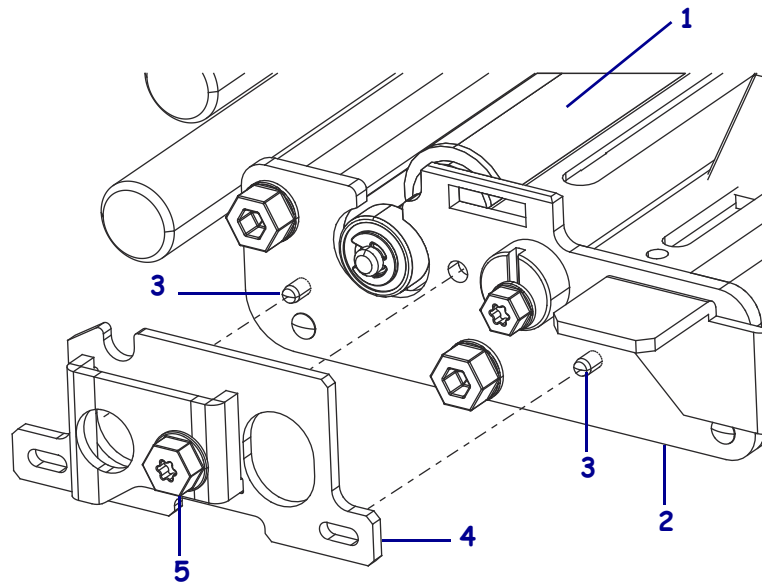
1. Open the upper pinch roller assembly by pressing on the release button located just above the pinch roller cam plate.
2. See [Figure 48](#). To remove the pinch roller cam plate, loosen the center mounting screw to release it from the pinch roller support plate.



Note • The center mounting screw is captive within the pinch roller cam plate.

3. Pull the cam plate off of the two support pins on the pinch roller support plate. Set the cam plate aside.

Figure 48 • Pinch Roller



1	Pinch roller (shaded)
2	Pinch roller support plate
3	Support pins
4	Pinch roller cam plate
5	Cam plate center mounting screw

4. Grasp the pinch roller tightly and pull the pinch roller toward the pinch roller support plate to release the pin secured in the pinch roller coupler.
The outboard bearing will extend past the end of the platen roller support plate.



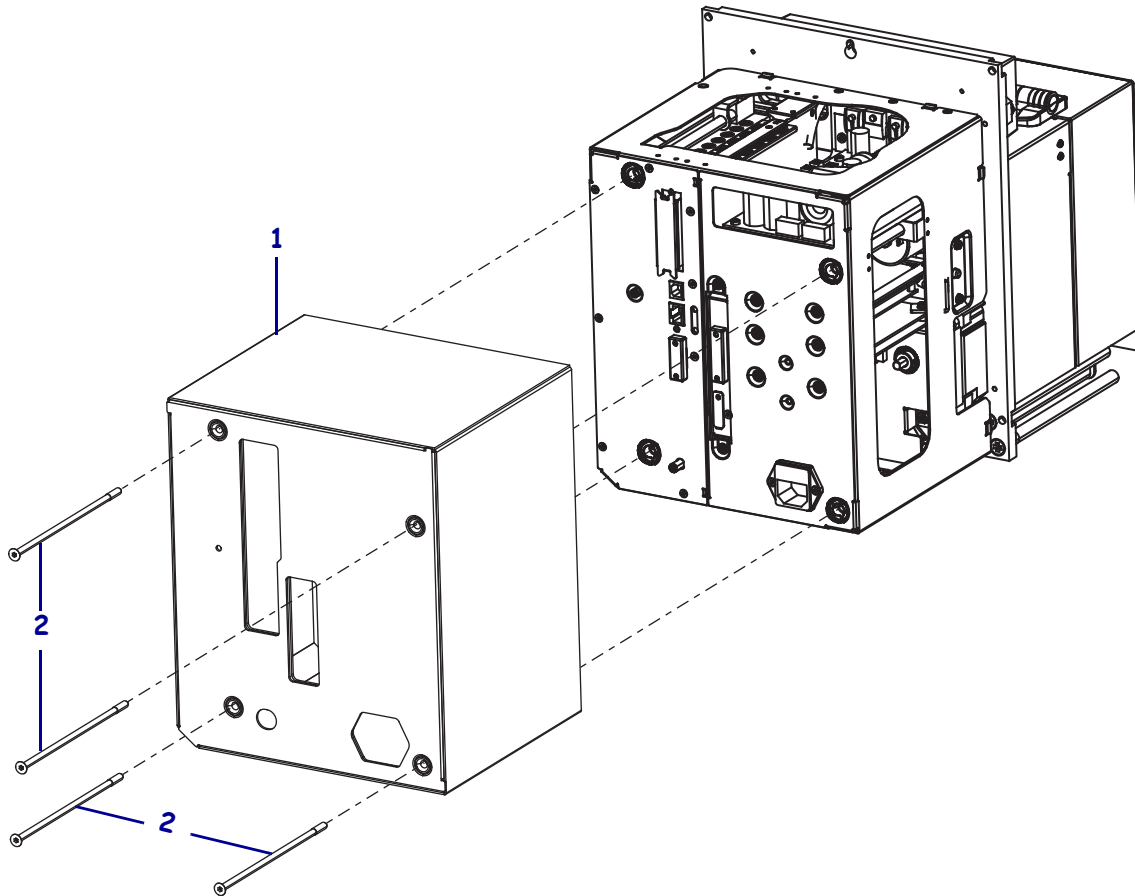
Note • You may have to turn the roller slightly to be able to remove the roller.

5. Lift the pinch roller out of the print engine.

Remove the Electronics Cover

1. See [Figure 49](#). Remove the four long mounting screws securing the electronics cover.

Figure 49 • Electronics Cover



1	Electronics cover
2	Electronics cover mounting screws (4)

2. Slide the electronics cover off of the print engine.

Open the Electronics Enclosure

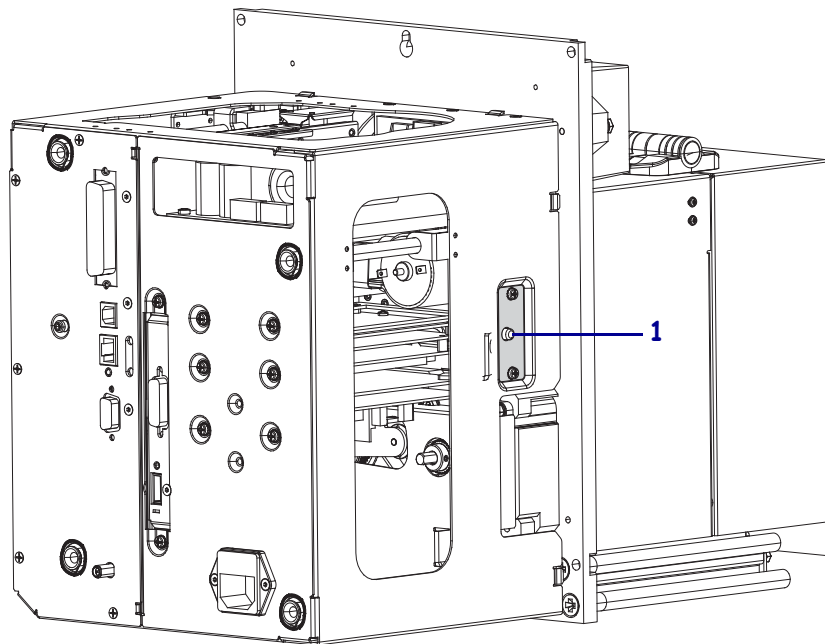
1. See [Figure 50](#). Locate the latch.



Note • For right-hand models, the latch is on the right side when looking from the back of the print engine. For left-hand models, the latch is on the left side.

2. Press the latch and swing the electronics enclosure open.

Figure 50 • Locate the Latch



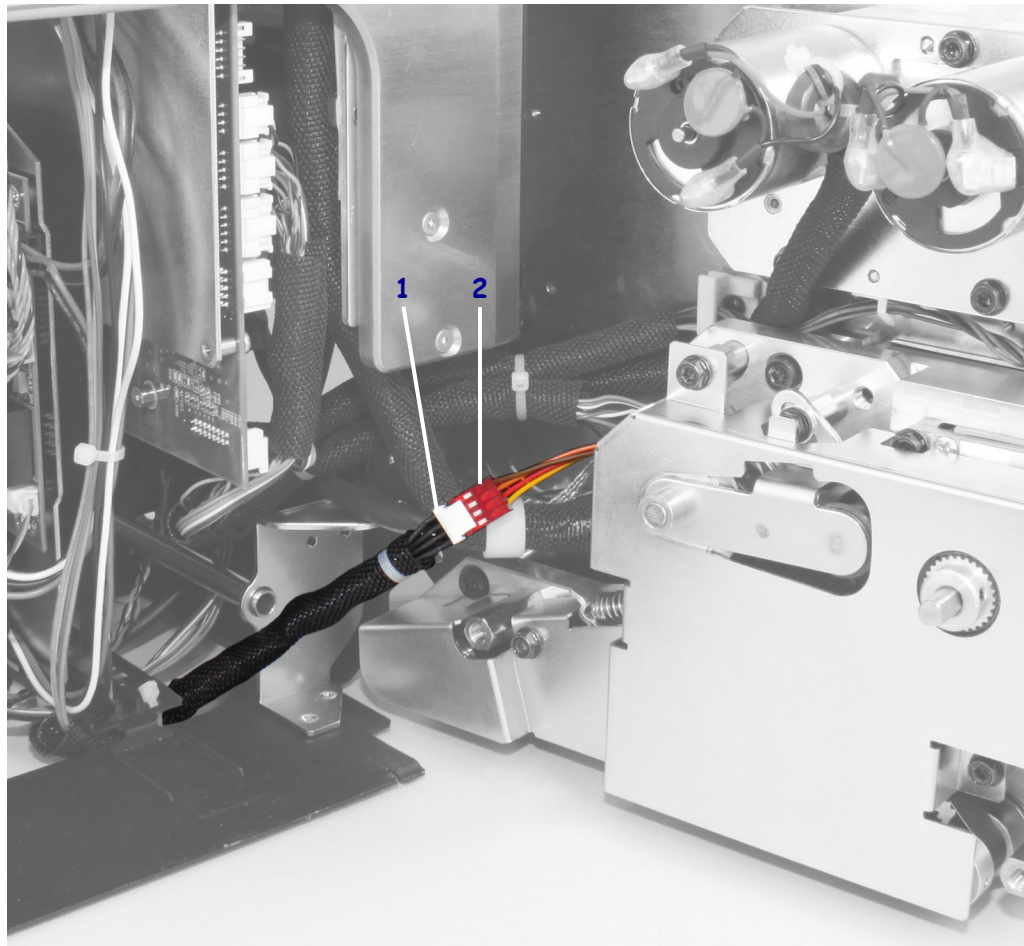
1	Latch
----------	-------

Remove the Drive System

1. See [Figure 51](#). Separate the drive system cable connectors.

The short part of the cable is wired to the stepper motor. The long part of the cable plugs into J4 on the DC power supply board.

Figure 51 • Drive System Cable



1	Long drive system cable goes to the DC power supply
2	Short drive system cable connector goes to the stepper motor

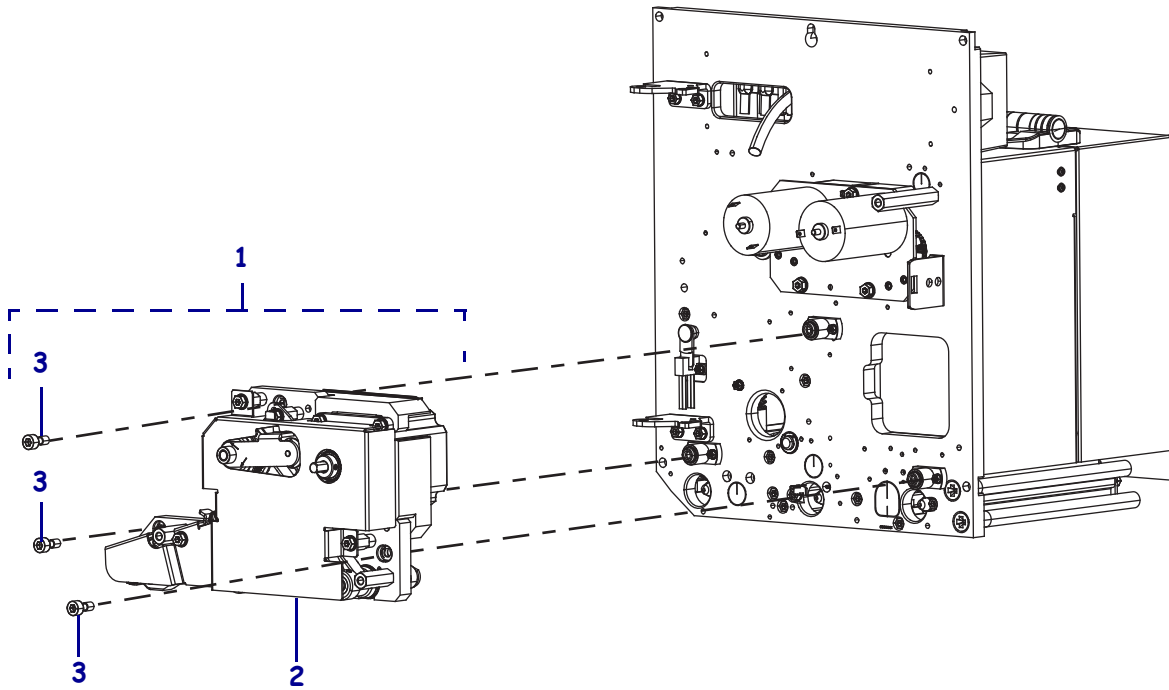
2. See [Figure 52](#). Loosen the three 4 mm mounting screws to release the drive system from the main frame.



Note • The three 4 mm mounting screws are captive within the drive system.

3. Remove the drive system from the main frame.

Figure 52 • Remove the Drive System



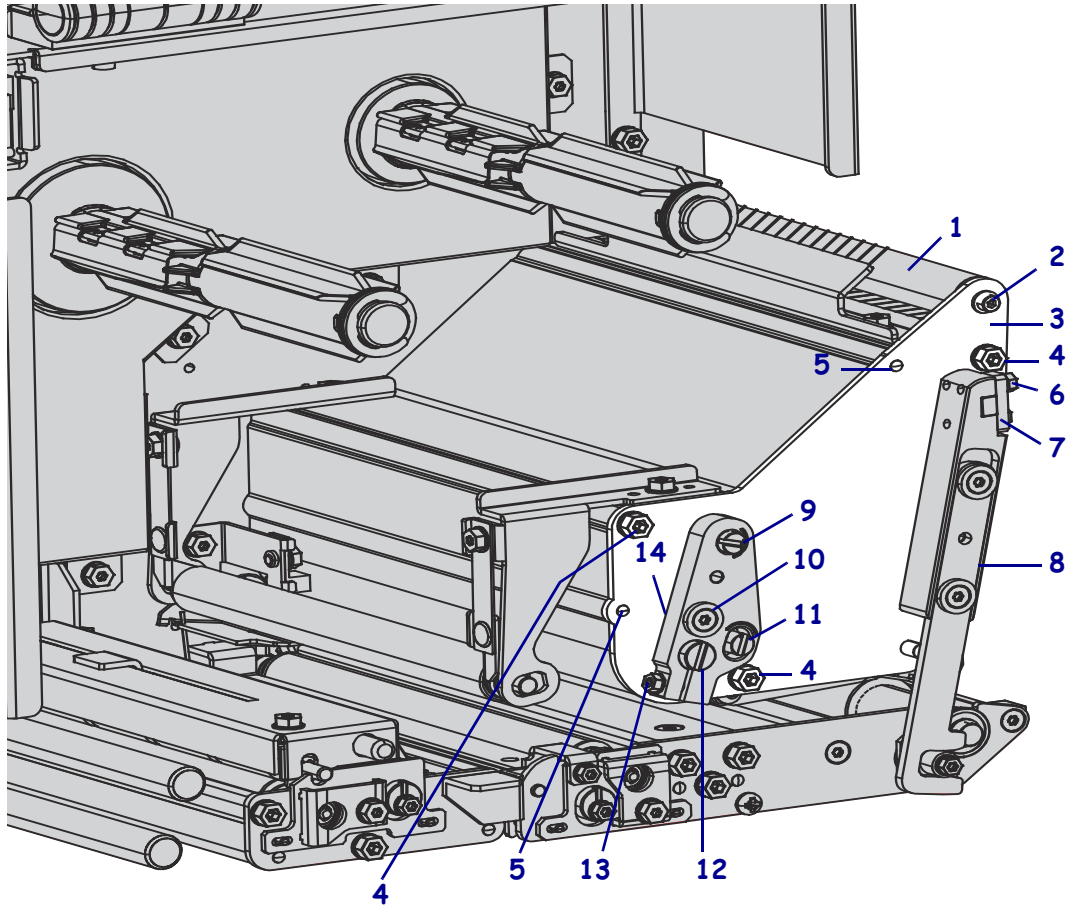
1	Drive system
2	Drive system cover
3	Drive system mounting screws (3)

Remove the Print Mechanism Extrusion End Plate



Note • See [Figure 53](#). Mark or note the location of the three print line adjusters: print line, balance, and skew.

Figure 53 • Print Mechanism Extrusion End Plate

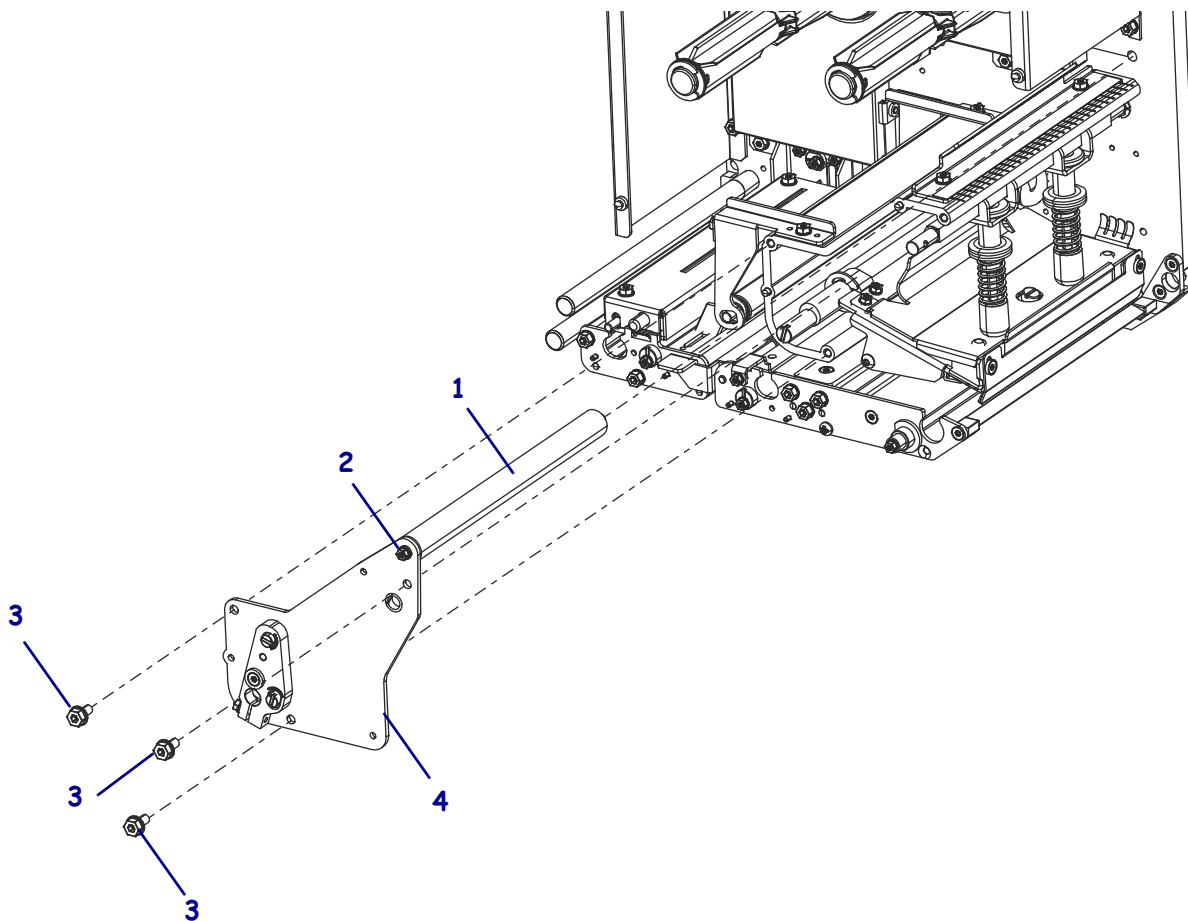


1	Upper ribbon guide roller	8	Printhead latch
2	Upper ribbon guide roller mounting screw	9	Balance adjuster
3	Print mechanism end plate (unshaded)	10	Printhead adjustment plate locking screw
4	End plate mounting screws (3)	11	Skew adjuster
5	Support pins (2)	12	Print line adjuster
6	Printhead latch screws (2)	13	Printhead adjustment plate clamp screw
7	Printhead latch clamping plate	14	Printhead adjustment plate

1. See [Figure 53](#). Loosen the two mounting screws securing the printhead latch clamping plate.
2. Slide the printhead latch off of the toggle bar to remove it.
3. Loosen the printhead adjustment plate clamp screw.
4. Loosen the printhead adjustment plate locking screw.

5. Remove the three screws securing the extrusion end plate.
6. See [Figure 54](#). Grasping the upper ribbon guide roller, gently pull the end plate off of the two support pins.
It is not necessary to disassemble the roller or its shaft from the end plate to remove it from the print engine.
7. Remove the upper ribbon guide roller mounting screw.

Figure 54 • Removing the Extrusion End Plate

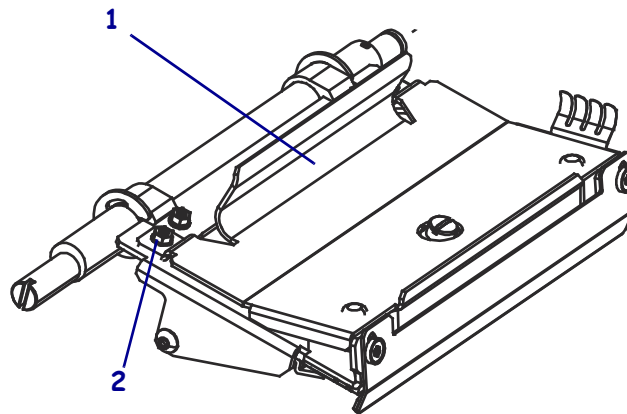


1	Upper ribbon guide roller
2	Upper ribbon guide roller mounting screw
3	Extrusion end plate mounting screw (3)
4	Extrusion end plate

Remove the Pressure Bar Mounting Bracket

1. See [Figure 55](#). Remove the outboard mounting screw and lock washer on the pressure bar mounting bracket.
2. Pull the print mechanism as far forward as possible.
3. Remove the inboard mounting screw, two lock washers and braided ground strap.
4. Lift the pressure bar mounting bracket off of the print mechanism.

Figure 55 • Pressure Bar Mounting Bracket



1	Pressure bar mounting bracket
2	Pressure bar mounting bracket mounting screws (2)

Remove the Print Mechanism

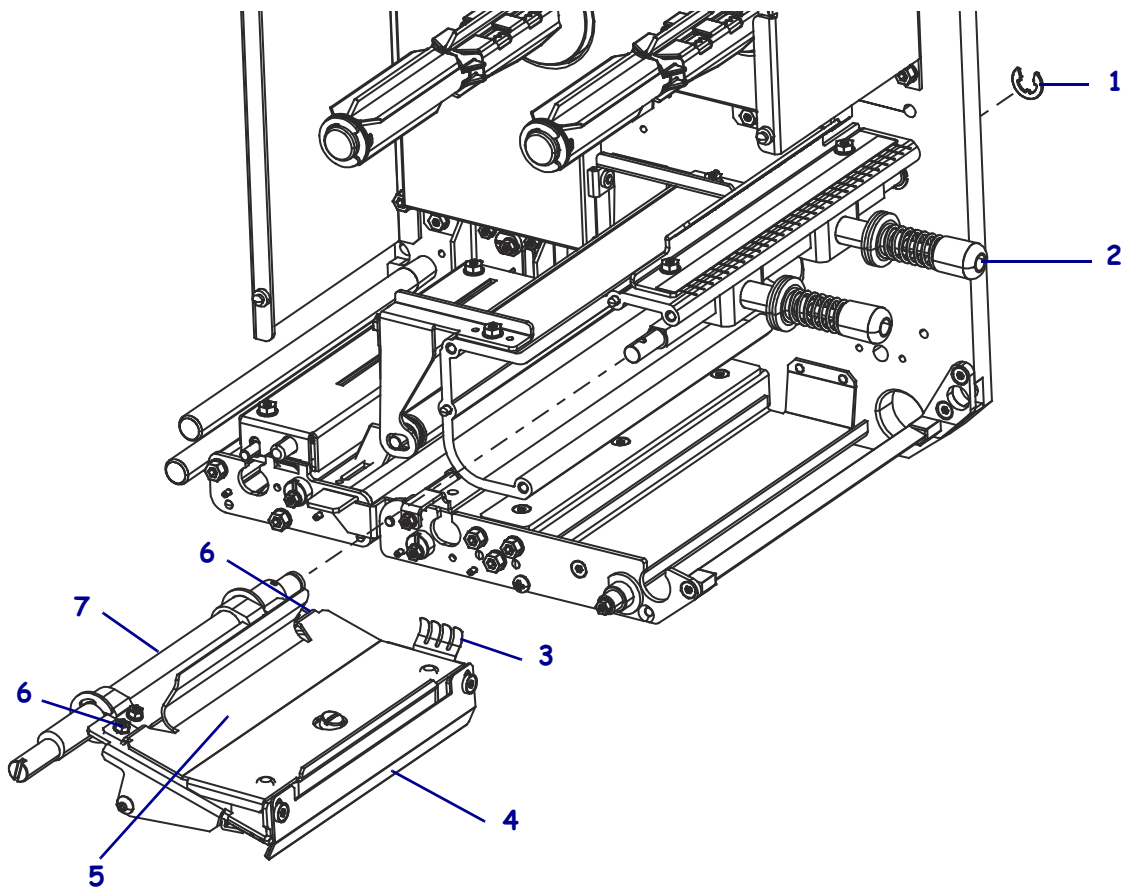


1. **Caution** • Wear protective eyewear when installing or removing E-rings, C-clips, snap rings, springs, and mounting buttons. These are under tension and could fly off.

From the electronics side, remove the large E-ring from the end of the print mechanism pivot bar.

2. See [Figure 56](#). Rotate the toggles to the “up” position to assist in the removal and replacement of the print mechanism.

Figure 56 • Print Mechanism



1	Large E-ring
2	Toggles (2) (shown in “up” position)
3	Ground fingers
4	Print mechanism
5	Pressure bar mounting bracket
6	Pressure bar mounting bracket screws (2)
7	Print mechanism pivot bar

3. Completely remove the print mechanism from the print engine.

Replace the Print Mechanism

1. Route the printhead cables and the braided ground strap (if necessary) through the sealing plug.
2. Insert the plug and cables into the large hole in the main frame.
3. Which model of print engine do you have?




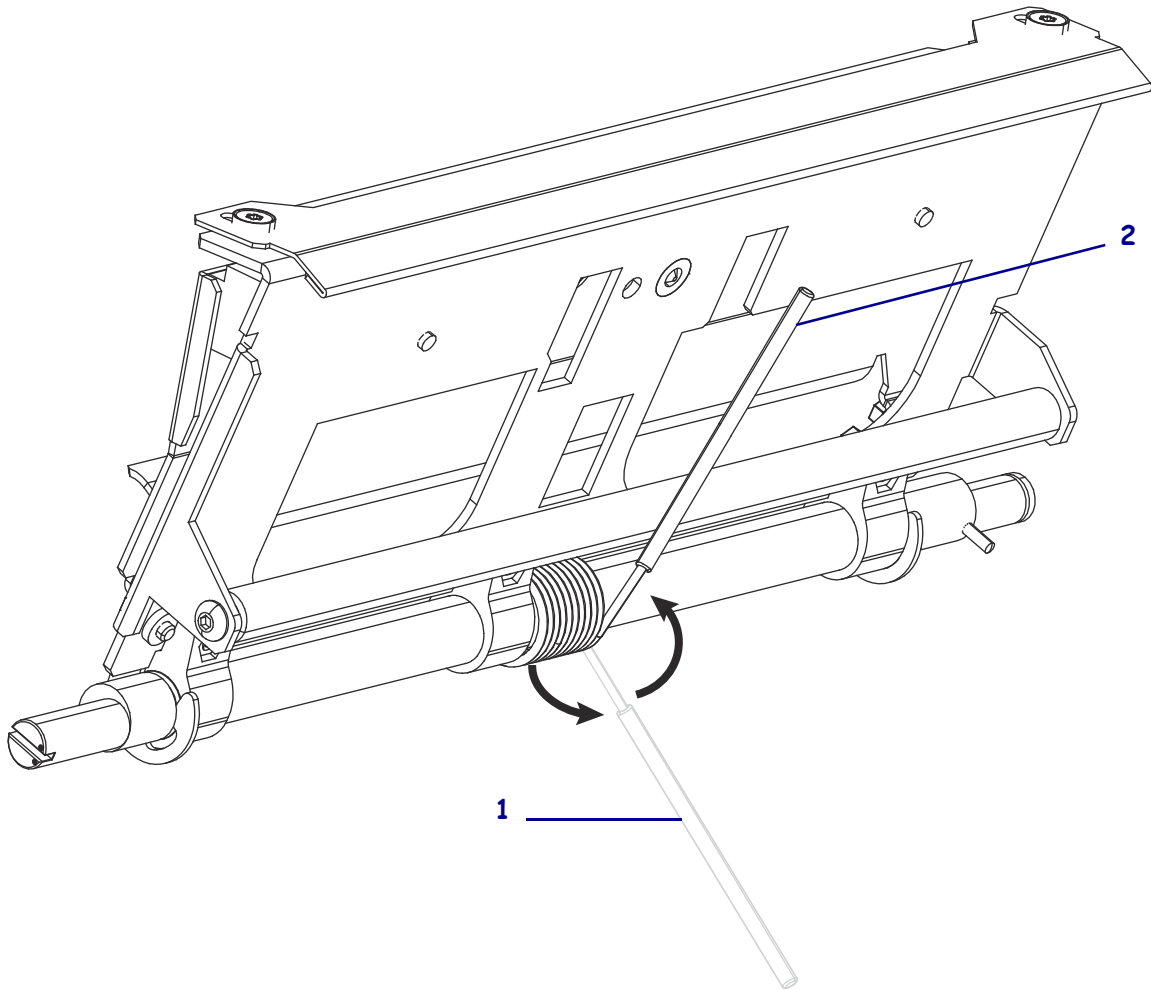
If you have a...	Then...
ZE500-4	<p>a. See Figure 56. Slide the end of the print mechanism pivot bar into the main frame.</p> <p> Note • The larger diameter of the pivot shaft must be oriented up. This position is critical.</p> <p>b. Continue with step 4.</p>
ZE500-6	<p> Caution • Wear protective eyewear when installing or removing E-rings, C-clips, snap rings, springs, and mounting buttons. These are under tension and could fly off.</p> <p>a. See Figure 57. Slide the small winding tube (provided in the kit) onto the exposed leg of the lift-assist spring.</p> <p>b. Rotate the spring approximately one revolution (or until it meets the underside of the print mechanism assembly). Do not remove the tube at this time.</p> <p>c. Using the tube, raise the spring leg up slightly as you slide the end of the print mechanism pivot bar into the main frame.</p> <p> Note • The larger diameter of the pivot shaft must be oriented up. This position is critical.</p> <p>d. Once the print mechanism is in place, lower the spring leg and slide the small tube off of the spring leg.</p> <p>e. Continue with step 4.</p>

Figure 57 • Lift-Assist Spring for ZE500-6 Print Engine



1	Winding tube and spring leg (grayed out and in mid-turn position)
2	Winding tube and spring leg in final position



4. **Caution** • Wear protective eyewear when installing or removing E-rings, C-clips, snap rings, springs, and mounting buttons. These are under tension and could fly off.

From the electronics side, replace the E-ring on the pivot bar.

5. Replace the mounting screw and lock washers to secure the printhead and electronics enclosure ground straps.

Route and Connect the Printhead Cables



Caution • An improperly connected printhead data or power cable may cause the printhead to generate excessive heat and/or a false **HEAD COLD** message to display while the printhead is hot enough to cause severe burns. Allow the printhead to cool.

1. Which hand print engine do you have?

If you have a...	Then...
Right-hand model	<ol style="list-style-type: none"> a. Select the shorter (25 in.) power cable and the ribbon data cable from the kit. b. Continue with step 2.
Left-hand model	<ol style="list-style-type: none"> a. Select the shorter (27 in.) power cable and the ribbon data cable from the kit. b. Continue with step 2.

2. See [Figure 58](#). Insert both printhead cables in the large cable clamp on the enclosure hinge and close the clamp.



Note • If you wish to replace the large cable clamp, remove the nut and screw securing the large cable clamp on the enclosure hinge.

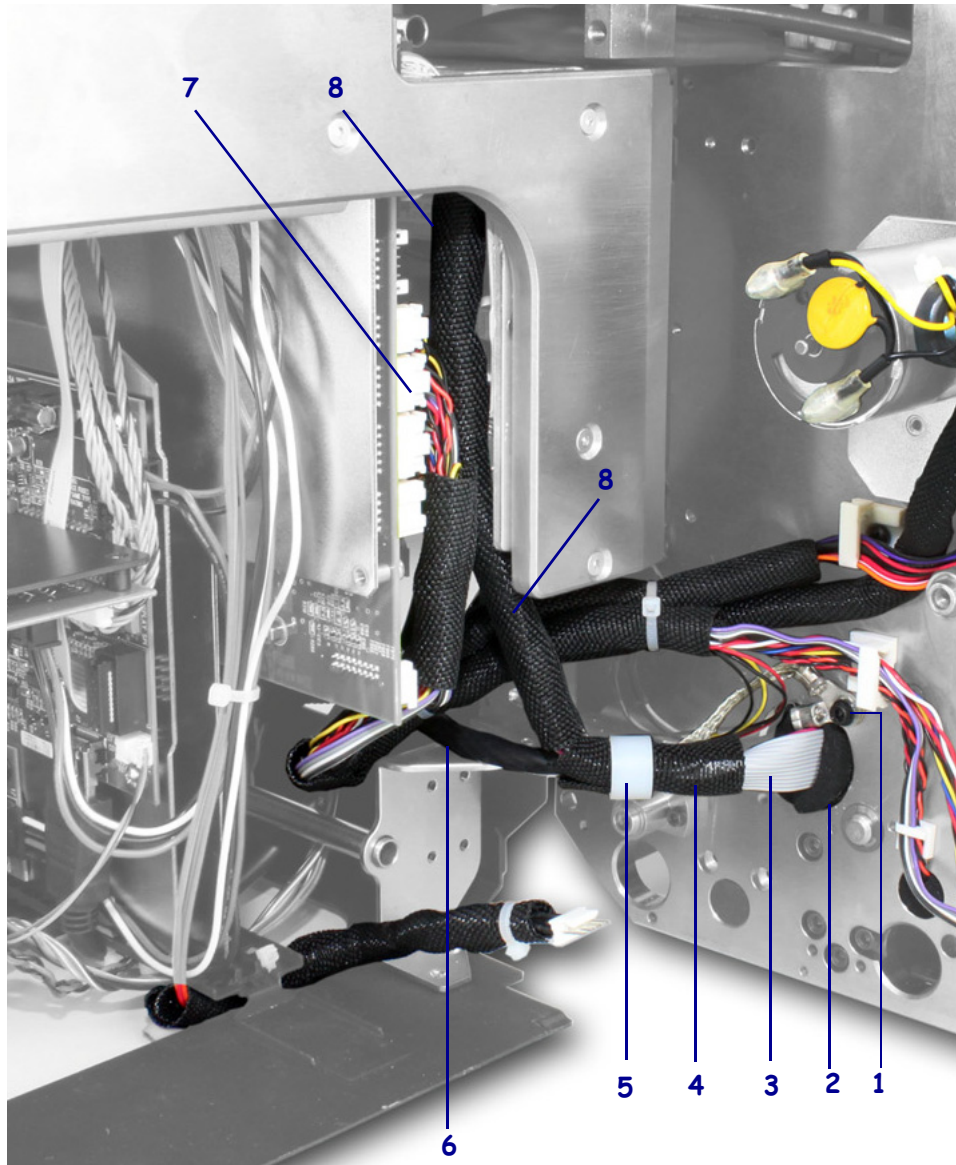
3. Are you replacing the printhead or the printhead cables?

If...	Then...
No	<ol style="list-style-type: none"> a. Go to Printhead Data Cable.
Yes	<ol style="list-style-type: none"> a. Thread the ground braid through the plug and the large hole in the main frame and into the electronics enclosure b. On the main frame wall and alongside of the large hole in the electronics enclosure, reinstall the mounting screw and lock washer to secure the two braided ground straps. c. Continue with Printhead Data Cable.

Printhead Data Cable

1. See [Figure 58](#). Insert and wrap the printhead ribbon data cable in the flexible conduit.

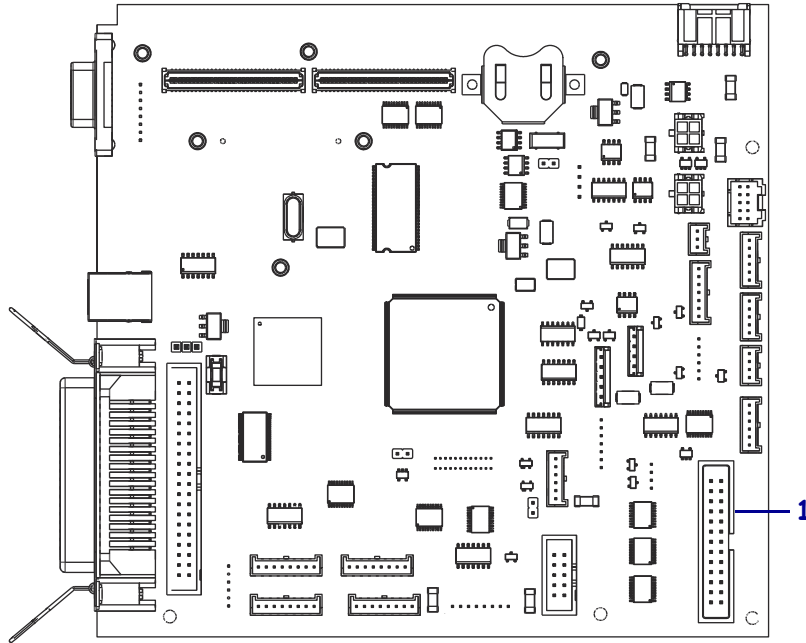
Figure 58 • Printhead Data Cable Routings



1	Braided cables mounting hole and screw
2	Large opening in main frame
3	Printhead data cable (flat ribbon)
4	Flexible conduit
5	Large cable clamp
6	Printhead power cable
7	Main logic board connectors
8	Printhead data cable (inside flexible conduit)

2. See [Figure 59](#). Connect the printhead data cable to P19 on the main logic board (MLB).

Figure 59 • MLB Power Supply Connections



1	P19: Printhead data cable
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3. See [Figure 58](#). Route the printhead data cable between the MLB and the AC power supply board in the electronics enclosure.

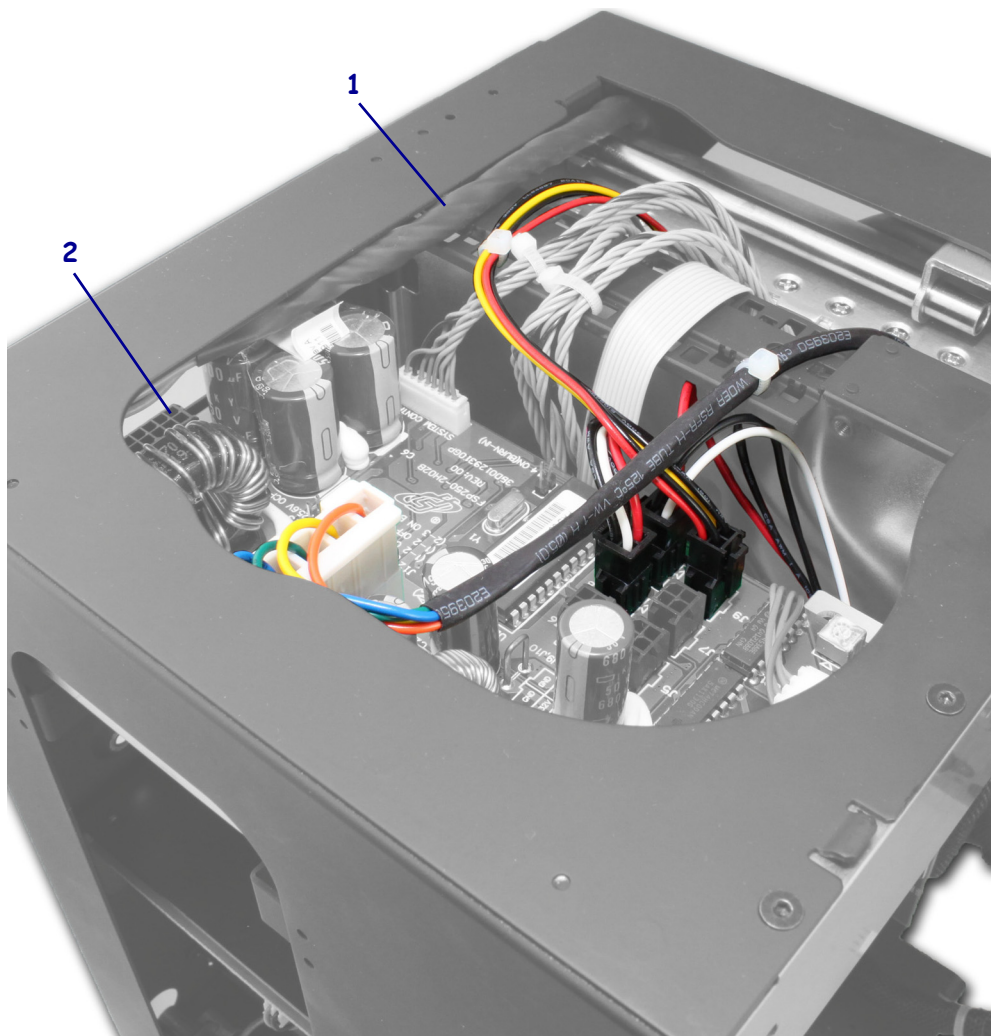
Printhead Power Cable



Note • The graphics and steps in this procedure are for the right-hand (RH) print engine. Steps for a left-hand (LH) print engine may be slightly different.

1. See [Figure 60](#). Route the printhead power cable as follows:
 - a. Over the upper half of the hinge in the electronics enclosure
 - b. Across the side (visible through the cutout section)
 - c. Up to the top and between the side of the enclosure and the AC power supply
 - d. Over the top of the chassis rail, and
 - e. Across the top of the DC power supply board

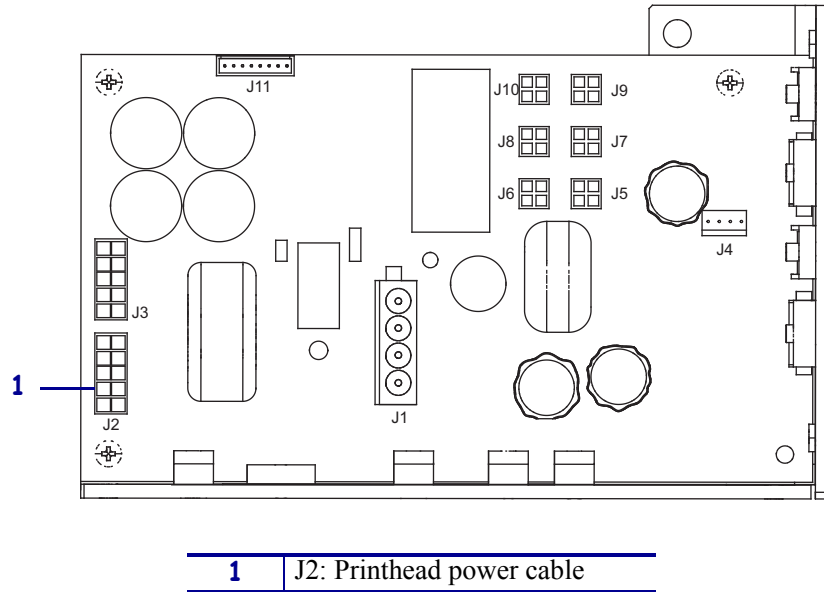
Figure 60 • Printhead Power Cable Routing



1	Printhead power cable
2	J3 connector on DC Power supply board

2. See [Figure 61](#). Connect the printhead power cable to J2 or J3 on the DC power supply board.

Figure 61 • DC Power Supply Connections



Replace the Pressure Bar Mounting Bracket

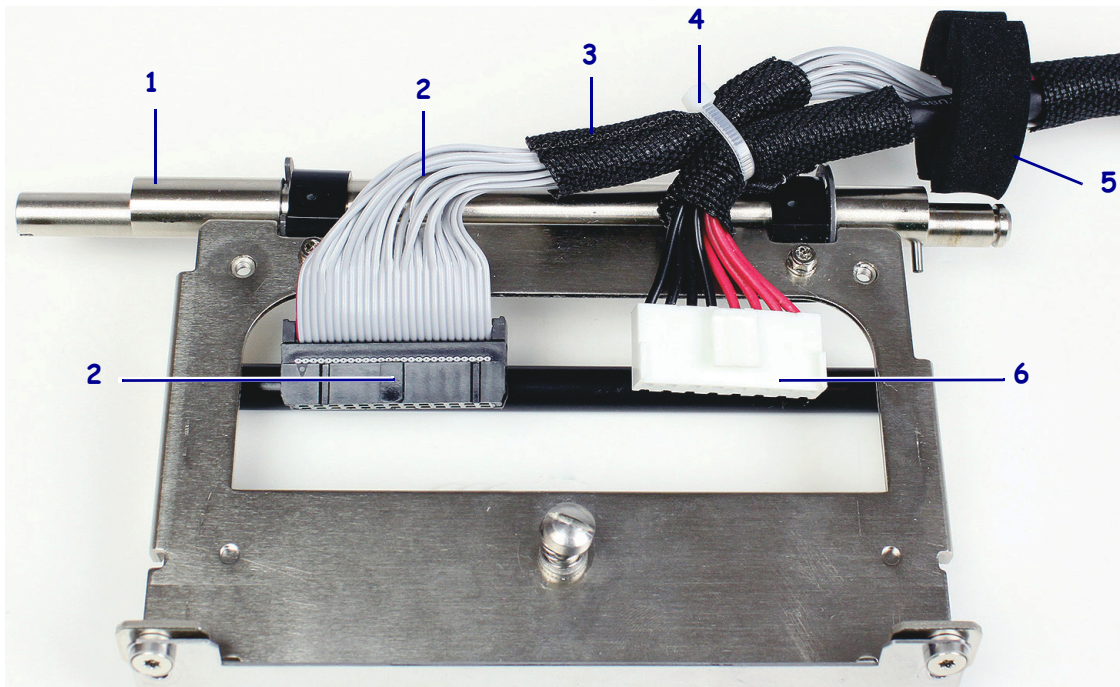


1. **Caution** • An improperly connected printhead data or power cable may cause the printhead to generate excessive heat and/or a false HEAD COLD message to display while the printhead is hot enough to cause severe burns. Allow the printhead to cool.

See [Figure 62](#). From the media side of the print engine, reinsert the printhead power and data cable connectors in their openings in the back of the printhead mounting bracket.

2. Align the pressure bar mounting bracket with the top of the print mechanism.
3. See [Figure 62](#). Position the printhead power and data cables so the length is adequate to connect the printhead.

Figure 62 • Print Mechanism with Printhead Cables



1	Print mechanism pivot bar	4	Cable tie
2	Printhead data cable	5	Sealing plug
3	Flexible conduit	6	Printhead power cable

4. Using a mounting screw and lock washer on the outboard end of the print mechanism, secure the pressure bar mounting bracket.
The outboard end is the side opposite the ground fingers.
5. Reinstall the mounting screw and lock washers to secure the ground strap to the pressure bar mounting bracket.



Note • The lock washers should be placed on both sides of the ground strap lug.

Replace the Print Mechanism Extrusion End Plate

1. See [Figure 53](#). Loosen the printhead adjustment plate locking screw enough to pivot the adjustment plate for assembly, if required.
2. See [Figure 54](#). Slide the upper ribbon guide roller onto the roller shaft, if necessary.
3. See [Figure 54](#). Align the end plate with the toggle bar and the print mechanism pivot bar.
4. Supporting the upper ribbon guide roller, insert the upper ribbon guide roller shaft into the main frame as you push the end plate onto the support pins.
5. Restore settings or place adjusters in the neutral position before tightening the printhead adjustment plate locking screw.
6. Reinstall the three end plate mounting screws securing the extrusion end plate.
7. Tighten the printhead adjustment plate locking screw.
8. Tighten the adjuster clamp screw.
9. Rotate the toggles onto the print mechanism.
10. Slide the printhead latch onto the toggle bar.
11. Tighten the two printhead latch clamping plate mounting screws.

Install the Printhead

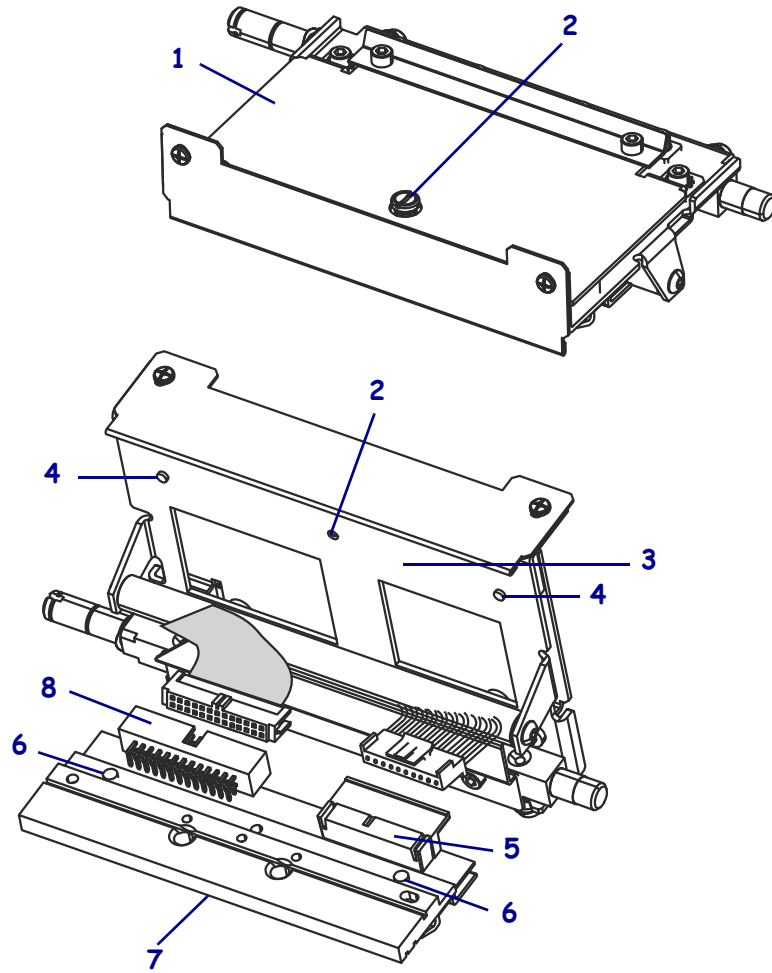


-
1. **Caution** • An improperly connected printhead data or power cable may cause the printhead to generate excessive heat and/or a false HEAD COLD message to display while the printhead is hot enough to cause severe burns. Allow the printhead to cool.
-

See [Figure 63](#). Reconnect the printhead power cable and the data cable to their appropriate connectors on the printhead. Seat both connectors firmly in place.

2. Fit the printhead into the mounting bracket by aligning the printhead alignment posts into the printhead alignment holes.
3. Verify that the printhead is seated properly. Carefully guide the printhead mounting screw into the printhead's aluminum body. After the screw is aligned properly, tighten it until snug.
Do not over-tighten.
4. Position the toggles so that they are evenly distributed across the width of the media and adjusted to provide equal pressure to the pressure bar mounting bracket.

**Figure 63 • Printhead and Bracket Alignment
 (LH Version Shown)**



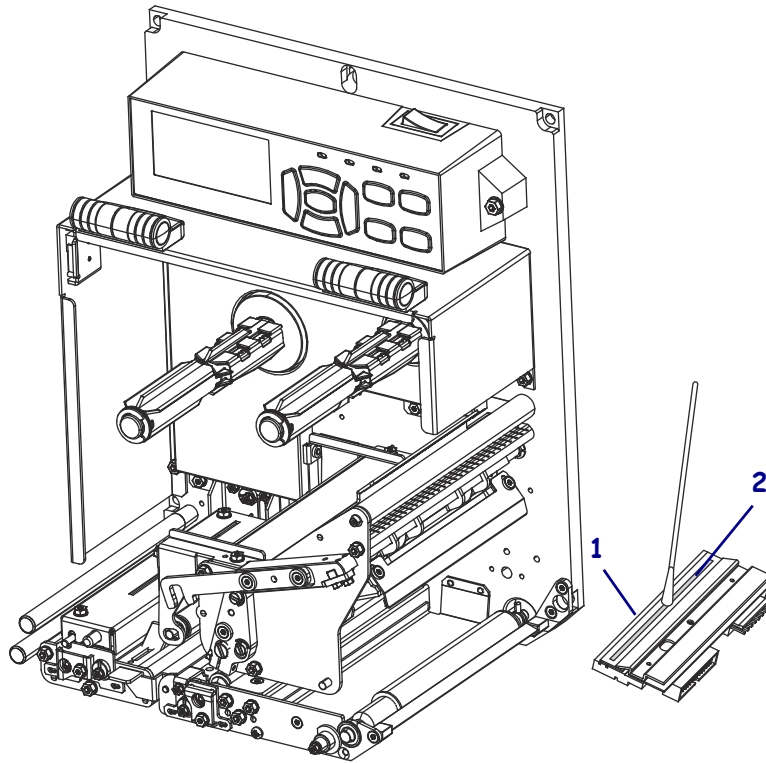
1	Print mechanism assembly
2	Printhead mounting screw
3	Printhead assembly mounting bracket
4	Printhead alignment post (2)
5	Printhead power connector
6	Printhead alignment hole (2)
7	Printhead
8	Printhead data connector

Clean the Printhead

1. See [Figure 64](#). Using the Zebra Preventive Maintenance Kit* (p/n: 47362), apply the cleaning solution to the cotton swab and clean the print element (gray area) of the new printhead.

*In place of the Preventive Maintenance Kit, you may use a clean swab dipped in a solution of isopropyl alcohol (minimum 90%) and deionized water (maximum 10%).

Figure 64 • Cleaning the Printhead



1	Printhead
2	Printhead elements (gray area)

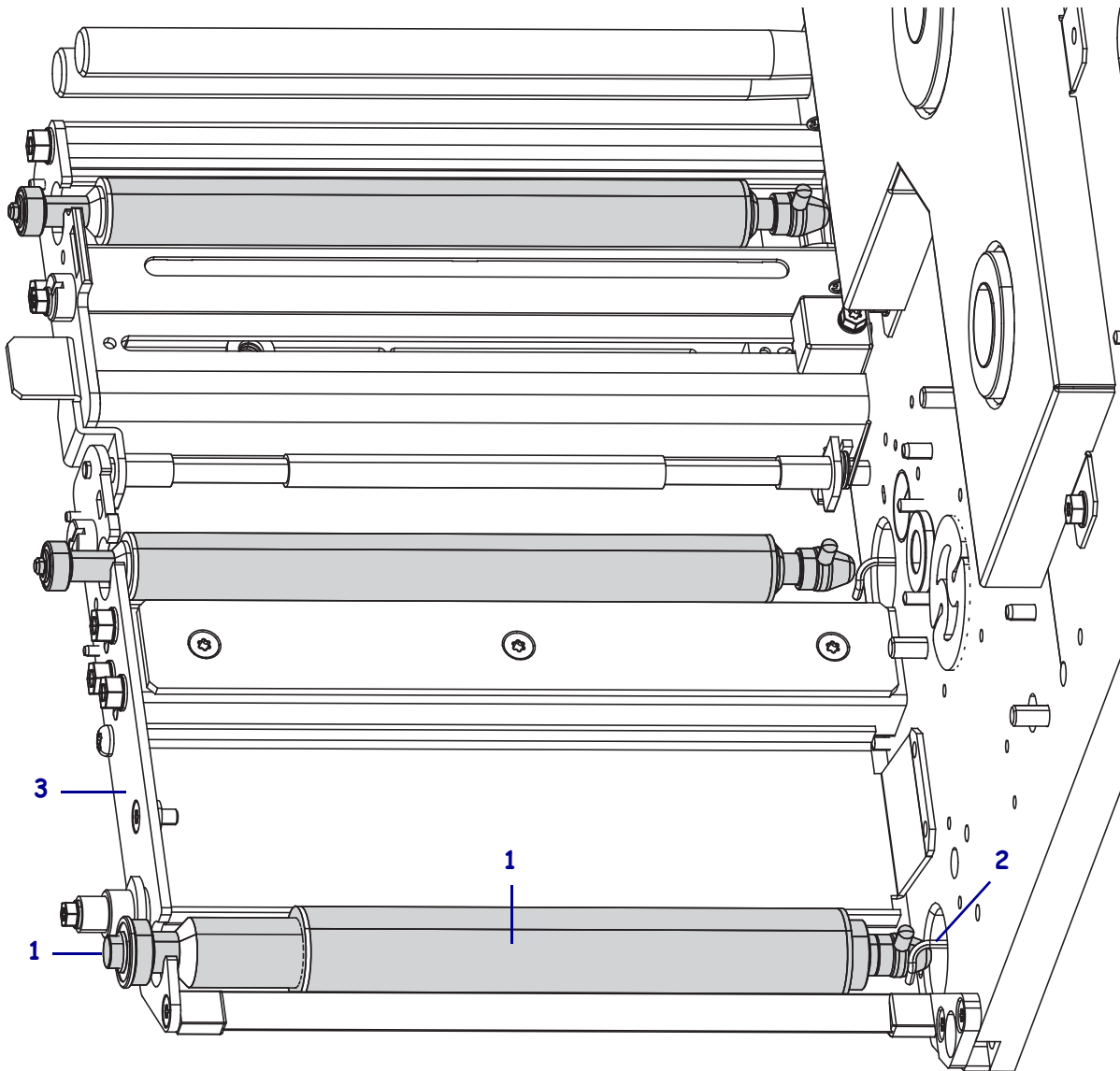
Reinstall the Drive System

1. See [Figure 52](#). Align the drive system with the drive system mounts on the main frame, and reinstall the three 4mm mounting screws.
2. See [Figure 51](#). Reconnect the stepper motor cable connectors. The short cable is wired to the drive motor. The long cable plugs into J4 on the DC power supply board.

Replace the Pinch Roller

1. See [Figure 65](#). Starting with the pin end of the roller, align the pin with the slot in the pinch roller coupler.

**Figure 65 • Roller Locations
(Top View with Subsystems Removed)**



1	Platen roller (shaded)
2	Platen roller coupler
3	Platen roller support plate

2. Lower the other end of the pinch shaft into the large hole on the pinch roller support plate.
3. Push the shaft into the pinch roller coupler to fully seat the pinch shaft.
You will hear a click when the pin is seated correctly or turn the roller slightly to confirm that the roller is firmly seated.
4. See [Figure 48](#). Replace the cam plate on the two support pins on the pinch roller support plate.
5. Reinstall the center mounting screw on the cam plate.
6. Close the upper pinch roller assembly.

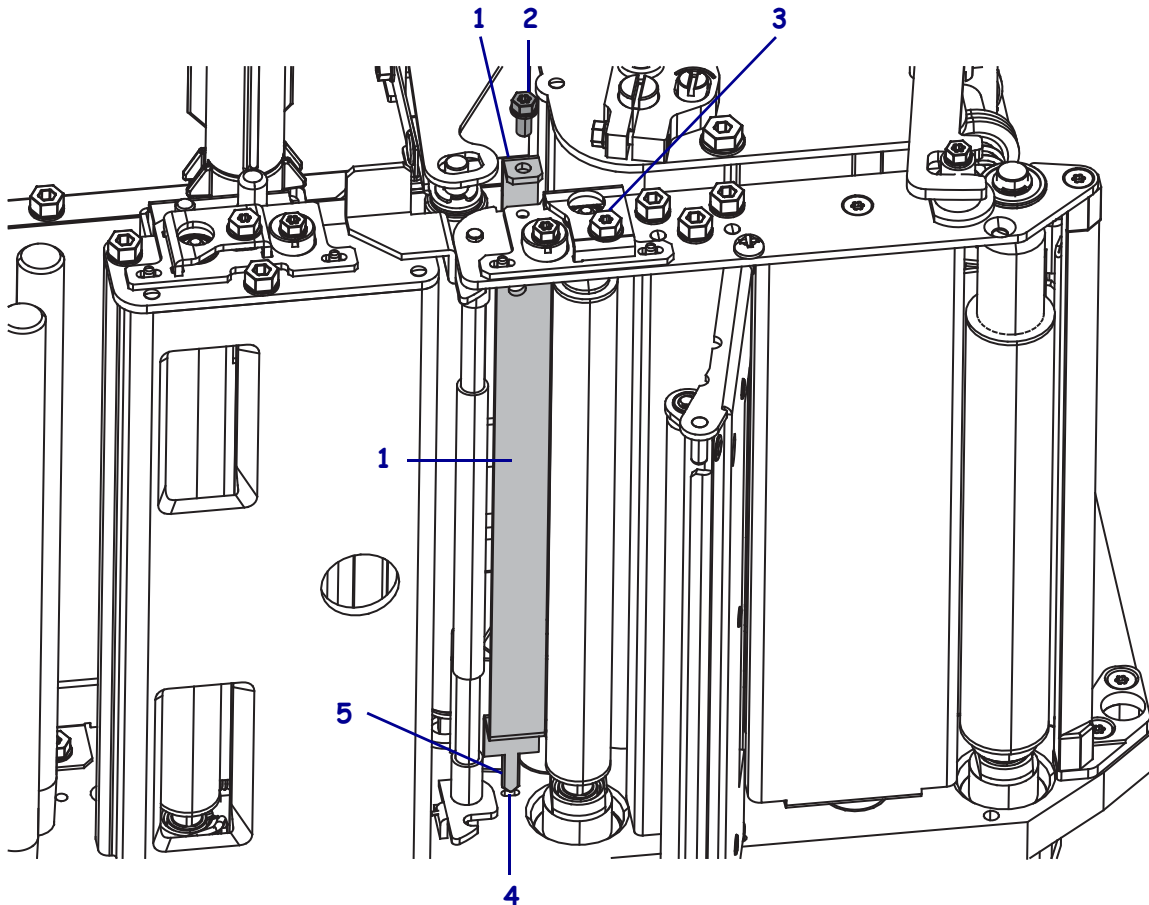
Replace the Peel Roller

1. Starting with the pin end of the roller, align the pin with the slot in the peel roller coupler.
2. Lower the other end of the peel roller shaft into the large hole on the platen roller support plate.
3. Push the shaft into the peel roller coupler to fully seat the peel shaft.
You will hear a click when the pin is seated correctly or turn the roller slightly to confirm that the roller is firmly seated.
4. See [Figure 66](#). Insert the tab on the deflector plate into the main frame slot.



Note • [Figure 66](#) shows the deflector plate separated from the platen roller cam plate. The deflector plate was designed to be attached to the cam plate during removal and installation.

Figure 66 • Deflector Plate



1	Deflector plate
2	Deflector plate mounting screw
3	Platen roller cam plate mounting screw
4	Slot
5	Tab

5. Replace the cam plate on the two support pins on the platen roller support plate.
6. Tighten the center mounting screw on the cam plate.
7. Close the peel roller bracket by pushing up until you hear the click.

Replace the Platen Roller

1. See [Figure 46](#). Starting with the pin end of the roller, align the pin with the slot in the platen roller coupler.
2. Lower the other end of the platen shaft into the large hole on the platen roller support plate.
3. Push the shaft toward the platen pulley to fully seat the platen shaft.
You will hear a click when the pin is seated correctly or turn the roller slightly to confirm that the roller is firmly seated.
4. See [Figure 45](#). Loosen the retaining screw for the platen latch pin, and rotate the latch pin to the closed position. Tighten the screw.
5. Close the printhead.

Close the Electronics Enclosure

1. Ensure that all wires are routed properly and are not causing any obstructions, and then carefully swing the electronics enclosure closed.
2. Adjust the wire clips for the parallel port until they are touching the parallel port.
3. Slide the electronics cover onto the print engine.
4. Reinstall the four electronics cover mounting screws.

Reinstall the Print Engine in the Applicator

1. To reinstall the print engine into the applicator, carefully place the keyhole on the center mounting bolt.



Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.

2. Replace the four corner mounting screws securing the print engine to the applicator.
3. Tighten the center mounting bolt.

Resume Printer Operation

1. Open the media cover.
2.

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.

Open the printhead latch, reinstall the media and ribbon, and close the printhead latch.

3. Reconnect the AC power cord and interface cables.
4. Turn on (I) the print engine.

Check the Print Line Quality

1. Check the print quality by performing a PAUSE Self-Test. Adjust the print line quality, if necessary.

For more detailed information on print line adjustments or the self-test, refer to the ZE500™ Series Print Engine Maintenance Manual in the Advanced User section.

The installation is complete.



Printhead Latch Maintenance Kit

Installation Instructions

This kit includes the parts and documentation necessary to install the Printhead Latch Maintenance Kit in the ZE500™ Series Print Engines. Read these instructions thoroughly before installing this kit.



Caution • This installation must be performed by a qualified service technician.

Parts List

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

Figure 67 • Kit Contents

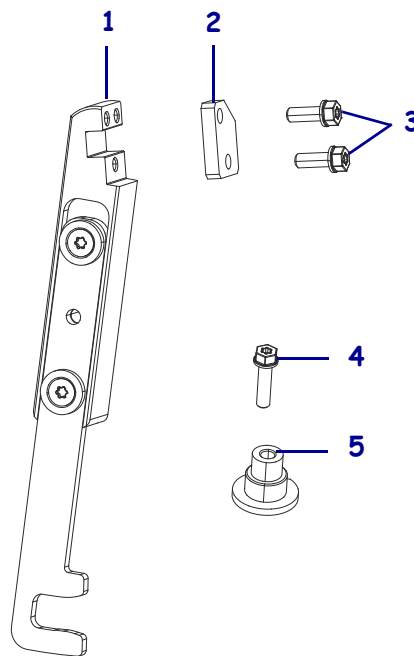


Table 16 • Parts List

✓	Item	Qty	Part Number	Description
	Ref	1	P1046696-008	Printhead Latch Maintenance Kit
	1	1	N/A	Printhead Latch Assembly
	2	1	N/A	Plate, Printhead Latch
	3	2	N/A	Screw, M3 ×8 Hx Tx Ni
	4	1	N/A	Screw, M3 ×0.5 × 8mm
	5	1	N/A	Pin, Latch

N/A = Not available as a separate part (listed for identification purposes only).

Tools Required



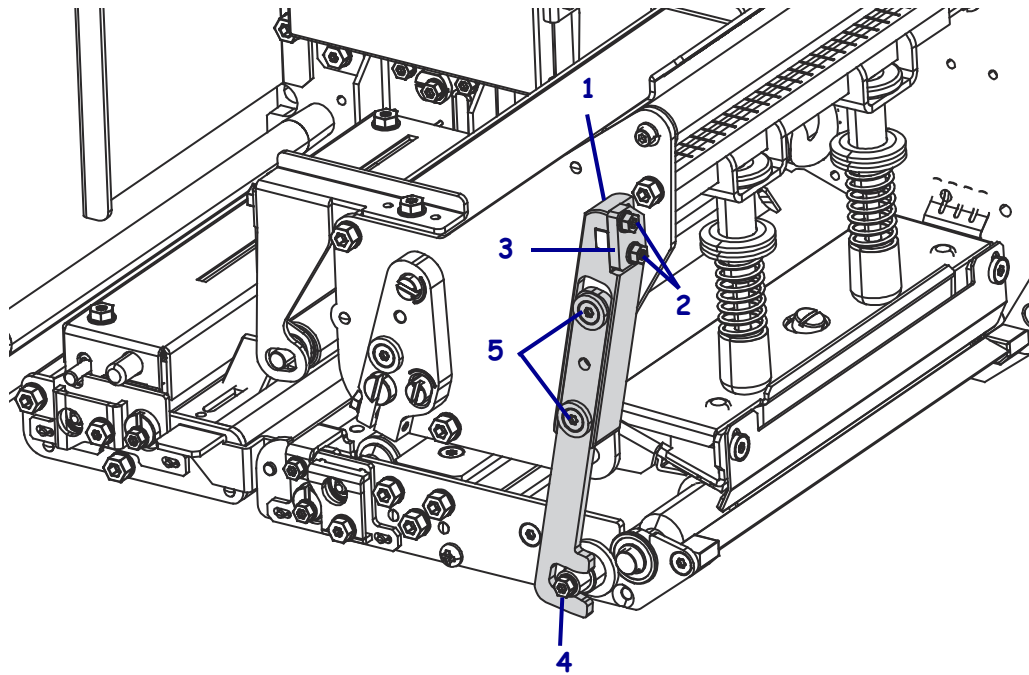
Tools • You need these tools to complete this procedure:

- Metric Hex Key (Allen Wrench) Set
- Torx Key Set
- Phillips Screwdriver Set
- Flat-blade Screwdriver Set

Remove the Printhead Latch

1. Open the media cover.
2. Open the printhead latch to the neutral position of approximately 45 degrees.
 There is no need to open the latch all the way at this time.
3. See [Figure 68](#). Loosen the two printhead plate mounting screws on the current printhead latch.
4. Slide the printhead latch off of the toggle bar.
5. Discard the printhead latch, plate, and two mounting screws.

**Figure 68 • Printhead Latch
 (Shown in Closed Position)**



1	Printhead latch
2	Printhead plate mounting screw (2)
3	Printhead latch plate
4	Latch pin
5	Printhead adjustment screw (2)

Remove the Latch Pin

1. Remove the mounting screw securing the latch pin.
2. Slide the latch pin off of the standoff.
3. Discard the screw and the latch pin.

Replace the Latch Pin

1. See [Figure 68](#). Slide the new latch pin onto the standoff.
2. Install the new mounting screw to secure the latch pin.

Replace the Printhead Latch

1. See [Figure 68](#). Loosen the two printhead latch plate mounting screws on the new printhead latch.
2. Slide the latch onto the toggle bar.
Ensure that the latch is pushed all the way back to the white nylon bearing on the toggle bar.
3. Tighten the two printhead latch plate mounting screws to secure the new printhead latch.
4. Close the printhead latch.
5. Close the media cover.

Adjust the Printhead Latch

1. Open the media cover.
2. See [Figure 68](#). Using a Torx key, loosen the two printhead latch adjustment screws.
3. Remove the toggle pressure on the printhead by turning the knurled nut counterclockwise.
4. Press up lightly on the bottom part of the printhead latch assembly until it contacts the underside of the latch pin, and tighten the latch adjustment screws.
5. Re-adjust the toggle position and pressure.
6. Close the media cover.

Check and Adjust the Print Quality

1. Perform a PAUSE self-test to verify print quality.
2. Check and adjust the print line quality, as needed.

For more detailed information on print line adjustments or the self-test, refer to the ZE500™ Series Print Engine Maintenance Manual in the Advanced User section.



Print Mechanism Maintenance Kit

Installation Instructions

This kit includes the parts and documentation necessary to install the Print Mechanism Maintenance Kit in the ZE500™ Series Print Engines. Read these instructions thoroughly before installing this kit.



Caution • This installation must be performed by a qualified service technician.



Note • The graphics and steps in this procedure are for the right-hand (RH) print engine. Steps for a left-hand (LH) print engine may be slightly different.

Parts List

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



Important • While the cables are shown separately in [Figure 69](#), the print mechanism in this kit comes with the cables and flexible conduit pre-assembled.

Figure 69 • Kit Contents

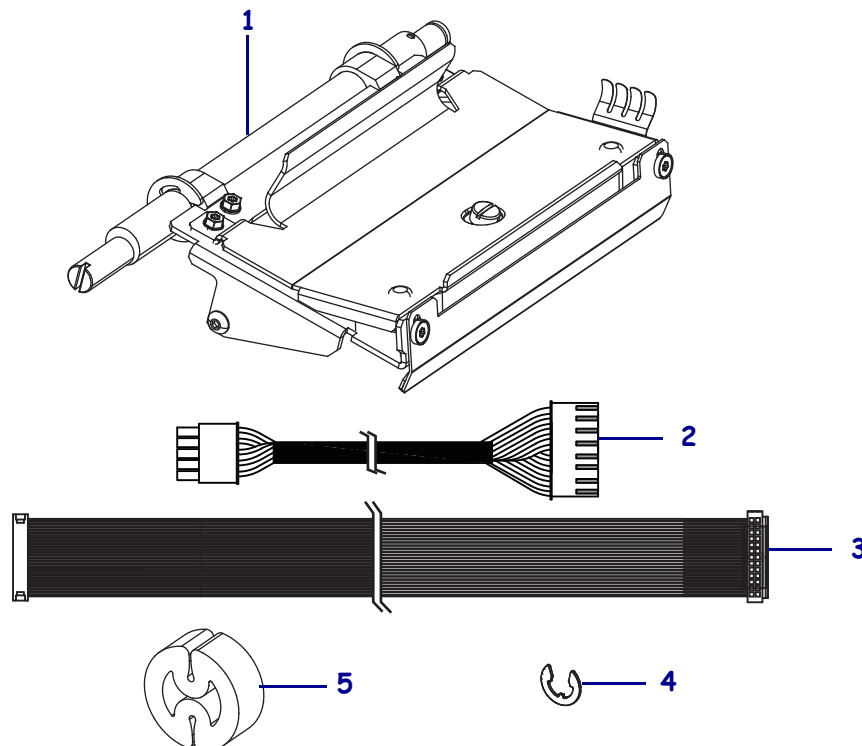


Table 17 • Parts List

✓	Item	Qty	Part Number	Description
	Ref	1	P1046696-012	ZE500-4 Print Mechanism Maintenance Kit, RH
			P1046696-013	ZE500-4 Print Mechanism Maintenance Kit, LH
			P1046696-014	ZE500-6 Print Mechanism Maintenance Kit, RH
			P1046696-015	ZE500-6 Print Mechanism Maintenance Kit, LH
	1	1	N/A	Assembly, Print Mechanism
	2	1	N/A	Cable, Printhead Power (25 in.)
	3	1	N/A	Cable, Printhead Data
	4		HW06250	E-Ring, Ext 0.312 Yel (Qty. of 25)
	5		N/A	Plug, Sealing
	N/S	1	N/A	Wrap, Cauterized Protection
	N/S	2	N/A	Wrap, Cauterized Protection (Short)
	N/S	1	HWQ06020	Cable Tie (Qty. of 20)
	N/S	1	N/S	(ZE500-6 only) Spring
	N/S	1	N/S	(ZE500-6 only) Tube
N/A = Not available as a separate part (listed for identification purposes only).				
N/S = Not shown.				

Tools Required



Tools • You need these tools to complete this procedure:

- Phillips Screwdriver Set
- Torx Key Set
- Metric Hex Key (Allen Wrench) Set
- 47362* Zebra Preventive Maintenance Kit
- Flat-blade Screwdriver Set
- Safety Goggles
- Antistatic Wriststrap and Mat

* In place of the Preventive Maintenance Kit, you may use a clean swab dipped in a solution of isopropyl alcohol (minimum 90%) and deionized water (maximum 10%).

Remove Power and Data Cables, Ribbon, and Media



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

Connect yourself to an antistatic device.



2. **Caution** • Turn off (O) the print engine and disconnect it from the power source before performing the following procedure.

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


3. **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.

Open the media door, the printhead latch, and remove media and ribbon from the print engine.

4. Close the printhead latch, and then close the media door.

Remove Print Engine from Applicator

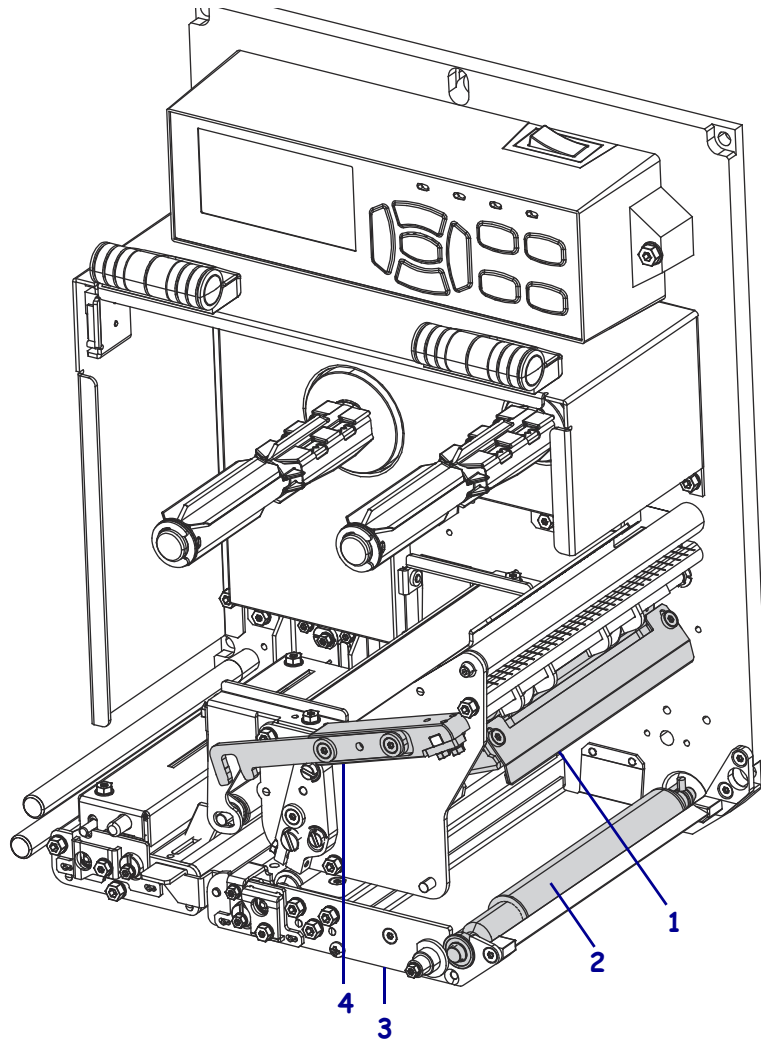
1. Does your applicator (or stand) permit open access to the rear of the print engine?

If you have an...	Then...
Open access	<p>You may swing the print engine open and work on it without removing the unit from the applicator.</p> <p>If you wish to remove the unit from the stand at any time, follow the instructions listed for the <i>Obstructed access</i> type applicator shown in this table.</p> <ol style="list-style-type: none"> a. Go to <i>Remove the Electronics Cover</i>.
Obstructed access	<p>You must remove the print engine from the applicator before you work on it.</p> <ol style="list-style-type: none"> a. Remove the four corner mounting screws securing the print engine to the applicator. b. Loosen the center mounting bolt, but do not remove it. <p> Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.</p> <ol style="list-style-type: none"> c. Lift the print engine off the center mounting bolt and place on a workbench.

Remove the Platen Roller

1. See [Figure 70](#). Using the printhead latch, open the printhead and press up until secured in the open position.

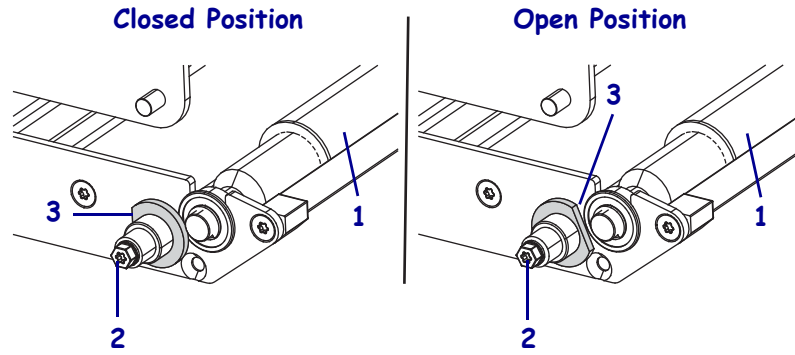
Figure 70 • Open Printhead



1	Printhead (shaded and shown in open position)
2	Platen roller (shaded)
3	Platen roller support plate
4	Printhead latch (shaded and shown in open position)

2. See [Figure 71](#). Using a Torx key, loosen the screw on the latch pin, and rotate the latch pin to the open position.

Figure 71 • Latch Pin



1	Platen roller
2	Latch pin screw
3	Latch pin (shaded)

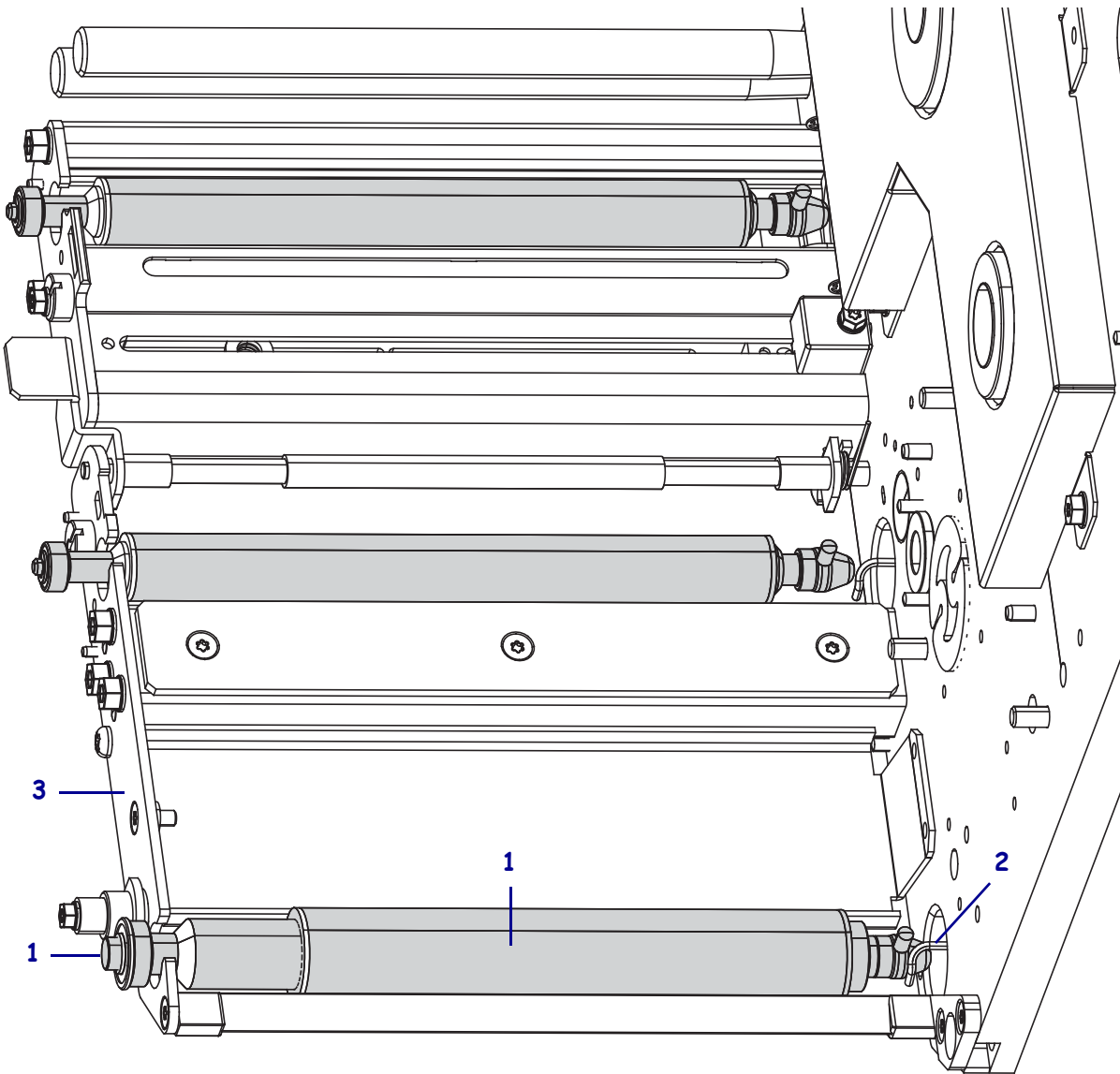
- See [Figure 72](#). Grasp the platen roller tightly and pull it toward the platen roller support plate to release the pin secured in the platen roller coupler.
 The outboard bearing will extend past the end of the platen roller support plate.



Note • You may have to turn the roller slightly to be able to remove the roller.

- Lift the platen roller out of the print engine.

**Figure 72 • Roller Locations
 (Top View with Subsystems Removed)**



1	Platen roller (shaded)
2	Platen roller coupler
3	Platen roller support plate

Remove the Peel Roller

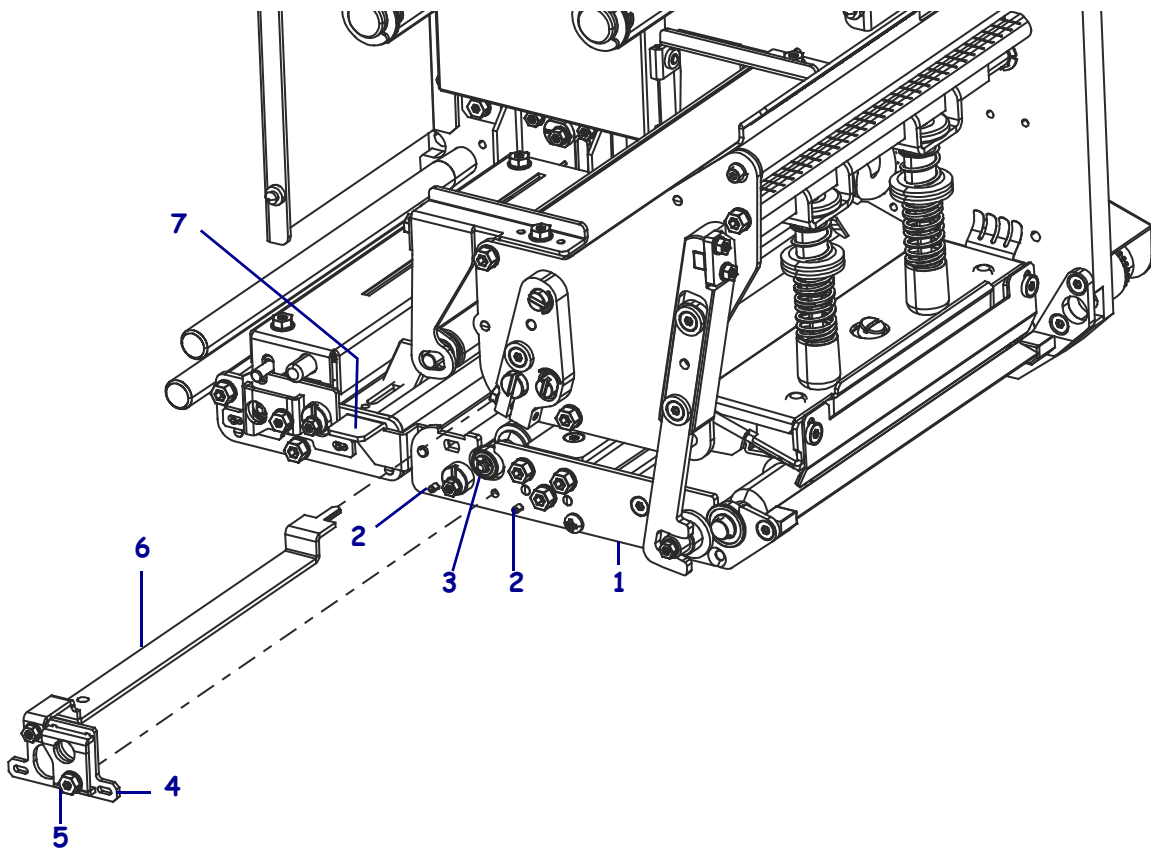
1. To open the peel roller bracket, push up on the latch.
2. See [Figure 73](#). To remove the peel roller cam plate, loosen the center mounting screw to release it from the platen roller support plate.



Note • The center mounting screw is captive within the peel roller cam plate.

3. Pull the peel roller cam plate (with the deflector plate attached) off of the two support pins on the platen roller support plate. Set the cam plate aside.

Figure 73 • Peel Roller



1	Platen roller support plate
2	Support pins
3	Peel roller
4	Peel roller cam plate
5	Peel roller cam plate center mounting screw
6	Peel roller deflector plate
7	Peel roller latch

4. Grasp the peel roller tightly and pull the peel roller toward the platen roller support plate to release the pin secured in the peel roller coupler.

The outboard bearing will extend past the end of the platen roller support plate.



Note • You may have to turn the roller slightly to be able to remove the roller.

5. Lift the peel roller out of the print engine.

Remove the Pinch Roller

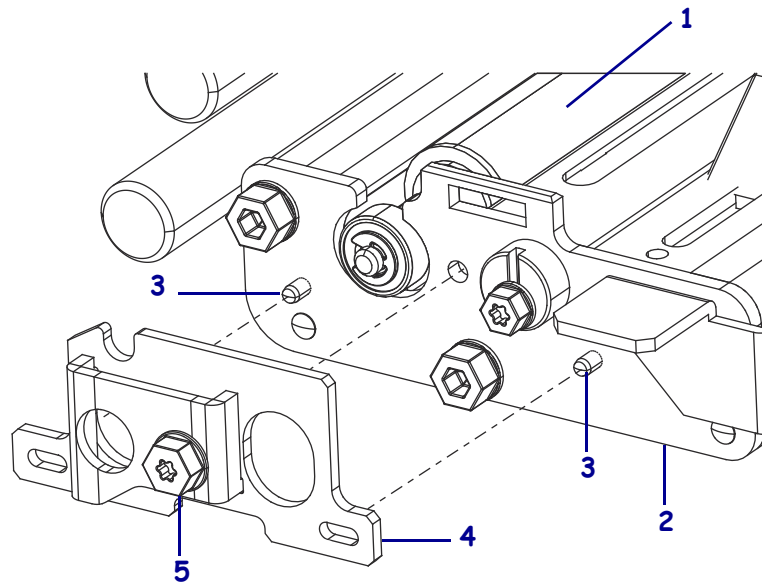
1. Open the upper pinch roller assembly by pressing on the release button located just above the pinch roller cam plate.
2. See [Figure 74](#). To remove the pinch roller cam plate, loosen the center mounting screw to release it from the pinch roller support plate.



Note • The center mounting screw is captive within the pinch roller cam plate.

3. Pull the cam plate off of the two support pins on the pinch roller support plate. Set the cam plate aside.

Figure 74 • Pinch Roller



1	Pinch roller (shaded)
2	Pinch roller support plate
3	Support pins
4	Pinch roller cam plate
5	Cam plate center mounting screw

4. Grasp the pinch roller tightly and pull the pinch roller toward the pinch roller support plate to release the pin secured in the pinch roller coupler.

The outboard bearing will extend past the end of the platen roller support plate.



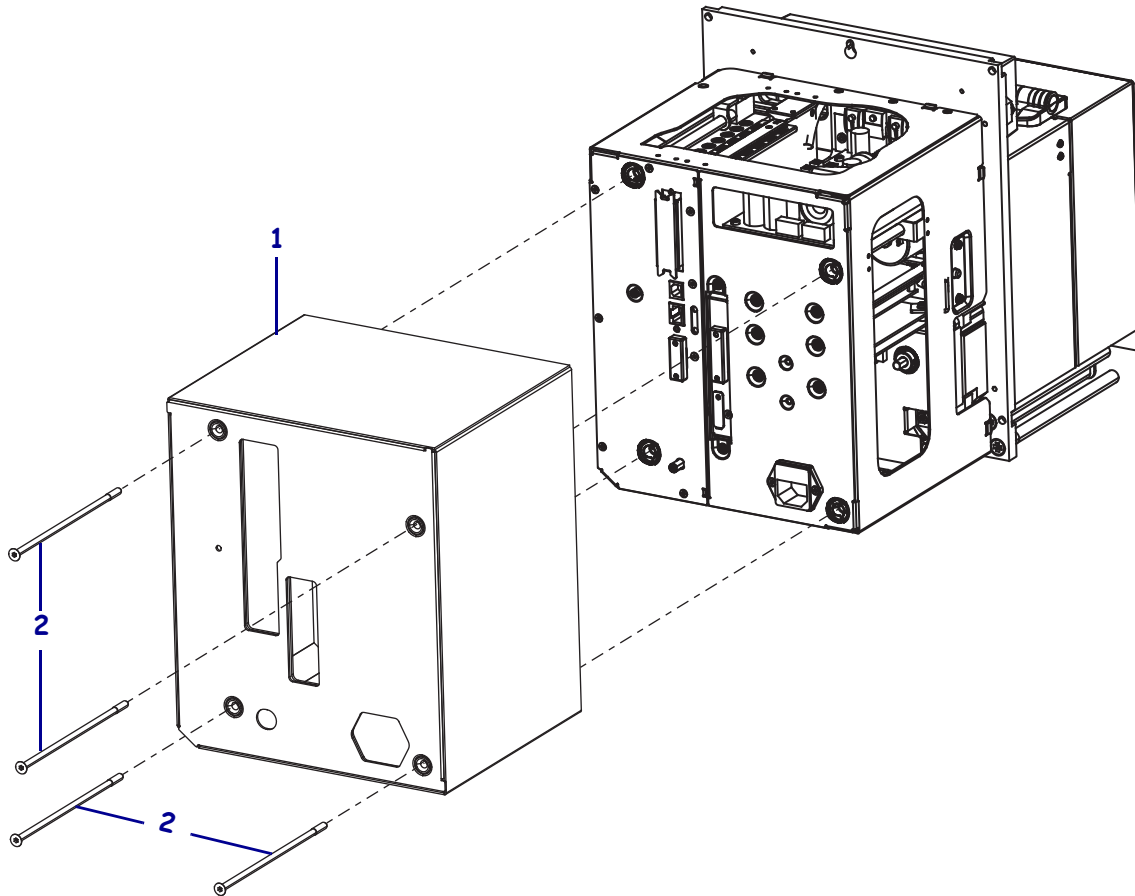
Note • You may have to turn the roller slightly to be able to remove the roller.

5. Lift the pinch roller out of the print engine.

Remove the Electronics Cover

1. See [Figure 75](#). Remove the four long mounting screws securing the electronics cover.

Figure 75 • Electronics Cover



1	Electronics cover
2	Electronics cover mounting screws (4)

2. Slide the electronics cover off of the print engine.

Open the Electronics Enclosure

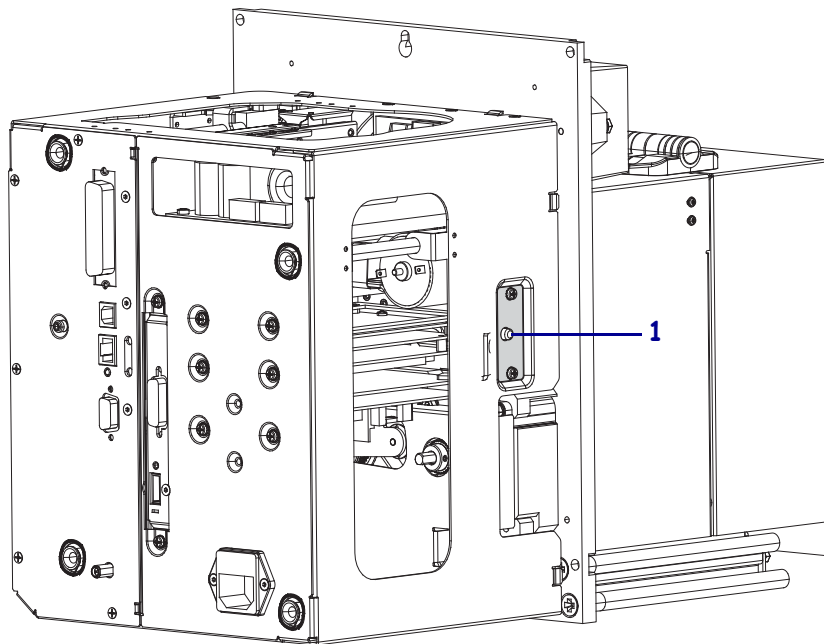
1. See [Figure 76](#). Locate the latch.



Note • For right-hand models, the latch is on the right side when looking from the back of the print engine. For left-hand models, the latch is on the left side.

2. Press the latch and swing the electronics enclosure open.

Figure 76 • Locate the Latch



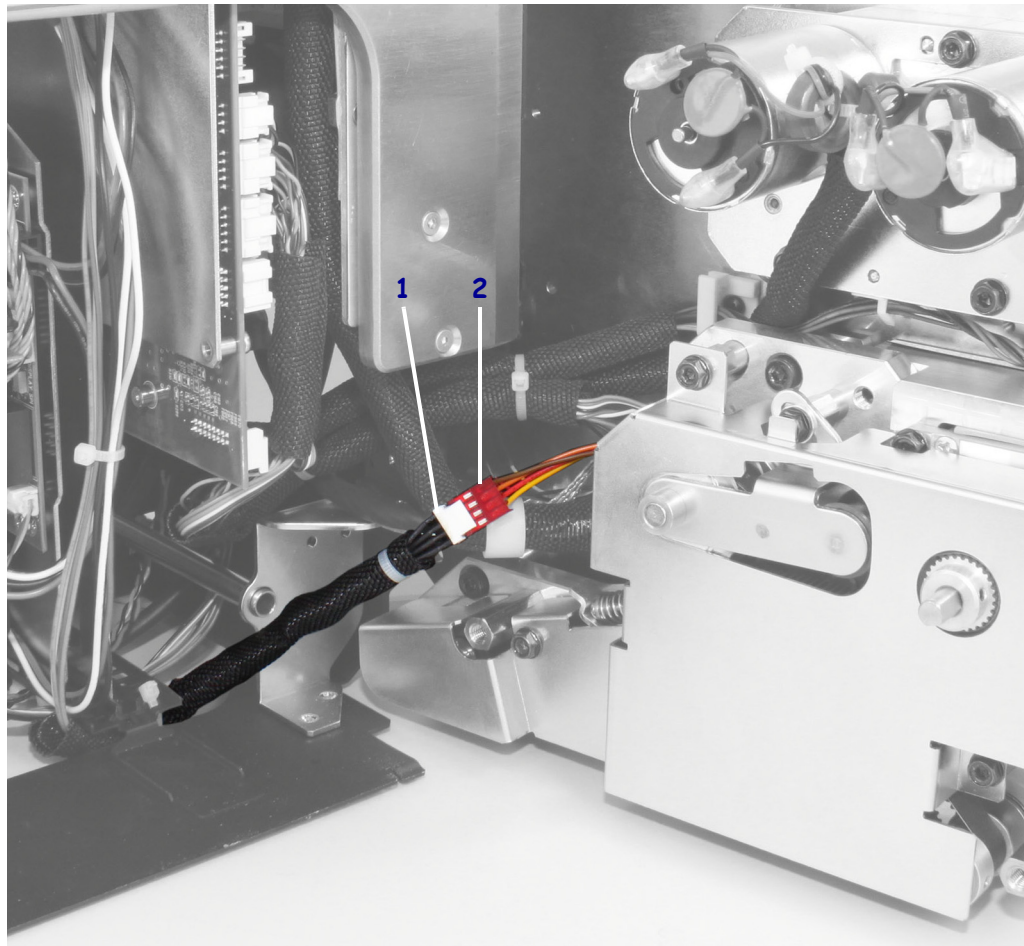
1	Latch
----------	-------

Remove the Drive System

1. See [Figure 77](#). Separate the drive system cable connectors.

The short part of the cable is wired to the stepper motor. The long part of the cable plugs into J4 on the DC power supply board.

Figure 77 • Drive System Cable



1	Long drive system cable goes to the DC power supply
2	Short drive system cable connector goes to the stepper motor

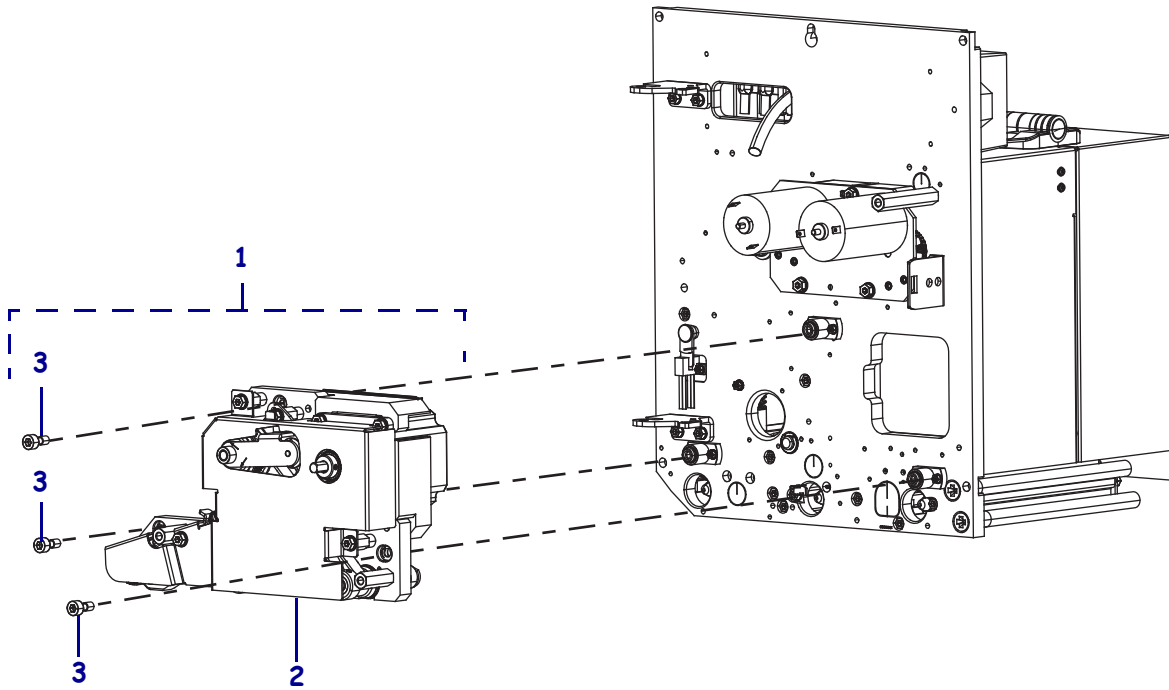
2. See [Figure 78](#). Loosen the three 4 mm mounting screws to release the drive system from the main frame.



Note • The three 4 mm mounting screws are captive within the drive system.

3. Remove the drive system from the main frame.

Figure 78 • Remove the Drive System



1	Drive system
2	Drive system cover
3	Drive system mounting screws (3)

Remove the Printhead Cables



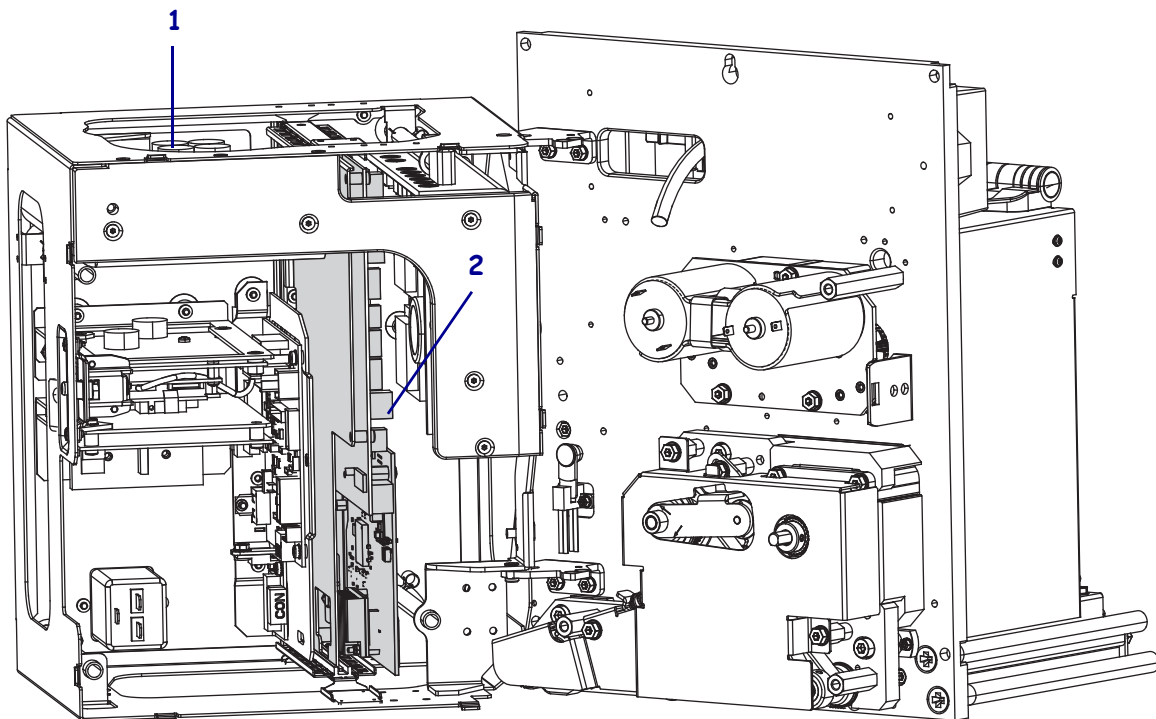
Note • Note all cable routing before removing.

1. See [Figure 79](#). On the main frame wall and alongside of the large hole, remove the mounting screw and lock washer securing the two braided ground straps.



Note • One braided ground strap is to ground the electronics enclosure; the other is for the printhead. The electronics enclosure braided ground strap does not need to be removed.

Figure 79 • MLB and DC Power Supply Boards



1	DC Power supply board
2	MLB (shaded)

2. See [Figure 88](#). From the electronics side, use a screwdriver to lift the loop and open the large cable clamp on the enclosure hinge and remove these two cables.
3. From the enclosure hinge, trace the path of the power cable to the DC power supply board.
4. See [Figure 91](#). Disconnect the power cable from J2 or J3 on the DC power supply board.
5. See [Figure 89](#). Disconnect the ribbon data cable from P19 on the main logic board (MLB), remove the cable.
6. Thread the power and data cables through the sealing plug and large hole in the main frame and into the electronics enclosure.

Remove the Printhead



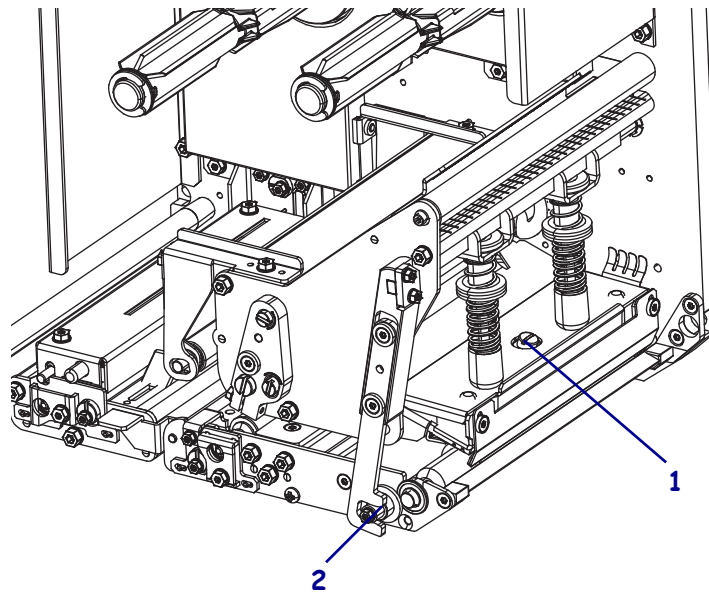
Caution • The printhead may be hot and could cause severe burns. Allow the printhead to cool.



1. **Caution** • Before touching the printhead assembly, discharge any built-up static electricity by touching the metal printer frame or by using an anti-static wriststrap and mat.

See [Figure 80](#). Loosen the printhead mounting screw.

Figure 80 • Printhead Mounting Screw

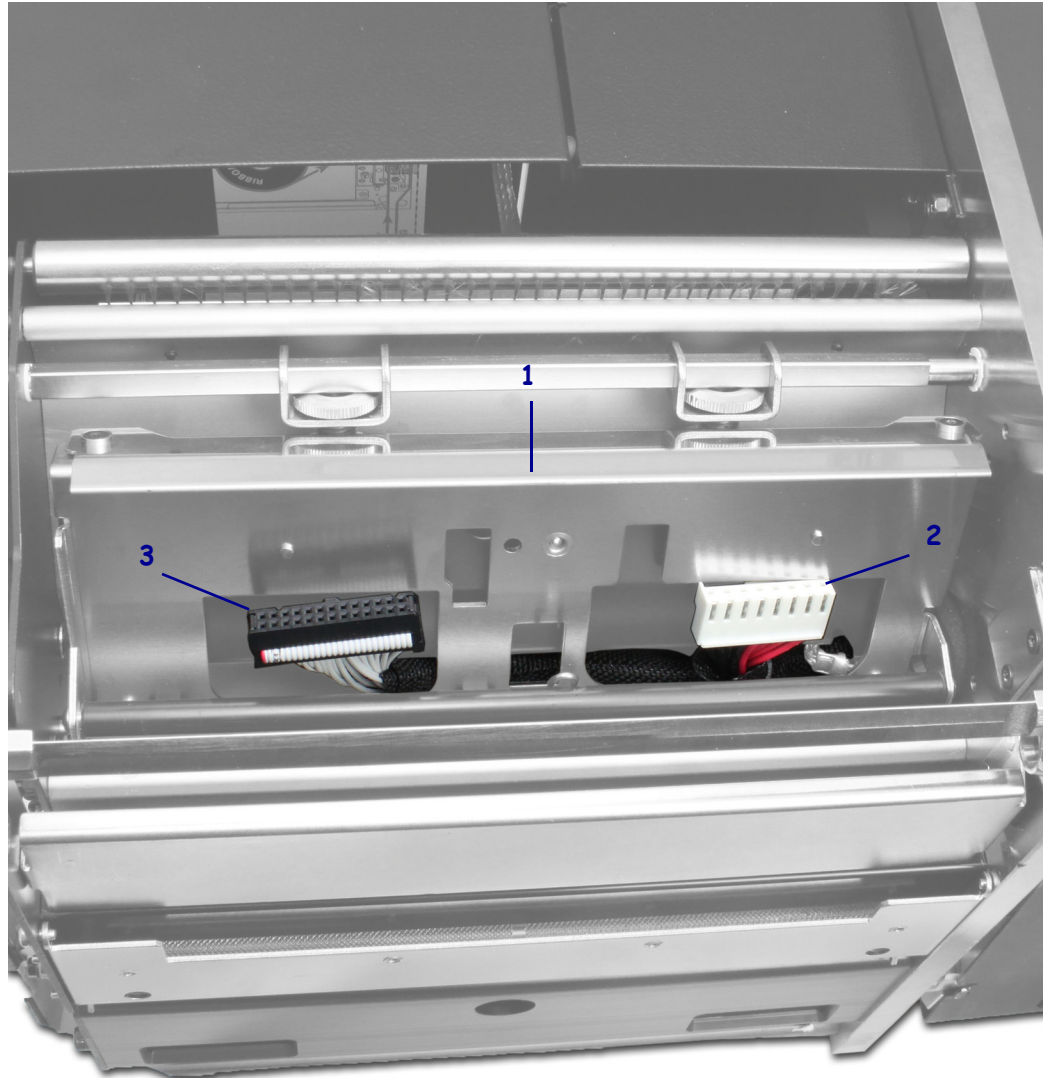


1	Printhead mounting screw
2	Printhead latch

2. Open the printhead latch.

3. See [Figure 81](#). While supporting the printhead, disconnect the power connector and the printhead data connector.

Figure 81 • Printhead Cables



1	Printhead mounting bracket
2	Printhead power connector
3	Printhead data connector (ribbon cable)

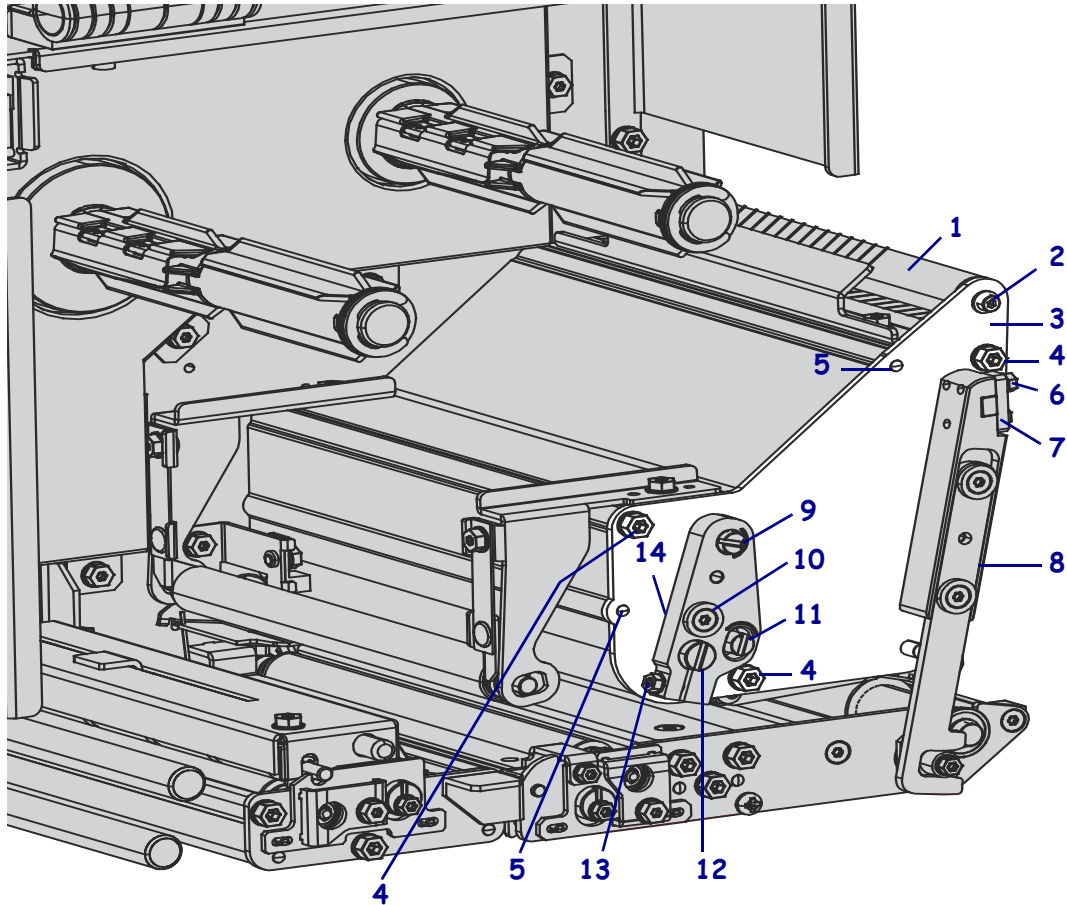
4. Remove the printhead.

Remove the Print Mechanism Extrusion End Plate



Note • See [Figure 82](#). Mark or note the location of the three print line adjusters: print line, balance, and skew.

Figure 82 • Print Mechanism Extrusion End Plate

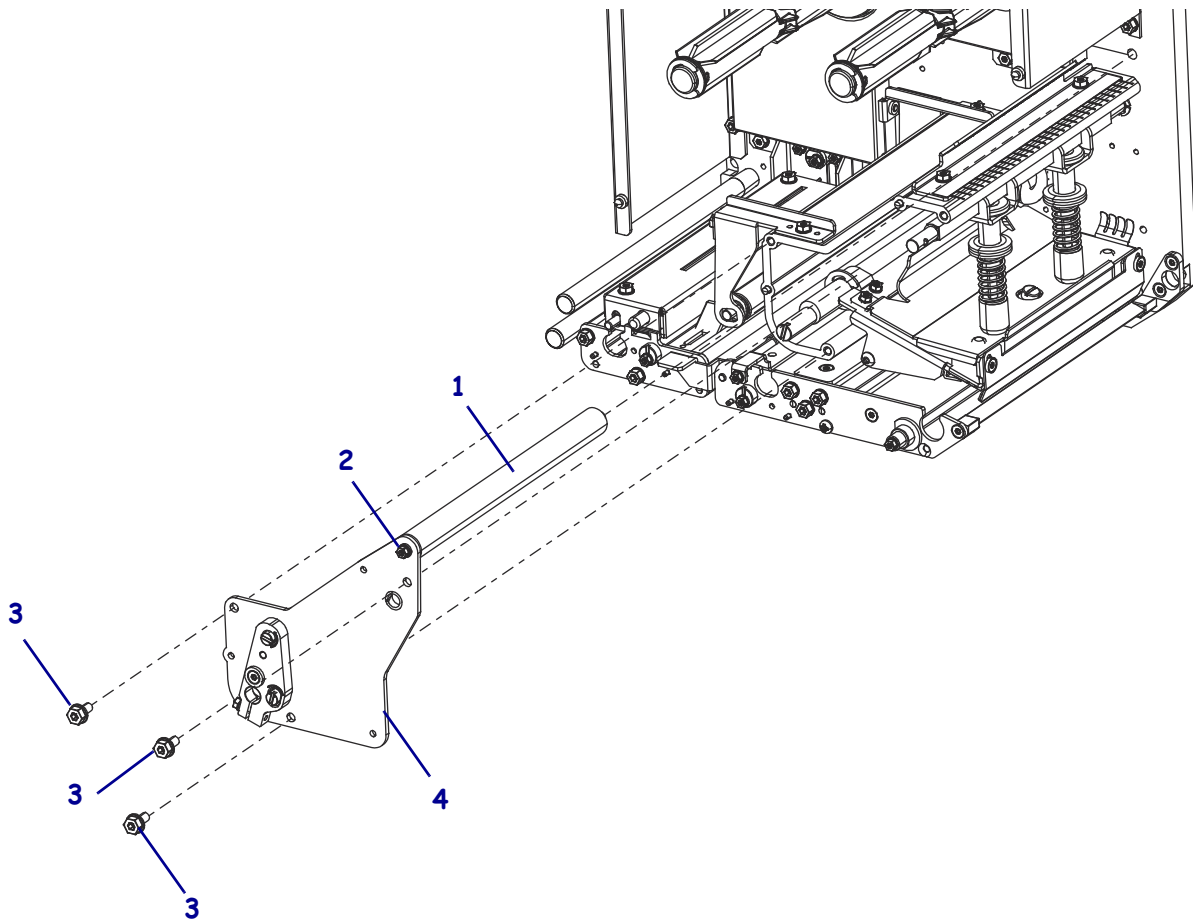


1	Upper ribbon guide roller	8	Printhead latch
2	Upper ribbon guide roller mounting screw	9	Balance adjuster
3	Print mechanism end plate (unshaded)	10	Printhead adjustment plate locking screw
4	End plate mounting screws (3)	11	Skew adjuster
5	Support pins (2)	12	Print line adjuster
6	Printhead latch screws (2)	13	Printhead adjustment plate clamp screw
7	Printhead latch clamping plate	14	Printhead adjustment plate

1. See [Figure 82](#). Loosen the two mounting screws securing the printhead latch clamping plate.
2. Slide the printhead latch off of the toggle bar to remove it.
3. Loosen the printhead adjustment plate clamp screw.
4. Loosen the printhead adjustment plate locking screw.

5. Remove the three screws securing the extrusion end plate.
6. See [Figure 83](#). Grasping the upper ribbon guide roller, gently pull the end plate off of the two support pins.
 It is not necessary to disassemble the roller or its shaft from the end plate to remove it from the print engine.
7. Remove the upper ribbon guide roller mounting screw.

Figure 83 • Removing the Extrusion End Plate



1	Upper ribbon guide roller
2	Upper ribbon guide roller mounting screw
3	Extrusion end plate mounting screw (3)
4	Extrusion end plate

Remove the Print Mechanism

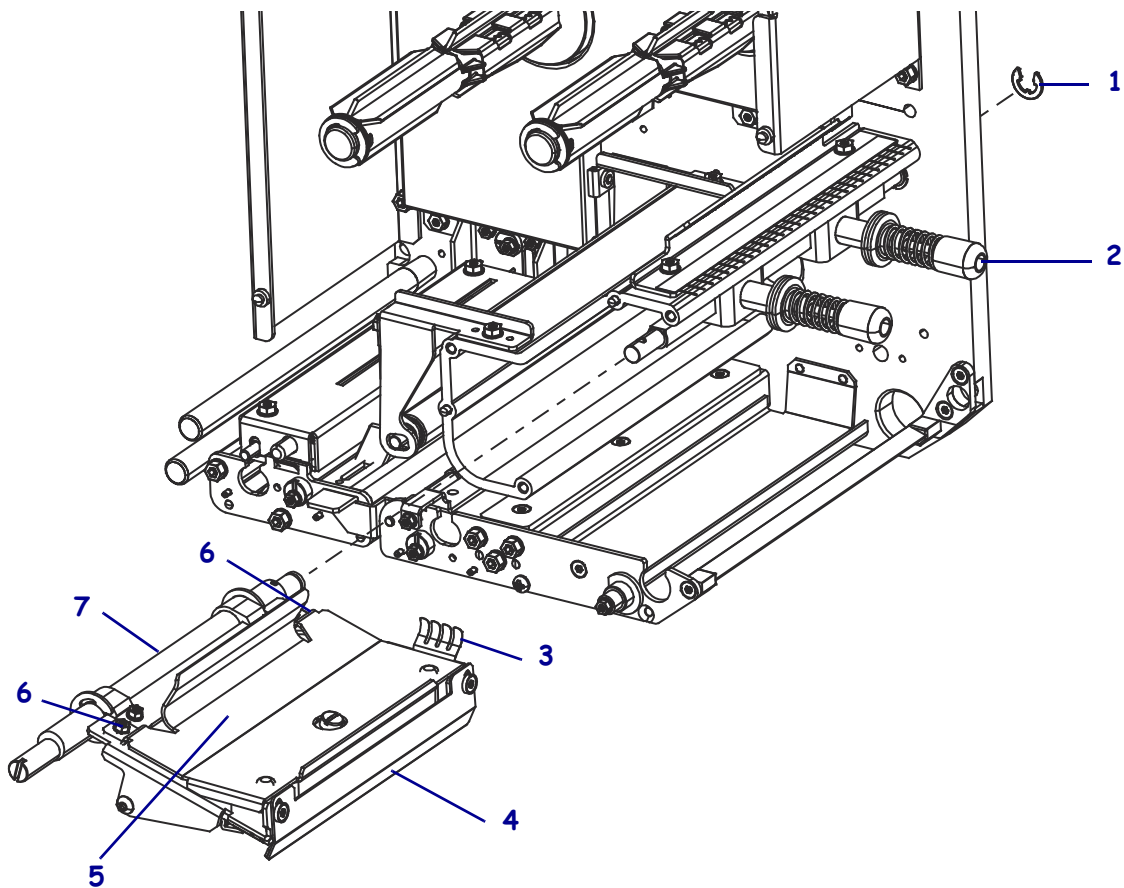


1. **Caution** • Wear protective eyewear when installing or removing E-rings, C-clips, snap rings, springs, and mounting buttons. These are under tension and could fly off.

From the electronics side, remove the large E-ring from the end of the print mechanism pivot bar.

2. See [Figure 84](#). Rotate the toggles to the “up” position to assist in the removal and replacement of the print mechanism.

Figure 84 • Print Mechanism



1	Large E-ring
2	Toggles (2) (shown in “up” position)
3	Ground fingers
4	Print mechanism
5	Pressure bar mounting bracket
6	Pressure bar mounting bracket screws (2)
7	Print mechanism pivot bar

3. Completely remove the print mechanism from the print engine.

Replace the Print Mechanism

1. Route the printhead cables and the braided ground strap (if necessary) through the sealing plug.
2. Insert the plug and cables into the large hole in the main frame.
3. Which model of print engine do you have?




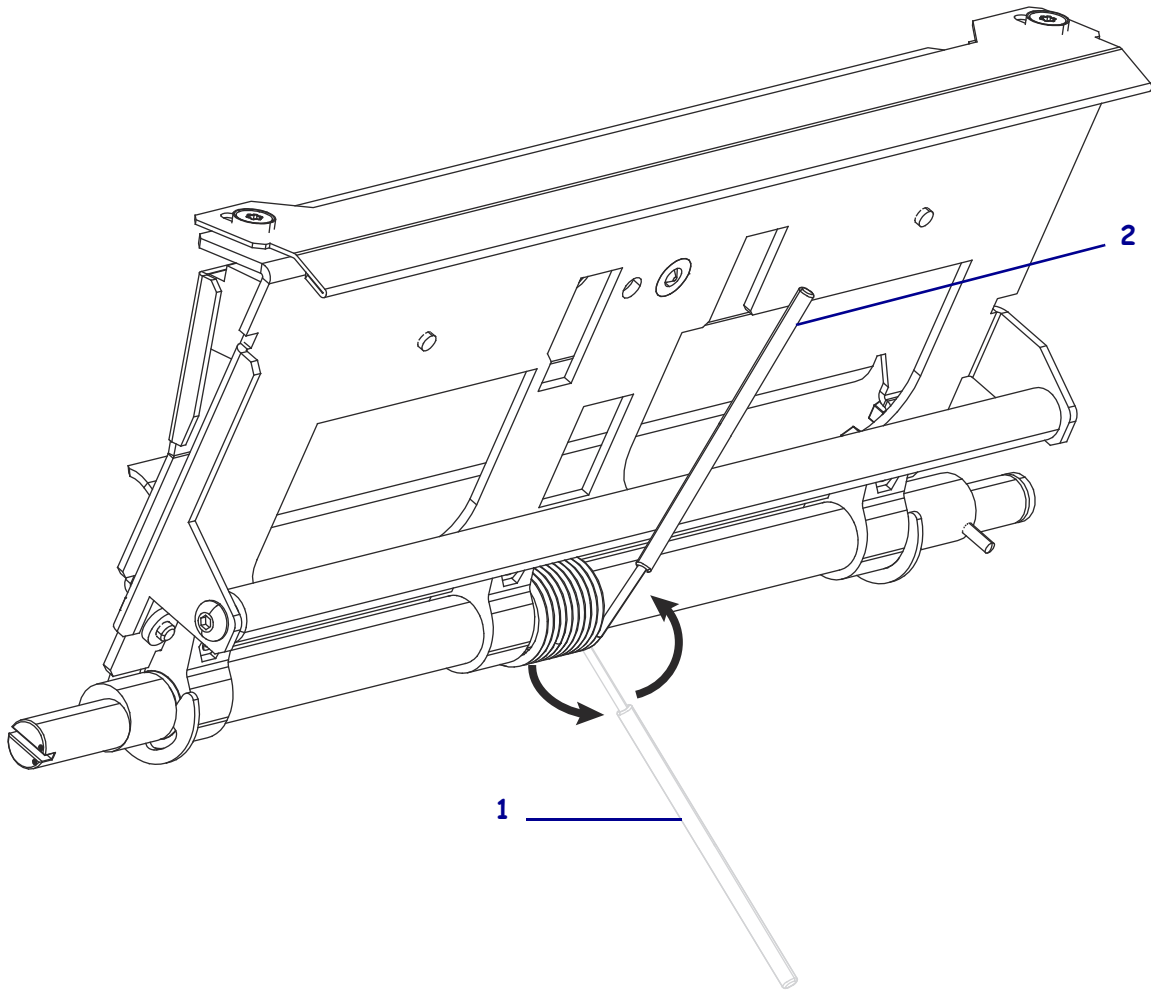
If you have a...	Then...
ZE500-4	<p>a. See Figure 84. Slide the end of the print mechanism pivot bar into the main frame.</p> <p> Note • The larger diameter of the pivot shaft must be oriented up. This position is critical.</p> <p>b. Continue with step 4.</p>
ZE500-6	<p> Caution • Wear protective eyewear when installing or removing E-rings, C-clips, snap rings, springs, and mounting buttons. These are under tension and could fly off.</p> <p>a. See Figure 85. Slide the small winding tube (provided in the kit) onto the exposed leg of the lift-assist spring.</p> <p>b. Rotate the spring approximately one revolution (or until it meets the underside of the print mechanism assembly). Do not remove the tube at this time.</p> <p>c. Using the tube, raise the spring leg up slightly as you slide the end of the print mechanism pivot bar into the main frame.</p> <p> Note • The larger diameter of the pivot shaft must be oriented up. This position is critical.</p> <p>d. Once the print mechanism is in place, lower the spring leg and slide the small tube off of the spring leg.</p> <p>e. Continue with step 4.</p>

Figure 85 • Lift-Assist Spring for ZE500-6 Print Engine



1	Winding tube and spring leg (grayed out and in mid-turn position)
2	Winding tube and spring leg in final position



4. **Caution** • Wear protective eyewear when installing or removing E-rings, C-clips, snap rings, springs, and mounting buttons. These are under tension and could fly off.

From the electronics side, replace the E-ring on the pivot bar.

5. Replace the mounting screw and lock washers to secure the printhead and electronics enclosure ground straps.

Replace the Print Mechanism Extrusion End Plate

1. See [Figure 82](#). Loosen the printhead adjustment plate locking screw enough to pivot the adjustment plate for assembly, if required.
2. See [Figure 83](#). Slide the upper ribbon guide roller onto the roller shaft, if necessary.
3. See [Figure 83](#). Align the end plate with the toggle bar and the print mechanism pivot bar.
4. Supporting the upper ribbon guide roller, insert the upper ribbon guide roller shaft into the main frame as you push the end plate onto the support pins.
5. Restore settings or place adjusters in the neutral position before tightening the printhead adjustment plate locking screw.
6. Reinstall the three end plate mounting screws securing the extrusion end plate.
7. Tighten the printhead adjustment plate locking screw.
8. Tighten the adjuster clamp screw.
9. Rotate the toggles onto the print mechanism.
10. Slide the printhead latch onto the toggle bar.
11. Tighten the two printhead latch clamping plate mounting screws.

Install the Printhead

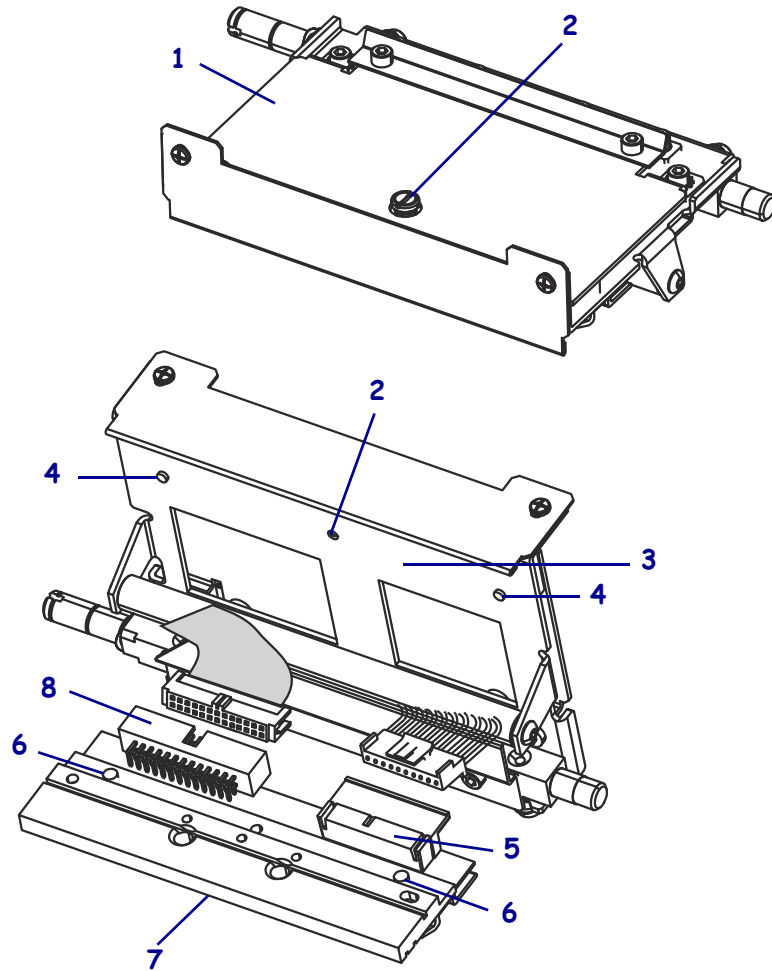


-
1. **Caution** • An improperly connected printhead data or power cable may cause the printhead to generate excessive heat and/or a false HEAD COLD message to display while the printhead is hot enough to cause severe burns. Allow the printhead to cool.
-

See [Figure 86](#). Reconnect the printhead power cable and the data cable to their appropriate connectors on the printhead. Seat both connectors firmly in place.

2. Fit the printhead into the mounting bracket by aligning the printhead alignment posts into the printhead alignment holes.
3. Verify that the printhead is seated properly. Carefully guide the printhead mounting screw into the printhead's aluminum body. After the screw is aligned properly, tighten it until snug.
Do not over-tighten.
4. Position the toggles so that they are evenly distributed across the width of the media and adjusted to provide equal pressure to the pressure bar mounting bracket.

**Figure 86 • Printhead and Bracket Alignment
 (LH Version Shown)**



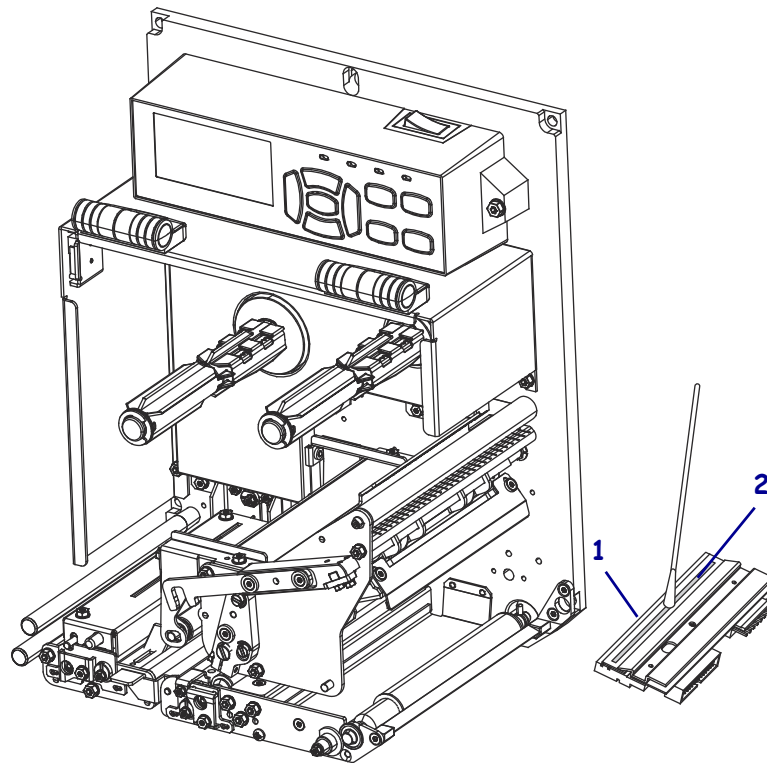
1	Print mechanism assembly
2	Printhead mounting screw
3	Printhead assembly mounting bracket
4	Printhead alignment post (2)
5	Printhead power connector
6	Printhead alignment hole (2)
7	Printhead
8	Printhead data connector

Clean the Printhead

1. See [Figure 87](#). Using the Zebra Preventive Maintenance Kit* (p/n: 47362), apply the cleaning solution to the cotton swab and clean the print element (gray area) of the new printhead.

*In place of the Preventive Maintenance Kit, you may use a clean swab dipped in a solution of isopropyl alcohol (minimum 90%) and deionized water (maximum 10%).

Figure 87 • Cleaning the Printhead



1	Printhead
2	Printhead elements (gray area)

Install the Printhead Cables



Caution • An improperly connected printhead data or power cable may cause the printhead to generate excessive heat and/or a false **HEAD COLD** message to display while the printhead is hot enough to cause severe burns. Allow the printhead to cool.

1. See [Figure 88](#). Insert the printhead data and power cables in the large cable clamp on the enclosure hinge and close the clamp.



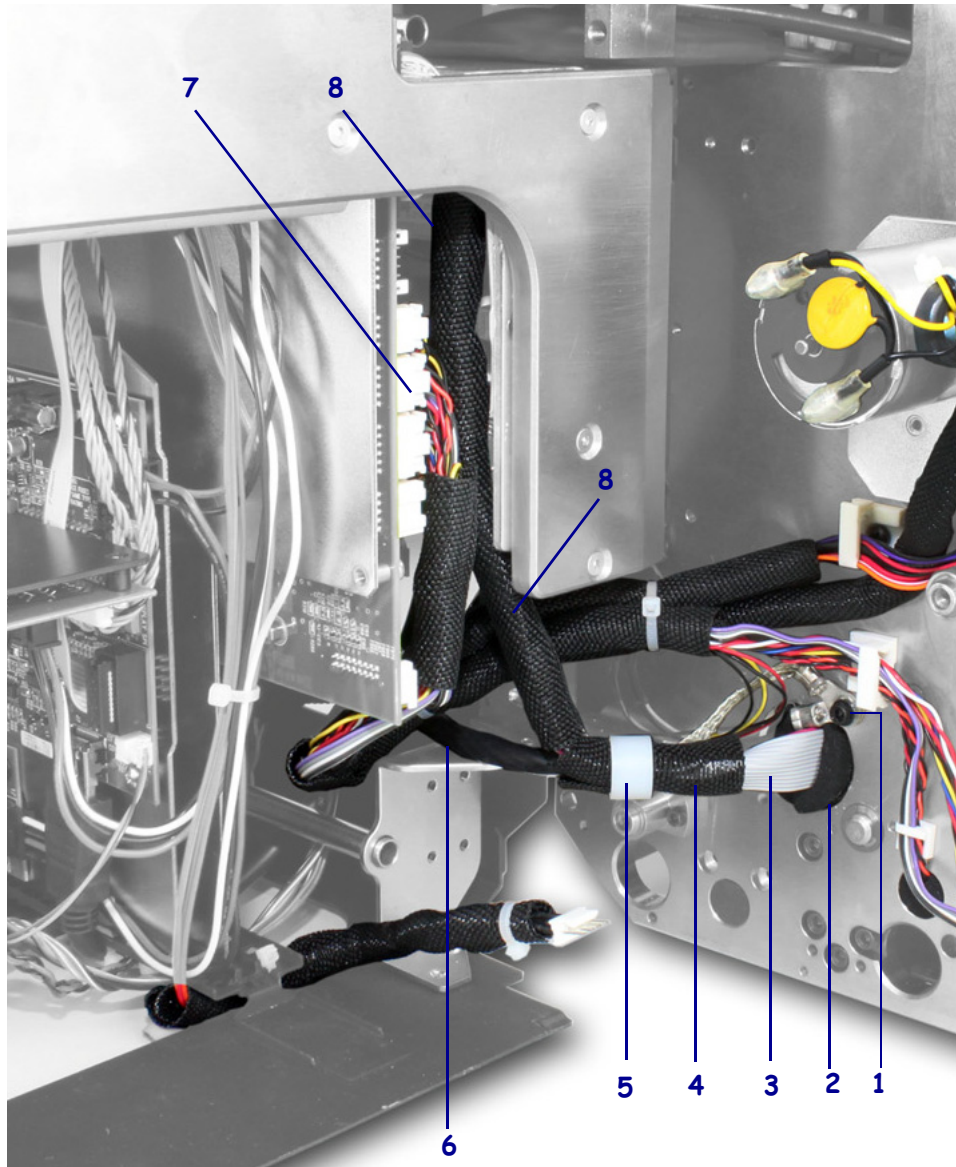
Note • If you wish to replace the large cable clamp, remove the nut and screw securing the large cable clamp on the enclosure hinge.

2. On the main frame wall and alongside of the large hole, reinstall the mounting screw and lock washer to secure the two braided ground straps.

Printhead Data Cable

1. See [Figure 88](#). Insert and wrap the printhead ribbon data cable in the flexible conduit.

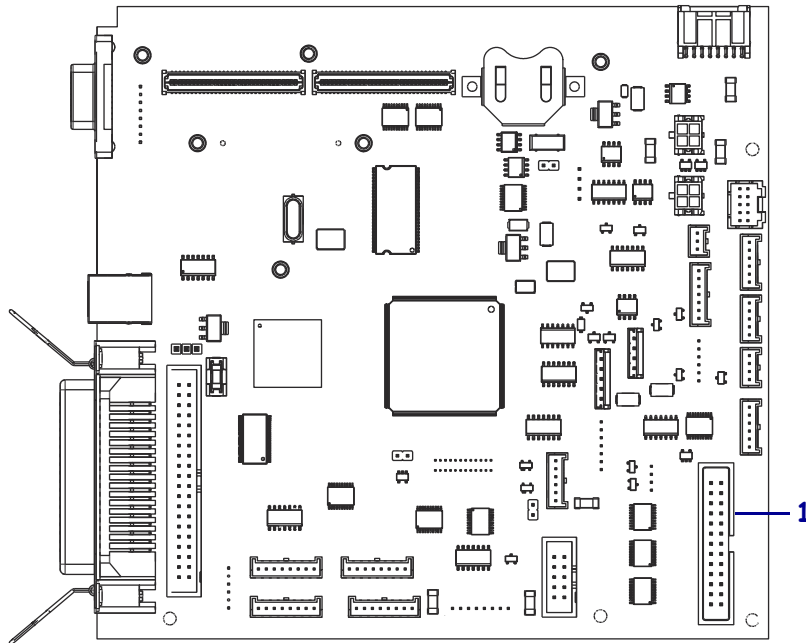
Figure 88 • Printhead Data Cable Routings



1	Braided cables mounting hole and screw
2	Large opening in main frame
3	Printhead data cable (flat ribbon)
4	Flexible conduit
5	Large cable clamp
6	Printhead power cable
7	Main logic board connectors
8	Printhead data cable (inside flexible conduit)

2. See [Figure 89](#). Connect the printhead data cable to P19 on the main logic board (MLB).

Figure 89 • MLB Power Supply Connections



1	P19: Printhead data cable
----------	---------------------------

3. See [Figure 88](#). Route the printhead data cable between the MLB and the AC power supply board in the electronics enclosure.

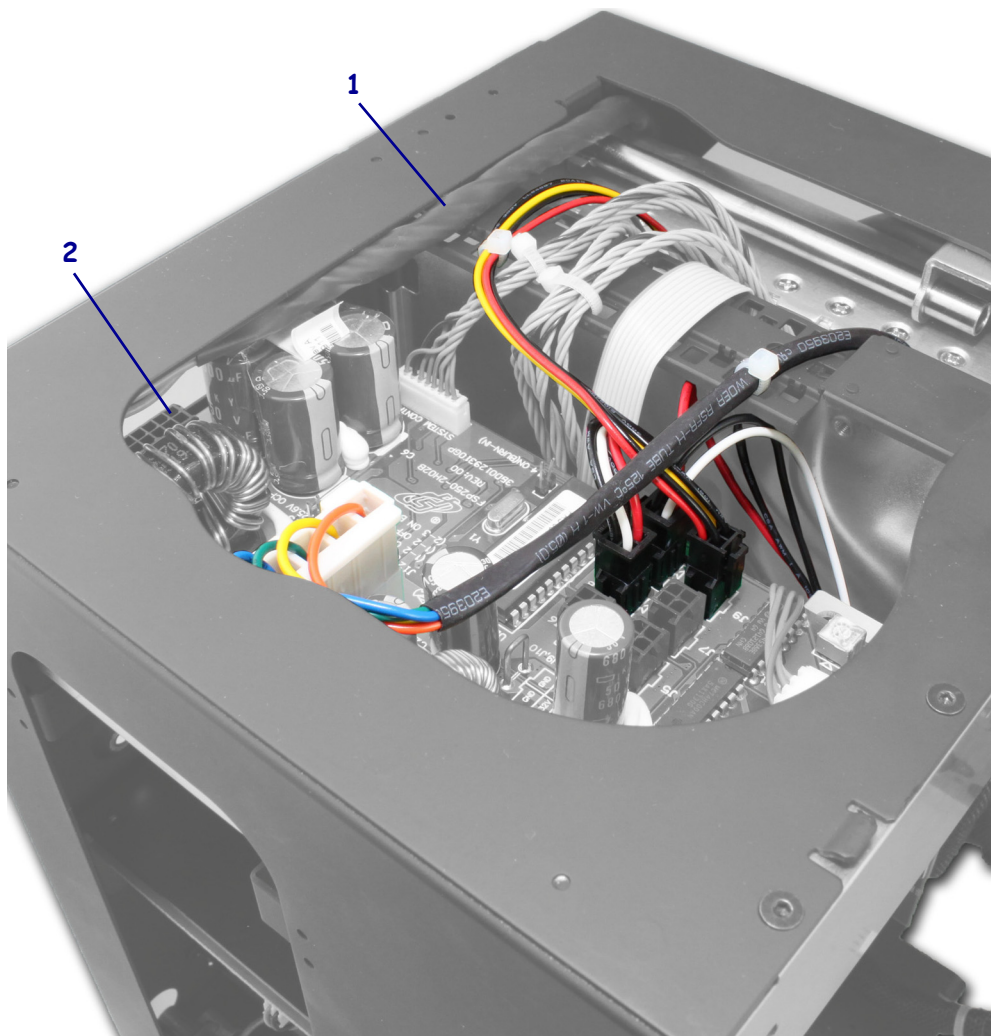
Printhead Power Cable



Note • The graphics and steps in this procedure are for the right-hand (RH) print engine. Steps for a left-hand (LH) print engine may be slightly different.

1. See [Figure 90](#). Route the printhead power cable as follows:
 - a. Over the upper half of the hinge in the electronics enclosure
 - b. Across the side (visible through the cutout section)
 - c. Up to the top and between the side of the enclosure and the AC power supply
 - d. Over the top of the chassis rail, and
 - e. Across the top of the DC power supply board

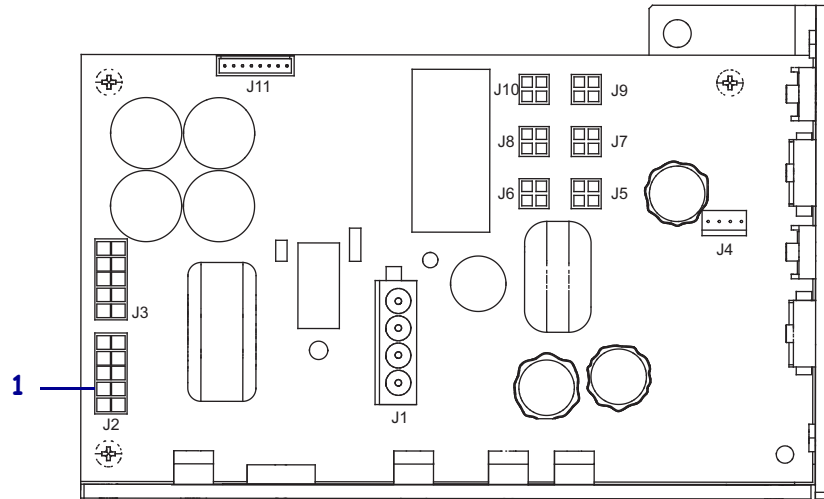
Figure 90 • Printhead Power Cable Routing



1	Printhead power cable
2	J3 connector on DC Power supply board

- See [Figure 91](#). Connect the printhead power cable to J2 or J3 on the DC power supply board.

Figure 91 • DC Power Supply Connections



1	J2: Printhead power cable
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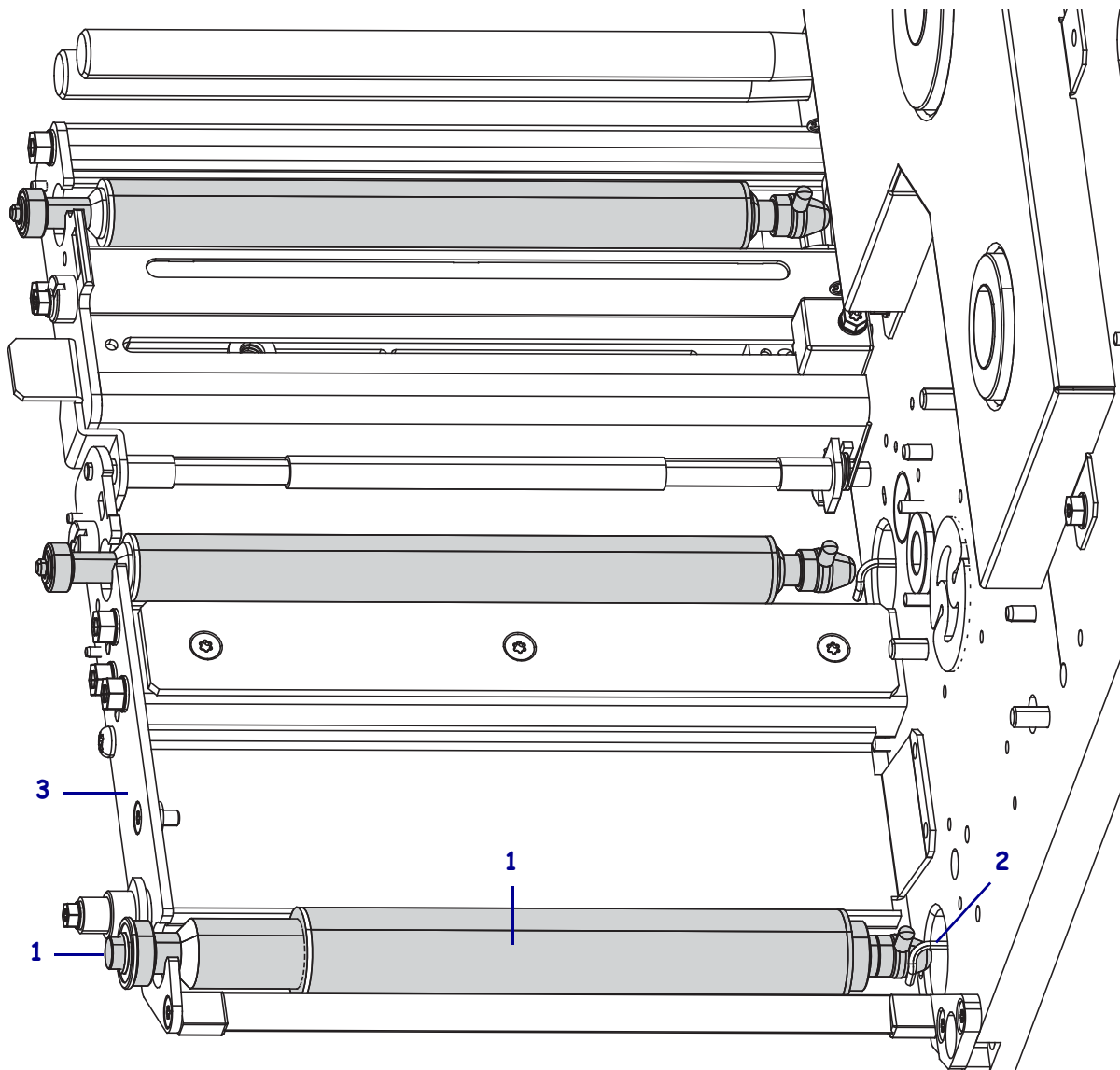
Reinstall the Drive System

1. See [Figure 78](#). Align the drive system with the drive system mounts on the main frame, and reinstall the three 4mm mounting screws.
2. See [Figure 77](#). Reconnect the stepper motor cable connectors. The short cable is wired to the drive motor. The long cable plugs into J4 on the DC power supply board.

Replace the Pinch Roller

1. See [Figure 92](#). Starting with the pin end of the roller, align the pin with the slot in the pinch roller coupler.

**Figure 92 • Roller Locations
 (Top View with Subsystems Removed)**



1	Platen roller (shaded)
2	Platen roller coupler
3	Platen roller support plate

2. Lower the other end of the pinch shaft into the large hole on the pinch roller support plate.
3. Push the shaft into the pinch roller coupler to fully seat the pinch shaft.
You will hear a click when the pin is seated correctly or turn the roller slightly to confirm that the roller is firmly seated.
4. See [Figure 74](#). Replace the cam plate on the two support pins on the pinch roller support plate.
5. Reinstall the center mounting screw on the cam plate.
6. Close the upper pinch roller assembly.

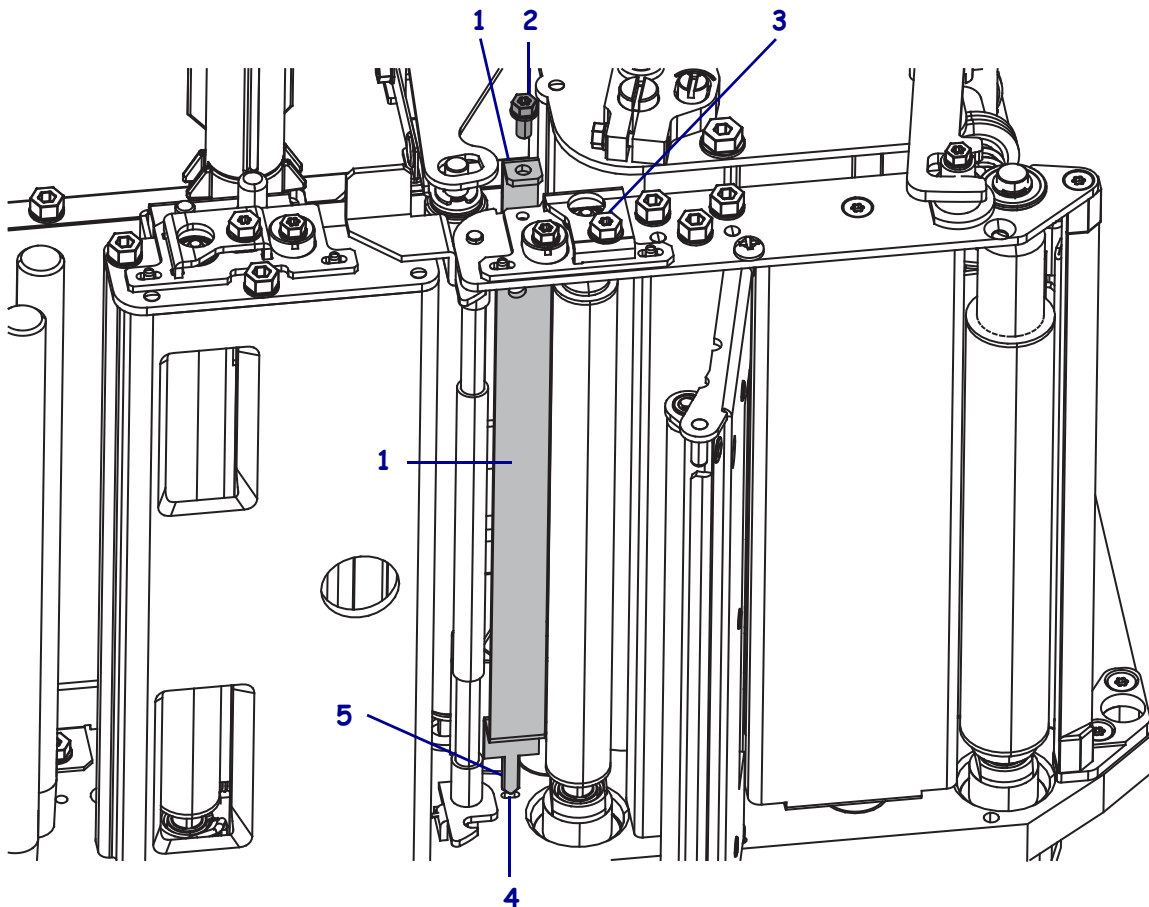
Replace the Peel Roller

1. Starting with the pin end of the roller, align the pin with the slot in the peel roller coupler.
2. Lower the other end of the peel roller shaft into the large hole on the platen roller support plate.
3. Push the shaft into the peel roller coupler to fully seat the peel shaft.
 You will hear a click when the pin is seated correctly or turn the roller slightly to confirm that the roller is firmly seated.
4. See [Figure 93](#). Insert the tab on the deflector plate into the main frame slot.



Note • [Figure 93](#) shows the deflector plate separated from the platen roller cam plate. The deflector plate was designed to be attached to the cam plate during removal and installation.

Figure 93 • Deflector Plate



1	Deflector plate
2	Deflector plate mounting screw
3	Platen roller cam plate mounting screw
4	Slot
5	Tab

5. Replace the cam plate on the two support pins on the platen roller support plate.
6. Tighten the center mounting screw on the cam plate.
7. Close the peel roller bracket by pushing up until you hear the click.

Replace the Platen Roller

1. See [Figure 72](#). Starting with the pin end of the roller, align the pin with the slot in the platen roller coupler.
2. Lower the other end of the platen shaft into the large hole on the platen roller support plate.
3. Push the shaft toward the platen pulley to fully seat the platen shaft.
You will hear a click when the pin is seated correctly or turn the roller slightly to confirm that the roller is firmly seated.
4. See [Figure 71](#). Loosen the retaining screw for the platen latch pin, and rotate the latch pin to the closed position. Tighten the screw.
5. Close the printhead.

Close the Electronics Enclosure

1. Ensure that all wires are routed properly and are not causing any obstructions, and then carefully swing the electronics enclosure closed.
2. Adjust the wire clips for the parallel port until they are touching the parallel port.
3. Slide the electronics cover onto the print engine.
4. Reinstall the four electronics cover mounting screws.

Reinstall the Print Engine in the Applicator

1. To reinstall the print engine into the applicator, carefully place the keyhole on the center mounting bolt.



Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.

2. Replace the four corner mounting screws securing the print engine to the applicator.
3. Tighten the center mounting bolt.

Resume Printer Operation

1. Open the media cover.
2. **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.

Open the printhead latch, reinstall the media and ribbon, and close the printhead latch.

3. Reconnect the AC power cord and interface cables.
4. Turn on (I) the print engine.

Check the Print Line Quality

1. Check the print quality by performing a PAUSE Self-Test. Adjust the print line quality, if necessary.

For more detailed information on print line adjustments or the self-test, refer to the ZE500™ Series Print Engine Maintenance Manual in the Advanced User section.

The installation is complete.

Toggle Bar and Toggles Maintenance Kit

Installation Instructions

This kit includes the parts and documentation necessary to install the Toggle Bar and Toggles Maintenance Kit in the ZE500™ Series Print Engines. Read these instructions thoroughly before installing this kit.



Caution • This installation must be performed by a qualified service technician.

Parts List

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

Figure 94 • Kit Contents

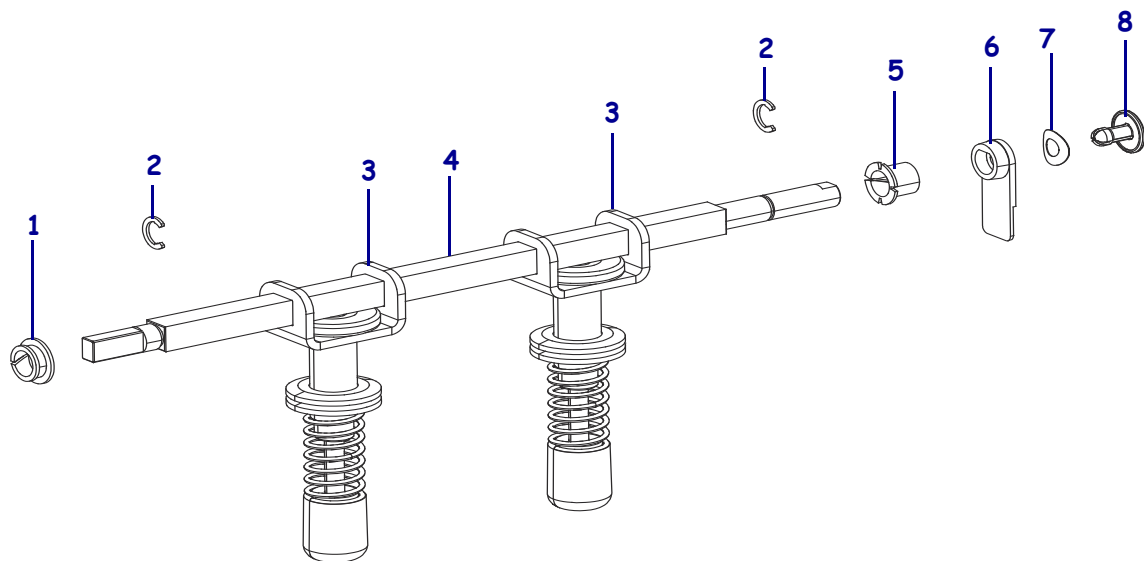


Table 18 • Parts List

✓	Item	Qty	Part Number	Description
	Ref	1	P1046696-009	ZE500-4 Toggle Bar and Toggles Maintenance Kit, RH/LH
			P1046696-010	ZE500-6 Toggle Bar and Toggles Maintenance Kit, RH/LH
	1	1	HW30105	Bearing, Nylon 0.212 × 0.251 (Qty. of 25)
	2	2	HW33810	C-Ring, External 0.250 (Qty. of 100)
	3	2	N/A	Toggle
	4	1	N/A	Bar, Toggle
	5	1	N/A	Bearing, Nylon Flanged
	6	1	HW46352	Flag, Sensor (Qty. of 50)
	7	1	HW40194	Washer, Curved 0.344 × 0.172 × 0.006 (Qty. of 25)
	8		N/A	Clip, Trimount
N/A = Not available as a separate part (listed for identification purposes only).				

Tools Required



Tools • You need these tools to complete this procedure:

- Phillips Screwdriver Set
- Torx Key Set
- Antistatic Wriststrap and Mat
- Flat-blade Screwdriver Set
- Safety Goggles

Remove Power and Data Cables, Ribbon, and Media



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

Connect yourself to an antistatic device.



2. **Caution** • Turn off (O) the print engine and disconnect it from the power source before performing the following procedure.

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


3. **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.

Open the media door, the printhead latch, and remove media and ribbon from the print engine.

4. Close the printhead latch, and then close the media door.

Remove Print Engine from Applicator

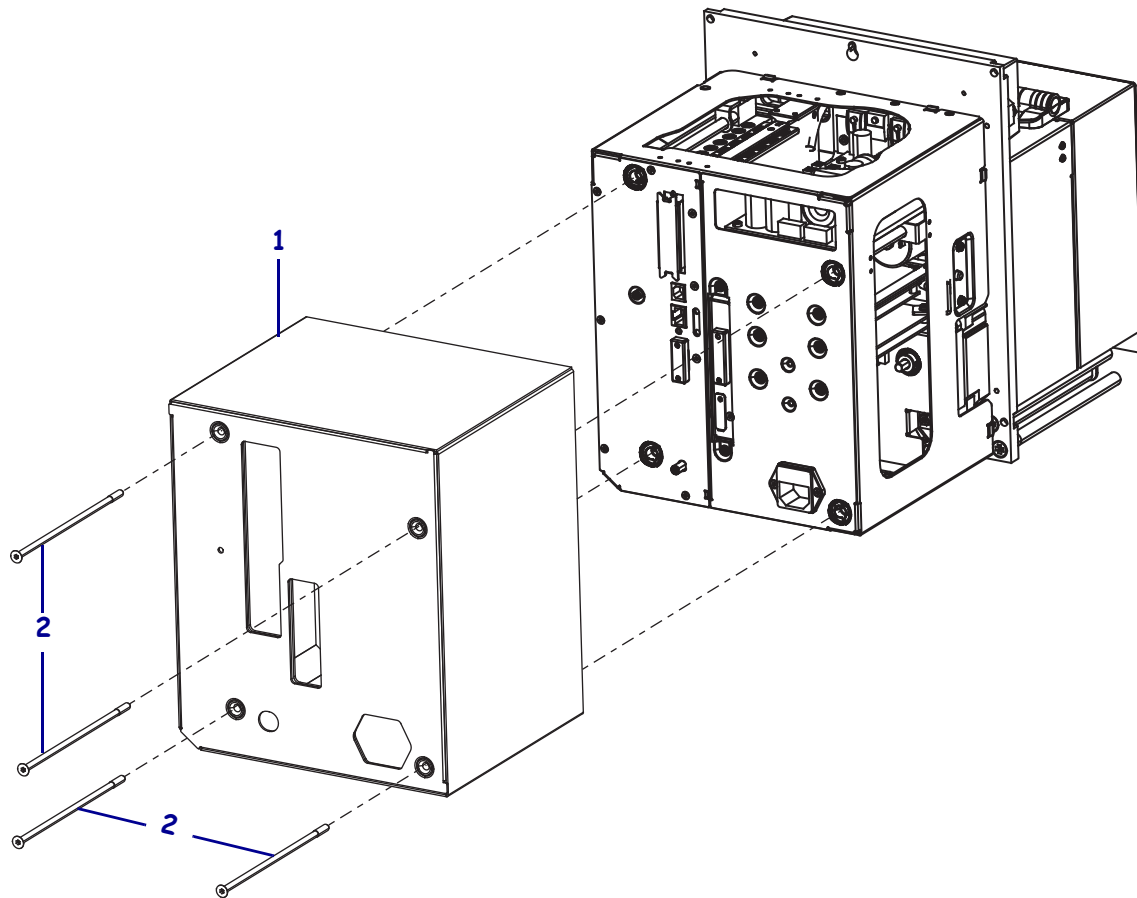
1. Does your applicator (or stand) permit open access to the rear of the print engine?

If you have an...	Then...
Open access	<p>You may swing the print engine open and work on it without removing the unit from the applicator.</p> <p>If you wish to remove the unit from the stand at any time, follow the instructions listed for the <i>Obstructed access</i> type applicator shown in this table.</p> <ol style="list-style-type: none"> a. Go to <i>Remove the Electronics Cover</i>.
Obstructed access	<p>You must remove the print engine from the applicator before you work on it.</p> <ol style="list-style-type: none"> a. Remove the four corner mounting screws securing the print engine to the applicator. b. Loosen the center mounting bolt, but do not remove it. <p> Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.</p> <ol style="list-style-type: none"> c. Lift the print engine off the center mounting bolt and place on a workbench.

Remove the Electronics Cover

1. See [Figure 95](#). Remove the four long mounting screws securing the electronics cover.

Figure 95 • Electronics Cover



1	Electronics cover
2	Electronics cover mounting screws (4)

2. Slide the electronics cover off of the print engine.

Open the Electronics Enclosure

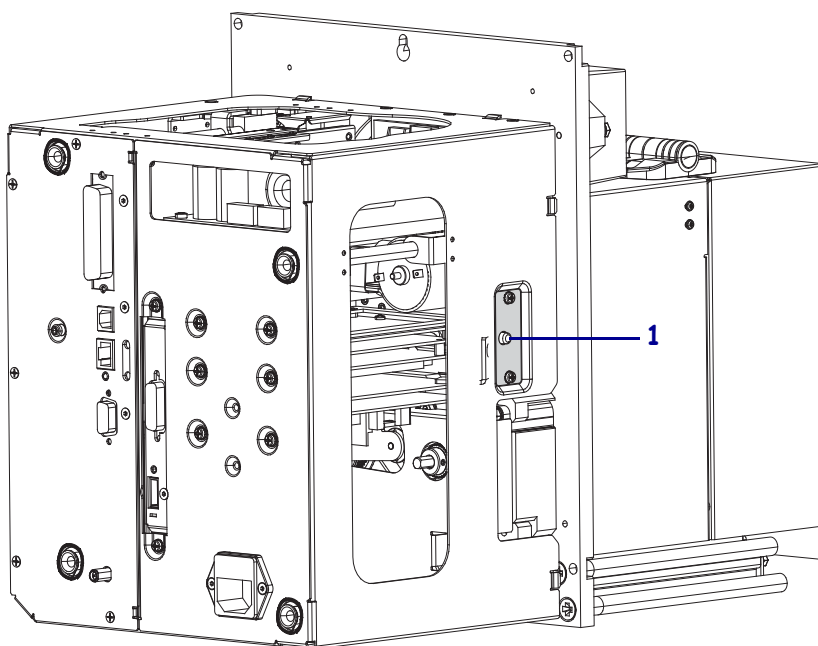
1. See [Figure 96](#). Locate the latch.



Note • For right-hand models, the latch is on the right side when looking from the back of the print engine. For left-hand models, the latch is on the left side.

2. Press the latch and swing the electronics enclosure open.

Figure 96 • Locate the Latch



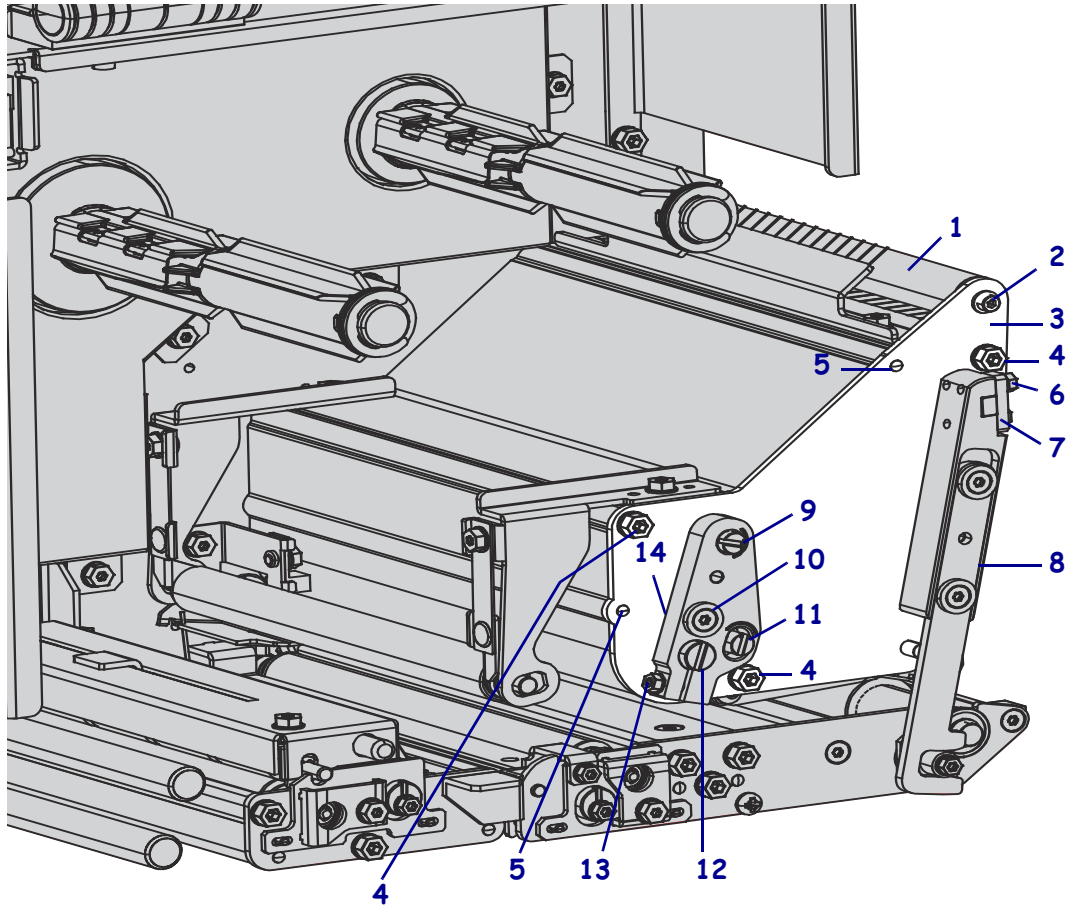
1	Latch
---	-------

Remove the Print Mechanism Extrusion End Plate



Note • See [Figure 97](#). Mark or note the location of the three print line adjusters: print line, balance, and skew.

Figure 97 • Print Mechanism Extrusion End Plate

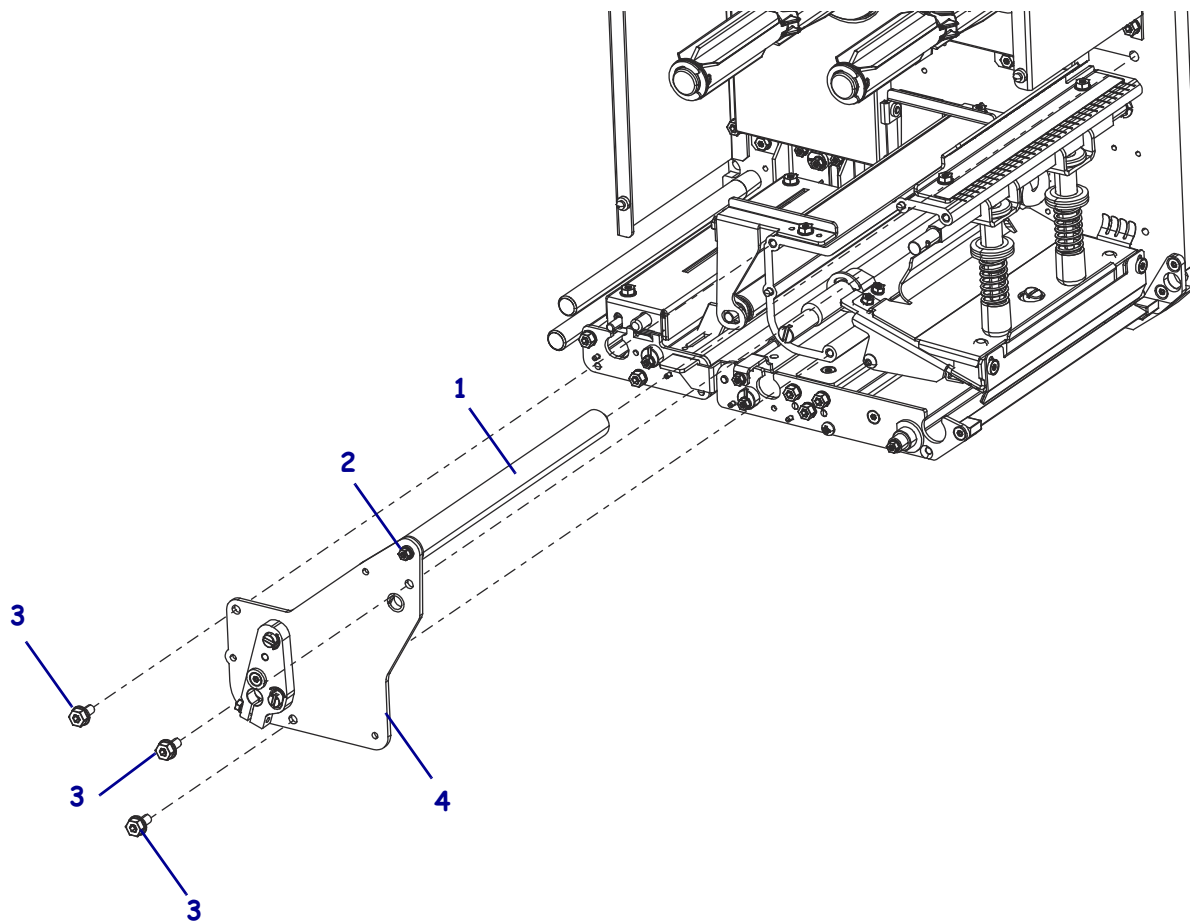


1	Upper ribbon guide roller	8	Printhead latch
2	Upper ribbon guide roller mounting screw	9	Balance adjuster
3	Print mechanism end plate (unshaded)	10	Printhead adjustment plate locking screw
4	End plate mounting screws (3)	11	Skew adjuster
5	Support pins (2)	12	Print line adjuster
6	Printhead latch screws (2)	13	Printhead adjustment plate clamp screw
7	Printhead latch clamping plate	14	Printhead adjustment plate

1. See [Figure 97](#). Loosen the two mounting screws securing the printhead latch clamping plate.
2. Slide the printhead latch off of the toggle bar to remove it.
3. Loosen the printhead adjustment plate clamp screw.
4. Loosen the printhead adjustment plate locking screw.


5. Remove the three screws securing the extrusion end plate.
6. See [Figure 98](#). Grasping the upper ribbon guide roller, gently pull the end plate off of the two support pins.
It is not necessary to disassemble the roller or its shaft from the end plate to remove it from the print engine.
7. Remove the upper ribbon guide roller mounting screw.

Figure 98 • Removing the Extrusion End Plate



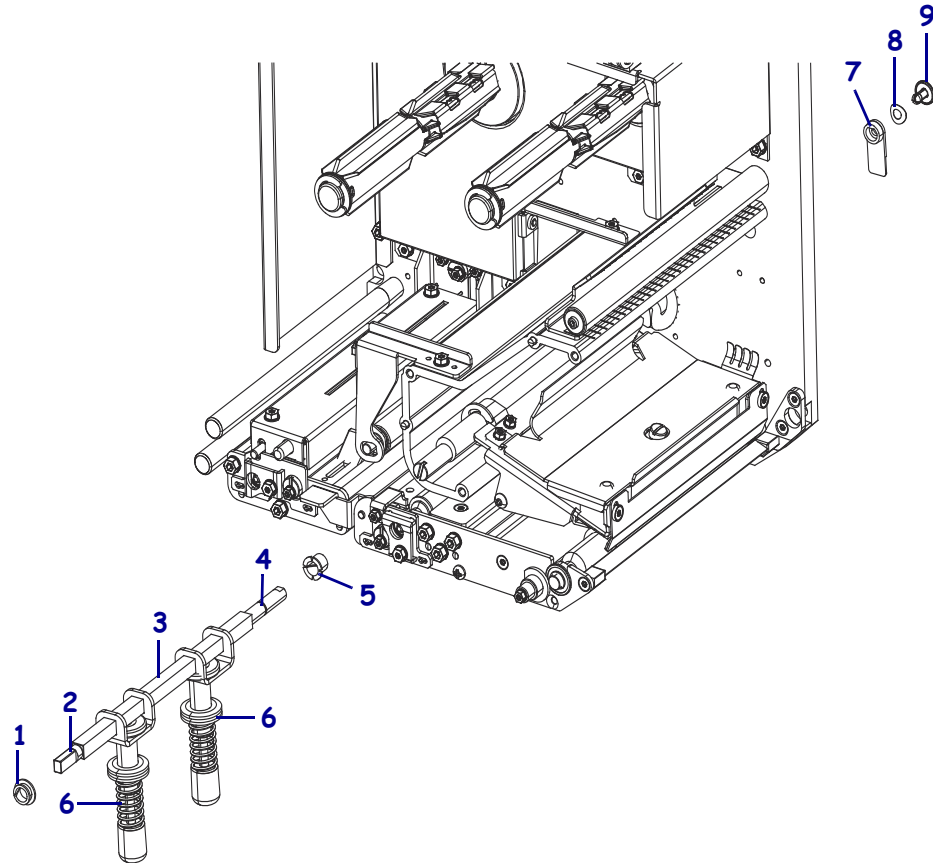
1	Upper ribbon guide roller
2	Upper ribbon guide roller mounting screw
3	Extrusion end plate mounting screw (3)
4	Extrusion end plate

Remove the Toggle Bar

1. See [Figure 99](#). Locate the head-open sensor on the main frame inside of the electronics enclosure.
 2. Using a flat-blade screwdriver, pry off the trimount clip.
 3. Slide the curved washer and sensor flag off of the toggle bar.
-
-  **4. Caution •** Wear protective eyewear when installing or removing E-rings, C-clips, snap rings, springs, and mounting buttons. These are under tension and could fly off.
-

See [Figure 99](#). From the media side, slide the entire toggle bar, toggles, and bearing flange out of the print engine.

Figure 99 • Toggle Bar Assembly



1	Nylon bearing
2	Outboard C-ring
3	Toggle bar
4	Inboard C-ring
5	Nylon flanged bearing

6	Toggles (2)
7	Flag
8	Curved washer
9	Trimount clip

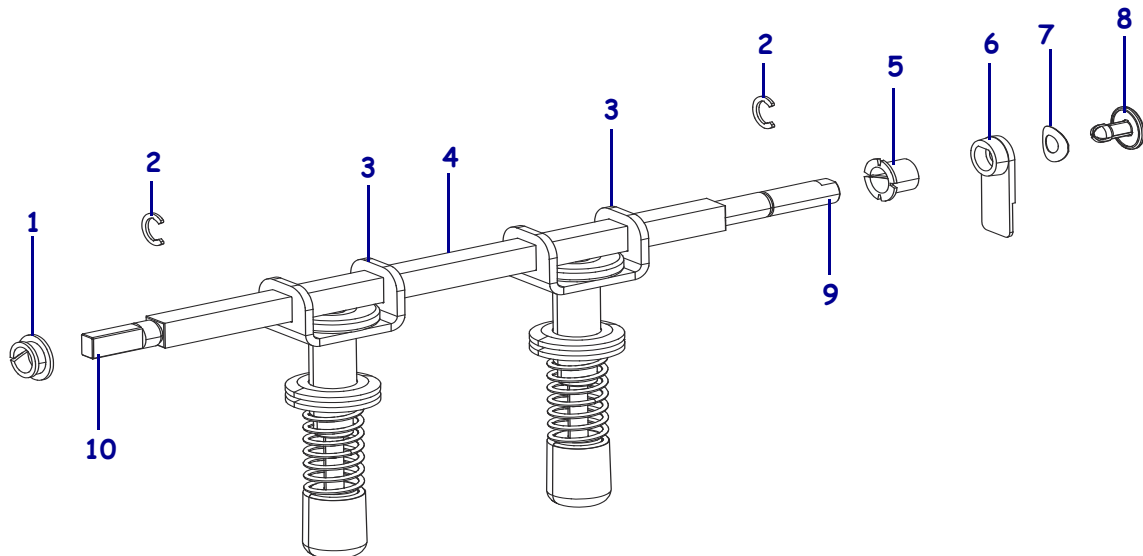
Replace the Toggle Bar

1. See [Figure 100](#). Ensure that the toggle bar assembly is assembled in the following order:
 - a. Starting with the inboard end of the toggle bar, slide on the nylon flanged bearing.
 - b. Slide on the two toggles.
 - c. Slide on the nylon bearing.



Note • Check your extrusion end plate. If you wish to replace the nylon bearing, you may have to remove the old bearing from the end plate.

Figure 100 • Toggle Bar Assembly



1	Nylon bearing	6	Sensor flag
2	C-rings (2)	7	Curved washer
3	Toggles (2)	8	Trimount clip
4	Toggle bar	9	Inboard end of toggle bar
5	Nylon flanged bearing	10	Outboard end of toggle bar (with hole in the shaft)



2. **Caution** • Wear protective eyewear when installing or removing E-rings, C-clips, snap rings, springs, and mounting buttons. These are under tension and could fly off.

Replace the two C-rings on the pivot bar. One is on the outboard end of the bar and the other is against the main frame. Ensure that the C-rings fit into the grooves on the pivot bar.

3. From the media side of the print engine, slide the inboard end of the toggle bar into the main frame.
4. Slide the sensor flag followed by the curved washer onto the toggle bar.

5. Locate the head-open sensor on the main frame inside of the electronics enclosure.



Note • Position the sensor flag at a 45 degree angle to avoid the head-open sensor.

6. Insert the trimount clip into the end of the toggle bar to secure all items on the bar.



Important • Ensure that the trimount clip is fully inserted into the end of the toggle shaft. If the trimount clip is only partially inserted, the operation of the head-open sensor may be affected.

7. Position the toggles so that they are evenly distributed across the width of the media and adjusted to provide equal pressure to the pressure bar mounting bracket.

Replace the Print Mechanism Extrusion End Plate

1. See [Figure 97](#). Loosen the printhead adjustment plate locking screw enough to pivot the adjustment plate for assembly, if required.
2. See [Figure 98](#). Slide the upper ribbon guide roller onto the roller shaft, if necessary.
3. See [Figure 98](#). Align the end plate with the toggle bar and the print mechanism pivot bar.
4. Supporting the upper ribbon guide roller, insert the upper ribbon guide roller shaft into the main frame as you push the end plate onto the support pins.
5. Restore settings or place adjusters in the neutral position before tightening the printhead adjustment plate locking screw.
6. Reinstall the three end plate mounting screws securing the extrusion end plate.
7. Tighten the printhead adjustment plate locking screw.
8. Tighten the adjuster clamp screw.
9. Rotate the toggles onto the print mechanism.
10. Slide the printhead latch onto the toggle bar.
11. Tighten the two printhead latch clamping plate mounting screws.

Close the Electronics Enclosure

1. Ensure that all wires are routed properly and are not causing any obstructions, and then carefully swing the electronics enclosure closed.
2. Adjust the wire clips for the parallel port until they are touching the parallel port.
3. Slide the electronics cover onto the print engine.
4. Reinstall the four electronics cover mounting screws.

Reinstall the Print Engine in the Applicator

1. To reinstall the print engine into the applicator, carefully place the keyhole on the center mounting bolt.



Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.

2. Replace the four corner mounting screws securing the print engine to the applicator.
3. Tighten the center mounting bolt.

Resume Printer Operation

1. Open the media cover.
2. **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.

Open the printhead latch, reinstall the media and ribbon, and close the printhead latch.

3. Reconnect the AC power cord and interface cables.
4. Turn on (I) the print engine.

Check the Print Line Quality

1. Check the print quality by performing a PAUSE Self-Test. Adjust the print line quality, if necessary.

For more detailed information on print line adjustments or the self-test, refer to the ZE500™ Series Print Engine Maintenance Manual in the Advanced User section.

The installation is complete.



Toggle Assembly Maintenance Kit

Installation Instructions

This kit includes the parts and documentation necessary to install the Toggle Assembly Maintenance Kit in the ZE500™ Series Print Engines. Read these instructions thoroughly before installing this kit.



Caution • This installation must be performed by a qualified service technician.

Parts List

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

Figure 101 • Kit Contents

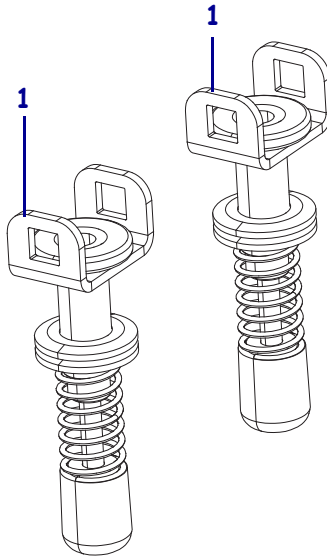


Table 19 • Parts List

✓	Item	Qty	Part Number	Description
	Ref	1	P1046696-011	Toggle Assembly Maintenance Kit
	1	2	N/A	Toggle Assembly

N/A = Not available as a separate part (listed for identification purposes only).

Tools Required



Tools • You need these tools to complete this procedure:

- Phillips Screwdriver Set
- Metric Hex Key (Allen Wrench) Set
- Torx Key Set
- Flat-blade Screwdriver Set
- Safety Goggles
- Antistatic Wriststrap and Mat

Remove Power and Data Cables, Ribbon, and Media



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

Connect yourself to an antistatic device.



2. **Caution** • Turn off (O) the print engine and disconnect it from the power source before performing the following procedure.

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


3. **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.

Open the media door, the printhead latch, and remove media and ribbon from the print engine.

4. Close the printhead latch, and then close the media door.

Remove Print Engine from Applicator

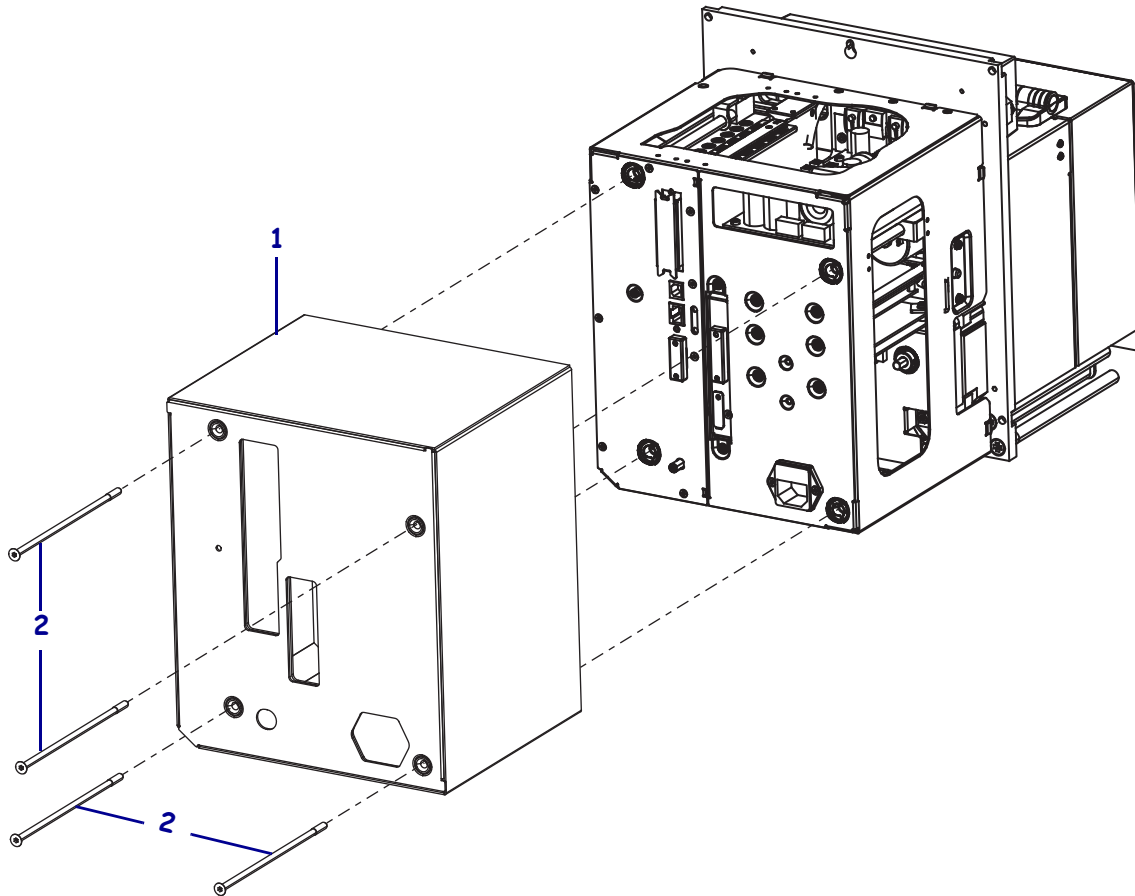
1. Does your applicator (or stand) permit open access to the rear of the print engine?

If you have an...	Then...
Open access	<p>You may swing the print engine open and work on it without removing the unit from the applicator.</p> <p>If you wish to remove the unit from the stand at any time, follow the instructions listed for the <i>Obstructed access</i> type applicator shown in this table.</p> <p>a. Go to <i>Remove the Electronics Cover</i>.</p>
Obstructed access	<p>You must remove the print engine from the applicator before you work on it.</p> <p>a. Remove the four corner mounting screws securing the print engine to the applicator.</p> <p>b. Loosen the center mounting bolt, but do not remove it.</p> <p> Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.</p> <p>c. Lift the print engine off the center mounting bolt and place on a workbench.</p>

Remove the Electronics Cover

1. See [Figure 102](#). Remove the four long mounting screws securing the electronics cover.

Figure 102 • Electronics Cover



1	Electronics cover
2	Electronics cover mounting screws (4)

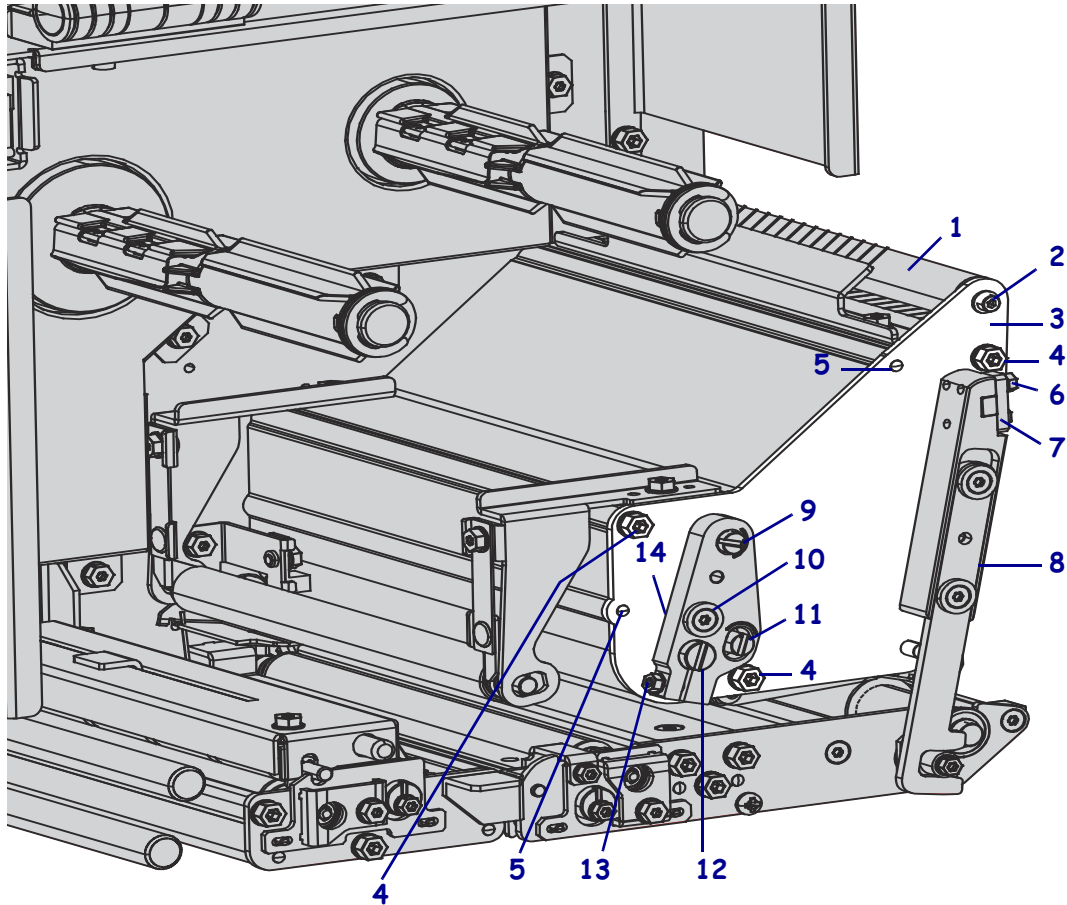
2. Slide the electronics cover off of the print engine.

Remove the Print Mechanism Extrusion End Plate



Note • See [Figure 103](#). Mark or note the location of the three print line adjusters: print line, balance, and skew.

Figure 103 • Print Mechanism Extrusion End Plate

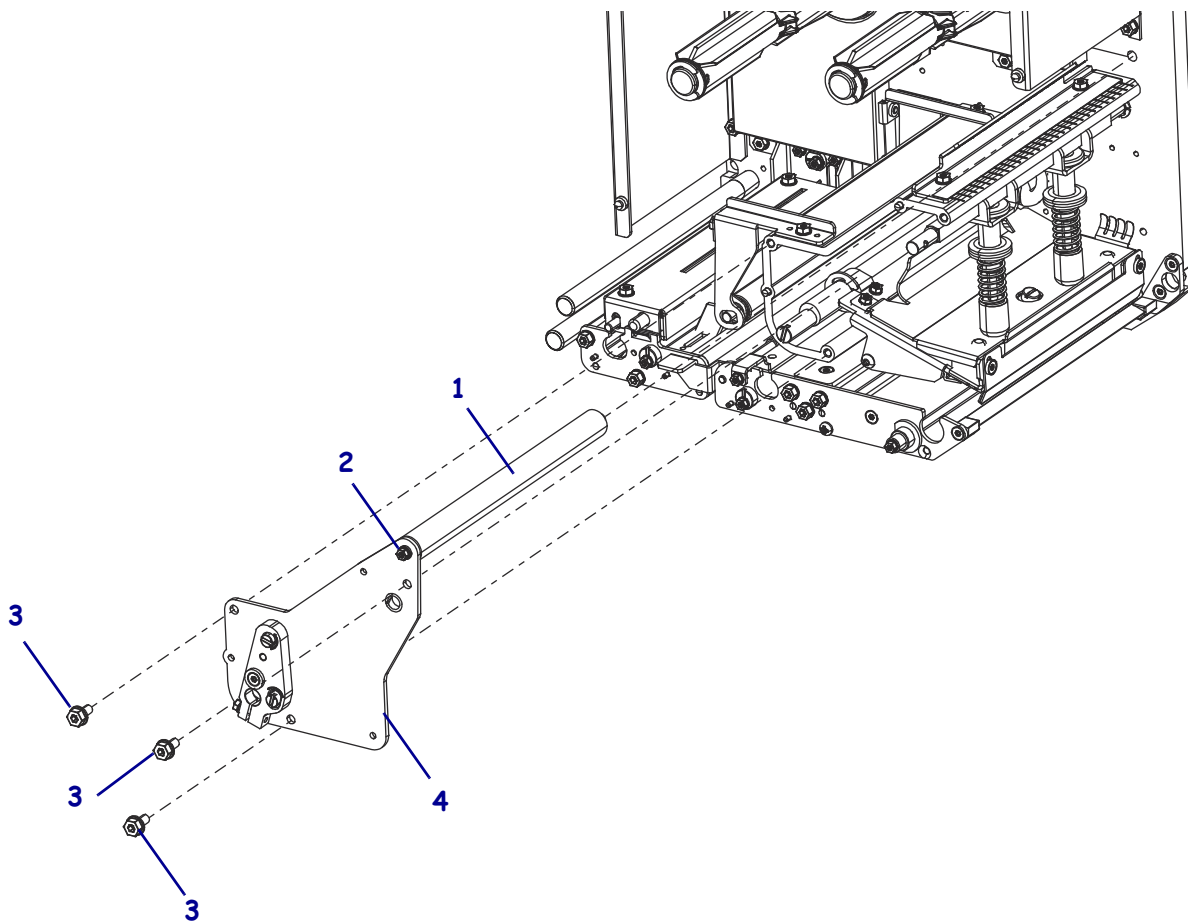


1	Upper ribbon guide roller	8	Printhead latch
2	Upper ribbon guide roller mounting screw	9	Balance adjuster
3	Print mechanism end plate (unshaded)	10	Printhead adjustment plate locking screw
4	End plate mounting screws (3)	11	Skew adjuster
5	Support pins (2)	12	Print line adjuster
6	Printhead latch screws (2)	13	Printhead adjustment plate clamp screw
7	Printhead latch clamping plate	14	Printhead adjustment plate

1. See [Figure 103](#). Loosen the two mounting screws securing the printhead latch clamping plate.
2. Slide the printhead latch off of the toggle bar to remove it.
3. Loosen the printhead adjustment plate clamp screw.
4. Loosen the printhead adjustment plate locking screw.

5. Remove the three screws securing the extrusion end plate.
6. See [Figure 104](#). Grasping the upper ribbon guide roller, gently pull the end plate off of the two support pins.
It is not necessary to disassemble the roller or its shaft from the end plate to remove it from the print engine.
7. Remove the upper ribbon guide roller mounting screw.

Figure 104 • Removing the Extrusion End Plate



1	Upper ribbon guide roller
2	Upper ribbon guide roller mounting screw
3	Extrusion end plate mounting screw (3)
4	Extrusion end plate

Remove the Toggles

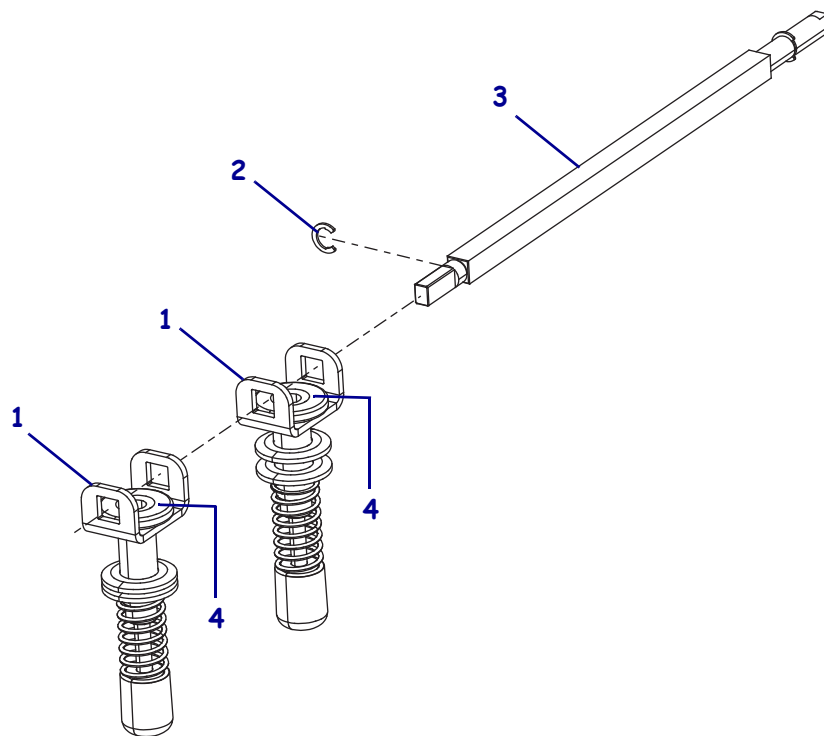


- Caution** • Wear protective eyewear when installing or removing E-rings, C-clips, snap rings, springs, and mounting buttons. These are under tension and could fly off.

See [Figure 105](#). Remove the outboard E-ring from the pivot bar.

- Turn the toggle position locking nuts clockwise to release from the pivot bar.
- Slide the two toggle assemblies off of the pivot bar and discard.

Figure 105 • Toggles



1	Toggle (2)
2	Outboard E-ring
3	Toggle bar
4	Toggle position locking nuts (2)

Replace the Toggles

1. See [Figure 105](#). Slide the two toggle assemblies onto the toggle bar.
2. Turn the toggle position locking nuts counterclockwise to secure in place on the pivot bar.



3. **Caution** • Wear protective eyewear when installing or removing E-rings, C-clips, snap rings, springs, and mounting buttons. These are under tension and could fly off.

Replace the outboard E-ring on the toggle bar. Ensure that the E-ring fits into the groove on the toggle bar.

4. Position the toggles so that they are evenly distributed across the width of the media and adjusted to provide equal pressure to the pressure bar mounting bracket.

Replace the Print Mechanism Extrusion End Plate

1. See [Figure 103](#). Loosen the printhead adjustment plate locking screw enough to pivot the adjustment plate for assembly, if required.
2. See [Figure 104](#). Slide the upper ribbon guide roller onto the roller shaft, if necessary.
3. See [Figure 104](#). Align the end plate with the toggle bar and the print mechanism pivot bar.
4. Supporting the upper ribbon guide roller, insert the upper ribbon guide roller shaft into the main frame as you push the end plate onto the support pins.
5. Restore settings or place adjusters in the neutral position before tightening the printhead adjustment plate locking screw.
6. Reinstall the three end plate mounting screws securing the extrusion end plate.
7. Tighten the printhead adjustment plate locking screw.
8. Tighten the adjuster clamp screw.
9. Rotate the toggles onto the print mechanism.
10. Slide the printhead latch onto the toggle bar.
11. Tighten the two printhead latch clamping plate mounting screws.

Close the Electronics Enclosure

1. Ensure that all wires are routed properly and are not causing any obstructions, and then carefully swing the electronics enclosure closed.
2. Adjust the wire clips for the parallel port until they are touching the parallel port.
3. Slide the electronics cover onto the print engine.
4. Reinstall the four electronics cover mounting screws.

Reinstall the Print Engine in the Applicator

1. To reinstall the print engine into the applicator, carefully place the keyhole on the center mounting bolt.



Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.

2. Replace the four corner mounting screws securing the print engine to the applicator.
3. Tighten the center mounting bolt.

Resume Printer Operation

1. Open the media cover.
2. **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.

Open the printhead latch, reinstall the media and ribbon, and close the printhead latch.

3. Reconnect the AC power cord and interface cables.
4. Turn on (I) the print engine.

Check the Print Line Quality

1. Check the print quality by performing a PAUSE Self-Test. Adjust the print line quality, if necessary.

For more detailed information on print line adjustments or the self-test, refer to the ZE500™ Series Print Engine Maintenance Manual in the Advanced User section.

The installation is complete.



Notes • _____

Electronics Replacements

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Figure 106 • Circuit Boards Overview

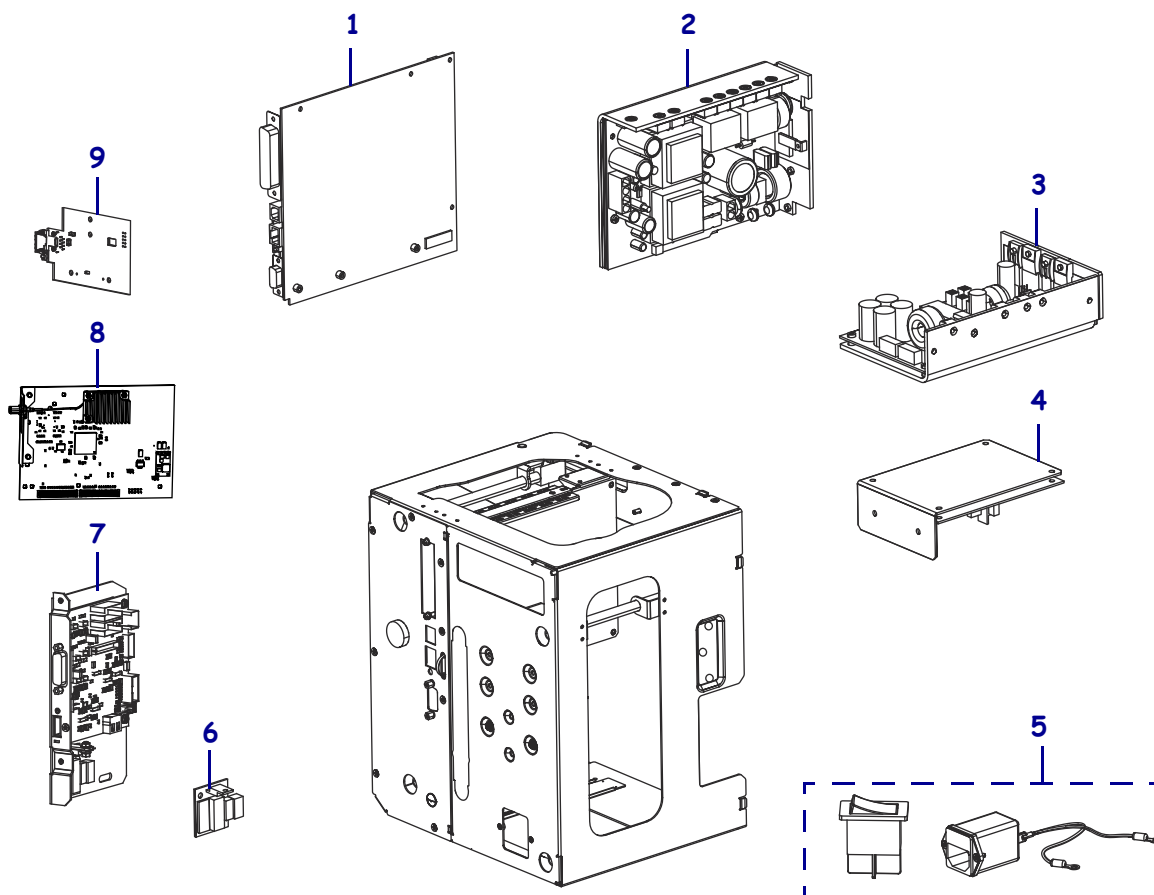


Table 20 • Circuit Boards Overview

Item	Part Number	Description
1	P1046696-017	ZE500 Series Main Logic Board Maintenance Kit, see Table 21 on page 235 .
2	P1046696-021	ZE500 Series AC Power Supply Maintenance Kit, see Table 21 on page 235 .
3	P1046696-022	ZE500 Series DC Power Supply Maintenance Kit RH, see Table 21 on page 235 .
	P1046696-023	ZE500 Series DC Power Supply Maintenance Kit LH, see Table 21 on page 235 .
4	P1046696-024	ZE500 Series Ribbon Tension Control Board Maintenance Kit, see Table 21 on page 235 .
5	P1046696-026	ZE500 Series Power Entry Module and Power Switch Maintenance Kit, see Table 21 on page 235 .
6	P1046696-020	ZE500 Series Voltage Regulator Board Maintenance Kit, see Table 21 on page 235 .
7	P1046696-018	ZE500 Series Applicator Interface /+28V DC Voltage Regulator Maintenance Kit, see Table 21 on page 235 .
8	P1046696-001	ZebraNet b/g Print Server Option Kit, see Table 21 on page 235 .
9	79823	Wired Ethernet Kit, see Table 21 on page 235 .
N/S	39518M	ZebraNet® Internal Wireless Print Servers Magnetic Mount and Tethered Cable Kit, see Table 21 on page 235 .
N/S	P1046696-025	ZE500 Series Electronics Cables Maintenance Kit, see Table 21 on page 235 .

Figure 107 • Electronics Kits

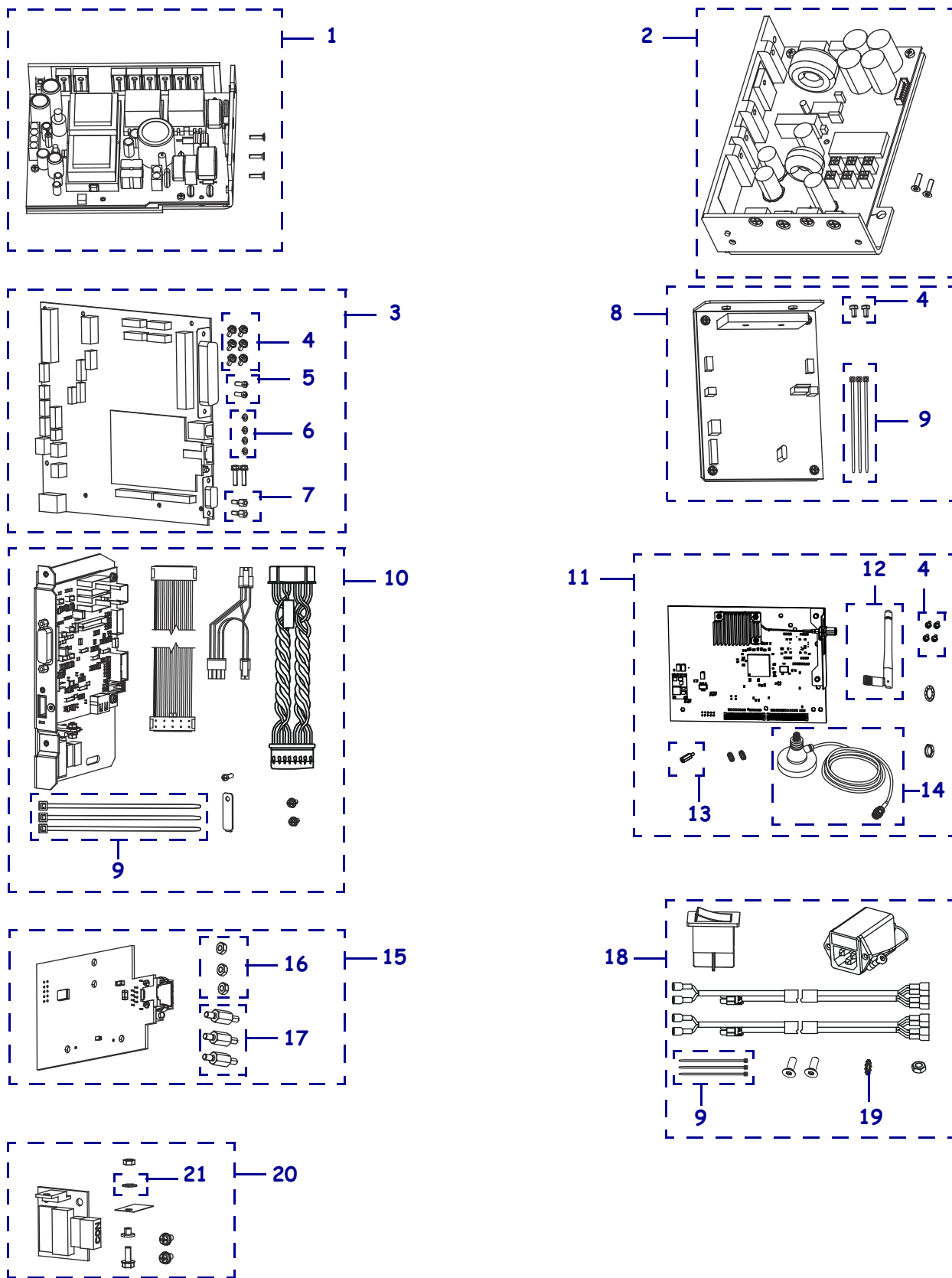


Table 21 • Electronics Kits Parts List

Item	Part Number	Description
1	P1046696-021	ZE500 Series AC Power Supply Maintenance Kit See AC Power Supply Maintenance Kit on page 254 .
2	P1046696-022	ZE500 Series DC Power Supply Maintenance Kit, RH See DC Power Supply Maintenance Kit on page 266 .
	P1046696-023	ZE500 Series DC Power Supply Maintenance Kit, LH See DC Power Supply Maintenance Kit on page 266 .
3	P1046696-017	ZE500 Series Main Logic Board Maintenance Kit See Main Logic Board Maintenance Kit on page 237 .
4	HW43495	Screw, M3 × 0.5 × 6 PH HD with Ext. Tooth Lock Washer (Qty. of 25)
5	HW78802	Screw, 4-40 × 0.31 PN PH SS (Qty. of 25)
6	HW45945	Washer, Split Lock #4 (Qty. of 25)
7	HW32406	Standoff, 4-40 Hex MF (Qty. of 25)
8	P1046696-024	ZE500 Series Ribbon Tension Control Board Maintenance Kit See Ribbon Tension Control Board Maintenance Kit on page 312 .
4	HW43495	Screw and Serrated Washer (Qty. of 25)
9	HWQ06020	Cable Tie, 0.09 × 3.62 (sold in quantities of 20)
10	P1046696-018	ZE500 Series Applicator Interface /+28V DC Voltage Regulator Maintenance Kit See Applicator Interface/+28V DC Voltage Regulator Maintenance Kit on page 275 .
9	HWQ06020	Cable Tie, 0.09 × 3.62 (sold in quantities of 20)
11	P1046696-001	ZebraNet b/g Print Server Option Kit See ZebraNet® b/g Print Server Option Kit on page 347 .
12	P1032276	Antenna, Elbow 802.11 b/g
4	HW43495	Screw, M3 × 0.5 × 6 (Qty. of 25)
13	HW79293	Standoff, M3 × 0.5 M/F 14 MM SS
12	P1032276	ZebraNet b/g Print Server Antenna Maintenance Kit See ZebraNet® b/g Print Server Antenna Maintenance Kit on page 366 .
4	HW43495	Screw, M3 x 0.5 x 6 Ph Hd with External Tooth Lock (for PAX4 printers) (sold in quantities of 25)
N/S	HW43968	Screw, M3 x 0.5 × 6 (Xi4 printers) (sold in quantities of 25)
N/S	HW78804	Screw, M3 x 0.5 x 6 (for ZMx00 Series printers) (sold in quantities of 50)
14	39518M	ZebraNet® Internal Wireless Print Servers Magnetic Mount and Tethered Cable Kit See ZebraNet® Internal Wireless Print Servers Magnetic Mount and Tethered Cable Kit on page 363 .
15	79823	Wired Ethernet Kit See Wired Ethernet Kit on page 339 .
16	HW10460	Nut, M3 × 2.4 × 5.5 (sold in quantities of 25)

Table 21 • Electronics Kits Parts List

Item	Part Number	Description
17	HW79656	Standoff, M3 × 0.5 × 10 (sold in quantities of 12)
18	P1046696-026	ZE500 Series Power Entry Module and Power Switch Maintenance Kit See Power Entry Module and Power Switch Maintenance Kit on page 321 .
19	HW43482	Washer, Serrated M4 (Qty. of 25)
9	HWQ06020	Cable Tie, 0.09 × 3.62 (sold in quantities of 20)
20	P1046696-020	ZE500 Series Voltage Regulator Board Maintenance Kit See Voltage Regulator Board Maintenance Kit on page 297 .
21	HW43893	Washer, Flat 0.25 × 0.125 × 0.028 (Qty. of 100)
N/S	P1046696-025	ZE500 Series Electronics Cables Maintenance Kit See Electronics Cables Maintenance Kit on page 369 .
N/S	HW78827	Washer, Lock External (Qty. of 25)
19	HW43482	Washer, Serrated (Qty. of 25)
9	HWQ06020	Cable Tie



Main Logic Board Maintenance Kit

Installation Instructions

This kit includes the parts and documentation necessary to install the Main Logic Board in the ZE500™ Series Print Engines. Read these instructions thoroughly before installing this kit.



Caution • This installation must be performed by a qualified service technician.



Note • The graphics and steps in this procedure are for the right-hand (RH) print engine. Steps for a left-hand (LH) print engine may be slightly different.

Parts List

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

Figure 108 • Kit Contents

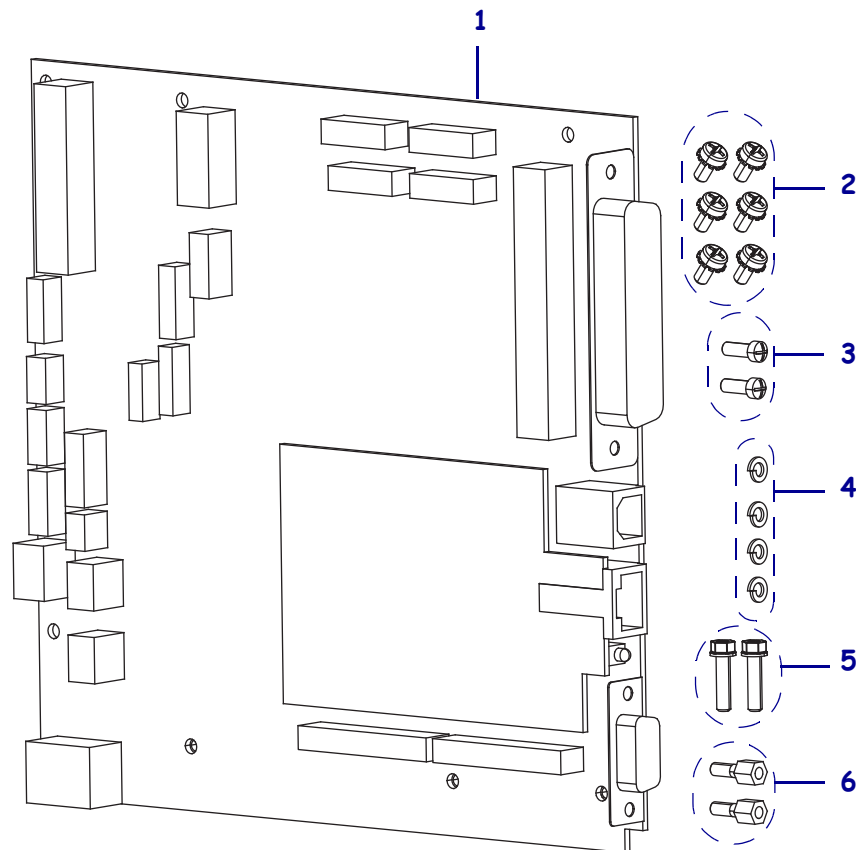


Table 22 • Parts List

✓	Item	Qty	Part Number	Description
	Ref	1	P1046696-017	Main Logic Board Maintenance Kit
	1	1	<i>N/A</i>	Main Logic Board 64MB
	2	6	HW43495	Screw, M3 × 0.5 × 6 PH HD with Ext. Tooth Lock Washer (Qty. of 25)
	3	2	HW78802	Screw, 4-40 × 0.31 PN PH SS (Qty. of 25)
	4	4	HW45945	Washer, Split Lock #4 (Qty. of 25)
	5	2	<i>N/A</i>	Screw, M3 × 12 HX TX NI
	6	2	HW32406	Standoff, 4-40 Hex MF (Qty. of 25)
N/A = Not available as a separate part (listed for identification purposes only).				

Tools Required



Tools • You need these tools to complete this procedure:

- Phillips Screwdriver Set
- Metric Hex Key (Allen Wrench) Set
- Torx Key Set
- Antistatic Wriststrap and Mat
- Metric Nutdriver Set

Remove Power and Data Cables



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

Connect yourself to an antistatic device.




2. **Caution** • Turn off (O) the print engine and disconnect it from the power source before performing the following procedure.

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

Remove Print Engine from Applicator

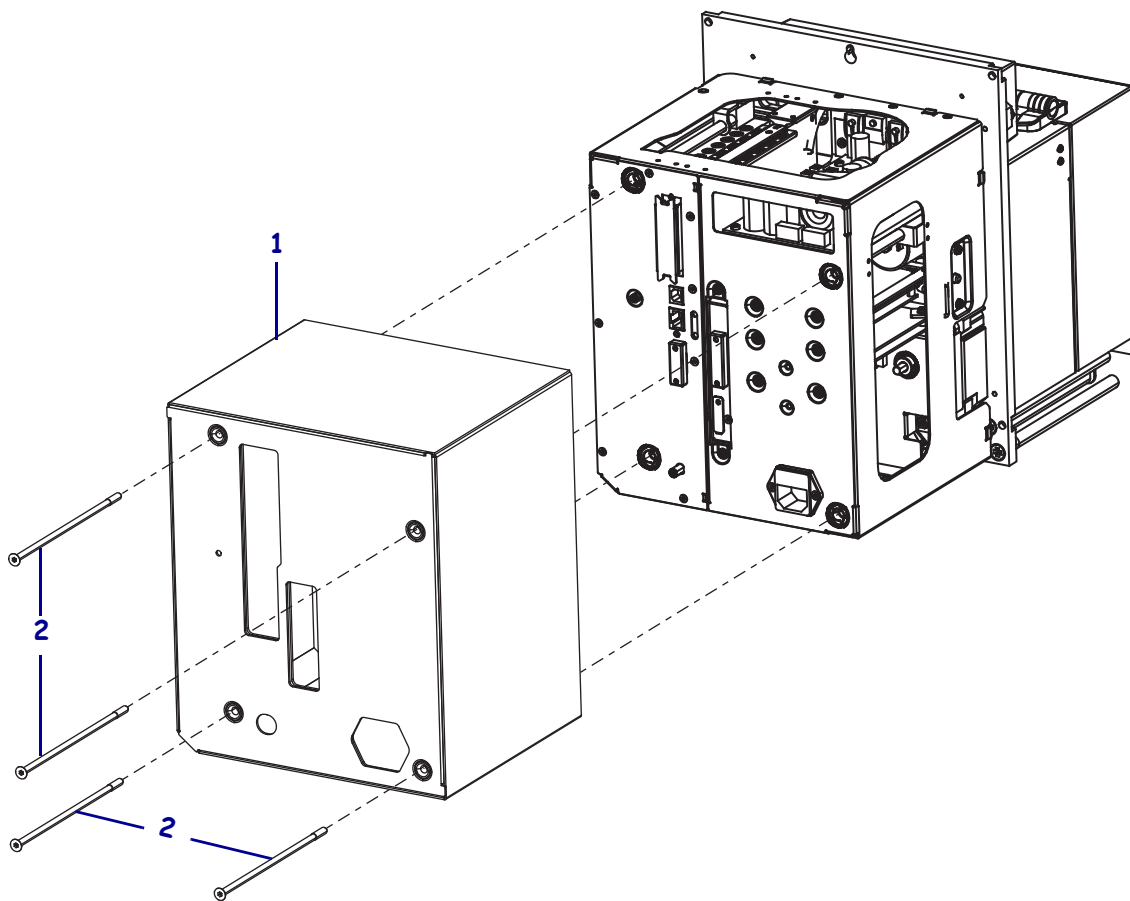
1. Does your applicator (or stand) permit open access to the rear of the print engine?

If you have an...	Then...
Open access	<p>You may swing the print engine open and work on it without removing the unit from the applicator.</p> <p>If you wish to remove the unit from the stand at any time, follow the instructions listed for the <i>Obstructed access</i> type applicator shown in this table.</p> <p>a. Go to <i>Remove the Electronics Cover</i>.</p>
Obstructed access	<p>You must remove the print engine from the applicator before you work on it.</p> <p>a. Remove the four corner mounting screws securing the print engine to the applicator.</p> <p>b. Loosen the center mounting bolt, but do not remove it.</p> <p> Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.</p> <p>c. Lift the print engine off the center mounting bolt and place on a workbench.</p>

Remove the Electronics Cover

1. See [Figure 109](#). Remove the four long mounting screws securing the electronics cover.

Figure 109 • Electronics Cover



1	Electronics cover
2	Electronics cover mounting screws (4)

2. Slide the electronics cover off of the print engine.

Open the Electronics Enclosure

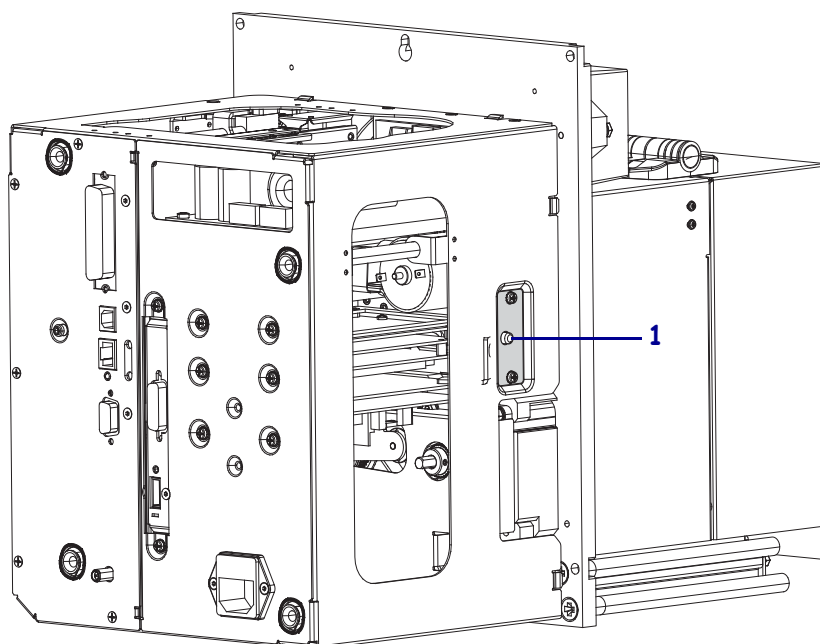
1. See [Figure 110](#). Locate the latch.



Note • For right-hand models, the latch is on the right side when looking from the back of the print engine. For left-hand models, the latch is on the left side.

2. Press the latch and swing the electronics enclosure open.

Figure 110 • Locate the Latch



1	Latch
----------	-------

Remove the Main Logic Board and Print Server Boards

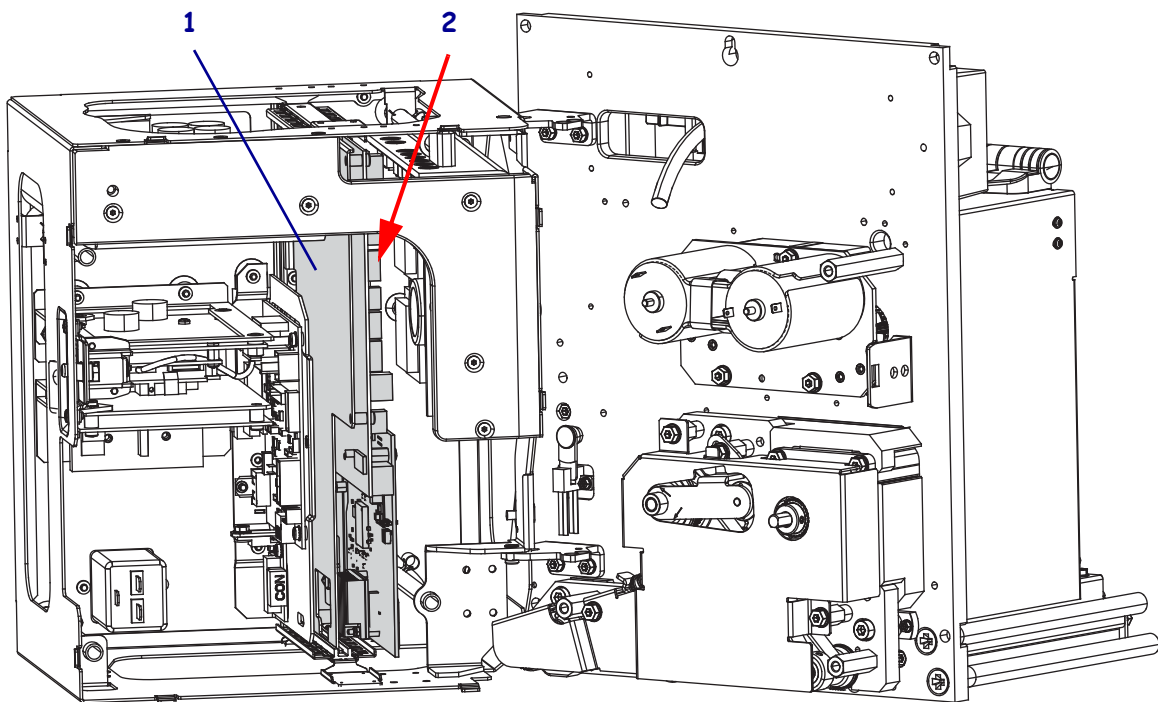
1. See [Figure 111](#). Disconnect all connectors on the main logic board (MLB) and any print server boards, if installed.

If you have difficulty removing all of the connectors, remove only those connectors that are vertically oriented along the main frame wall. (See the red arrow in [Figure 111](#).)



Note • Each of the connectors on the MLB has a latch that must be depressed to remove the connector from the MLB. [Figure 111](#) depicts a right-hand engine assembly. For left-hand print engines, these latches are not always visible, since they are located either along the bottom or the inside edge of the connector.

Figure 111 • MLB Assembly



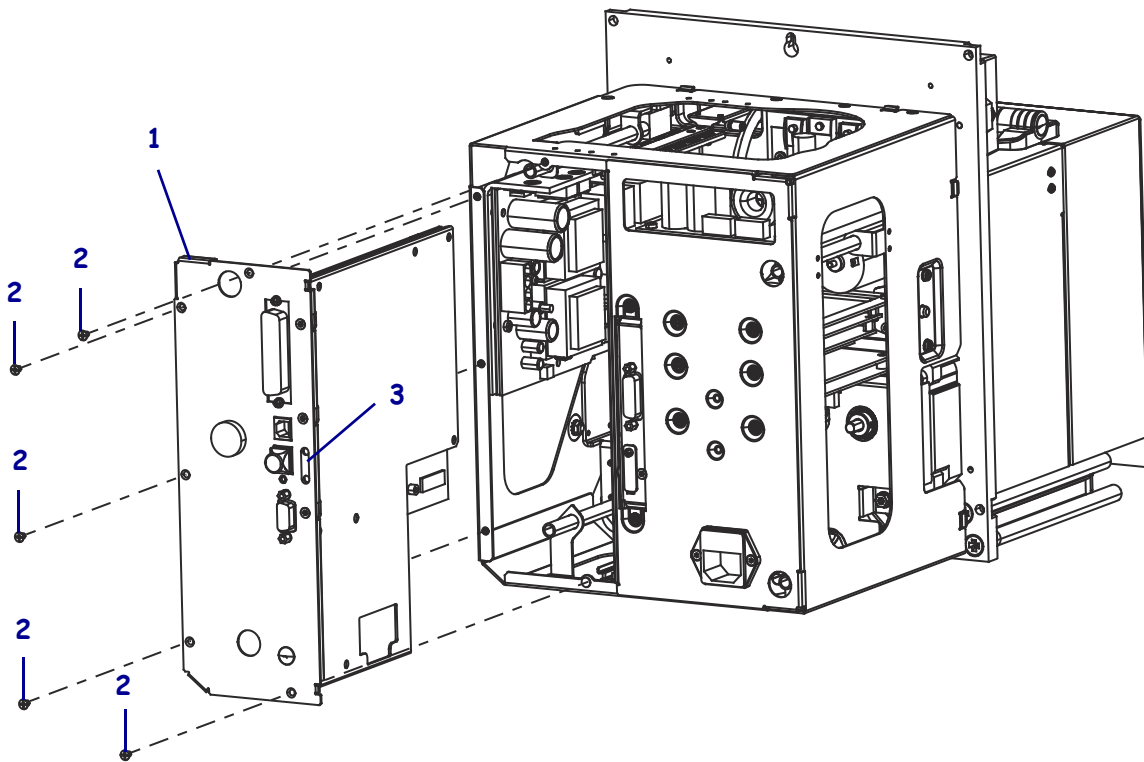
1	MLB assembly (shaded)
2	Disconnect this row of connectors to assist with the removal of the MLB

- See [Figure 112](#). Remove the five mounting screws securing the MLB and print server boards to the back plane of the print engine.



Note • The MLB and print server boards are designed to be removed as a single assembly.

Figure 112 • MLB Access Panel



1	MLB access panel
2	Mounting screws (5)
3	Cable tie

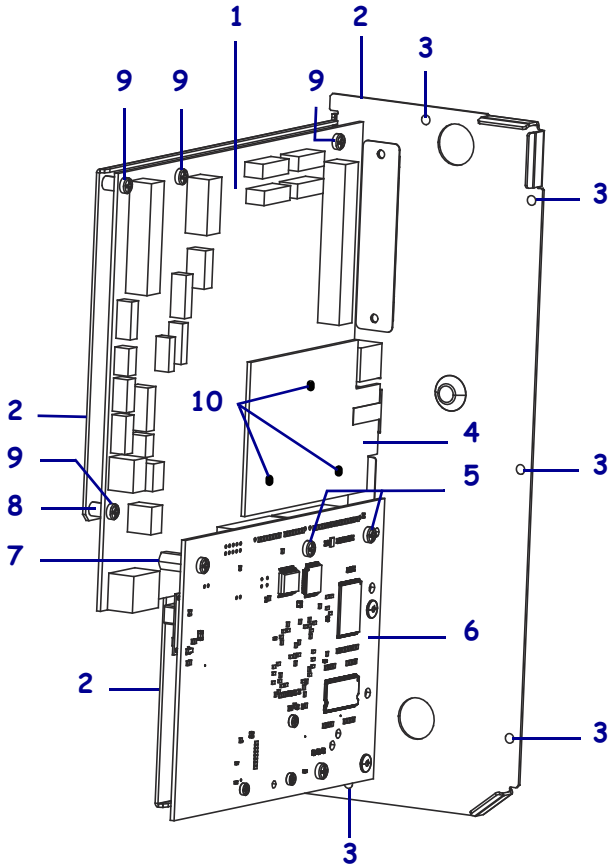
- Pull the cable tie out of the MLB access panel until you see a loop. Use the loop to help pull the MLB access panel out of the print engine.
- Slide the combined MLB/print server boards out of the back of the print engine.
- Disconnect any remaining connectors on the MLB.

Remove the Print Server(s)

1. Which print server(s) do you have installed?

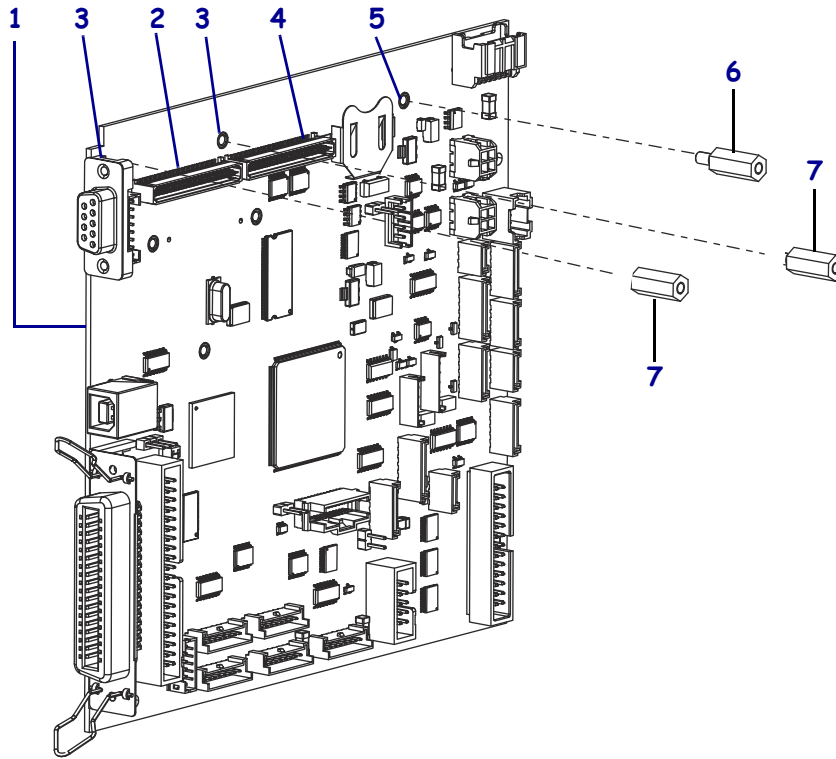
If you have...	Then...
ZebraNet Internal 10/100 Print Server (Wired/Ethernet)	<ol style="list-style-type: none"> See Figure 113. With the MLB components facing up, remove the three nuts securing the wired print server to the MLB. Ease the wired print server board off of the three standoffs and guide the RJ45 connector out of the back plate. Continue with Remove the MLB from the Access Panel.
ZebraNet b/g Print Server (Wireless)	<ol style="list-style-type: none"> See Figure 116. From the back panel of the print engine, remove the brass nut and lock washer from the RF connector. See Figure 113. Remove the three screws securing the wireless print server board to the MLB. See Figure 114. Gently separate the wireless print server board from the MLB at P23 and P24. On the access panel side, remove the two screws securing the spacers. See Figure 113. On the MLB, remove the two spacers and the standoff. Continue with Remove the MLB from the Access Panel.
Both	<ol style="list-style-type: none"> Perform the procedure associated with ZebraNet b/g Print Server (Wireless) in this table. When complete, perform the procedure for ZebraNet Internal 10/100 Print Server (Wired/Ethernet). Continue with Remove the MLB from the Access Panel.
Neither	Continue with Remove the MLB from the Access Panel .

Figure 113 • MLB, Wired Board,
and
Wireless Print Server Board



1	MLB
2	MLB access panel
3	MLB access panel mounting holes (5)
4	Wired 10/100 board
5	Screw through spacer under the wireless board (2)
6	Wireless b/g Print Server board
7	Standoff under the wireless board
8	Fixed spacer on MLB access panel (6)
9	MLB mounting screws (4)
10	Wired print server mounting nuts (3)

Figure 114 • MLB



1	Main logic board
2	P24 Connector
3	Spacer mounting hole (2)
4	P23 Connector

5	Standoff mounting hole
6	Standoff
7	Spacers (2)

Remove the MLB from the Access Panel

1. See [Figure 113](#). From the back plate, remove the two standoffs with split lock washers securing the 36-pin parallel port.
2. Remove the two hex standoffs with split lock washers securing the 9-pin serial port.
3. With the MLB components facing up, remove the four mounting screws and star washers from the MLB.
4. With the MLB components facing down, remove the two mounting screws and star washers from the MLB access panel.
5. Separate the MLB from the MLB access panel.

Replace the Main Logic Board (MLB) and Print Server Boards

1. Starting with the parallel port side of the MLB, insert the circuit board into the back panel of the access panel.
2. Reinstall the six screws and star washers securing the MLB to the access panel.
Four screws are installed on the face of the MLB and two screws are installed on the access panel side.
3. Reinstall the two hex standoffs with split lock washers securing the 9-pin serial port connector
4. Reinstall the two screws with split lock washers securing the 36-pin parallel port connector.
5. Which print server do you have installed?

If you have...	Then...
ZebraNet Internal 10/100 Print Server (Wired/Ethernet)	<ol style="list-style-type: none"> a. See Figure 113. Starting with the component side of the MLB face up, guide the RJ45 connector through the back panel. b. Lower the wired print server board onto the three studs on the MLB and secure with the three small nuts. c. Continue with Reinstall the MLB Assembly.
ZebraNet b/g Print Server (Wireless)	<ol style="list-style-type: none"> a. From the back side of the panel (with MLB facing away from you), reinstall the two screws in the threaded mounting holes to secure the spacers. These screws go in the holes closest to the connector-end of the MLB. b. Flip the panel and MLB/print server boards face up. c. See Figure 114. Reinstall the two spacers and the standoff. d. The standoff goes into the threaded hole alongside of the battery. e. Reconnect the wireless print server board to the MLB at connectors P23 and P24. f. Install the three mounting screws and star washers (two into the spacers and one in the standoff) to secure the wireless print server board to the MLB and the MLB access panel. g. See Figure 115. From the back panel of the print engine, reinstall the brass nut and lock washer on the RF connector. h. Continue with Reinstall the MLB Assembly.
Both	<ol style="list-style-type: none"> a. Perform the procedure for ZebraNet Internal 10/100 Print Server (Wired/Ethernet). b. When complete, perform the procedure for ZebraNet b/g Print Server (Wireless) in this table. c. Continue with Reinstall the MLB Assembly.
Neither	Continue with Reinstall the MLB Assembly .

Reinstall the MLB Assembly

1. Connect the inner row of connectors on the MLB.
2. Partially slide the combined MLB/print server boards onto the rails provided in the electronics enclosure.
3. See [Figure 115](#). Connect as many of the MLB and the print server board connectors as you are able to reach.

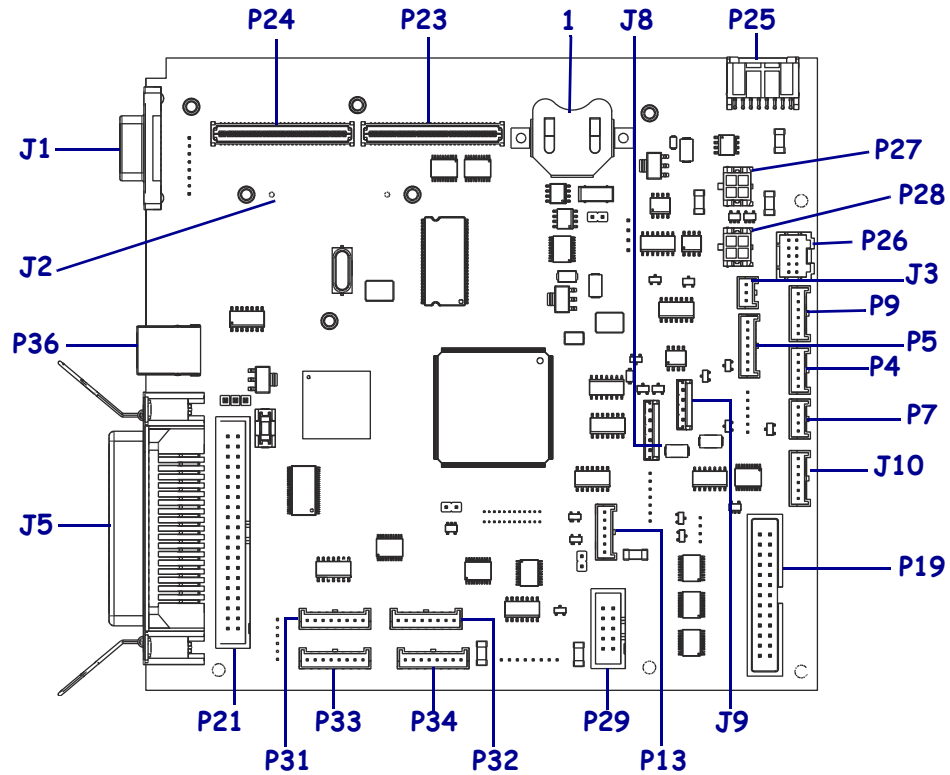


Note • Some of the cables will not be long enough to connect while the MLB is only partially inserted. Plug in as many as you can now, and the remaining cables will be connected after the MLB is completely seated.

Ensure that the wires are routed properly and are not causing any obstructions.

4. Push the MLB assembly the rest of the way into the enclosure.
5. Connect any remaining MLB connectors.
6. Reinstall the five mounting screws securing the MLB panel to the back plane of the print engine.

Figure 115 • MLB Connections



Conn	Description	Conn	Description
J1	Serial port	P23	Wireless board connector
J2	Internal Ethernet	P24	Wireless board connector
J3	Media sensor receiver	P25	DC power input
J5	Parallel port	P26	Cutter/Rewind
J8	Ribbon low sensor	P27	DC output
J9	Media low sensor	P28	DC output
J10	Ribbon low quadrature	P29	Control Panel Connector
P4	Ribbon sensor	P31	SPI Connector *
P5	Head open sensor	P32	SPI Connector *
P7	Reflective media sensor	P33	SPI Connector *
P9	Media Sensor emitter	P34	SPI Connector *
P19	Printhead data cable	P36	USB Port
P21	Internal parallel connector	1	Battery

*SPI—Serial Peripheral Interface

7. Were you using the ZebraNet b/g Print Server as your primary method to communicate over your network?

If...	Then...
Yes	Continue with <i>Install Antenna</i> .
No	Skip to <i>Close the Electronics Enclosure</i> .

Install Antenna

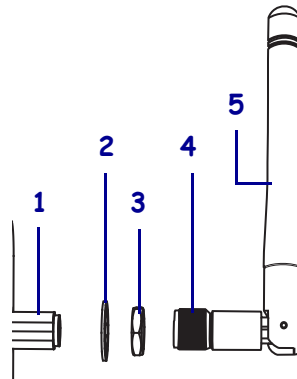
1. Which type of antenna do you wish to install?

If...	Then...
Elbow Antenna	Continue with <i>Install Elbow Antenna</i> .
Tethered Antenna with Magnetic Mount Base	Go to <i>Install Tethered Antenna</i> on page 252.

Install Elbow Antenna

1. See [Figure 116](#). To install the external antenna, screw the antenna onto the RF connector extending out from the back plate of the printer.

Figure 116 • Close Up of Antenna Installation

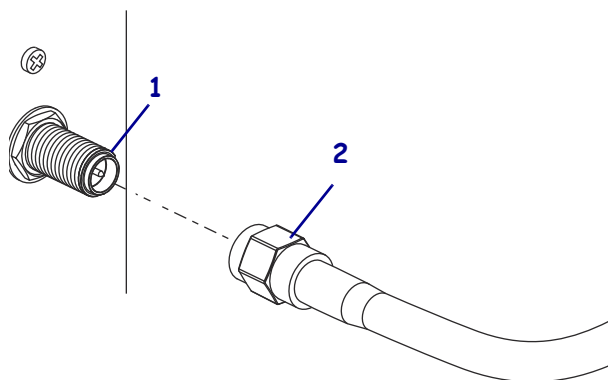


1	RF connector
2	Lock washer
3	Nut
4	Antenna nut
5	RF antenna

Install Tethered Antenna

1. See [Figure 117](#). To install the tethered cable, screw the end of the cable connector onto the RF connector extending out from the back plate of the printer.

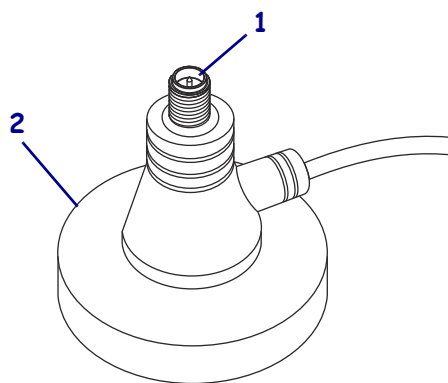
Figure 117 • Close-up of Tethered Cable Installation



1	RF connector
2	Tethered cable connector on magnetic mount base

2. See [Figure 118](#). Screw the small antenna onto the connector on top of the magnetic mount base.

Figure 118 • Magnetic Mount Base and Connector (Shown without Antenna)



1	Connector for small antenna
2	Magnetic mount base

Close the Electronics Enclosure

1. Ensure that all wires are routed properly and are not causing any obstructions, and then carefully swing the electronics enclosure closed.
2. Adjust the wire clips for the parallel port until they are touching the parallel port.
3. Slide the electronics cover onto the print engine.
4. Reinstall the four electronics cover mounting screws.

Reinstall the Print Engine in the Applicator

1. To reinstall the print engine into the applicator, carefully place the keyhole on the center mounting bolt.



Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.

2. Replace the four corner mounting screws securing the print engine to the applicator.
3. Tighten the center mounting bolt.

Resume Printer Operation

1. Reconnect the AC power cord and interface cables.
2. Turn on (I) the print engine.

The installation is complete.



AC Power Supply Maintenance Kit

Installation Instructions

This kit includes the parts and documentation necessary to install the AC power supply in the ZE500™ Series Print Engines. Read these instructions thoroughly before installing this kit.



Caution • This installation must be performed by a qualified service technician.

Parts List

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



Note • The graphics and steps in this procedure are for the right-hand (RH) print engine. Steps for a left-hand (LH) print engine may be slightly different.

Figure 119 • Kit Contents

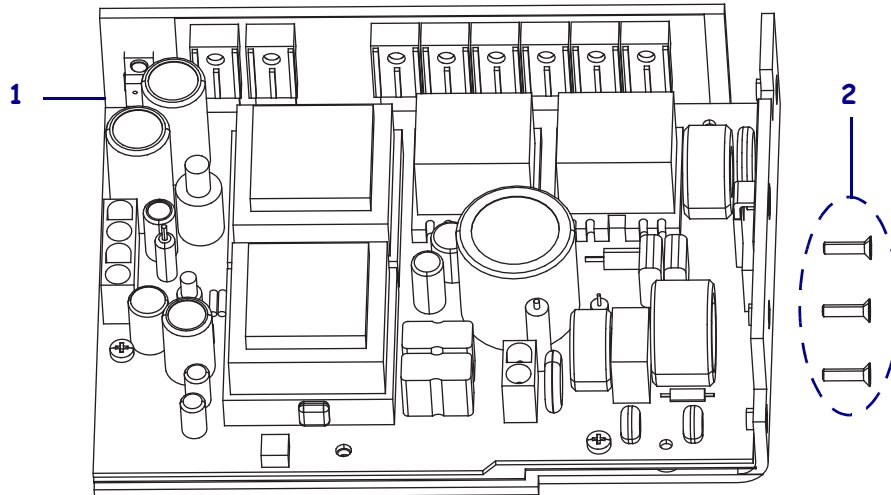


Table 23 • Parts List

✓	Item	Qty	Part Number	Description
	Ref	1	P1046696-021	AC Power Supply Maintenance Kit
	1	1	N/A	AC Power Supply
	2	3	N/A	Screw, M3 × 12 FL TX NI

N/A = Not available as a separate part (listed for identification purposes only).

Tools Required



Tools • You need these tools to complete this procedure:

- Phillips Screwdriver Set
- Metric Hex Key (Allen Wrench) Set
- Torx Key Set
- Antistatic Wriststrap and Mat
- Safety Goggles

Remove Power and Data Cables



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

Connect yourself to an antistatic device.




2. **Caution** • Turn off (O) the print engine and disconnect it from the power source before performing the following procedure.

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

Remove Print Engine from Applicator

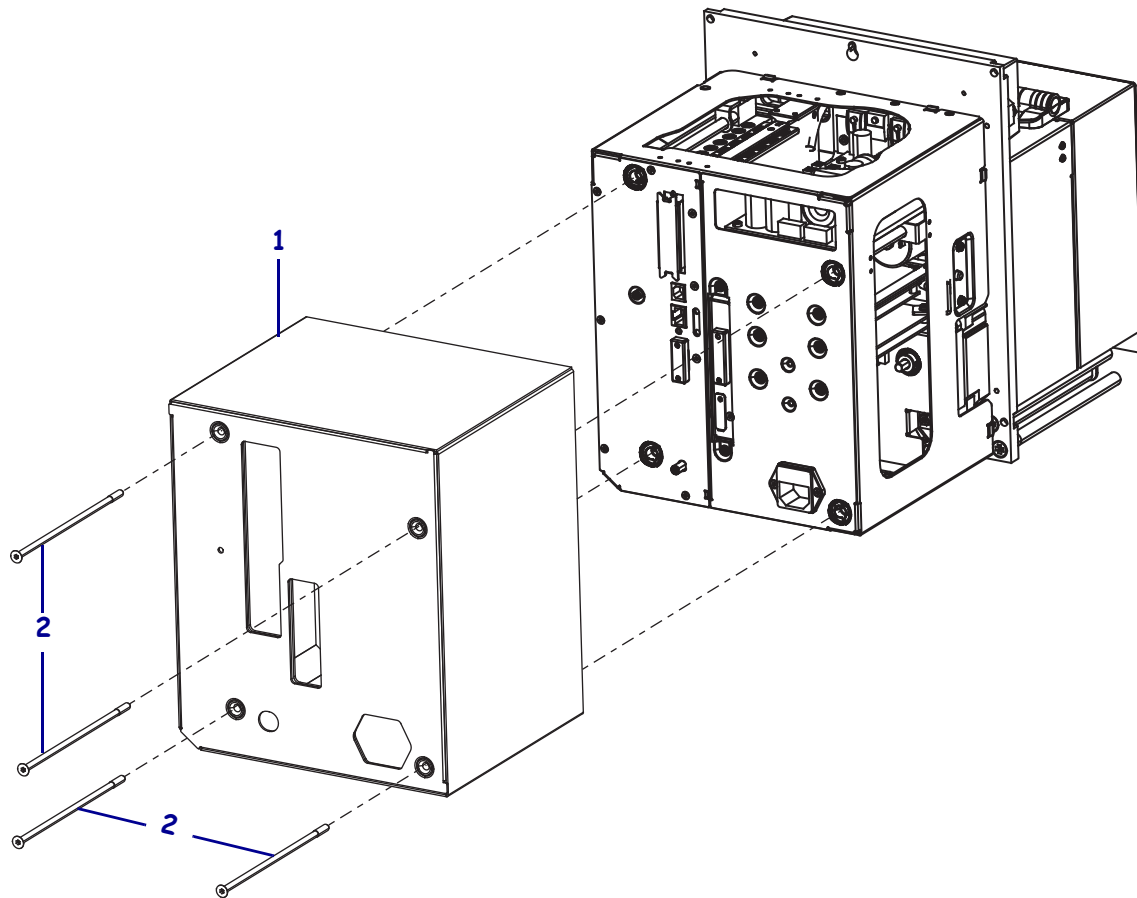
1. Does your applicator (or stand) permit open access to the rear of the print engine?

If you have an...	Then...
Open access	<p>You may swing the print engine open and work on it without removing the unit from the applicator.</p> <p>If you wish to remove the unit from the stand at any time, follow the instructions listed for the <i>Obstructed access</i> type applicator shown in this table.</p> <ol style="list-style-type: none"> a. Go to <i>Remove the Electronics Cover</i>.
Obstructed access	<p>You must remove the print engine from the applicator before you work on it.</p> <ol style="list-style-type: none"> a. Remove the four corner mounting screws securing the print engine to the applicator. b. Loosen the center mounting bolt, but do not remove it. <p> Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.</p> <ol style="list-style-type: none"> c. Lift the print engine off the center mounting bolt and place on a workbench.

Remove the Electronics Cover

1. See [Figure 120](#). Remove the four long mounting screws securing the electronics cover.

Figure 120 • Electronics Cover



1	Electronics cover
2	Electronics cover mounting screws (4)

2. Slide the electronics cover off of the print engine.

Open the Electronics Enclosure

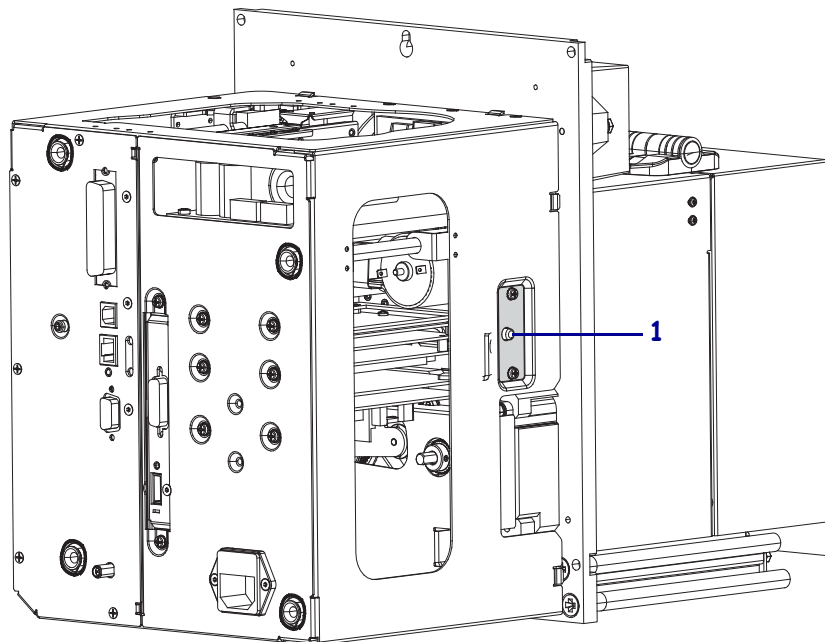
1. See [Figure 121](#). Locate the latch.



Note • For right-hand models, the latch is on the right side when looking from the back of the print engine. For left-hand models, the latch is on the left side.

2. Press the latch and swing the electronics enclosure open.

Figure 121 • Locate the Latch



1	Latch
---	-------

Access the Main Logic Board and Print Server Boards

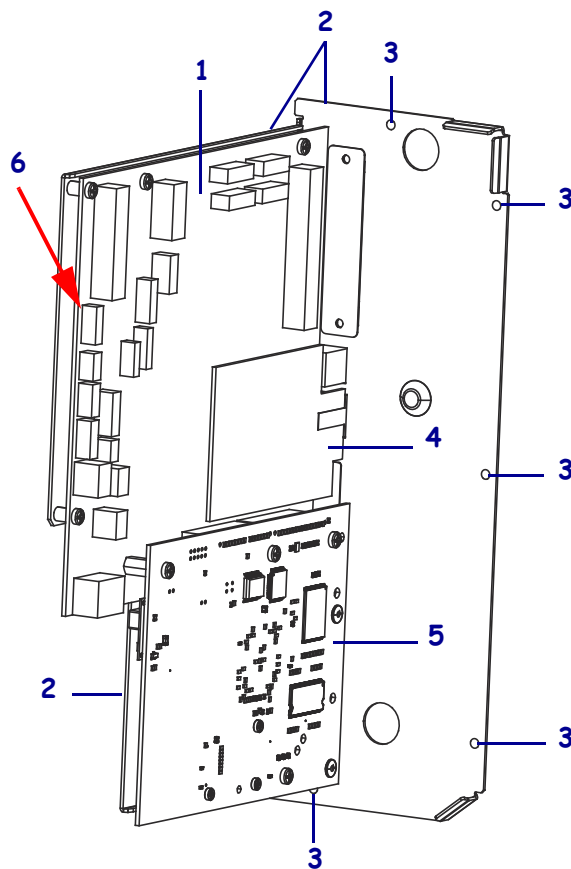
1. See [Figure 122](#). Disconnect all connectors on the main logic board (MLB) and any print server boards, if installed.

If you have difficulty removing all of the connectors, remove only those connectors that are vertically oriented along the main frame wall. (See the red arrow in [Figure 122](#).)



Note • Each of the connectors on the MLB has a latch that must be depressed to remove the connector from the MLB. [Figure 122](#) depicts a right-hand engine assembly. For left-hand print engines, these latches are not always visible, since they are located either along the bottom or the inside edge of the connector.

Figure 122 • MLB and Wireless and Print Server Boards



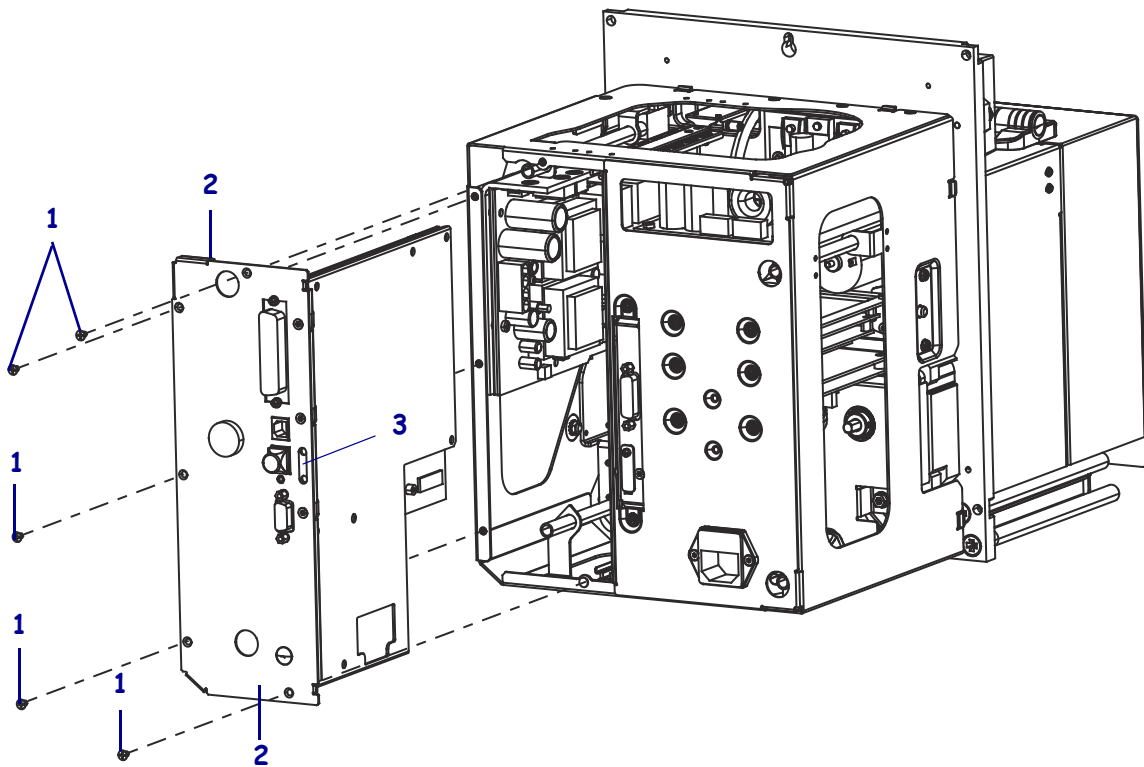
1	MLB
2	MLB access panel
3	Mounting holes (5)
4	Wired 10/100 print server board
5	Wireless b/g Print Server board
6	Disconnect this row of connectors to assist with the removal of the MLB

2. See [Figure 123](#). Remove the five mounting screws securing the MLB and print server boards to the back plane of the print engine.



Note • The MLB and print server boards are designed to be removed as a single entity.

Figure 123 • MLB Access Panel



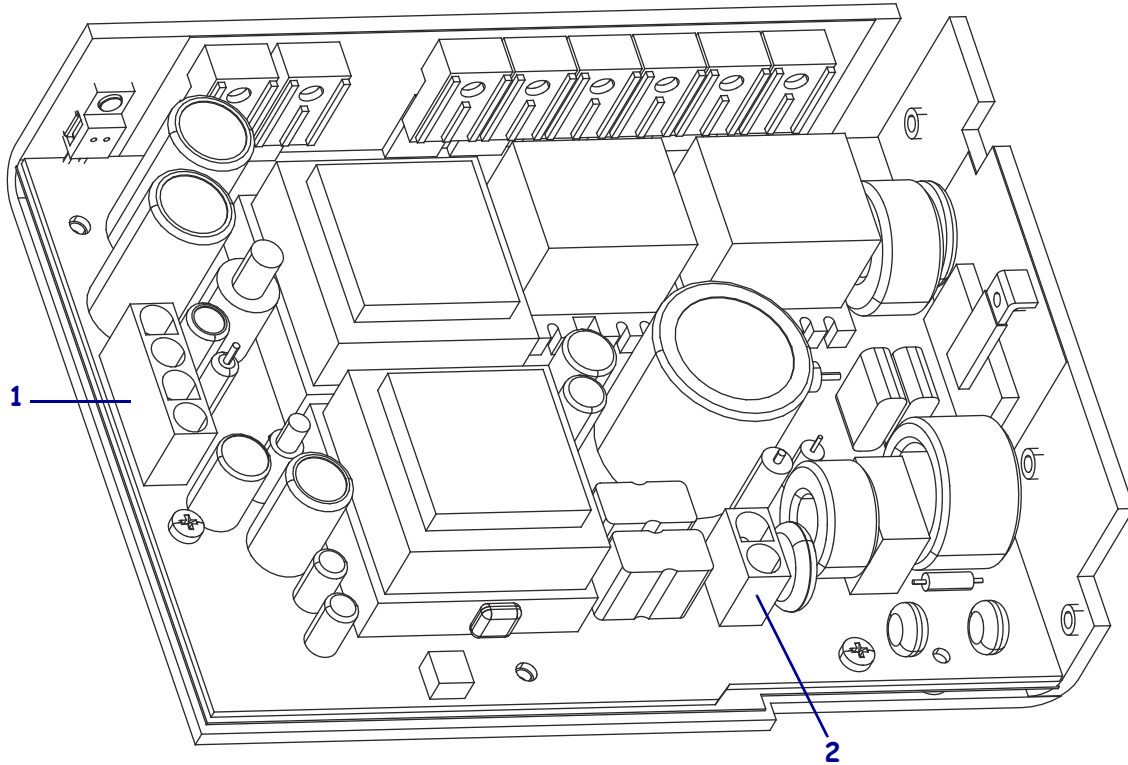
1	Mounting screws (5)
2	MLB access panel
3	Cable tie loop

3. Pull the cable tie out of the MLB access panel until you see a loop. Use the loop to help pull the MLB access panel out of the print engine.
4. Slide the combined MLB/print server boards out of the back of the print engine.
5. Disconnect any remaining connectors on the MLB.

Remove the AC Power Supply

1. See [Figure 124](#). Disconnect the two cables at J1 and J2 on the AC power supply.

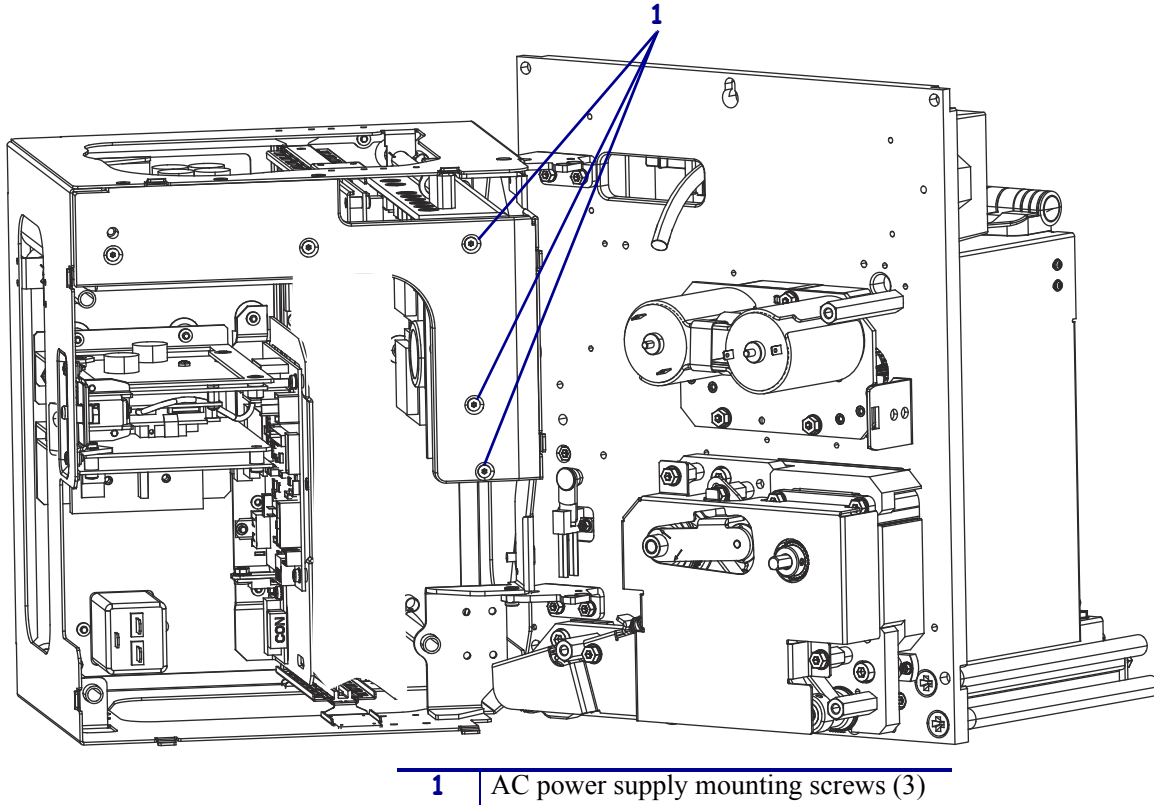
Figure 124 • AC Power Supply Connections



1	J1: DC power supply
2	J2: Power switch

2. See [Figure 125](#). Support the AC power supply with one hand, and remove the three mounting screws securing it to the chassis.

Figure 125 • AC Power Supply



3. Remove the AC power supply.

Replace the AC Power Supply

1. Replace the AC power supply in the chassis and align the mounting holes.
2. Reinstall the three mounting screws to secure the AC power supply to the chassis.
3. See [Figure 124](#). Reconnect the two cables at J1 and J2 on the AC power supply.

Replace the MLB Access Panel

1. Connect the inner row of connectors on the MLB.
2. Partially slide the combined MLB/print server boards onto the rails provided in the electronics enclosure.
3. See [Figure 122](#). Connect as many of the MLB and the print server board connectors as you are able to reach.



Note • Some of the cables will not be long enough to connect while the MLB is only partially inserted. Plug in as many as you can now, and the remaining cables will be connected after the MLB is completely seated.

Ensure that the wires are routed properly and are not causing any obstructions.

4. Push the MLB assembly the rest of the way into the enclosure.
5. Connect any remaining MLB connectors.
6. Reinstall the five mounting screws securing the MLB panel to the back plane of the print engine.

Close the Electronics Enclosure

1. Ensure that all wires are routed properly and are not causing any obstructions, and then carefully swing the electronics enclosure closed.
2. Adjust the wire clips for the parallel port until they are touching the parallel port.
3. Slide the electronics cover onto the print engine.
4. Reinstall the four electronics cover mounting screws.

Reinstall the Print Engine in the Applicator

1. To reinstall the print engine into the applicator, carefully place the keyhole on the center mounting bolt.



Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.

2. Replace the four corner mounting screws securing the print engine to the applicator.
3. Tighten the center mounting bolt.

Resume Printer Operation

1. Reconnect the AC power cord and interface cables.
2. Turn on (I) the print engine.

The installation is complete.



DC Power Supply Maintenance Kit

Installation Instructions

This kit includes the parts and documentation necessary to install the DC power supply in the ZE500™ Series Print Engines. Read these instructions thoroughly before installing this kit.



Caution • This installation must be performed by a qualified service technician.



Note • The graphics and steps in this procedure are for the right-hand (RH) print engine. Steps for a left-hand (LH) print engine may be slightly different.

Parts List

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

Figure 126 • Kit Contents

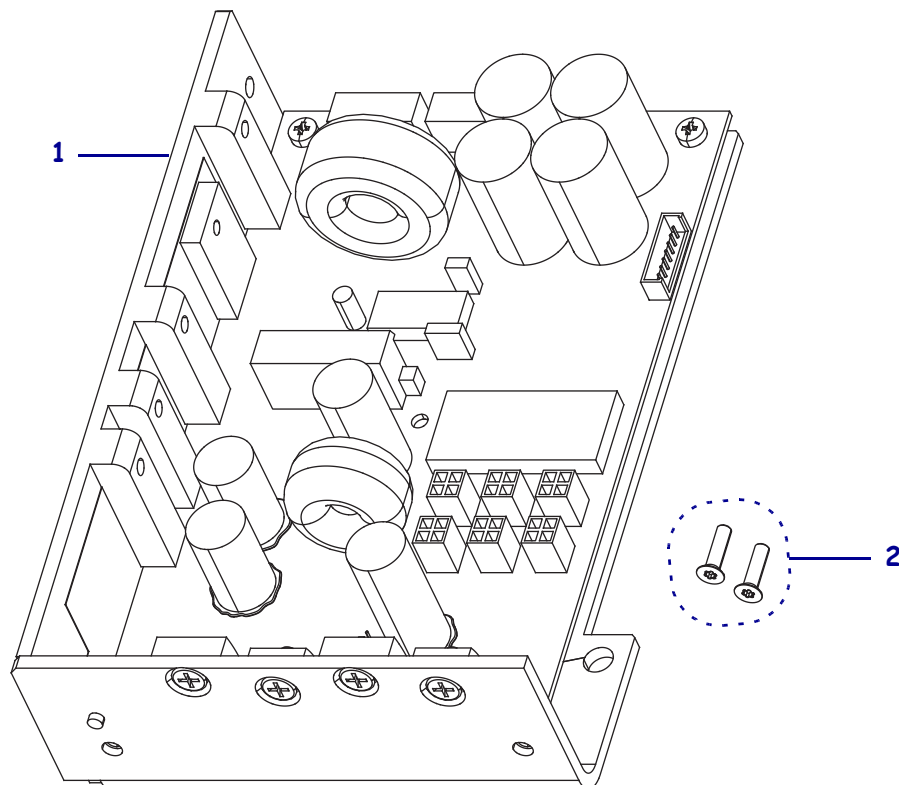


Table 24 • Parts List

✓	Item	Qty	Part Number	Description
	Ref	1	P1046696-022	DC Power Supply Maintenance Kit RH
			P1046696-023	DC Power Supply Maintenance Kit LH
	1	1	<i>N/A</i>	Assembly, DC Power Supply RH
			<i>N/A</i>	Assembly, DC Power Supply LH
	2	2	<i>N/A</i>	Screw, M3 × 12 FL TX NI

N/A = Not available as a separate part (listed for identification purposes only).

Tools Required



Tools • You need these tools to complete this procedure:

- Phillips Screwdriver Set
- Flat-blade Screwdriver Set
- Metric Hex Key (Allen Wrench) Set
- Torx Key Set
- Antistatic Wriststrap and Mat

Remove Power and Data Cables



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

Connect yourself to an antistatic device.




2. **Caution** • Turn off (O) the print engine and disconnect it from the power source before performing the following procedure.

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

Remove Print Engine from Applicator

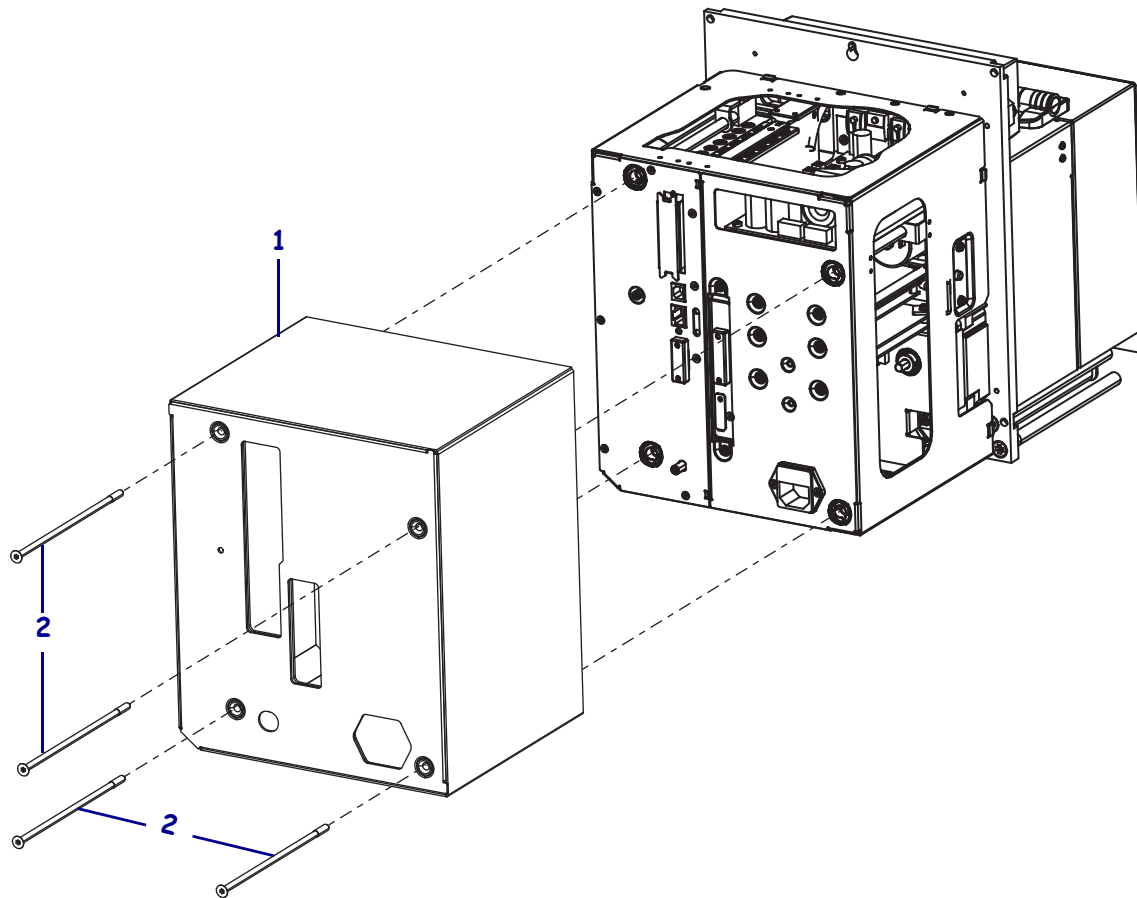
1. Does your applicator (or stand) permit open access to the rear of the print engine?

If you have an...	Then...
Open access	<p>You may swing the print engine open and work on it without removing the unit from the applicator.</p> <p>If you wish to remove the unit from the stand at any time, follow the instructions listed for the <i>Obstructed access</i> type applicator shown in this table.</p> <ol style="list-style-type: none"> a. Go to <i>Remove the Electronics Cover</i>.
Obstructed access	<p>You must remove the print engine from the applicator before you work on it.</p> <ol style="list-style-type: none"> a. Remove the four corner mounting screws securing the print engine to the applicator. b. Loosen the center mounting bolt, but do not remove it. <p> Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.</p> <ol style="list-style-type: none"> c. Lift the print engine off the center mounting bolt and place on a workbench.

Remove the Electronics Cover

1. See [Figure 127](#). Remove the four long mounting screws securing the electronics cover.

Figure 127 • Electronics Cover



1	Electronics cover
2	Electronics cover mounting screws (4)

2. Slide the electronics cover off of the print engine.

Open the Electronics Enclosure

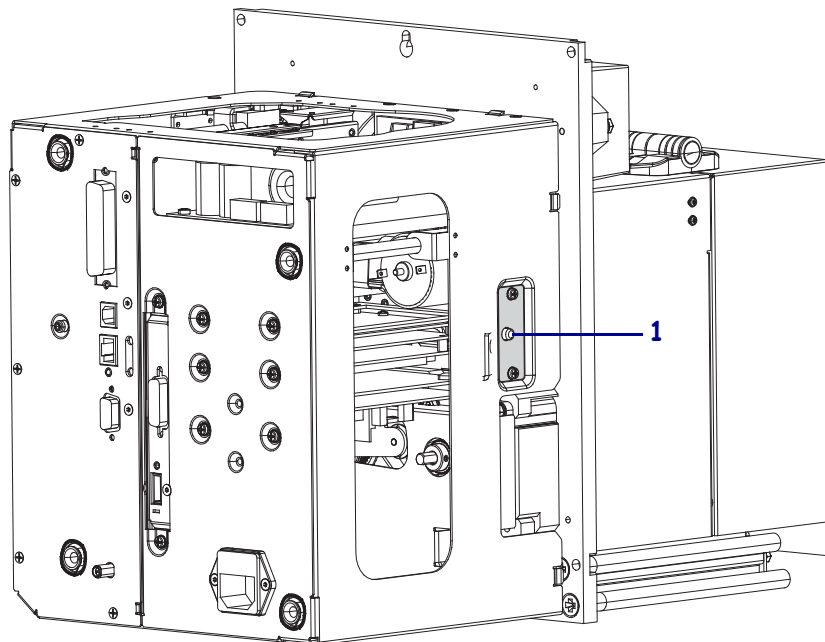
1. See [Figure 128](#). Locate the latch.



Note • For right-hand models, the latch is on the right side when looking from the back of the print engine. For left-hand models, the latch is on the left side.

2. Press the latch and swing the electronics enclosure open.

Figure 128 • Locate the Latch

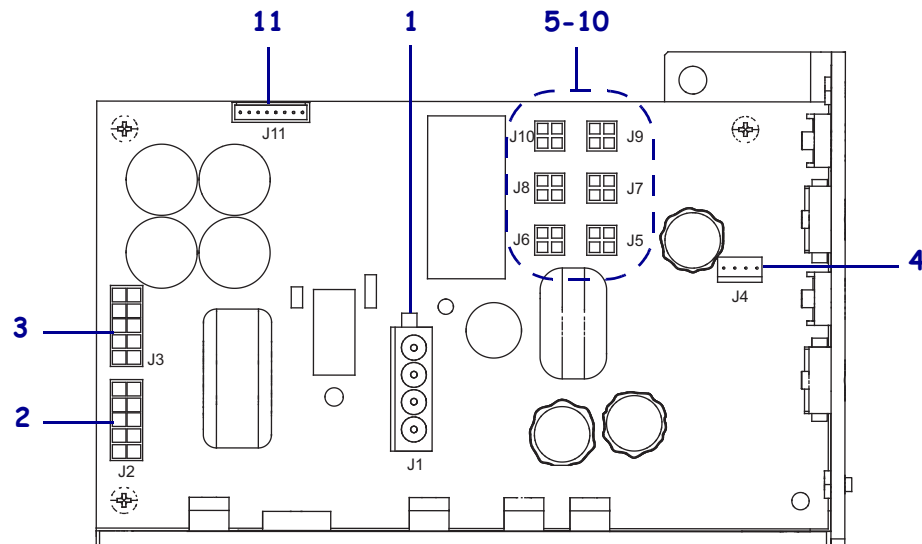


1	Latch
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Remove the DC Power Supply

1. See [Figure 129](#). Disconnect all of the connectors from the DC power supply.

Figure 129 • DC Power Supply Connections

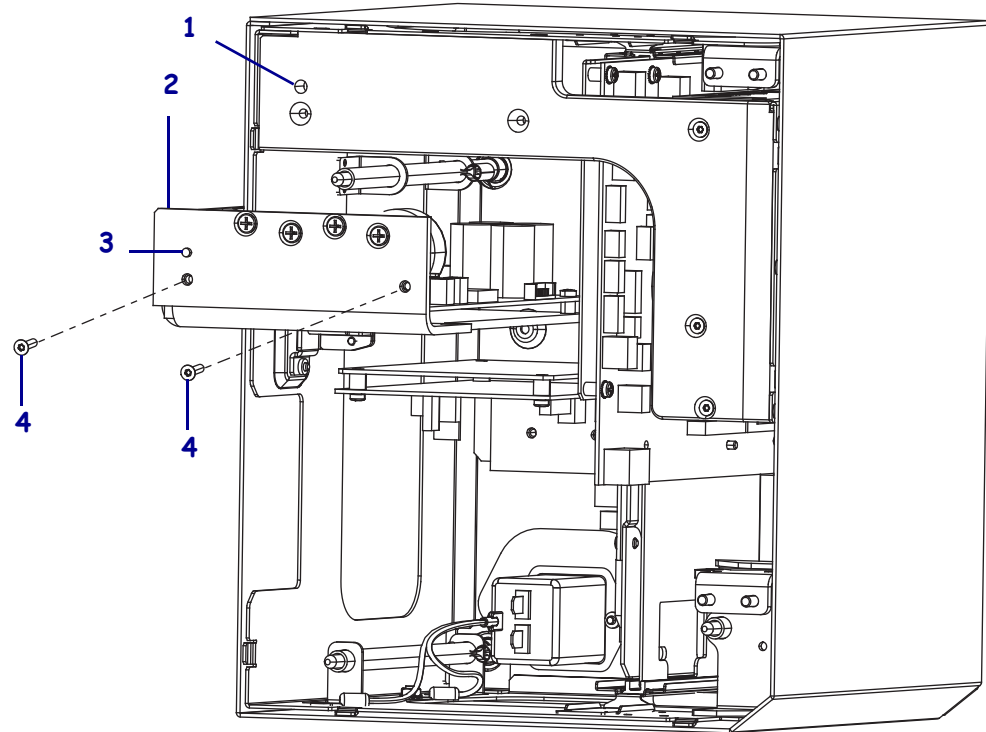


1	J1: AC power supply
2	J2: Printhead power cable
3	J3: Not used
4	J4: Stepper motor
5	J5: Not used
6	J6: Not used

7	J7: MLB cable
8	J8: Ribbon Tension Control Board
9	J9: Applicator interface/Ribbon tension control boards
10	J10: Not used
11	J11: MLB SPI cable
12	J12: Not used

2. See [Figure 130](#). While supporting the bottom of the DC power supply, remove the two mounting screws securing the DC power supply to the chassis.

Figure 130 • DC Power Supply



1	Alignment pin locating hole
2	DC power supply assembly
3	Alignment pin
4	Mounting screws (2)

3. Remove the DC power supply.

Reinstall the DC Power Supply

1. See [Figure 130](#). Place the DC power supply assembly in the electronics enclosure.
2. Seat the alignment pin on the DC power supply in the locating hole.
3. Reinstall the two mounting screws to secure the DC power supply to the mainframe.
4. See [Figure 129](#). Reconnect all of the cable connectors to the DC power supply.

Close the Electronics Enclosure

1. Ensure that all wires are routed properly and are not causing any obstructions, and then carefully swing the electronics enclosure closed.
2. Adjust the wire clips for the parallel port until they are touching the parallel port.
3. Slide the electronics cover onto the print engine.
4. Reinstall the four electronics cover mounting screws.

Reinstall the Print Engine in the Applicator

1. To reinstall the print engine into the applicator, carefully place the keyhole on the center mounting bolt.



Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.

2. Replace the four corner mounting screws securing the print engine to the applicator.
3. Tighten the center mounting bolt.

Resume Printer Operation

1. Reconnect the AC power cord and interface cables.
2. Turn on (I) the print engine.

The installation is complete.



Applicator Interface/+28V DC Voltage Regulator Maintenance Kit

Installation Instructions

This kit includes the parts and documentation necessary to install the Applicator Interface/+28V DC Voltage Regulator Maintenance Kit in the ZE500™ Series Print Engines. Read these instructions thoroughly before installing this kit.



Caution • This installation must be performed by a qualified service technician.



Note • The graphics and steps in this procedure are for the right-hand (RH) print engine. Steps for a left-hand (LH) print engine may be slightly different.

Parts List

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

Figure 131 • Kit Contents

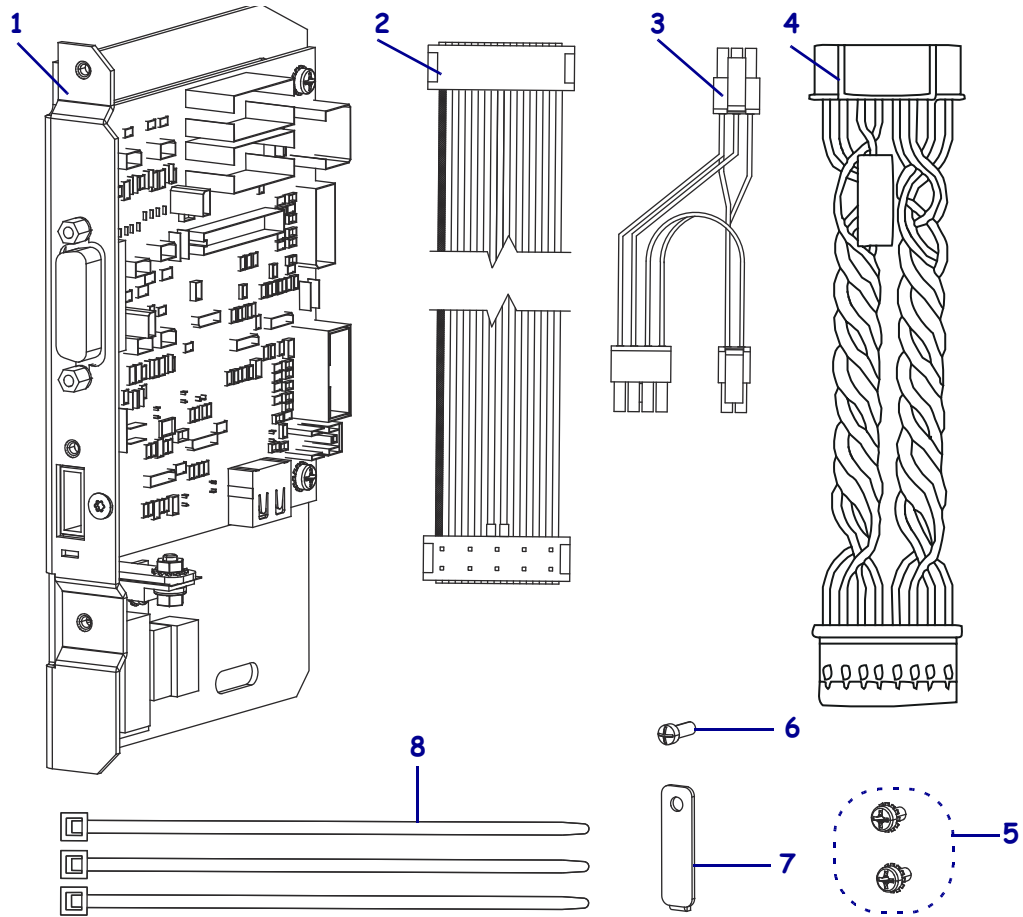


Table 25 • Parts List

✓	Item	Qty	Part Number	Description
	Ref	1	P1046696-018	Applicator Interface /+28V DC Voltage Regulator Maintenance Kit
	1	1	N/A	Applicator Interface/+28V DC Voltage Regulator Assembly
	2	1	N/A	Cable, Control Panel SPI Extension
	3	1	N/A	Cable, Applicator Interface Power 32V
	4	1	N/A	Cable, Locking SP Comm with Ferrite
	5	2	N/A	Screw, M3 × 6
	6	1	N/A	Screw, M3 × 0.5 × 8mm
	7	1	N/A	Cover, HDMI Connector
	8	3	HWQ06020	Cable Tie (Qty. of 20)

N/A = Not available as a separate part (listed for identification purposes only).

Tools Required



Tools • You need these tools to complete this procedure:

- Phillips Screwdriver Set
- Flat-blade Screwdriver Set
- Metric Hex Key (Allen Wrench) Set
- Torx Key Set
- Antistatic Wriststrap and Mat

Remove Power and Data Cables



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

Connect yourself to an antistatic device.




2. **Caution** • Turn off (O) the print engine and disconnect it from the power source before performing the following procedure.

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

Remove Print Engine from Applicator

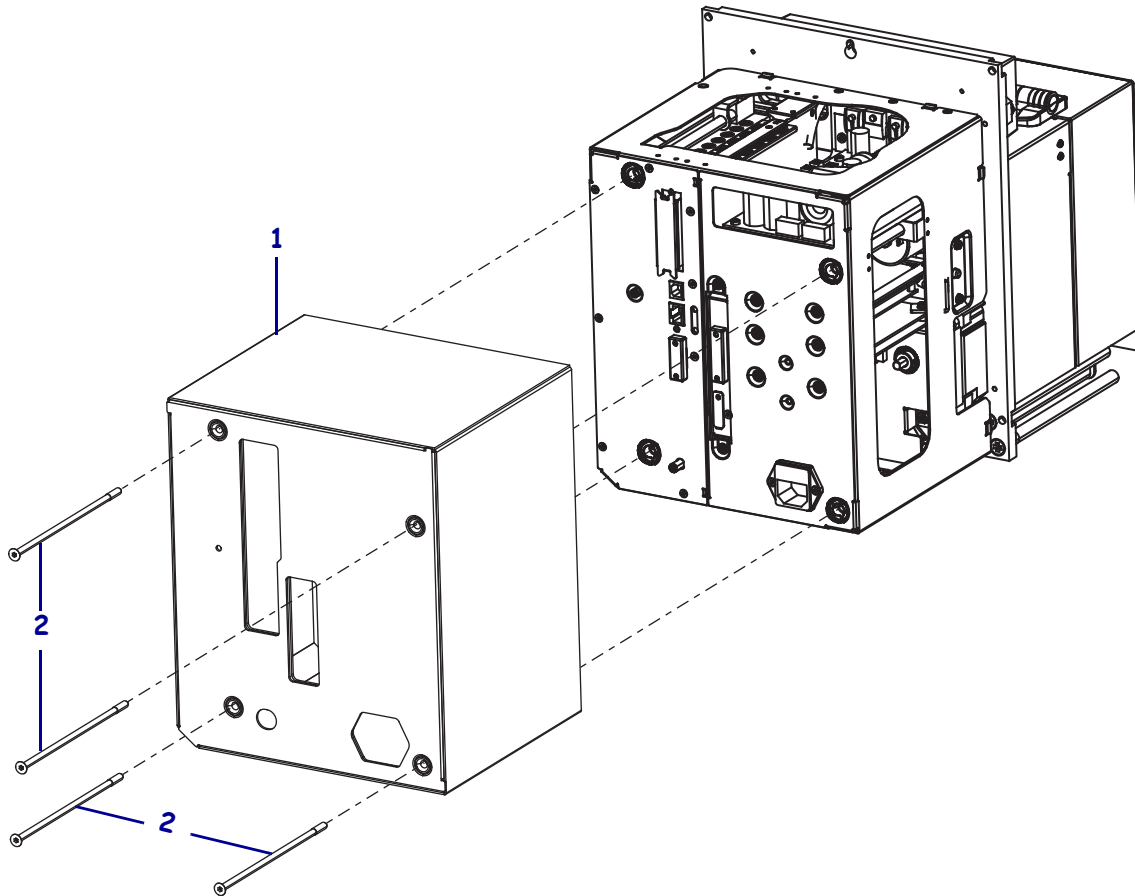
1. Does your applicator (or stand) permit open access to the rear of the print engine?

If you have an...	Then...
Open access	<p>You may swing the print engine open and work on it without removing the unit from the applicator.</p> <p>If you wish to remove the unit from the stand at any time, follow the instructions listed for the <i>Obstructed access</i> type applicator shown in this table.</p> <p>a. Go to <i>Remove the Electronics Cover</i>.</p>
Obstructed access	<p>You must remove the print engine from the applicator before you work on it.</p> <p>a. Remove the four corner mounting screws securing the print engine to the applicator.</p> <p>b. Loosen the center mounting bolt, but do not remove it.</p> <p> Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.</p> <p>c. Lift the print engine off the center mounting bolt and place on a workbench.</p>

Remove the Electronics Cover

1. See [Figure 132](#). Remove the four long mounting screws securing the electronics cover.

Figure 132 • Electronics Cover



1	Electronics cover
2	Electronics cover mounting screws (4)

2. Slide the electronics cover off of the print engine.

Open the Electronics Enclosure

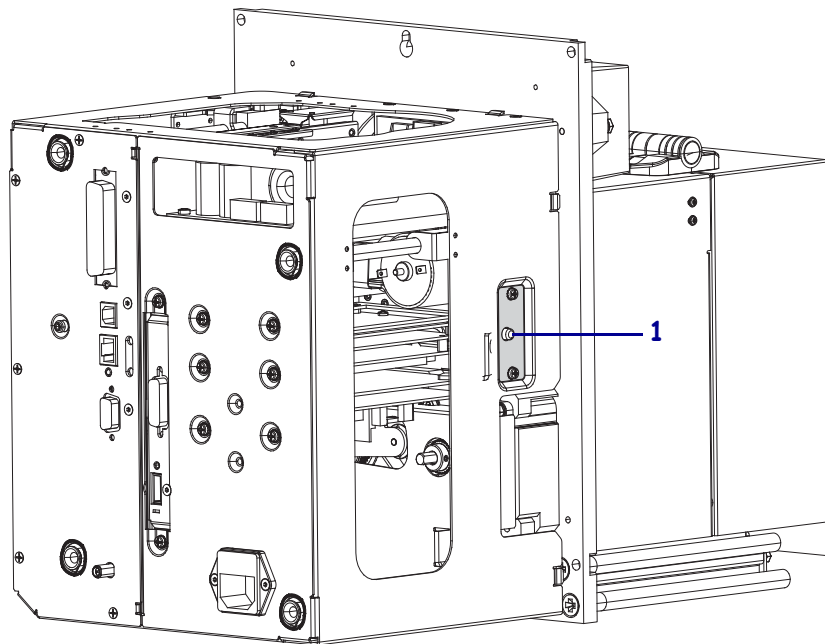
1. See [Figure 133](#). Locate the latch.



Note • For right-hand models, the latch is on the right side when looking from the back of the print engine. For left-hand models, the latch is on the left side.

2. Press the latch and swing the electronics enclosure open.

Figure 133 • Locate the Latch

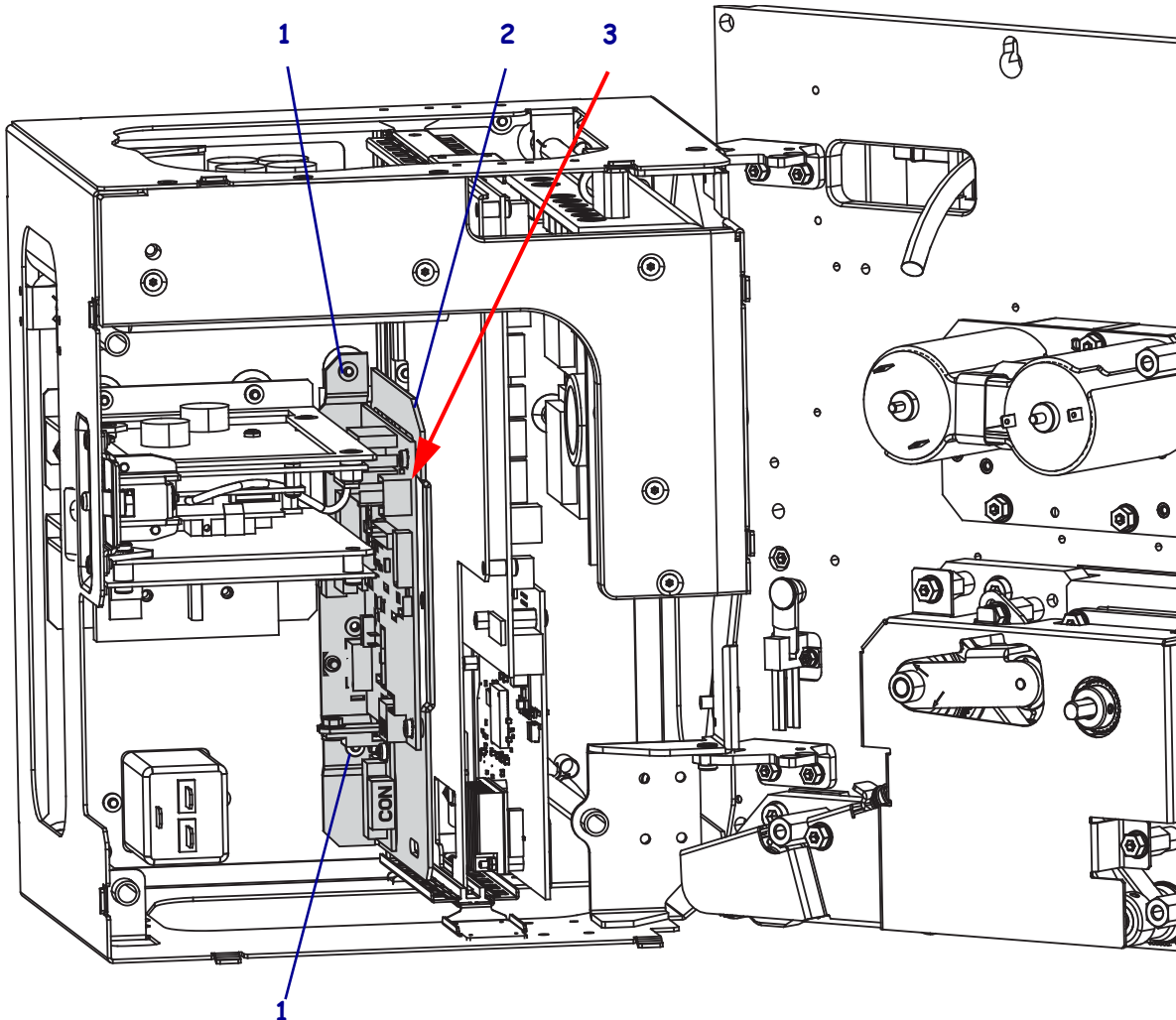


1	Latch
---	-------

Remove the Applicator Interface Board

1. See [Figure 134](#). Disconnect the connectors along the accessible edge of the applicator interface board and the voltage regulator board.

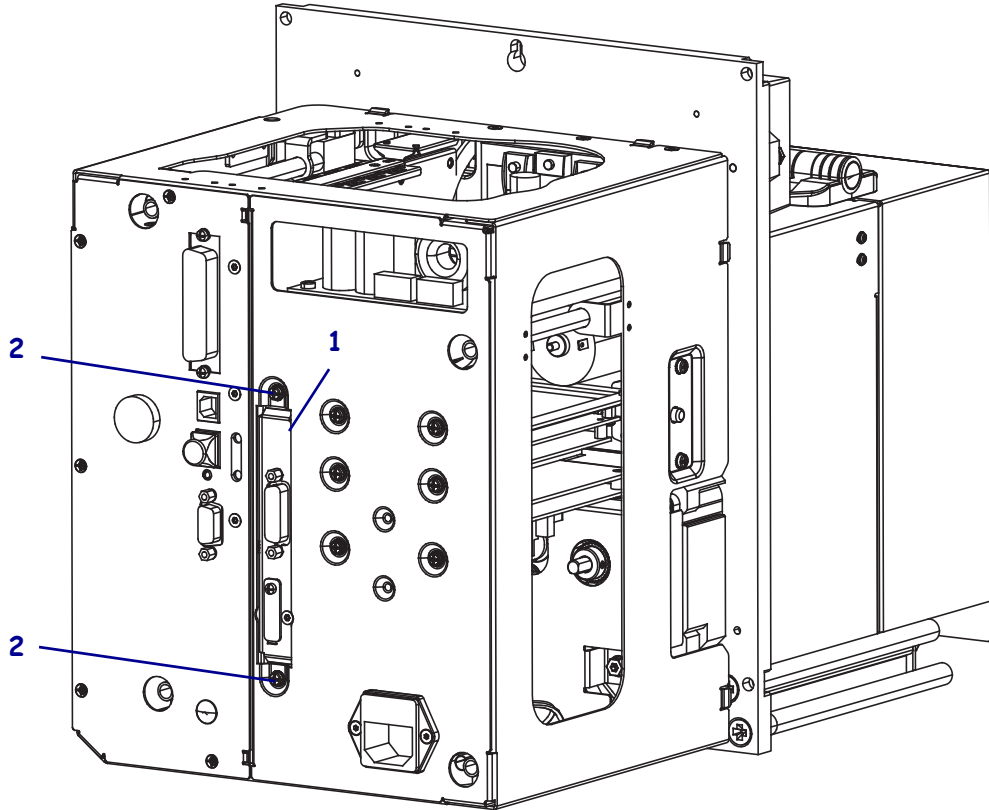
Figure 134 • Applicator Interface Board



1	Mounting screws (2)
2	Applicator interface board (shaded)
3	Disconnect this row of connectors to assist with the removal of the applicator interface assembly

2. See [Figure 135](#). Remove the two mounting screws securing the applicator interface mounting plate to the back plane of the print engine.

Figure 135 • Applicator Interface Board and Mounting Screws



1	Applicator interface board
2	Mounting screws (2)

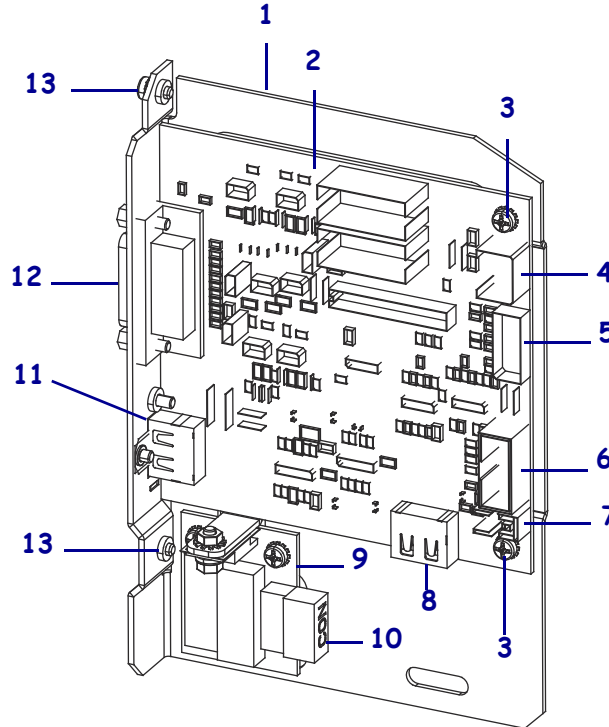
3. Gently pull the applicator interface mounting plate (with the applicator interface board and voltage regulator board attached) partially away from the back plane of the print engine.



Note • Avoid disconnecting or pinching any cables inside the electronics enclosure.

- See [Figure 136](#). Disconnect the remaining connectors on the applicator interface board and voltage regulator board.

Figure 136 • Applicator Interface Board and Voltage Regulator Board



1	Applicator interface board mounting plate	8	J7: Internal HDMI connector for control panel
2	Applicator interface board	9	Voltage regulator board
3	Applicator interface board mounting screws (2)	10	J1 (on voltage reg. board): Power cable
4	J3: Applicator interface power cable	11	J2: External HDMI connector for deported control panel
5	J1: Locking SP comm cable	12	J6: Applicator interface cable
6	J8: Control panel SPI extension (ribbon) cable	13	Applicator interface mounting plate mounting screws (2)
7	J9: Door-open sensor cable		

- Remove the applicator interface mounting plate and boards from the print engine.

Confirm/Adjust Jumper Placement for Interface Signal Modes

The applicator interface board can be configured for:

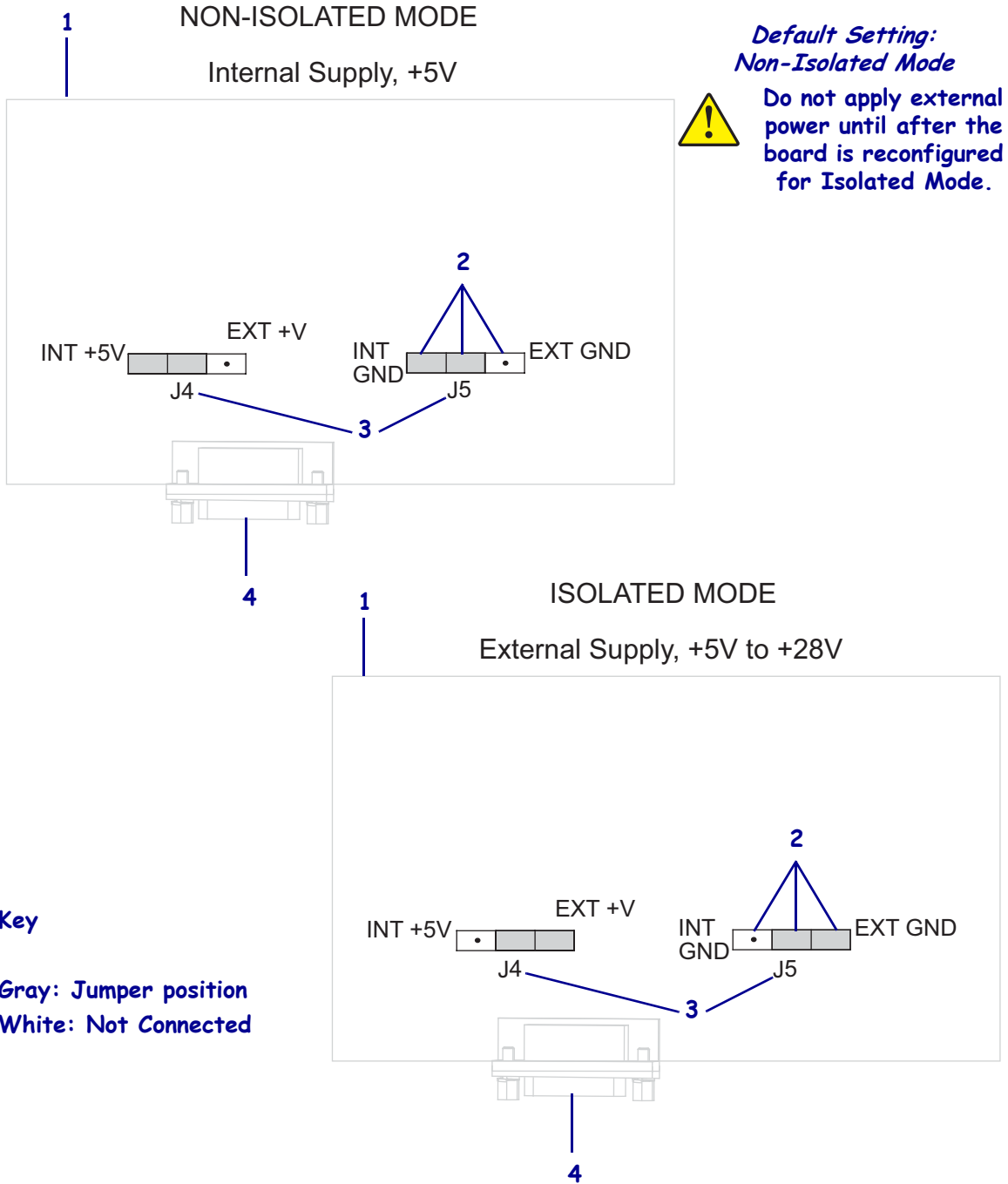
- isolated mode (uses external power)
- non-isolated applicator interface signals (uses internal power)



Important • The factory default jumper settings are +5V non-isolated mode. This default setting is not compatible with applications configured to apply external power.

1. Move the jumpers on both J4 and J5 to cover the pins as shown in [Figure 137](#), if necessary.

Figure 137 • Jumper Placement

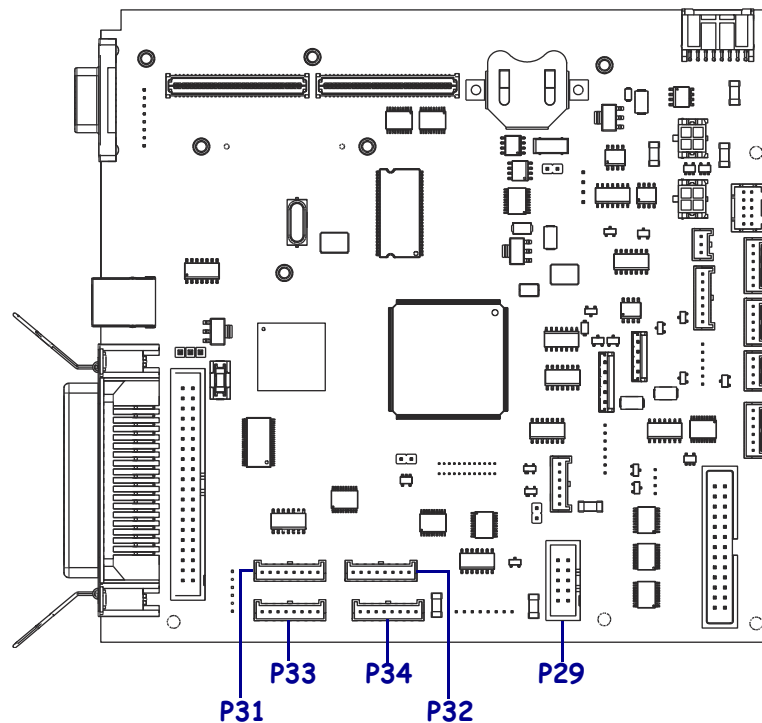


1	Simulated applicator interface board
2	Pins
3	Labels on the applicator interface board
4	Applicator port

Connect Cables to Other Circuit Boards

1. Connect the cables (included in this kit) as follows:
 - a. See [Figure 138](#). Connect the locking SP comm cable to an open connector in P31-34 on the main logic board (MLB).
The locking connector is the one farthest from the ferrite.
 - b. Connect the control panel SPI extension cable (ribbon cable) to P29 on the MLB.

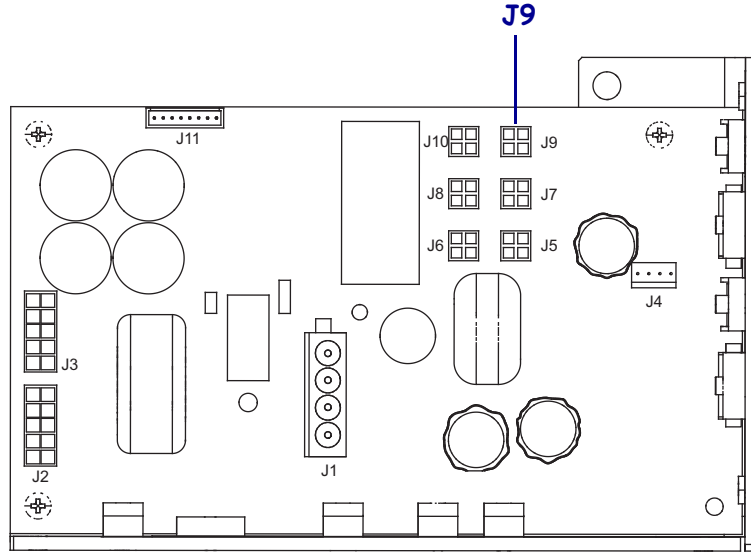
Figure 138 • MLB Connections



P29	Control panel connector
P31 - 34	Serial Peripheral Interface connector

- c. See Figure 139. Connect the four-pin connector (arranged in a square) for the power cable to J9 on the DC power supply board.

Figure 139 • DC Power Supply Connection



J9	Power connector
-----------	-----------------

Insert the Applicator Interface Board and Mounting Plate

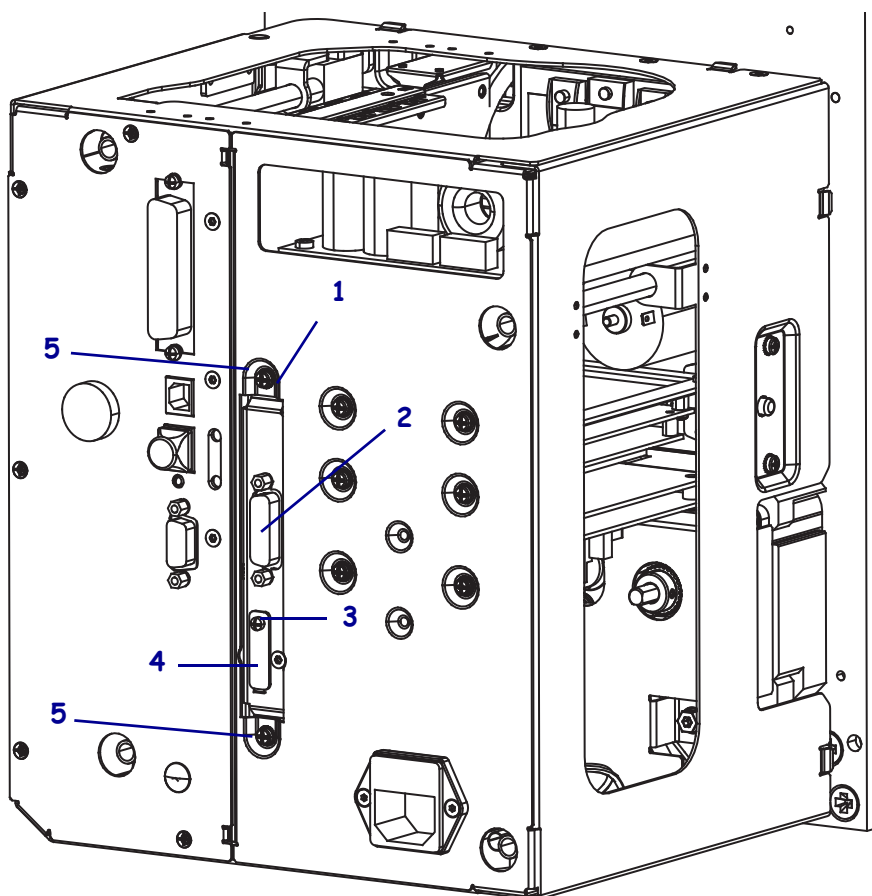
1. Gently insert the applicator interface mounting plate (with the applicator interface board and voltage regulator board attached) toward the back plane.



Note • Avoid disconnecting or pinching any cables inside the electronics enclosure.

2. See [Figure 140](#). Align the mounting holes in the applicator board mounting plate with the holes in the back plane of the print engine.

Figure 140 • Applicator Interface Board and External Connectors



1	Applicator interface board
2	Applicator interface connector
3	HDMI connector cover mounting screw
4	HDMI connector cover
5	Applicator interface board mounting screw (2)

Connect Cables to the Applicator Interface and Voltage Regulator Boards

1. What type of control panel are you using?

If...	Then...
Standard (attached to the top of the print engine)	<ol style="list-style-type: none"> a. See Figure 141. Connect the HDMI cable to J7 on the applicator interface board. b. Continue with step 2.
Deported (attached away from the print engine)	<ol style="list-style-type: none"> a. See Figure 140. From the back plane of the print engine, remove the mounting screw and HDMI connector cover. b. Reconnect the HDMI cable to J2 on the applicator interface board. This connector is accessible from the back plane. c. Continue with step 2.

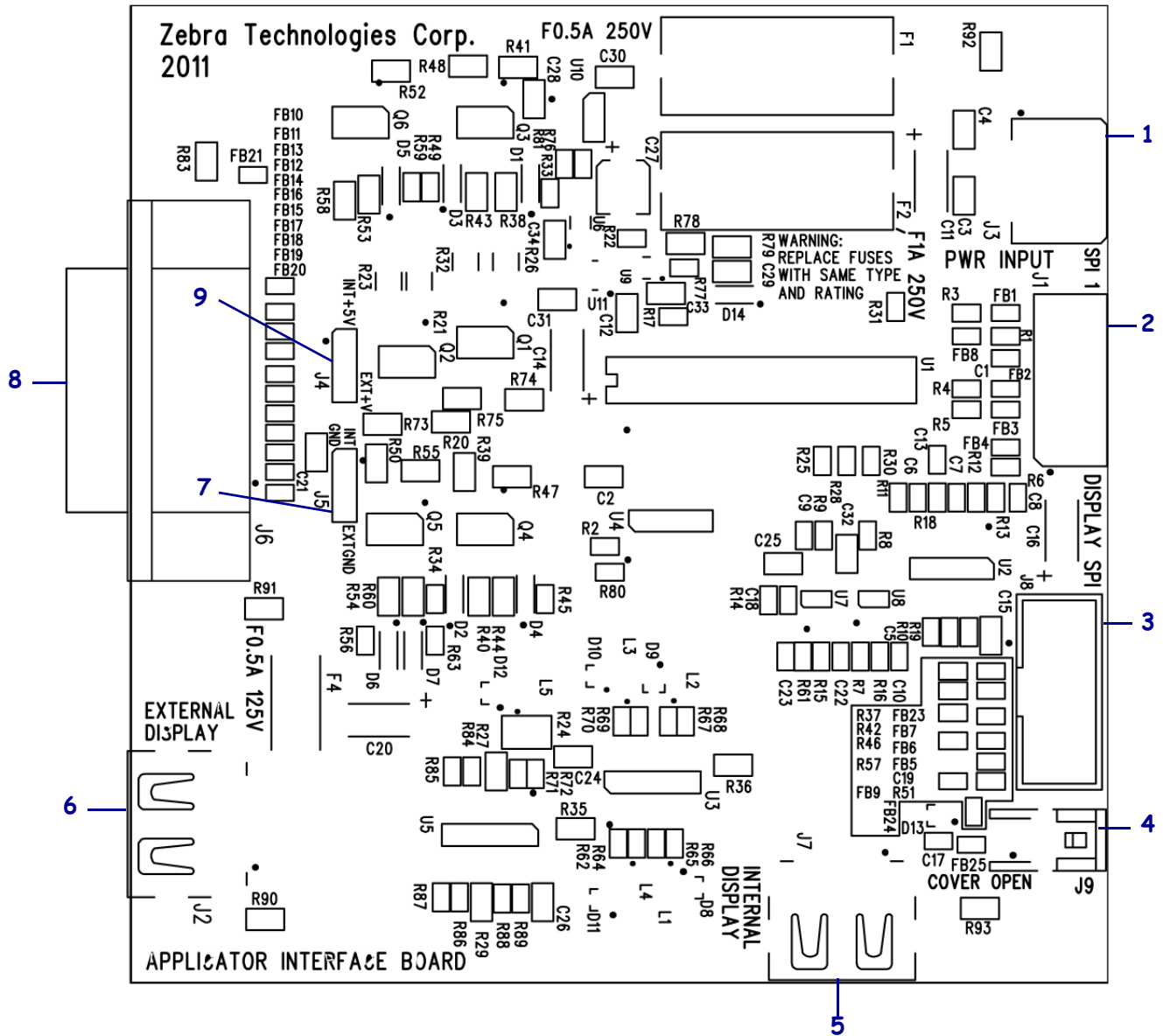
2. Connect the control panel SPI extension cable (ribbon cable) to J8 on the applicator interface board.
3. Connect the locking SP comm cable to J1 on the applicator interface board.



Important • This applicator interface board requires the use of an SP comm cable with a ferrite. The locking connector is the one closest to the ferrite.

4. Connect the six-pin connector for the power cable to J3 on the applicator interface board.
5. See [Figure 136](#). Connect the four-pin connector (arranged in a line) for the power cable to J1 on the voltage regulator board.
6. See [Figure 141](#). Connect the door-open sensor to J9 on the applicator interface board.
7. Reinstall the two mounting screws to secure the applicator interface mounting plate to the back plane of the print engine.

Figure 141 • Applicator Interface Board Connections



1	J3: Applicator interface power cable
2	J1: Locking SP comm cable
3	J8: Control panel SPI extension (ribbon) cable
4	J9: Door-open sensor cable
5	J7: Internal HDMI connector for control panel
6	J2: External HDMI connector for departed control panel
7	J5: Jumper
8	J6: Applicator interface cable
9	J4: Jumper

Applicator Port Pinouts

See [Figure 142](#) and [Table 26](#) to identify the pins, signals, and functions for the applicator board port.

Figure 142 • Applicator Board Pinouts

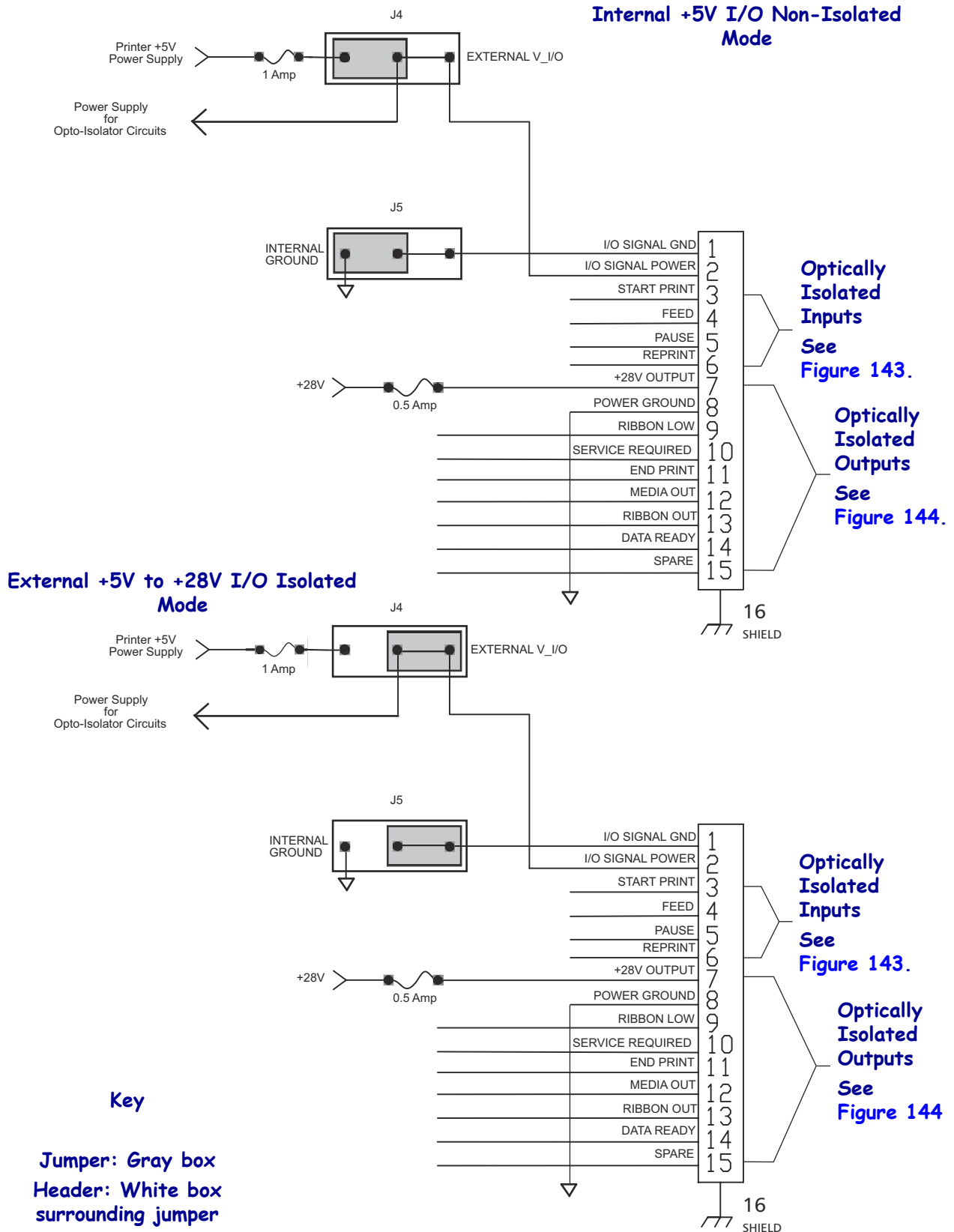


Table 26 • Applicator Interface Connector Pin Configuration





Pin No.	Signal Name	Signal Type	Description
1	I/O SIGNAL GROUND	I/O Signal Ground	Using jumper J5, this pin can be configured as isolated or non-isolated. When in non-isolated mode, the printer's +5V ground is connected to this pin. See Figure 141 for location of jumpers.
2	I/O SIGNAL POWER	Power	Using jumper J4, this pin can be configured as isolated or non-isolated. When in non-isolated mode, the printer's +5V power supply is used and fused at 1 Amp. See Figure 137 and Figure 142 .  Note • Replace the fuse with one of the same type and rating only.
3	START PRINT	Input	<ul style="list-style-type: none"> • Pulse Mode—The label printing process begins on the HIGH to LOW transition of this signal if a format is ready. De-assert this signal HIGH to inhibit printing of a new label. • Level Mode—Assert LOW to enable the print engine to print if a label format is ready. When de-asserted HIGH, the print engine completes the label that is printing then stops and waits for this input to be reasserted LOW.
4	FEED	Input	When the print engine is idle or has been paused, assert this input LOW to trigger repeated feeding of blank labels. De-assert HIGH to stop feeding blank labels and register to the top of the next label.
5	PAUSE	Input	To toggle the current Pause state, this input must be asserted LOW for 200 milliseconds, or until the SERVICE REQUIRED output (pin 10) changes state.
6	REPRINT	Input	<ul style="list-style-type: none"> • If the Reprint feature is enabled, this input must be asserted LOW to cause the print engine to reprint the last label. • If the Reprint feature is disabled, this input is ignored.
7	+28 V (Fused at 0.5A)  Note • Replace the fuse with one of the same type and rating only.	Power	The Interface Power Supply. Supplies power to external sensors as required.  Note • If operating with +28V signals, pin 7 may be used to supply power to pin 2. However, this creates a non-isolated mode of operation with +28V signals.
8	POWER GROUND (+28 V DC Return)	Power Ground	The Interface Power Ground.  Note • If pin 7 is used to supply power to pin 2, use this pin to supply ground to pin 1. However, this creates a non-isolated mode of operation.

Table 26 • Applicator Interface Connector Pin Configuration (Continued)

Pin No.	Signal Name	Signal Type	Description
9	RIBBON LOW	Output	Asserted LOW if the Supplies Warning feature is enabled and the amount of ribbon remaining on the supply spindle is below the threshold level.
10	SERVICE REQUIRED	Output	Asserted LOW in the following circumstances: <ul style="list-style-type: none"> • the printhead is open • the ribbon or media is out • the print engine is paused • an operational fault occurs • a Resynch error occurs while the applicator Resynch mode is set to Error mode
11	END PRINT	Output	<ul style="list-style-type: none"> • MODE 0—The applicator port is OFF. • MODE 1—Asserted LOW only while the print engine is moving the label forward; otherwise deasserted HIGH. • MODE 2—Asserted HIGH only while the print engine is moving the label forward; otherwise deasserted LOW. • MODE 3—(Default) Asserted LOW for 20 milliseconds when a label is completed and positioned. Not asserted during continuous printing. • MODE 4—Asserted HIGH for 20 milliseconds when a label is completed and positioned. Not asserted during continuous printing.
12	MEDIA OUT	Output	Asserted LOW while there is no media in the print engine.
13	RIBBON OUT	Output	Asserted LOW while there is no ribbon in the print engine.
14	DATA READY	Output	<ul style="list-style-type: none"> • Asserted LOW when sufficient data has been received to begin printing the next label. • Deasserted HIGH whenever printing stops after the current label, due to either a pause condition or the absence of a label format.
15	SPARE	Output	Unassigned.

Input/Output Specifications

Figure 143 • Input Signal Circuit

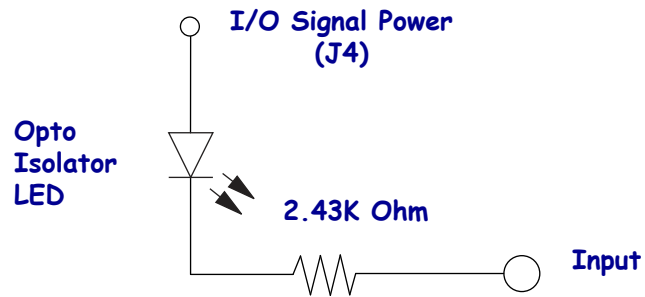
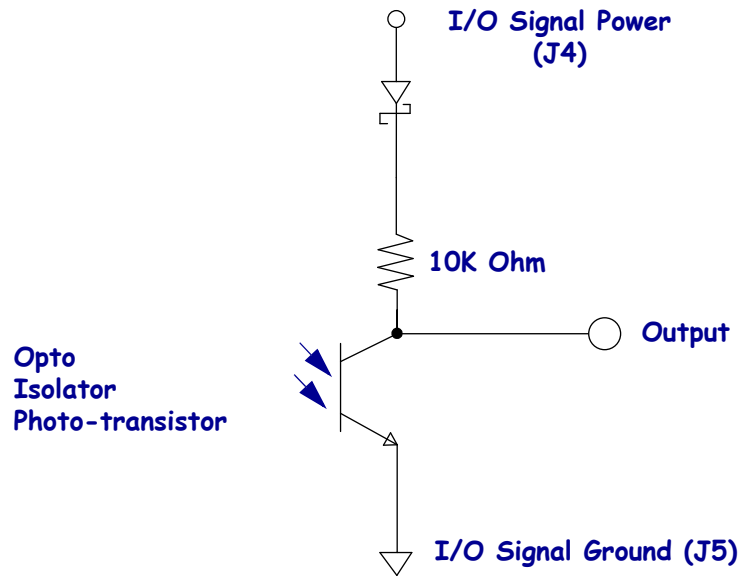


Figure 144 • Output Signal Circuit



Close the Electronics Enclosure

1. Ensure that all wires are routed properly and are not causing any obstructions, and then carefully swing the electronics enclosure closed.
2. Adjust the wire clips for the parallel port until they are touching the parallel port.
3. Slide the electronics cover onto the print engine.
4. Reinstall the four electronics cover mounting screws.

Reinstall the Print Engine in the Applicator

1. To reinstall the print engine into the applicator, carefully place the keyhole on the center mounting bolt.



Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.

2. Replace the four corner mounting screws securing the print engine to the applicator.
3. Tighten the center mounting bolt.

Resume Printer Operation

1. Reconnect the AC power cord and interface cables.
2. Turn on (I) the print engine.

The installation is complete.



Voltage Regulator Board Maintenance Kit

Installation Instructions

This kit includes the parts and documentation necessary to install the Voltage Regulator Board Maintenance Kit in the ZE500™ Series Print Engines. Read these instructions thoroughly before installing this kit.



Caution • This installation must be performed by a qualified service technician.

Parts List

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

Figure 145 • Kit Contents

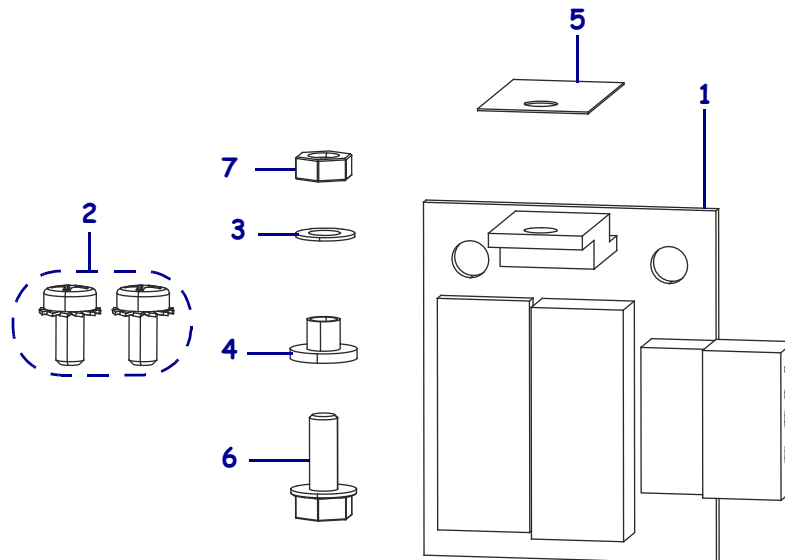


Table 27 • Parts List

✓	Item	Qty	Part Number	Description
	Ref	1	P1046696-020	Voltage Regulator Board Maintenance Kit
	1	1	N/A	Voltage Regulator Board Assembly
	2	2	N/A	Screw, M3 × 6 HX TX NI
	3	1	HW43893	Washer, Flat 0.25 × 0.125 × 0.028 (Qty. of 100)
	4	1	N/A	Washer, Shoulder 0.125
	5	1	N/A	Pad, Thermal TO 220
	6	1	N/A	Screw, M3 × 0.5 × 8 mm
	7	1	N/A	Nut, M3

N/A = Not available as a separate part (listed for identification purposes only).

Tools Required



Tools • You need these tools to complete this procedure:

- Phillips Screwdriver Set
- Torx Key Set
- Antistatic Wriststrap and Mat
- Flat-blade Screwdriver Set
- Metric Hex Key (Allen Wrench) Set

Remove Power and Data Cables



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

Connect yourself to an antistatic device.




2. **Caution** • Turn off (O) the print engine and disconnect it from the power source before performing the following procedure.

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

Remove Print Engine from Applicator

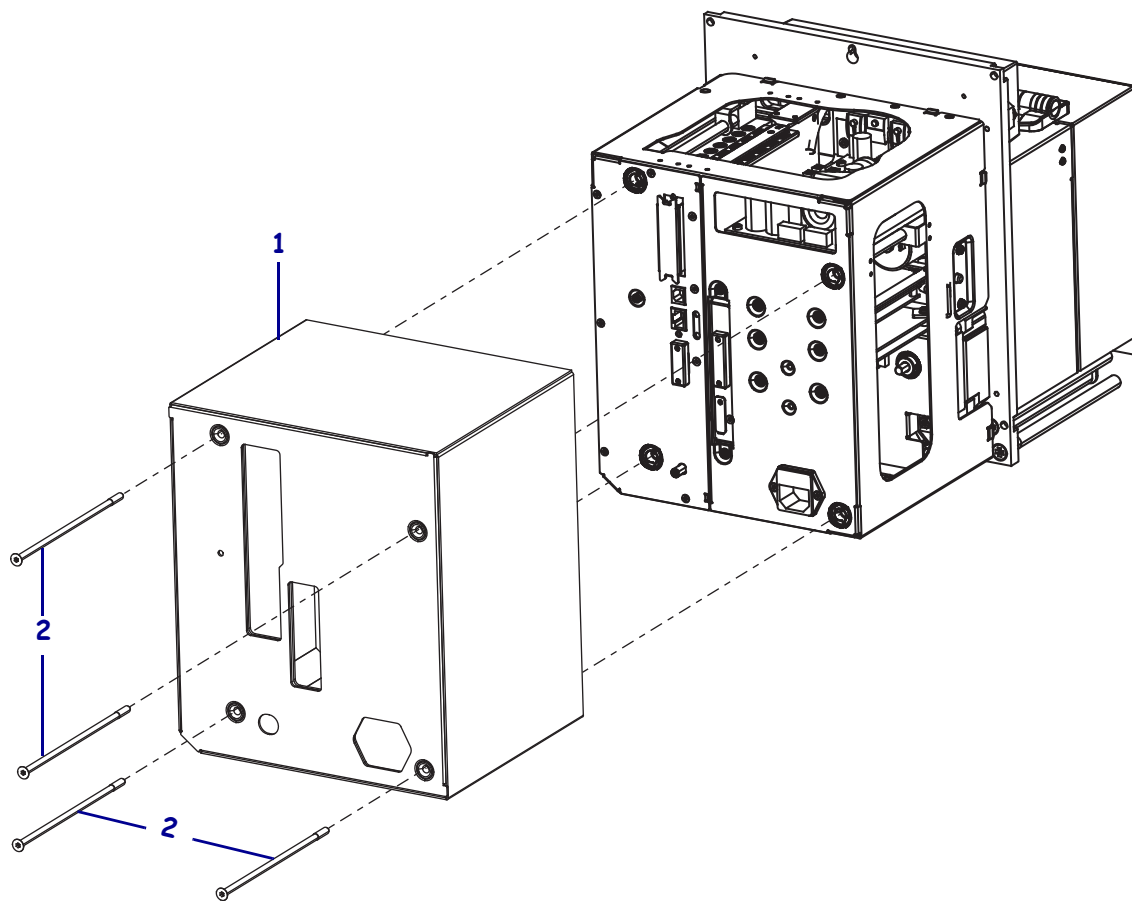
1. Does your applicator (or stand) permit open access to the rear of the print engine?

If you have an...	Then...
Open access	<p>You may swing the print engine open and work on it without removing the unit from the applicator.</p> <p>If you wish to remove the unit from the stand at any time, follow the instructions listed for the <i>Obstructed access</i> type applicator shown in this table.</p> <ol style="list-style-type: none"> a. Go to <i>Remove the Electronics Cover</i>.
Obstructed access	<p>You must remove the print engine from the applicator before you work on it.</p> <ol style="list-style-type: none"> a. Remove the four corner mounting screws securing the print engine to the applicator. b. Loosen the center mounting bolt, but do not remove it. <p> Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.</p> <ol style="list-style-type: none"> c. Lift the print engine off the center mounting bolt and place on a workbench.

Remove the Electronics Cover

1. See [Figure 146](#). Remove the four long mounting screws securing the electronics cover.

Figure 146 • Electronics Cover



1	Electronics cover
2	Electronics cover mounting screws (4)

2. Slide the electronics cover off of the print engine.

Open the Electronics Enclosure

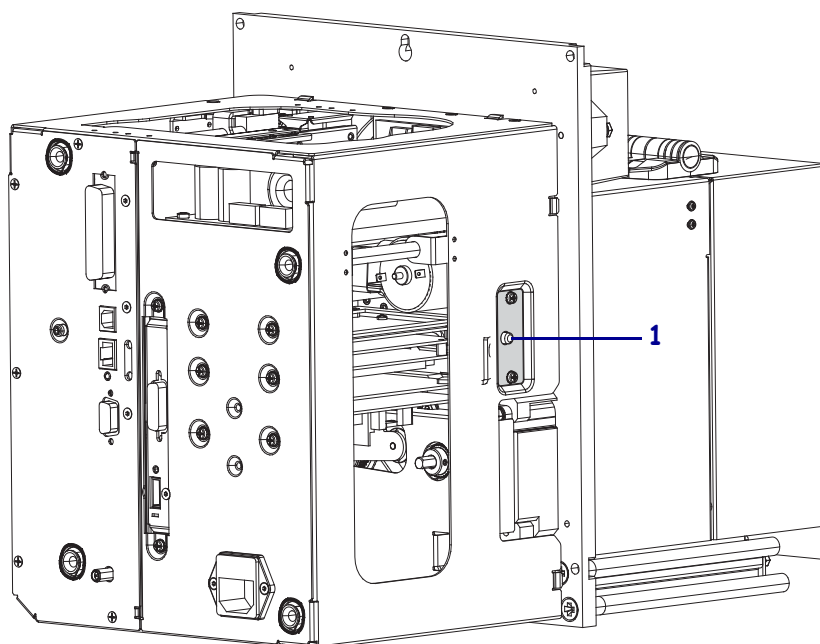
1. See [Figure 147](#). Locate the latch.



Note • For right-hand models, the latch is on the right side when looking from the back of the print engine. For left-hand models, the latch is on the left side.

2. Press the latch and swing the electronics enclosure open.

Figure 147 • Locate the Latch

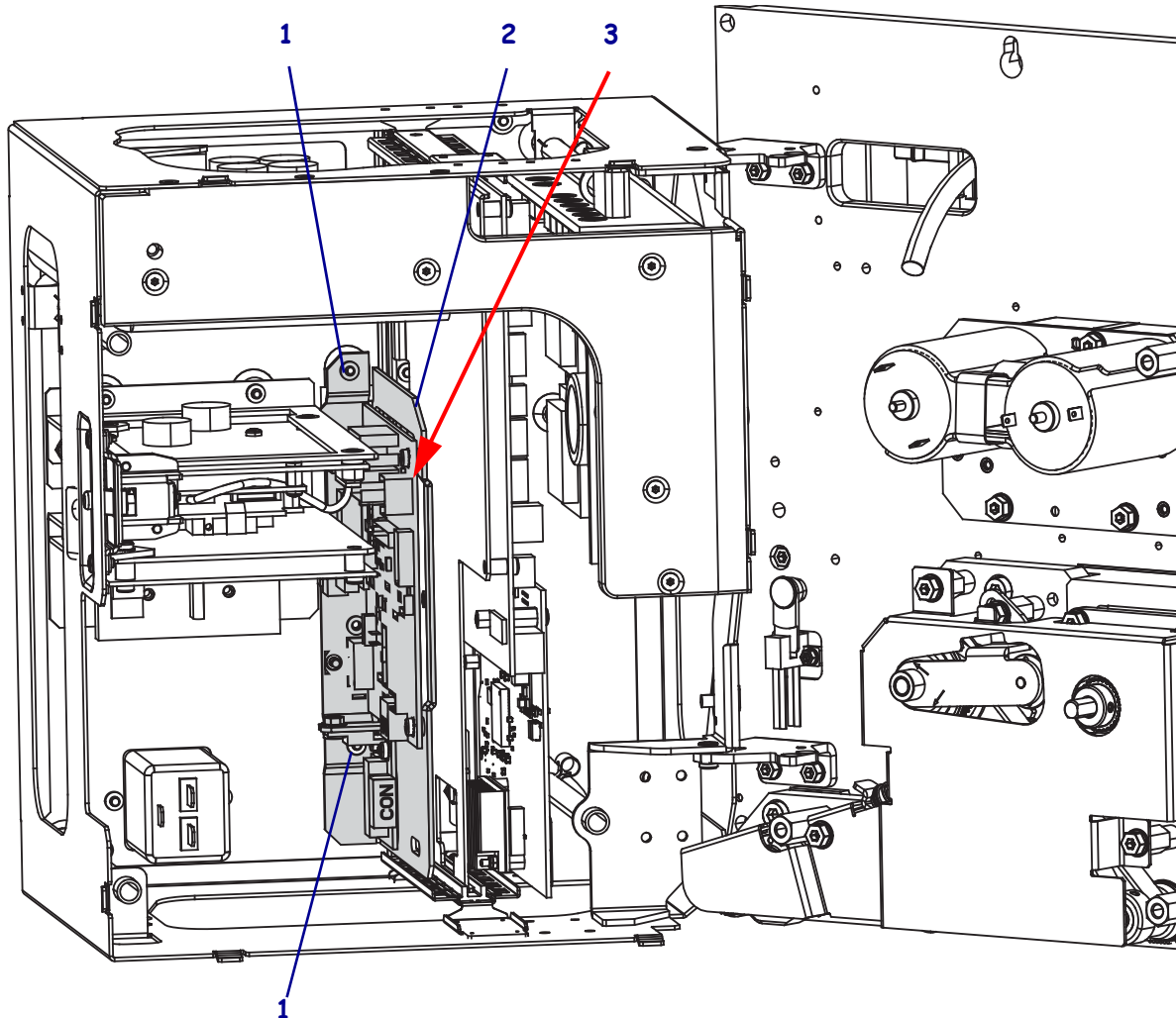


1	Latch
----------	-------

Remove the Applicator Interface Board

1. See [Figure 148](#). Disconnect the connectors along the accessible edge of the applicator interface board and the voltage regulator board.

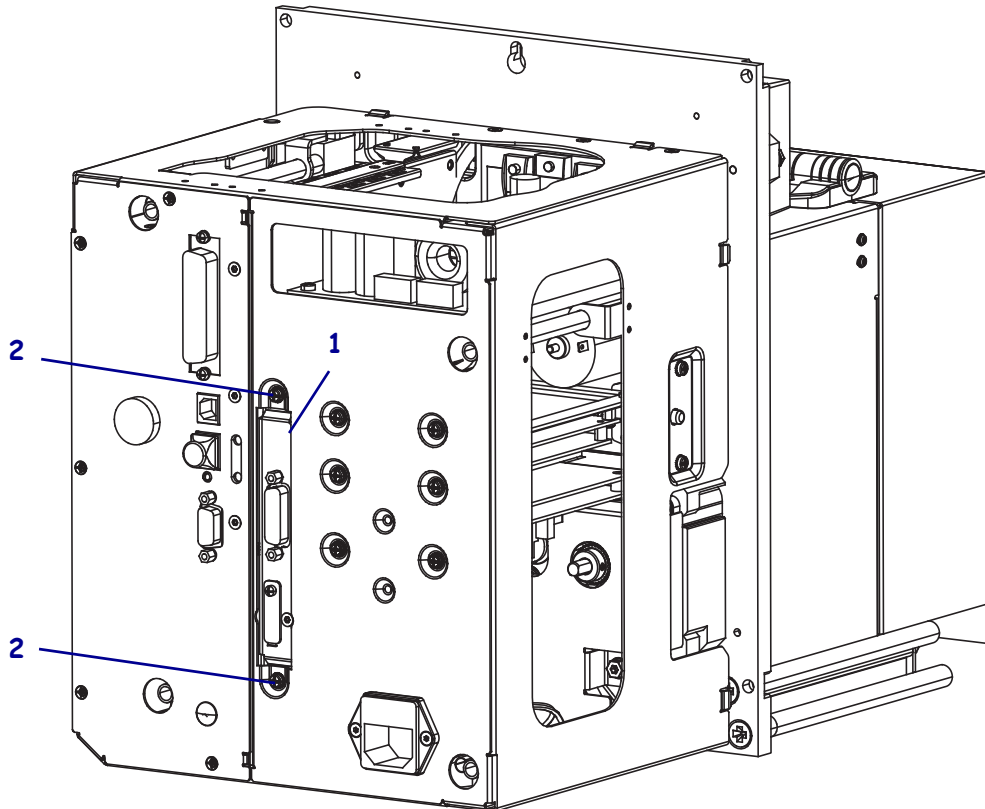
Figure 148 • Applicator Interface Board



1	Mounting screws (2)
2	Applicator interface board (shaded)
3	Disconnect this row of connectors to assist with the removal of the applicator interface assembly

- See [Figure 149](#). Remove the two mounting screws securing the applicator interface mounting plate to the back plane of the print engine.

Figure 149 • Applicator Interface Board and Mounting Screws



1	Applicator interface board
2	Mounting screws (2)

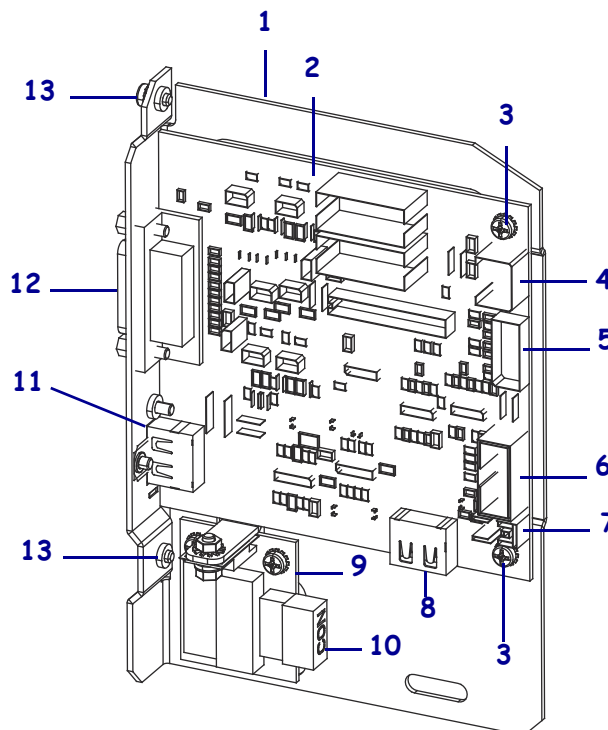
- Gently pull the applicator interface mounting plate (with the applicator interface board and voltage regulator board attached) partially away from the back plane of the print engine.



Note • Avoid disconnecting or pinching any cables inside the electronics enclosure.

- See [Figure 150](#). Disconnect the remaining connectors on the applicator interface board and voltage regulator board.

Figure 150 • Applicator Interface Board and Voltage Regulator Board



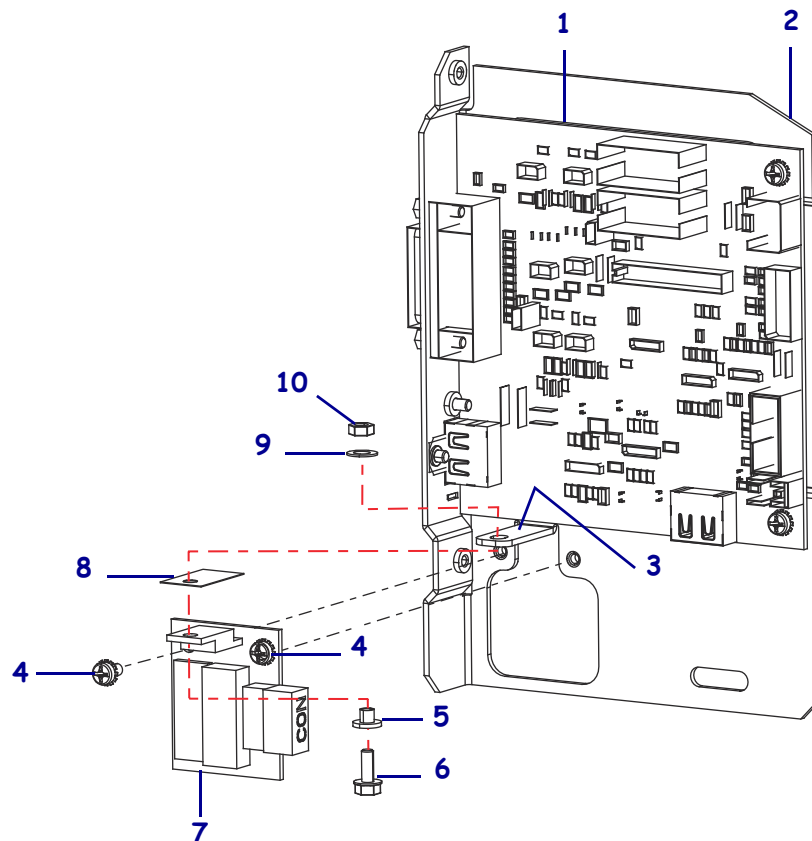
1	Applicator interface board mounting plate	8	J7: Internal HDMI connector for control panel
2	Applicator interface board	9	Voltage regulator board
3	Applicator interface board mounting screws (2)	10	J1 (on voltage reg. board): Power cable
4	J3: Applicator interface power cable	11	J2: External HDMI connector for deported control panel
5	J1: Locking SP comm cable	12	J6: Applicator interface cable
6	J8: Control panel SPI extension (ribbon) cable	13	Applicator interface mounting plate mounting screws (2)
7	J9: Door-open sensor cable		

- Remove the applicator interface mounting plate and boards from the print engine.

Remove the Voltage Regulator Board

1. Place the applicator interface mounting bracket on a workbench or flat surface.
2. See [Figure 151](#). Remove the two Phillips mounting screws securing the voltage regulator board to the applicator interface mounting bracket.

Figure 151 • Voltage Regulator Board



1	Applicator interface board
2	Applicator interface board mounting plate
3	Mounting tab
4	Phillips mounting screws (2)
5	Hex mounting screw and washer
6	Insulated washer
7	Voltage regulator board
8	Heat sink pad
9	Washer
10	Nut

3. Remove the hex mounting screw, two flat washers, insulated washer, heat sink pad and nut securing the voltage regulator board to the upright mounting tab.

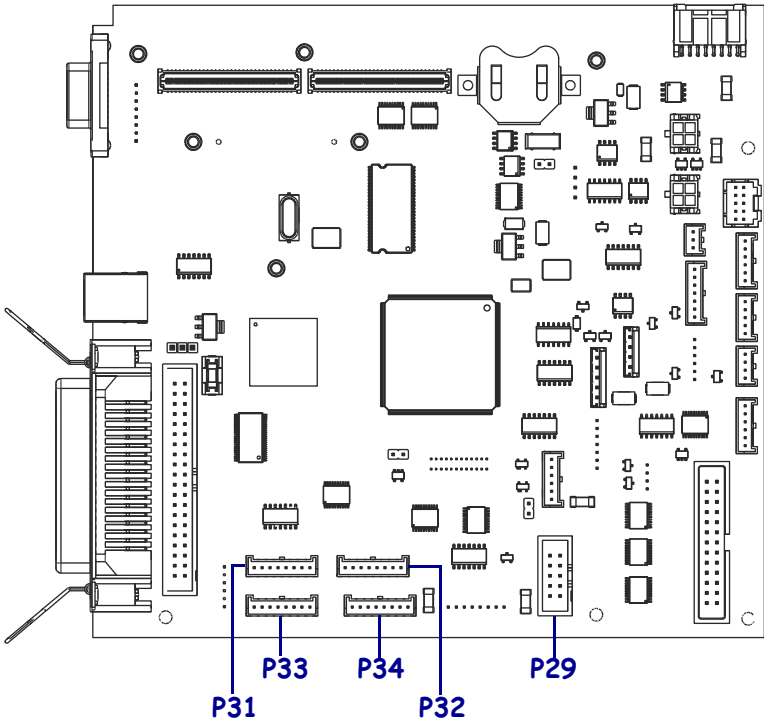
Replace the Voltage Regulator Board

1. See [Figure 151](#). Reinstall the two Phillips mounting screws to secure the voltage regulator board to the applicator interface mounting bracket.
2. Start with the hex mounting screw, and reinstall the items in the exact order below:
 - a. Add a flat washer to the mounting screw.
 - b. Add the insulated washer to the mounting screw.
 - c. Insert the screw and hardware into the voltage regulator board.
 - d. Add the heat sink pad on the top side of the upright mounting tab on the voltage regulator board.
 - e. Insert the screw, hardware and heat sink into the upright mounting tab on the voltage regulator board.
 - f. Using a flat washer and a nut, secure the voltage regulator board to the upright mounting tab on the mounting plate.

Connect Cables to Other Circuit Boards

1. Connect the cables as follows:
 - a. See [Figure 152](#). Connect the locking SP comm cable to an open connector in P31-34 on the main logic board (MLB).
The latching connector is the one farthest from the ferrite.
 - b. Connect the control panel SPI extension cable (ribbon cable) to P29 on the MLB.
 - c. Connect the four-pin connector (arranged in a square) for the power cable to J9 on the DC power supply board.

Figure 152 • MLB Connections



P29	Control Panel Connector
P31-34	SPI Connector *
*SPI—Serial Peripheral Interface	

Insert the Applicator Interface Board and Mounting Plate

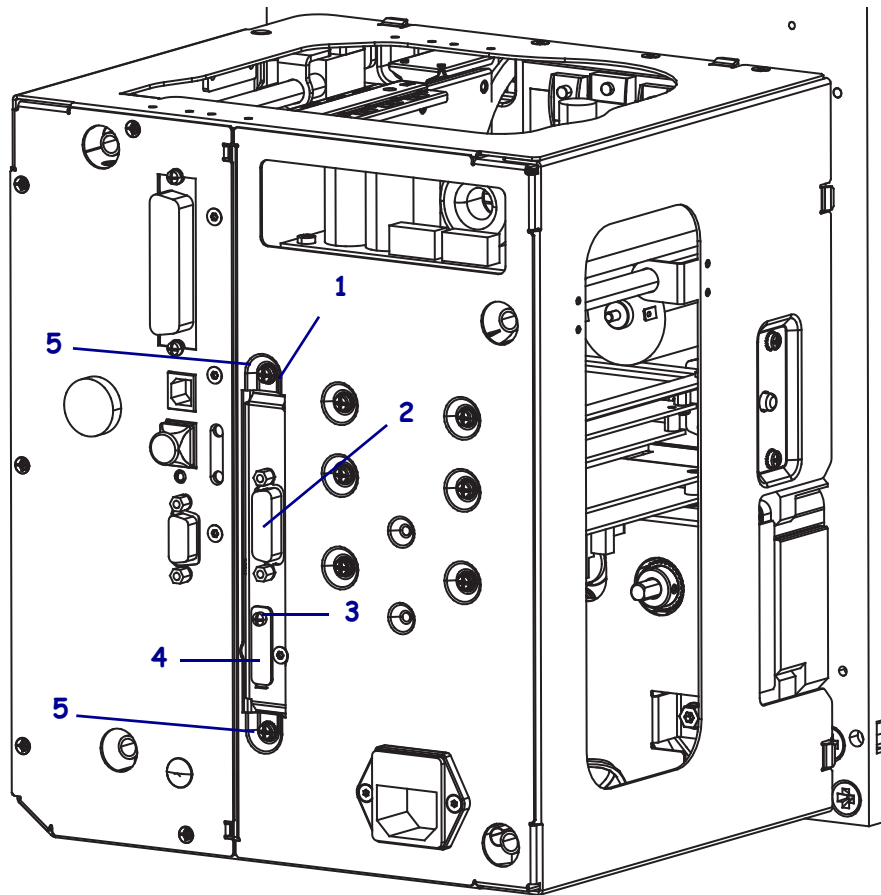
1. Gently insert the applicator interface mounting plate (with the applicator interface board and voltage regulator board attached) through the center opening and toward the back plane.



Note • Avoid disconnecting or pinching any cables inside the electronics enclosure.

2. See [Figure 153](#). Align the mounting holes in the applicator board mounting plate with the holes in the back plane of the print engine.

Figure 153 • Applicator Interface Board and External Connectors



1	Applicator interface board
2	Applicator interface connector
3	HDMI connector cover mounting screw
4	HDMI connector cover
5	Applicator interface board mounting screw (2)

3. Reinstall the two mounting screws to secure the applicator interface mounting plate to the back plane of the print engine.

Connect Cables to the Applicator Interface and Voltage Regulator Boards

1. Which type of control panel are you using?

If...	Then...
Standard (attached to the top of the print engine)	<ol style="list-style-type: none"> a. See Figure 154. Connect the HDMI cable to J7 on the applicator interface board. b. Continue with step 2.
Deported (attached away from the print engine)	<ol style="list-style-type: none"> a. See Figure 153. From the back plane of the print engine, remove the mounting screw and HDMI connector cover. b. Reconnect the HDMI cable to J2 on the applicator interface board. This connector is accessible from the back plane. c. Continue with step 2.

2. Connect the control panel SPI extension cable (ribbon cable) to J8 on the applicator interface board.
3. Connect the locking SP comm cable to J1 on the applicator interface board.

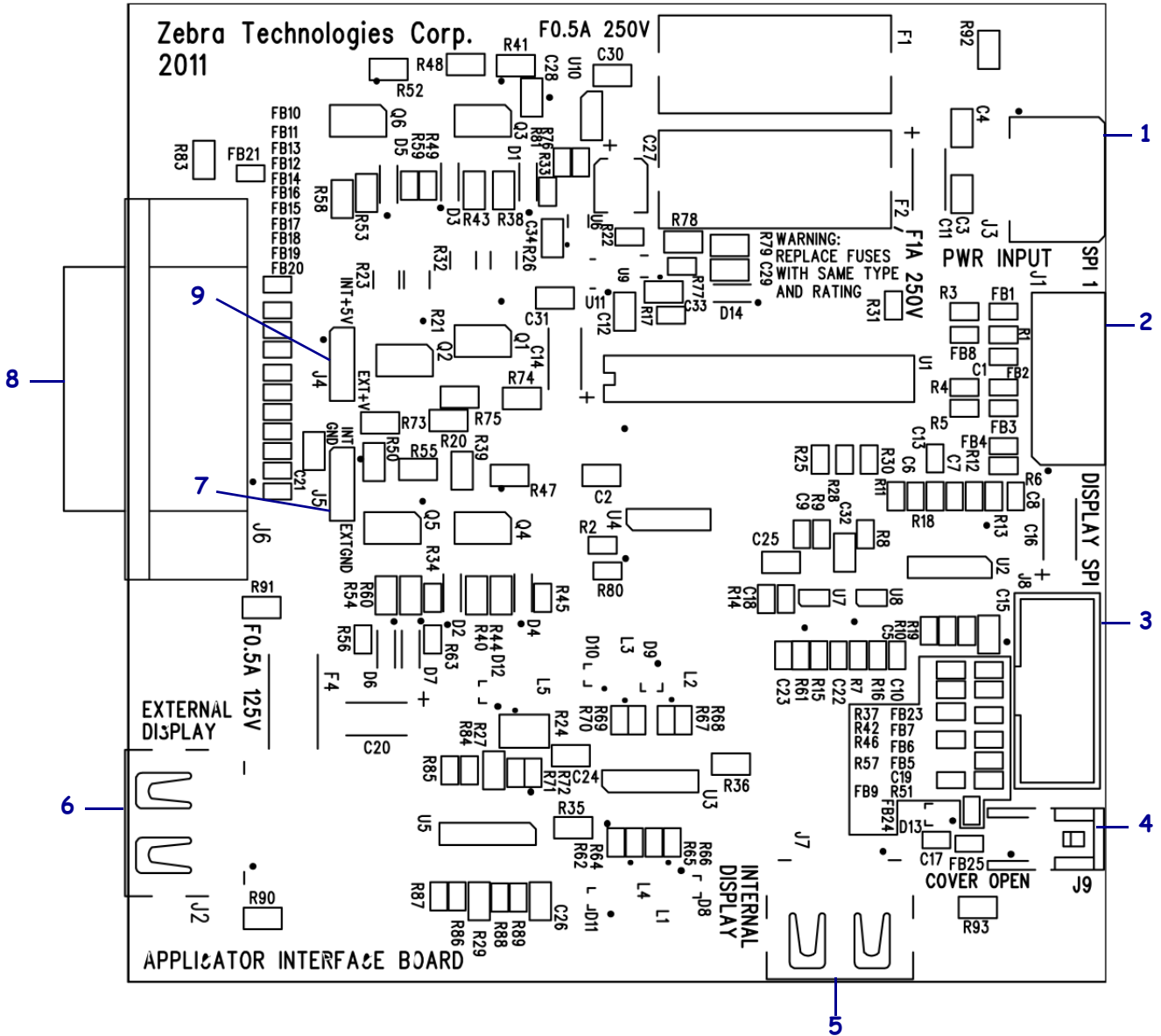


Important • This applicator interface board requires the use of an SP comm cable with a ferrite. The locking connector is the one closest to the ferrite.

4. Connect the six-pin connector for the power cable to J3 on the applicator interface board.
5. Connect the four-pin connector (arranged in a line) for the power cable to J1 on the voltage regulator board.

6. See Figure 154. Connect the door-open sensor to J9 on the applicator interface board.

Figure 154 • Applicator Interface Board Connections



1	J3: Applicator interface power cable
2	J1: Locking SP comm cable
3	J8: Control panel SPI extension (ribbon) cable
4	J9: Door-open sensor cable
5	J7: Internal HDMI connector for control panel
6	J2: External HDMI connector for departed control panel
7	J5: Jumper
8	J6: Applicator interface cable
9	J4: Jumper

Close the Electronics Enclosure

1. Ensure that all wires are routed properly and are not causing any obstructions, and then carefully swing the electronics enclosure closed.
2. Adjust the wire clips for the parallel port until they are touching the parallel port.
3. Slide the electronics cover onto the print engine.
4. Reinstall the four electronics cover mounting screws.

Reinstall the Print Engine in the Applicator

1. To reinstall the print engine into the applicator, carefully place the keyhole on the center mounting bolt.



Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.

2. Replace the four corner mounting screws securing the print engine to the applicator.
3. Tighten the center mounting bolt.

Resume Printer Operation

1. Reconnect the AC power cord and interface cables.
2. Turn on (I) the print engine.

The installation is complete.



Ribbon Tension Control Board Maintenance Kit

Installation Instructions

This kit includes the parts and documentation necessary to install the Ribbon Tension Control Board Maintenance Kit in the ZE500™ Series Print Engines. Read these instructions thoroughly before installing this kit.



Caution • This installation must be performed by a qualified service technician.

Parts List

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

Figure 155 • Kit Contents

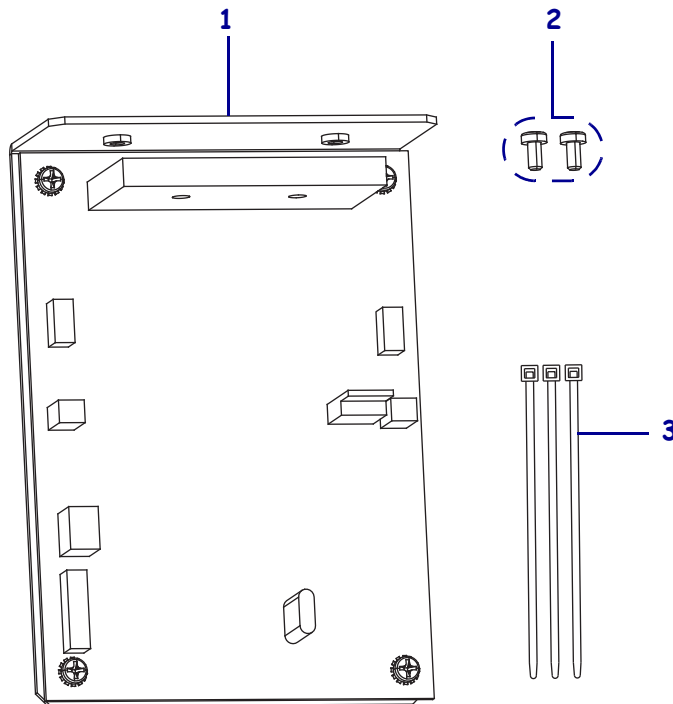


Table 28 • Parts List

✓	Item	Qty	Part Number	Description
	Ref	1	P1046696-024	Ribbon Tension Control Board Maintenance Kit
	1	1	<i>N/A</i>	Ribbon Tension Control Board Assembly
	2	2	HW43495	Screw and Serrated Washer (Qty. of 25)
	3	3	HWQ06020	Cable Tie

N/A = Not available as a separate part (listed for identification purposes only).

Tools Required



Tools • You need these tools to complete this procedure:

- Phillips Screwdriver Set
- Metric Hex Key (Allen Wrench) Set
- Antistatic Wriststrap and Mat
- Safety Goggles

Remove Power and Data Cables



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

Connect yourself to an antistatic device.




2. **Caution** • Turn off (O) the print engine and disconnect it from the power source before performing the following procedure.

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

Remove Print Engine from Applicator

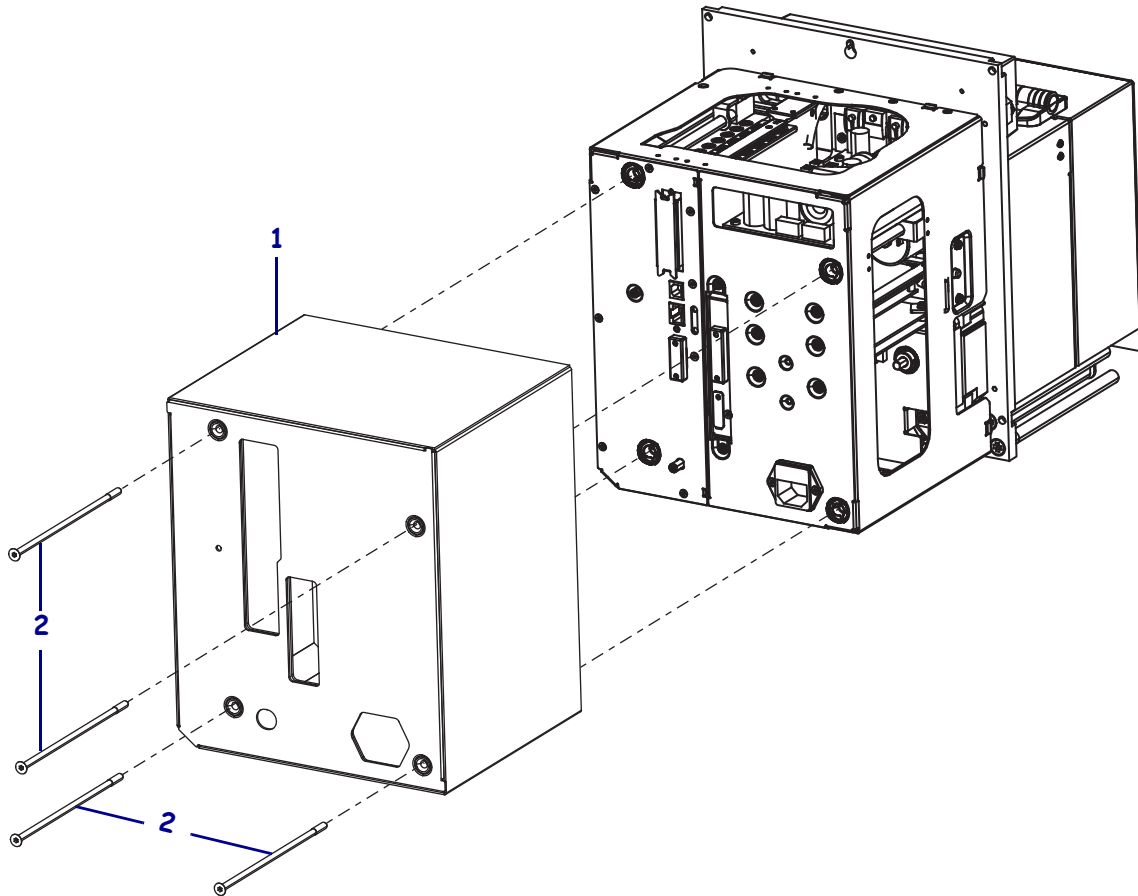
1. Does your applicator (or stand) permit open access to the rear of the print engine?

If you have an...	Then...
Open access	<p>You may swing the print engine open and work on it without removing the unit from the applicator.</p> <p>If you wish to remove the unit from the stand at any time, follow the instructions listed for the <i>Obstructed access</i> type applicator shown in this table.</p> <ol style="list-style-type: none"> a. Go to <i>Remove the Electronics Cover</i>.
Obstructed access	<p>You must remove the print engine from the applicator before you work on it.</p> <ol style="list-style-type: none"> a. Remove the four corner mounting screws securing the print engine to the applicator. b. Loosen the center mounting bolt, but do not remove it. <p> Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.</p> <ol style="list-style-type: none"> c. Lift the print engine off the center mounting bolt and place on a workbench.

Remove the Electronics Cover

1. See [Figure 156](#). Remove the four long mounting screws securing the electronics cover.

Figure 156 • Electronics Cover



1	Electronics cover
2	Electronics cover mounting screws (4)

2. Slide the electronics cover off of the print engine.

Open the Electronics Enclosure

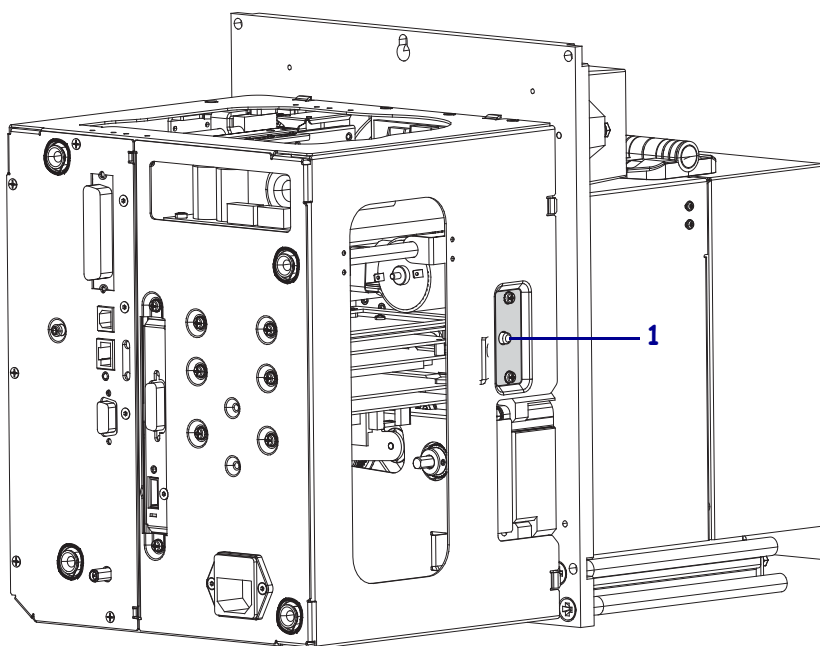
1. See [Figure 157](#). Locate the latch.



Note • For right-hand models, the latch is on the right side when looking from the back of the print engine. For left-hand models, the latch is on the left side.

2. Press the latch and swing the electronics enclosure open.

Figure 157 • Locate the Latch



1	Latch
----------	-------

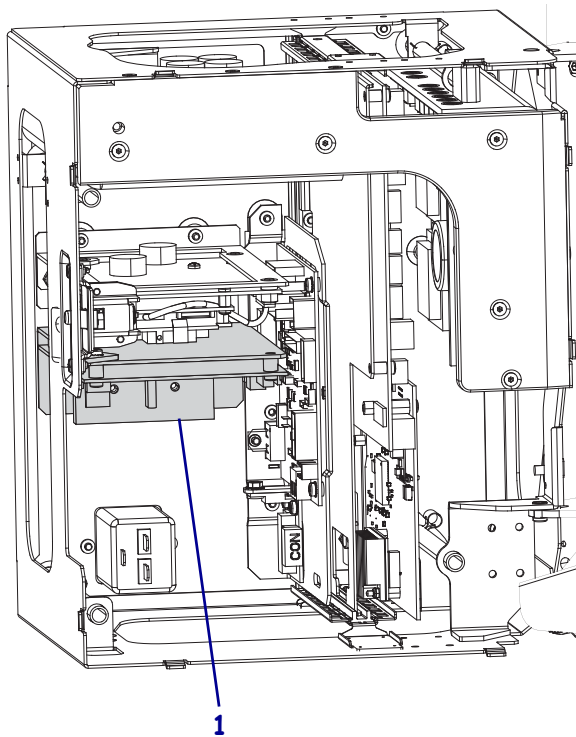
Remove the Ribbon Tension Control Board

1. See [Figure 158](#). Disconnect all connectors on the ribbon tension control board.



Note • This board is mounted with the connectors pointing down. Keep that in mind when disconnecting and connecting cables.

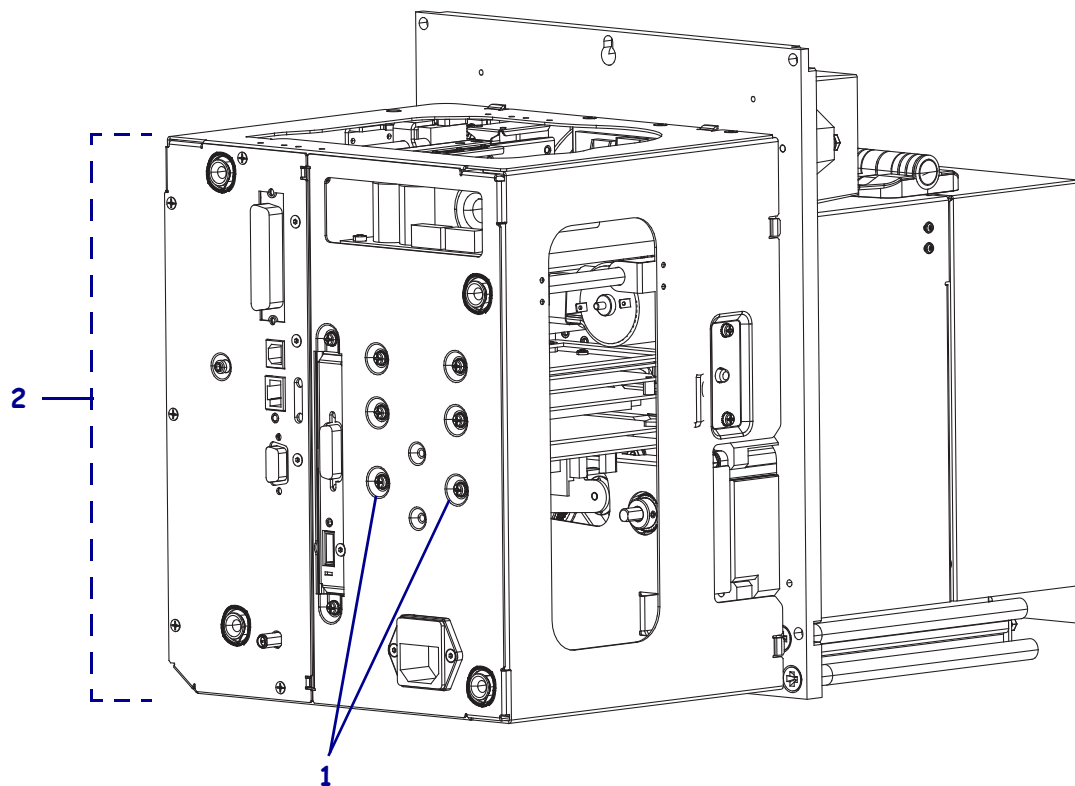
Figure 158 • Ribbon Tension Control Board



1	Ribbon tension control board
----------	------------------------------

2. See [Figure 159](#). While supporting the board with one hand, remove the two mounting screws securing the ribbon tension control board to the back plane of the print engine.

Figure 159 • Mounting Screws on Back Plane



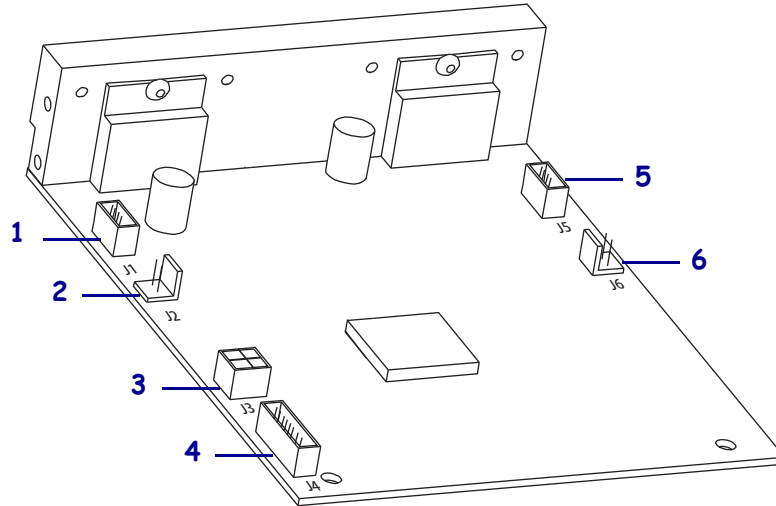
1	Mounting screws (2)
2	Back plane

3. Remove the ribbon tension control board from the electronics enclosure.

Replace the Ribbon Tension Control Board

1. See [Figure 160](#). Reconnect all of the connectors on the ribbon tension control board.

Figure 160 • Ribbon Tension Control Board Connections



1	J1: Take-up encoder cable (one black, one violet, and two red wires)
2	J2: Supply DC motor cable (black and yellow wires)
3	J3
4	J4
5	J5: Supply encoder cable (one black, one orange, and two red/white wires)
6	J6: Take-up DC motor cable (black and red wires)

2. Insert the ribbon tension control board inside of the chassis and align mounting holes.
3. While holding the board with one hand, reinstall the two mounting screws to secure the ribbon tension control board to the back plane of the print engine.

Close the Electronics Enclosure

1. Ensure that all wires are routed properly and are not causing any obstructions, and then carefully swing the electronics enclosure closed.
2. Adjust the wire clips for the parallel port until they are touching the parallel port.
3. Slide the electronics cover onto the print engine.
4. Reinstall the four electronics cover mounting screws.

Reinstall the Print Engine in the Applicator

1. To reinstall the print engine into the applicator, carefully place the keyhole on the center mounting bolt.



Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.

2. Replace the four corner mounting screws securing the print engine to the applicator.
3. Tighten the center mounting bolt.

Resume Printer Operation

1. Reconnect the AC power cord and interface cables.
2. Turn on (I) the print engine.

The installation is complete.

Power Entry Module and Power Switch Maintenance Kit

Installation Instructions

This kit includes the parts and documentation necessary to install the Power Entry Module and Power Switch Maintenance Kit in the ZE500™ Series Print Engines. Read these instructions thoroughly before installing this kit.



Caution • This installation must be performed by a qualified service technician.

Parts List

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

Figure 161 • Kit Contents

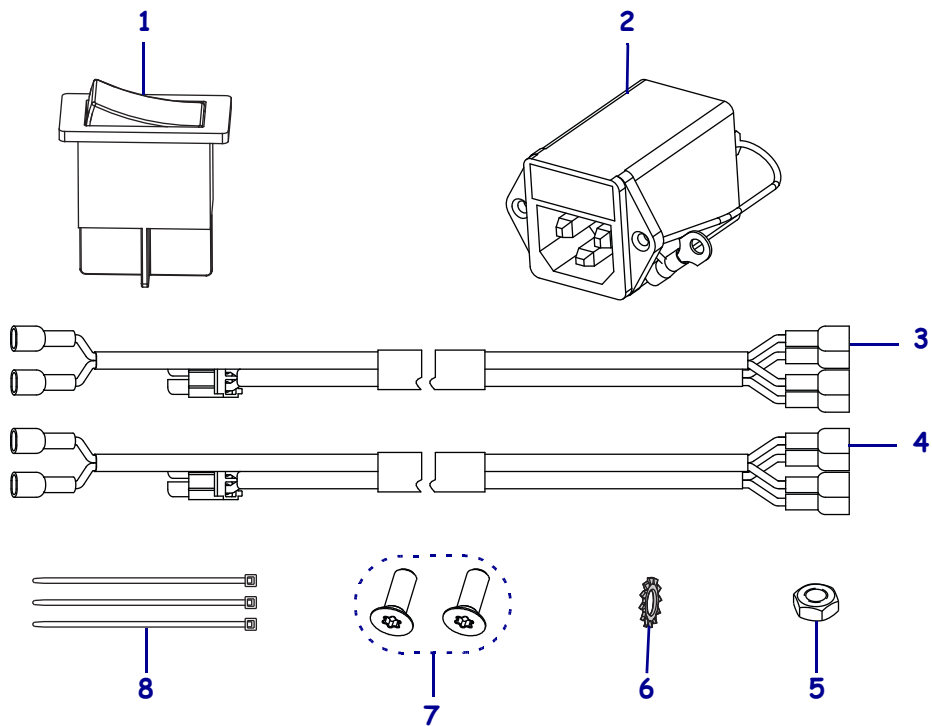


Table 29 • Parts List

✓	Item	Qty	Part Number	Description
	Ref	1	P1046696-026	Power Entry Module and Power Switch Maintenance Kit
	1	1	N/A	Switch, Rocker 2DPST Panel
	2	1	N/A	Power Entry Module with Ground Fuse
	3	1	N/A	Cable, Power Assembly RH
	4	1	N/A	Cable, Power Assembly LH
	5	1	N/A	Nut, M4 × 0.7 S BO HX
	6	1	HW43482	Washer, Serrated M4 (Qty. of 25)
	7	2	N/A	Screw, M3 × 0.5 × 8 FL TX NI
	8	3	HWQ06020	Cable Tie

N/A = Not available as a separate part (listed for identification purposes only).

Tools Required



Tools • You need these tools to complete this procedure:

- Phillips Screwdriver Set
- Flat-blade Screwdriver Set
- Metric Hex Key (Allen Wrench) Set
- Torx Key Set
- Anti-Static Wriststrap and Mat

Remove Power and Data Cables



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

Connect yourself to an antistatic device.




2. **Caution** • Turn off (O) the print engine and disconnect it from the power source before performing the following procedure.

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

Remove Print Engine from Applicator

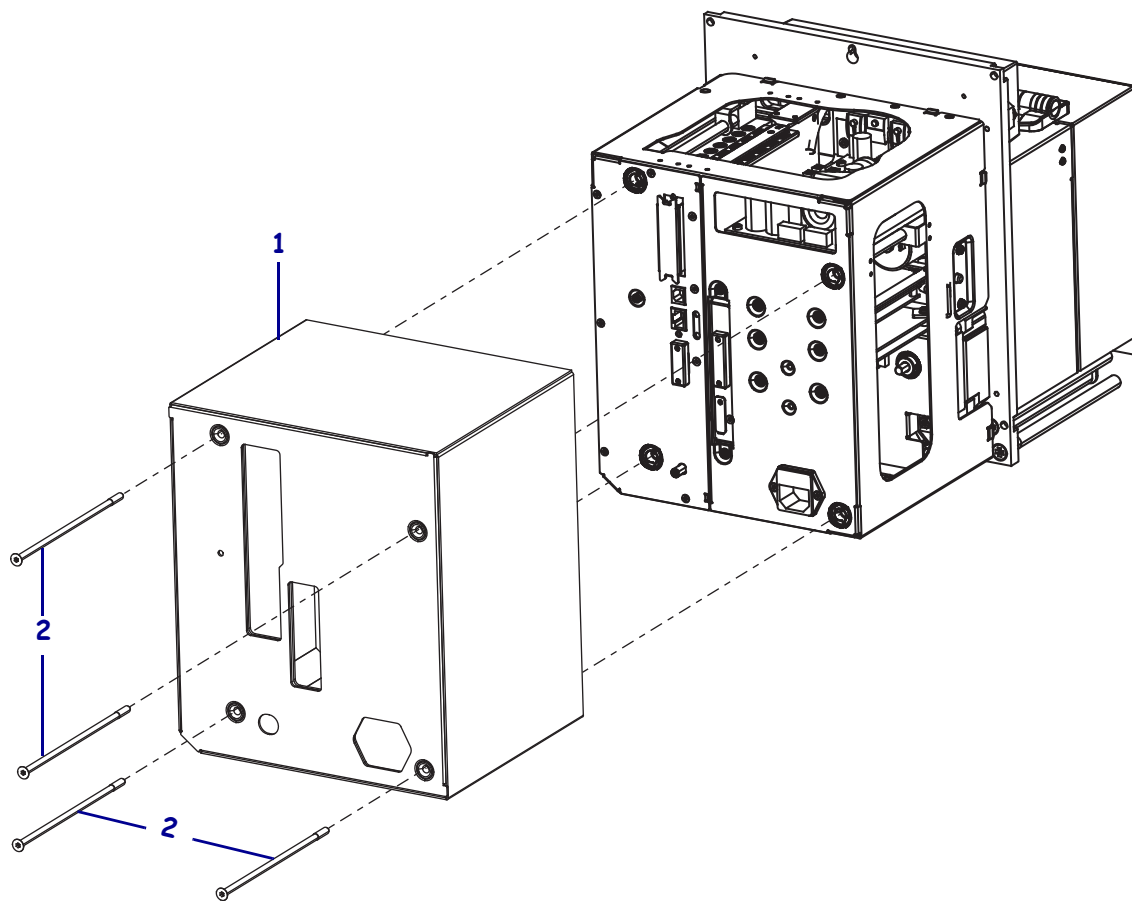
1. Does your applicator (or stand) permit open access to the rear of the print engine?

If you have an...	Then...
Open access	<p>You may swing the print engine open and work on it without removing the unit from the applicator.</p> <p>If you wish to remove the unit from the stand at any time, follow the instructions listed for the <i>Obstructed access</i> type applicator shown in this table.</p> <p>a. Go to <i>Remove the Electronics Cover</i>.</p>
Obstructed access	<p>You must remove the print engine from the applicator before you work on it.</p> <p>a. Remove the four corner mounting screws securing the print engine to the applicator.</p> <p>b. Loosen the center mounting bolt, but do not remove it.</p> <p> Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.</p> <p>c. Lift the print engine off the center mounting bolt and place on a workbench.</p>

Remove the Electronics Cover

1. See [Figure 162](#). Remove the four long mounting screws securing the electronics cover.

Figure 162 • Electronics Cover



1	Electronics cover
2	Electronics cover mounting screws (4)

2. Slide the electronics cover off of the print engine.

Open the Electronics Enclosure

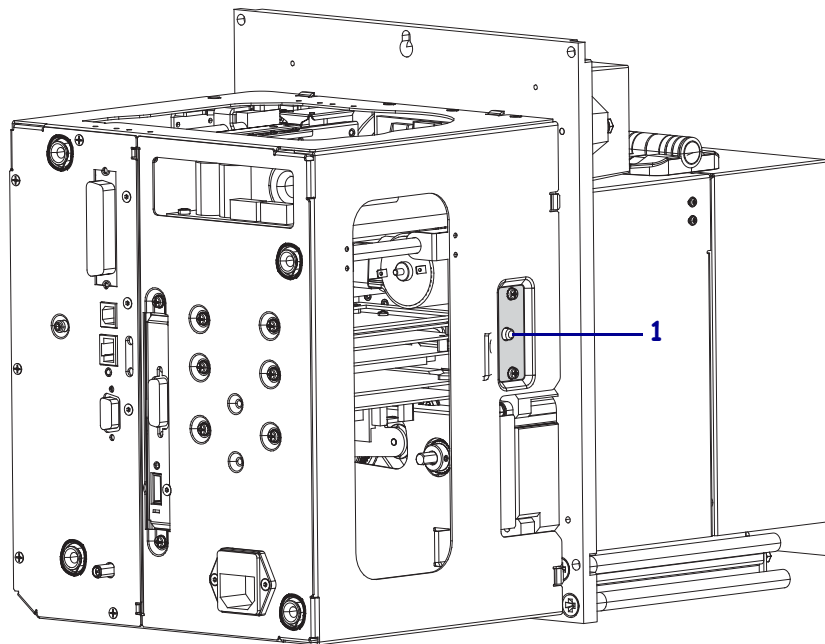
1. See [Figure 163](#). Locate the latch.



Note • For right-hand models, the latch is on the right side when looking from the back of the print engine. For left-hand models, the latch is on the left side.

2. Press the latch and swing the electronics enclosure open.

Figure 163 • Locate the Latch



1	Latch
----------	-------

Remove the Control Panel or Control Panel Cover Plate

1. What type of control panel do you have?


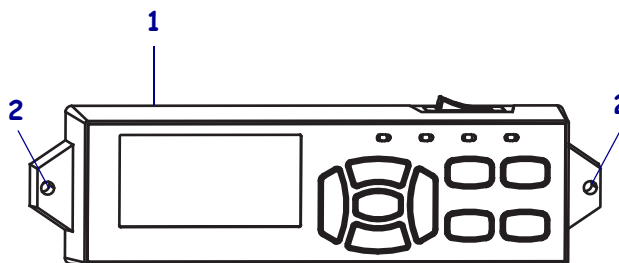
If you have a...	Then...
Control panel (attached to the print engine)	<p>a. See Figure 164. Remove the two mounting screws securing the control panel.</p> <p>b. Lift the control panel off of the print engine and move it off to the side and out of your way.</p> <p>There is no need to unplug the control panel HDMI cable from the applicator interface PCB or from the control panel for this procedure.</p>  The HDMI cable remains attached to the control panel. <p>c. Continue with <i>Remove the Power Switch</i>.</p>
Deported control panel (detached and mounted away from the print engine)	<p>a. See Figure 164. Remove the two mounting screws securing the control panel cover plate located on the top of the main frame.</p> <p>b. Remove the cover plate and set aside.</p> <p>c. Continue with <i>Remove the Power Switch</i>.</p>

Figure 164 • Front View of Control Panel



1	Control panel
2	Control panel mounting screws (2)

Remove the Power Switch

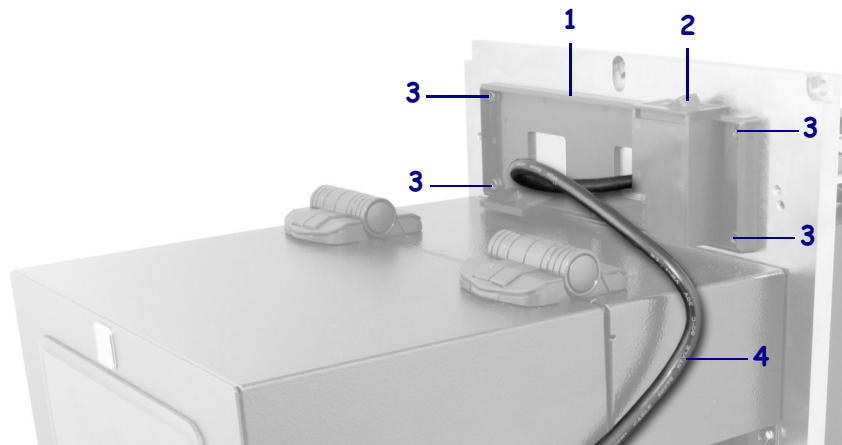
1. Note the orientation of the power switch.



Important • For both RH and LH print engines, the O (signifying the Off position) is always on the left as you face the print engine.

2. See [Figure 165](#). Remove the four mounting screws securing the control panel bracket to the main frame.

Figure 165 • Front View of Control Panel Bracket



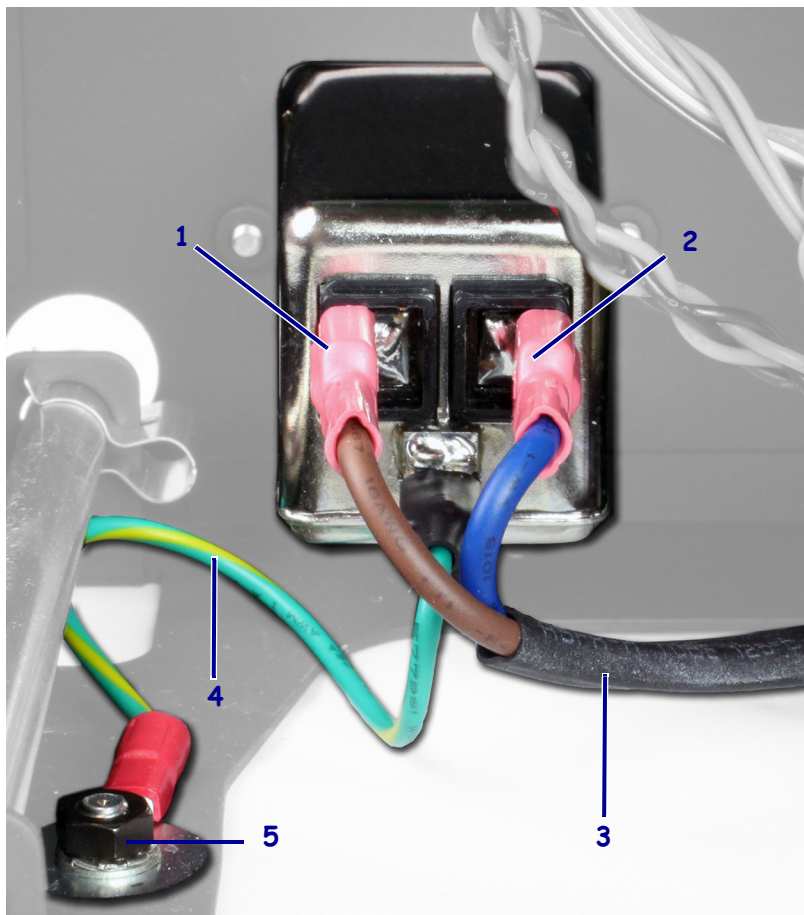
1	Control panel bracket
2	Power switch
3	Control panel bracket mounting screws (4)
4	HDMI cable

3. Disconnect the four power switch connectors.
4. Depress the tabs (one on each side of the power switch) simultaneously and push the switch out of the top of the control panel bracket.

Remove the Power Entry Module

1. See [Figure 166](#). Disconnect the power switch cable from the power entry module.
2. Remove the nut and lock washer securing the ground wire lug.

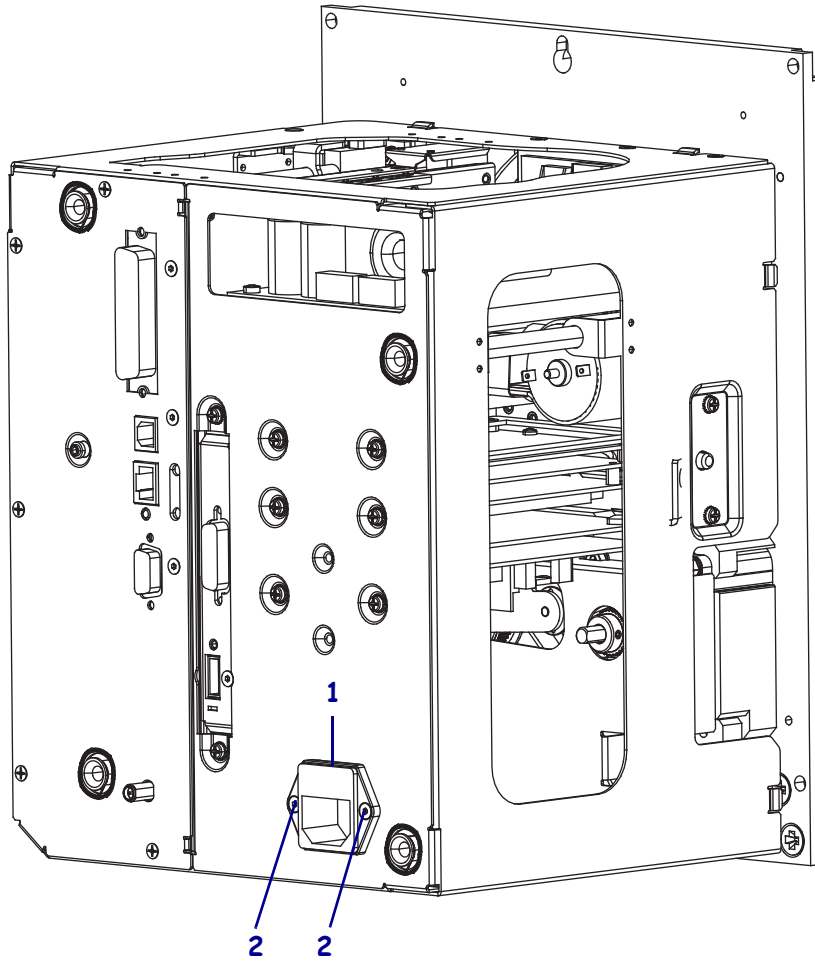
Figure 166 • Power Entry Module and Cable Connections



1	Brown wire (Line)
2	Blue wire (Neutral)
3	Power switch cable
4	Green/yellow ground wire (Earth ground)
5	Nut

3. See [Figure 167](#). From the back of the print engine, remove the two mounting screws securing the power entry module.
4. Slide the power entry module out of the back of the print engine.

Figure 167 • Power Entry Module from Back of Print Engine



1	Power entry module
2	Mounting screws

Remove the Power Switch Cable

1. Trace the power switch cable from the power entry module to the upper electronics enclosure hinge. Remove the cable from any flexible conduit or cable ties securing it.
2. Ease the power switch cable out of the electronics enclosure.
3. Pull the end of the cable (from the power switch) through the large hole in the main frame and discard the cable.

Replace the Power Switch

1. Place the control panel bracket on top of the media door, if necessary.
2. On a workbench or flat surface, place the power switch with the connectors facing you.



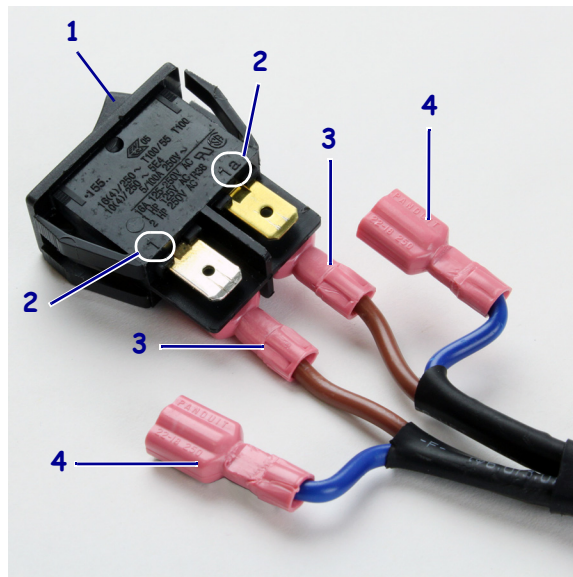
Note • Ensure that the **O** (Off position) on the power switch is now on the right as you look at the connector end.

3. See [Figure 168](#). Connect the power switch cable as follows:



Important • The position of these connectors is critical.

Figure 168 • Power Switch Close-Up

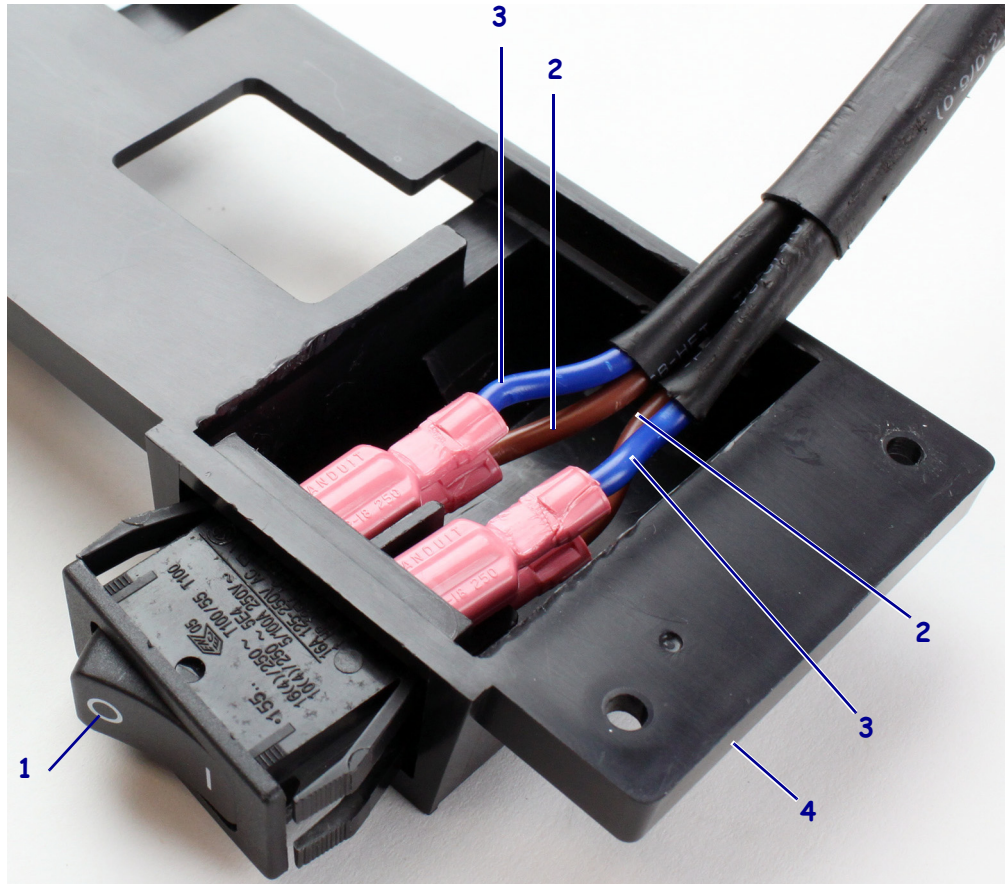


1	Power switch with O (Off position) on the right side indicates correct orientation (when looking at the connector end of the switch)
2	Labels for the connector tabs (2)
3	Cable connectors with brown wire (2)
4	Cable connectors with blue wire (2)

- a. Connect the two brown wire connectors to the bottom row of tabs on the power switch.
The tabs are labeled 2 and 2a on the opposite side of the power switch.
- b. Connect the two blue wire connectors to the top row of tabs on the power switch.
The tabs are labeled 1 and 1a on the power switch.

- c. See [Figure 169](#). Insert the free end of the power switch cable down through the power switch opening of the control panel bracket and out the back opening.
 - d. From the front of the print engine, insert the power switch (with the O position now on the left) into the control panel bracket.
- When the power switch is completely seated, you will hear it click into place.

Figure 169 • Power Switch, Bracket, and Cable Routing



1	Power switch with O (Off position) on the left side indicates correct orientation (when looking at the top of the switch)
2	Cable connectors with brown wire (2)
3	Cable connectors with blue wire (2)
4	Control panel bracket

- e. Route the power switch cable through the large opening in the main frame and into the electronics enclosure.

Replace the Control Panel or Control Panel Cover Plate

1. See [Figure 165](#). Align the control panel bracket with the mounting holes in the main frame.
2. Reinstall the four mounting screws to secure the control panel bracket.
3. Which type of control panel do you have?

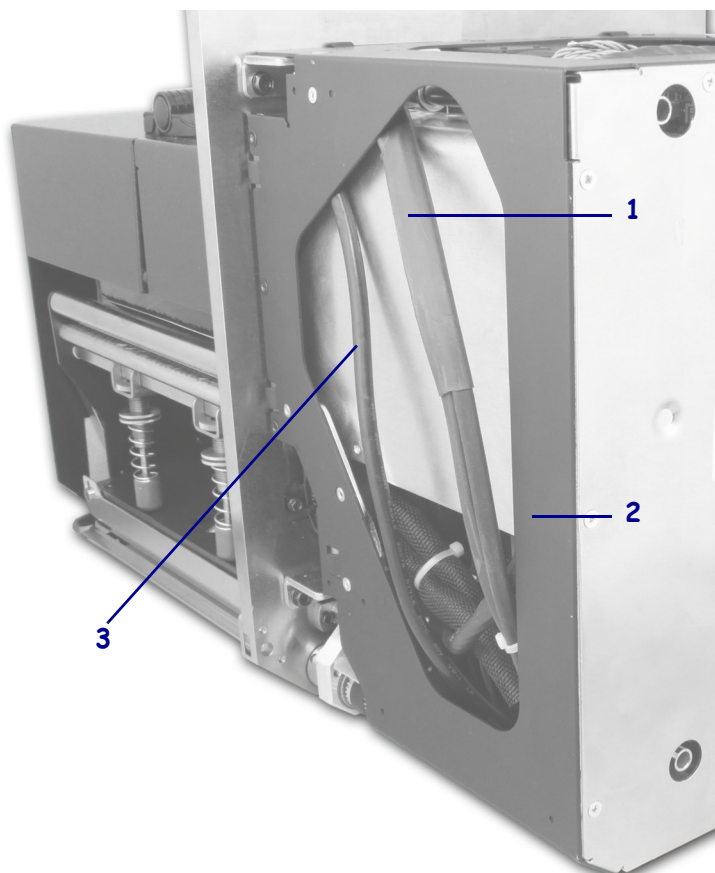
If you have a...	Then...
Control panel (attached to the print engine)	<ol style="list-style-type: none"> a. See Figure 164. Place the control panel on the top of the media door and route the attached HDMI cable through the large hole in the main frame. b. Align the two control panel mounting holes with the main frame. c. Reinstall the two mounting screws to secure the control panel.
Deported control panel (detached and mounted away from the print engine)	<ol style="list-style-type: none"> a. Align the control panel cover plate mounting holes with the main frame. b. Reinstall the two mounting screws to secure the control panel cover plate.

4. Reposition the print engine on its side (latch side down).

Replace the Power Switch Cable

1. See [Figure 170](#). Thread the power switch cable through the electronics enclosure.
The cables are routed down the inside of the electronics chassis, across the bottom, and under the applicator interface board.

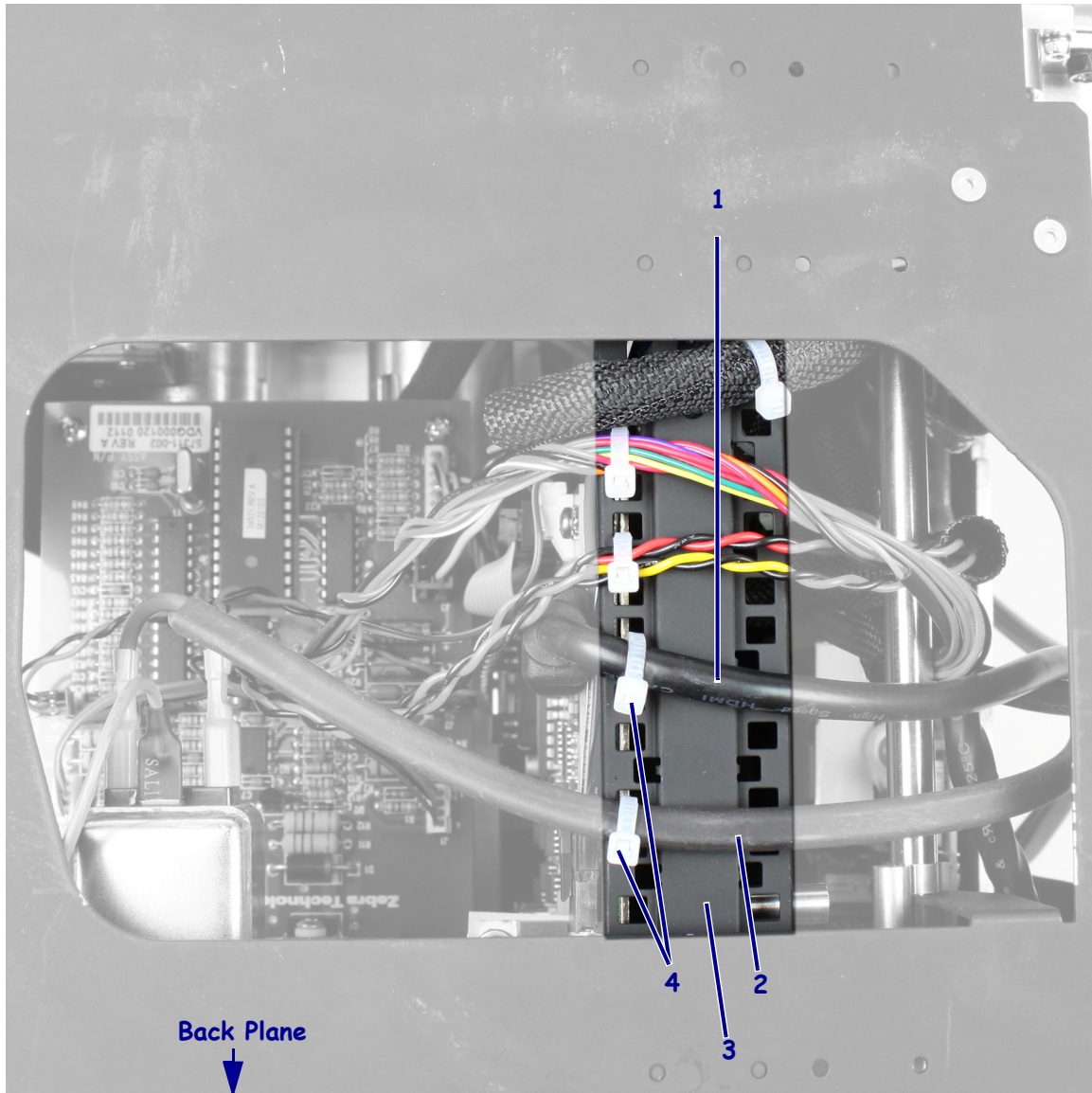
Figure 170 • Power Switch Cable Routing



1	Power switch cable
2	Electronics chassis
3	HDMI cable

2. See [Figure 171](#). Secure the power switch cable to the bottom rail of the electronics chassis with a cable tie and trim the excess.

**Figure 171 • Bottom Chassis Rail
(View from Under the Print Engine)**



1	HDMI cable
2	Power switch cable
3	Bottom chassis rail
4	Cable ties (2)

Replace the Power Entry Module

1. Slide the power entry module into the back of the print engine.
2. Install the two mounting screws to secure the power entry module.
3. Connect the ground wire lug, lock washer, and nut to the ground post.
4. See [Figure 172](#). Connect the power switch cable to the two posts on the power entry module as follows.
 - a. Insert the blue wire connector on the right tab.
 - b. Insert the brown wire connector on the left tab.

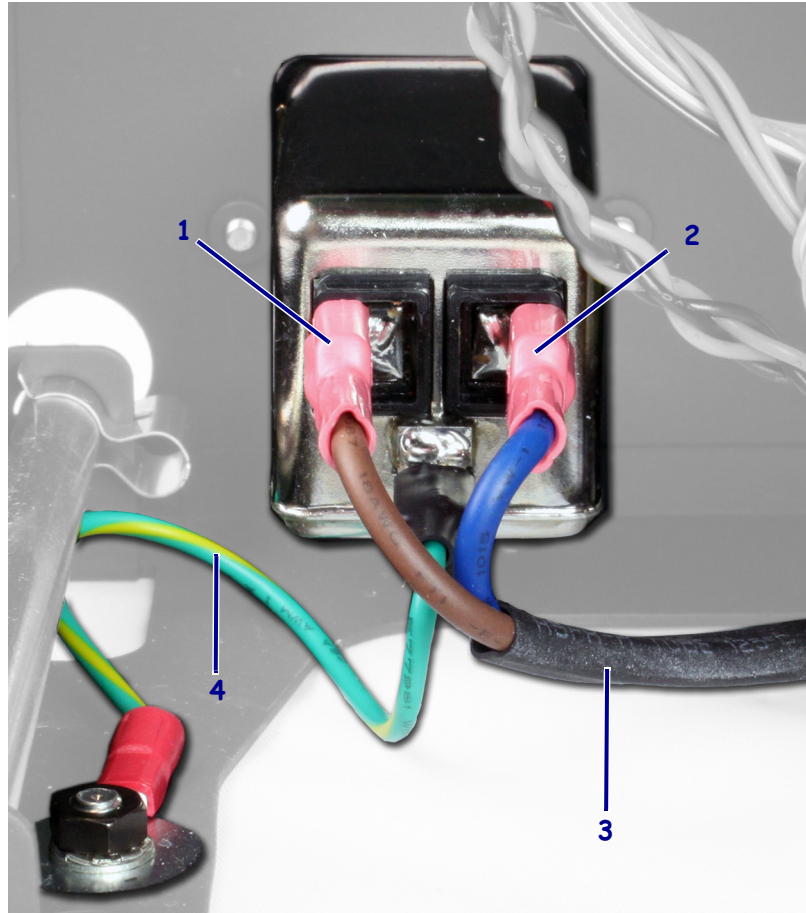


Note • Connections at the power entry module are the same for right-hand and left-hand models.



Caution • Improper connection to the power entry module will compromise the fuse functionality. Ensure that the connections are made exactly as shown in [Figure 172](#).

Figure 172 • Power Entry Module and Cable Connections



1	Brown wire (Line)
2	Blue wire (Neutral)
3	Power switch cable
4	Green/yellow wire (Earth ground)

Close the Electronics Enclosure

1. Ensure that all wires are routed properly and are not causing any obstructions, and then carefully swing the electronics enclosure closed.
2. Adjust the wire clips for the parallel port until they are touching the parallel port.
3. Slide the electronics cover onto the print engine.
4. Reinstall the four electronics cover mounting screws.

Reinstall the Print Engine in the Applicator

1. To reinstall the print engine into the applicator, carefully place the keyhole on the center mounting bolt.



Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.

2. Replace the four corner mounting screws securing the print engine to the applicator.
3. Tighten the center mounting bolt.

Resume Printer Operation

1. Reconnect the AC power cord and interface cables.
2. Turn on (I) the print engine.

The installation is complete.



Wired Ethernet Kit

Installation Instructions

This kit includes the parts and documentation necessary to install the Wired Ethernet board in the following print engines:

- ZE500™

Read these instructions thoroughly before installing this kit.

Parts List

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

Figure 173 • Kit Contents

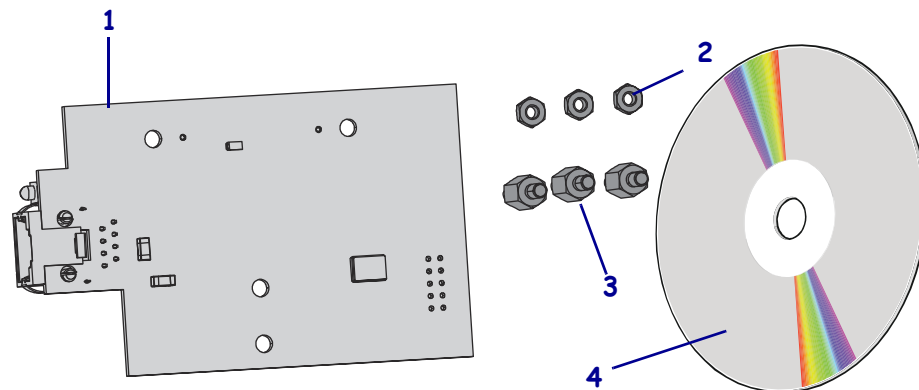


Table 30 • Parts List

✓	Item	Qty	Part Number	Description
	Ref	1	79823	Wired Ethernet Kit
	1	1	N/A	Wired Ethernet Board
	2	3	HW10460	Nut, M3 × 2.4 × 5.5 (sold in quantities of 25)
	3	3	HW79656	Standoff, M3 × 0.5 × 10 (sold in quantities of 12)
	4	1	N/A	Connectivity CD

N/A = Part not available for purchase; listed and shown for reference only.

Tools Required



Tools • You need these tools to complete this procedure:

- Phillips Screwdriver Set
- Metric Nutdriver Set
- Antistatic Wriststrap and Mat
- 47362* Zebra Preventive Maintenance Kit

* In place of the Preventive Maintenance Kit, you may use a clean swab dipped in a solution of isopropyl alcohol (minimum 90%) and deionized water (maximum 10%).



Important • Do not use needle nose pliers in place of the nutdriver, as you can damage the Ethernet board. Always use recommended tools.

Remove the ZE500 Power and Data Cables



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

Connect yourself to an antistatic device.

2. **Caution** • Turn off (O) the print engine and disconnect it from the power source before performing the following procedure.

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

Remove Print Engine from Applicator

1. Does your applicator (or stand) permit open access to the rear of the print engine?

If you have an...	Then...
Open access	<p>You may swing the print engine open and work on it without removing the unit from the applicator.</p> <p>If you wish to remove the unit from the stand at any time, follow the instructions listed for the <i>Obstructed access</i> type applicator shown in this table.</p> <p>b. Go to Remove the ZE500 Rear Cover on page 342.</p>
Obstructed access	<p>You must remove the print engine from the applicator before you work on it.</p> <p>a. Remove the four corner mounting screws securing the print engine to the applicator.</p> <p>b. Loosen the center mounting bolt, but do not remove it.</p> <div style="display: inline-block; vertical-align: middle;"> </div> <p>The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.</p> <p>c. To remove the print engine from the applicator, lift the print engine off the center mounting bolt and place on a workbench.</p>

Remove the ZE500 Rear Cover



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

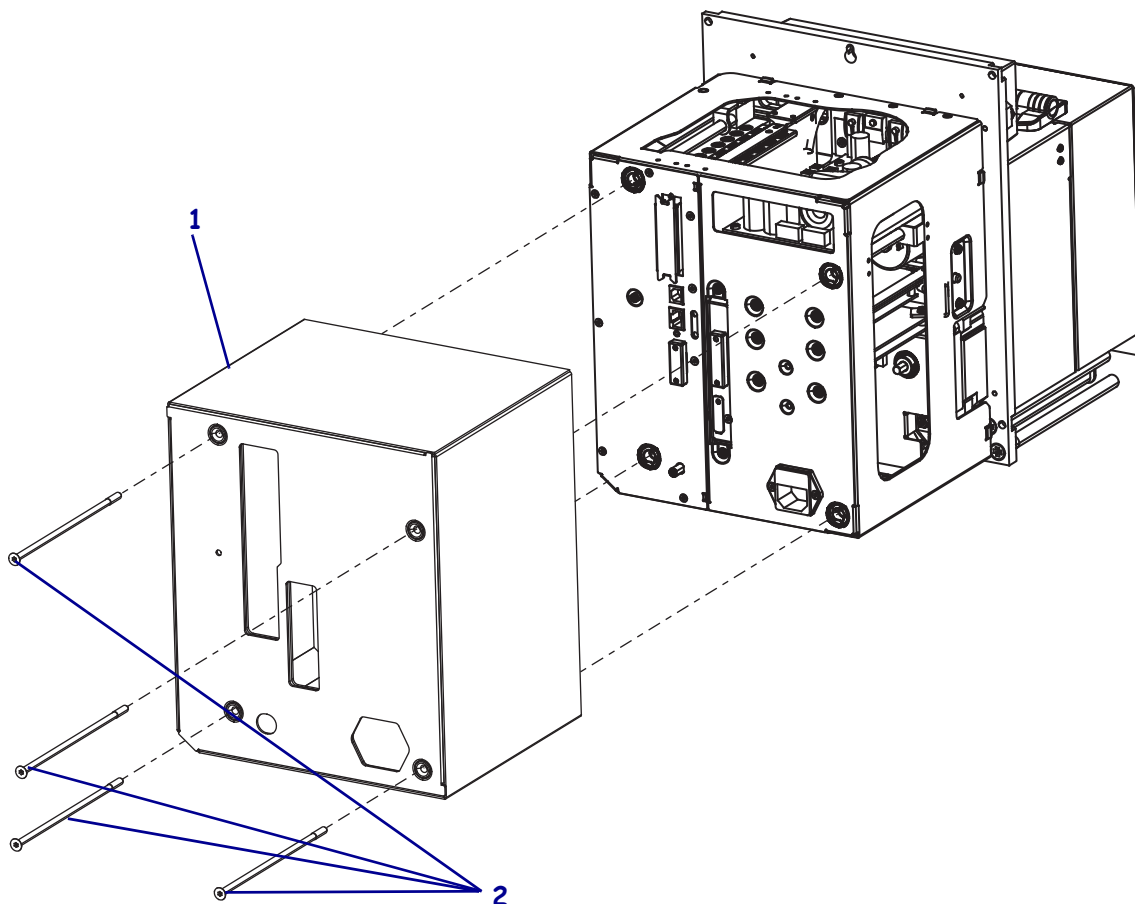


1. **Caution** • Turn off (O) the print engine and disconnect it from the power source before performing the following procedure.

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

2. See [Figure 174](#). To remove the electronics cover, remove the four mounting screws securing it.

Figure 174 • Remove the Electronics Cover



1	Electronics cover
2	Mounting screws (4)

3. Pull the electronics cover off of the chassis and set the cover aside.

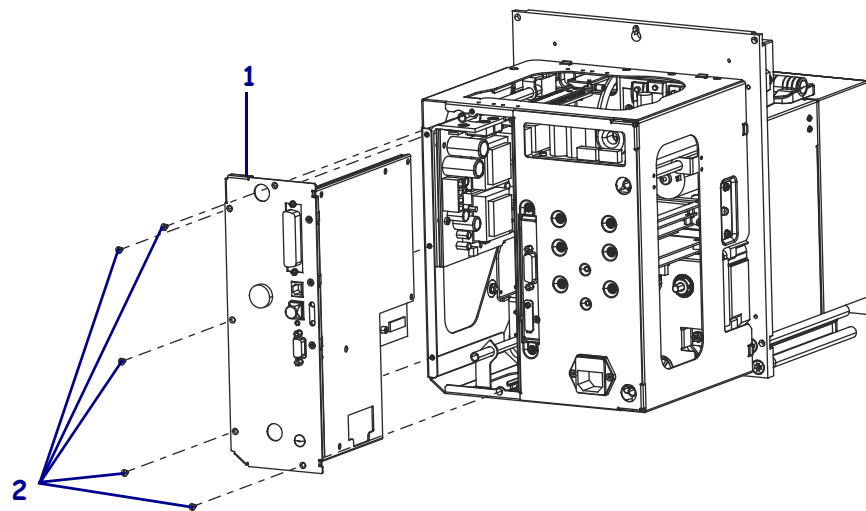


4. **Caution** • Observe proper electrostatic safety precautions when handling static-sensitive components such as circuit boards and printheads.

Connect yourself to an antistatic device.

5. Press the latch to open the chassis and swing it away from the main frame.
6. Remove the five mounting screws securing the main logic board (MLB) access panel to the back plane of the print engine.

Figure 175 • Remove the MLB Access Panel



1	MLB access panel
2	Mounting screws (5)



Note • Note the location of each cable and connector as you disconnect them.

7. Slide the MLB partially out of the opening and disconnect the cable connectors closest to the main frame.
8. Slide the MLB completely out and remove any remaining cable connector on the MLB.

Remove the Wired Ethernet Board from the ZE500

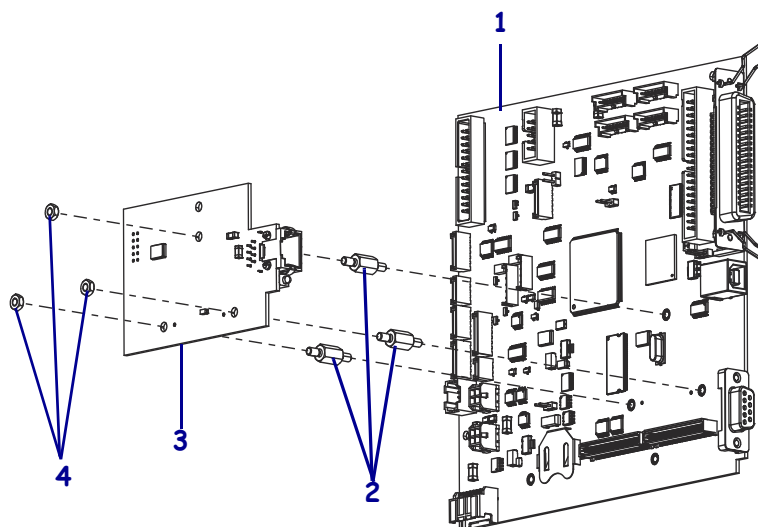


1. **Caution** • Observe proper electrostatic safety precautions when handling static-sensitive components such as circuit boards and printheads.

Connect yourself to an antistatic device.

2. See [Figure 176](#). Remove the three nuts securing the wired Ethernet board to the main logic board.

Figure 176 • Remove the Wired Ethernet Board



1	MLB
2	Standoffs (3)
3	Wired Ethernet board
4	Mounting nuts (3)

3. Remove the wired Ethernet board.
4. Remove the three standoffs.

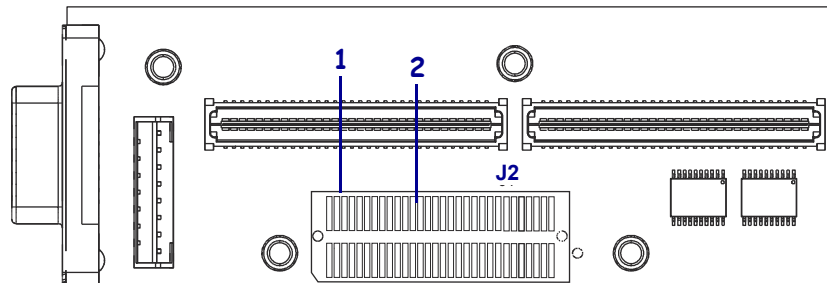
Install the Wired Ethernet Board in the ZE500

1. See [Figure 177](#). Clean the J2 pads using the Zebra Preventive Maintenance Kit part number 47362.



Note • In place of the Preventive Maintenance Kit, you may use a clean swab dipped in a solution of isopropyl alcohol (minimum 90%) and deionized water (maximum 10%).

Figure 177 • Clean the J2 Pads



1	J2 connector
2	Pads

2. See [Figure 176 on page 344](#). Install the three mounting standoffs supplied in the kit into the three threaded mounting holes on the MLB.
3. Install the wired Ethernet board.
 - a. Insert the Ethernet connector into the back plate.
 - b. Rotate the board down onto the three mounting studs.
 - c. Secure the board with the three nuts supplied in the kit.

Reinstall the MLB Access Panel

1. Reconnect all cables to the MLB.
2. Slide the MLB access panel into the print engine and then reinstall the 5 mounting screws.

Reinstall the ZE500 Electronics Cover

1. Swing the chassis toward the main frame and press closed until you hear it click.
Ensure that wires are routed properly and are not causing any obstructions.
2. See [Figure 174 on page 342](#). Reinstall the electronics cover by aligning the cover so that it slips over the chassis.
3. Reinstall the four mounting screws to secure the electronics cover.
4. Did you remove the print engine from the applicator.

If...	Then...
Yes	Continue with <i>Reinstall the Print Engine in the Applicator</i> .
No	Go to <i>Resume Operations</i> .

Reinstall the Print Engine in the Applicator

1. To reinstall the print engine into the applicator, carefully place the keyhole on the center mounting bolt.



Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.

2. Replace the four corner mounting screws securing the print engine to the applicator.
3. Tighten the center mounting bolt.
4. Continue with *Resume Operations*.

Resume Operations

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

Reinstall the media and ribbon.

2. Reconnect the AC power cord and data cables.
3. Turn on (I) the printer.
4. Refer to the *ZebraNet[®] Wired and Wireless Print Servers User Guide* to configure your Ethernet board.

The installation is complete.



ZebraNet[®] b/g Print Server Option Kit

Installation Instructions

This kit includes the parts and documentation necessary to install the ZebraNet b/g Print Server in the ZE500 Series print engines. Read these instructions thoroughly before installing this kit.



Caution • This installation must be performed by a qualified service technician.

Parts List

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

Figure 178 • Kit Contents

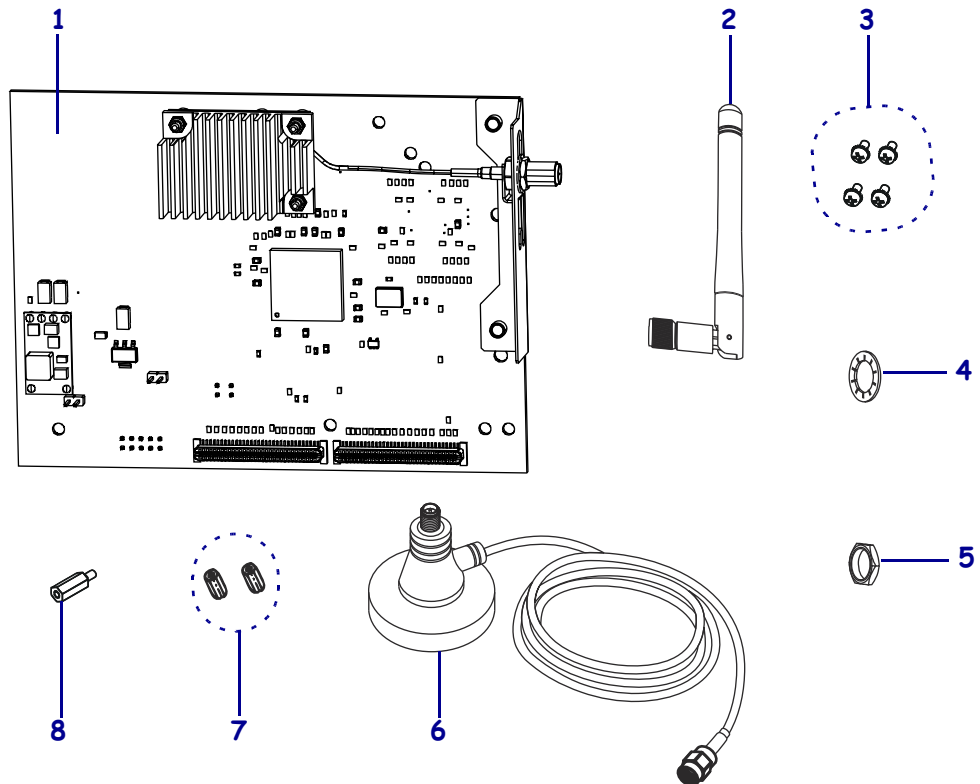


Table 31 • Parts List

✓	Item	Qty	Part Number	Description
	Ref	1	P1046696-001	ZebraNet b/g Print Server Option Kit
	1	1	<i>N/A</i>	ZebraNet b/g Print Server Board
	2	1	P1032276	Antenna, Elbow 802.11 b/g
	3	4	HW43495	Screw, M3 × 0.5 × 6 (Qty. of 25)
	4	1	<i>N/A</i>	Washer, 1/4 in. Internal Lock
	5	1	<i>N/A</i>	Nut, 1/4 in. 36 Uns 2B Hex
	6	1	<i>N/A</i>	Mount, Extended Magnetic Antenna
	7	2	<i>N/A</i>	Spacer, Hex 6 × 14
	8	1	HW79293	Standoff, M3 × 0.5 M/F 14 MM SS
	N/S	1	<i>N/A</i>	Wireless Agency Labels for ZE500-4 and ZE500-6
N/A = Not available as a separate part (listed for identification purposes only).				
N/S = Not shown				

Tools Required



Tools • You need these tools to complete this procedure:

- Phillips Screwdriver Set
- Flat-blade Screwdriver Set
- Metric Hex Key (Allen Wrench) Set
- Anti-Static Wriststrap and Mat
- Metric Open-End Wrench Set

Remove Power and Data Cables



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

Connect yourself to an antistatic device.




2. **Caution** • Turn off (O) the print engine and disconnect it from the power source before performing the following procedure.

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

Remove Print Engine from Applicator

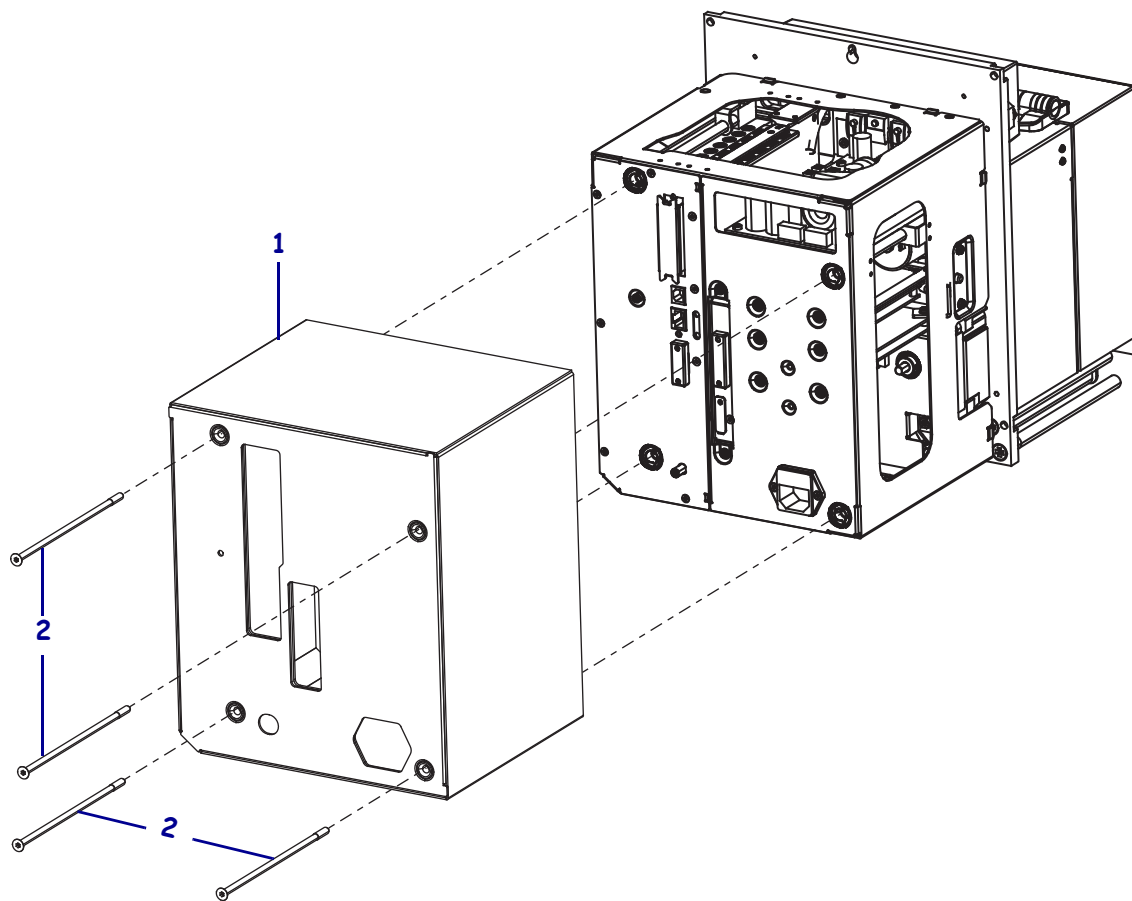
1. Does your applicator (or stand) permit open access to the rear of the print engine?

If you have an...	Then...
Open access	<p>You may swing the print engine open and work on it without removing the unit from the applicator.</p> <p>If you wish to remove the unit from the stand at any time, follow the instructions listed for the <i>Obstructed access</i> type applicator shown in this table.</p> <p>a. Go to <i>Remove the Electronics Cover</i>.</p>
Obstructed access	<p>You must remove the print engine from the applicator before you work on it.</p> <p>a. Remove the four corner mounting screws securing the print engine to the applicator.</p> <p>b. Loosen the center mounting bolt, but do not remove it.</p> <p> Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.</p> <p>c. Lift the print engine off the center mounting bolt and place on a workbench.</p>

Remove the Electronics Cover

1. See [Figure 179](#). Remove the four long mounting screws securing the electronics cover.

Figure 179 • Electronics Cover



1	Electronics cover
2	Electronics cover mounting screws (4)

2. Slide the electronics cover off of the print engine.

Open the Electronics Enclosure

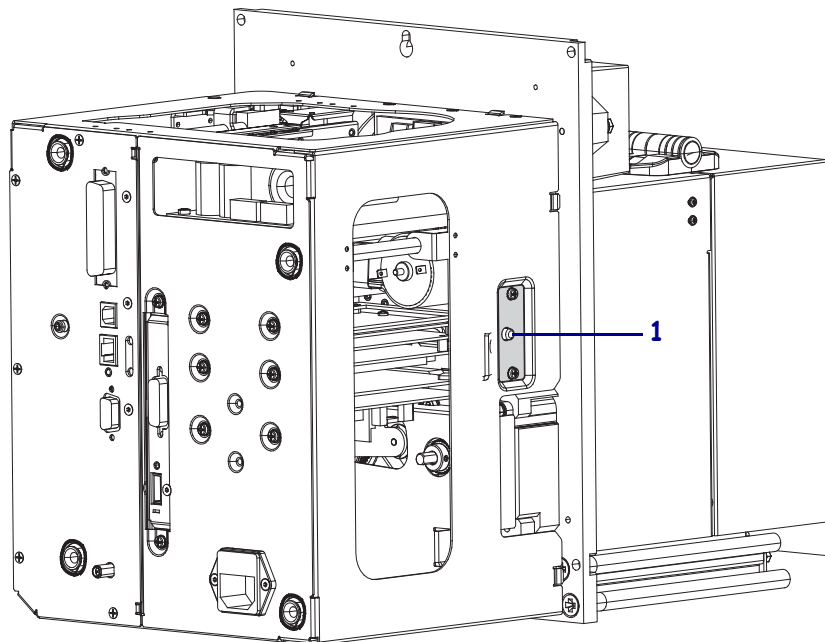
1. See [Figure 180](#). Locate the latch.



Note • For right-hand models, the latch is on the right side when looking from the back of the print engine. For left-hand models, the latch is on the left side.

2. Press the latch and swing the electronics enclosure open.

Figure 180 • Locate the Latch



1	Latch
----------	-------

Access the Main Logic Board and Print Server Boards

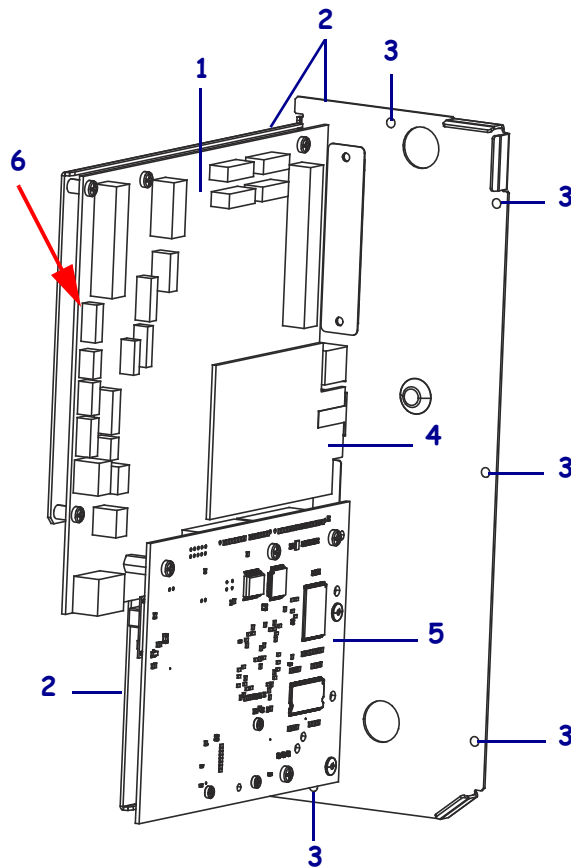
1. See [Figure 181](#). Disconnect all connectors on the main logic board (MLB) and any print server boards, if installed.

If you have difficulty removing all of the connectors, remove only those connectors that are vertically oriented along the main frame wall. (See the red arrow in [Figure 181](#).)



Note • Each of the connectors on the MLB has a latch that must be depressed to remove the connector from the MLB. [Figure 181](#) depicts a right-hand engine assembly. For left-hand print engines, these latches are not always visible, since they are located either along the bottom or the inside edge of the connector.

Figure 181 • MLB and Wireless and Print Server Boards



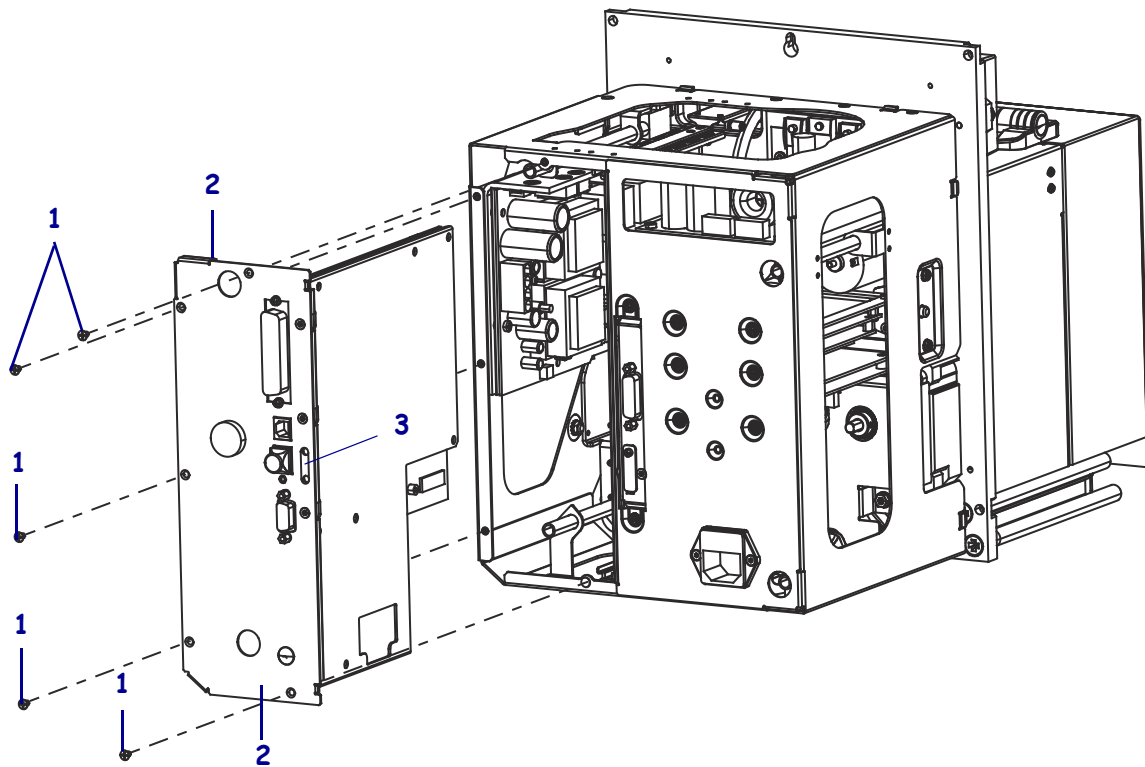
1	MLB
2	MLB access panel
3	Mounting holes (5)
4	Wired 10/100 print server board
5	Wireless b/g Print Server board
6	Disconnect this row of connectors to assist with the removal of the MLB

- See [Figure 182](#). Remove the five mounting screws securing the MLB and print server boards to the back plane of the print engine.



Note • The MLB and print server boards are designed to be removed as a single entity.

Figure 182 • MLB Access Panel



1	Mounting screws (5)
2	MLB access panel
3	Cable tie loop

- Pull the cable tie out of the MLB access panel until you see a loop. Use the loop to help pull the MLB access panel out of the print engine.
- Slide the combined MLB/print server boards out of the back of the print engine.
- Disconnect any remaining connectors on the MLB.

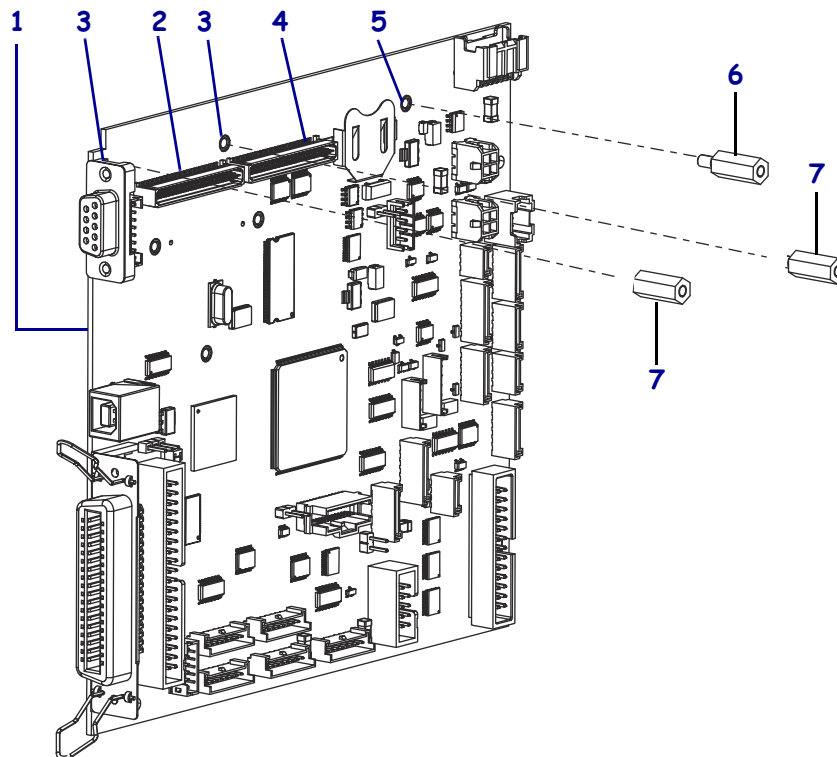
Install ZebraNet b/g Print Server

1. Do you have a ZebraNet b/g Print Server currently installed?

If...	Then...
No	Continue with step 2 .
Yes	<ol style="list-style-type: none"><li>a. From the back plane of the print engine, remove the brass nut and lock washer from the RF connector.<li>b. Remove the three screws securing the wireless print server board to the MLB.<li>c. Gently separate the wireless print server board from the MLB.<li>d. On the access panel side, remove the two screws securing the spacers.<li>e. On the MLB, remove the two spacers and the standoff.<li>f. Discard the old wireless print server board, spacers, standoff, and screws.<li>g. Continue with step 2.

- See [Figure 183](#). Align the two spacers along the edge of the MLB and below the P23 and P24 connectors.

Figure 183 • MLB Standoffs



1	Main logic board
2	P24 Connector
3	Spacer mounting hole (2)
4	P23 Connector

5	Standoff mounting hole
6	Standoff
7	Spacers (2)

- From the access panel side, install the two mounting screws into the threaded mounting holes to secure the spacers.
- Install the standoff into the threaded hole alongside of the battery.
- Insert the RF connector into the wireless antenna hole in the PCB access panel.
- Align the two connectors on the b/g print server board with P23 and P24 on the MLB and press the boards together.
Ensure that the ZebraNet b/g Print Server board is seated into the MLB connectors correctly.
- Install three screws (two into the spacers and one into the standoff) to secure the print server board to the MLB and the MLB access panel.
- See [Figure 185 on page 357](#). From the back plane, place the lock washer and brass nut on the RF connector and hand-tighten.
- Using an open-end wrench, tighten the nut by turning it clockwise one quarter of a turn.

Install Antenna

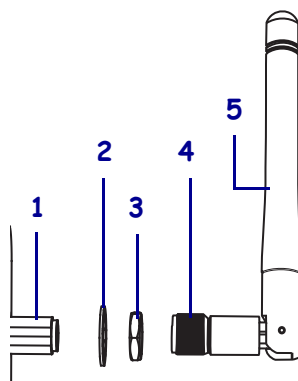
1. Which type of antenna do you wish to install?

If...	Then...
Elbow Antenna	Continue with <i>Install Elbow Antenna</i> .
Tethered Antenna with Magnetic Mount Base	Go to <i>Install Tethered Antenna</i> on page 357.

Install Elbow Antenna

1. See [Figure 184](#). To install the external antenna, screw the antenna onto the RF connector extending out from the back plate of the printer.

Figure 184 • Close Up of Antenna Installation

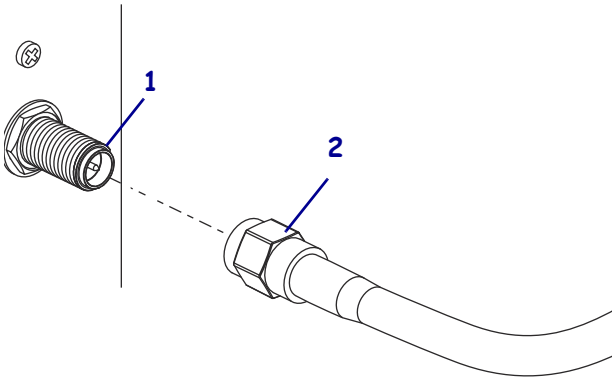


1	RF connector
2	Lock washer
3	Nut
4	Antenna nut
5	RF antenna

Install Tethered Antenna

1. See [Figure 185](#). To install the tethered cable, screw the end of the cable connector onto the RF connector extending out from the back plate of the printer.

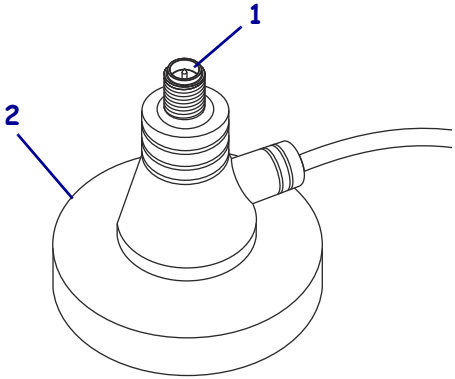
Figure 185 • Close-up of Tethered Cable Installation



1	RF connector
2	Tethered cable connector on magnetic mount base

2. See [Figure 186](#). Screw the small antenna onto the connector on top of the magnetic mount base.

Figure 186 • Magnetic Mount Base and Connector (Shown without Antenna)



1	Connector for small antenna
2	Magnetic mount base

Replace the MLB Access Panel

1. Connect the inner row of connectors on the MLB.
2. Partially slide the combined MLB/print server boards onto the rails provided in the electronics enclosure.
3. See [Figure 181](#). Connect as many of the MLB and the print server board connectors as you are able to reach.



Note • Some of the cables will not be long enough to connect while the MLB is only partially inserted. Plug in as many as you can now, and the remaining cables will be connected after the MLB is completely seated.

Ensure that the wires are routed properly and are not causing any obstructions.

4. Push the MLB assembly the rest of the way into the enclosure.
5. Connect any remaining MLB connectors.
6. Reinstall the five mounting screws securing the MLB panel to the back plane of the print engine.

Close the Electronics Enclosure

1. Ensure that all wires are routed properly and are not causing any obstructions, and then carefully swing the electronics enclosure closed.
2. Adjust the wire clips for the parallel port until they are touching the parallel port.
3. Slide the electronics cover onto the print engine.
4. Reinstall the four electronics cover mounting screws.

Reinstall the Print Engine in the Applicator

1. To reinstall the print engine into the applicator, carefully place the keyhole on the center mounting bolt.



Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.

2. Replace the four corner mounting screws securing the print engine to the applicator.
3. Tighten the center mounting bolt.

Resume Printer Operation

1. Reconnect the AC power cord and interface cables.
2. Turn on (I) the print engine.

The installation is complete.

After You Complete the Installation

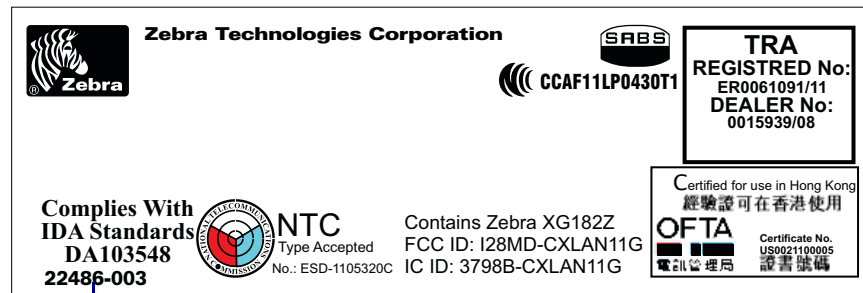
Firmware

After you have completed this installation, you must download firmware version V53.17.12Z (or later) from: www.zebra.com/firmware.

Attach Labels

1. See [Figure 187](#). Examine the labels included with the kit.
There may be several labels included with your kit.

Figure 187 • ZE500 Series Sample Label



1

1 | Zebra part number

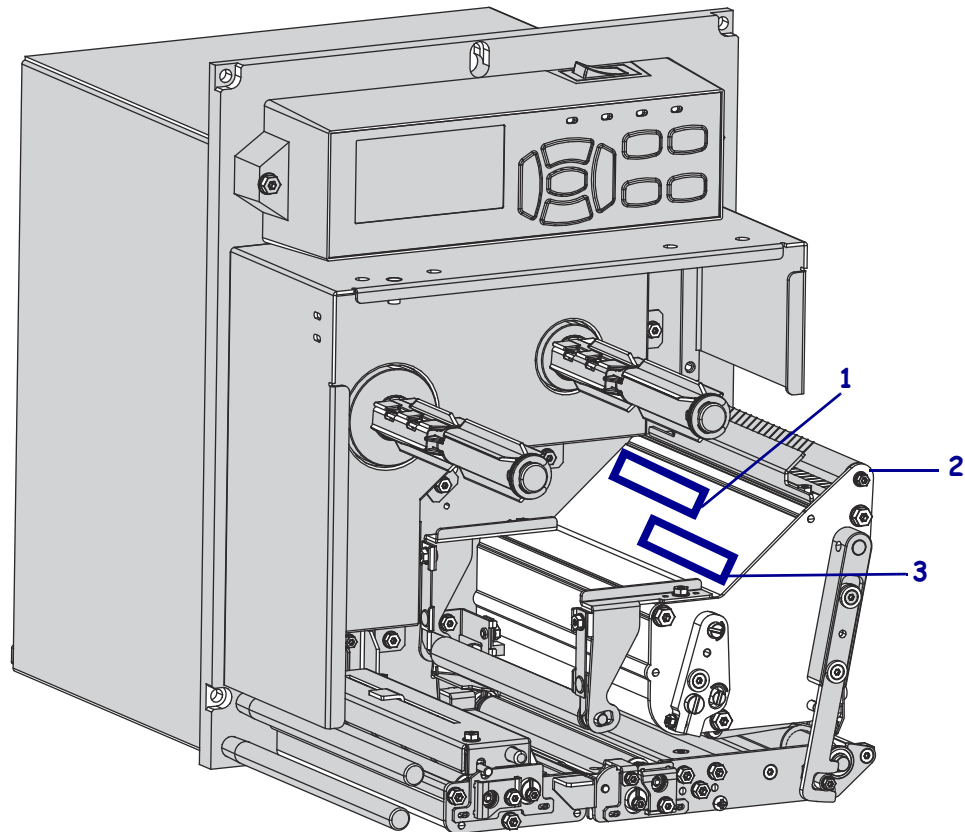
2. Locate the label for your print engine.

- See [Figure 188](#). If present, remove the old plastic label affixed to the print mechanism extrusion on the media side of the print engine.



Note • Do not remove the electrical ratings label, also known as the model plate. The model plate contains essential user information.

Figure 188 • Label Location



1	Model plate (Do not remove)
2	Print mechanism extrusion (unshaded)
3	Affix label to the print mechanism extrusion

- See [Figure 187](#). Remove the backing from the new label for your specific print engine.
- See [Figure 188](#). Affix the new Compliance label in the area on the print mechanism extrusion near the model plate.
- Discard any additional labels included in the kit.

The installation is complete.

Compliance Information

FCC Compliance Statement

This device complies with Part 15 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.

The user is cautioned that any changes or modifications not expressly approved by Zebra Technologies could void the user's authority to operate the equipment. To ensure compliance, this print engine must be used with Shielded Communication Cables.

FCC Radiation Exposure Statement

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.



ZebraNet[®] Internal Wireless Print Servers Magnetic Mount and Tethered Cable Kit

Installation Instructions

Prepare for Installation

This kit includes the parts and documentation necessary to install the ZebraNet Internal Wireless Print Servers Magnetic Mount and Tethered Cable Kit into the following print engines:

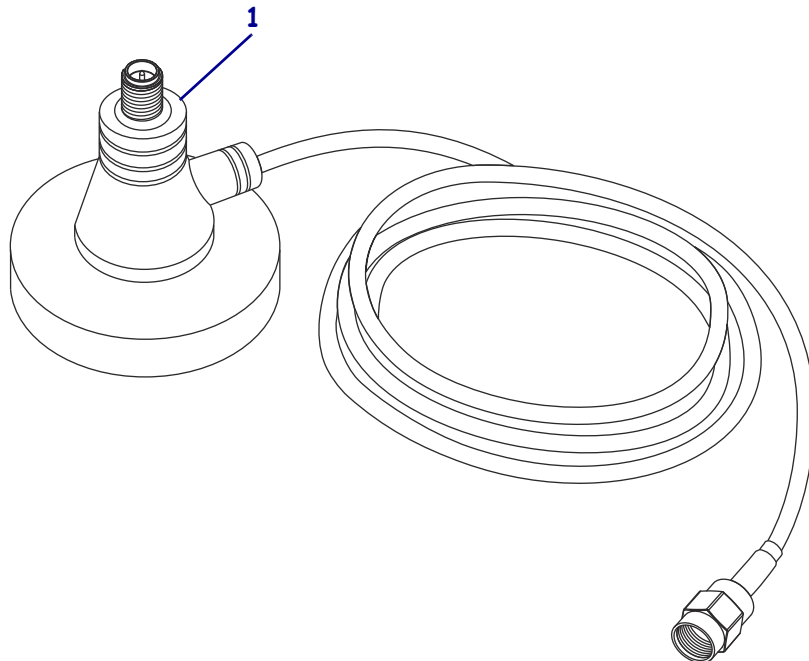
- ZE500[™]

Read these instructions thoroughly before installing this kit.

Parts List

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

Figure 189 • Kit Contents



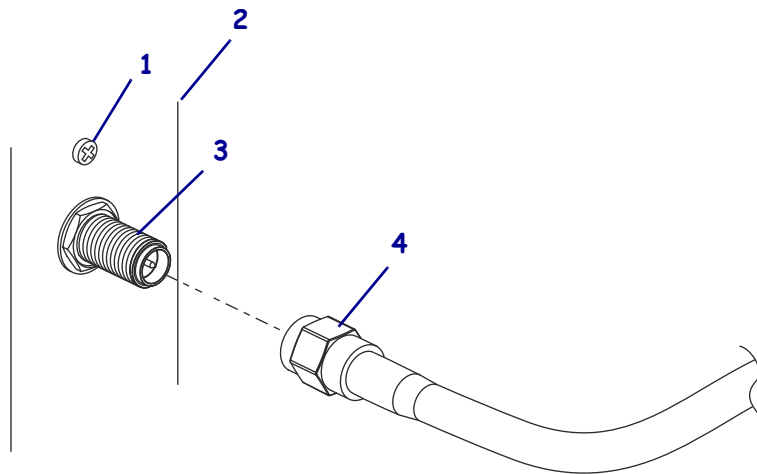
✓	Item	Qty	Part Number	Description
	Ref	1	39518M	Internal Wireless Print Servers Option Maintenance Kit
	1	1	<i>N/A</i>	Magnetic Mount with Cable

Bold = Part available for purchase.
Italic = Part not available for purchase; listed and shown for reference only.

Install the Tethered Cable

1. See [Figure 190](#). To install the tethered cable, screw the end of the cable connector onto the RF connector extending out from the back plate of the printer, finger tighten only.

Figure 190 • Close up View of Tethered Cable Installation

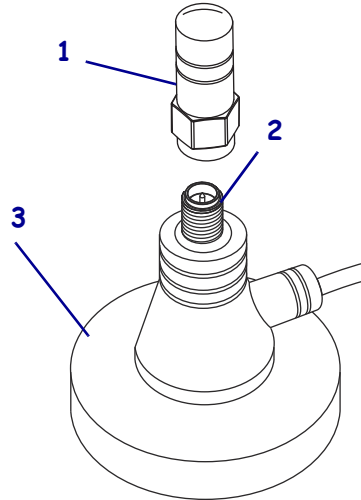


1	Cover mounting screw
2	Right edge of the board cover
3	RF connector
4	Tethered cable connector attached to magnetic mount base

Install Antenna

1. See [Figure 191](#). Screw the antenna onto the connector on top of the magnetic mount base, finger tighten only.

Figure 191 • Magnetic Mount Base and Connector



1	Antenna (small shown)
2	Connector for small antenna
3	Magnetic mount base

2. Place the magnetic mount base and antenna in the location that yields the best RF reception.
 This location may be up to 5 ft. away from the printer.

The installation is complete.



ZebraNet[®] b/g Print Server Antenna Maintenance Kit

Installation Instructions

Prepare for Installation

This kit includes the parts and documentation necessary to install the ZebraNet b/g Print Server Antenna maintenance kit into the following print engines:

- ZE500[™]

Read these instructions thoroughly before installing this kit.

Parts List

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

Figure 192 • Kit Contents

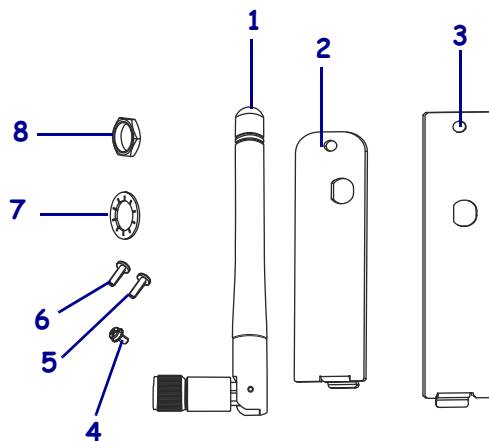


Table 32 • Kit Contents

✓	Item	Qty	Part Number	Description
	Ref	1	P1032276	ZebraNet b/g Print Server Antenna Maintenance Kit
	1	1	N/A	Antenna, Elbow 802.11
	2	1	N/A	ZebraNet b/g Print Server Cover for Xi4 and ZMx00
	3	1	N/A	ZebraNet b/g Print Server Board Cover for PAX4
	4	1	HW43495	Screw, M3 x 0.5 x 6 Ph Hd with External Tooth Lock (for PAX4 printers) (sold in quantities of 25)
	5	1	HW43968	Screw, M3 x 0.5 x 6 (Xi4 printers) (sold in quantities of 25)
	6	1	HW78804	Screw, M3 x 0.5 x 6 (for ZMx00 Series printers) (sold in quantities of 50)
	7	1	N/A	Washer, 1/4 in. Internal Lock
	8	1	N/A	Nut, 1/4 in. 36 Uns 2B Hex
N/A = Not available as a separate part (listed for identification purposes only).				
Bold = Part available for purchase.				

Tools Required



Tools • You need these tools to complete this procedure:

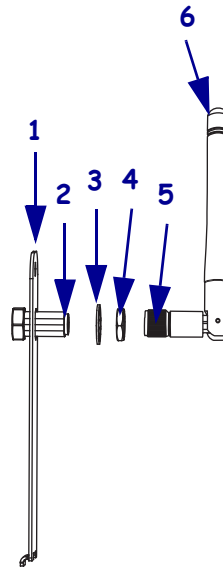
- Phillips Screwdriver Set
- Open End Wrench Set

Install the Antenna



1. **Caution** • Turn off (O) the printer/print engine and disconnect it from the power source before performing the following procedure.
2. See [Figure 193](#). From the back of the printer, place the lock washer and nut on the RF connector and hand tighten.

Figure 193 • Close-up of Antenna Installation



1	Cover
2	RF connector
3	Lock washer
4	Nut
5	Antenna nut
6	RF antenna

3. Using an open-end wrench, tighten the brass nut by turning it clockwise one quarter of a turn.
4. To install the external antenna, screw the antenna onto the RF connector extending out from the back plate of the printer.

The installation is complete.



Electronics Cables Maintenance Kit

Installation Instructions

This kit includes the parts necessary to install the Electronics Cables Maintenance Kit in the ZE500™ Series Print Engines. Read these instructions thoroughly before installing this kit.



Caution • This installation must be performed by a qualified service technician.

Parts List

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



Note • In the interest of space, only one of each of the parts is shown in [Figure 194](#) and [Figure 195](#).

Figure 194 • Kit Contents

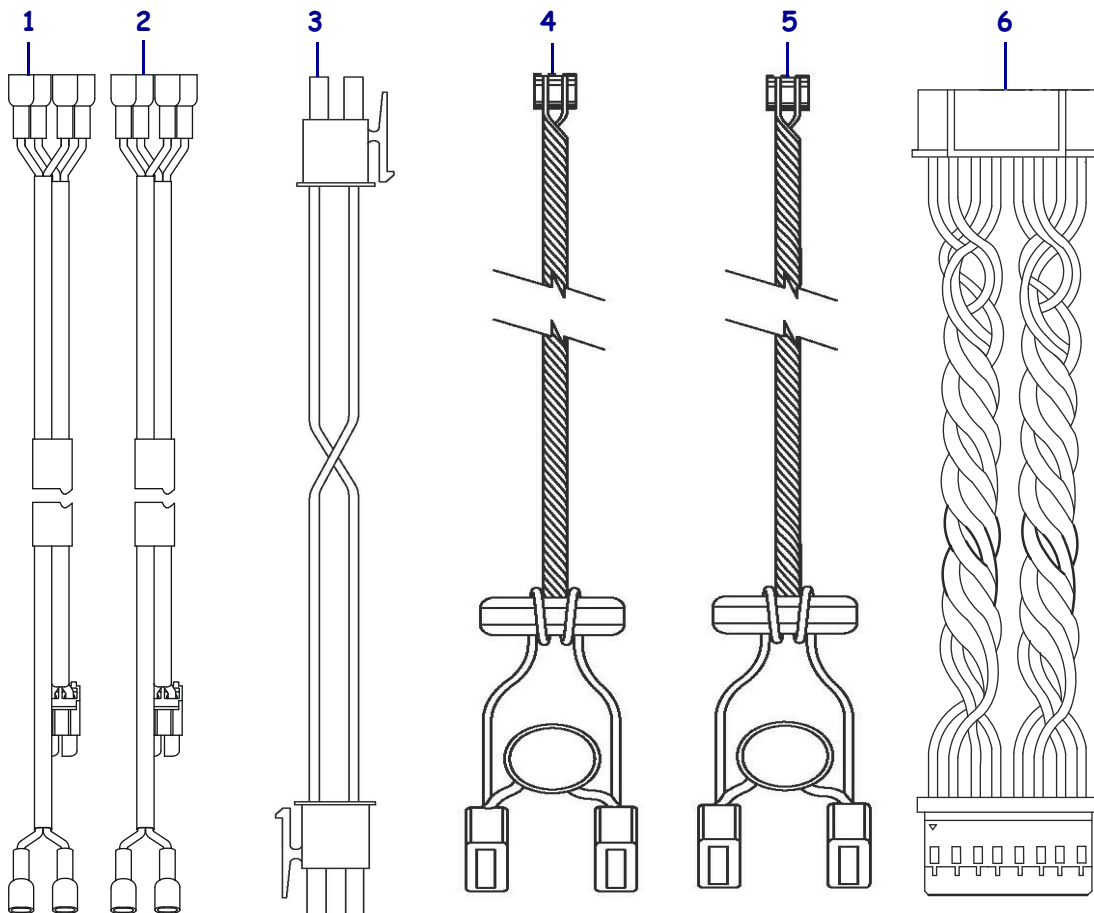


Figure 195 • Kit Contents (continued)

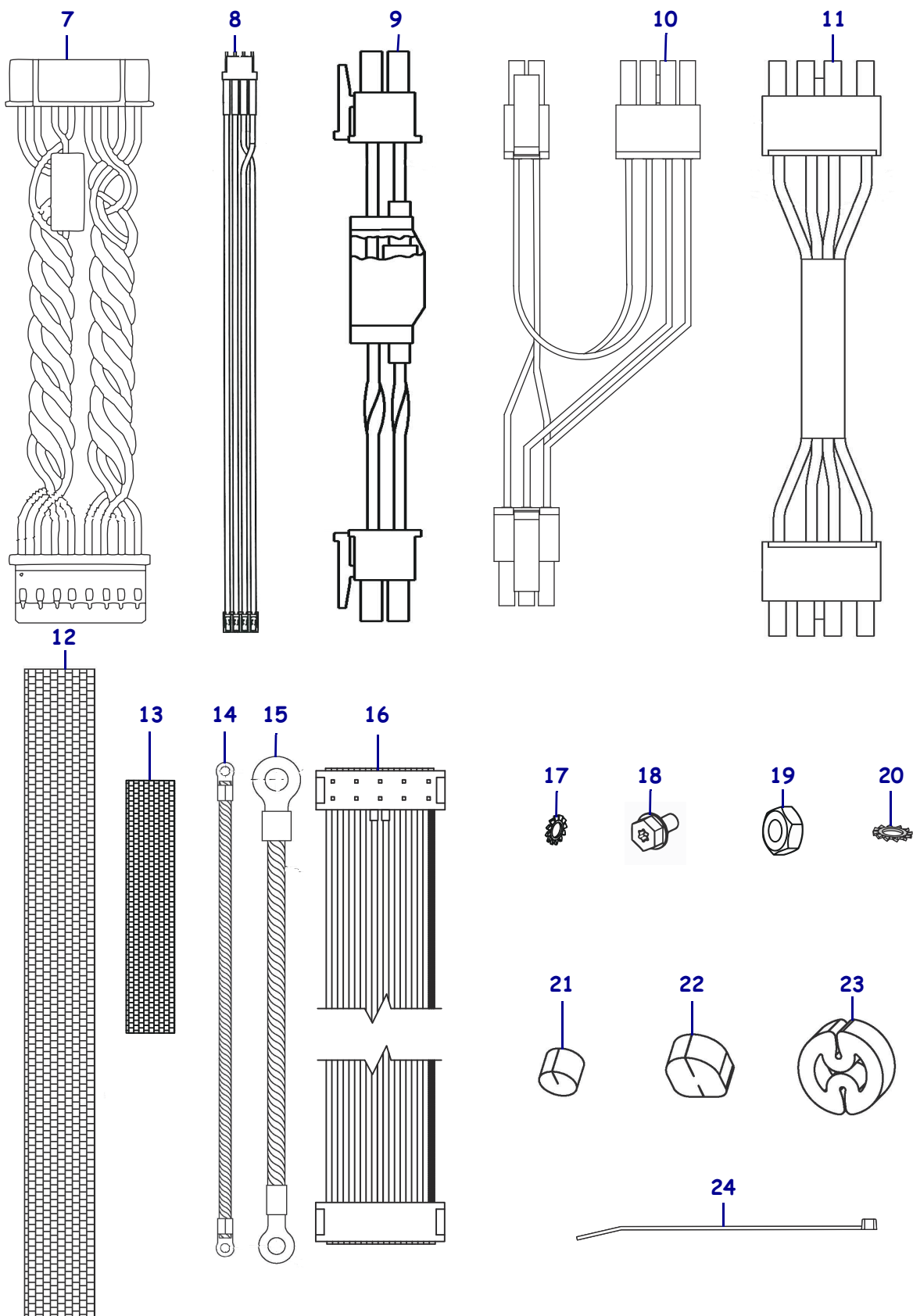


Table 33 • Parts List

✓	Item	Qty	Part Number	Description
	Ref	1	P1046696-025	Electronics Cables Maintenance Kit
	1	1	N/A	Cable, Power Assembly (RH)
	2	1	N/A	Cable, Power Assembly (LH)
	3	1	N/A	Cable, Power Distribution (4 wire)
	4	1	N/A	Cable, DC Motor (25 in.)
	5	1	N/A	Cable, DC Motor (26 in.)
	6	1	N/A	Cable, SP Comm 10 in.
	7	2	N/A	Cable, SP Comm 12 in.
	8	1	N/A	Cable, Stepper Motor Extension
	9	1	N/A	Cable, Power Distribution with Inductor
	10	1	N/A	Cable, Applicator Interface Power 32V
	11	1	N/A	Cable, AC/DC Power
	12	7	N/A	Conduit, Flexible (Long)
	13	1	N/A	Conduit, Flexible (Short)
	14	2	N/A	Cable, Braid (4 in.)
	15	1	N/A	Cable, Printhead Ground (4 in.)
	16	1	N/A	Cable, Control Panel SPI Extension
	17	1	HW78827	Washer, Lock External (Qty. of 25)
	18	1	N/A	Screw, M3 × 8 Hx Tx Ni Flng
	19	2	N/A	Nut, M4
	20	2	HW43482	Washer, Serrated (Qty. of 25)
	21	3	N/A	Plug, Ribbon Sealing
	22	1	N/A	Plug, Media Sealing
	23	1	N/A	Plug, Printhead Sealing
	24	16	HWQ06020	Cable Tie

N/A = Not available as a separate part (listed for identification purposes only).

Sensor Replacements

Contents

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Printhead-Open Sensor Maintenance Kit	402
Media Sensor Maintenance Kit	412
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Figure 196 • Sensors Overview

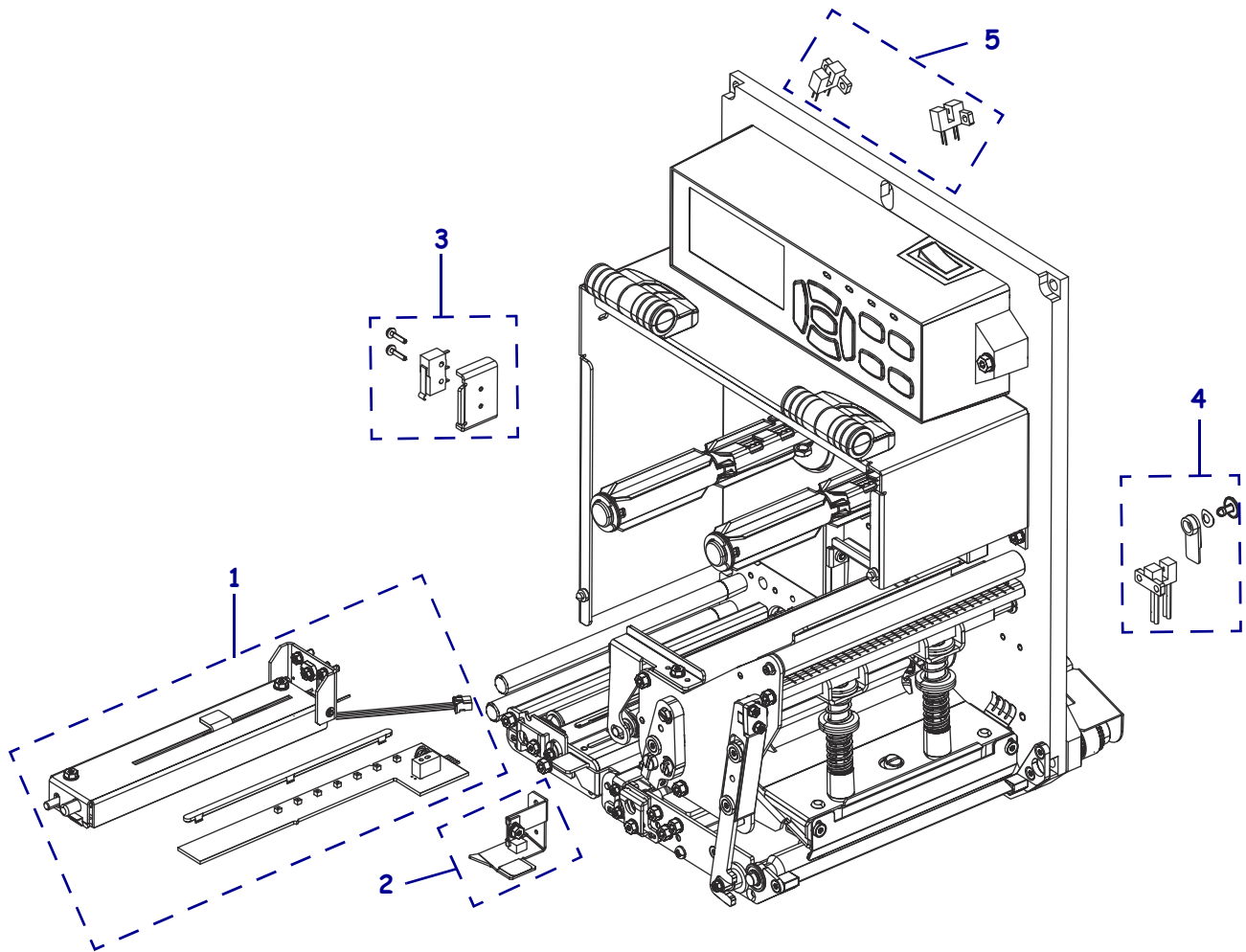


Table 34 • Sensors Overview

Item	Part Number	Description
1	P1046696-027	ZE500-4 Media Sensor Maintenance Kit, RH, see Table 197 on page 376 .
	P1046696-028	ZE500-4 Media Sensor Maintenance Kit, LH, see Table 197 on page 376 .
	P1046696-029	ZE500-6 Media Sensor Maintenance Kit, RH, see Table 197 on page 376 .
	P1046696-030	ZE500-6 Media Sensor Maintenance Kit, LH, see Table 197 on page 376 .
2	P1046696-031	ZE500 Series Ribbon Sensor Maintenance Kit, RH or LH, see Table 197 on page 376 .
3	P1046696-032	ZE500 Series Door-Open Sensor Maintenance Kit, see Table 197 on page 376 .
4	P1046696-033	ZE500 Series Printhead Open Sensor Maintenance Kit, see Table 197 on page 376 .
5	P1046696-034	ZE500 Series Encoder Sensors Maintenance Kit, see Table 197 on page 376 .

Figure 197 • Sensors Kits

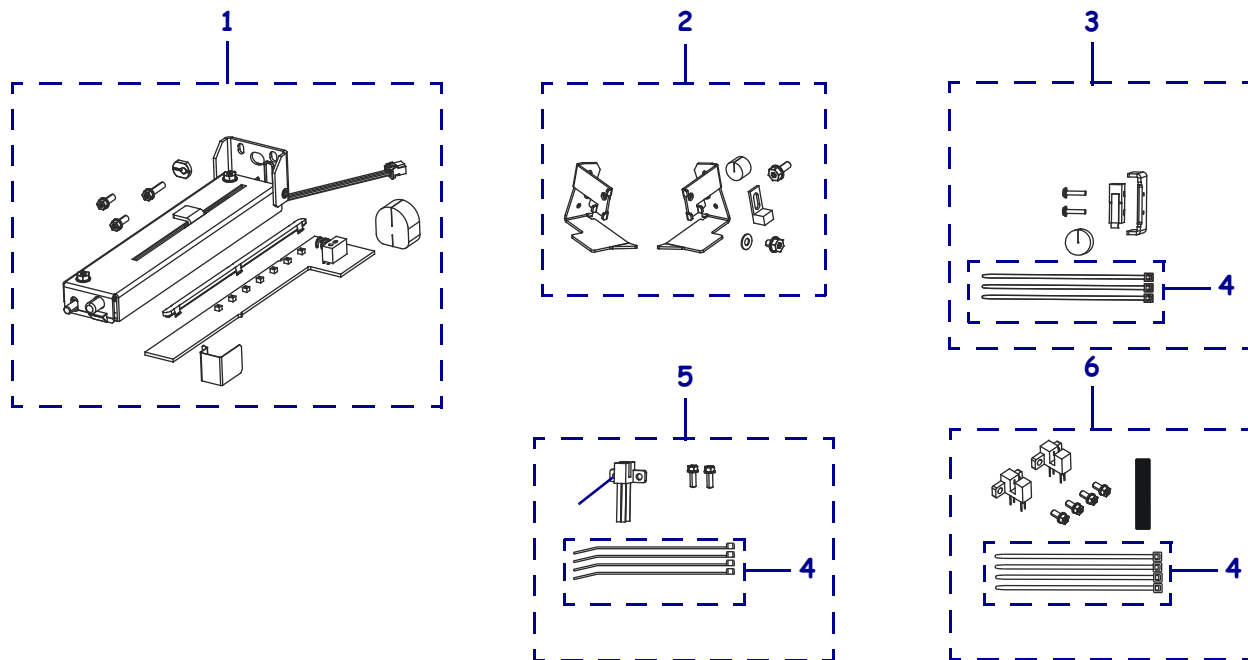


Table 35 • Sensors Kits Parts List

Item	Part Number	Description
1	P1046696-027	ZE500-4 Media Sensor Maintenance Kit, RH See Media Sensor Maintenance Kit on page 412 .
	P1046696-028	ZE500-4 Media Sensor Maintenance Kit, LH See Media Sensor Maintenance Kit on page 412 .
	P1046696-029	ZE500-6 Media Sensor Maintenance Kit, RH See Media Sensor Maintenance Kit on page 412 .
	P1046696-030	ZE500-6 Media Sensor Maintenance Kit, LH See Media Sensor Maintenance Kit on page 412 .
2	P1046696-031	ZE500 Series Ribbon Sensor Maintenance Kit, RH or LH See Ribbon Sensor Maintenance Kit on page 443 .
3	P1046696-032	ZE500 Series Door-Open Sensor Maintenance Kit See Door-Open Sensor Maintenance Kit on page 378 .
4	HWQ06020	Cable Tie, 0.09 × 3.62 (sold in quantities of 20)
5	P1046696-033	ZE500 Series Printhead Open Sensor Maintenance Kit See Printhead-Open Sensor Maintenance Kit on page 402 .
4	HWQ06020	Cable Tie, 0.09 × 3.62 (sold in quantities of 20)
6	P1046696-034	ZE500 Series Encoder Sensors Maintenance Kit See Encoder Sensor Maintenance Kit on page 390 .
4	HWQ06020	Cable Tie, 0.09 × 3.62 (sold in quantities of 20)



Door-Open Sensor Maintenance Kit

Installation Instructions

This kit includes the parts and documentation necessary to install the Door-Open Sensor Maintenance Kit in the ZE500™ Series Print Engines. Read these instructions thoroughly before installing this kit.



Caution • This installation must be performed by a qualified service technician.

Parts List

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

Figure 198 • Kit Contents

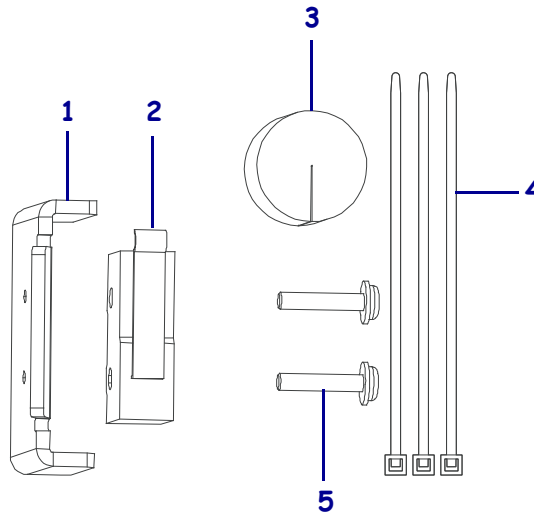


Table 36 • Parts List

✓	Item	Qty	Part Number	Description
	Ref	1	P1046696-032	Door-Open Sensor Maintenance Kit
	1	1	N/A	Bracket, Door-Open Sensor
	2	1	N/A	Sensor, Door-Open
	3	1	N/A	Plug, Sealing
	4	3	HWQ06020	Cable Tie (Qty. of 20)
	5	2	N/A	Screw, M2 × 0.4 × 10 (Qty. of 25)

N/A = Not available as a separate part (listed for identification purposes only).

Tools Required



Tools • You need these tools to complete this procedure:

- Phillips Screwdriver Set
- Flat-blade Screwdriver Set
- Metric Hex Key (Allen Wrench) Set
- Antistatic Wriststrap and Mat
- Torx Key Set

Remove Power and Data Cables, Ribbon, and Media



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

Connect yourself to an antistatic device.



2. **Caution** • Turn off (O) the print engine and disconnect it from the power source before performing the following procedure.

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


3. **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.

Open the media door, the printhead latch, and remove media and ribbon from the print engine.

4. Close the printhead latch, and then close the media door.

Remove Print Engine from Applicator

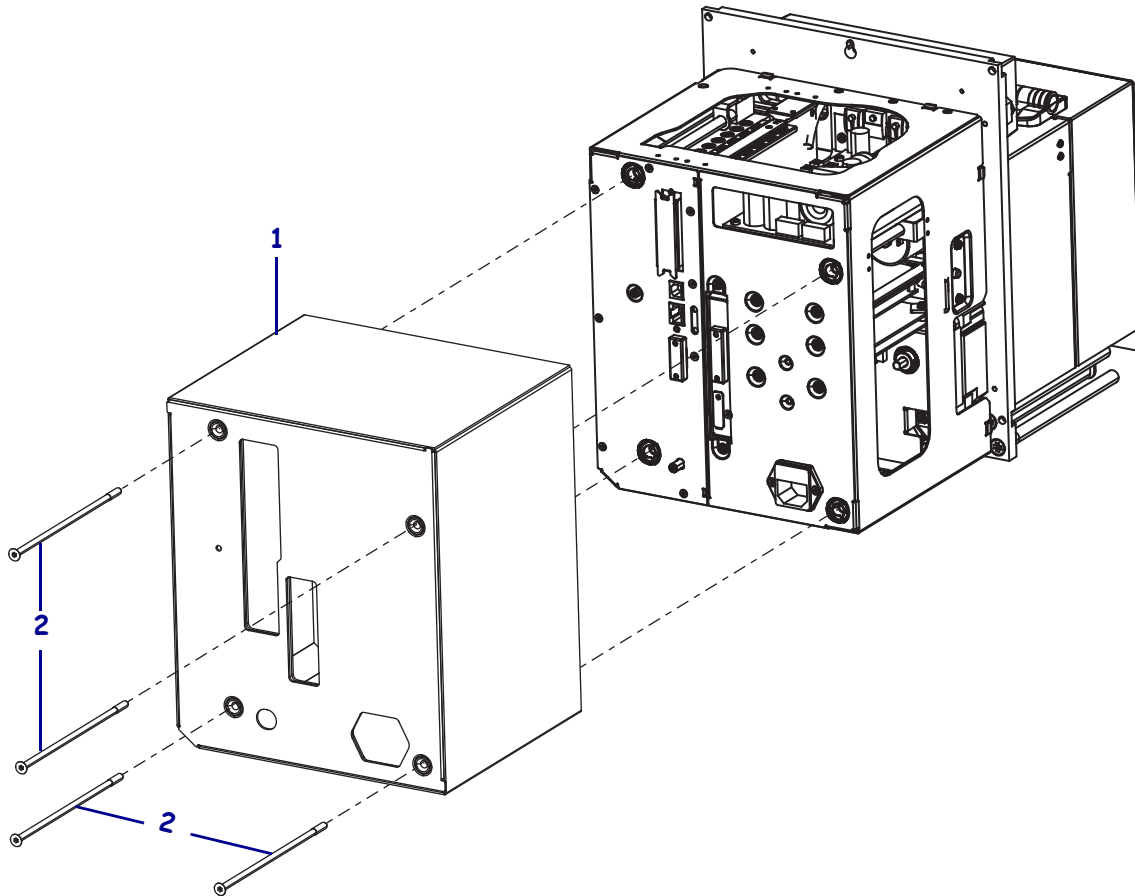
1. Does your applicator (or stand) permit open access to the rear of the print engine?

If you have an...	Then...
Open access	<p>You may swing the print engine open and work on it without removing the unit from the applicator.</p> <p>If you wish to remove the unit from the stand at any time, follow the instructions listed for the <i>Obstructed access</i> type applicator shown in this table.</p> <ol style="list-style-type: none"> a. Go to <i>Remove the Electronics Cover</i>.
Obstructed access	<p>You must remove the print engine from the applicator before you work on it.</p> <ol style="list-style-type: none"> a. Remove the four corner mounting screws securing the print engine to the applicator. b. Loosen the center mounting bolt, but do not remove it. <p> Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.</p> <ol style="list-style-type: none"> c. Lift the print engine off the center mounting bolt and place on a workbench.

Remove the Electronics Cover

1. See [Figure 199](#). Remove the four long mounting screws securing the electronics cover.

Figure 199 • Electronics Cover



1	Electronics cover
2	Electronics cover mounting screws (4)

2. Slide the electronics cover off of the print engine.

Open the Electronics Enclosure

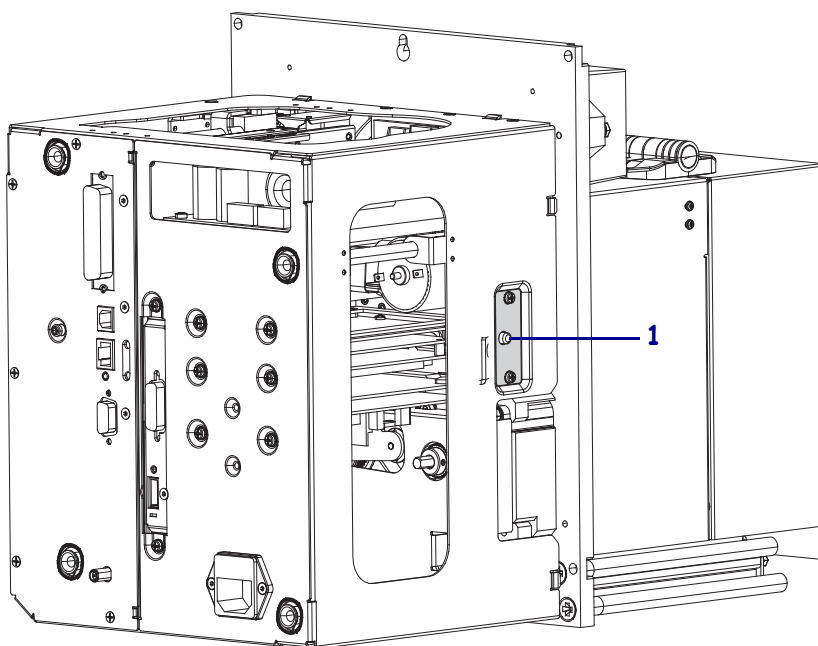
1. See [Figure 200](#). Locate the latch.



Note • For right-hand models, the latch is on the right side when looking from the back of the print engine. For left-hand models, the latch is on the left side.

2. Press the latch and swing the electronics enclosure open.

Figure 200 • Locate the Latch

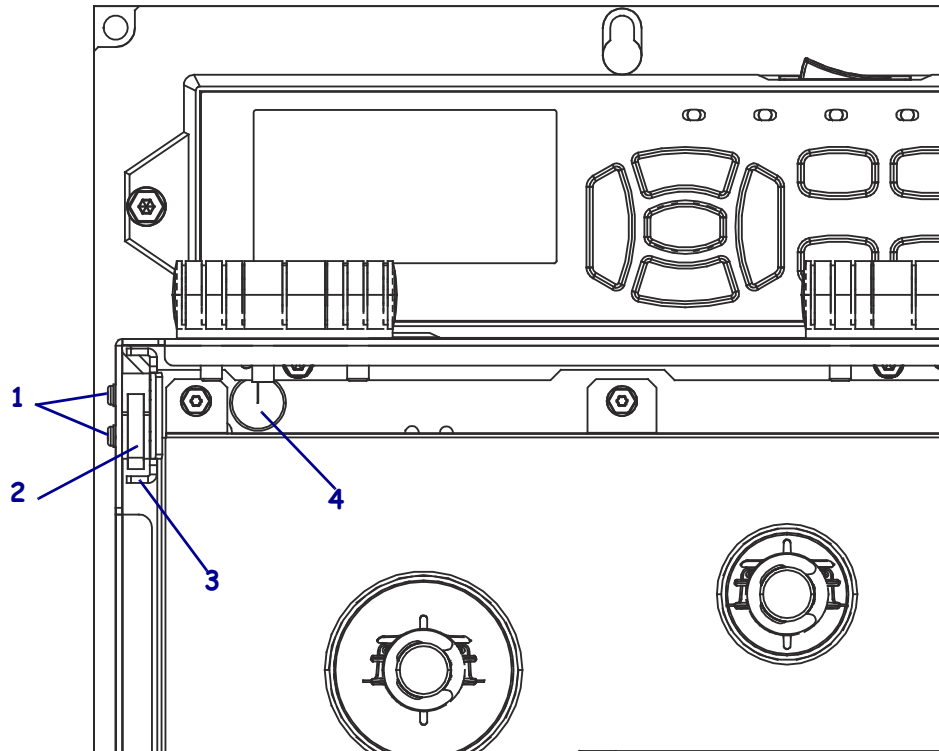


1	Latch
---	-------

Remove the Door-Open Sensor

1. See [Figure 201](#). Remove one of the door-open mounting screws.
2. Place one hand under the door-open sensor while you remove the other mounting screw.
 The door-open sensor bracket will drop into your hand and the sensor will remain suspended by its cable.

Figure 201 • Door-Open Sensor

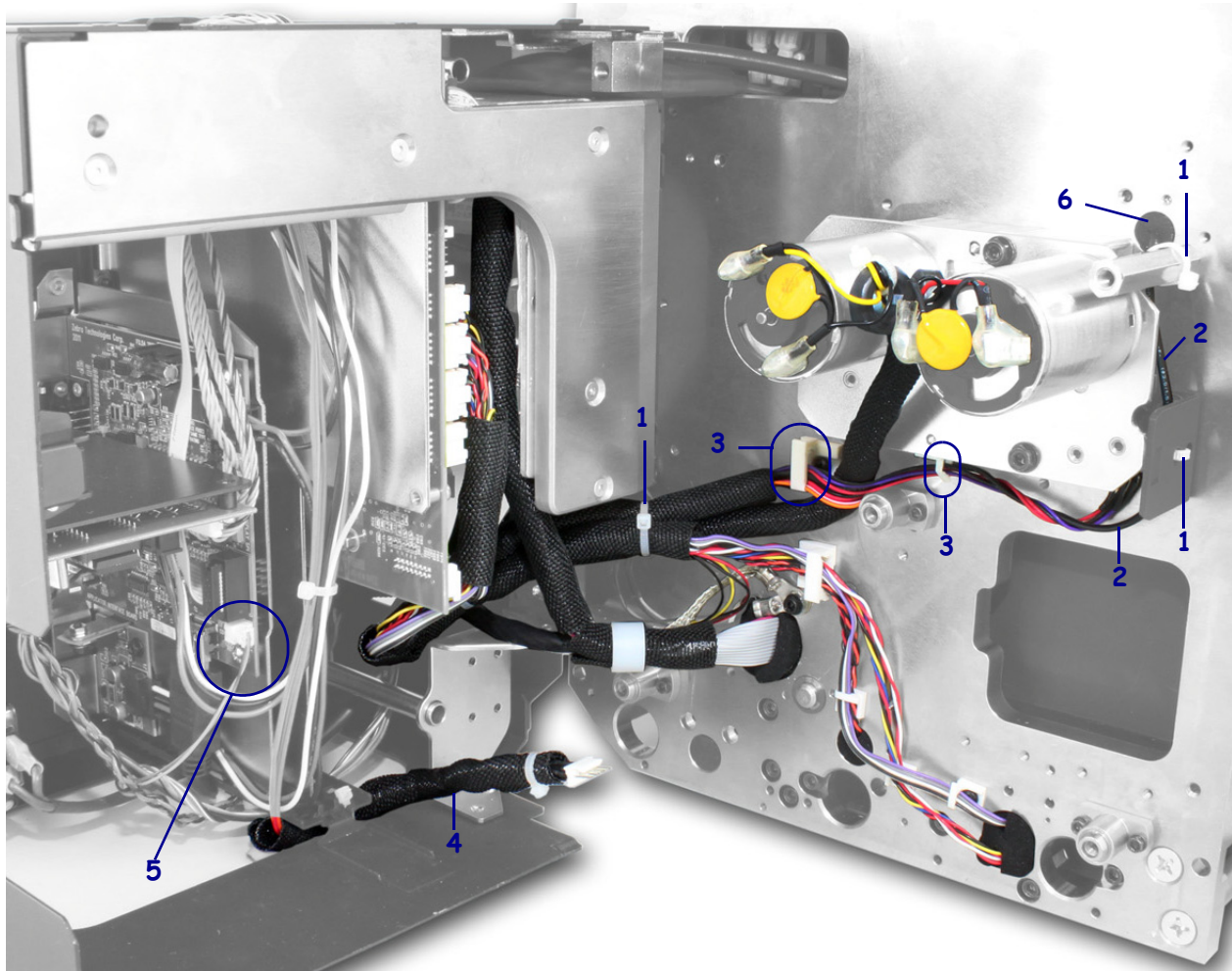


1	Door-open sensor mounting screws (2)
2	Door-open sensor
3	Door-open bracket
4	Sealing plug in main frame

3. Remove the sealing plug in the main frame wall.

4. See [Figure 202](#). From the electronics side, trace the black door-open sensor cable from the hole in the main frame and cut the two cable ties securing the cable to the ribbon drive bracket.

Figure 202 • Door-Open Sensor Cable Routing and Cable Ties (Shown with Drive System Removed)

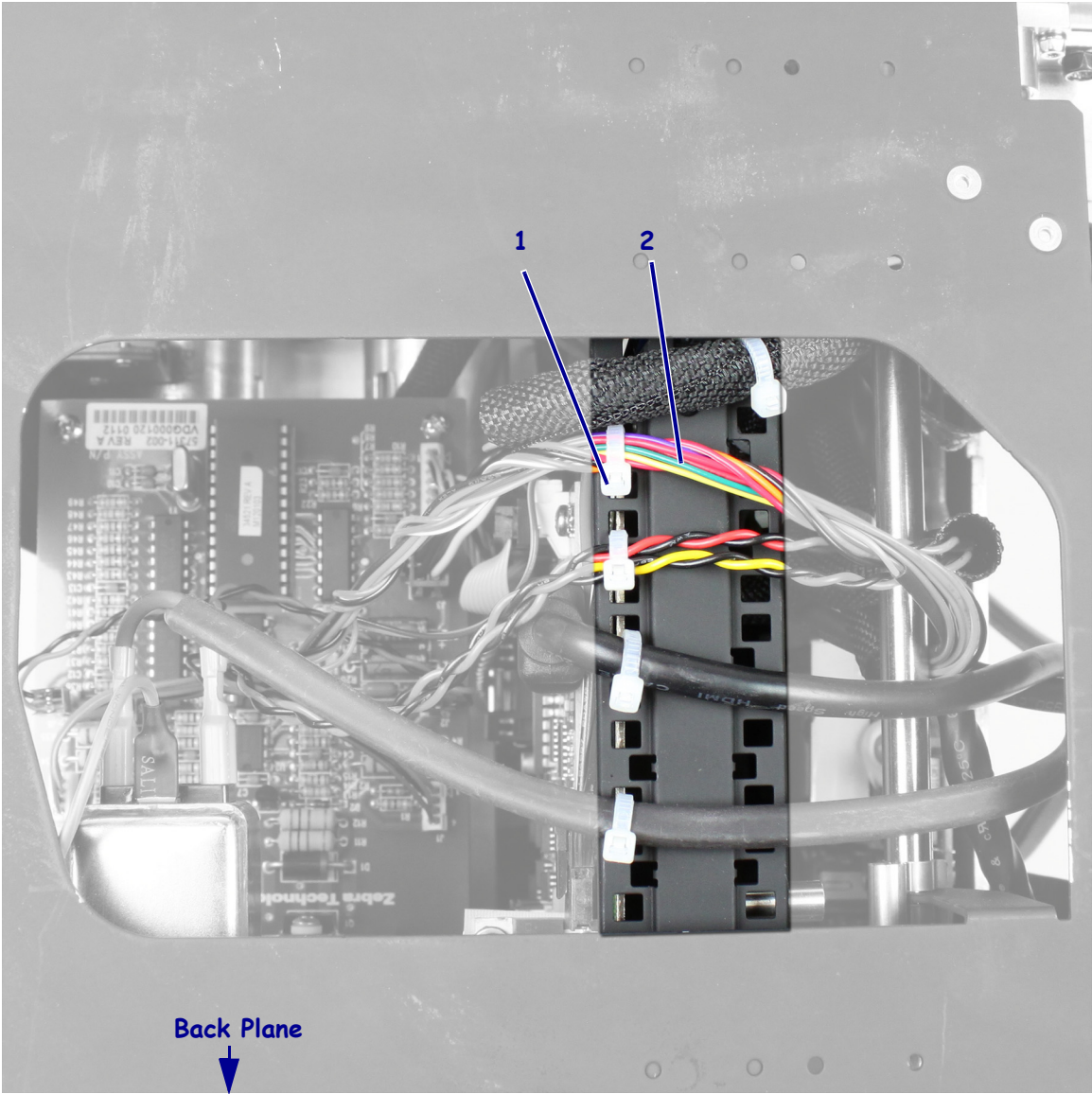


1	Cable tie (3)
2	Door-open sensor cable
3	Cable clamp (2)
4	Flexible conduit
5	J9: Applicator interface board and door-open sensor cable
6	Sealing plug in main frame

5. Open the cable clamps securing the sensor cable.
6. Cut the cable tie around the flexible conduit and remove the sensor cable.

7. See [Figure 203](#). Cut the cable tie securing the cable on the bottom rail of the electronics chassis.

**Figure 203 • Bottom Chassis Rail
(View from Under the Print Engine)**



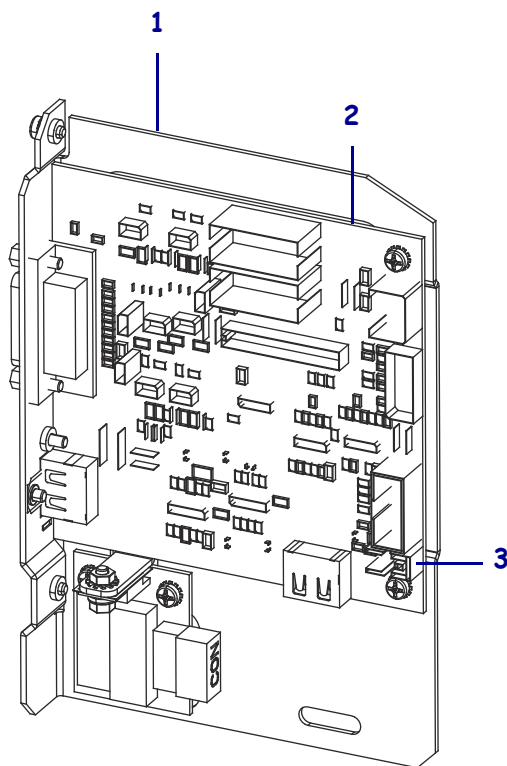
1	Cable tie
2	Door-open sensor cable

8. See [Figure 204](#). Disconnect the door-open sensor cable from J9 on the applicator interface board.



Note • You do not need to remove the board to disconnect this cable.

Figure 204 • Applicator Interface Board Connection



1	Applicator interface board mounting plate
2	Applicator interface board
3	J9: Door-open sensor

9. Gently pull the door-open sensor out of the print engine.

Replace the Door-Open Sensor

1. Place the print engine with the media door face up.
2. Open the media cover.
3. See [Figure 201](#). Insert the sensor cable through the sealing plug and insert both through the hole in the main frame.
 Ensure that the connector is on the electronics side and the plug is closing the hole in the main frame.
4. Align the door-open sensor and its bracket on the inside of the media door.
5. Reinstall the two mounting screws to secure the sensor. Snug the screws, but do not tighten.

6. See [Figure 205](#). Starting with the screws positioned in the center of the slots, close the media door, and listen for the trip of the actuator switch.
 - a. If the switch does **not** trip, slide the two screws forward and repeat the switch adjustment.



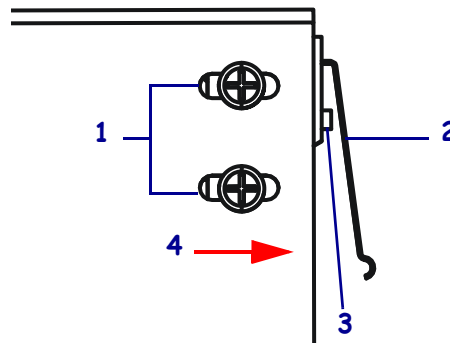
Note • Ensure that both screws are vertically aligned (parallel to the front of the media door).

- b. If the switch does trip, tighten both of the screws to secure the door-open sensor.



Note • If you receive a **Cover Open** error during power up, repeat the switch adjustment.

Figure 205 • Door-Open Sensor Adjustment



1	Switch lever
2	Mounting screws shown inside of slots (2)
3	Actuator
4	Direction of adjustment

7. Route the sensor cable along the media cover wall to the back of the media enclosure.

Route the Door-Open Sensor Cable

1. See [Figure 202](#). From the electronics side, replace the two cable ties to secure the cable.
One cable tie attaches the sensor cable to the outside post for the ribbon drive bracket, and the other tie attaches the cable to the bottom of the electronics latch.
2. Thread the sensor cable across, under the ribbon drive system bracket, and through the small and large cable clamps.
Ensure that the cable clamps are closed and include the sensor cable.
3. Insert the door-open sensor cable through the flexible conduit.
4. Secure all flexible conduit with a cable tie.
5. Thread the door-open sensor cable over the lower hinge, under the electronics cover spacer tube, over the bottom rail of the electronics chassis.
6. See [Figure 203](#). Secure the door-open sensor cable to the bottom rail using a cable tie.
7. See [Figure 204](#). Connect the door-open sensor cable (green and yellow wires) to J9 on the applicator interface board.

Reinstall the Print Engine in the Applicator

1. To reinstall the print engine into the applicator, carefully place the keyhole on the center mounting bolt.



Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.

2. Replace the four corner mounting screws securing the print engine to the applicator.
3. Tighten the center mounting bolt.

Resume Printer Operation

1. Open the front cover.
2. **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.

Unlatch the printhead lever, reinstall the media and ribbon, and close and latch the printhead lever.

3. Reconnect the AC power cord and interface cables.
4. Turn on (I) the print engine.

The installation is complete.



Encoder Sensor Maintenance Kit

Installation Instructions

This kit includes the parts and documentation necessary to install the Encoder Sensor Maintenance Kit in the ZE500™ Series Print Engines. Read these instructions thoroughly before installing this kit.



Caution • This installation must be performed by a qualified service technician.

Parts List

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



Note • The sensors come with the cables attached, but are not shown in many of the figures.

Figure 206 • Kit Contents

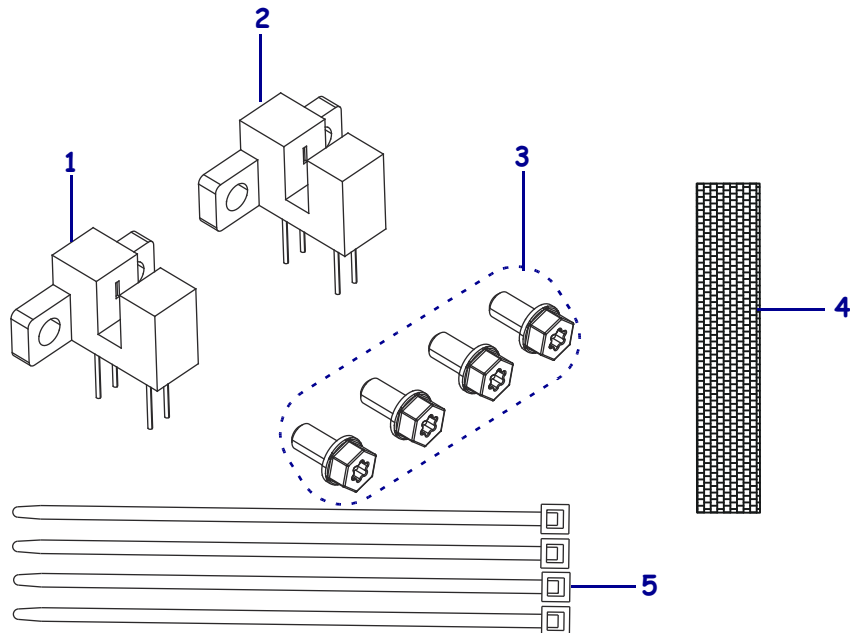


Table 37 • Parts List

✓	Item	Qty	Part Number	Description
	Ref	1	P1046696-034	Encoder Sensors Maintenance Kit
	1	1	<i>N/A</i>	Encoder, Supply
	2	1	<i>N/A</i>	Encoder, Take-Up
	3	4	<i>N/A</i>	Screw, M3 × 0.5 × 6 HX TX NI
	4	1	<i>N/A</i>	Wrap, Cauterized Protective
	5	4	<i>HWQ06020</i>	Cable Tie (Qty. of 20)

N/A = Not available as a separate part (listed for identification purposes only).

Tools Required



Tools • You need these tools to complete this procedure:

- Phillips Screwdriver Set
- Flat-blade Screwdriver Set
- Metric Hex Key (Allen Wrench) Set
- Antistatic Wriststrap and Mat
- Torx Key Set
- Diagonal Cutter

Remove Power and Data Cables



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

Connect yourself to an antistatic device.




2. **Caution** • Turn off (O) the print engine and disconnect it from the power source before performing the following procedure.

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

Remove Print Engine from Applicator

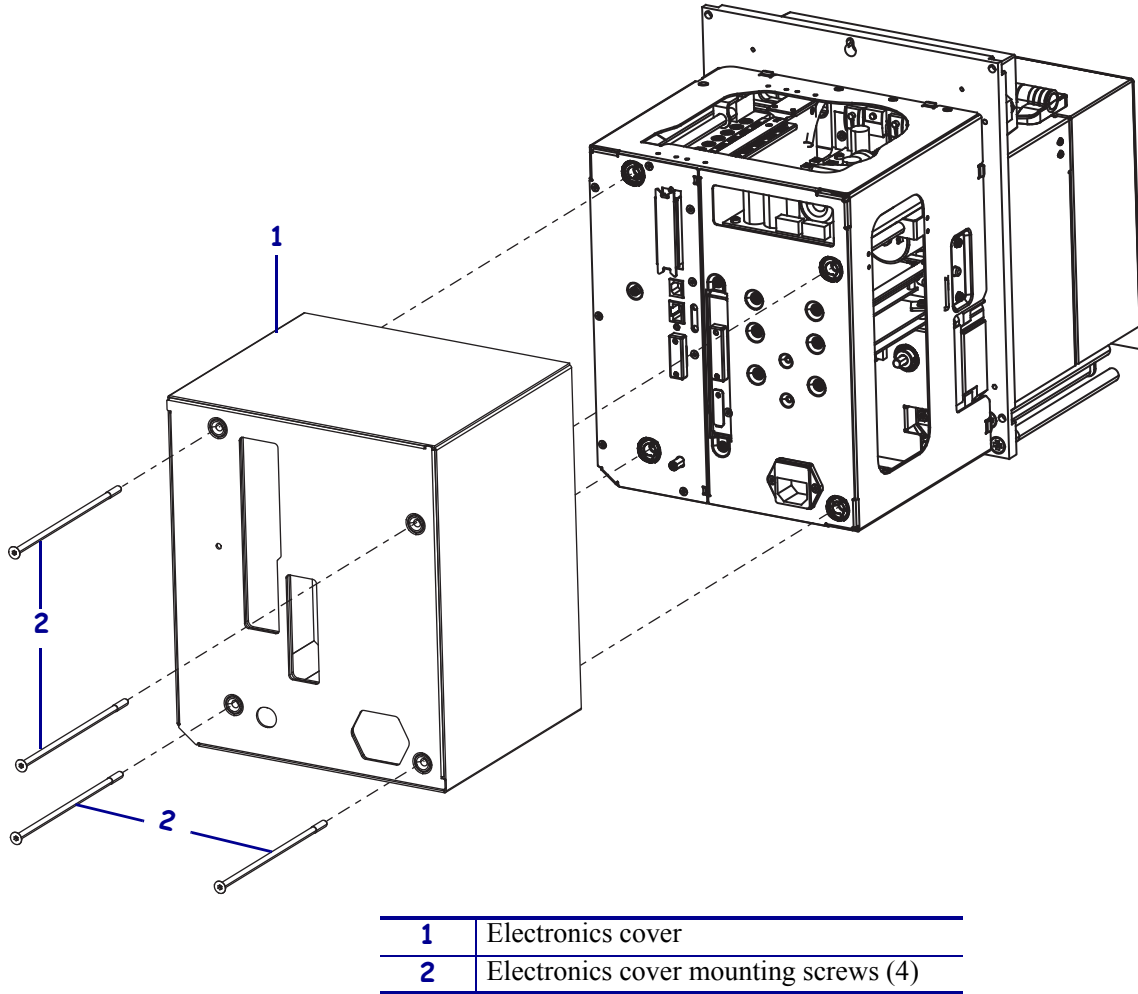
1. Does your applicator (or stand) permit open access to the rear of the print engine?

If you have an...	Then...
Open access	<p>You may swing the print engine open and work on it without removing the unit from the applicator.</p> <p>If you wish to remove the unit from the stand at any time, follow the instructions listed for the <i>Obstructed access</i> type applicator shown in this table.</p> <p>a. Go to <i>Remove the Electronics Cover</i>.</p>
Obstructed access	<p>You must remove the print engine from the applicator before you work on it.</p> <p>a. Remove the four corner mounting screws securing the print engine to the applicator.</p> <p>b. Loosen the center mounting bolt, but do not remove it.</p> <p> Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.</p> <p>c. Lift the print engine off the center mounting bolt and place on a workbench.</p>

Remove the Electronics Cover

1. See [Figure 207](#). Remove the four long mounting screws securing the electronics cover.

Figure 207 • Electronics Cover



2. Slide the electronics cover off of the print engine.

Open the Electronics Enclosure

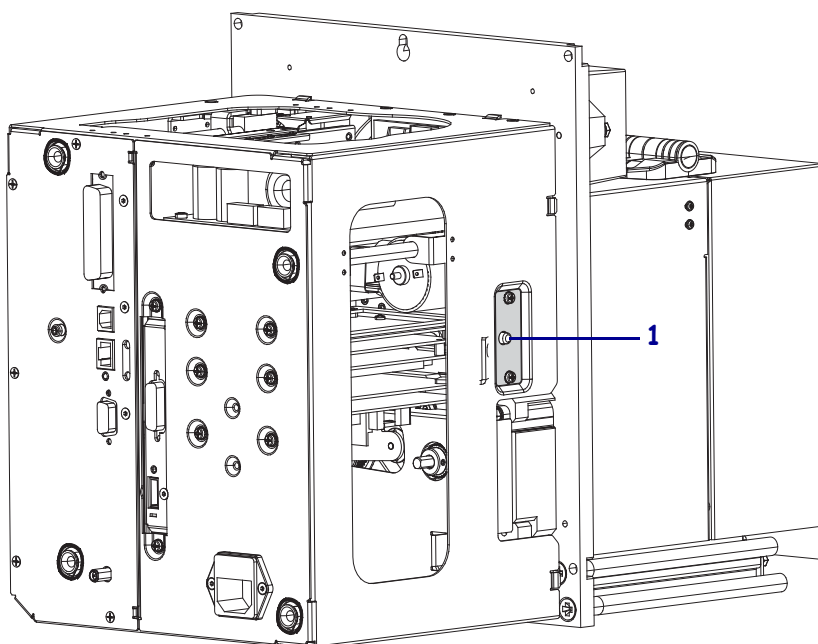
1. See [Figure 208](#). Locate the latch.



Note • For right-hand models, the latch is on the right side when looking from the back of the print engine. For left-hand models, the latch is on the left side.

2. Press the latch and swing the electronics enclosure open.

Figure 208 • Locate the Latch

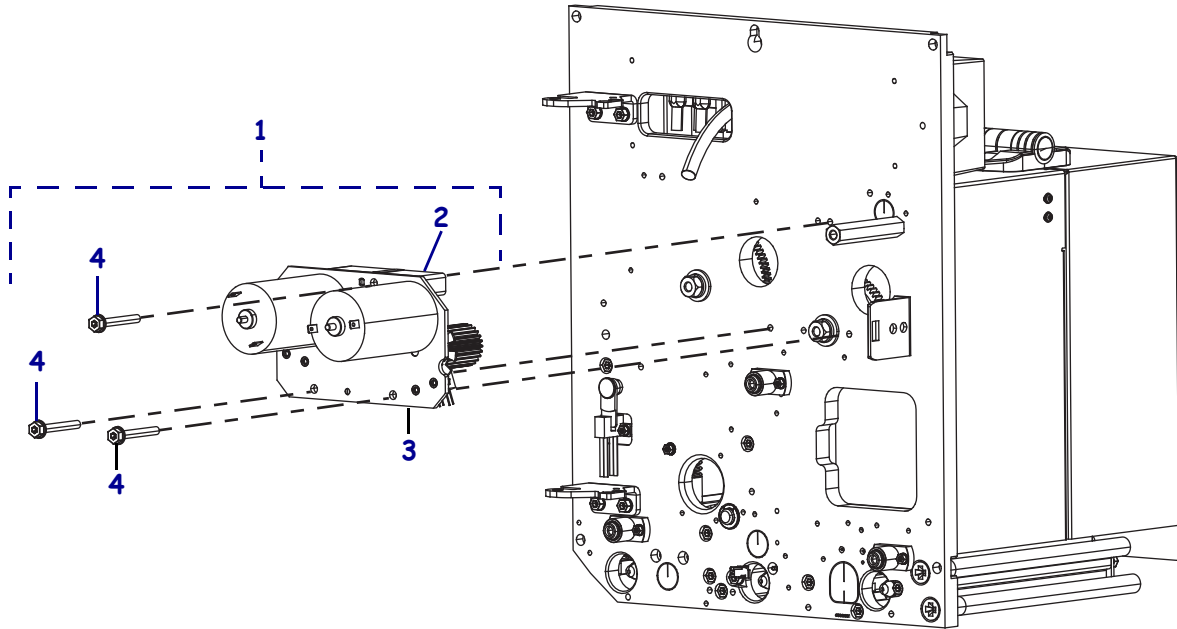


1	Latch
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Remove the Ribbon Drive System

1. See [Figure 209](#). Remove the three mounting screws securing the ribbon drive system.

Figure 209 • Ribbon Drive System



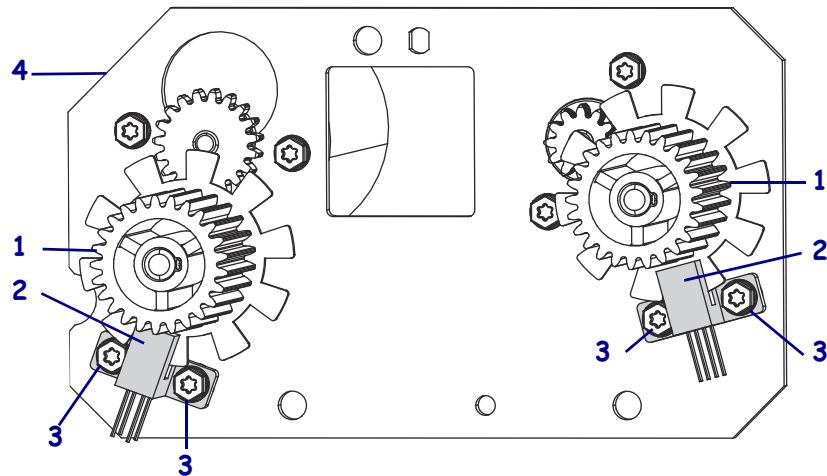
1	Ribbon drive system
2	Heat sink
3	Ribbon drive bracket
4	Ribbon drive system mounting screws (3)

2. Gently pull the ribbon drive system away from the main frame.

Remove the Encoder Sensors

1. See [Figure 210](#). Remove the two mounting screws securing each encoder sensor.
2. Remove both encoder sensors.

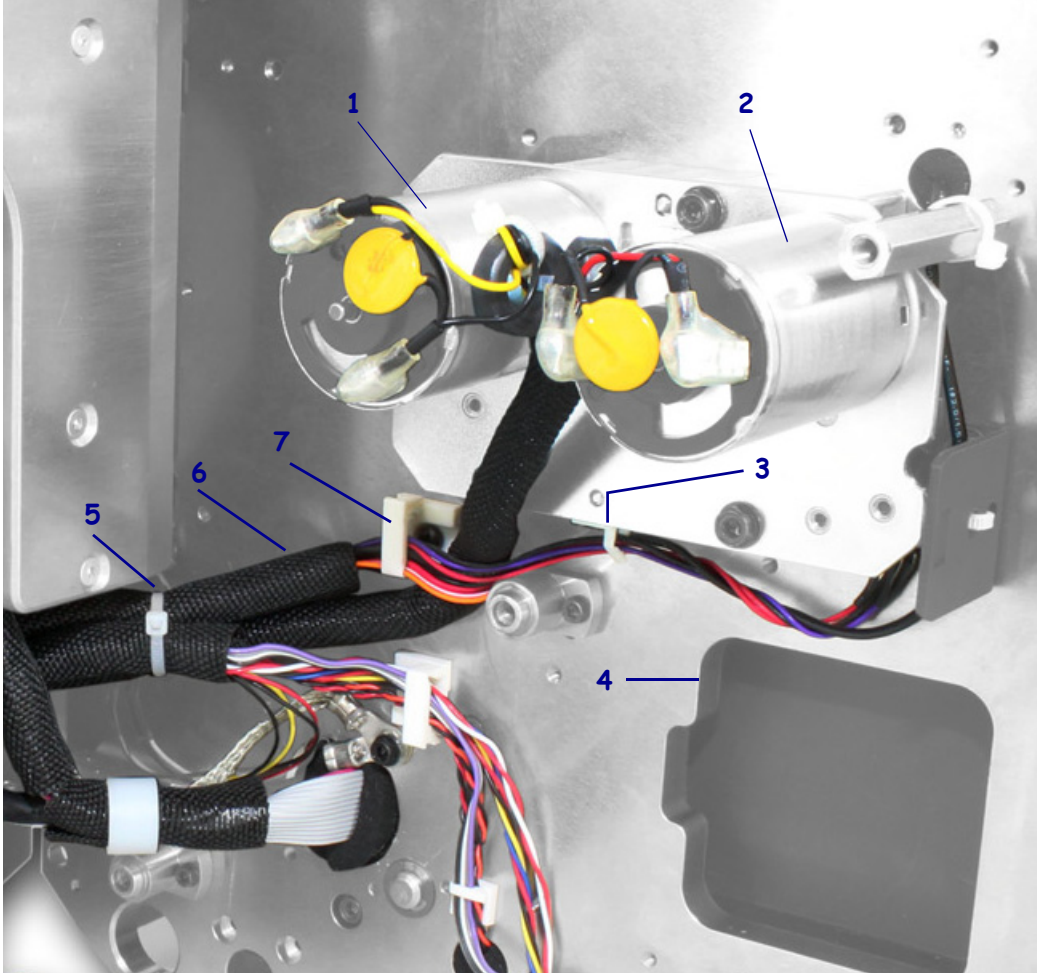
Figure 210 • Encoder Sensor



1	Ribbon drive gears (2)
2	Encoder sensor (shaded) (2)
3	Encoder sensor mounting screws (4)
4	Ribbon drive system (view from the back)

3. See [Figure 211](#). Remove the cables from all of the quick-release cable clamps, tubing, and cable tie, as necessary.

Figure 211 • Cable Routings



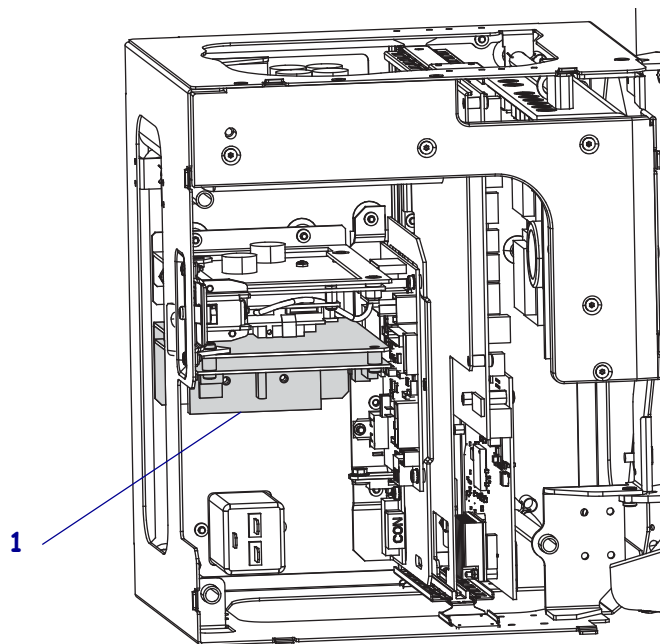
1	Supply DC motor
2	Take-up DC motor
3	Quick release cable clamp (small)
4	Stepper motor opening
5	Cable tie
6	Cloth-covered tubing
7	Quick release cable clamp (large)

4. See [Figure 212](#). Disconnect the two encoder sensor cables from J1 and J5 on the ribbon tension control board.



Note • This board is oriented upside down in the print engine, so all connectors must be accessed from the bottom side of the board.

Figure 212 • Ribbon Tension Control Board

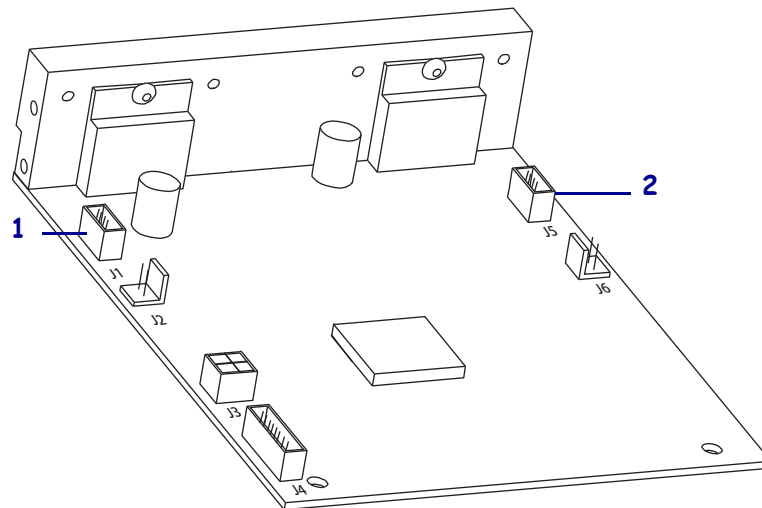


1	Ribbon tension control board
---	------------------------------

Replace the Supply and Take-Up Encoder Sensors

1. See [Figure 213](#). Align the supply encoder sensor holes with the two inserts and secure with the two mounting screws.
The supply encoder sensor is located directly above the stepper motor (when viewed from the electronics enclosure) and has one black, one orange, and two red/white wires. The supply encoder sensor overall cable length is shorter than the take-up encoder sensor overall cable length.
2. Align the take-up encoder sensor holes with the two inserts and secure with the two mounting screws.
The take-up encoder sensor is off to the side of the supply spindle and has one black, one violet, and two red wires. The take-up encoder sensor overall cable length is longer than the supply encoder sensor overall cable length.
3. Thread the cables through the quick-release cable clamps and tubing.
4. Replace the cable tie around the cloth-covered cables. See [Figure 211](#) for the specific location of the cable tie.
5. See [Figure 213](#). Reconnect the supply encoder sensor cable to J5 and the take-up encoder sensor to J1 on the ribbon tension control board.

Figure 213 • Ribbon Tension Control Board Connections

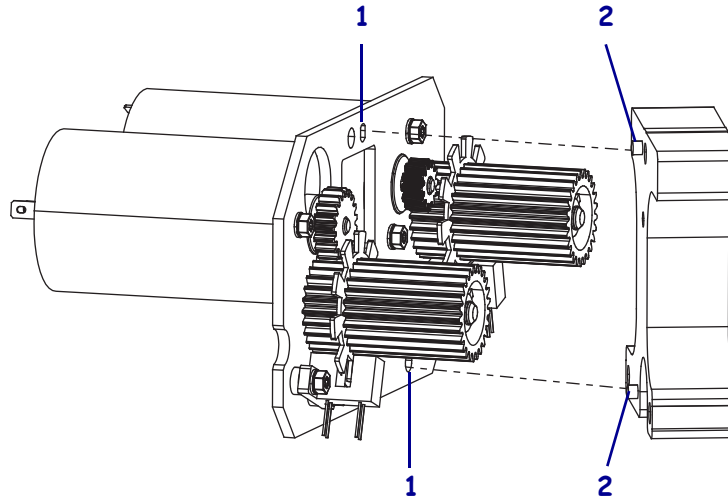


1	J1: Take-up encoder sensor connector
2	J5: Supply encoder sensor connector

Replace the Ribbon Drive System

1. See [Figure 214](#). Align the heat sink mounting pins with the ribbon drive bracket holes.

Figure 214 • Ribbon Drive Bracket and Heat Sink



1	Ribbon drive bracket alignment hole
2	Heat sink mounting pin

2. Thread the encoder sensor cables through the small cable clamp on the bottom of the heat sink.
3. Align the heat sink mounting pins with the main frame mounting holes.
4. Reinstall the three mounting screws to secure the ribbon drive system.

Close the Electronics Enclosure

1. Ensure that all wires are routed properly and are not causing any obstructions, and then carefully swing the electronics enclosure closed.
2. Adjust the wire clips for the parallel port until they are touching the parallel port.
3. Slide the electronics cover onto the print engine.
4. Reinstall the four electronics cover mounting screws.

Reinstall the Print Engine in the Applicator

1. To reinstall the print engine into the applicator, carefully place the keyhole on the center mounting bolt.



Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.

2. Replace the four corner mounting screws securing the print engine to the applicator.
3. Tighten the center mounting bolt.

Resume Printer Operation

1. Reconnect the AC power cord and interface cables.
2. Turn on (I) the print engine.

The installation is complete.



Printhead-Open Sensor Maintenance Kit

Installation Instructions

This kit includes the parts and documentation necessary to install the Printhead-Open Sensor Maintenance Kit in the ZE500™ Series Print Engines. Read these instructions thoroughly before installing this kit.



Caution • This installation must be performed by a qualified service technician.

Parts List

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

Figure 215 • Kit Contents

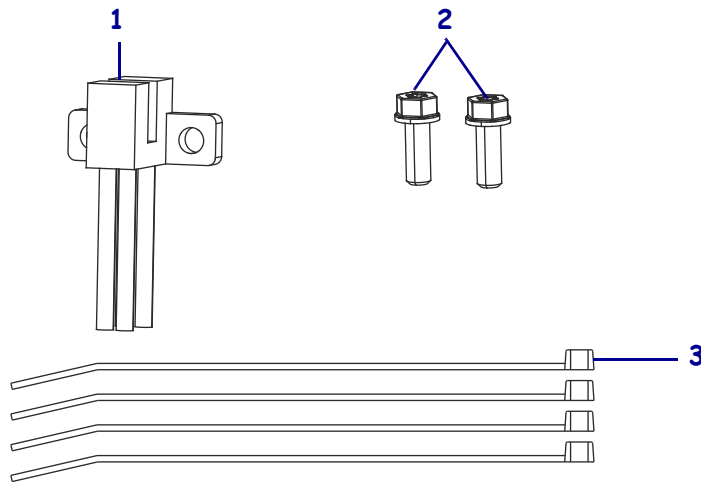


Table 38 • Parts List

✓	Item	Qty	Part Number	Description
	Ref	1	P1046696-033	Printhead-Open Sensor Maintenance Kit
	1	1	N/A	Sensor, Printhead-Open
	2	2	N/A	Screw, M3 × 0.5 × 6 Hx Tx Ni (Qty. of 25)
	3	4	HWQ06020	Cable Tie (Qty. of 20)

N/A = Not available as a separate part (listed for identification purposes only)

Tools Required



Tools • You need these tools to complete this procedure:

- Phillips Screwdriver Set
- Diagonal Cutter
- Antistatic Wriststrap and Mat
- Flat-blade Screwdriver Set
- Torx Key Set

Remove Power and Data Cables, Ribbon, and Media



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

Connect yourself to an antistatic device.



2. **Caution** • Turn off (O) the print engine and disconnect it from the power source before performing the following procedure.

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


3. **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.

Open the media door, the printhead latch, and remove media and ribbon from the print engine.

4. Close the printhead latch, and then close the media door.

Remove Print Engine from Applicator

1. Does your applicator (or stand) permit open access to the rear of the print engine?

If you have an...	Then...
Open access	<p>You may swing the print engine open and work on it without removing the unit from the applicator.</p> <p>If you wish to remove the unit from the stand at any time, follow the instructions listed for the <i>Obstructed access</i> type applicator shown in this table.</p> <ol style="list-style-type: none"> a. Go to <i>Remove the Electronics Cover</i>.
Obstructed access	<p>You must remove the print engine from the applicator before you work on it.</p> <ol style="list-style-type: none"> a. Remove the four corner mounting screws securing the print engine to the applicator. b. Loosen the center mounting bolt, but do not remove it. <p> Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.</p> <ol style="list-style-type: none"> c. Lift the print engine off the center mounting bolt and place on a workbench.

Open the Electronics Enclosure

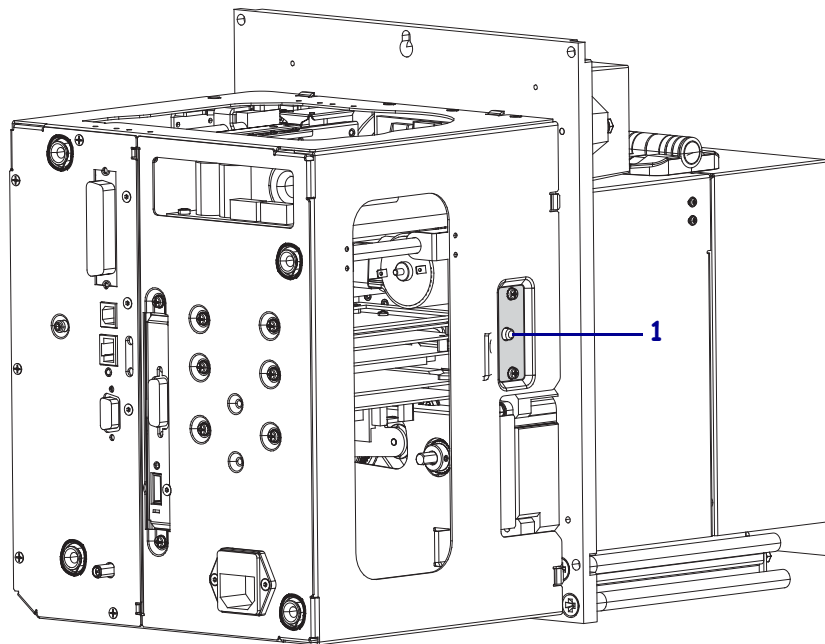
1. See [Figure 216](#). Locate the latch.



Note • For right-hand models, the latch is on the right side when looking from the back of the print engine. For left-hand models, the latch is on the left side.

2. Press the latch and swing the electronics enclosure open.

Figure 216 • Locate the Latch

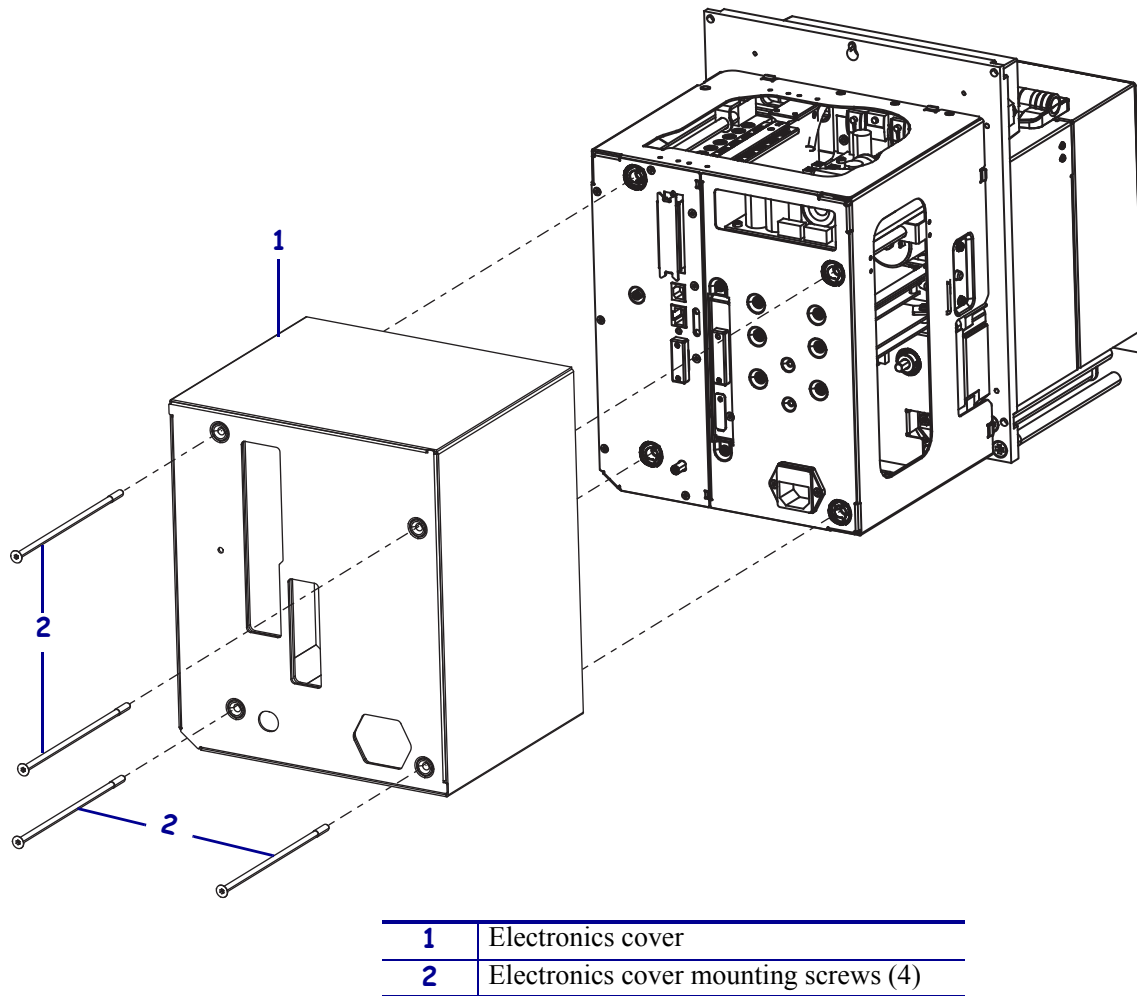


1	Latch
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Remove the Electronics Cover

1. See [Figure 217](#). Remove the four long mounting screws securing the electronics cover.

Figure 217 • Electronics Cover

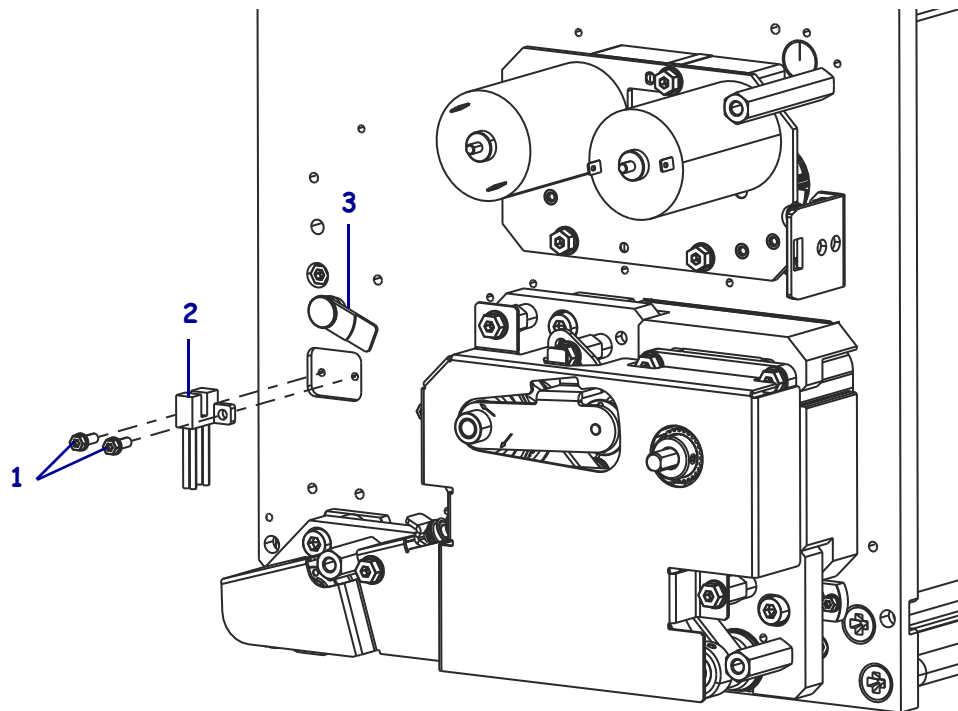


2. Slide the electronics cover off of the print engine.

Remove the Printhead-Open Sensor

1. Open the printhead latch to rotate the flag out from between the sensor.
2. To access the outer mounting screw, you may need to partially close the electronics enclosure.
3. See [Figure 218](#). To remove the printhead-open (head-open) sensor, remove the two mounting screws.

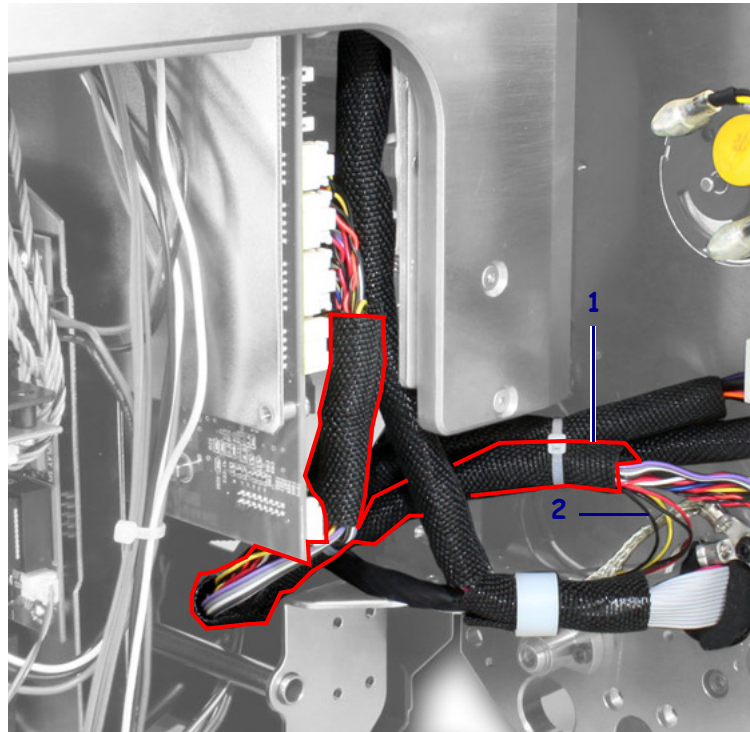
Figure 218 • Head-Open Sensor



1	Mounting screws (2)
2	Head-open sensor
3	Flag

4. See [Figure 219](#). Trace the head-open sensor cable (red, yellow, and two black wires) from the sensor.
5. Remove the cable from the flexible conduit securing the cable. Cut any cable ties, as necessary.

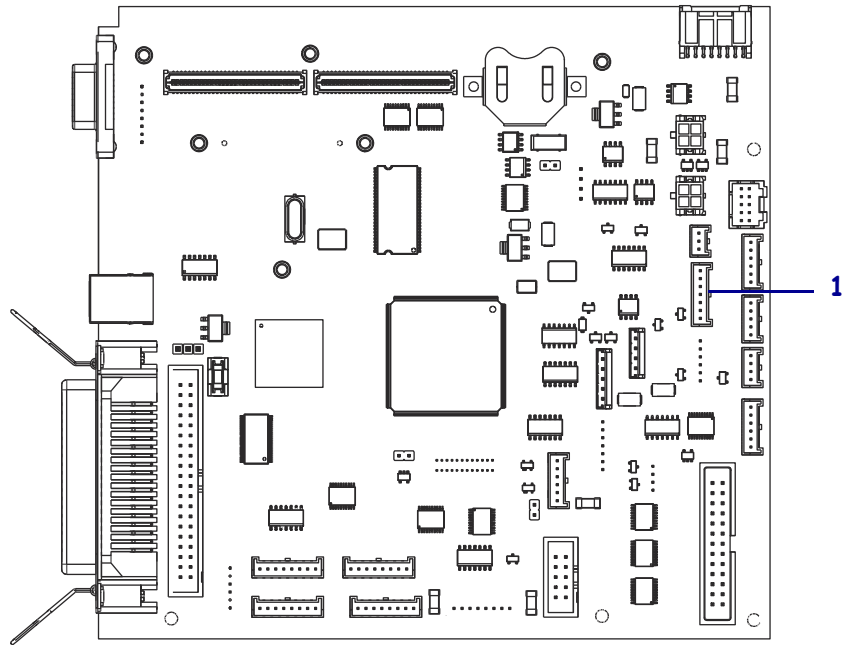
Figure 219 • Head-Open Sensor Cable Routing



1	Flexible conduit (outlined in red)
2	Head-open sensor cable (two black, one red, and one yellow wire)

6. See [Figure 220](#). Disconnect the head-open sensor cable from P5 on the MLB.

Figure 220 • MLB Connection



1	P5: Head-open sensor
----------	----------------------

7. Gently pull the head-open sensor out of the print engine.

Replace the Head-Open Sensor

1. Place the print engine with the media cover facing up, if necessary.
2. See [Figure 218](#). Align the sensor with the mounting holes in the main frame.
3. Reinstall the two mounting screws to secure the head-open sensor.
4. See [Figure 219](#). Route the head-open sensor cable (red, yellow, and two black wires) through the flexible conduit to secure the cable.
5. Replace the cable ties.
6. See [Figure 220](#). Reconnect the head-open sensor cable from P5 on the MLB.
7. From the media side, open and close the printhead. Check that the sensor flag swings freely in and out of the sensor. When the printhead latch is closed, the flag should be centered in the sensor.

Close the Electronics Enclosure

1. Ensure that all wires are routed properly and are not causing any obstructions, and then carefully swing the electronics enclosure closed.
2. Adjust the wire clips for the parallel port until they are touching the parallel port.
3. Slide the electronics cover onto the print engine.
4. Reinstall the four electronics cover mounting screws.

Reinstall the Print Engine in the Applicator

1. To reinstall the print engine into the applicator, carefully place the keyhole on the center mounting bolt.



Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.

2. Replace the four corner mounting screws securing the print engine to the applicator.
3. Tighten the center mounting bolt.

Resume Printer Operation

1. Open the front cover.
2. **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.

Unlatch the printhead lever, reinstall the media and ribbon, and close and latch the printhead lever.

3. Ensure that the printhead toggles are positioned evenly across the width of the media.
4. Reconnect the AC power cord and interface cables.
5. Turn on (I) the print engine.

The installation is complete.



Media Sensor Maintenance Kit

Installation Instructions

This kit includes the parts and documentation necessary to install the Media Sensor Maintenance Kit in the ZE500™ Series Print Engines. Read these instructions thoroughly before installing this kit.



Caution • This installation must be performed by a qualified service technician.



Note • The graphics and steps in this procedure are for the right-hand (RH) print engine. Steps for a left-hand (LH) print engine may be slightly different.

Parts List

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

Figure 221 • Kit Contents

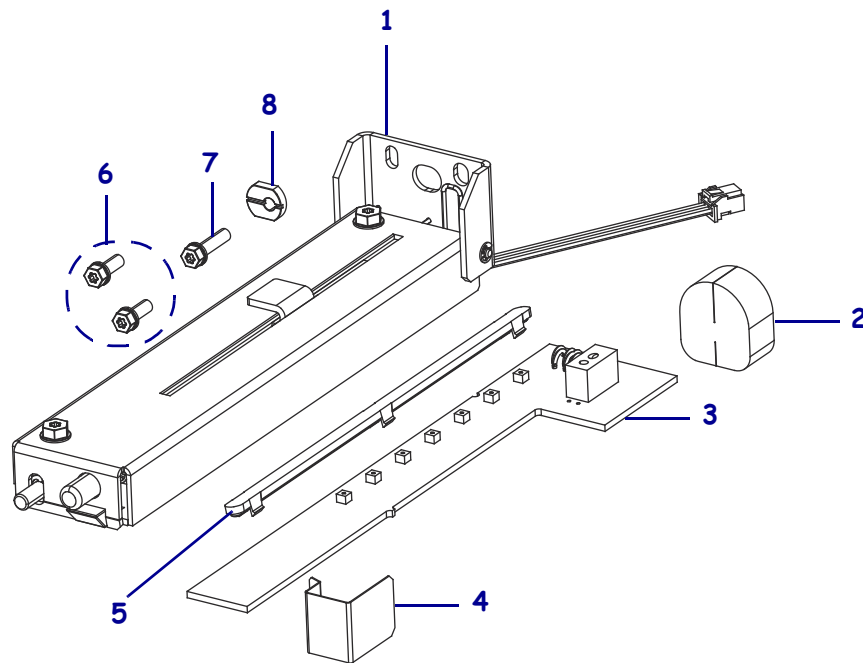


Table 39 • Parts List

✓	Item	Qty	Part Number	Description
	Ref	1	P1046696-027	ZE500-4 Media Sensor Maintenance Kit, RH
		1	P1046696-028	ZE500-4 Media Sensor Maintenance Kit, LH
		1	P1046696-029	ZE500-6 Media Sensor Maintenance Kit, RH
		1	P1046696-030	ZE500-6 Media Sensor Maintenance Kit, LH
	1	1	N/A	Upper Segmented Pinch Roller Assembly (includes Upper Media Transmissive Sensor)
	2	1	N/A	Plug, Sealing
	3	1	N/A	Media Sensor Emitter (Lower Media Transmissive Sensor)
	4	1	N/A	Clip, Spring
	5	1	N/A	Lens, Transmissive Sensor
	6	2	N/A	Screw, M3 × 8 Hx Tx Zn Flng
	7	1	N/A	Screw, M3 × 12 Hx Tx Ni
	8	1	N/A	Cam

N/A = Not available as a separate part (listed for identification purposes only).

Tools Required



Tools • You need these tools to complete this procedure:

- Phillips Screwdriver Set
- Flat-blade Screwdriver Set
- Metric Hex Key (Allen Wrench) Set
- Torx Key Set
- Anti-Static Wriststrap and Mat

Remove Power and Data Cables, Ribbon, and Media



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

Connect yourself to an antistatic device.



2. **Caution** • Turn off (O) the print engine and disconnect it from the power source before performing the following procedure.

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


3. **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.

Open the media door, the printhead latch, and remove media and ribbon from the print engine.

4. Close the printhead latch, and then close the media door.

Remove Print Engine from Applicator

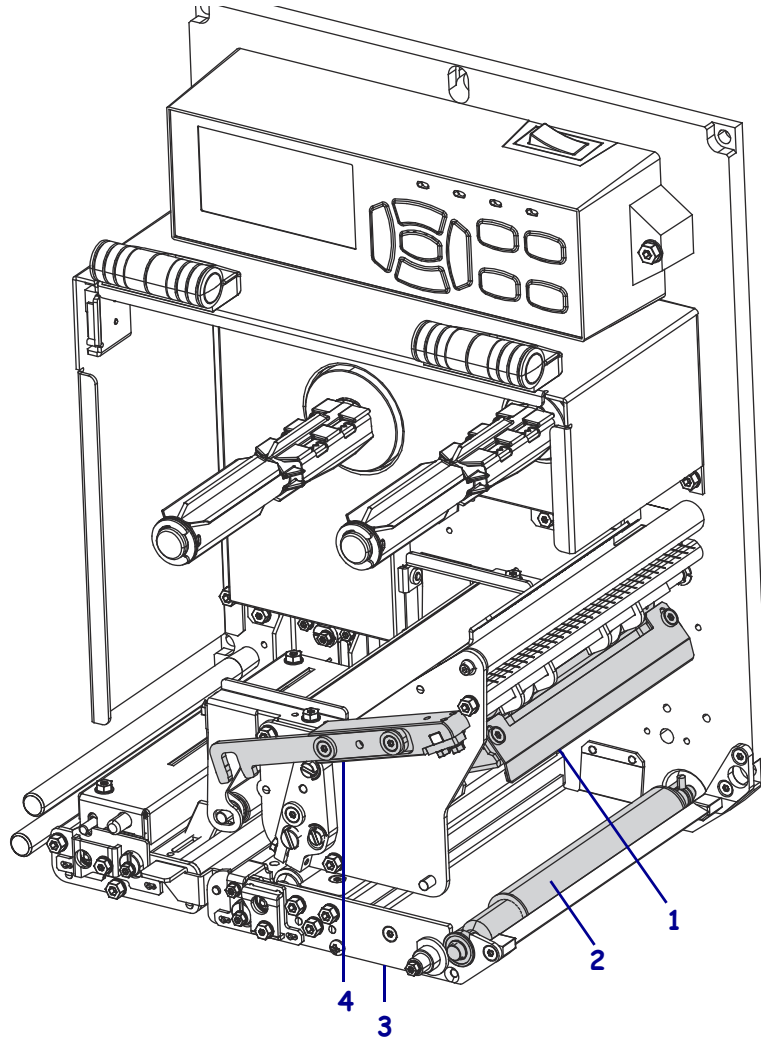
1. Does your applicator (or stand) permit open access to the rear of the print engine?

If you have an...	Then...
Open access	<p>You may swing the print engine open and work on it without removing the unit from the applicator.</p> <p>If you wish to remove the unit from the stand at any time, follow the instructions listed for the <i>Obstructed access</i> type applicator shown in this table.</p> <ol style="list-style-type: none"> a. Go to <i>Remove the Electronics Cover</i>.
Obstructed access	<p>You must remove the print engine from the applicator before you work on it.</p> <ol style="list-style-type: none"> a. Remove the four corner mounting screws securing the print engine to the applicator. b. Loosen the center mounting bolt, but do not remove it. <p> Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.</p> <ol style="list-style-type: none"> c. Lift the print engine off the center mounting bolt and place on a workbench.

Remove the Platen Roller

1. See [Figure 222](#). Using the printhead latch, open the printhead and press up until secured in the open position.

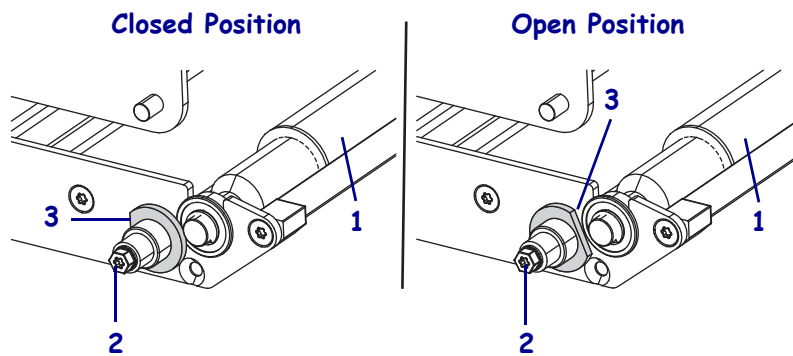
Figure 222 • Open Printhead



1	Printhead (shaded and shown in open position)
2	Platen roller (shaded)
3	Platen roller support plate
4	Printhead latch (shaded and shown in open position)

2. See [Figure 223](#). Using a Torx key, loosen the screw on the latch pin, and rotate the latch pin to the open position.

Figure 223 • Latch Pin



1	Platen roller
2	Latch pin screw
3	Latch pin (shaded)

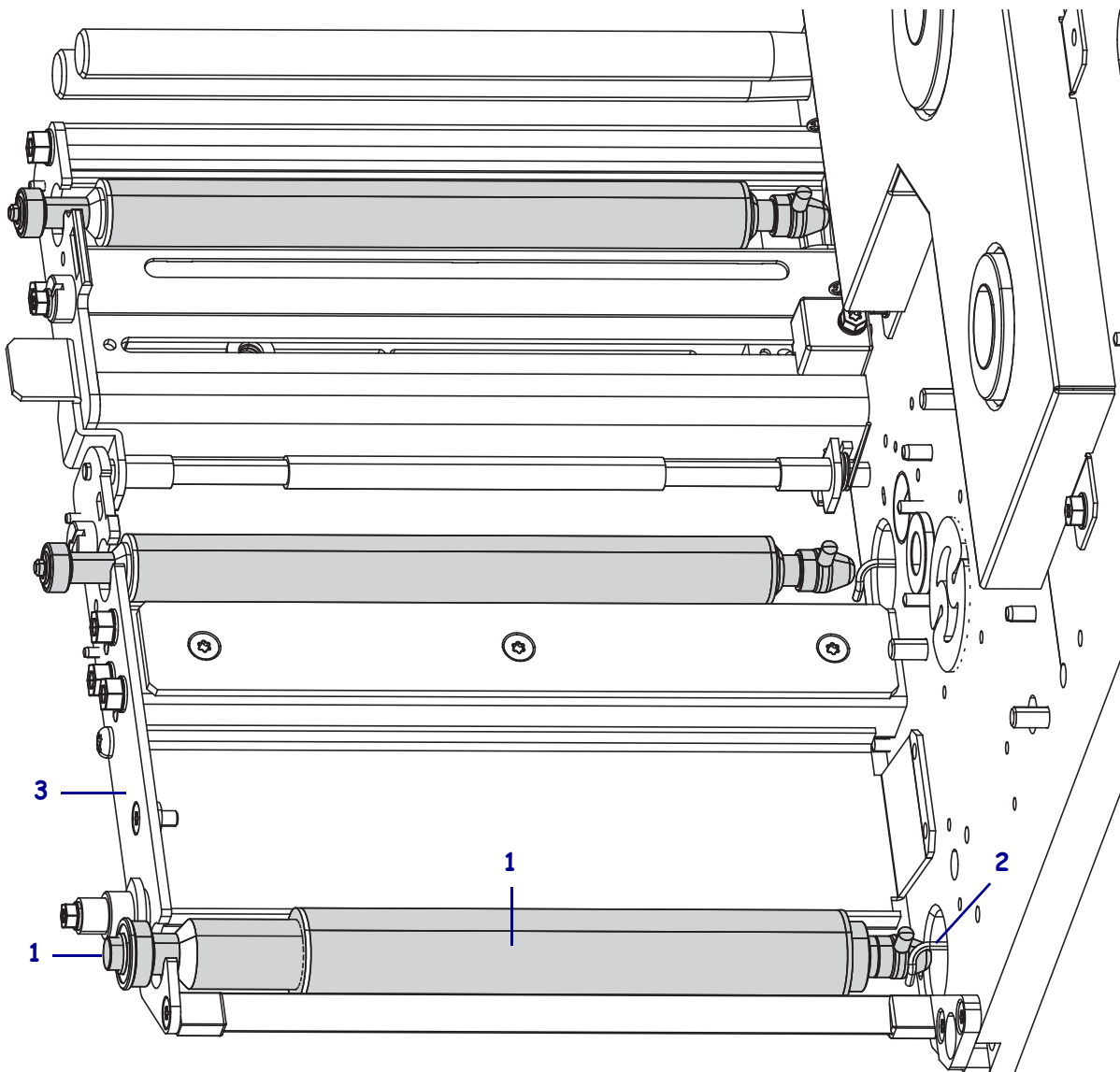
- See [Figure 224](#). Grasp the platen roller tightly and pull it toward the platen roller support plate to release the pin secured in the platen roller coupler.
The outboard bearing will extend past the end of the platen roller support plate.



Note • You may have to turn the roller slightly to be able to remove the roller.

- Lift the platen roller out of the print engine.

**Figure 224 • Roller Locations
(Top View with Subsystems Removed)**



1	Platen roller (shaded)
2	Platen roller coupler
3	Platen roller support plate

Remove the Peel Roller

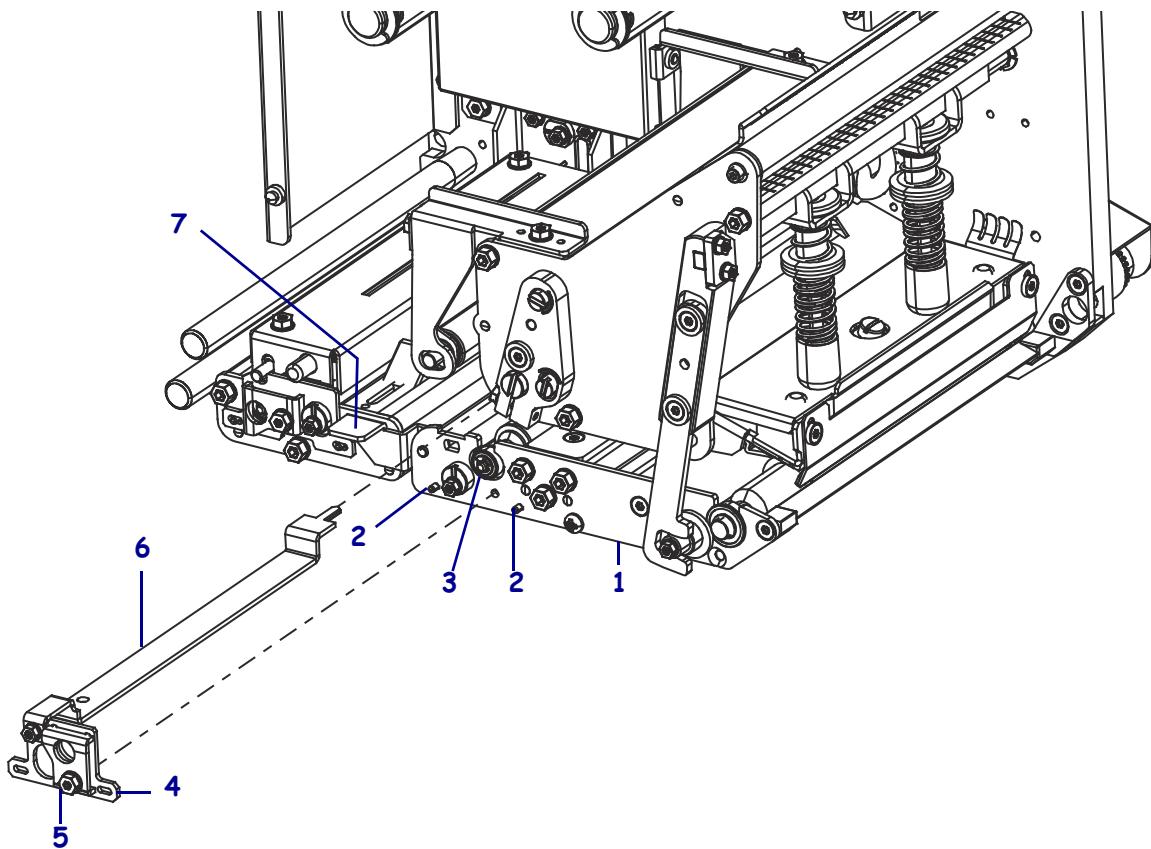
1. To open the peel roller bracket, push up on the latch.
2. See [Figure 225](#). To remove the peel roller cam plate, loosen the center mounting screw to release it from the platen roller support plate.



Note • The center mounting screw is captive within the peel roller cam plate.

3. Pull the peel roller cam plate (with the deflector plate attached) off of the two support pins on the platen roller support plate. Set the cam plate aside.

Figure 225 • Peel Roller



1	Platen roller support plate
2	Support pins
3	Peel roller
4	Peel roller cam plate
5	Peel roller cam plate center mounting screw
6	Peel roller deflector plate
7	Peel roller latch

4. Grasp the peel roller tightly and pull the peel roller toward the platen roller support plate to release the pin secured in the peel roller coupler.

The outboard bearing will extend past the end of the platen roller support plate.



Note • You may have to turn the roller slightly to be able to remove the roller.

5. Lift the peel roller out of the print engine.

Remove the Pinch Roller

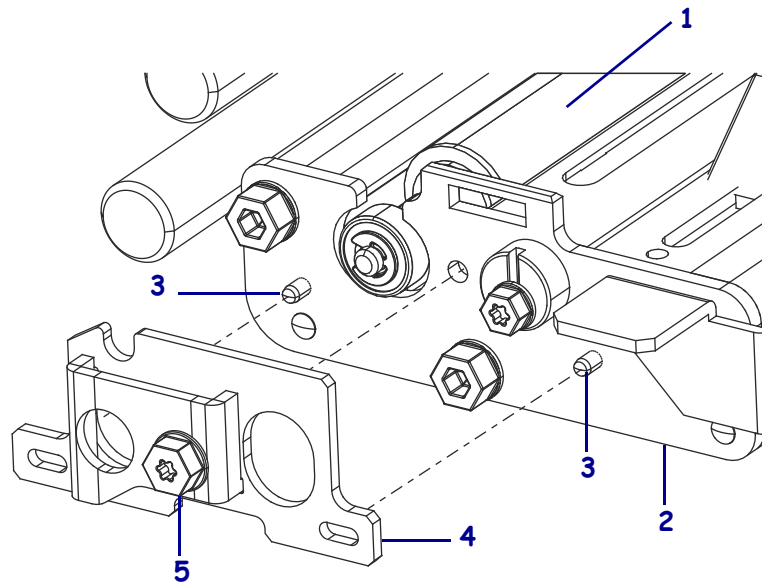
1. Open the upper pinch roller assembly by pressing on the release button located just above the pinch roller cam plate.
2. See [Figure 226](#). To remove the pinch roller cam plate, loosen the center mounting screw to release it from the pinch roller support plate.



Note • The center mounting screw is captive within the pinch roller cam plate.

3. Pull the cam plate off of the two support pins on the pinch roller support plate. Set the cam plate aside.

Figure 226 • Pinch Roller



1	Pinch roller (shaded)
2	Pinch roller support plate
3	Support pins
4	Pinch roller cam plate
5	Cam plate center mounting screw

4. Grasp the pinch roller tightly and pull the pinch roller toward the pinch roller support plate to release the pin secured in the pinch roller coupler.
The outboard bearing will extend past the end of the platen roller support plate.



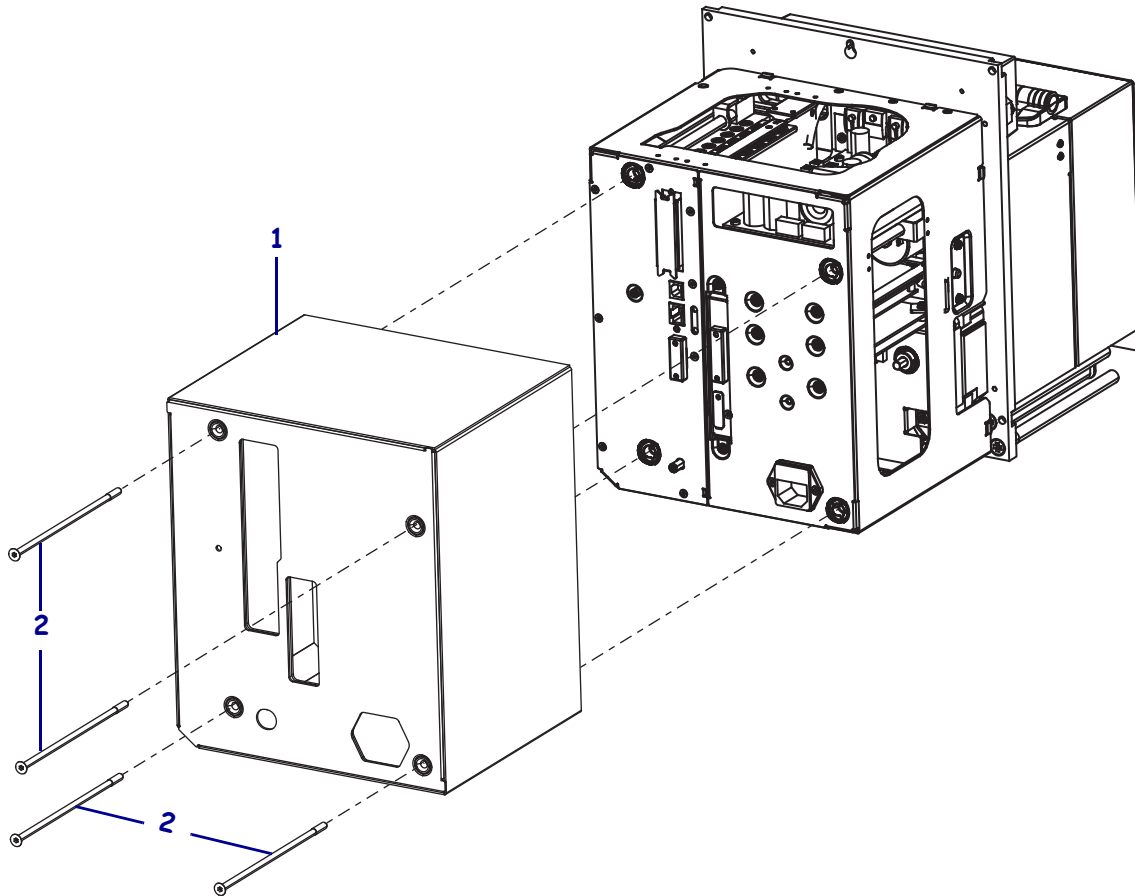
Note • You may have to turn the roller slightly to be able to remove the roller.

5. Lift the pinch roller out of the print engine.

Remove the Electronics Cover

1. See [Figure 227](#). Remove the four long mounting screws securing the electronics cover.

Figure 227 • Electronics Cover



1	Electronics cover
2	Electronics cover mounting screws (4)

2. Slide the electronics cover off of the print engine.

Open the Electronics Enclosure

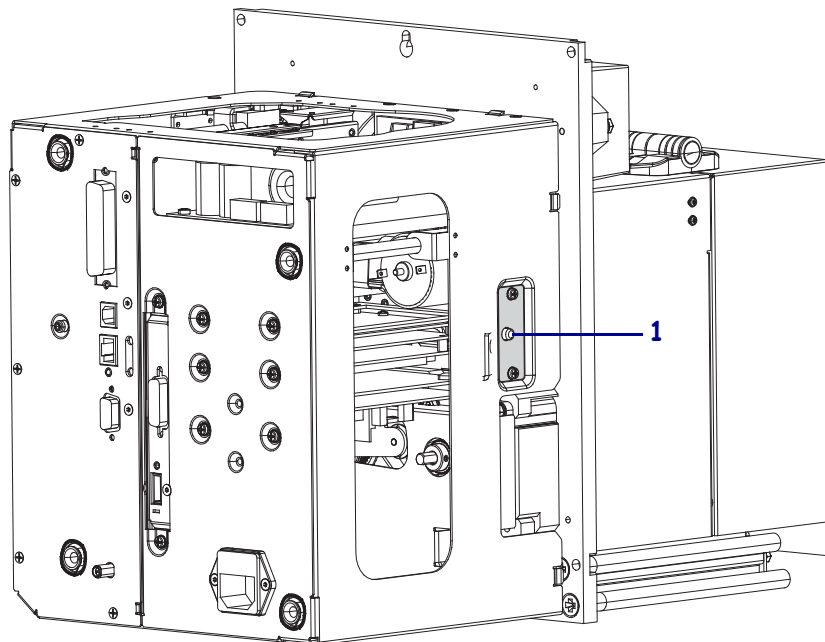
1. See [Figure 228](#). Locate the latch.



Note • For right-hand models, the latch is on the right side when looking from the back of the print engine. For left-hand models, the latch is on the left side.

2. Press the latch and swing the electronics enclosure open.

Figure 228 • Locate the Latch



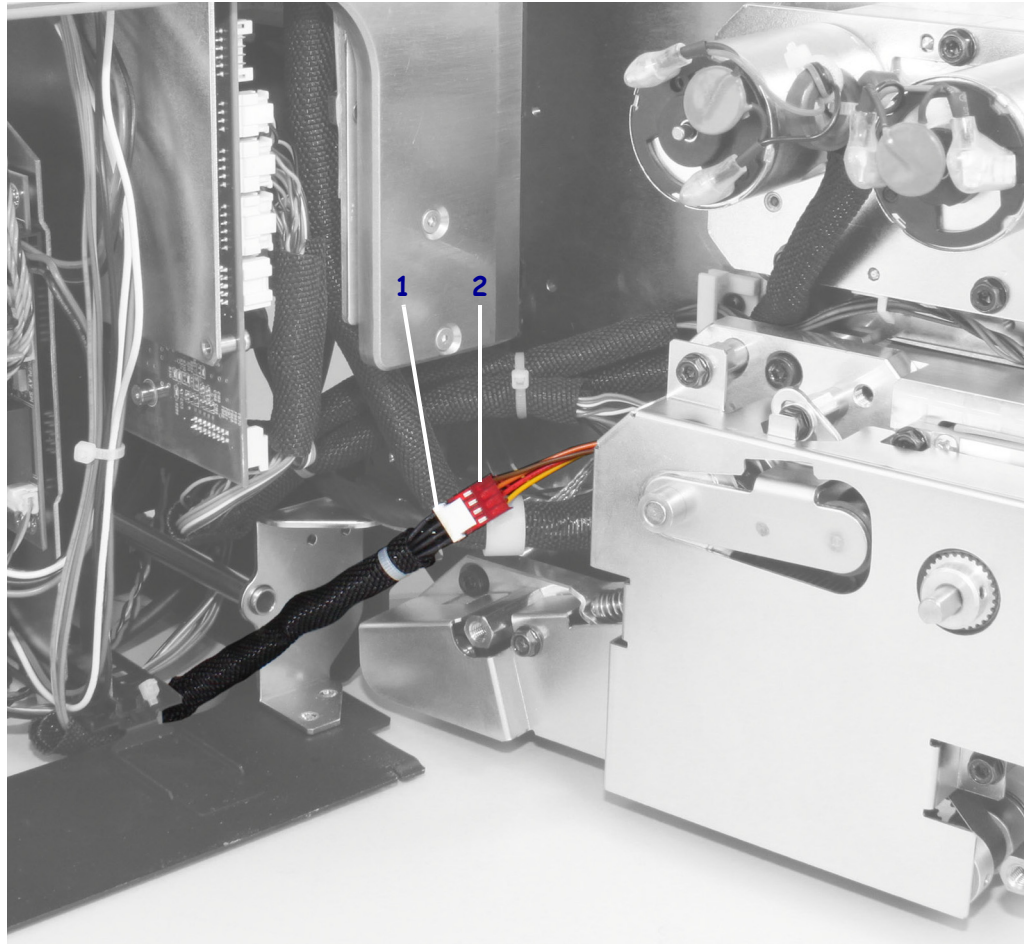
1	Latch
---	-------

Remove the Drive System

1. See [Figure 229](#). Separate the drive system cable connectors.

The short part of the cable is wired to the stepper motor. The long part of the cable plugs into J4 on the DC power supply board.

Figure 229 • Drive System Cable



1	Long drive system cable goes to the DC power supply
2	Short drive system cable connector goes to the stepper motor

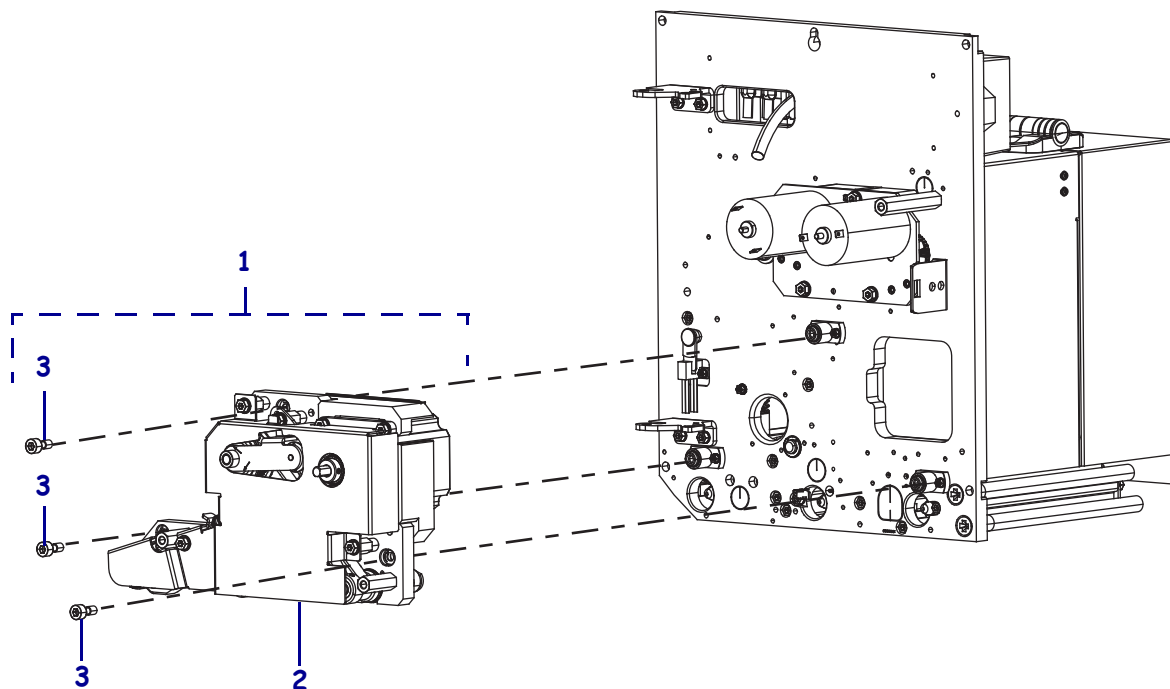
2. See [Figure 230](#). Loosen the three 4 mm mounting screws to release the drive system from the main frame.



Note • The three 4 mm mounting screws are captive within the drive system.

3. Remove the drive system from the main frame.

Figure 230 • Remove the Drive System



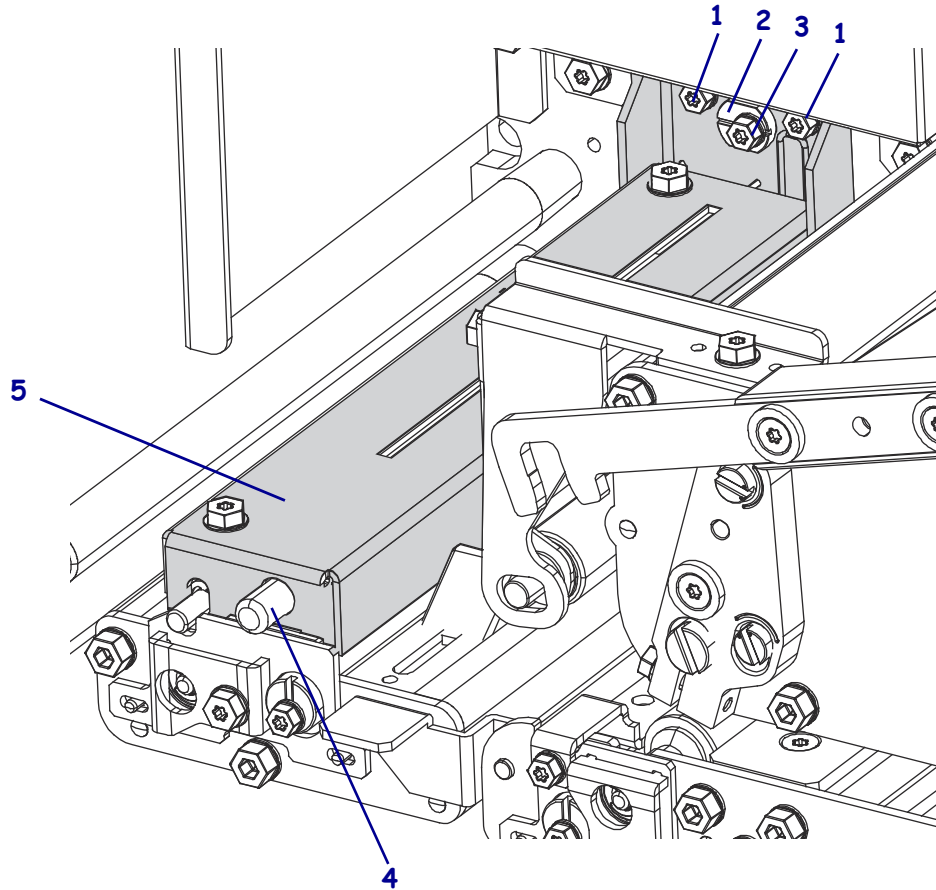
1	Drive system
2	Drive system cover
3	Drive system mounting screws (3)

Remove the Upper Segmented Pinch Roller

1. See [Figure 231](#). From the media side, remove the two mounting screws, upper pinch cam locking screw, and cam securing the upper segmented pinch roller assembly to the main frame.

Do not try to remove the assembly at this time.

Figure 231 • Upper Segmented Pinch Roller

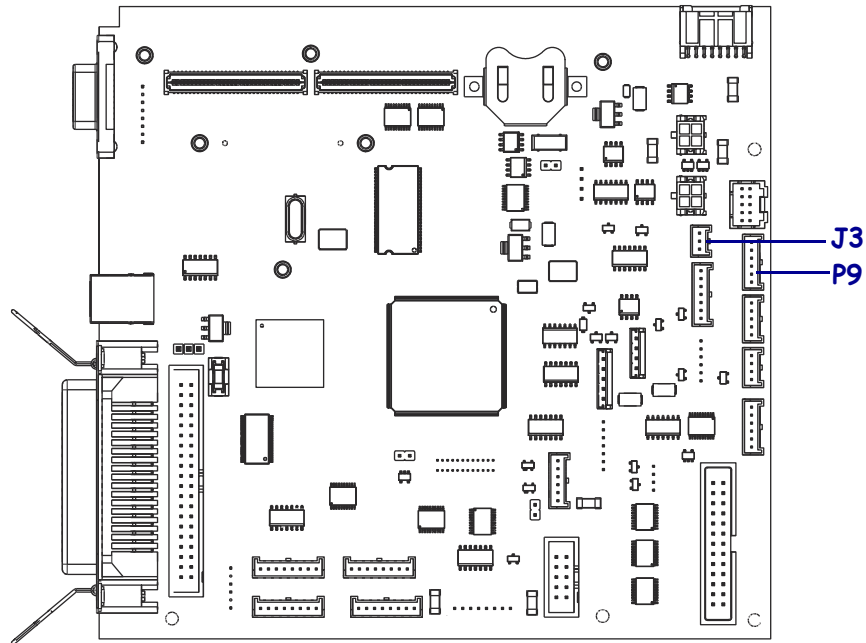


1	Upper pinch roller mounting screws (2) (unshaded)
2	Upper pinch roller cam (unshaded)
3	Upper pinch roller cam locking screw (unshaded)
4	Release button (unshaded)
5	Upper segmented pinch roller (shaded)

2. From the electronics side, open the quick-release cable clamps securing the upper media sensor cable (black, white, gray, and purple wires).

- See [Figure 232](#). Disconnect the upper media sensor cable from J3 on the MLB.

Figure 232 • MLB Connections



J3	Upper media sensor (transmissive sensor receiver)
P9	Lower media sensor (transmissive sensor emitter)

- Remove the sealing plug from the main frame.
- Remove the upper media cable from the sealing plug.
- Open the upper segmented pinch roller assembly by pressing the release button.
- **Caution** • Wear protective eyewear when installing or removing E-rings, C-clips, snap rings, springs, and mounting buttons. These are under tension and could fly off.

Pull the upper segmented pinch roller assembly and the cable out of the print engine.

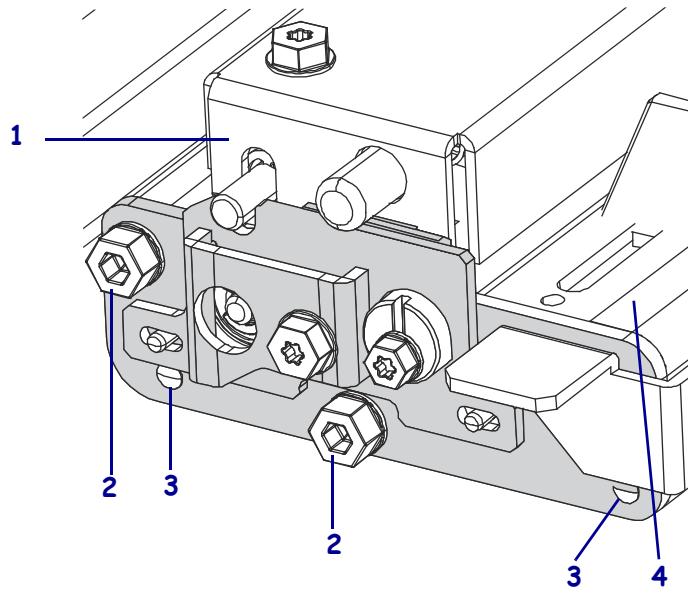


Note • In addition to the mounting screws removed earlier, the upper segmented pinch roller assembly is held in place by two long wire spring legs. Remove the assembly slowly.

Remove the Media Sensor

1. See [Figure 233](#). To remove the pinch roller support plate, remove the two mounting screws on the pinch roller support plate.

**Figure 233 • Pinch Roller Support Plate
(Shown with Upper Pinch Roller Closed)**

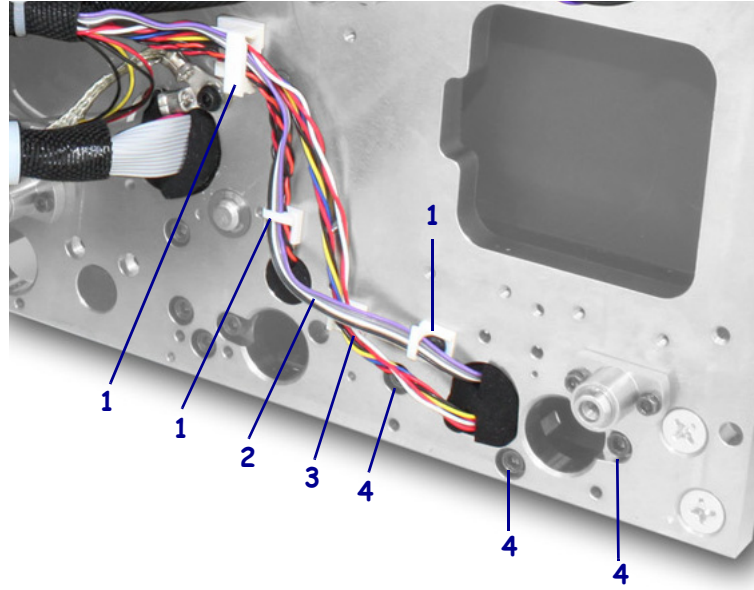


1	Upper segmented pinch roller assembly
2	Pinch roller support plate mounting screws (2)
3	Support pins (2)
4	Lower media shelf assembly

2. Pull the pinch roller support plate off of the two support pins and set aside.

3. See [Figure 234](#). From the electronics side, remove the three mounting screws securing the lower media shelf to the main frame.

Figure 234 • Media Sensor Cable Routing

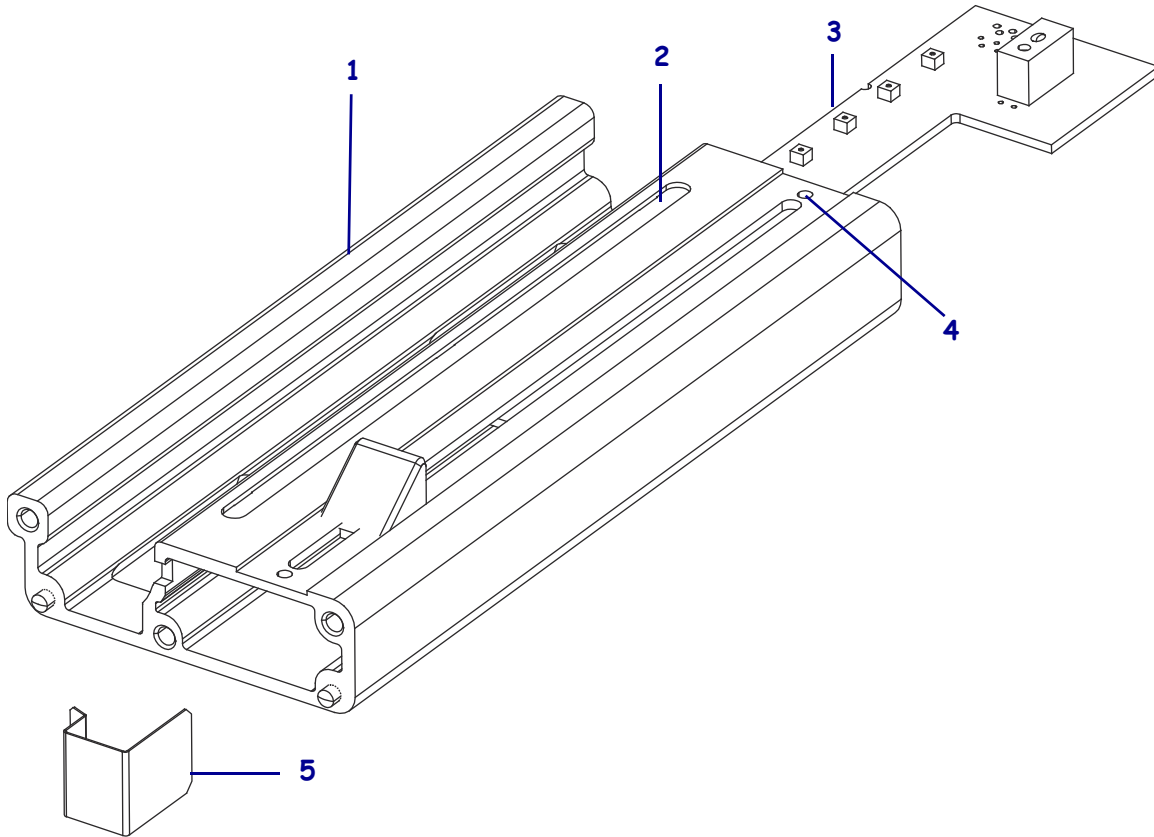


1	Quick release cable clamps
2	Upper media sensor cable
3	Lower media sensor cable
4	Lower media shelf assembly mounting screws (3)

4. Open the quick-release cable clamps securing both media sensor cables.
The lower media sensor cable consists of black, white, two red, blue, and yellow wires.
5. See [Figure 232](#). Disconnect the lower media sensor cable from P9 on the MLB.

6. See [Figure 235](#). Thread the lower media sensor cable through the large opening in the main frame while sliding the lower media shelf assembly out of the media side of the print engine.

Figure 235 • Lower Media Shelf Assembly



1	Lower media shelf
2	Transmissive lens opening
3	Lower media sensor (transmissive emitter)
4	Inboard media guide mounting hole
5	Spring clip

7. Remove the mounting screw securing the inboard media guide.
8. Remove the silver spring clip supporting the outboard end of the media sensor.
9. Gently pull the lower media sensor out of the inboard end of the lower media shelf enclosure.
10. If you wish to change the transmissive sensor lens, push it up and out of the lower media shelf assembly opening.

Replace the Media Sensor

1. See [Figure 235](#). If you are changing the transmissive sensor lens, snap the new lens into opening in the lower media shelf assembly.
2. Starting on the inboard end of the media shelf and with the small end of the lower media sensor, gently slide the lower media sensor into the lower media shelf.
3. From the outboard end of the lower media shelf, insert the silver spring clip to support one side of the media sensor.
4. Reinstall the mounting screw securing the inboard media guide.
5. From the media side, thread the lower media sensor cable through the large opening in the main frame while bringing the lower media shelf toward the main frame.
6. See [Figure 231](#). Insert the upper segmented pinch roller assembly back toward the main frame wall.
7. Thread the upper media sensor cable through the large opening in the main frame.



-
8. **Caution** • Wear protective eyewear when installing or removing E-rings, C-clips, snap rings, springs, and mounting buttons. These are under tension and could fly off.
-

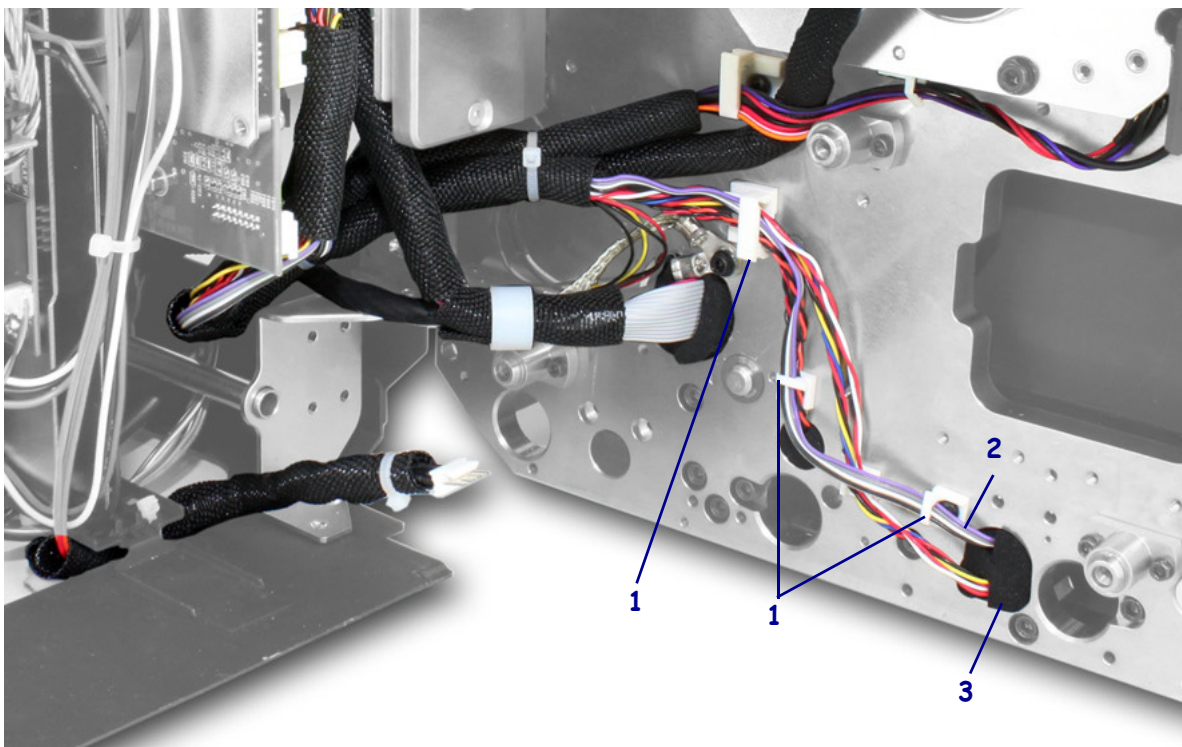
Insert the two spring wire legs into the tiny holes in the main frame and align the upper pinch roller bracket with the three mounting holes.

9. Reinstall the three mounting screws and the cam to secure the upper segmented pinch roller assembly to the main frame.
10. Rotate cam slot to the neutral (horizontal) position.
11. See [Figure 234](#). From the electronics side, reinstall the three mounting screws to secure the lower shelf guide assembly.
12. Open the quick-release cable clamps to secure the media sensor cables, if necessary.
13. Route both media sensor cables through the quick-release cable clamps.
14. See [Figure 232](#). Reconnect the upper media sensor cables to J3 and the lower media sensor cable to P9 on the MLB.
15. See [Figure 233](#). From the media side, align the pinch roller support plate with the two support pins.
16. Reinstall the two mounting screws to secure the pinch roller support plate.

Replace the Upper Segmented Pinch Roller

1. See [Figure 236](#). From the media side, thread the upper sensor media cable through the sealing plug in the main frame.
2. Insert the two wire spring legs into the tiny holes in the main frame and align the upper pinch roller bracket with the three mounting holes.
3. See [Figure 231](#). Reinstall the cam and all three mounting screws to secure the upper segmented pinch roller assembly to the main frame.
4. Rotate the cam slot to a horizontal orientation and tighten the mounting screw to secure the cam in the neutral position.
5. Close the upper segmented pinch roller assembly.
6. See [Figure 236](#). Route the media sensor cable through the quick-release cable clamps and close them.

Figure 236 • Routing the Media Sensor Cable



1	Quick-release cable clamps (2)
2	Media sensor cable (black, white, gray, and purple wires)
3	Sealing plug

7. See [Figure 232](#). Reconnect the upper sensor media cable to J3 on the MLB.

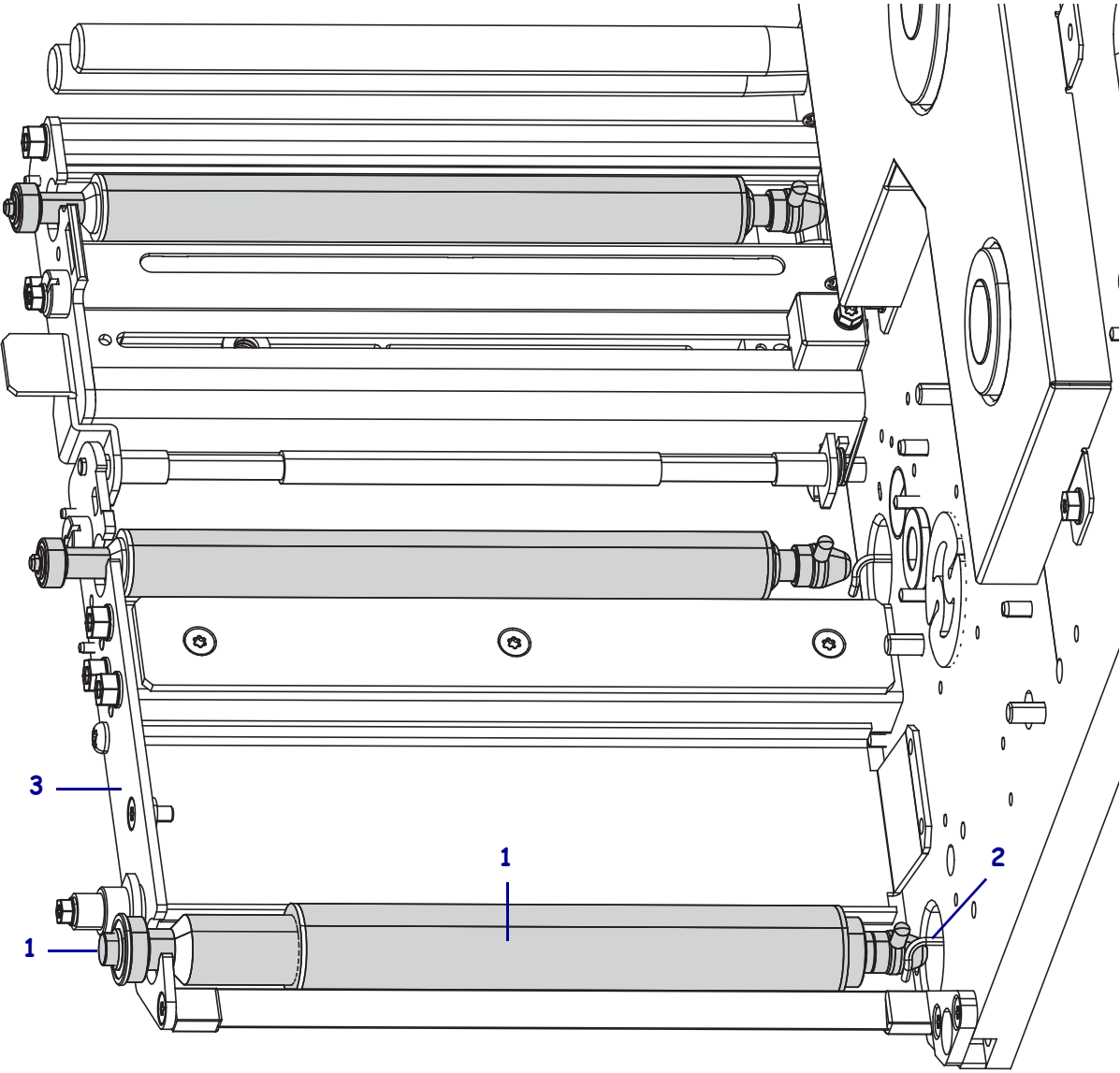
Reinstall the Drive System

1. See [Figure 230](#). Align the drive system with the drive system mounts on the main frame, and reinstall the three 4mm mounting screws.
2. See [Figure 230](#). Reconnect the stepper motor cable connectors. The short cable is wired to the drive motor. The long cable plugs into J4 on the DC power supply board.

Replace the Pinch Roller

- 1. See Figure 237. Starting with the pin end of the roller, align the pin with the slot in the pinch roller coupler.

Figure 237 • Roller Locations
(Top View with Subsystems Removed)



1	Platen roller (shaded)
2	Platen roller coupler
3	Platen roller support plate

2. Lower the other end of the pinch shaft into the large hole on the pinch roller support plate.
3. Push the shaft into the pinch roller coupler to fully seat the pinch shaft.
You will hear a click when the pin is seated correctly or turn the roller slightly to confirm that the roller is firmly seated.
4. See [Figure 226](#). Replace the cam plate on the two support pins on the pinch roller support plate.
5. Reinstall the center mounting screw on the cam plate.
6. Close the upper pinch roller assembly.

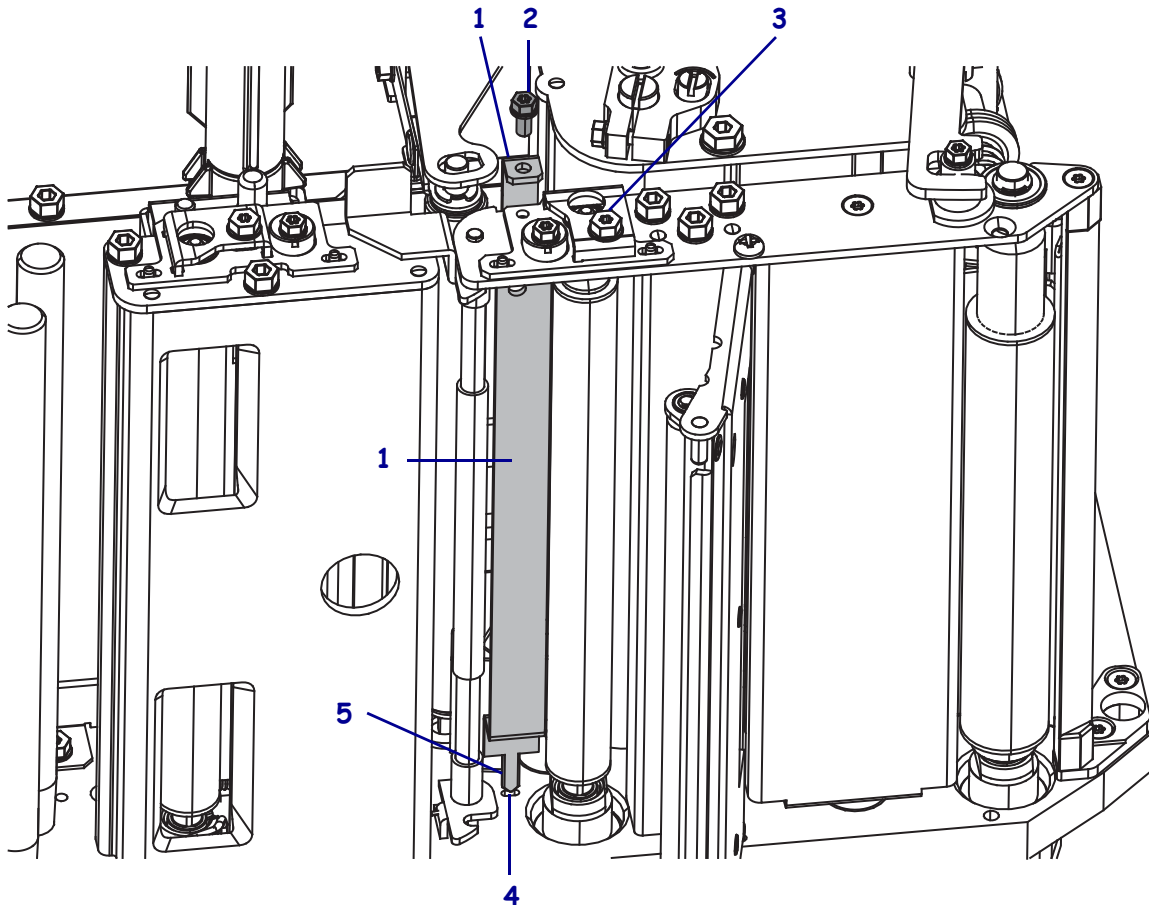
Replace the Peel Roller

1. Starting with the pin end of the roller, align the pin with the slot in the peel roller coupler.
2. Lower the other end of the peel roller shaft into the large hole on the platen roller support plate.
3. Push the shaft into the peel roller coupler to fully seat the peel shaft.
You will hear a click when the pin is seated correctly or turn the roller slightly to confirm that the roller is firmly seated.
4. See [Figure 238](#). Insert the tab on the deflector plate into the main frame slot.



Note • [Figure 238](#) shows the deflector plate separated from the platen roller cam plate. The deflector plate was designed to be attached to the cam plate during removal and installation.

Figure 238 • Deflector Plate



1	Deflector plate
2	Deflector plate mounting screw
3	Platen roller cam plate mounting screw
4	Slot
5	Tab

5. Replace the cam plate on the two support pins on the platen roller support plate.
6. Tighten the center mounting screw on the cam plate.
7. Close the peel roller bracket by pushing up until you hear the click.

Replace the Platen Roller

1. See [Figure 224](#). Starting with the pin end of the roller, align the pin with the slot in the platen roller coupler.
2. Lower the other end of the platen shaft into the large hole on the platen roller support plate.
3. Push the shaft toward the platen pulley to fully seat the platen shaft.
You will hear a click when the pin is seated correctly or turn the roller slightly to confirm that the roller is firmly seated.
4. See [Figure 223](#). Loosen the retaining screw for the platen latch pin, and rotate the latch pin to the closed position. Tighten the screw.
5. Close the printhead.

Close the Electronics Enclosure

1. Ensure that all wires are routed properly and are not causing any obstructions, and then carefully swing the electronics enclosure closed.
2. Adjust the wire clips for the parallel port until they are touching the parallel port.
3. Slide the electronics cover onto the print engine.
4. Reinstall the four electronics cover mounting screws.

Reinstall the Print Engine in the Applicator

1. To reinstall the print engine into the applicator, carefully place the keyhole on the center mounting bolt.



Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.

2. Replace the four corner mounting screws securing the print engine to the applicator.
3. Tighten the center mounting bolt.

Resume Printer Operation

1. Open the front cover.
2. **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.

Unlatch the printhead lever, reinstall the media and ribbon, and close and latch the printhead lever.

3. Ensure that the printhead toggles are positioned evenly across the width of the media.
4. Reconnect the AC power cord and interface cables.
5. Turn on (I) the print engine.

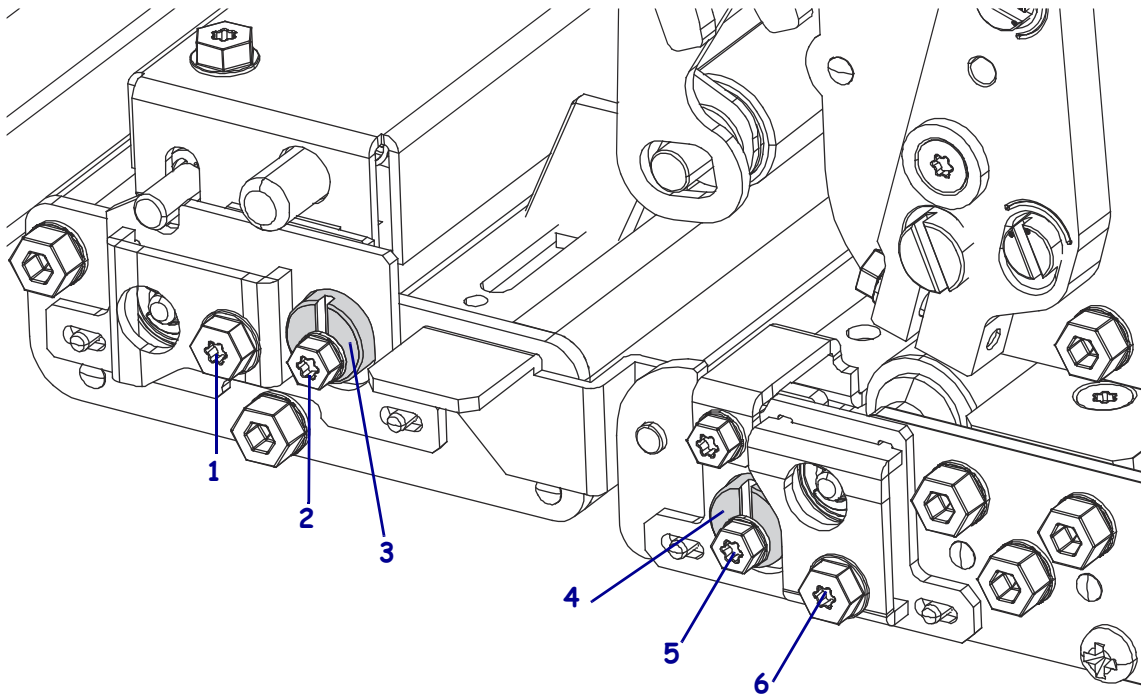
The installation is complete.

Adjust Media Tracking

1. Check the media tracking by performing a PAUSE Self-Test.
2. Adjust the media tracking, if necessary.
3. Which adjustments are necessary?

If you...	Then...
<ul style="list-style-type: none"> • Removed or replaced both of the roller plates 	<ul style="list-style-type: none"> • Perform the <i>Skew Adjustments</i>. • Perform the <i>Media Tension Adjustment across the Peel Bar</i>.
<ul style="list-style-type: none"> • Replaced the upper pinch roller • Replaced the media guide shelf or media sensor • Removed or replaced the pinch roller plate 	<ul style="list-style-type: none"> • Perform the <i>Skew Adjustments</i>. • Perform the <i>Pressure Balance Adjustment (between the Upper and Lower Pinch Rollers)</i>.

Figure 239 • Pinch and Peel Cams

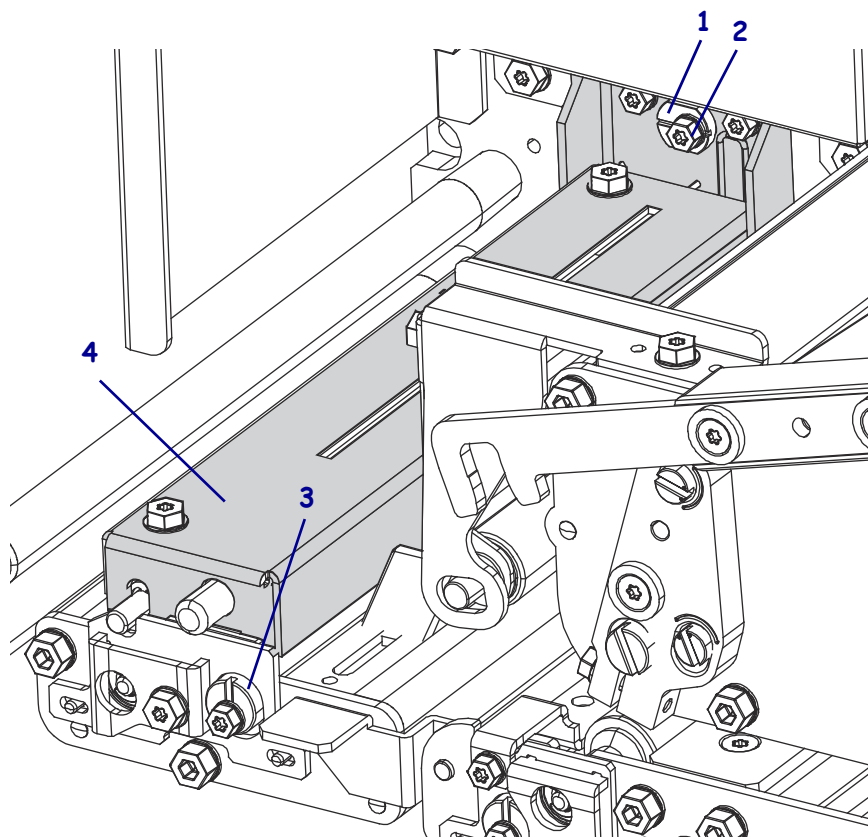


1	Pinch cam plate center mounting screw
2	Pinch cam locking screw
3	Pinch cam (shaded)
4	Peel cam (shaded)
5	Peel cam locking screw
6	Peel cam plate center mounting screw



Note • The pinch and peel cams are in the neutral position when the slot is vertical.

Figure 240 • Upper Segmented Pinch Roller



1	Upper pinch roller cam
2	Upper pinch roller cam locking screw
3	Pinch roller cam
4	Upper segmented pinch roller (shaded)



Note • The steps in these procedures are for the right-hand (RH) print engine. Steps for a left-hand (LH) print engine may be slightly different.

Skew Adjustments

In a RH print engine, perform the following steps:

1. See [Figure 239](#). Loosen the pinch cam plate center mounting screw and the pinch cam locking screw.
2. Using a flat-blade screwdriver, insert the screwdriver into the slot in the pinch cam.
3. Rotate the pinch cam to move the media.
 - Rotate *clockwise* to move the media closer to the inboard (main frame) side of the print engine.
 - Rotate *counterclockwise* to move the media closer to the outboard (media door) side of the print engine.
4. Tighten the pinch cam plate center mounting screw and the pinch cam locking screw.

Pressure Balance Adjustment (between the Upper and Lower Pinch Rollers)

In a RH print engine, perform the following steps:



Note • The upper pinch cam is in the neutral position when the slot is horizontal.

1. See [Figure 240](#). Loosen the upper pinch cam locking screw.
2. Using a flat-blade screwdriver, insert the screwdriver into the slot in the upper pinch cam.
3. Rotate the upper pinch cam to move the media.
 - Rotate *clockwise (upward)* to move the media closer to the outboard (media door) side of the print engine.
 - Rotate *counterclockwise (downward)* to move the media closer to the inboard (main frame) side of the print engine.
4. Tighten the pinch cam plate center mounting screw and the pinch cam locking screw.

The adjustments are complete.

Media Tension Adjustment across the Peel Bar

In a RH print engine, perform the following steps:

1. See [Figure 239](#). Loosen the peel cam plate center mounting screw and the peel cam locking screw.
2. Using a flat-blade screwdriver, insert the screwdriver into the slot in the peel cam.
3. Rotate the peel cam to tension the edge of the media.
 - Rotate *clockwise* to tension the inboard edge of the media (closer to the main frame side of the print engine).
 - Rotate *counterclockwise* to tension the outboard edge of the media (closer to the media door side of the print engine).
4. Hold the peel cam plate in place while tightening the peel cam plate center mounting screw and the peel cam locking screw.

The adjustments are complete.



Ribbon Sensor Maintenance Kit

Installation Instructions

This kit includes the parts and documentation necessary to install the Ribbon Sensor Maintenance Kit in the ZE500™ Series Print Engines. Read these instructions thoroughly before installing this kit.



Caution • This installation must be performed by a qualified service technician.



Note • The graphics and steps in this procedure are for the right-hand (RH) print engine. Steps for a left-hand (LH) print engine may be slightly different.

Parts List

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

Figure 241 • Kit Contents

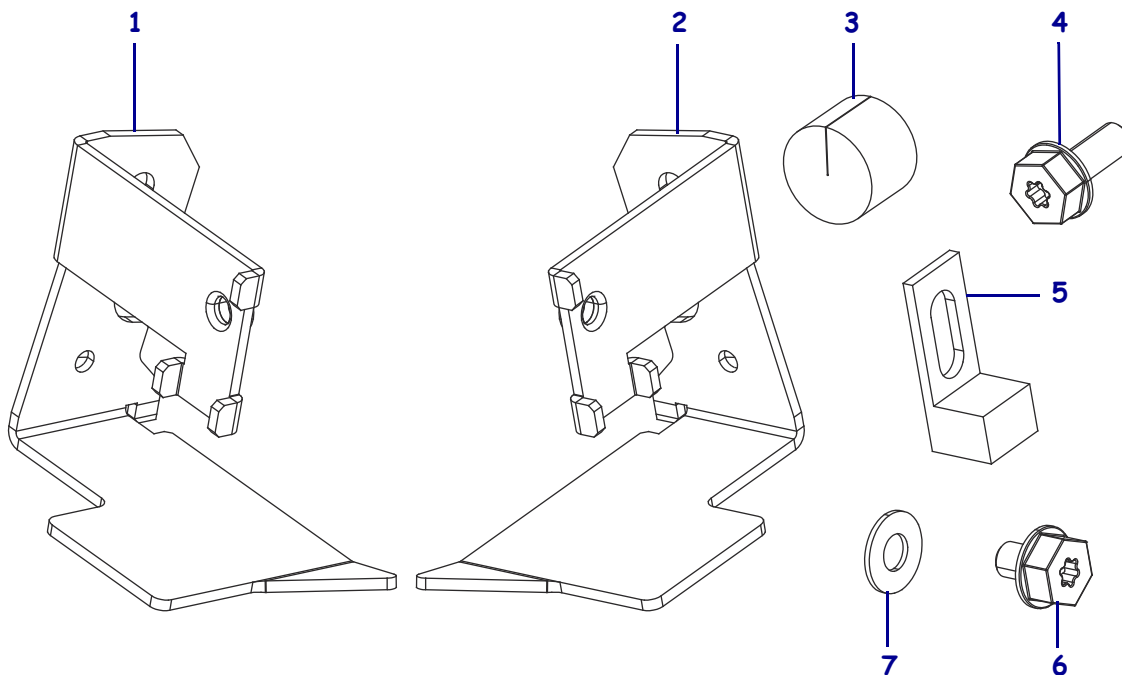


Table 40 • Parts List

✓	Item	Qty	Part Number	Description
	Ref	1	P1046696-031	Ribbon Sensor Maintenance Kit, RH or LH
	1	1	<i>N/A</i>	Bracket, Ribbon Sensor LH
	2	1	<i>N/A</i>	Bracket, Ribbon Sensor RH
	3	1	<i>N/A</i>	Plug, Sealing
	4	1	<i>N/A</i>	Screw, M3 × 8 Hx Tx Ni
	5	1	<i>N/A</i>	Assembly, Ribbon Sensor and Cable
	6	1	<i>N/A</i>	Screw, M3 × 4 Hx Tx Ni Flng
	7	1	HW10470	Washer, Flat M3 Zn (Qty. of 50)
N/A = Not available as a separate part (listed for identification purposes only).				

Tools Required



Tools • You need these tools to complete this procedure:

- Phillips Screwdriver Set
- Metric Hex Key (Allen Wrench) Set
- Anti-Static Wriststrap and Mat
- Flat-blade Screwdriver Set
- Torx Key Set
- Torque Wrench

Remove Power and Data Cables, Ribbon, and Media



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

Connect yourself to an antistatic device.



2. **Caution** • Turn off (O) the print engine and disconnect it from the power source before performing the following procedure.

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


3. **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.

Open the media door, the printhead latch, and remove media and ribbon from the print engine.

4. Close the printhead latch, and then close the media door.

Remove Print Engine from Applicator

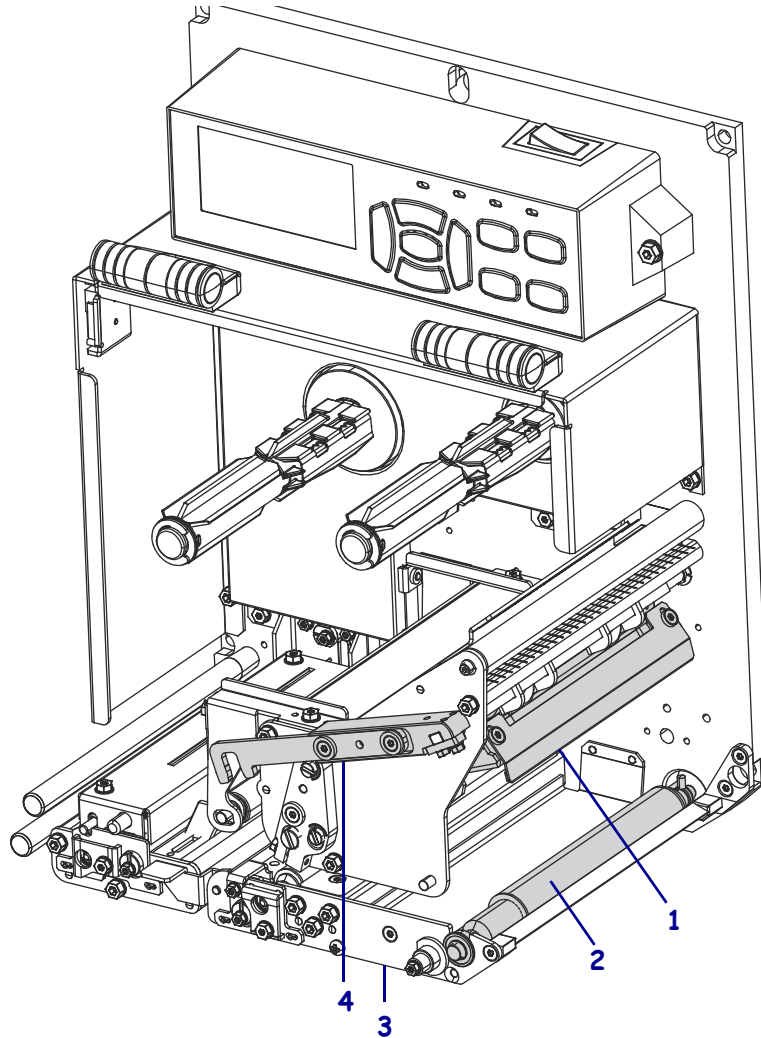
1. Does your applicator (or stand) permit open access to the rear of the print engine?

If you have an...	Then...
Open access	<p>You may swing the print engine open and work on it without removing the unit from the applicator.</p> <p>If you wish to remove the unit from the stand at any time, follow the instructions listed for the <i>Obstructed access</i> type applicator shown in this table.</p> <p>a. Go to <i>Remove the Electronics Cover</i>.</p>
Obstructed access	<p>You must remove the print engine from the applicator before you work on it.</p> <p>a. Remove the four corner mounting screws securing the print engine to the applicator.</p> <p>b. Loosen the center mounting bolt, but do not remove it.</p> <p> Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.</p> <p>c. Lift the print engine off the center mounting bolt and place on a workbench.</p>

Remove the Platen Roller

1. See [Figure 242](#). Using the printhead latch, open the printhead and press up until secured in the open position.

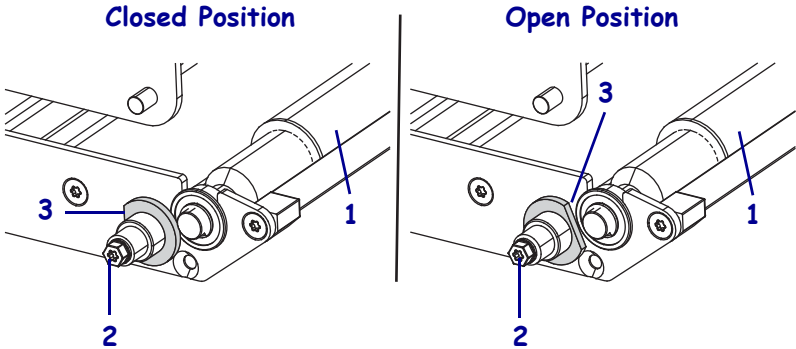
Figure 242 • Open Printhead



1	Printhead (shaded and shown in open position)
2	Platen roller (shaded)
3	Platen roller support plate
4	Printhead latch (shaded and shown in open position)

2. See [Figure 243](#). Using a Torx key, loosen the screw on the latch pin, and rotate the latch pin to the open position.

Figure 243 • Latch Pin



1	Platen roller
2	Latch pin screw
3	Latch pin (shaded)

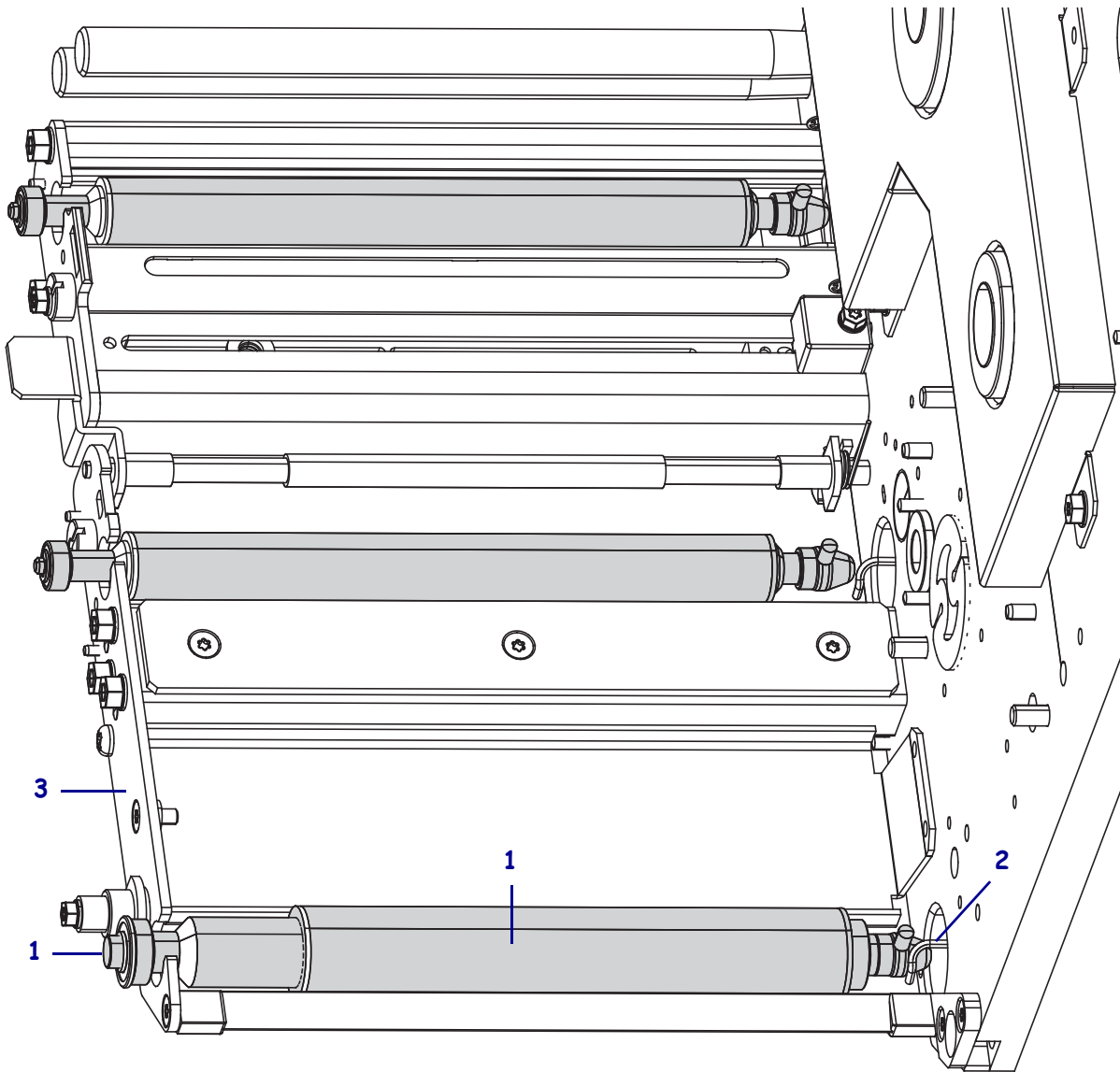
3. See [Figure 244](#). Grasp the platen roller tightly and pull it toward the platen roller support plate to release the pin secured in the platen roller coupler.
The outboard bearing will extend past the end of the platen roller support plate.



Note • You may have to turn the roller slightly to be able to remove the roller.

4. Lift the platen roller out of the print engine.

**Figure 244 • Roller Locations
(Top View with Subsystems Removed)**



1	Platen roller (shaded)
2	Platen roller coupler
3	Platen roller support plate

Remove the Peel Roller

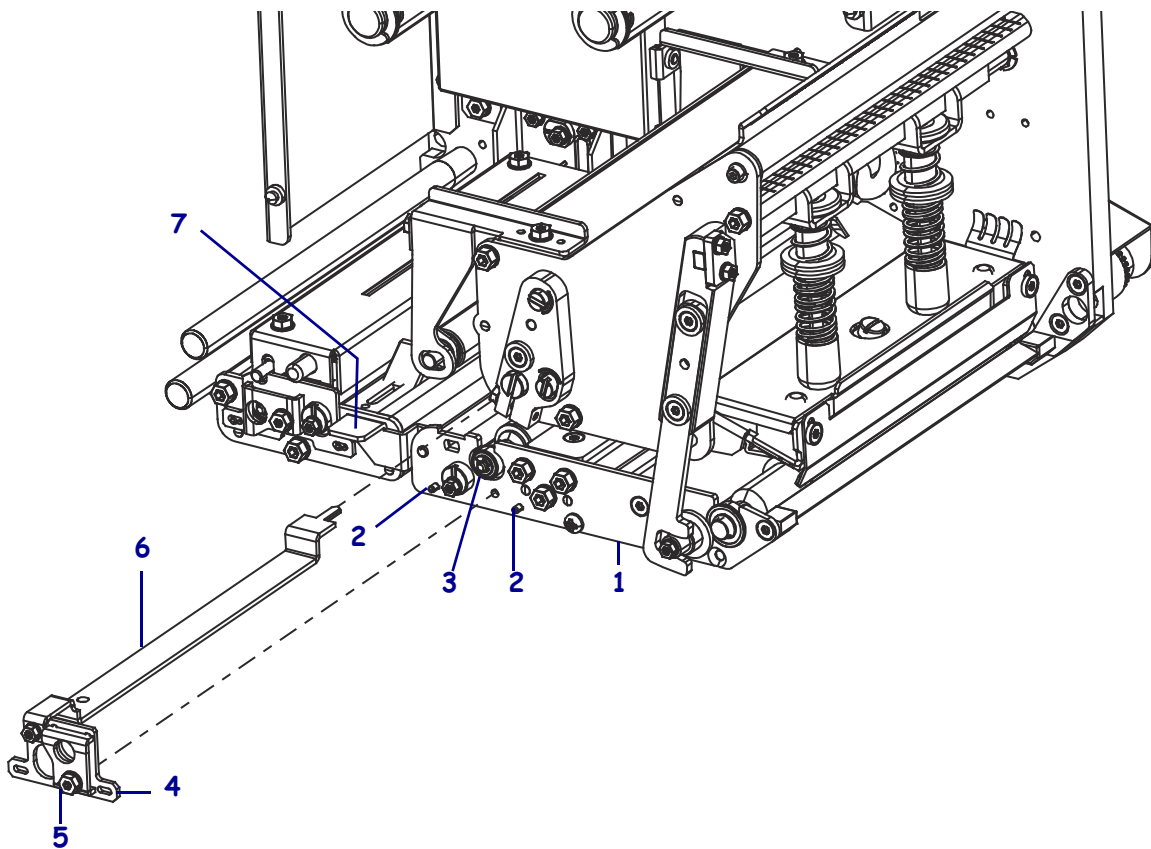
1. To open the peel roller bracket, push up on the latch.
2. See [Figure 245](#). To remove the peel roller cam plate, loosen the center mounting screw to release it from the platen roller support plate.



Note • The center mounting screw is captive within the peel roller cam plate.

3. Pull the peel roller cam plate (with the deflector plate attached) off of the two support pins on the platen roller support plate. Set the cam plate aside.

Figure 245 • Peel Roller



1	Platen roller support plate
2	Support pins
3	Peel roller
4	Peel roller cam plate
5	Peel roller cam plate center mounting screw
6	Peel roller deflector plate
7	Peel roller latch

4. Grasp the peel roller tightly and pull the peel roller toward the platen roller support plate to release the pin secured in the peel roller coupler.

The outboard bearing will extend past the end of the platen roller support plate.



Note • You may have to turn the roller slightly to be able to remove the roller.

5. Lift the peel roller out of the print engine.

Remove the Pinch Roller

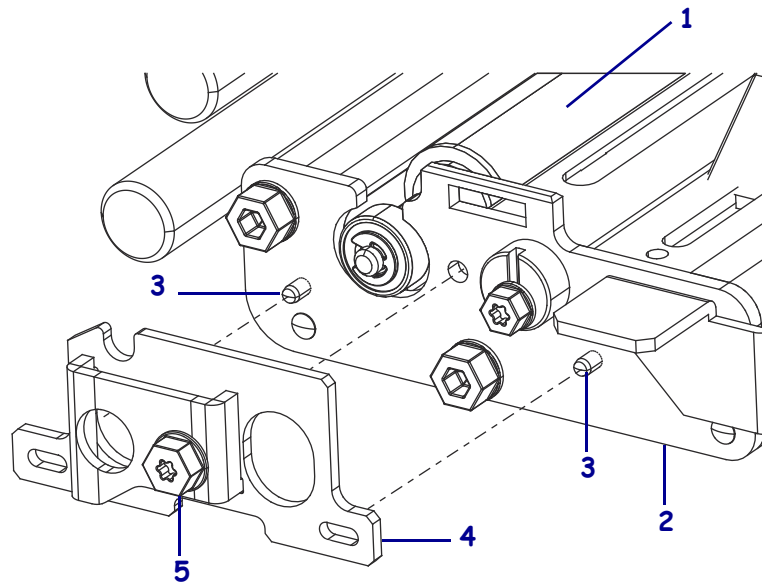
1. Open the upper pinch roller assembly by pressing on the release button located just above the pinch roller cam plate.
2. See [Figure 246](#). To remove the pinch roller cam plate, loosen the center mounting screw to release it from the pinch roller support plate.



Note • The center mounting screw is captive within the pinch roller cam plate.

3. Pull the cam plate off of the two support pins on the pinch roller support plate. Set the cam plate aside.

Figure 246 • Pinch Roller



1	Pinch roller (shaded)
2	Pinch roller support plate
3	Support pins
4	Pinch roller cam plate
5	Cam plate center mounting screw

4. Grasp the pinch roller tightly and pull the pinch roller toward the pinch roller support plate to release the pin secured in the pinch roller coupler.
 The outboard bearing will extend past the end of the platen roller support plate.



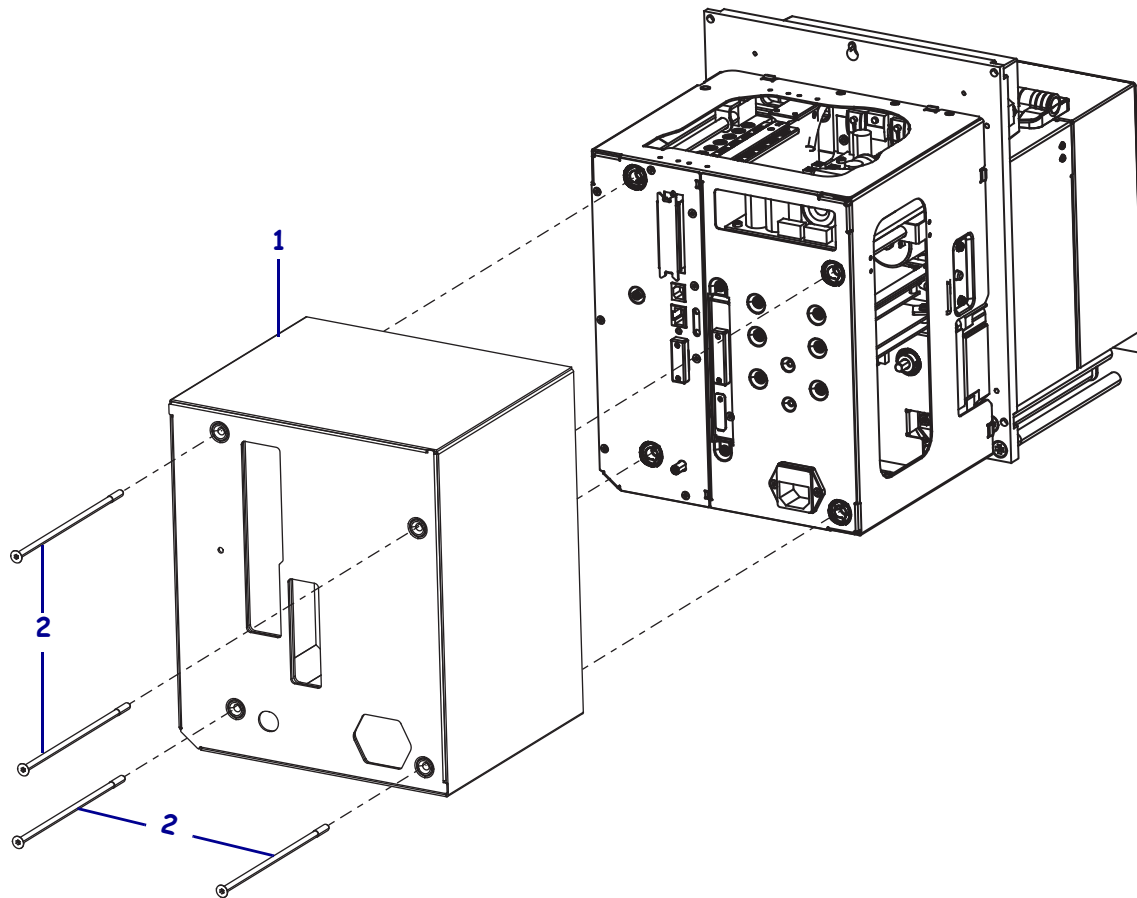
Note • You may have to turn the roller slightly to be able to remove the roller.

5. Lift the pinch roller out of the print engine.

Remove the Electronics Cover

1. See [Figure 247](#). Remove the four long mounting screws securing the electronics cover.

Figure 247 • Electronics Cover



1	Electronics cover
2	Electronics cover mounting screws (4)

2. Slide the electronics cover off of the print engine.

Open the Electronics Enclosure

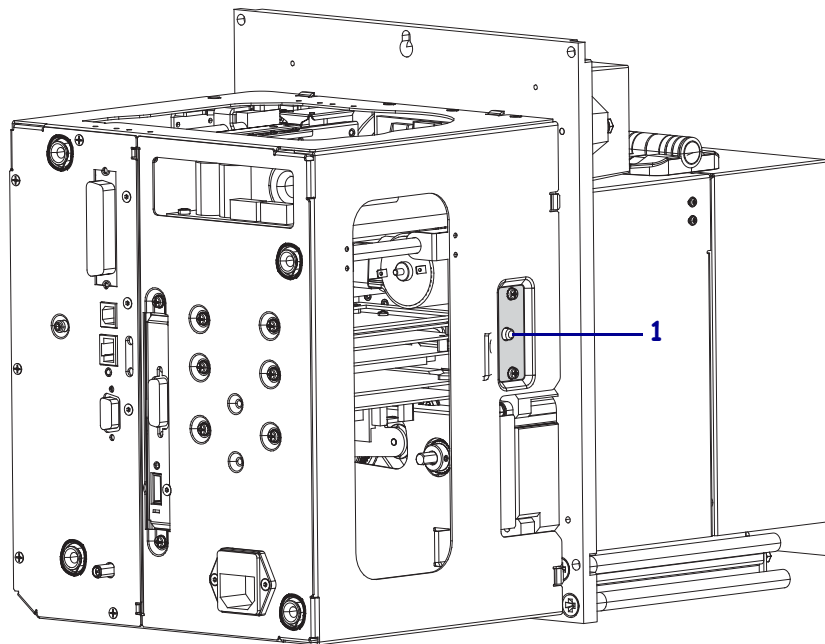
1. See [Figure 248](#). Locate the latch.



Note • For right-hand models, the latch is on the right side when looking from the back of the print engine. For left-hand models, the latch is on the left side.

2. Press the latch and swing the electronics enclosure open.

Figure 248 • Locate the Latch



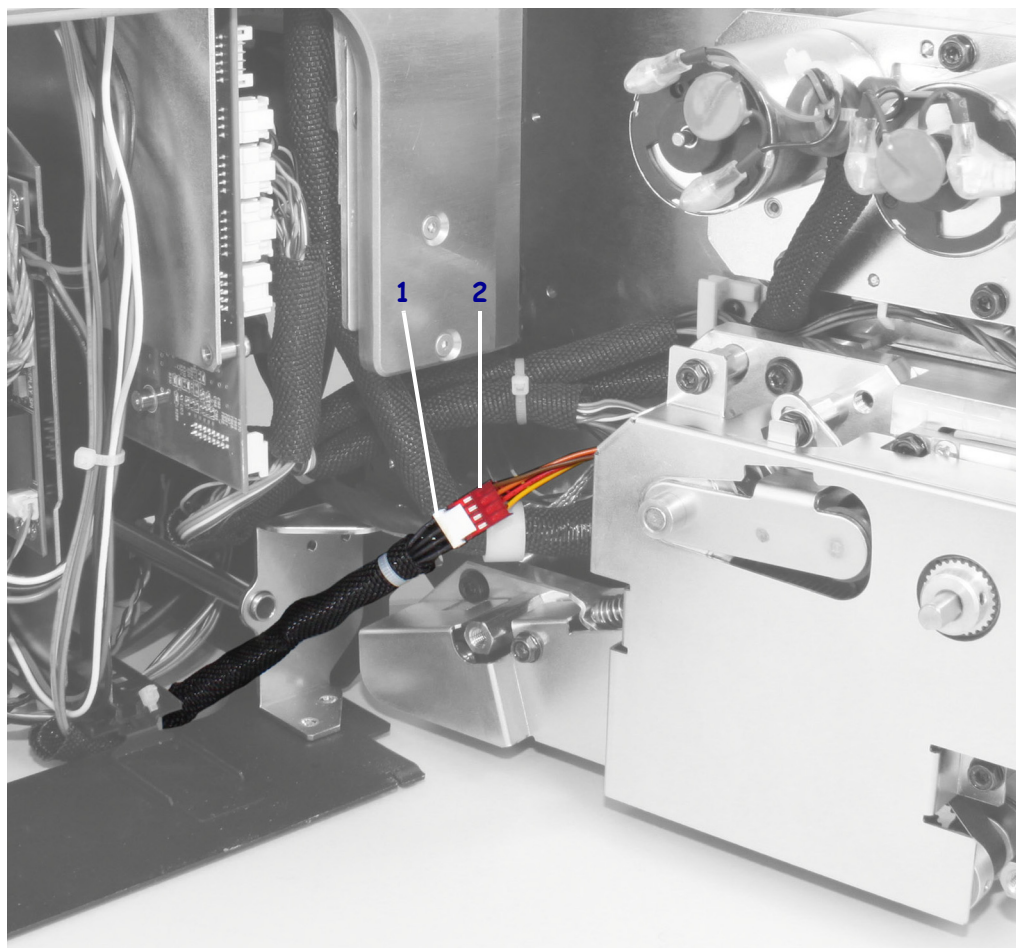
1	Latch
----------	-------

Remove the Drive System

1. See [Figure 249](#). Separate the drive system cable connectors.

The short part of the cable is wired to the stepper motor. The long part of the cable plugs into J4 on the DC power supply board.

Figure 249 • Drive System Cable



1	Long drive system cable goes to the DC power supply
2	Short drive system cable connector goes to the stepper motor

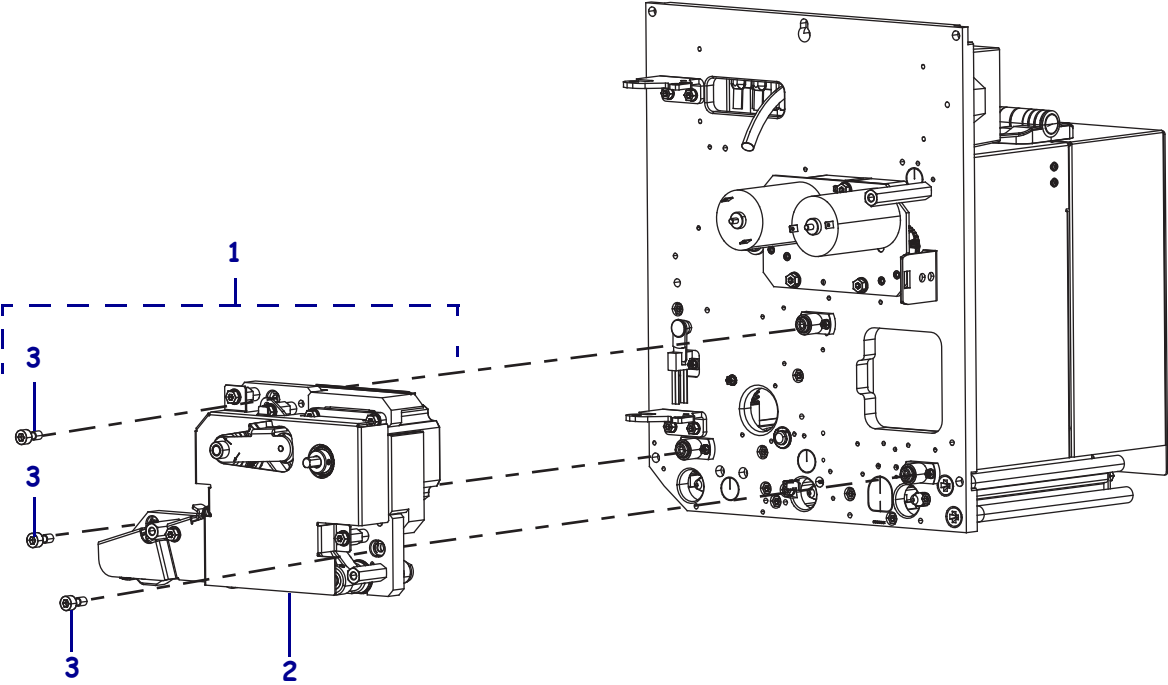
2. See [Figure 250](#). Loosen the three 4 mm mounting screws to release the drive system from the main frame.



Note • The three 4 mm mounting screws are captive within the drive system.

3. Remove the drive system from the main frame.

Figure 250 • Remove the Drive System

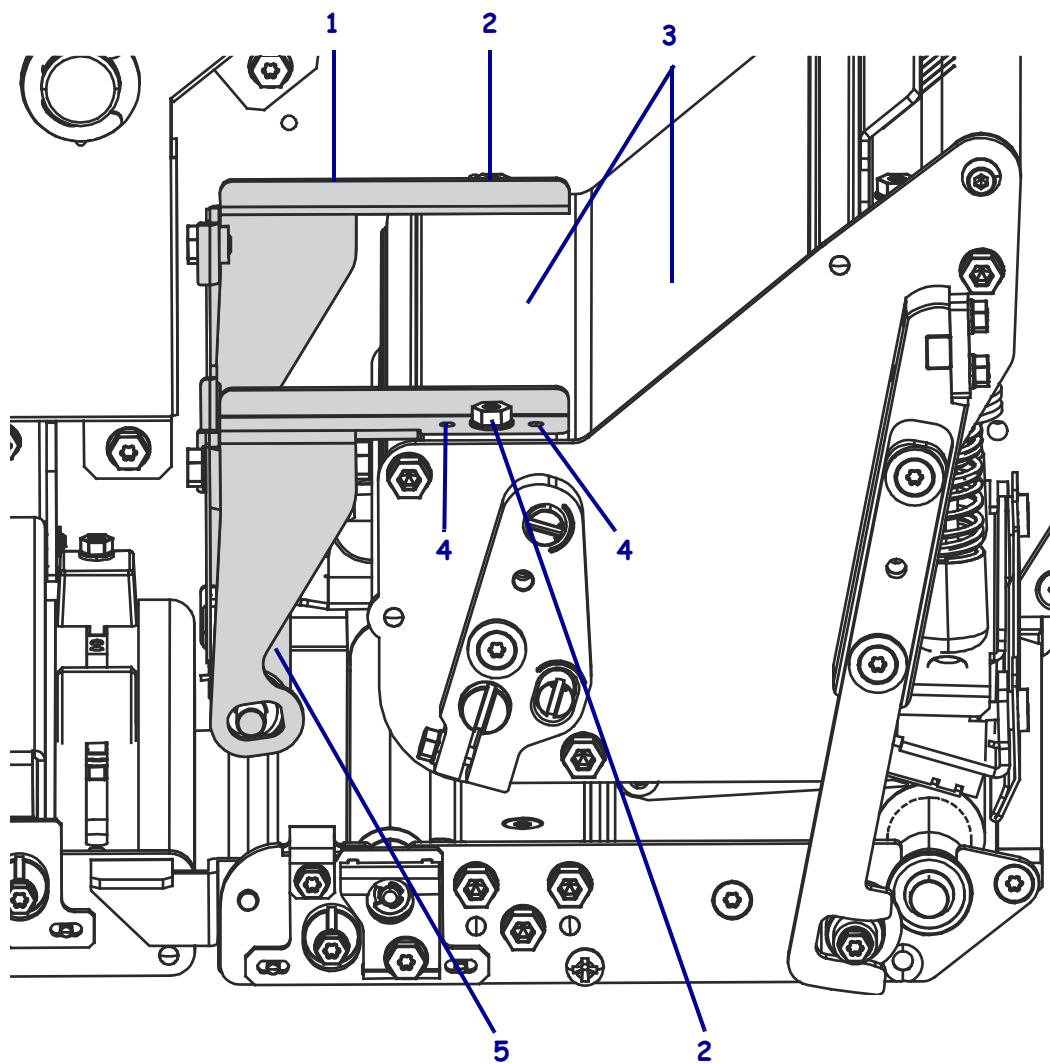


1	Drive system
2	Drive system cover
3	Drive system mounting screws (3)

Remove the Dancer Assembly

1. See [Figure 251](#). Remove the two mounting screws securing the dancer bracket to the print mechanism extrusion.

Figure 251 • Dancer Bracket, Roller, and Mounting Screws

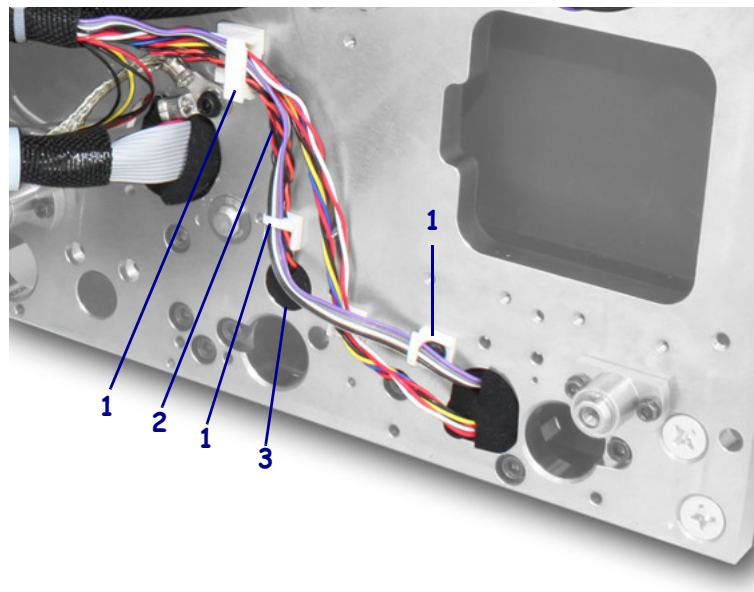


1	Dancer bracket
2	Dancer bracket mounting screws (2)
3	Print mechanism extrusion
4	Locators (4)
5	Dancer roller

Remove the Ribbon Sensor Bracket

1. Disconnect the ribbon sensor cable from P4 on the main logic board (MLB).
2. Trace the ribbon sensor cable from the MLB to the main frame. Remove the ribbon sensor cable from any flexible conduit and cut any cable ties securing it.
3. Open the quick-release cable clamps securing the ribbon sensor cable and remove it.
 The ribbon sensor cable consists of two sets of red and black wires twisted together.

Figure 252 • Ribbon Sensor Cable Routing

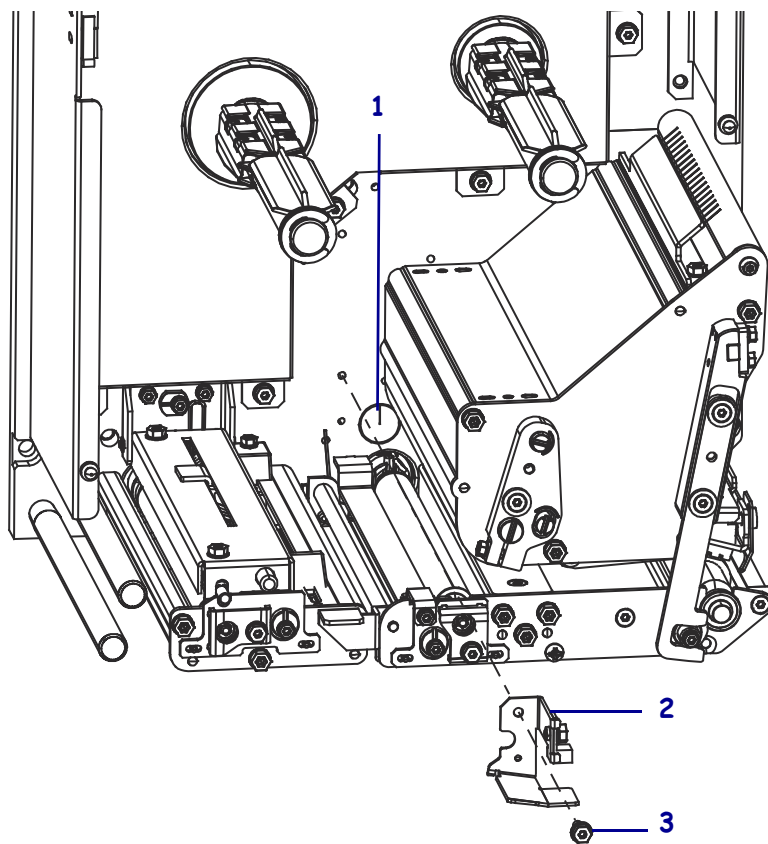


1	Quick release cable clamps
2	Sensor cable
3	Sealing plug

4. Remove the sealing plug and pull the ribbon sensor cable out of it.
5. Thread the ribbon sensor cable through the opening in the main frame.

6. See [Figure 253](#). Remove the ribbon sensor mounting screw.

Figure 253 • Ribbon Sensor Bracket



1	Sealing plug
2	Ribbon sensor bracket assembly
3	Ribbon sensor mounting screw

Replace the Ribbon Sensor Bracket

1. Align the sensor slot with the ribbon bracket arm (either RH or LH) for your print engine.

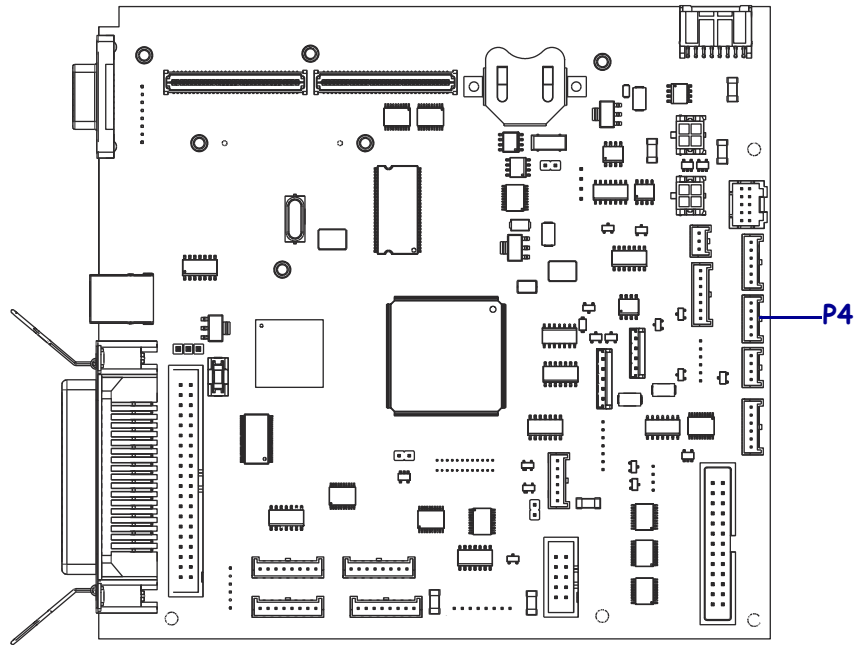


Note • Ensure that the sensor is seated between the three tabs on the ribbon bracket arm.

2. Install the washer and the shorter mounting screw (provided in this kit) through the sensor to secure it to the bracket. Tighten the screw just enough to hold the sensor in place.
3. Adjust the height of the ribbon sensor to be 0.385 in. (9.78 mm) above the reflective label on the ribbon sensor bracket.
4. Using a torque wrench, tighten the mounting screw to 5 in-lbs.
5. See [Figure 253](#). Align the ribbon sensor bracket with the mounting hole in the main frame and replace the ribbon sensor mounting screw.
6. Thread the ribbon sensor cable through the opening in the main frame.
7. Replace the ribbon sensor cable through the sealing plug and replace the plug in the main frame.
8. Route the ribbon sensor cable through the quick-release cable clamps to secure it.
9. Wrap the ribbon sensor cable in the flexible conduit and replace the cable tie to secure the cables.

10. See [Figure 254](#). Connect the ribbon sensor cable to P4 on the MLB.

Figure 254 • MLB Connections



P4	Ribbon Sensor
----	---------------

Replace the Dancer Assembly

1. See [Figure 251](#). Reinstall the two mounting screws to secure the dancer bracket to the print mechanism extrusion.
2. Slide the bracket away from the toggles and tighten the mounting screws.



Note • Ensure that the dancer roller is parallel to the print mechanism extrusion. If required, each side of the bracket may be adjusted independently to assist with parallelism.

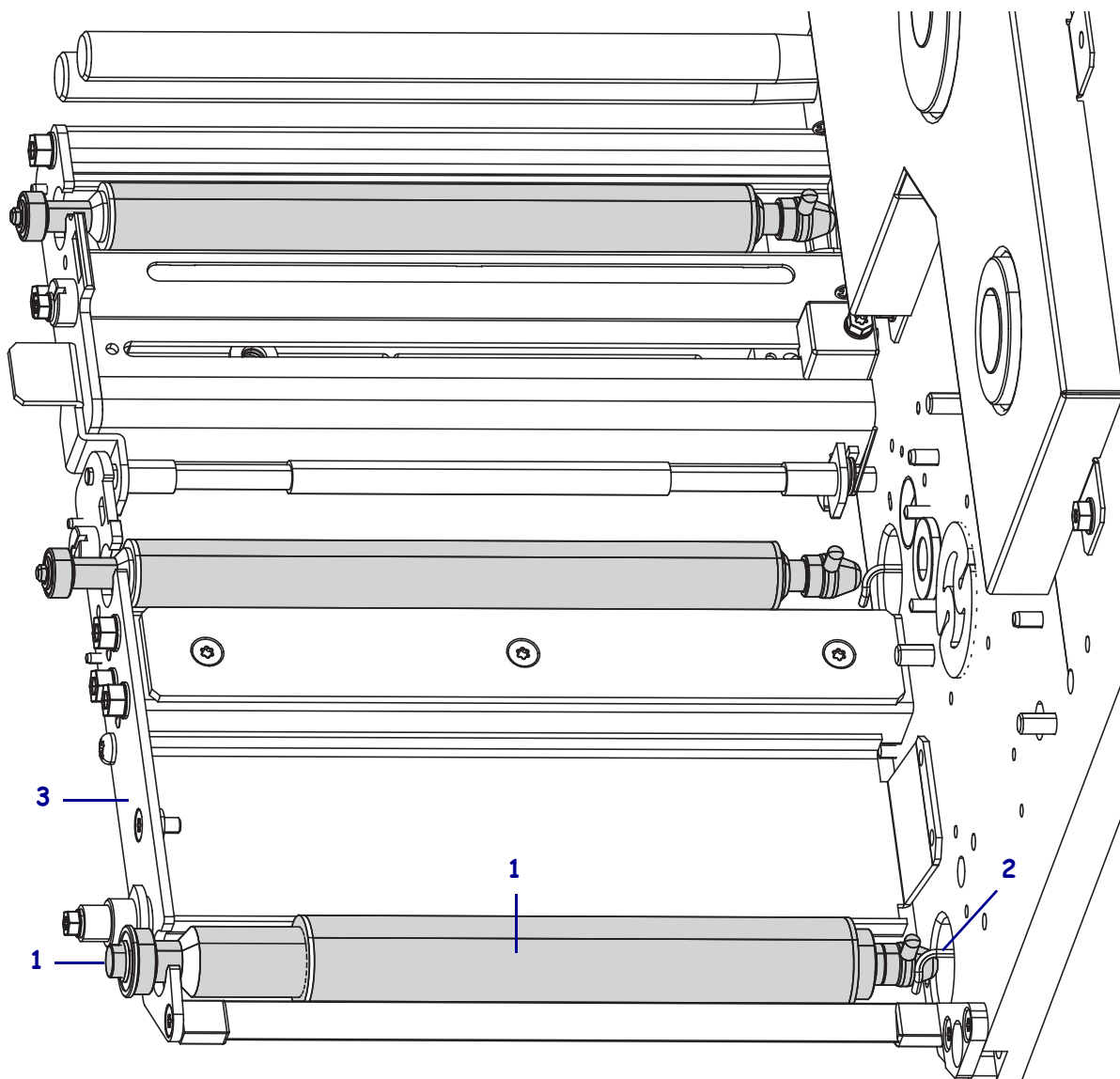
Reinstall the Drive System

1. See [Figure 250](#). Align the drive system with the drive system mounts on the main frame, and reinstall the three 4mm mounting screws.
2. See [Figure 249](#). Reconnect the stepper motor cable connectors. The short cable is wired to the drive motor. The long cable plugs into J4 on the DC power supply board.

Replace the Pinch Roller

1. See [Figure 255](#). Starting with the pin end of the roller, align the pin with the slot in the pinch roller coupler.

**Figure 255 • Roller Locations
(Top View with Subsystems Removed)**



1	Platen roller (shaded)
2	Platen roller coupler
3	Platen roller support plate

2. Lower the other end of the pinch shaft into the large hole on the pinch roller support plate.
3. Push the shaft into the pinch roller coupler to fully seat the pinch shaft.
You will hear a click when the pin is seated correctly or turn the roller slightly to confirm that the roller is firmly seated.
4. See [Figure 246](#). Replace the cam plate on the two support pins on the pinch roller support plate.
5. Reinstall the center mounting screw on the cam plate.
6. Close the upper pinch roller assembly.

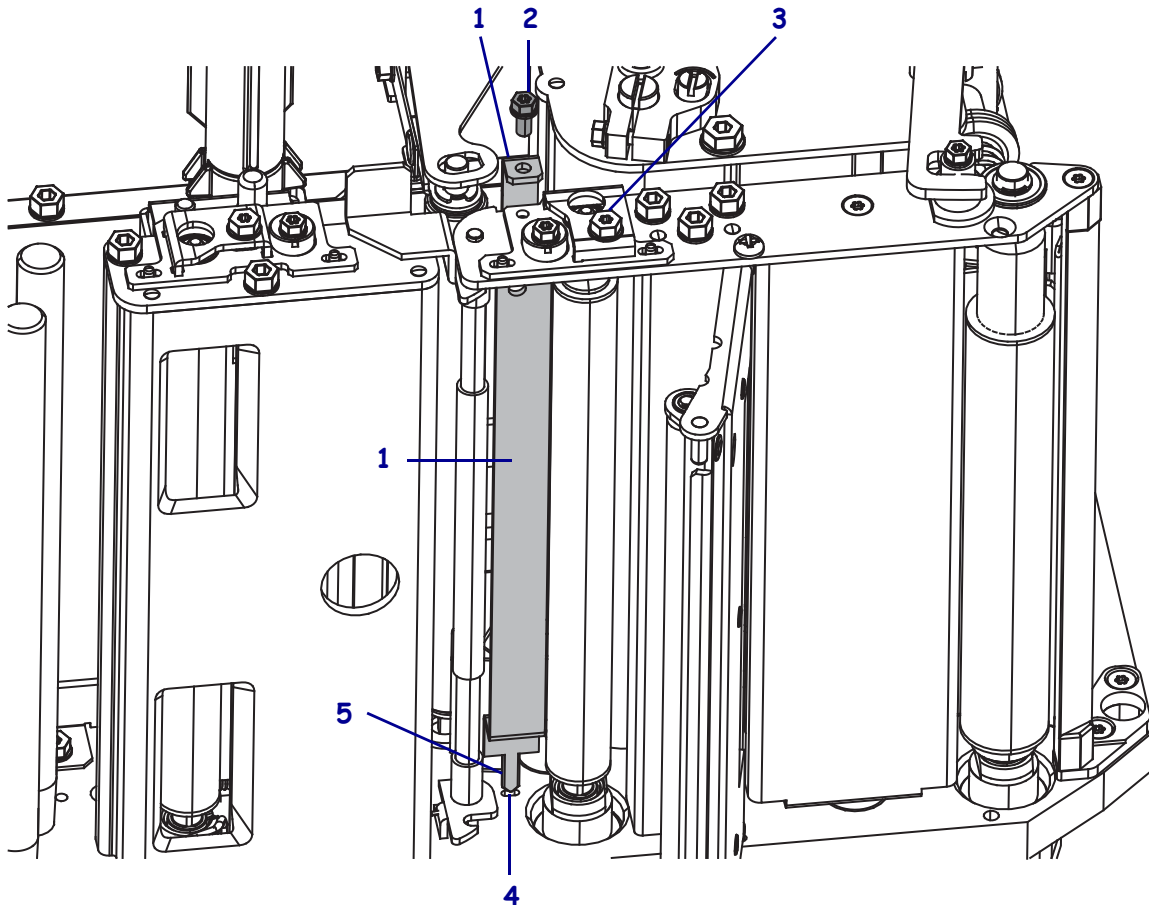
Replace the Peel Roller

1. Starting with the pin end of the roller, align the pin with the slot in the peel roller coupler.
2. Lower the other end of the peel roller shaft into the large hole on the platen roller support plate.
3. Push the shaft into the peel roller coupler to fully seat the peel shaft.
You will hear a click when the pin is seated correctly or turn the roller slightly to confirm that the roller is firmly seated.
4. See [Figure 256](#). Insert the tab on the deflector plate into the main frame slot.



Note • [Figure 256](#) shows the deflector plate separated from the platen roller cam plate. The deflector plate was designed to be attached to the cam plate during removal and installation.

Figure 256 • Deflector Plate



1	Deflector plate
2	Deflector plate mounting screw
3	Platen roller cam plate mounting screw
4	Slot
5	Tab

5. Replace the cam plate on the two support pins on the platen roller support plate.
6. Tighten the center mounting screw on the cam plate.
7. Close the peel roller bracket by pushing up until you hear the click.

Replace the Platen Roller

1. See [Figure 244](#). Starting with the pin end of the roller, align the pin with the slot in the platen roller coupler.
2. Lower the other end of the platen shaft into the large hole on the platen roller support plate.
3. Push the shaft toward the platen pulley to fully seat the platen shaft.
You will hear a click when the pin is seated correctly or turn the roller slightly to confirm that the roller is firmly seated.
4. See [Figure 243](#). Loosen the retaining screw for the platen latch pin, and rotate the latch pin to the closed position. Tighten the screw.
5. Close the printhead.

Close the Electronics Enclosure

1. Ensure that all wires are routed properly and are not causing any obstructions, and then carefully swing the electronics enclosure closed.
2. Adjust the wire clips for the parallel port until they are touching the parallel port.
3. Slide the electronics cover onto the print engine.
4. Reinstall the four electronics cover mounting screws.

Reinstall the Print Engine in the Applicator

1. To reinstall the print engine into the applicator, carefully place the keyhole on the center mounting bolt.



Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.

2. Replace the four corner mounting screws securing the print engine to the applicator.
3. Tighten the center mounting bolt.

Resume Printer Operation

1. Open the front cover.
2. **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.

Unlatch the printhead lever, reinstall the media and ribbon, and close and latch the printhead lever.

3. Ensure that the printhead toggles are positioned evenly across the width of the media.
4. Reconnect the AC power cord and interface cables.
5. Turn on (I) the print engine.

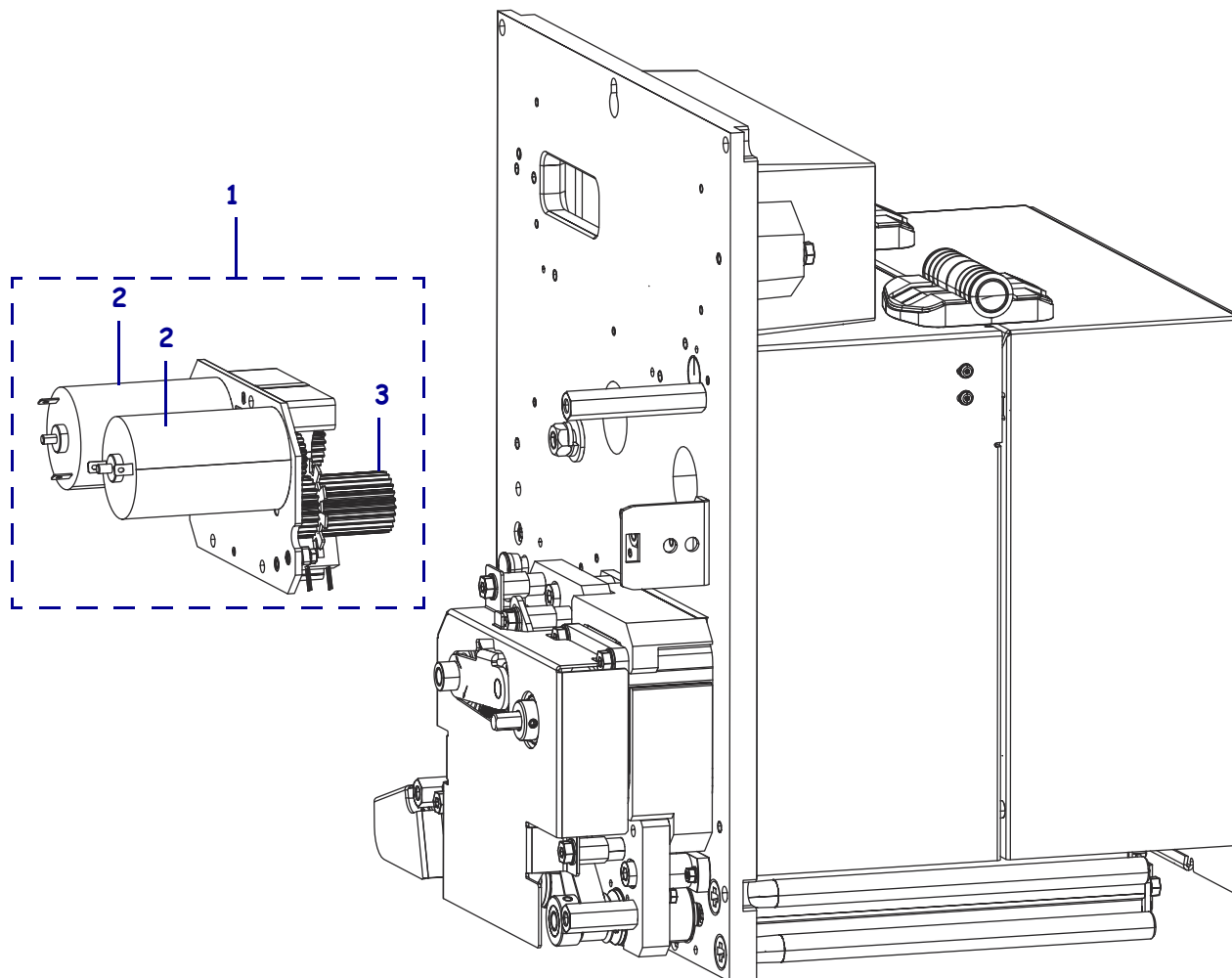
The installation is complete.

Ribbon System Replacements

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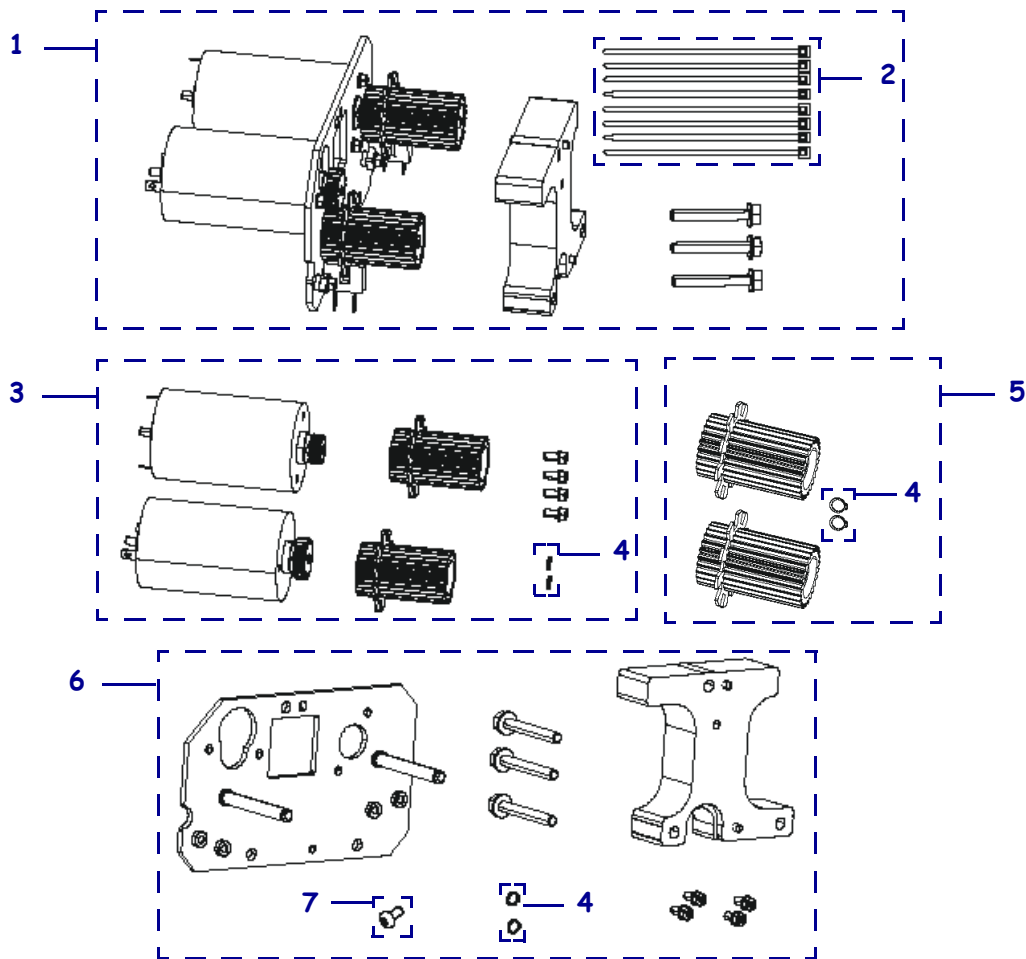
Figure 257 • Ribbon System Overview
(Electronics Side)



**Table 41 • Ribbon System Overview
 (Electronics Side)**

Item	Part Number	Description
1	P1046696-035	ZE500 Series Ribbon Drive System Maintenance Kit RH, see Table 42 on page 473 .
	P1046696-036	ZE500 Series Ribbon Drive System Maintenance Kit LH, see Table 42 on page 473 .
2	P1046696-039	ZE500 Series Ribbon Drive Motors Maintenance Kit, see Table 42 on page 473 .
3	P1046696-040	ZE500 Series Ribbon Drive System Gears Maintenance Kit, see Table 42 on page 473 .

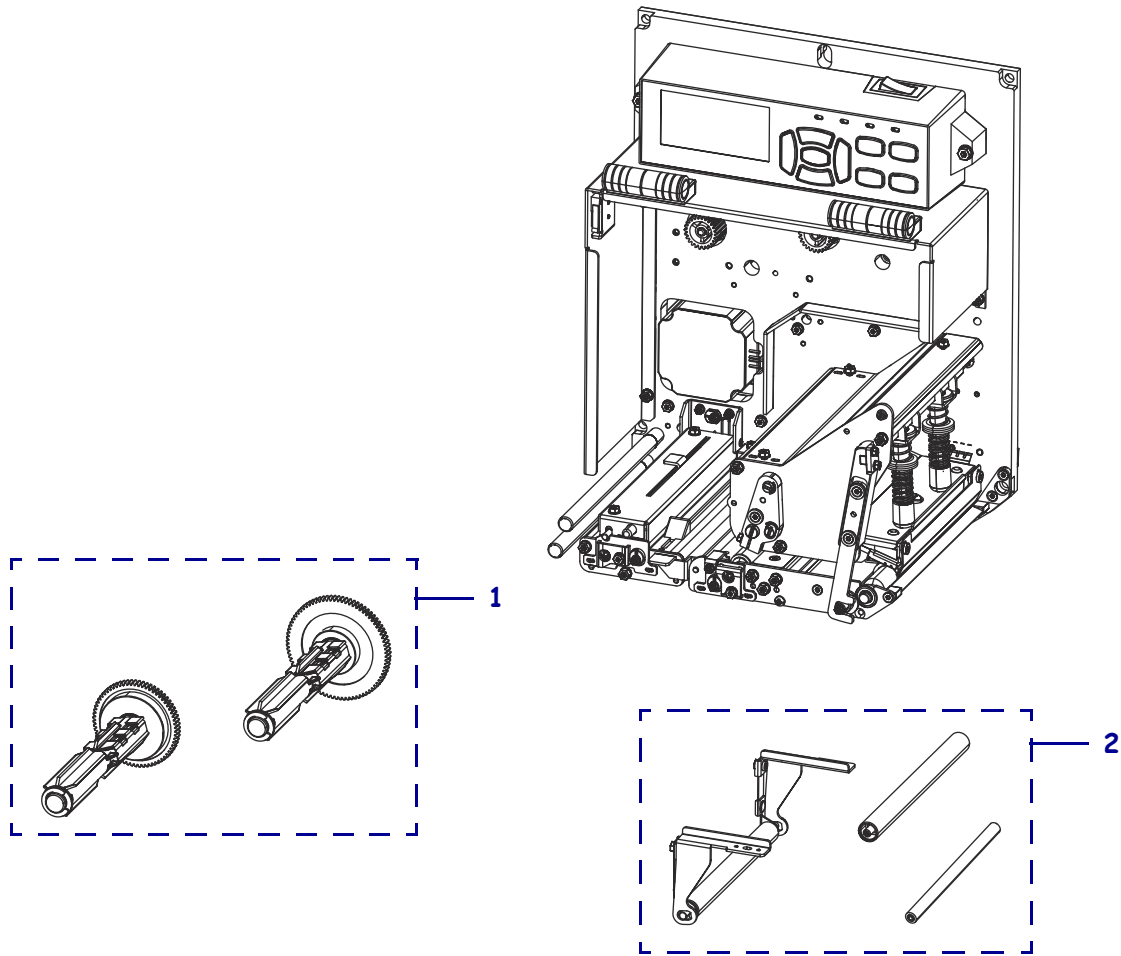
Figure 258 • Ribbon System Kits
(Electronics Side)



**Table 42 • Ribbon System Kits Parts List
 (Electronics Side)**

Item	Part Number	Description
1	P1046696-035	ZE500 Series Ribbon Drive System Maintenance Kit, RH See Ribbon Drive System Maintenance Kit on page 478 .
	P1046696-036	ZE500 Series Ribbon Drive System Maintenance Kit, LH See Ribbon Drive System Maintenance Kit on page 478 .
2	HWQ06020	Cable Tie, 0.09 × 3.62 (sold in quantities of 20)
3	P1046696-039	ZE500 Series Ribbon Drive Motors Maintenance Kit See Ribbon Drive Motors Maintenance Kit on page 488 .
4	HW49195	Ring, Retaining (Qty. of 10)
5	P1046696-040	ZE500 Series Ribbon Drive System Gears Maintenance Kit See Ribbon Drive System Gears Maintenance Kit on page 505 .
4	HW49195	Ring, Retaining (Qty. of 10)
6	P1046696-045	ZE500 Series Ribbon Drive System Mounting Hardware Maintenance Kit See Ribbon Drive System Mounting Hardware Maintenance Kit on page 517 .
4	HW49195	Ring, Retaining (Qty. of 10)
7	HW78804	Screw, M3 × 0.5 × 6 (Qty. of 50)

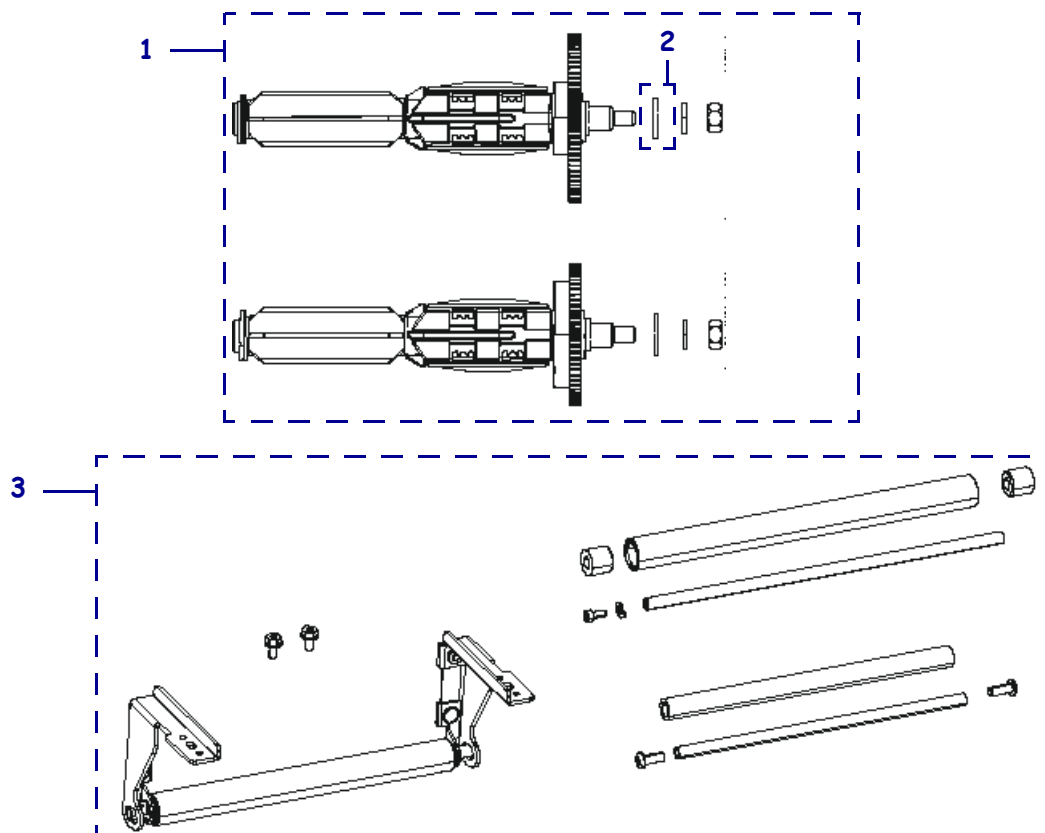
Figure 259 • Ribbon System Overview
(Media Side)



**Table 43 • Ribbon System Overview
 (Media Side)**

Item	Part Number	Description
1	P1046696-037	ZE500-4 Ribbon Spindles Maintenance Kit, RH/LH, see Table 44 on page 477 .
	P1046696-038	ZE500-6 Ribbon Spindles Maintenance Kit, RH/LH, see Table 44 on page 477 .
2	P1046696-041	ZE500-4 Dancer and Ribbon Rollers Maintenance Kit, RH & LH, see Table 44 on page 477 .
	P1046696-042	ZE500-6 Dancer and Ribbon Rollers Maintenance Kit, RH & LH, see Table 44 on page 477 .

Figure 260 • Ribbon System Kits
(Media Side)



**Table 44 • Ribbon System Kits Parts List
 (Media Side)**

Item	Part Number	Description
1	P1046696-037	ZE500-4 Ribbon Spindles Maintenance Kit, RH/LH See Ribbon Spindles Maintenance Kit on page 573 .
	P1046696-038	ZE500-6 Ribbon Spindles Maintenance Kit, RH/LH See Ribbon Spindles Maintenance Kit on page 573 .
2	HW45935	Washer, Flat 0.625 × 0.265 (Qty of 25)
3	P1046696-041	ZE500-4 Dancer and Ribbon Rollers Maintenance Kit, RH & LH See Dancer and Ribbon Rollers Maintenance Kit on page 532 .
	P1046696-042	ZE500-6 Dancer and Ribbon Rollers Maintenance Kit, RH & LH See Dancer and Ribbon Rollers Maintenance Kit on page 532 .



Ribbon Drive System Maintenance Kit

Installation Instructions

This kit includes the parts and documentation necessary to install the Ribbon Drive System Maintenance Kit in the ZE500™ Series Print Engines. Read these instructions thoroughly before installing this kit.



Caution • This installation must be performed by a qualified service technician.

Parts List

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



Note • The sensors and motors come with the cables attached, but are not shown in some of the figures.

Figure 261 • Kit Contents

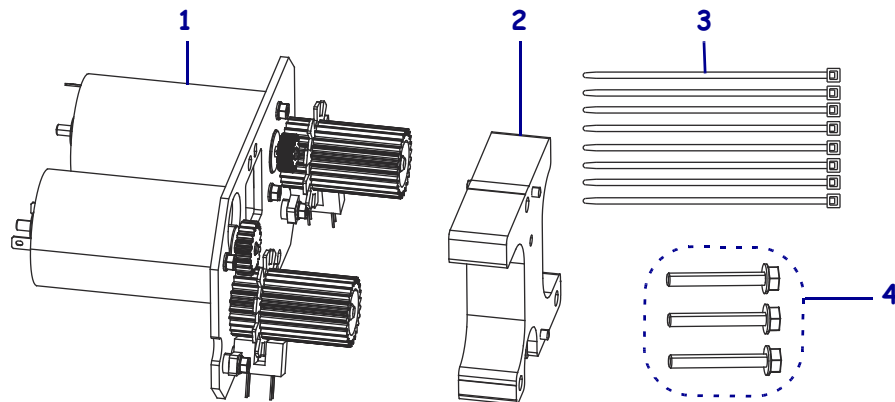


Table 45 • Parts List

✓	Item	Qty	Part Number	Description
	Ref	1	P1046696-035	Ribbon Drive System Maintenance Kit RH
	Ref	1	P1046696-036	Ribbon Drive System Maintenance Kit LH
	1	1	N/A	Ribbon Drive System Assembly
	2	1	N/A	Heat Sink, Motor Distance
	3	8	HWQ06020	Cable Tie
	4	3	N/A	Screw, M4 × 30 HX SO ZN

N/A = Not available as a separate part (listed for identification purposes only).

Tools Required



Tools • You need these tools to complete this procedure:

- Phillips Screwdriver Set
- Diagonal Cutter
- Antistatic Wriststrap and Mat
- Metric Hex Key (Allen Wrench) Set
- Flat-blade Screwdriver Set

Remove Power and Data Cables



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

Connect yourself to an antistatic device.




2. **Caution** • Turn off (O) the print engine and disconnect it from the power source before performing the following procedure.

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

Remove Print Engine from Applicator

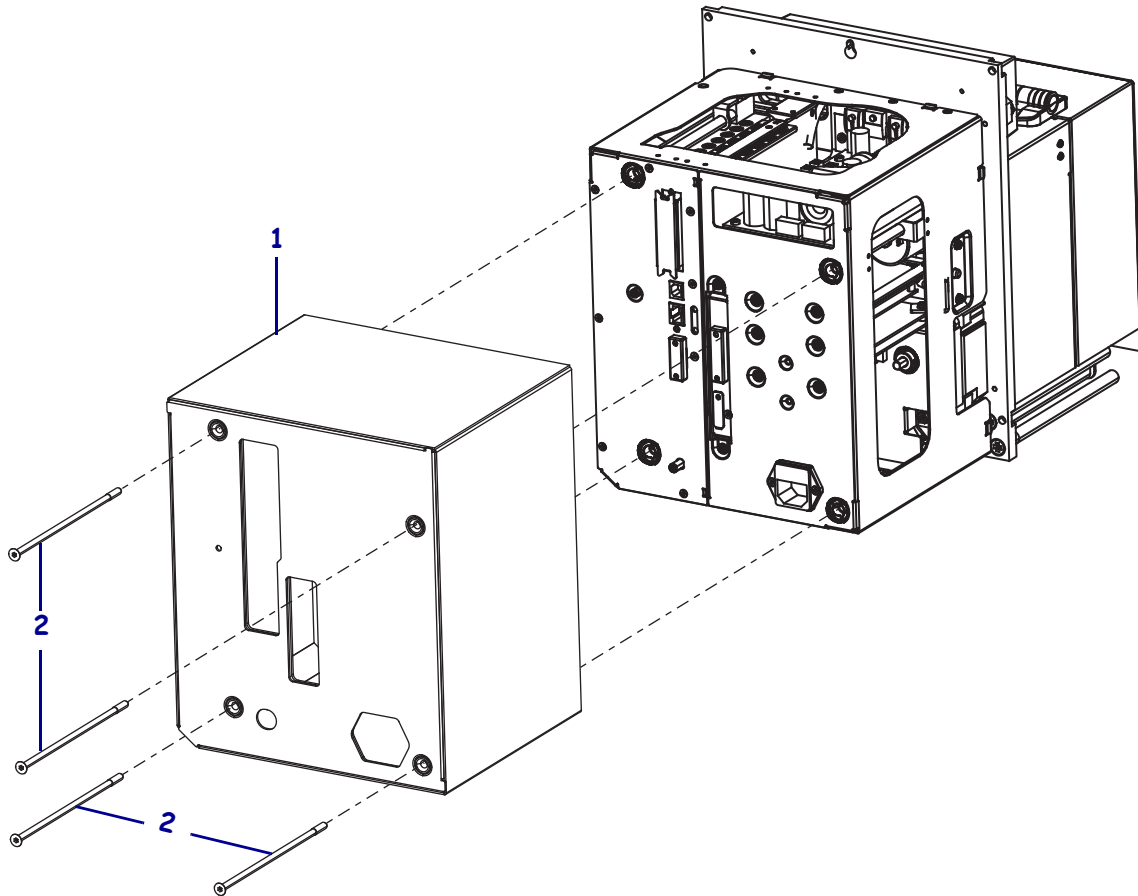
1. Does your applicator (or stand) permit open access to the rear of the print engine?

If you have an...	Then...
Open access	<p>You may swing the print engine open and work on it without removing the unit from the applicator.</p> <p>If you wish to remove the unit from the stand at any time, follow the instructions listed for the <i>Obstructed access</i> type applicator shown in this table.</p> <p>a. Go to <i>Remove the Electronics Cover</i>.</p>
Obstructed access	<p>You must remove the print engine from the applicator before you work on it.</p> <p>a. Remove the four corner mounting screws securing the print engine to the applicator.</p> <p>b. Loosen the center mounting bolt, but do not remove it.</p> <p> Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.</p> <p>c. Lift the print engine off the center mounting bolt and place on a workbench.</p>

Remove the Electronics Cover

1. See [Figure 262](#). Remove the four long mounting screws securing the electronics cover.

Figure 262 • Electronics Cover



1	Electronics cover
2	Electronics cover mounting screws (4)

2. Slide the electronics cover off of the print engine.

Open the Electronics Enclosure

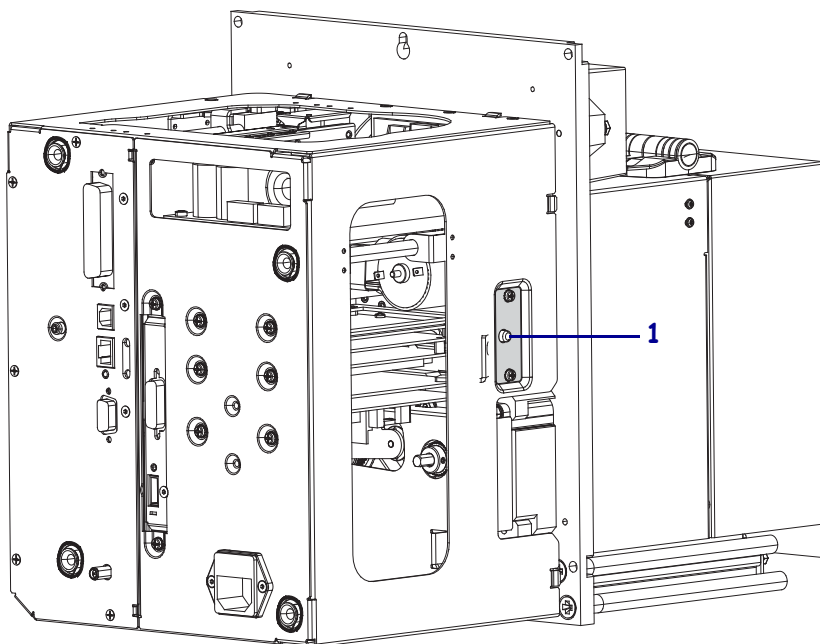
1. See [Figure 263](#). Locate the latch.



Note • For right-hand models, the latch is on the right side when looking from the back of the print engine. For left-hand models, the latch is on the left side.

2. Press the latch and swing the electronics enclosure open.

Figure 263 • Locate the Latch

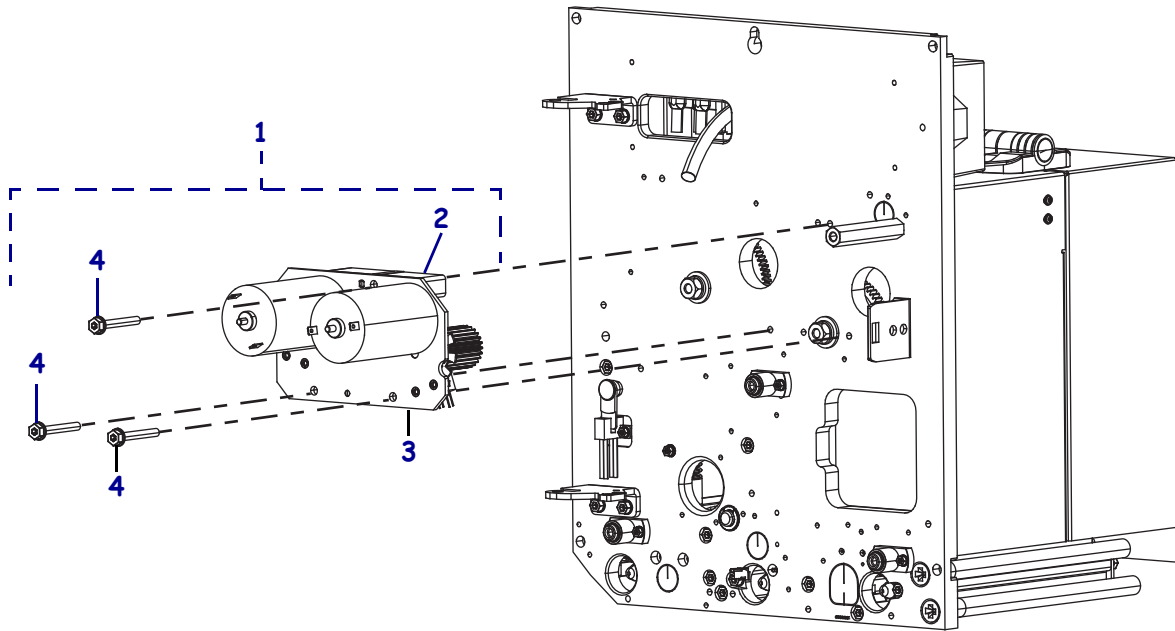


1	Latch
---	-------

Remove the Ribbon Drive System

1. See [Figure 264](#). Remove the three mounting screws securing the ribbon drive system.

Figure 264 • Ribbon Drive System

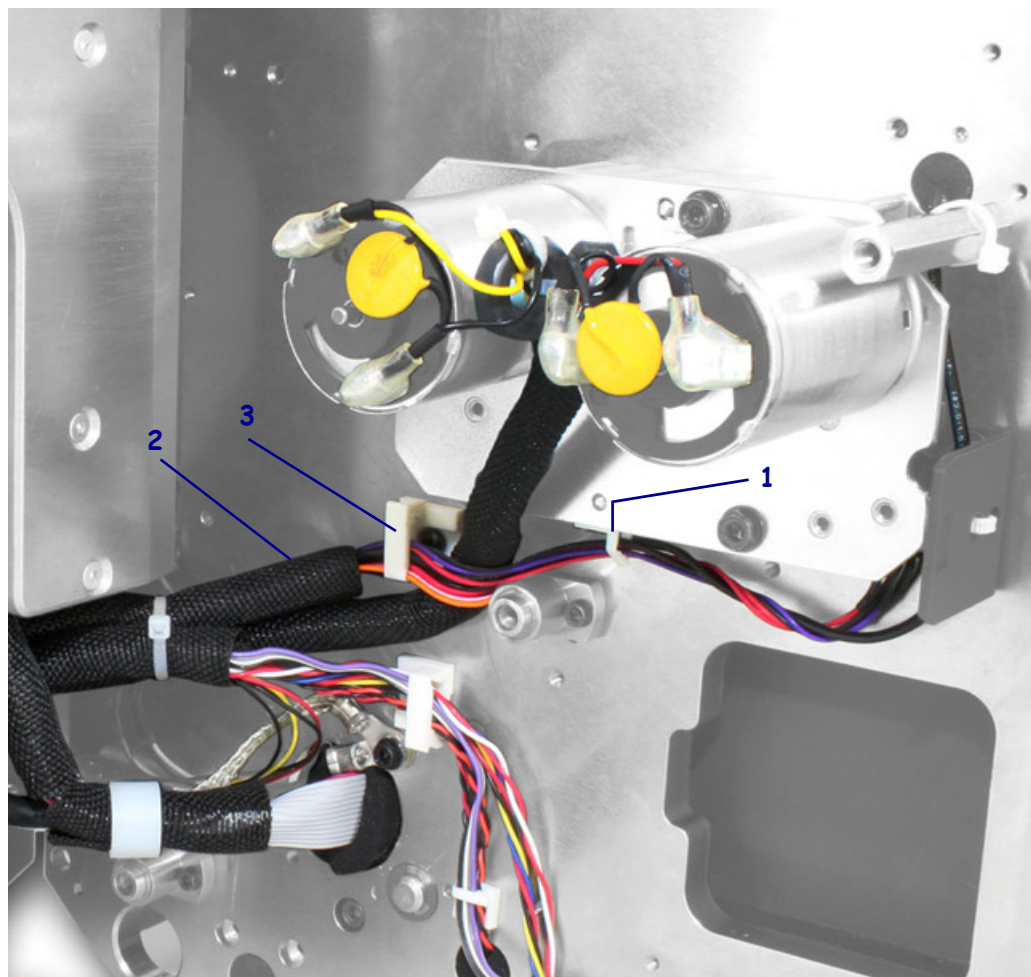


1	Ribbon drive system
2	Heat sink
3	Ribbon drive bracket
4	Ribbon drive system mounting screws (3)

2. Gently pull the ribbon drive system away from the main frame.

3. See [Figure 265](#). Remove the cables from all of the quick-release cable clamps, tubing, and cable tie, as necessary.

Figure 265 • Cable Routings



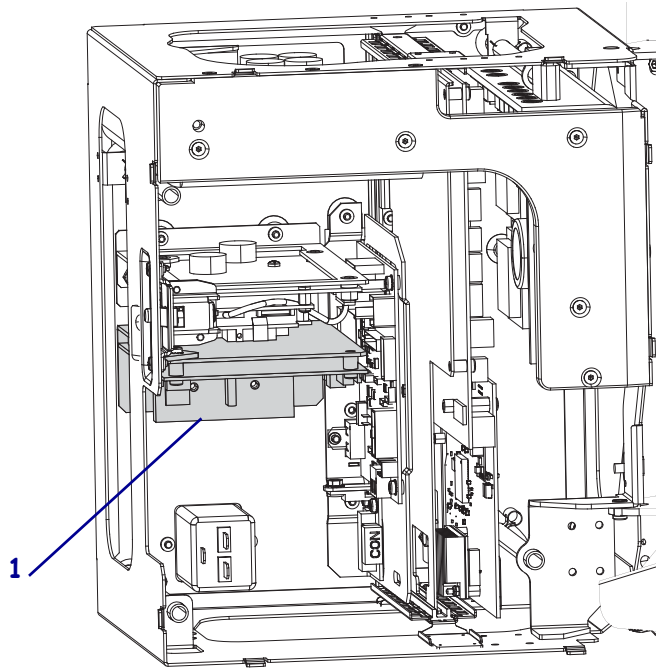
1	Quick release cable clamp (small)
2	Cloth-covered tubing
3	Quick release cable clamp (large)

4. See [Figure 266](#). Disconnect the two DC motor cables from J2 and J6 on the ribbon tension control board.



Note • This board is oriented upside down in the print engine, so all connectors must be accessed from the bottom side of the board.

Figure 266 • Ribbon Tension Control Board



1	Ribbon tension control board (shaded)
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5. Disconnect the two encoder cables from J1 and J5 on the ribbon tension control board.

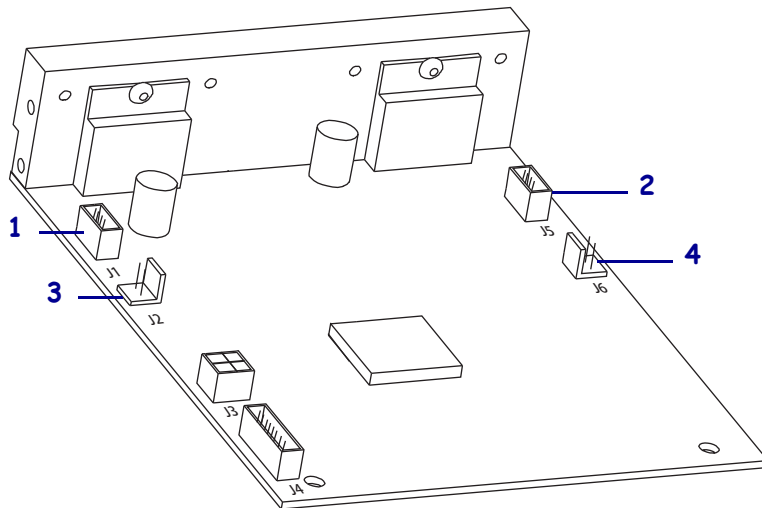
Replace the Ribbon Drive System

1. Align the heat sink mounting pins with the ribbon drive bracket holes.
2. Align the heat sink mounting pins with the main frame mounting holes.
3. Reinstall the three mounting screws to secure the ribbon drive system.
4. See [Figure 265](#). Route the cables through the quick-release cable clamps and tubing on the heat sink and the main frame.
5. See [Figure 267](#). Connect the supply DC motor cable (black and yellow wires) to J2 on the ribbon tension control board.
6. See [Figure 267](#). Connect the take-up DC motor cable (black and red wires) to J6 on the ribbon tension control board.

See [Figure 267](#). Connect the supply encoder cable (one black, one orange, and two red/white wires) to J5 and the take-up encoder cable (one black, one violet, and two red wires) to J1 on the ribbon tension control board.

The supply encoder overall cable length is shorter than the take-up encoder overall cable length. The take-up encoder overall cable length is longer than the supply encoder overall cable length.

Figure 267 • Ribbon Tension Control Board Connections



1	J1: Take-up encoder sensor connector
2	J5: Supply encoder sensor connector
3	J2: Supply DC motor connector
4	J6: Take-up DC motor sensor connector

Close the Electronics Enclosure

1. Ensure that all wires are routed properly and are not causing any obstructions, and then carefully swing the electronics enclosure closed.
2. Adjust the wire clips for the parallel port until they are touching the parallel port.
3. Slide the electronics cover onto the print engine.
4. Reinstall the four electronics cover mounting screws.

Reinstall the Print Engine in the Applicator

1. To reinstall the print engine into the applicator, carefully place the keyhole on the center mounting bolt.



Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.

2. Replace the four corner mounting screws securing the print engine to the applicator.
3. Tighten the center mounting bolt.

Resume Printer Operation

1. Reconnect the AC power cord and interface cables.
2. Turn on (I) the print engine.

The installation is complete.



Ribbon Drive Motors Maintenance Kit

Installation Instructions

This kit includes the parts and documentation necessary to install the Ribbon Drive Motors Maintenance Kit in the ZE500™ Series Print Engines. Read these instructions thoroughly before installing this kit.



Note • All figures show the right-hand model print engine.



Caution • This installation must be performed by a qualified service technician.

Parts List

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



Note • The motors come with the cables attached, but are not shown in many of the figures.

Figure 268 • Kit Contents

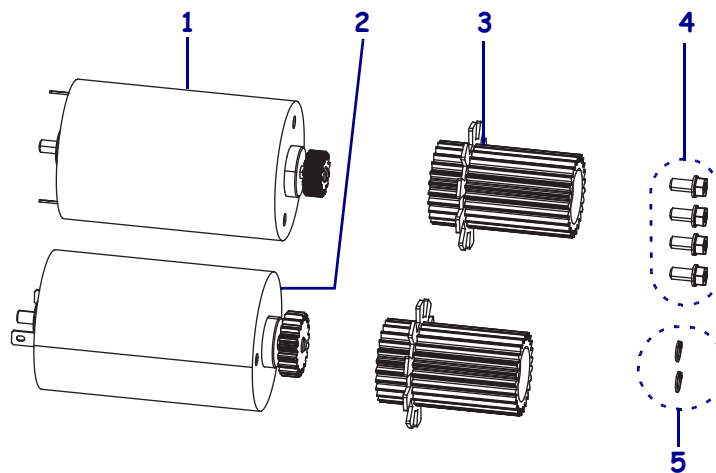


Table 46 • Parts List

✓	Item	Qty	Part Number	Description
	Ref	1	P1046696-039	Ribbon Drive Motors Maintenance Kit
	1	1	N/A	DC Motor Assembly Gear 12T
	2	1	N/A	DC Motor Assembly Gear 19T
	3	2	N/A	Gear 12T 32P 20DEG
	4	4	N/A	Screw, M3 × 6 HX TX NI
	5	2	HW49195	Ring, Retaining (Qty. of 10)

N/A = Not available as a separate part (listed for identification purposes only).

Tools Required



Tools • You need these tools to complete this procedure:

- Phillips Screwdriver Set
- Flat-blade Screwdriver Set
- Safety Goggles
- Antistatic Wriststrap and Mat
- Metric Hex Key (Allen Wrench) Set
- Torx Key Set
- Snap Ring Pliers

Remove Power and Data Cables



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

Connect yourself to an antistatic device.




2. **Caution** • Turn off (O) the print engine and disconnect it from the power source before performing the following procedure.

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

Remove Print Engine from Applicator

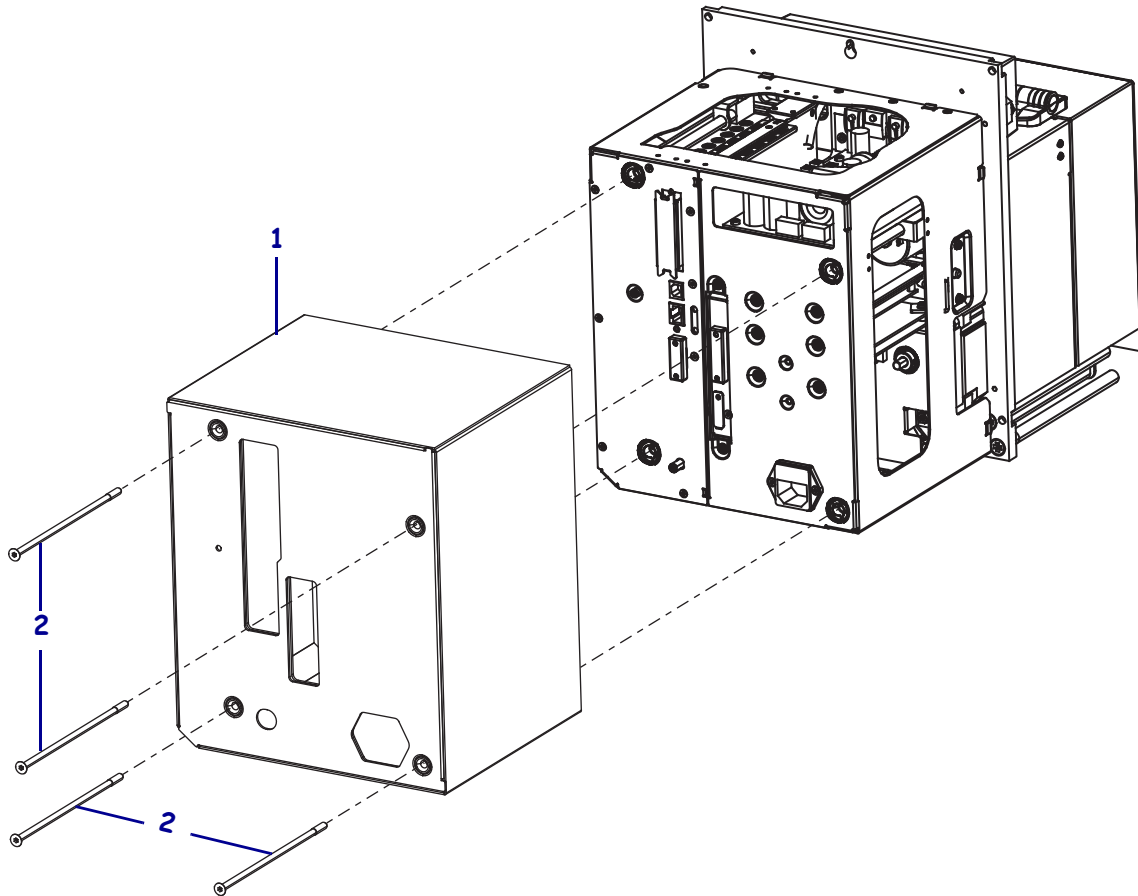
1. Does your applicator (or stand) permit open access to the rear of the print engine?

If you have an...	Then...
Open access	<p>You may swing the print engine open and work on it without removing the unit from the applicator.</p> <p>If you wish to remove the unit from the stand at any time, follow the instructions listed for the <i>Obstructed access</i> type applicator shown in this table.</p> <p>a. Go to <i>Remove the Electronics Cover</i>.</p>
Obstructed access	<p>You must remove the print engine from the applicator before you work on it.</p> <p>a. Remove the four corner mounting screws securing the print engine to the applicator.</p> <p>b. Loosen the center mounting bolt, but do not remove it.</p> <p> Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.</p> <p>c. Lift the print engine off the center mounting bolt and place on a workbench.</p>

Remove the Electronics Cover

1. See [Figure 269](#). Remove the four long mounting screws securing the electronics cover.

Figure 269 • Electronics Cover



1	Electronics cover
2	Electronics cover mounting screws (4)

2. Slide the electronics cover off of the print engine.

Open the Electronics Enclosure

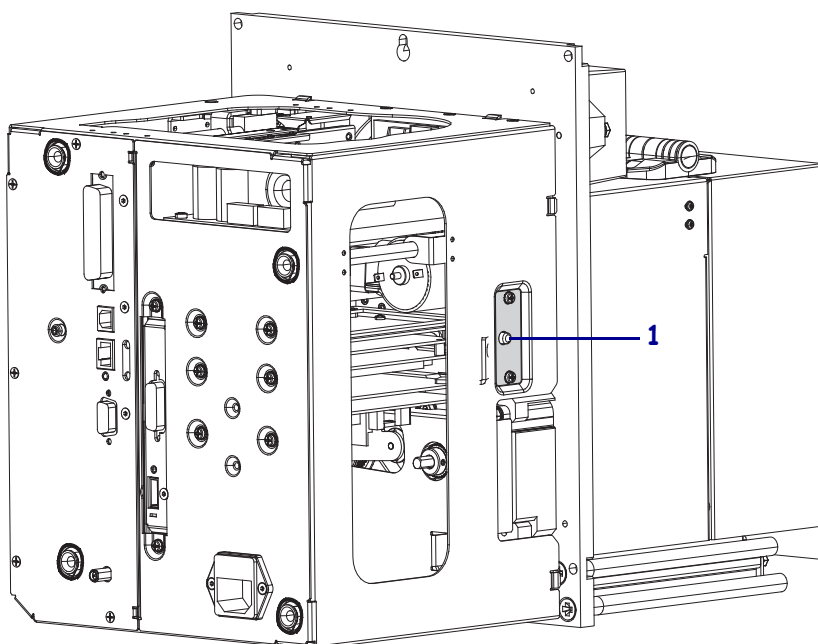
1. See [Figure 270](#). Locate the latch.



Note • For right-hand models, the latch is on the right side when looking from the back of the print engine. For left-hand models, the latch is on the left side.

2. Press the latch and swing the electronics enclosure open.

Figure 270 • Locate the Latch

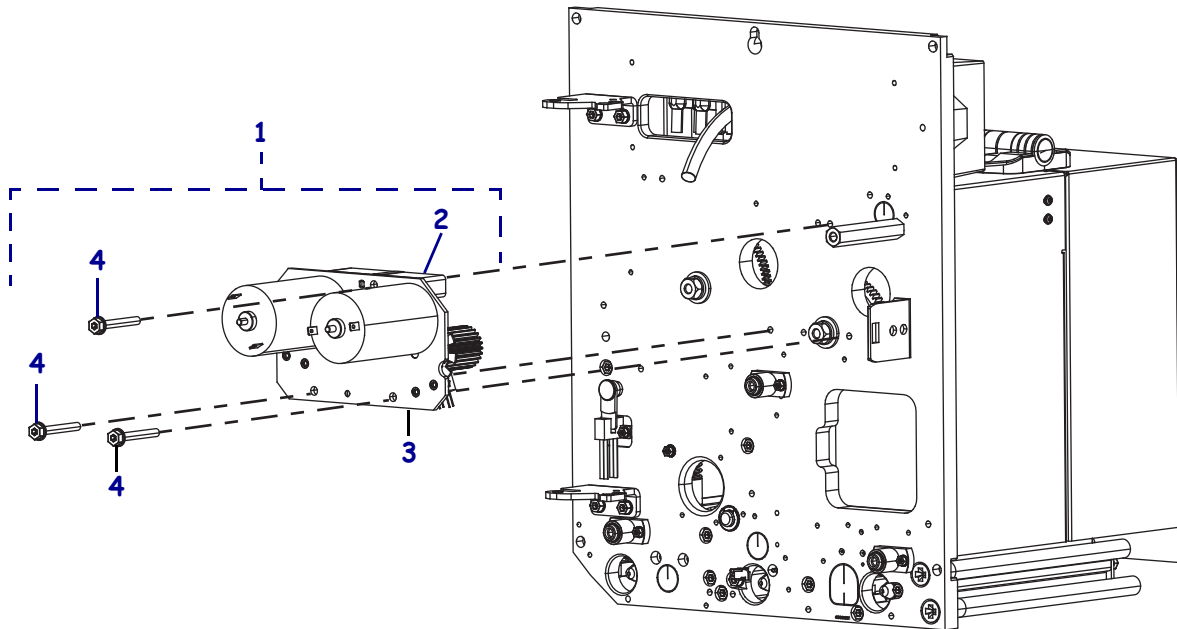


1	Latch
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Remove the Ribbon Drive System

1. See [Figure 271](#). Remove the three mounting screws securing the ribbon drive system.

Figure 271 • Ribbon Drive System



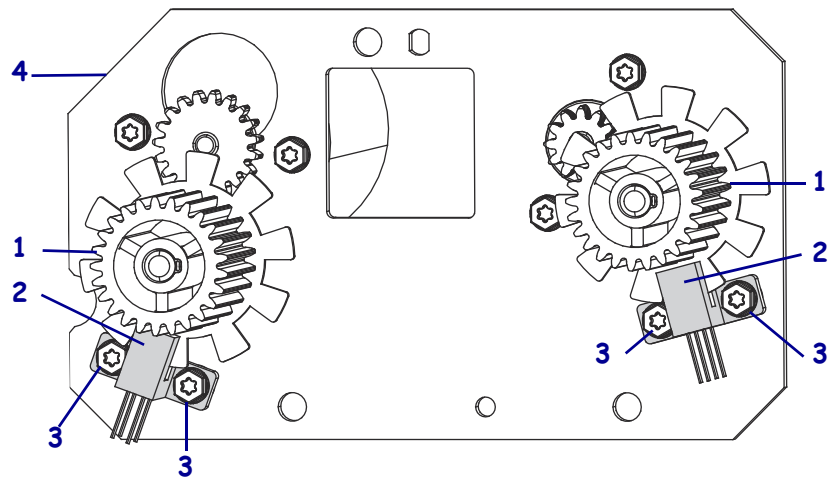
1	Ribbon drive system
2	Heat sink
3	Ribbon drive bracket
4	Ribbon drive system mounting screws (3)

2. Gently pull the ribbon drive system away from the main frame.

Remove the Encoder Sensors

1. See [Figure 272](#). Remove the two mounting screws securing each encoder sensor.
2. Remove both encoder sensors.

Figure 272 • Encoder Sensor



1	Ribbon drive gears (2)
2	Encoder sensor (shaded) (2)
3	Encoder sensor mounting screws (4)
4	Ribbon drive system (view from the back)

Remove the Ribbon Drive Gears

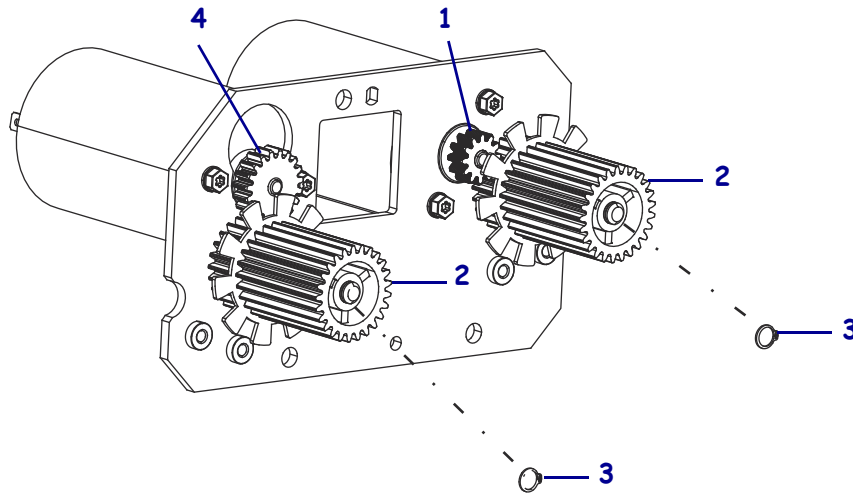


- Caution** • Wear protective eyewear when installing or removing E-rings, C-clips, snap rings, springs, and mounting buttons. These are under tension and could fly off.

See [Figure 273](#). Using a snap ring pliers, remove the retaining ring on the end of each gear.

- Slide each gear off of its shaft.

Figure 273 • Ribbon Drive Gears

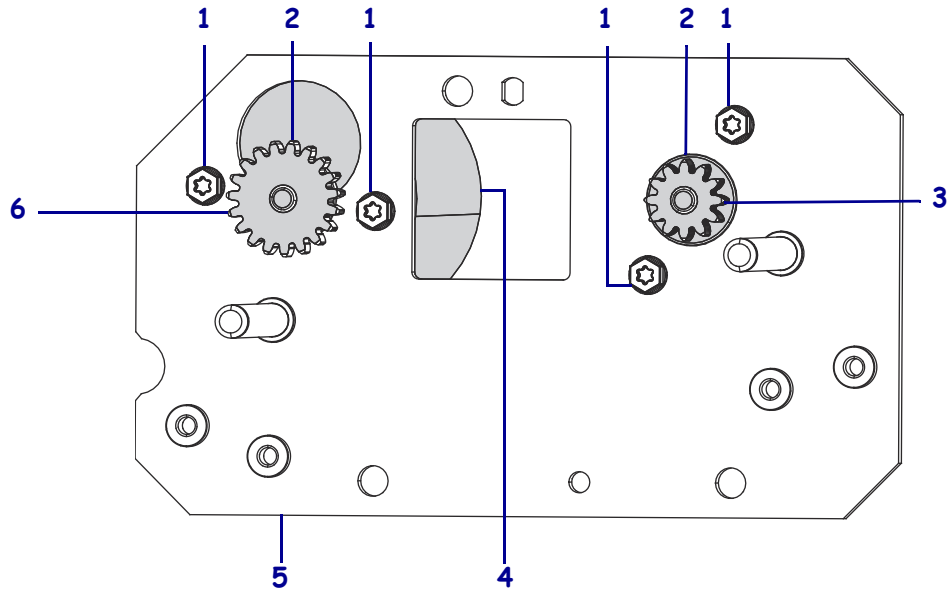


1	Supply gear
2	Ribbon drive gears (2)
3	Retaining clips (2)
4	Take-up gear

Remove the Ribbon Drive Motors

1. See [Figure 274](#). Remove the two mounting screws securing each ribbon drive motor.
2. Remove each ribbon drive motor from the bracket.

Figure 274 • Ribbon Drive Motors



1	Ribbon drive motor mounting screws (4)
2	Ribbon drive motor gear (shaded)
3	Supply gear
4	Ribbon drive motor (shaded)
5	Ribbon drive bracket
6	Take-up gear

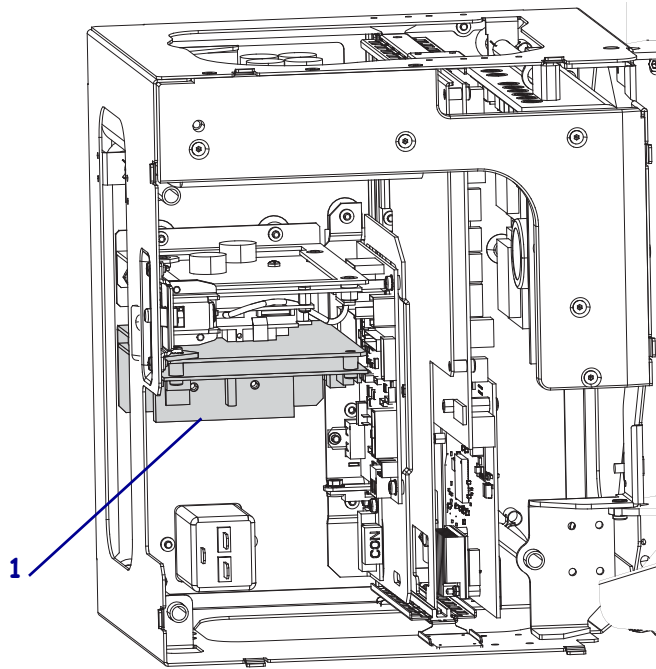
3. Remove the cables from all of the quick-release cable clamps and tubing.

4. See [Figure 275](#). Disconnect the two DC motor cables from J2 and J6 on the ribbon tension control board.



Note • This board is oriented upside down in the print engine, so all connectors must be accessed from the bottom side of the board.

Figure 275 • Ribbon Tension Control Board

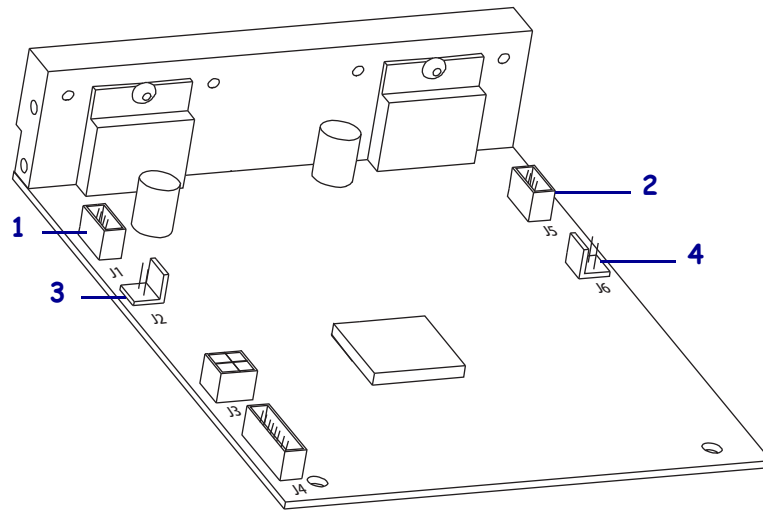


1	Ribbon tension control board (shaded)
----------	---------------------------------------

Replace the Ribbon Drive Motors

1. See [Figure 274](#). Insert the ribbon supply motor with the smaller gear into the smaller hole on the bracket.
2. Reinstall the two small mounting screws to secure the ribbon supply motor.
3. Insert the ribbon take-up motor with the larger gear into the large keyhole on the bracket.
4. Reinstall the two small mounting screws to secure the ribbon take-up motor.
5. Route the cables through the quick-release cable clamps and tubing on the heat sink and the main frame.
6. See [Figure 276](#). Connect the supply DC motor cable (black and yellow wires) to J2 on the ribbon tension control board.
7. See [Figure 276](#). Connect the take-up DC motor cable (black and red wires) to J6 on the ribbon tension control board.

Figure 276 • Ribbon Tension Control Board Connections



1	J1: Take-up encoder sensor connector
2	J5: Supply encoder sensor connector
3	J2: Supply DC motor connector
4	J6: Take-up DC motor sensor connector



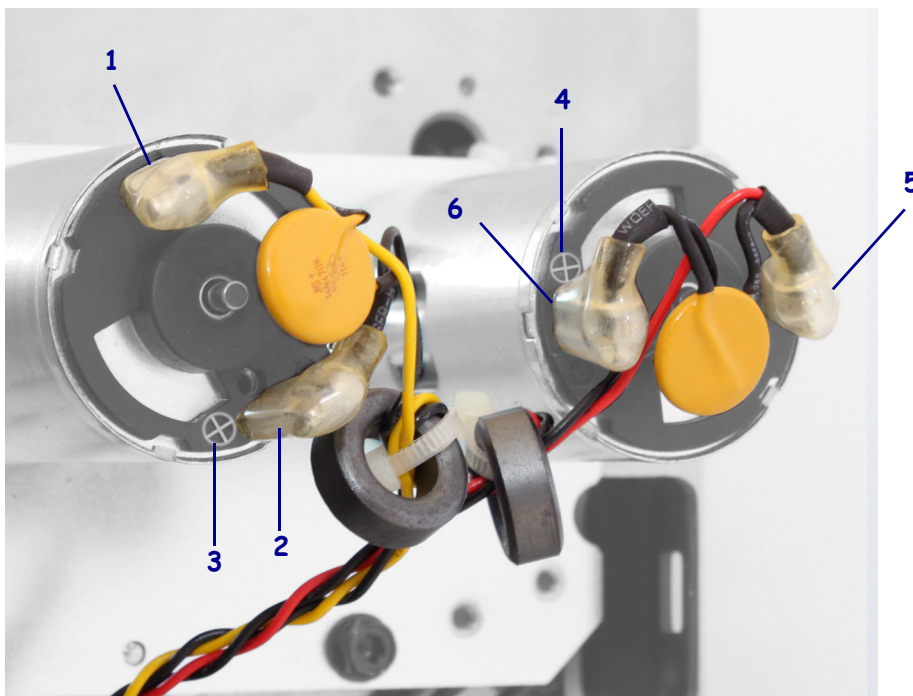
Note • This board is oriented upside down in the print engine, so all connectors must be accessed from the bottom side of the board.

Reconnect the DC Motor Cables

1. If the cables are disconnected from the terminals on the DC motors, follow the instructions in the table below to reconnect them.

If you have a...	Then...
Right-hand print engine	<ol style="list-style-type: none"> a. See Figure 277. Connect the motor cable with the two black wires to the positive terminal for the DC <u>supply</u> motor. b. Connect the motor cable with a yellow wire and a black wire to the negative terminal for the DC <u>supply</u> motor. c. Connect the motor cable with the two black wires to the positive terminal for the DC <u>take-up</u> motor. d. Connect the motor cable with the red wire and a black wire to the negative terminal for the DC <u>take-up</u> motor.
Left-hand print engine	<ol style="list-style-type: none"> a. Connect the motor cable with the yellow wire and a black wire to the positive terminal for the DC <u>supply</u> motor. b. Connect the motor cable with the two black wires to the negative terminal for the DC <u>supply</u> motor. c. Connect the motor cable with the red wire and a black wire to the positive terminal for the DC <u>take-up</u> motor. d. Connect the motor cable with the two black wires to the negative terminal for the DC <u>take-up</u> motor.

Figure 277 • Wiring of Ribbon Drive Motors
(Right-Hand Model Shown)



1	Yellow and black wire cable: DC supply motor cable
2	Two black wires in the cable: DC supply motor cable
3	Positive terminal marking (highlighted)
4	Positive terminal marking (highlighted)
5	Red and black wire cable: DC take-up motor cable
6	Two black wires in the cable: DC take-up motor wire

Replace the Ribbon Drive Gears

1. See [Figure 273](#). Slide the ribbon drive gears onto the shafts.

Ensure that the gears mesh correctly.



2. **Caution** • Wear protective eyewear when installing or removing E-rings, C-clips, snap rings, springs, and mounting buttons. These are under tension and could fly off.

Using a snap ring pliers, reinstall the retaining ring on the end of each gear

Replace the Supply and Take-Up Encoder Sensors

1. See [Figure 272](#). Align the supply encoder sensor holes with the two inserts and secure with the two mounting screws.

The supply encoder sensor is located directly above the stepper motor (when viewed from the electronics enclosure) and has one black, one orange, and two red/white wires. The supply encoder sensor overall cable length is shorter than the take-up encoder sensor overall cable length.

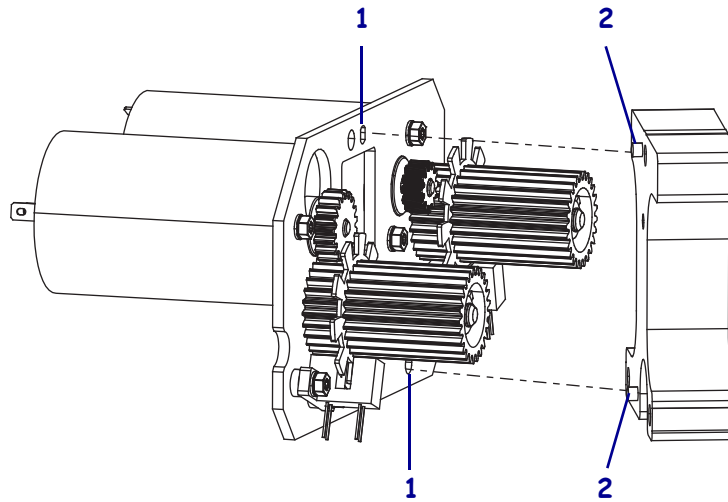
2. Align the take-up encoder sensor holes with the two inserts and secure with the two mounting screws.

The take-up encoder sensor is off to the side of the supply spindle and has one black, one violet, and two red wires. The take-up encoder sensor overall cable length is longer than the supply encoder sensor overall cable length.

Replace the Ribbon Drive System

1. See [Figure 278](#). Align the heat sink mounting pins with the ribbon drive bracket holes.

Figure 278 • Ribbon Drive Bracket and Heat Sink



1	Ribbon drive bracket alignment hole
2	Heat sink mounting pin

2. Thread the encoder sensor cables through the small cable clamp on the bottom of the heat sink.
3. Align the heat sink mounting pins with the main frame mounting holes.
4. Reinstall the three mounting screws to secure the ribbon drive system.

Close the Electronics Enclosure

1. Ensure that all wires are routed properly and are not causing any obstructions, and then carefully swing the electronics enclosure closed.
2. Adjust the wire clips for the parallel port until they are touching the parallel port.
3. Slide the electronics cover onto the print engine.
4. Reinstall the four electronics cover mounting screws.

Reinstall the Print Engine in the Applicator

1. To reinstall the print engine into the applicator, carefully place the keyhole on the center mounting bolt.



Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.

2. Replace the four corner mounting screws securing the print engine to the applicator.
3. Tighten the center mounting bolt.

Resume Printer Operation

1. Reconnect the AC power cord and interface cables.
2. Turn on (I) the print engine.

The installation is complete.



Ribbon Drive System Gears Maintenance Kit

Installation Instructions

This kit includes the parts and documentation necessary to install the Ribbon Drive System Gears Maintenance Kit in the ZE500™ Series Print Engines. Read these instructions thoroughly before installing this kit.



Caution • This installation must be performed by a qualified service technician.

Parts List

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

Figure 279 • Kit Contents

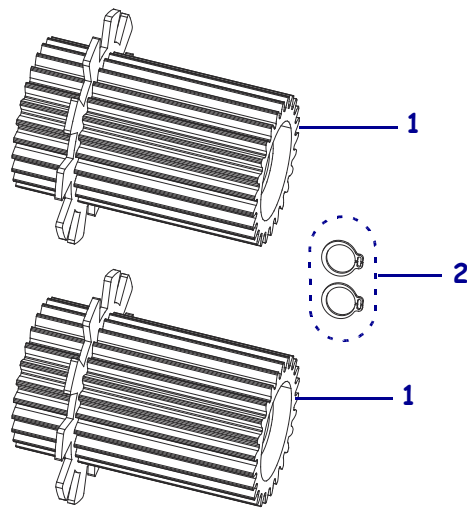


Table 47 • Parts List

✓	Item	Qty	Part Number	Description
	Ref	1	P1046696-040	Ribbon Drive System Gears Maintenance Kit
	1	2	<i>N/A</i>	Gear 12T 32P 20Deg
	2	2	HW49195	Retaining Ring (Qty. of 10)

N/A = Not available as a separate part (listed for identification purposes only).

Tools Required



Tools • You need these tools to complete this procedure:

- Phillips Screwdriver Set
- Snap Ring Pliers
- Safety Goggles
- Metric Hex Key (Allen Wrench) Set
- Torx Key Set
- Antistatic Wriststrap and Mat

Remove Power and Data Cables



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

Connect yourself to an antistatic device.




2. **Caution** • Turn off (O) the print engine and disconnect it from the power source before performing the following procedure.

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

Remove Print Engine from Applicator

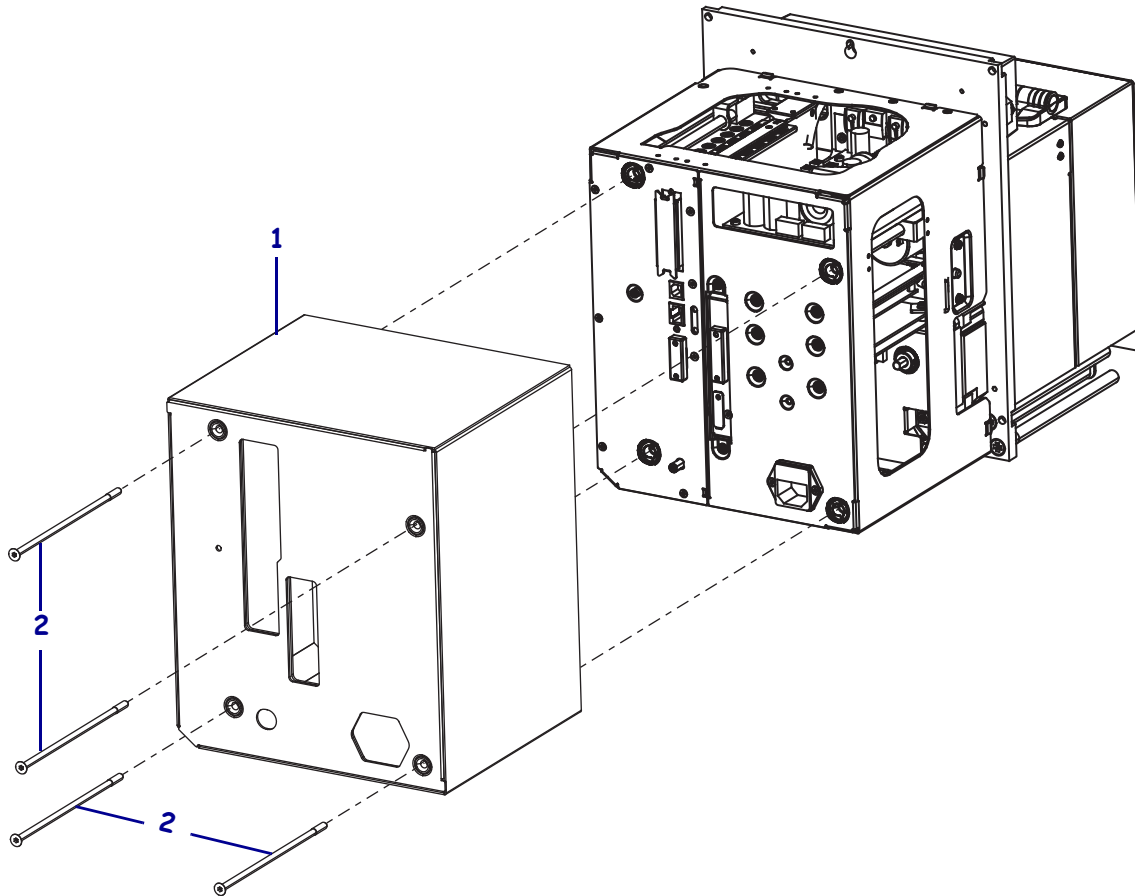
1. Does your applicator (or stand) permit open access to the rear of the print engine?

If you have an...	Then...
Open access	<p>You may swing the print engine open and work on it without removing the unit from the applicator.</p> <p>If you wish to remove the unit from the stand at any time, follow the instructions listed for the <i>Obstructed access</i> type applicator shown in this table.</p> <p>a. Go to <i>Remove the Electronics Cover</i>.</p>
Obstructed access	<p>You must remove the print engine from the applicator before you work on it.</p> <p>a. Remove the four corner mounting screws securing the print engine to the applicator.</p> <p>b. Loosen the center mounting bolt, but do not remove it.</p> <p> Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.</p> <p>c. Lift the print engine off the center mounting bolt and place on a workbench.</p>

Remove the Electronics Cover

1. See [Figure 280](#). Remove the four long mounting screws securing the electronics cover.

Figure 280 • Electronics Cover



1	Electronics cover
2	Electronics cover mounting screws (4)

2. Slide the electronics cover off of the print engine.

Open the Electronics Enclosure

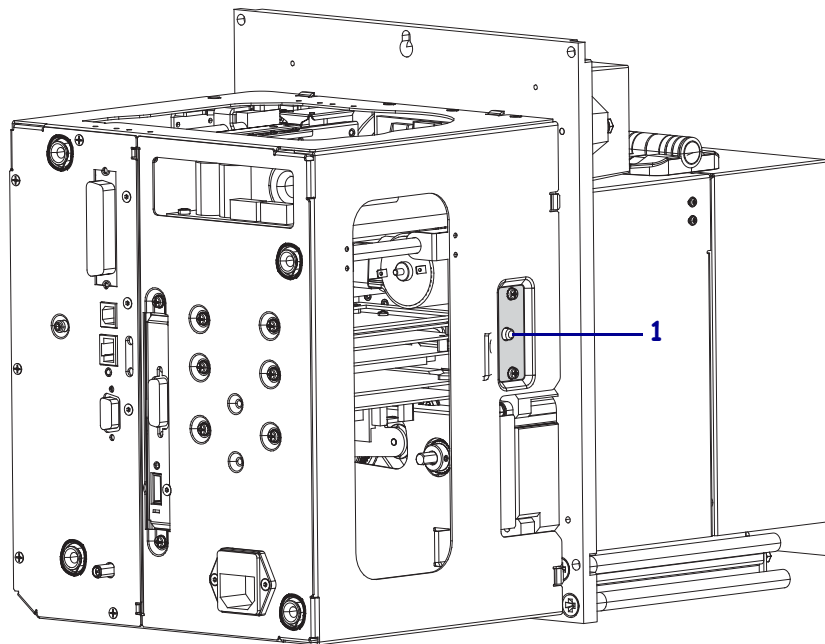
1. See [Figure 281](#). Locate the latch.



Note • For right-hand models, the latch is on the right side when looking from the back of the print engine. For left-hand models, the latch is on the left side.

2. Press the latch and swing the electronics enclosure open.

Figure 281 • Locate the Latch

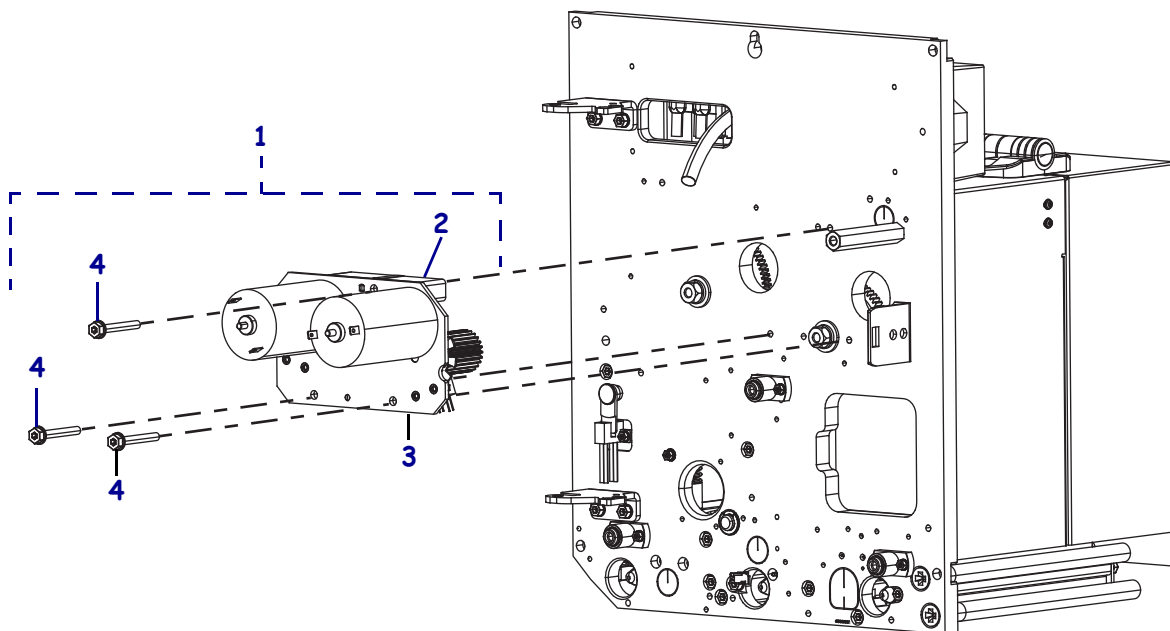


1	Latch
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Remove the Ribbon Drive System

1. See [Figure 282](#). Remove the three mounting screws securing the ribbon drive system.

Figure 282 • Ribbon Drive System



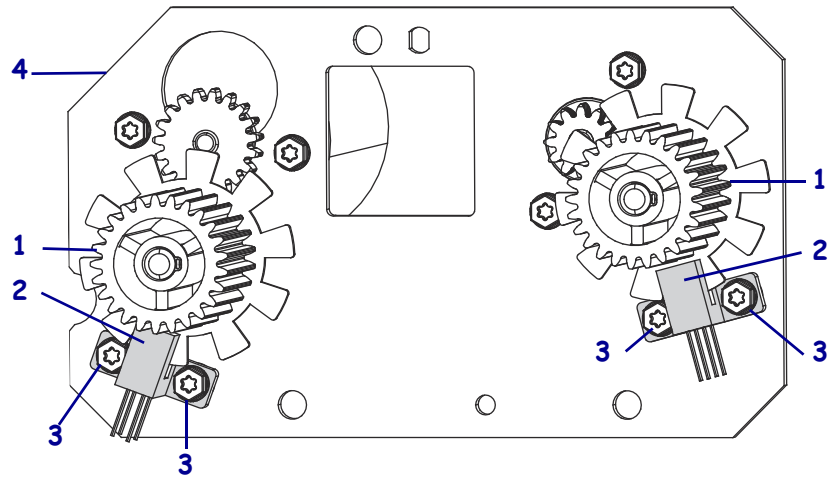
1	Ribbon drive system
2	Heat sink
3	Ribbon drive bracket
4	Ribbon drive system mounting screws (3)

2. Gently pull the ribbon drive system away from the main frame.

Remove the Encoder Sensors

1. See [Figure 283](#). Remove the two mounting screws securing each encoder sensor.
2. Remove both encoder sensors.

Figure 283 • Encoder Sensor



1	Ribbon drive gears (2)
2	Encoder sensor (shaded) (2)
3	Encoder sensor mounting screws (4)
4	Ribbon drive system (view from the back)

Remove the Ribbon Drive Gears

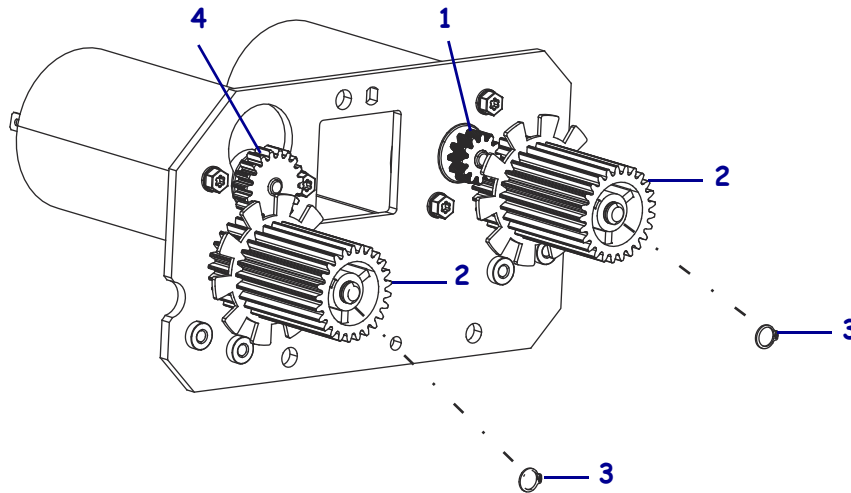


1. **Caution** • Wear protective eyewear when installing or removing E-rings, C-clips, snap rings, springs, and mounting buttons. These are under tension and could fly off.

See [Figure 284](#). Using a snap ring pliers, remove the retaining ring on the end of each gear.

2. Slide each gear off of its shaft.

Figure 284 • Ribbon Drive Gears



1	Supply gear
2	Ribbon drive gears (2)
3	Retaining clips (2)
4	Take-up gear

Replace the Ribbon Drive Gears

1. See [Figure 284](#). Slide the ribbon drive gears onto the shafts.

Ensure that the gears mesh correctly.



2. **Caution** • Wear protective eyewear when installing or removing E-rings, C-clips, snap rings, springs, and mounting buttons. These are under tension and could fly off.

Using a snap ring pliers, reinstall the retaining ring on the end of each gear

Replace the Supply and Take-Up Encoder Sensors

1. See [Figure 283](#). Align the supply encoder sensor holes with the two inserts and secure with the two mounting screws.

The supply encoder sensor is located directly above the stepper motor (when viewed from the electronics enclosure) and has one black, one orange, and two red/white wires. The supply encoder sensor overall cable length is shorter than the take-up encoder sensor overall cable length.

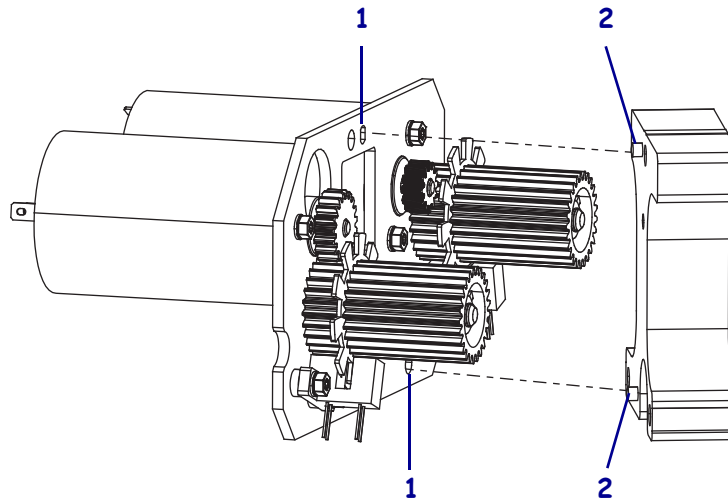
2. Align the take-up encoder sensor holes with the two inserts and secure with the two mounting screws.

The take-up encoder sensor is off to the side of the supply spindle and has one black, one violet, and two red wires. The take-up encoder sensor overall cable length is longer than the supply encoder sensor overall cable length.

Replace the Ribbon Drive System

1. See [Figure 285](#). Align the heat sink mounting pins with the ribbon drive bracket holes.

Figure 285 • Ribbon Drive Bracket and Heat Sink



1	Ribbon drive bracket alignment hole
2	Heat sink mounting pin

2. Thread the encoder sensor cables through the small cable clamp on the bottom of the heat sink.
3. Align the heat sink mounting pins with the main frame mounting holes.
4. Reinstall the three mounting screws to secure the ribbon drive system.

Close the Electronics Enclosure

1. Ensure that all wires are routed properly and are not causing any obstructions, and then carefully swing the electronics enclosure closed.
2. Adjust the wire clips for the parallel port until they are touching the parallel port.
3. Slide the electronics cover onto the print engine.
4. Reinstall the four electronics cover mounting screws.

Reinstall the Print Engine in the Applicator

1. To reinstall the print engine into the applicator, carefully place the keyhole on the center mounting bolt.



Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.

2. Replace the four corner mounting screws securing the print engine to the applicator.
3. Tighten the center mounting bolt.

Resume Printer Operation

1. Reconnect the AC power cord and interface cables.
2. Turn on (I) the print engine.

The installation is complete.



Ribbon Drive System Mounting Hardware Maintenance Kit

Installation Instructions

This kit includes the parts and documentation necessary to install the Ribbon Drive System Mounting Hardware Maintenance Kit in the ZE500™ Series Print Engines. Read these instructions thoroughly before installing this kit.



Caution • This installation must be performed by a qualified service technician.

Parts List

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

Figure 286 • Kit Contents

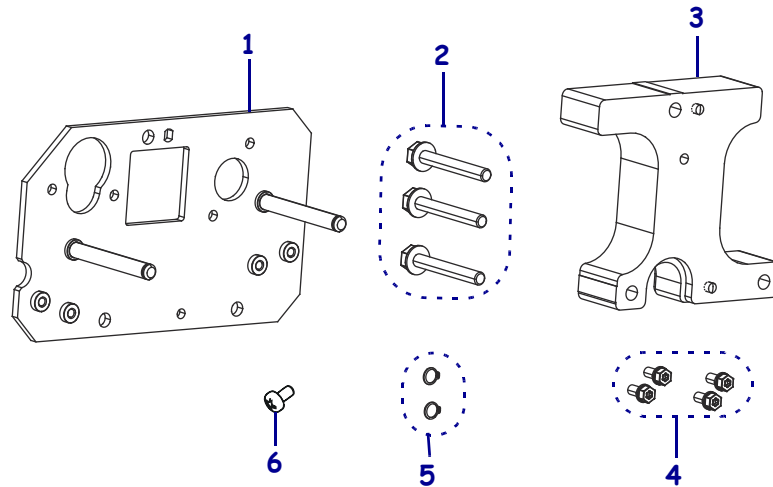


Table 48 • Parts List

✓	Item	Qty	Part Number	Description
	Ref	1	P1046696-045	Ribbon Drive System Mounting Hardware Maintenance Kit
	1	1	<i>N/A</i>	Bracket, DC Motor RH
	N/S	1	<i>N/A</i>	Bracket, DC Motor LH
	2	3	<i>N/A</i>	Screw, M4 × 30 HX TX NI
	3	1	<i>N/A</i>	Heat Sink, Motor Distance
	4	4	<i>N/A</i>	Screw, M3 × 6 HX SO ZN
	5	2	HW49195	Ring, Retaining (Qty. of 10)
	6	1	HW78804	Screw, M3 × 0.5 × 6 (Qty. of 50)
	N/S	1	<i>N/A</i>	Saddle, Micro Wire
N/A = Not available as a separate part (listed for identification purposes only).				
N/S = Not shown.				

Tools Required



Tools • You need these tools to complete this procedure:

- Phillips Screwdriver Set
- Snap Ring Pliers
- Safety Goggles
- Metric Hex Key (Allen Wrench) Set
- Torx Key Set
- Antistatic Wriststrap and Mat

Remove Power and Data Cables



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

Connect yourself to an antistatic device.




2. **Caution** • Turn off (O) the print engine and disconnect it from the power source before performing the following procedure.

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

Remove Print Engine from Applicator

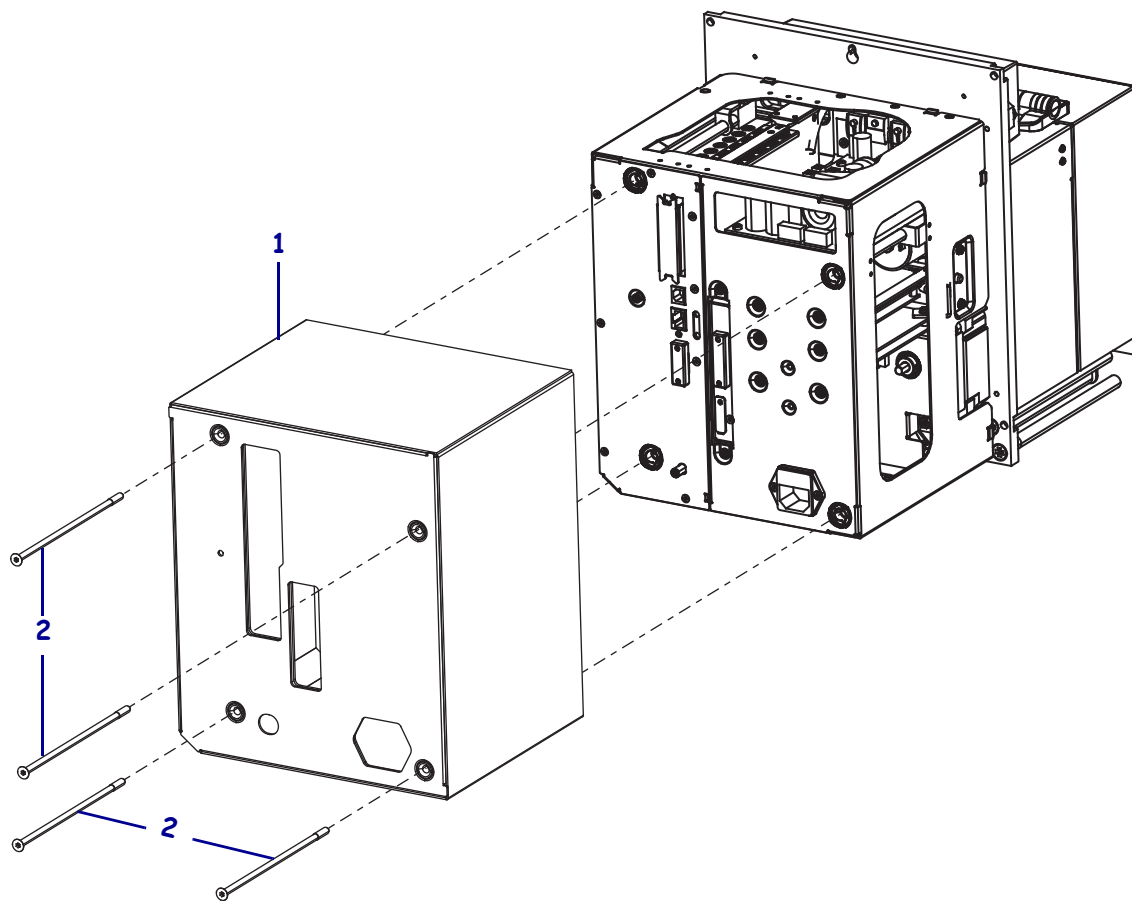
1. Does your applicator (or stand) permit open access to the rear of the print engine?

If you have an...	Then...
Open access	<p>You may swing the print engine open and work on it without removing the unit from the applicator.</p> <p>If you wish to remove the unit from the stand at any time, follow the instructions listed for the <i>Obstructed access</i> type applicator shown in this table.</p> <p>a. Go to <i>Remove the Electronics Cover</i>.</p>
Obstructed access	<p>You must remove the print engine from the applicator before you work on it.</p> <p>a. Remove the four corner mounting screws securing the print engine to the applicator.</p> <p>b. Loosen the center mounting bolt, but do not remove it.</p> <p> Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.</p> <p>c. Lift the print engine off the center mounting bolt and place on a workbench.</p>

Remove the Electronics Cover

1. See [Figure 287](#). Remove the four long mounting screws securing the electronics cover.

Figure 287 • Electronics Cover



1	Electronics cover
2	Electronics cover mounting screws (4)

2. Slide the electronics cover off of the print engine.

Open the Electronics Enclosure

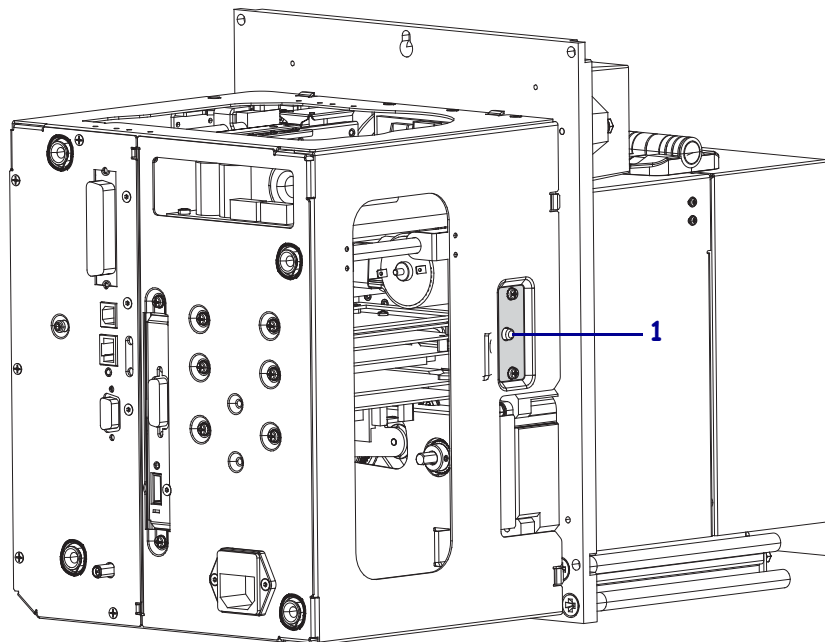
1. See [Figure 288](#). Locate the latch.



Note • For right-hand models, the latch is on the right side when looking from the back of the print engine. For left-hand models, the latch is on the left side.

2. Press the latch and swing the electronics enclosure open.

Figure 288 • Locate the Latch

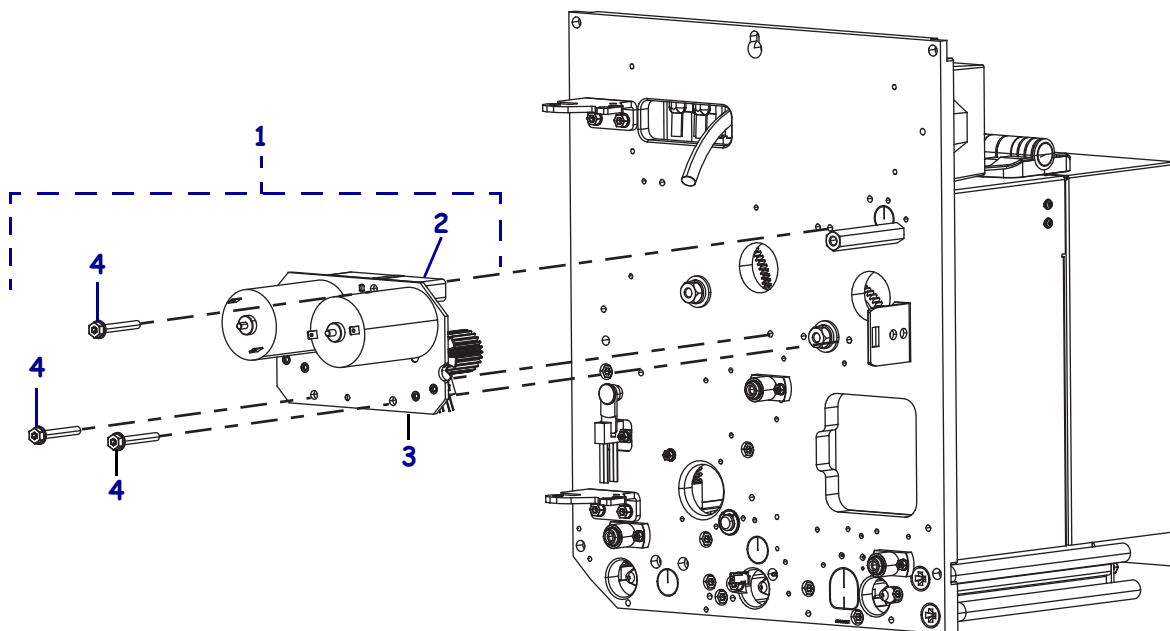


1	Latch
----------	-------

Remove the Ribbon Drive System

1. See [Figure 289](#). Remove the three mounting screws securing the ribbon drive system.

Figure 289 • Ribbon Drive System



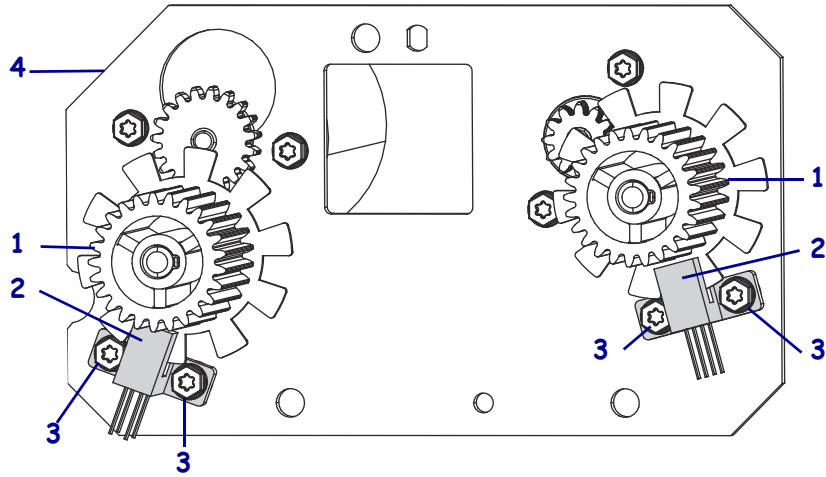
1	Ribbon drive system
2	Heat sink
3	Ribbon drive bracket
4	Ribbon drive system mounting screws (3)

2. Gently pull the ribbon drive system away from the main frame.

Remove the Encoder Sensors

1. See [Figure 290](#). Remove the two mounting screws securing each encoder sensor.
2. Remove both encoder sensors.

Figure 290 • Encoder Sensor



1	Ribbon drive gears (2)
2	Encoder sensor (shaded) (2)
3	Encoder sensor mounting screws (4)
4	Ribbon drive system (view from the back)

Remove the Ribbon Drive Gears

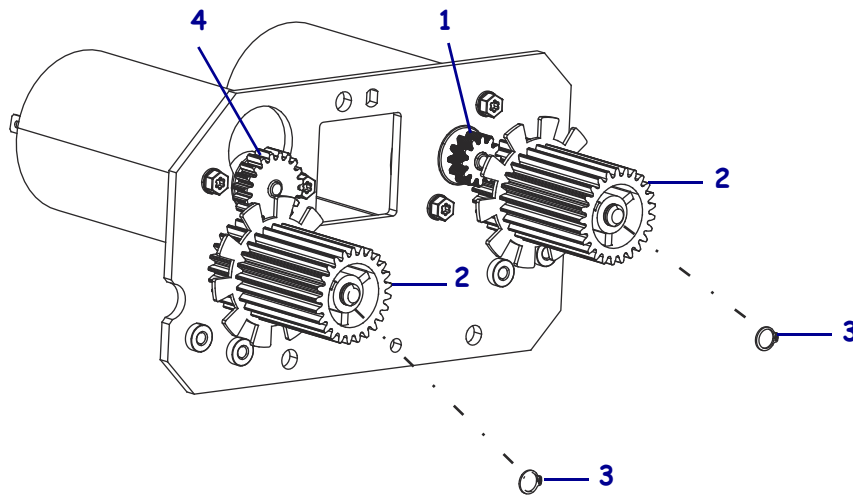


1. **Caution** • Wear protective eyewear when installing or removing E-rings, C-clips, snap rings, springs, and mounting buttons. These are under tension and could fly off.

See [Figure 291](#). Using a snap ring pliers, remove the retaining ring on the end of each gear.

2. Slide each gear off of its shaft.

Figure 291 • Ribbon Drive Gears

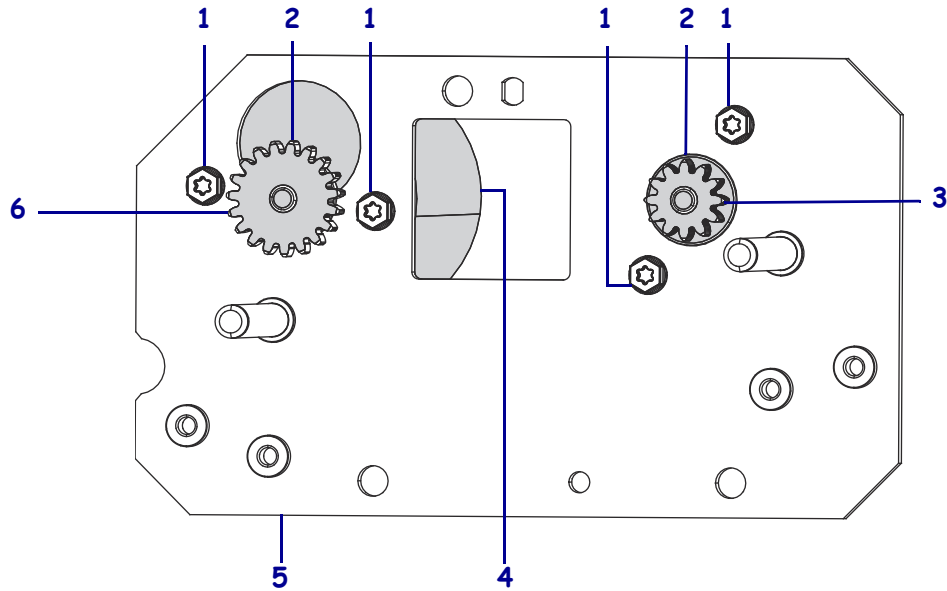


1	Supply gear
2	Ribbon drive gears (2)
3	Retaining clips (2)
4	Take-up gear

Remove the Ribbon Drive Motors

1. See [Figure 292](#). Remove the two mounting screws securing each ribbon drive motor.
2. Remove the ribbon drive motor from the bracket.

Figure 292 • Ribbon Drive Motors



1	Ribbon drive motor mounting screws (4)
2	Ribbon drive motor gear (shaded)
3	Supply gear
4	Ribbon drive motor (shaded)
5	Ribbon drive bracket
6	Take-up gear

Replace the Ribbon Drive Motors

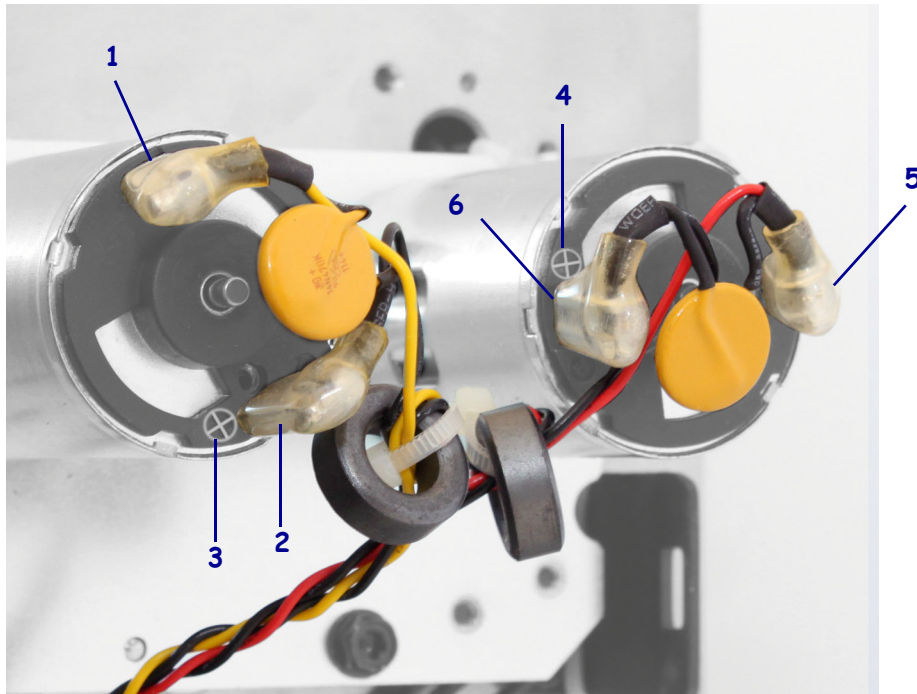
1. See [Figure 292](#). Insert the ribbon supply motor with the smaller gear into the smaller hole on the bracket.
2. Reinstall the two small mounting screws to secure the ribbon supply motor.
3. Insert the ribbon take-up motor with the larger gear into the large keyhole on the bracket.
4. Reinstall the two small mounting screws to secure the ribbon take-up motor.

Reconnect the DC Motor Cables

1. If the cables are disconnected from the terminals on the DC motors, follow the instructions in the table below to reconnect them.

If you have a...	Then...
Right-hand print engine	<ol style="list-style-type: none"> a. See Figure 293. Connect the motor cable with the two black wires to the positive terminal for the DC <u>supply</u> motor. b. Connect the motor cable with a yellow wire and a black wire to the negative terminal for the DC <u>supply</u> motor. c. Connect the motor cable with the two black wires to the positive terminal for the DC <u>take-up</u> motor. d. Connect the motor cable with the red wire and a black wire to the negative terminal for the DC <u>take-up</u> motor.
Left-hand print engine	<ol style="list-style-type: none"> a. Connect the motor cable with the yellow wire and a black wire to the positive terminal for the DC <u>supply</u> motor. b. Connect the motor cable with the two black wires to the negative terminal for the DC <u>supply</u> motor. c. Connect the motor cable with the red wire and a black wire to the positive terminal for the DC <u>take-up</u> motor. d. Connect the motor cable with the two black wires to the negative terminal for the DC <u>take-up</u> motor.

**Figure 293 • Wiring of Ribbon Drive Motors
 (Right-Hand Model Shown)**



1	Yellow and black wire cable: DC supply motor cable
2	Two black wires in the cable: DC supply motor cable
3	Positive terminal marking (highlighted)
4	Positive terminal marking (highlighted)
5	Red and black wire cable: DC take-up motor cable
6	Two black wires in the cable: DC take-up motor wire

Replace the Ribbon Drive Gears

1. See [Figure 291](#). Slide the ribbon drive gears onto the shafts.
Ensure that the gears mesh correctly.



2. **Caution** • Wear protective eyewear when installing or removing E-rings, C-clips, snap rings, springs, and mounting buttons. These are under tension and could fly off.

Using a snap ring pliers, reinstall the retaining ring on the end of each gear

Replace the Supply and Take-Up Encoder Sensors

1. See [Figure 290](#). Align the supply encoder sensor holes with the two inserts and secure with the two mounting screws.

The supply encoder sensor is located directly above the stepper motor (when viewed from the electronics enclosure) and has one black, one orange, and two red/white wires. The supply encoder sensor overall cable length is shorter than the take-up encoder sensor overall cable length.

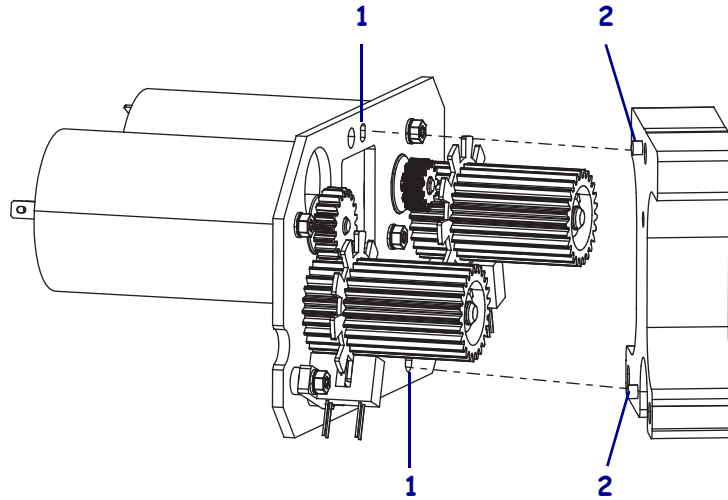
2. Align the take-up encoder sensor holes with the two inserts and secure with the two mounting screws.

The take-up encoder sensor is off to the side of the supply spindle and has one black, one violet, and two red wires. The take-up encoder sensor overall cable length is longer than the supply encoder sensor overall cable length.

Replace the Ribbon Drive System

1. See [Figure 294](#). Align the heat sink mounting pins with the ribbon drive bracket holes.

Figure 294 • Ribbon Drive Bracket and Heat Sink



1	Ribbon drive bracket alignment hole
2	Heat sink mounting pin

2. Thread the encoder sensor cables through the small cable clamp on the bottom of the heat sink.
3. Align the heat sink mounting pins with the main frame mounting holes.
4. Reinstall the three mounting screws to secure the ribbon drive system.

Close the Electronics Enclosure

1. Ensure that all wires are routed properly and are not causing any obstructions, and then carefully swing the electronics enclosure closed.
2. Adjust the wire clips for the parallel port until they are touching the parallel port.
3. Slide the electronics cover onto the print engine.
4. Reinstall the four electronics cover mounting screws.

Reinstall the Print Engine in the Applicator

1. To reinstall the print engine into the applicator, carefully place the keyhole on the center mounting bolt.



Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.

2. Replace the four corner mounting screws securing the print engine to the applicator.
3. Tighten the center mounting bolt.

Resume Printer Operation

1. Reconnect the AC power cord and interface cables.
2. Turn on (I) the print engine.

The installation is complete.



Dancer and Ribbon Rollers Maintenance Kit

Installation Instructions

This kit includes the parts and documentation necessary to install the Dancer and Ribbon Rollers Maintenance Kit in the ZE500™ Series Print Engines. Read these instructions thoroughly before installing this kit.



Caution • This installation must be performed by a qualified service technician.

Parts List

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

Figure 295 • Kit Contents

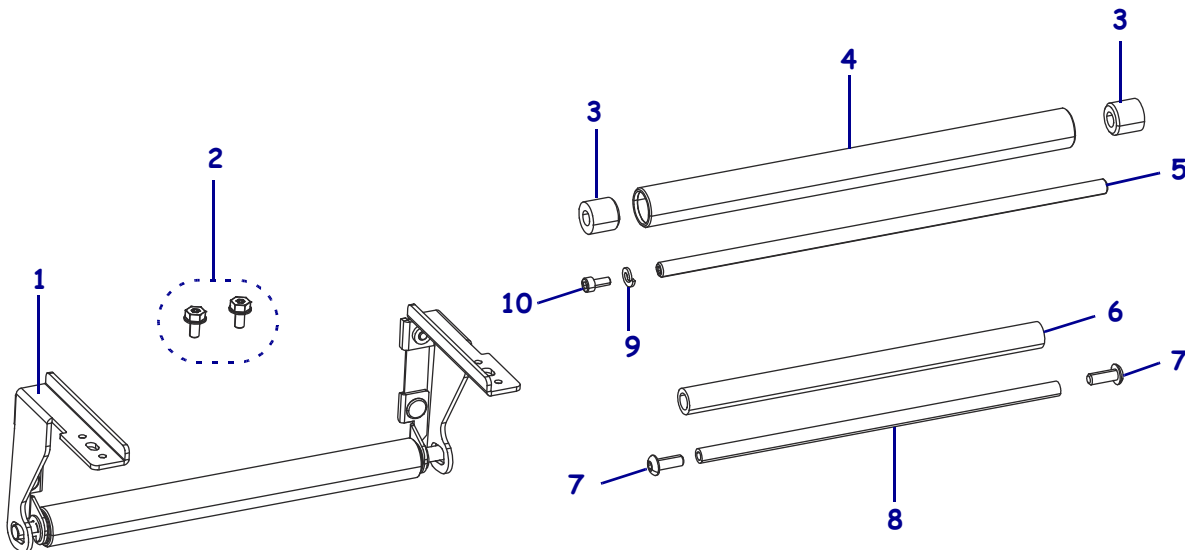


Table 49 • Parts List

✓	Item	Qty	Part Number	Description
	Ref	1	P1046696-041	ZE500-4 Dancer and Ribbon Rollers Maintenance Kit, RH & LH
			P1046696-042	ZE500-6 Dancer and Ribbon Rollers Maintenance Kit, RH & LH
	1	1	<i>N/A</i>	Assembly, Dancer and Bracket, RH
			<i>N/A</i>	Assembly, Dancer and Bracket, LH
	2	2	<i>N/A</i>	Screw, M3 × 6 Hx Tx Zn Flng
	3	2	<i>N/A</i>	Bearing, Ribbon Guide Roller
	4	1	<i>N/A</i>	Roller, Upper Ribbon Guide
	5	2	<i>N/A</i>	Shaft, Upper Ribbon Guide Roller
	6	1	<i>N/A</i>	Roller, Lower Ribbon Guide
	7	2	<i>N/A</i>	Screw, 6-32 0.37 Bu So H Bo
	8	1	<i>N/A</i>	Shaft, Lower Ribbon Guide Roller
	9	1	<i>N/A</i>	Washer, Split M3
	10	1	<i>N/A</i>	Screw, M2.5 × 0.45 × 6 Cp So Zn

N/A = Not available as a separate part (listed for identification purposes only).

Tools Required



Tools • You need these tools to complete this procedure:

- Phillips Screwdriver Set
- Flat-blade Screwdriver Set
- Metric Hex Key (Allen Wrench) Set
- Torx Key Set
- Antistatic Wriststrap and Mat

Remove Power and Data Cables, Ribbon, and Media



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

Connect yourself to an antistatic device.



2. **Caution** • Turn off (O) the print engine and disconnect it from the power source before performing the following procedure.

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


3. **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.

Open the media door, the printhead latch, and remove media and ribbon from the print engine.

4. Close the printhead latch, and then close the media door.

Remove Print Engine from Applicator

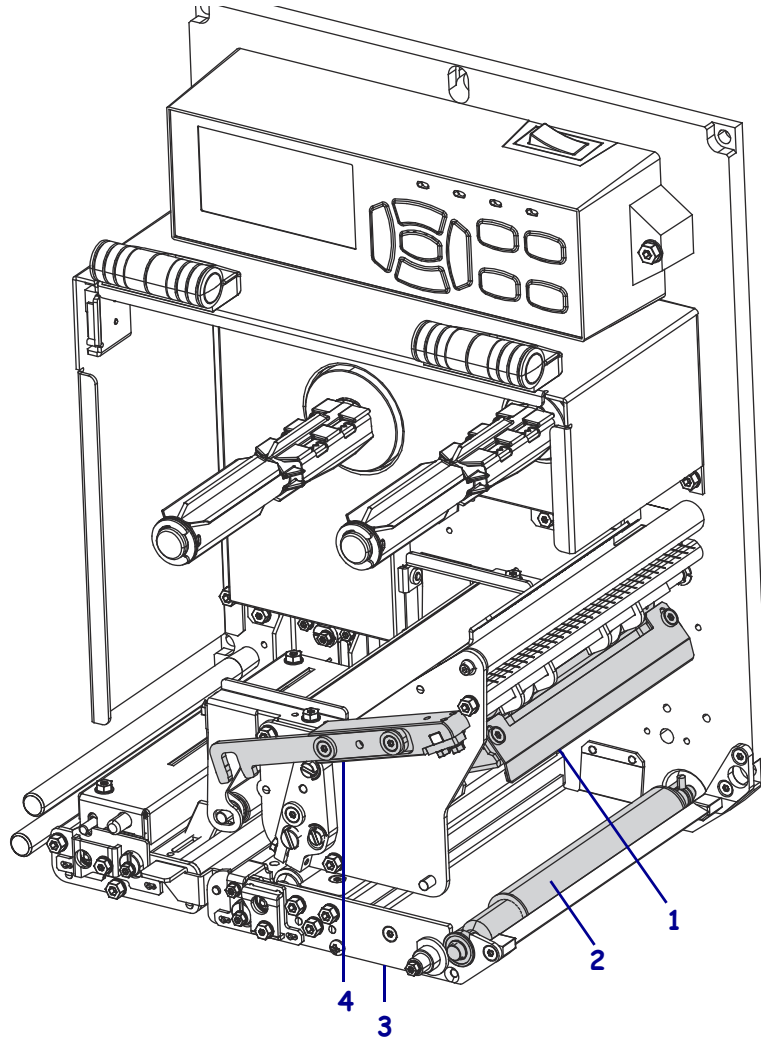
1. Does your applicator (or stand) permit open access to the rear of the print engine?

If you have an...	Then...
Open access	<p>You may swing the print engine open and work on it without removing the unit from the applicator.</p> <p>If you wish to remove the unit from the stand at any time, follow the instructions listed for the <i>Obstructed access</i> type applicator shown in this table.</p> <ol style="list-style-type: none"> a. Go to <i>Remove the Electronics Cover</i>.
Obstructed access	<p>You must remove the print engine from the applicator before you work on it.</p> <ol style="list-style-type: none"> a. Remove the four corner mounting screws securing the print engine to the applicator. b. Loosen the center mounting bolt, but do not remove it. <p> Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.</p> <ol style="list-style-type: none"> c. Lift the print engine off the center mounting bolt and place on a workbench.

Remove the Platen Roller

1. See [Figure 296](#). Using the printhead latch, open the printhead and press up until secured in the open position.

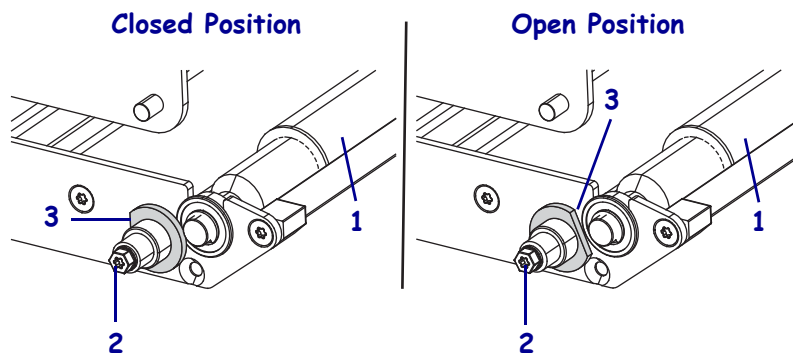
Figure 296 • Open Printhead



1	Printhead (shaded and shown in open position)
2	Platen roller (shaded)
3	Platen roller support plate
4	Printhead latch (shaded and shown in open position)

2. See [Figure 297](#). Using a Torx key, loosen the screw on the latch pin, and rotate the latch pin to the open position.

Figure 297 • Latch Pin



1	Platen roller
2	Latch pin screw
3	Latch pin (shaded)

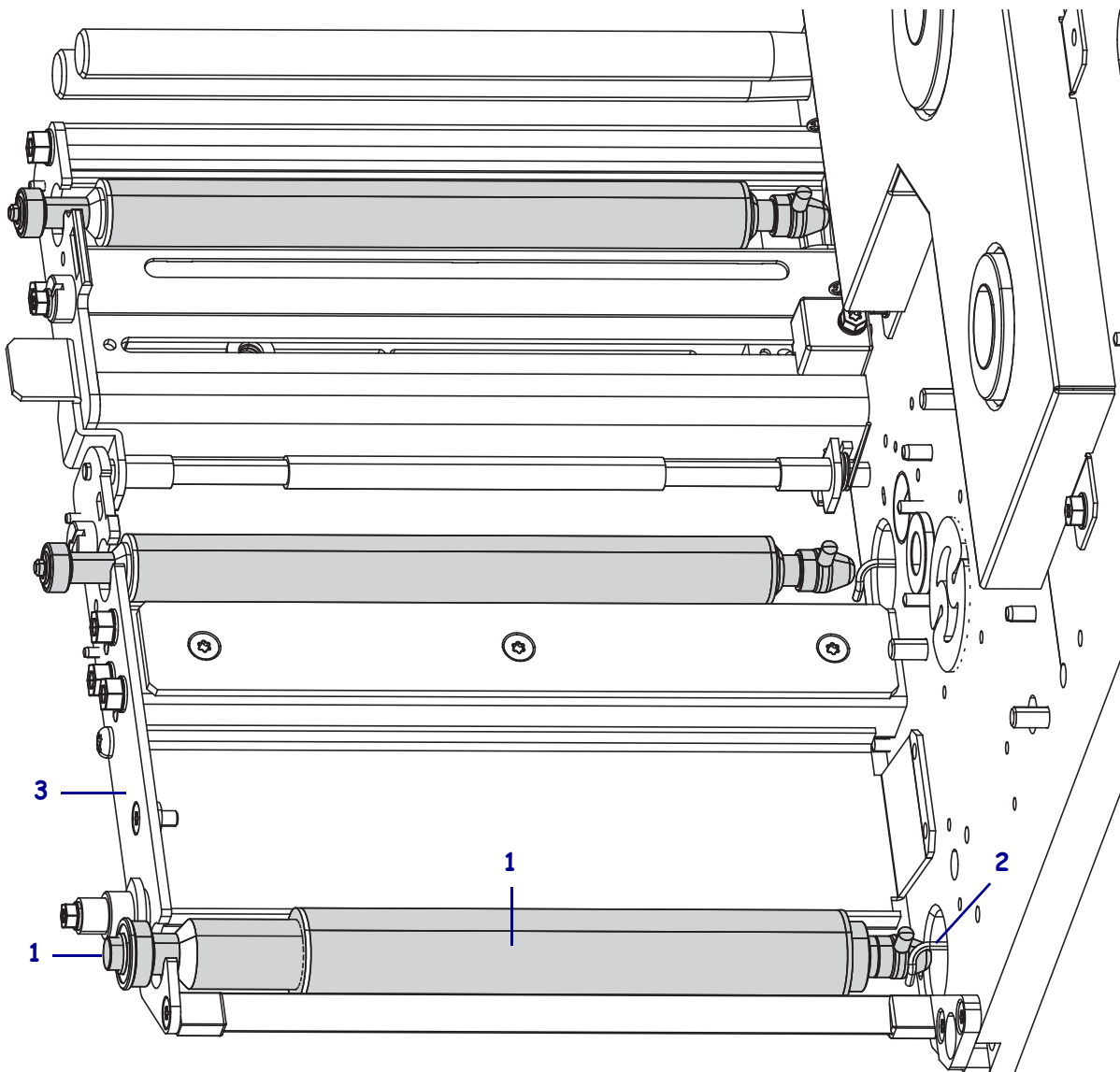
- See [Figure 298](#). Grasp the platen roller tightly and pull it toward the platen roller support plate to release the pin secured in the platen roller coupler.
The outboard bearing will extend past the end of the platen roller support plate.



Note • You may have to turn the roller slightly to be able to remove the roller.

- Lift the platen roller out of the print engine.

**Figure 298 • Roller Locations
(Top View with Subsystems Removed)**



1	Platen roller (shaded)
2	Platen roller coupler
3	Platen roller support plate

Remove the Peel Roller

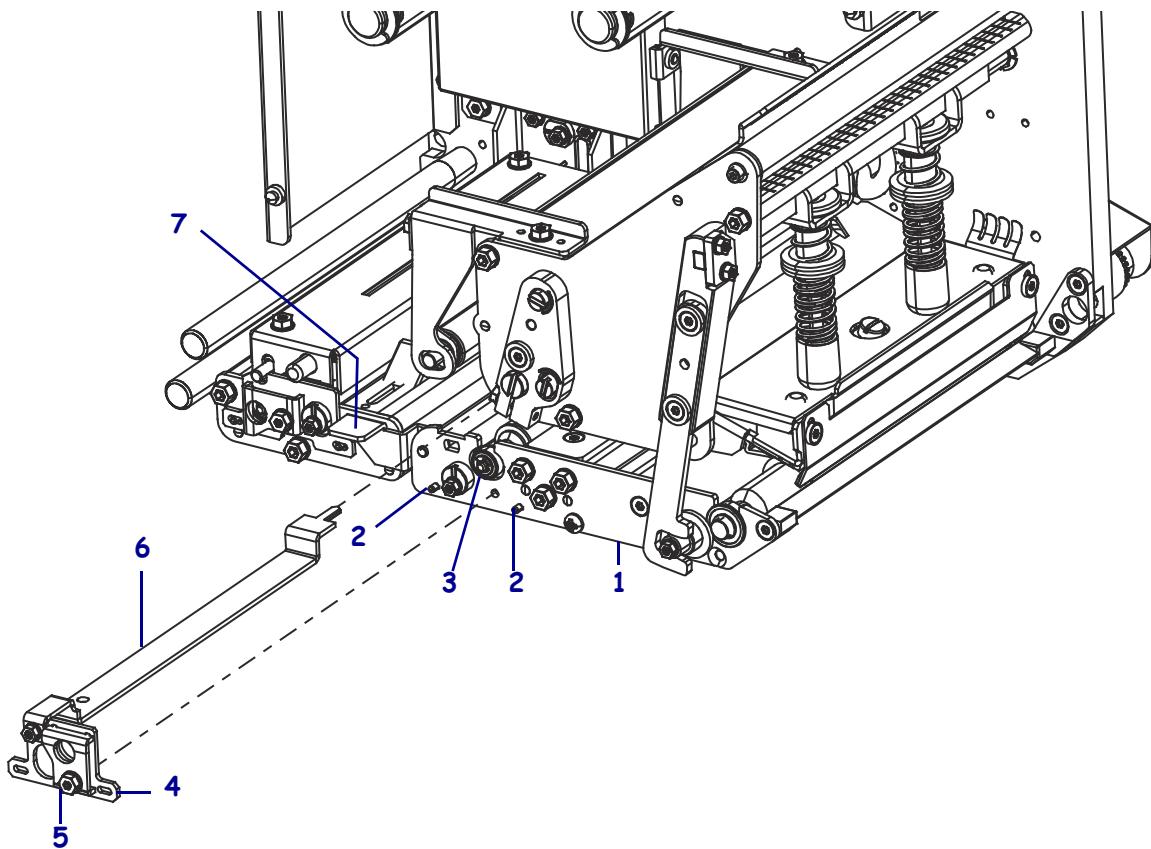
1. To open the peel roller bracket, push up on the latch.
2. See [Figure 299](#). To remove the peel roller cam plate, loosen the center mounting screw to release it from the platen roller support plate.



Note • The center mounting screw is captive within the peel roller cam plate.

3. Pull the peel roller cam plate (with the deflector plate attached) off of the two support pins on the platen roller support plate. Set the cam plate aside.

Figure 299 • Peel Roller



1	Platen roller support plate
2	Support pins
3	Peel roller
4	Peel roller cam plate
5	Peel roller cam plate center mounting screw
6	Peel roller deflector plate
7	Peel roller latch

4. Grasp the peel roller tightly and pull the peel roller toward the platen roller support plate to release the pin secured in the peel roller coupler.

The outboard bearing will extend past the end of the platen roller support plate.



Note • You may have to turn the roller slightly to be able to remove the roller.

5. Lift the peel roller out of the print engine.

Remove the Pinch Roller

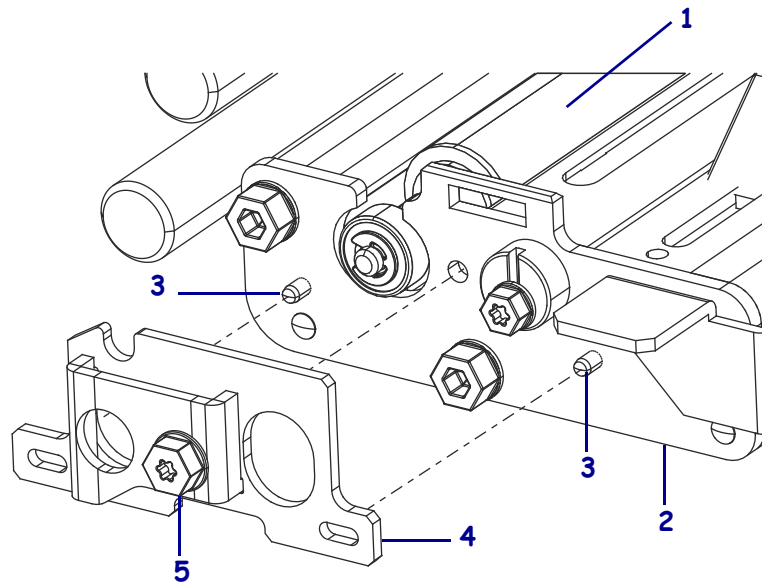
1. Open the upper pinch roller assembly by pressing on the release button located just above the pinch roller cam plate.
2. See [Figure 300](#). To remove the pinch roller cam plate, loosen the center mounting screw to release it from the pinch roller support plate.



Note • The center mounting screw is captive within the pinch roller cam plate.

3. Pull the cam plate off of the two support pins on the pinch roller support plate. Set the cam plate aside.

Figure 300 • Pinch Roller



1	Pinch roller (shaded)
2	Pinch roller support plate
3	Support pins
4	Pinch roller cam plate
5	Cam plate center mounting screw

4. Grasp the pinch roller tightly and pull the pinch roller toward the pinch roller support plate to release the pin secured in the pinch roller coupler.
The outboard bearing will extend past the end of the platen roller support plate.



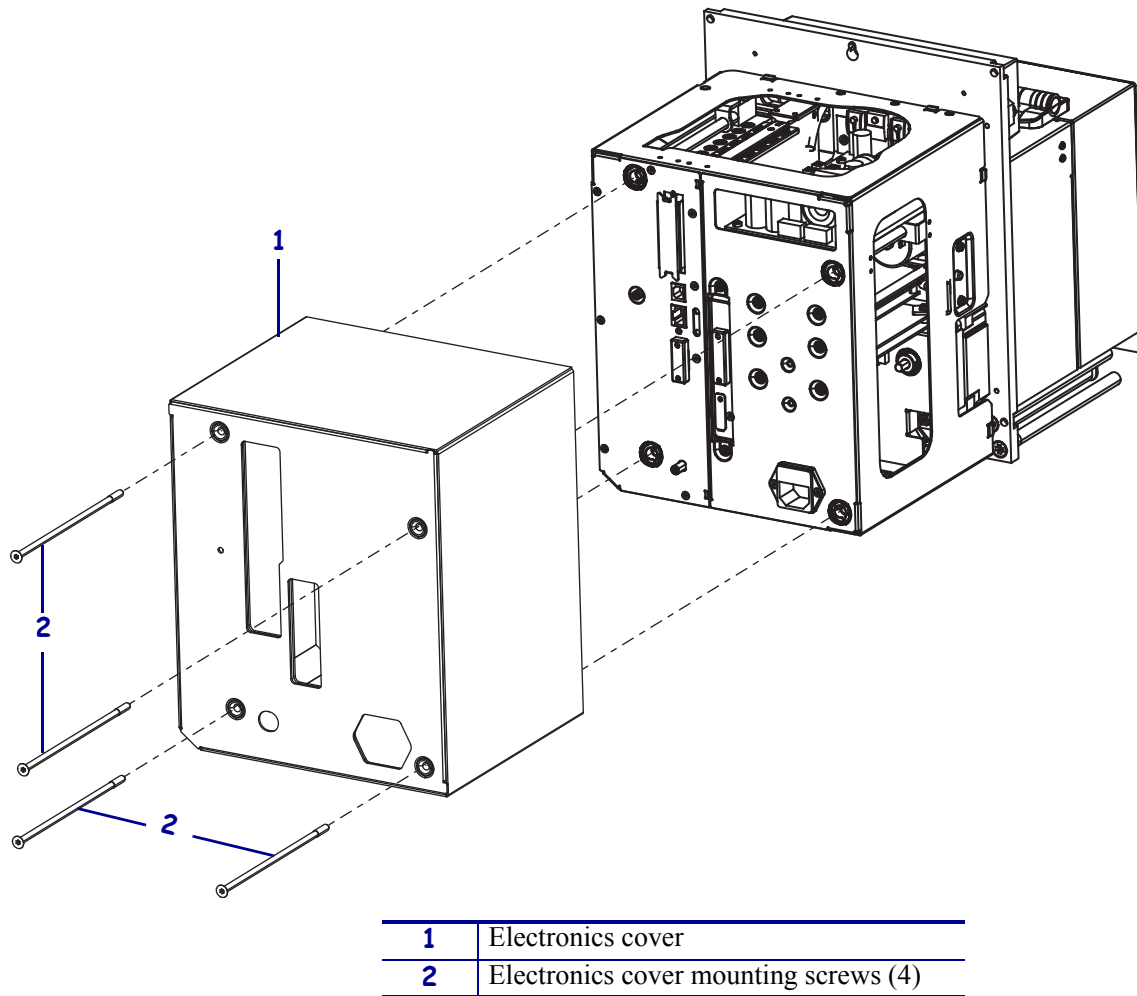
Note • You may have to turn the roller slightly to be able to remove the roller.

5. Lift the pinch roller out of the print engine.

Remove the Electronics Cover

1. See [Figure 301](#). Remove the four long mounting screws securing the electronics cover.

Figure 301 • Electronics Cover



2. Slide the electronics cover off of the print engine.

Open the Electronics Enclosure

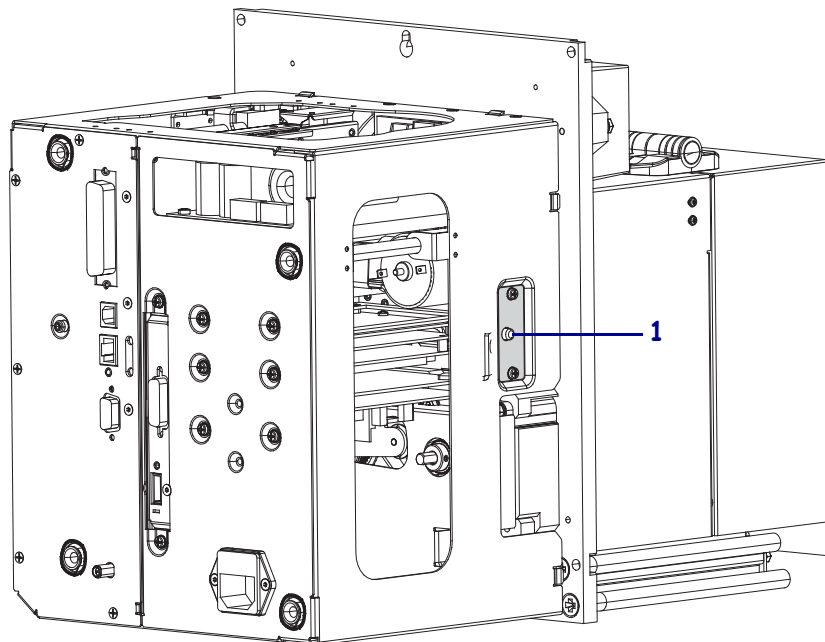
1. See [Figure 302](#). Locate the latch.



Note • For right-hand models, the latch is on the right side when looking from the back of the print engine. For left-hand models, the latch is on the left side.

2. Press the latch and swing the electronics enclosure open.

Figure 302 • Locate the Latch



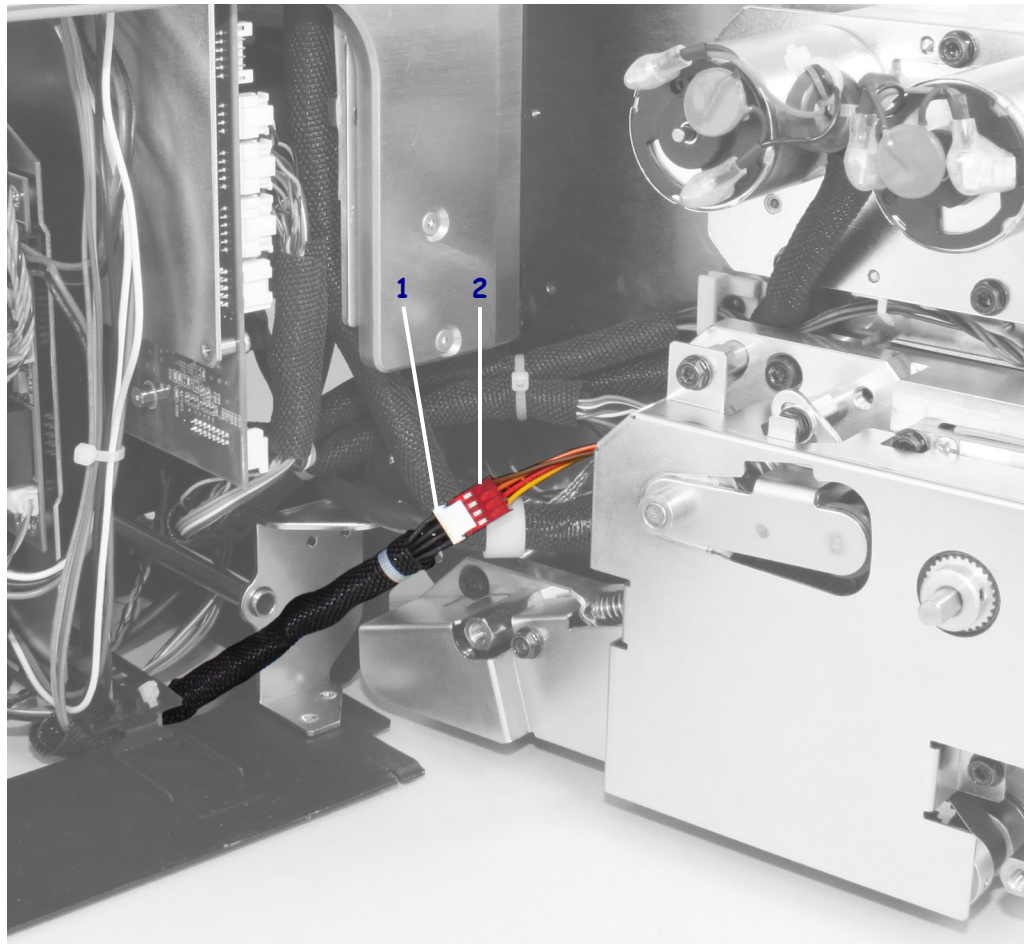
1	Latch
----------	-------

Remove the Drive System

1. See [Figure 303](#). Separate the drive system cable connectors.

The short part of the cable is wired to the stepper motor. The long part of the cable plugs into J4 on the DC power supply board.

Figure 303 • Drive System Cable



1	Long drive system cable goes to the DC power supply
2	Short drive system cable connector goes to the stepper motor

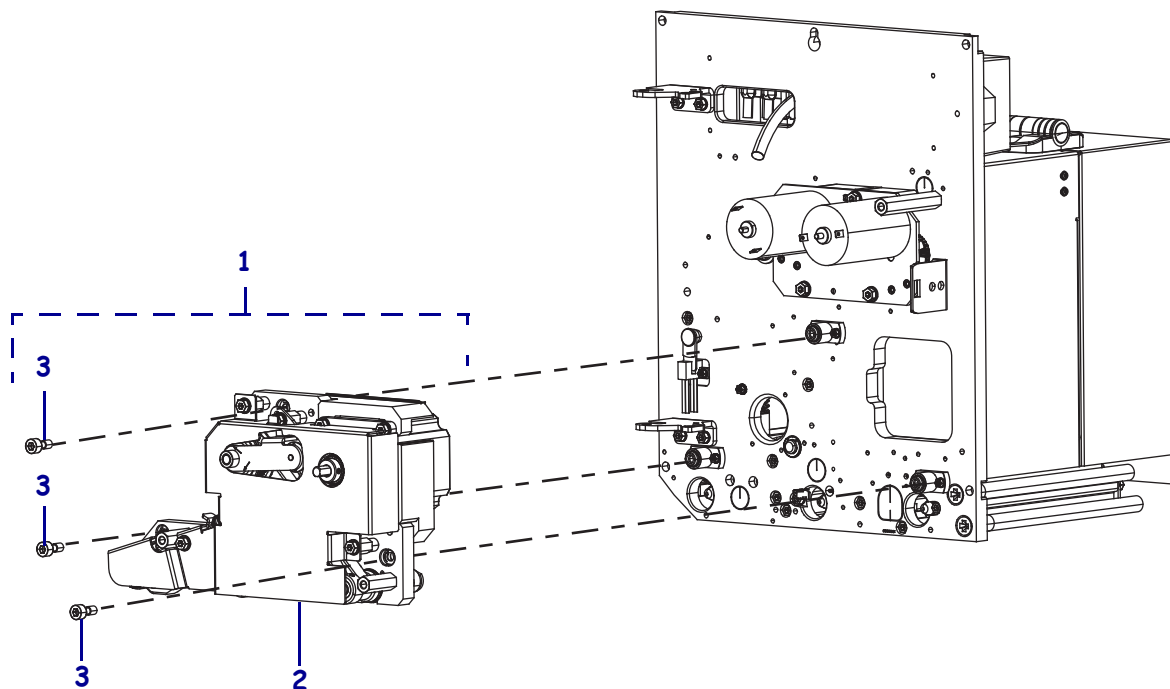
2. See [Figure 304](#). Loosen the three 4 mm mounting screws to release the drive system from the main frame.



Note • The three 4 mm mounting screws are captive within the drive system.

3. Remove the drive system from the main frame.

Figure 304 • Remove the Drive System



1	Drive system
2	Drive system cover
3	Drive system mounting screws (3)

Remove the Printhead



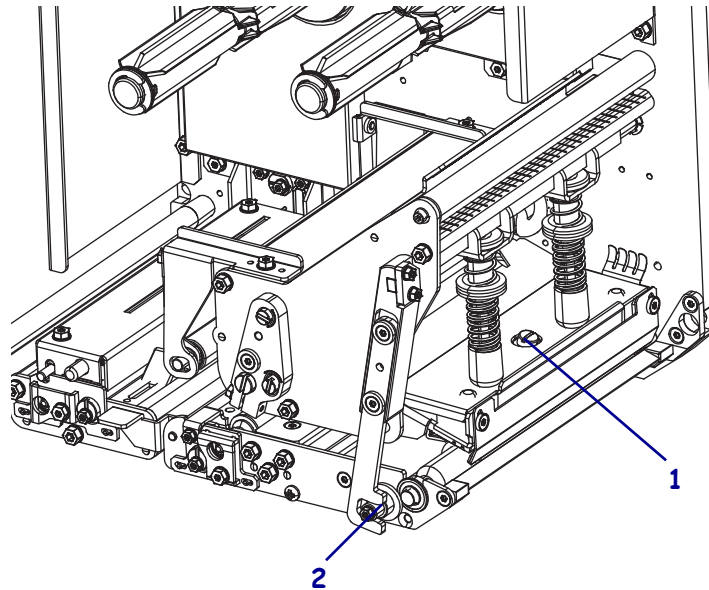
Caution • The printhead may be hot and could cause severe burns. Allow the printhead to cool.



1. **Caution** • Before touching the printhead assembly, discharge any built-up static electricity by touching the metal printer frame or by using an anti-static wriststrap and mat.

See [Figure 305](#). Loosen the printhead mounting screw.

Figure 305 • Printhead Mounting Screw

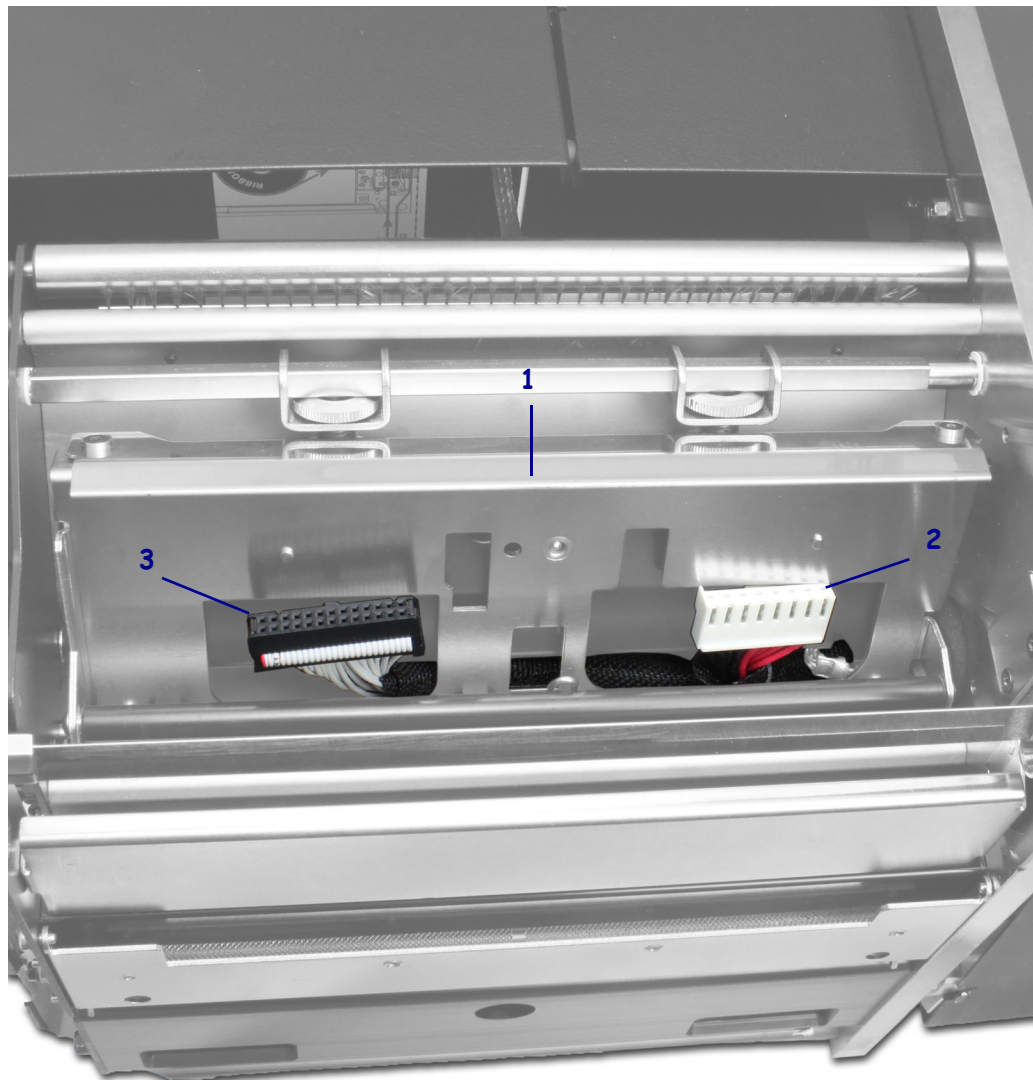


1	Printhead mounting screw
2	Printhead latch

2. Open the printhead latch.

3. See [Figure 306](#). While supporting the printhead, disconnect the power connector and the printhead data connector.

Figure 306 • Printhead Cables



1	Printhead mounting bracket
2	Printhead power connector
3	Printhead data connector (ribbon cable)

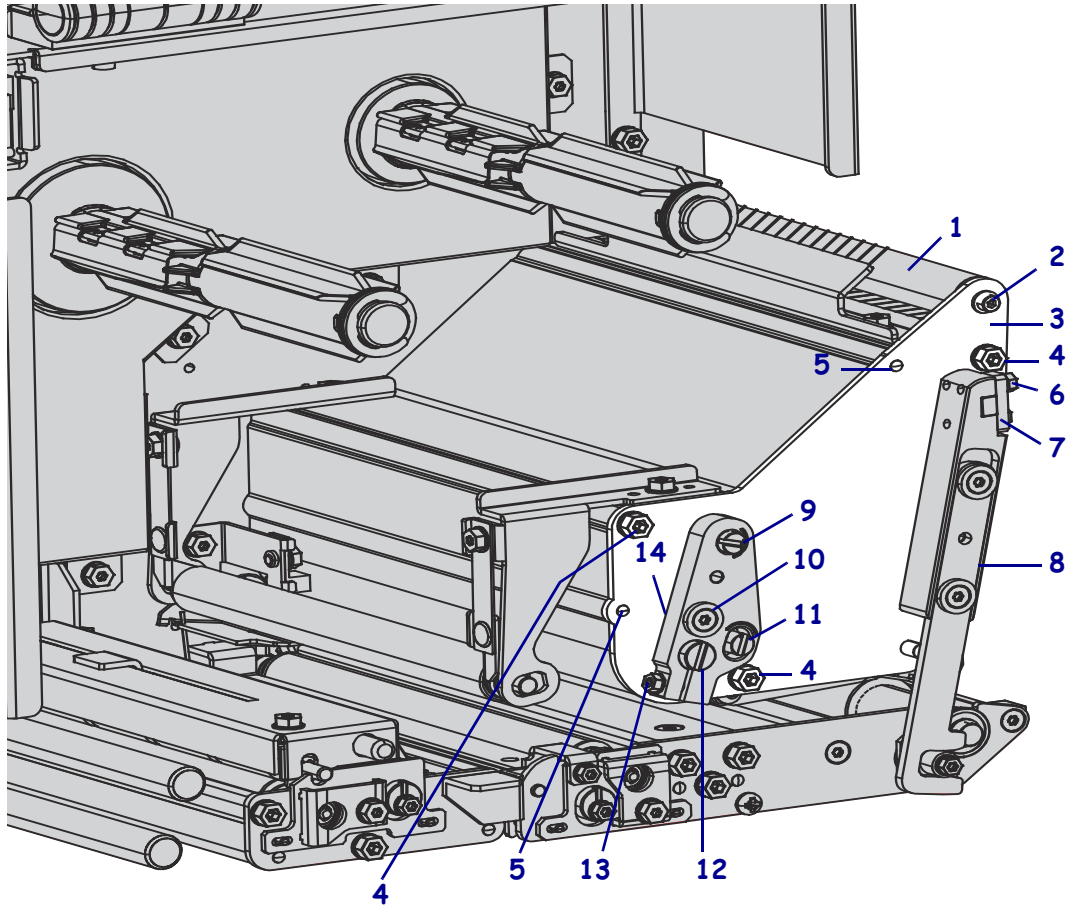
4. Remove the printhead.

Remove the Print Mechanism Extrusion End Plate



Note • See [Figure 307](#). Mark or note the location of the three print line adjusters: print line, balance, and skew.

Figure 307 • Print Mechanism Extrusion End Plate

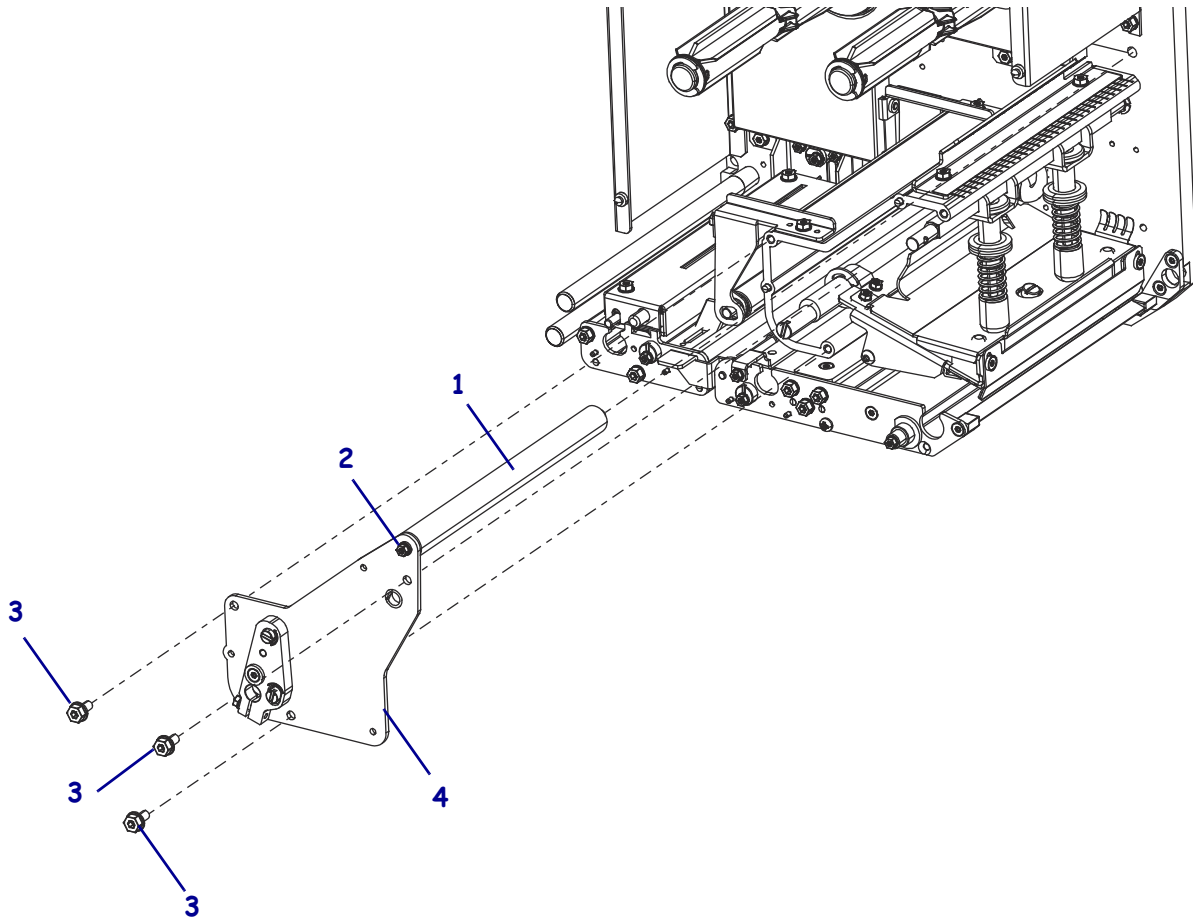


1	Upper ribbon guide roller	8	Printhead latch
2	Upper ribbon guide roller mounting screw	9	Balance adjuster
3	Print mechanism end plate (unshaded)	10	Printhead adjustment plate locking screw
4	End plate mounting screws (3)	11	Skew adjuster
5	Support pins (2)	12	Print line adjuster
6	Printhead latch screws (2)	13	Printhead adjustment plate clamp screw
7	Printhead latch clamping plate	14	Printhead adjustment plate

1. See [Figure 307](#). Loosen the two mounting screws securing the printhead latch clamping plate.
2. Slide the printhead latch off of the toggle bar to remove it.
3. Loosen the printhead adjustment plate clamp screw.
4. Loosen the printhead adjustment plate locking screw.

5. Remove the three screws securing the extrusion end plate.
6. See [Figure 308](#). Grasping the upper ribbon guide roller, gently pull the end plate off of the two support pins.
It is not necessary to disassemble the roller or its shaft from the end plate to remove it from the print engine.
7. Remove the upper ribbon guide roller mounting screw.

Figure 308 • Removing the Extrusion End Plate

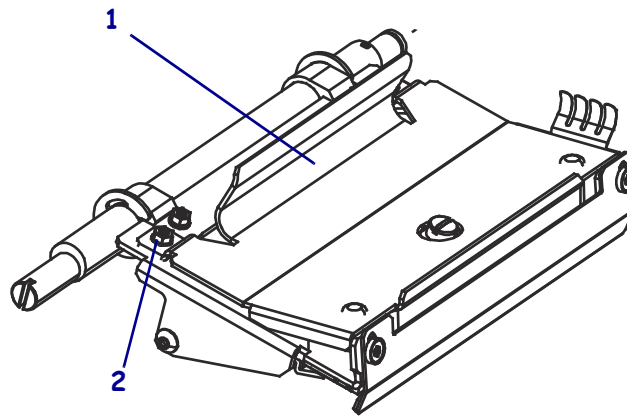


1	Upper ribbon guide roller
2	Upper ribbon guide roller mounting screw
3	Extrusion end plate mounting screw (3)
4	Extrusion end plate

Remove the Pressure Bar Mounting Bracket

1. See [Figure 309](#). Remove the outboard mounting screw and lock washer on the pressure bar mounting bracket.
2. Pull the print mechanism as far forward as possible.
3. Remove the inboard mounting screw, two lock washers and braided ground strap.
4. Lift the pressure bar mounting bracket off of the print mechanism.

Figure 309 • Pressure Bar Mounting Bracket



1	Pressure bar mounting bracket
2	Pressure bar mounting bracket mounting screws (2)

Remove the Print Mechanism

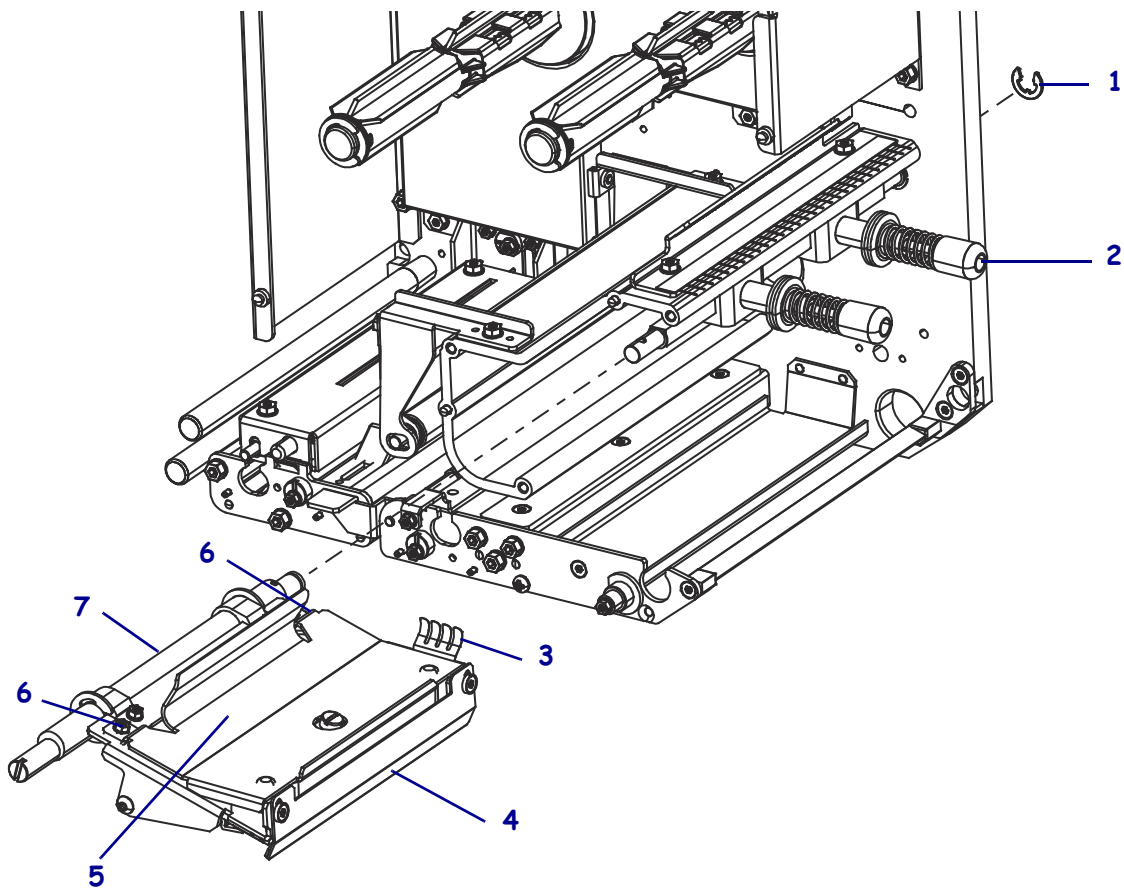


1. **Caution** • Wear protective eyewear when installing or removing E-rings, C-clips, snap rings, springs, and mounting buttons. These are under tension and could fly off.

From the electronics side, remove the large E-ring from the end of the print mechanism pivot bar.

2. See [Figure 310](#). Rotate the toggles to the “up” position to assist in the removal and replacement of the print mechanism.

Figure 310 • Print Mechanism



1	Large E-ring
2	Toggles (2) (shown in “up” position)
3	Ground fingers
4	Print mechanism
5	Pressure bar mounting bracket
6	Pressure bar mounting bracket screws (2)
7	Print mechanism pivot bar

3. Completely remove the print mechanism from the print engine.

Remove the Lower Ribbon Guide Roller

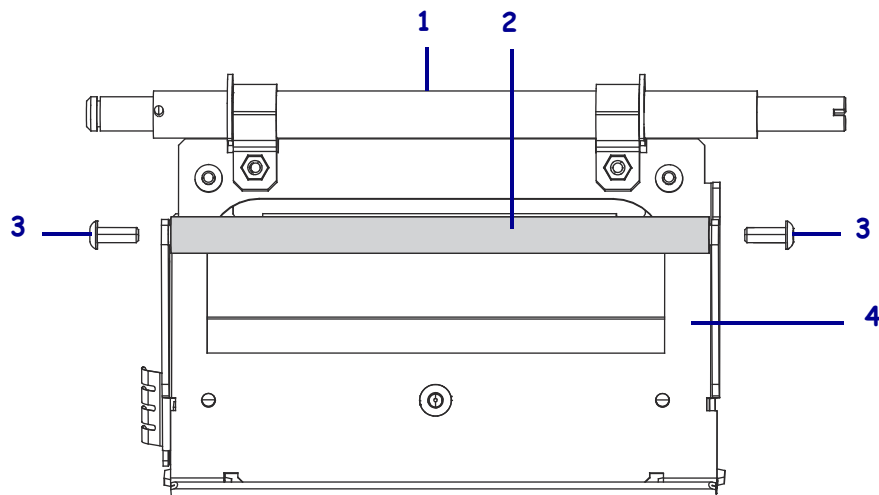
1. Turn the print mechanism face down on the workbench.
2. See [Figure 311](#). Using two 2 mm hex keys (one on each screw), remove one mounting screw securing the lower ribbon guide roller and shaft.
3. Slide the lower ribbon guide roller off of its shaft.
4. Firmly grasp the lower ribbon guide roller shaft while removing the other mounting screw securing the lower ribbon guide roller.



Note • Be careful to avoid marring the lower ribbon guide roller shaft.

5. Discard both mounting screws, ribbon roller, and shaft.

**Figure 311 • Lower Ribbon Guide Roller and Mounting Screws
(Shown from Underneath the Print Mechanism)**

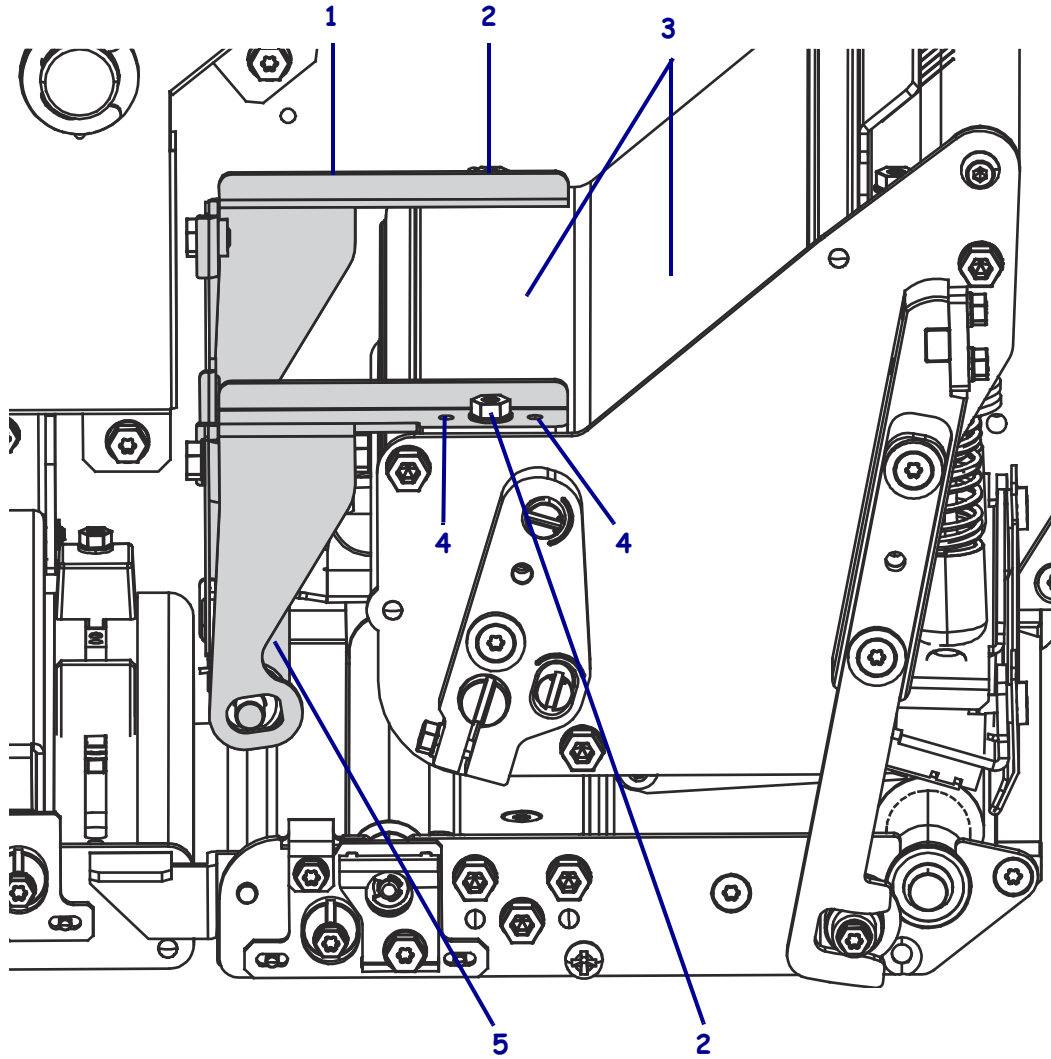


1	Print mechanism pivot bar
2	Lower ribbon guide roller and shaft (shaded)
3	Lower ribbon guide roller mounting screws (2)
4	Print mechanism

Remove the Dancer Assembly

1. See [Figure 312](#). Remove the two mounting screws securing the dancer bracket to the print mechanism extrusion.

Figure 312 • Dancer Bracket, Roller, and Mounting Screws



1	Dancer bracket
2	Dancer bracket mounting screws (2)
3	Print mechanism extrusion
4	Locators (4)
5	Dancer roller

Replace the Ribbon Roller

1. See [Figure 311](#). Align the lower ribbon guide shaft mounting holes with the print mechanism holes.
2. Reinstall one mounting screw to secure the lower ribbon guide shaft.
3. Insert the lower ribbon guide roller on its shaft.
4. While holding one hex key in the installed mounting screw to keep it from spinning, replace the other mounting screw in the other end of the ribbon roller shaft.
5. Turn the print mechanism face up.

Replace the Dancer Assembly

1. See [Figure 312](#). Reinstall the two mounting screws to secure the dancer bracket to the print mechanism extrusion.
2. Slide the bracket away from the toggles and tighten the mounting screws.



Note • Ensure that the dancer roller is parallel to the print mechanism extrusion. If required, each side of the bracket may be adjusted independently to assist with parallelism.

Replace the Pressure Bar Mounting Bracket

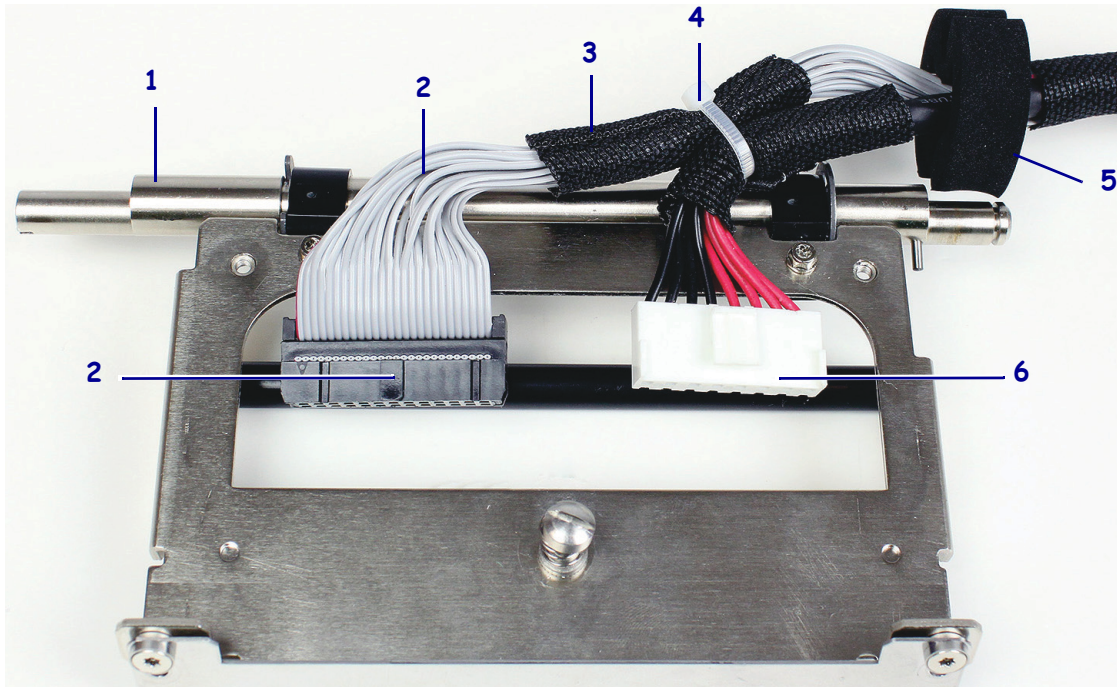


1. **Caution** • An improperly connected printhead data or power cable may cause the printhead to generate excessive heat and/or a false HEAD COLD message to display while the printhead is hot enough to cause severe burns. Allow the printhead to cool.

See [Figure 313](#). From the media side of the print engine, reinsert the printhead power and data cable connectors in their openings in the back of the printhead mounting bracket.

2. Align the pressure bar mounting bracket with the top of the print mechanism.
3. See [Figure 313](#). Position the printhead power and data cables so the length is adequate to connect the printhead.

Figure 313 • Print Mechanism with Printhead Cables



1	Print mechanism pivot bar	4	Cable tie
2	Printhead data cable	5	Sealing plug
3	Flexible conduit	6	Printhead power cable

4. Using a mounting screw and lock washer on the outboard end of the print mechanism, secure the pressure bar mounting bracket.
The outboard end is the side opposite the ground fingers.
5. Reinstall the mounting screw and lock washers to secure the ground strap to the pressure bar mounting bracket.



Note • The lock washers should be placed on both sides of the ground strap lug.

Replace the Print Mechanism

1. Route the printhead cables and the braided ground strap (if necessary) through the sealing plug.
2. Insert the plug and cables into the large hole in the main frame.
3. Which model of print engine do you have?




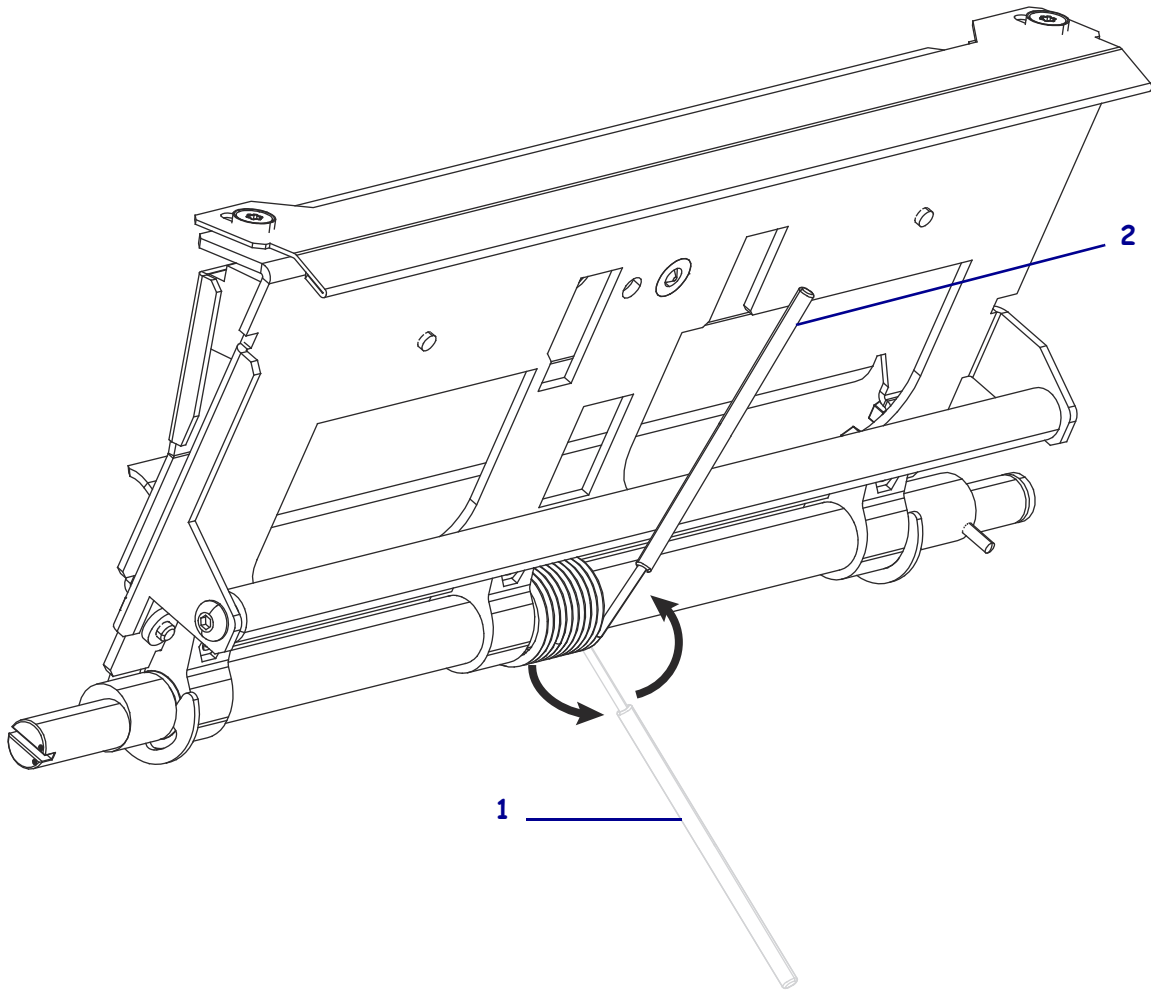
If you have a...	Then...
ZE500-4	<p>a. See Figure 310. Slide the end of the print mechanism pivot bar into the main frame.</p> <p> Note • The larger diameter of the pivot shaft must be oriented up. This position is critical.</p> <p>b. Continue with step 4.</p>
ZE500-6	<p> Caution • Wear protective eyewear when installing or removing E-rings, C-clips, snap rings, springs, and mounting buttons. These are under tension and could fly off.</p> <p>a. See Figure 314. Slide the small winding tube (provided in the kit) onto the exposed leg of the lift-assist spring.</p> <p>b. Rotate the spring approximately one revolution (or until it meets the underside of the print mechanism assembly). Do not remove the tube at this time.</p> <p>c. Using the tube, raise the spring leg up slightly as you slide the end of the print mechanism pivot bar into the main frame.</p> <p> Note • The larger diameter of the pivot shaft must be oriented up. This position is critical.</p> <p>d. Once the print mechanism is in place, lower the spring leg and slide the small tube off of the spring leg.</p> <p>e. Continue with step 4.</p>

Figure 314 • Lift-Assist Spring for ZE500-6 Print Engine



1	Winding tube and spring leg (grayed out and in mid-turn position)
2	Winding tube and spring leg in final position



4. **Caution** • Wear protective eyewear when installing or removing E-rings, C-clips, snap rings, springs, and mounting buttons. These are under tension and could fly off.

From the electronics side, replace the E-ring on the pivot bar.

5. Replace the mounting screw and lock washers to secure the printhead and electronics enclosure ground straps.

Replace the Print Mechanism Extrusion End Plate

1. See [Figure 307](#). Loosen the printhead adjustment plate locking screw enough to pivot the adjustment plate for assembly, if required.
2. See [Figure 308](#). Slide the upper ribbon guide roller onto the roller shaft, if necessary.
3. See [Figure 308](#). Align the end plate with the toggle bar and the print mechanism pivot bar.
4. Supporting the upper ribbon guide roller, insert the upper ribbon guide roller shaft into the main frame as you push the end plate onto the support pins.
5. Restore settings or place adjusters in the neutral position before tightening the printhead adjustment plate locking screw.
6. Reinstall the three end plate mounting screws securing the extrusion end plate.
7. Tighten the printhead adjustment plate locking screw.
8. Tighten the adjuster clamp screw.
9. Rotate the toggles onto the print mechanism.
10. Slide the printhead latch onto the toggle bar.
11. Tighten the two printhead latch clamping plate mounting screws.

Install the Printhead

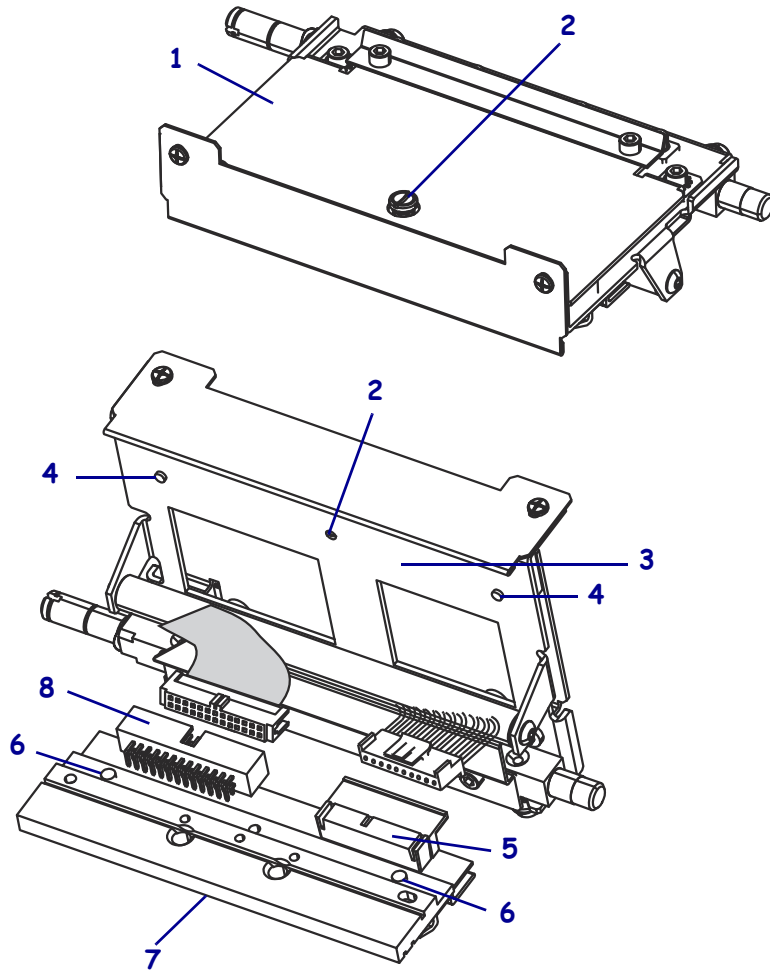


-
1. **Caution** • An improperly connected printhead data or power cable may cause the printhead to generate excessive heat and/or a false HEAD COLD message to display while the printhead is hot enough to cause severe burns. Allow the printhead to cool.
-

See [Figure 315](#). Reconnect the printhead power cable and the data cable to their appropriate connectors on the printhead. Seat both connectors firmly in place.

2. Fit the printhead into the mounting bracket by aligning the printhead alignment posts into the printhead alignment holes.
3. Verify that the printhead is seated properly. Carefully guide the printhead mounting screw into the printhead's aluminum body. After the screw is aligned properly, tighten it until snug.
Do not over-tighten.
4. Position the toggles so that they are evenly distributed across the width of the media and adjusted to provide equal pressure to the pressure bar mounting bracket.

Figure 315 • Printhead and Bracket Alignment
 (LH Version Shown)



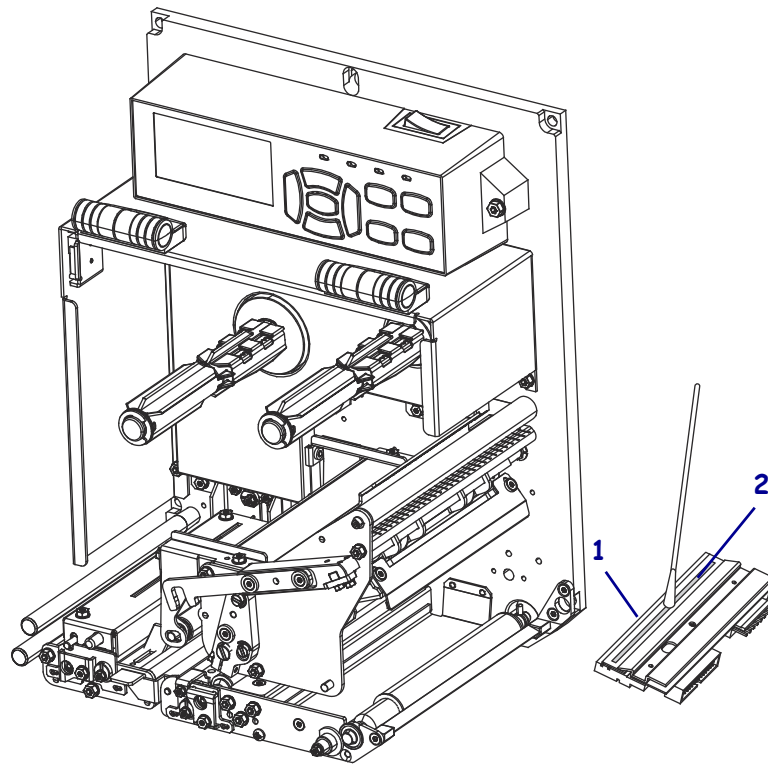
1	Print mechanism assembly
2	Printhead mounting screw
3	Printhead assembly mounting bracket
4	Printhead alignment post (2)
5	Printhead power connector
6	Printhead alignment hole (2)
7	Printhead
8	Printhead data connector

Clean the Printhead

1. See [Figure 316](#). Using the Zebra Preventive Maintenance Kit* (p/n: 47362), apply the cleaning solution to the cotton swab and clean the print element (gray area) of the new printhead.

*In place of the Preventive Maintenance Kit, you may use a clean swab dipped in a solution of isopropyl alcohol (minimum 90%) and deionized water (maximum 10%).

Figure 316 • Cleaning the Printhead



1	Printhead
2	Printhead elements (gray area)

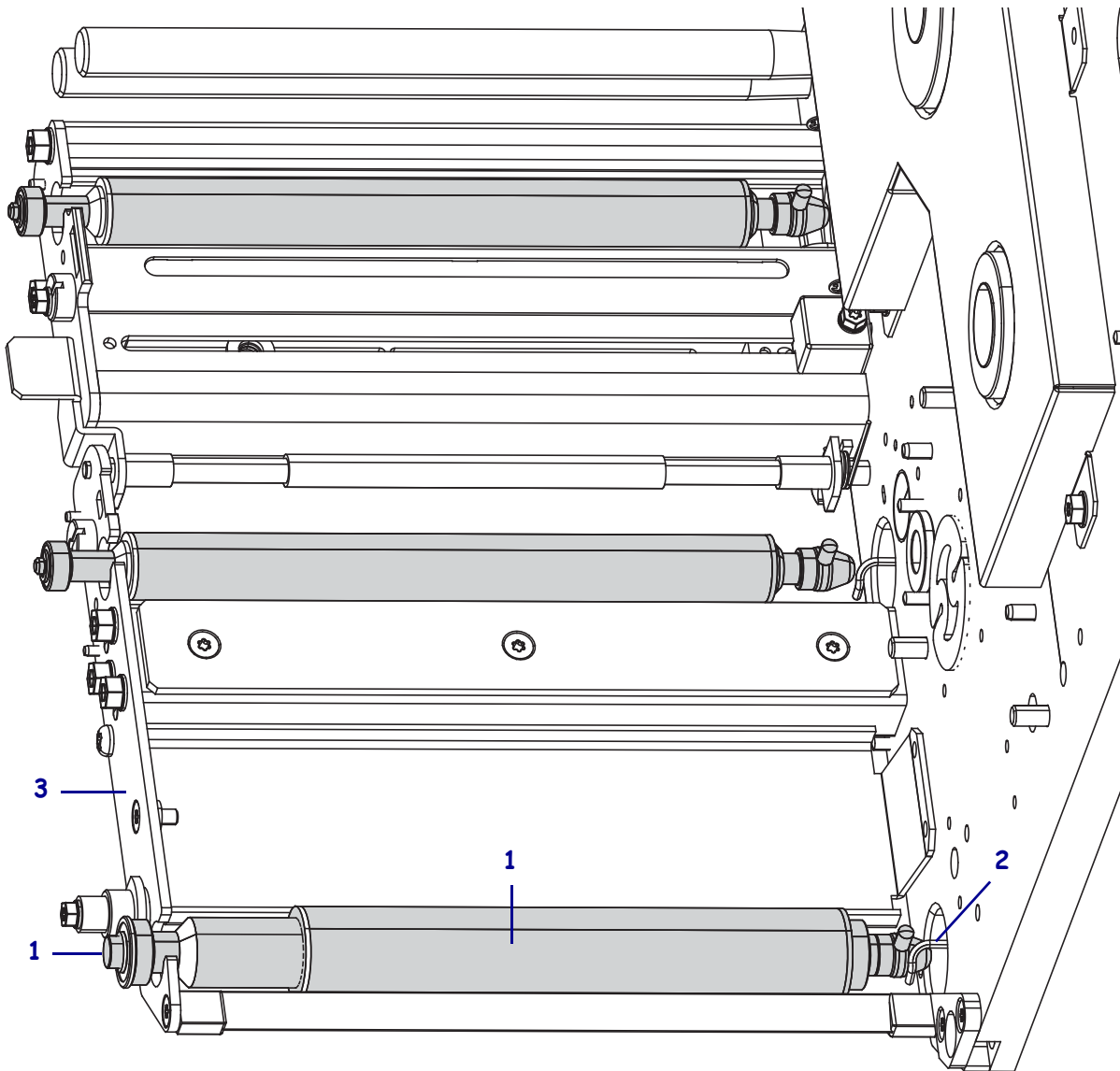
Reinstall the Drive System

1. See [Figure 304](#). Align the drive system with the drive system mounts on the main frame, and reinstall the three 4mm mounting screws.
2. See [Figure 303](#). Reconnect the stepper motor cable connectors. The short cable is wired to the drive motor. The long cable plugs into J4 on the DC power supply board.

Replace the Pinch Roller

1. See [Figure 317](#). Starting with the pin end of the roller, align the pin with the slot in the pinch roller coupler.

**Figure 317 • Roller Locations
(Top View with Subsystems Removed)**



1	Platen roller (shaded)
2	Platen roller coupler
3	Platen roller support plate

2. Lower the other end of the pinch shaft into the large hole on the pinch roller support plate.
3. Push the shaft into the pinch roller coupler to fully seat the pinch shaft.
You will hear a click when the pin is seated correctly or turn the roller slightly to confirm that the roller is firmly seated.
4. See [Figure 300](#). Replace the cam plate on the two support pins on the pinch roller support plate.
5. Reinstall the center mounting screw on the cam plate.
6. Close the upper pinch roller assembly.

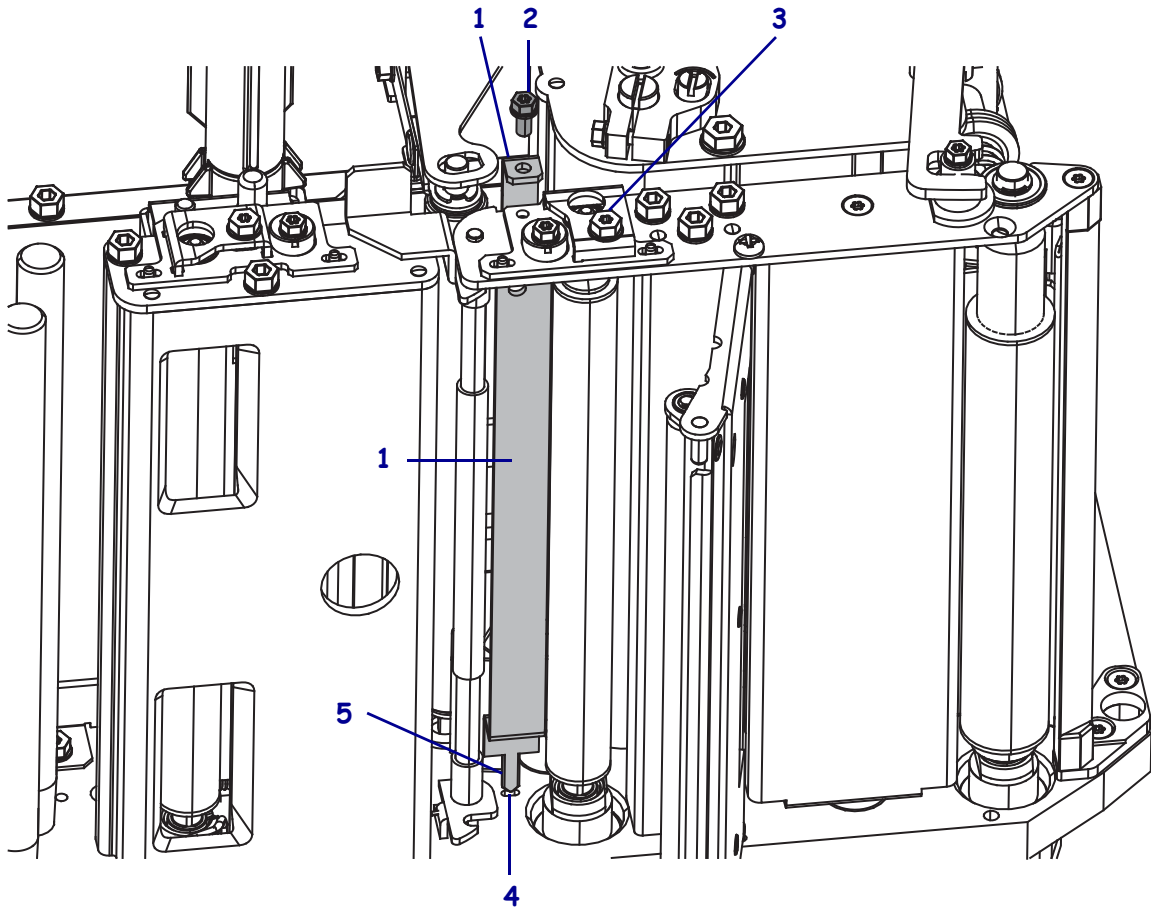
Replace the Peel Roller

1. Starting with the pin end of the roller, align the pin with the slot in the peel roller coupler.
2. Lower the other end of the peel roller shaft into the large hole on the platen roller support plate.
3. Push the shaft into the peel roller coupler to fully seat the peel shaft.
You will hear a click when the pin is seated correctly or turn the roller slightly to confirm that the roller is firmly seated.
4. See [Figure 318](#). Insert the tab on the deflector plate into the main frame slot.



Note • [Figure 318](#) shows the deflector plate separated from the platen roller cam plate. The deflector plate was designed to be attached to the cam plate during removal and installation.

Figure 318 • Deflector Plate



1	Deflector plate
2	Deflector plate mounting screw
3	Platen roller cam plate mounting screw
4	Slot
5	Tab

5. Replace the cam plate on the two support pins on the platen roller support plate.
6. Tighten the center mounting screw on the cam plate.
7. Close the peel roller bracket by pushing up until you hear the click.

Replace the Platen Roller

1. See [Figure 298](#). Starting with the pin end of the roller, align the pin with the slot in the platen roller coupler.
2. Lower the other end of the platen shaft into the large hole on the platen roller support plate.
3. Push the shaft toward the platen pulley to fully seat the platen shaft.
You will hear a click when the pin is seated correctly or turn the roller slightly to confirm that the roller is firmly seated.
4. See [Figure 297](#). Loosen the retaining screw for the platen latch pin, and rotate the latch pin to the closed position. Tighten the screw.
5. Close the printhead.

Close the Electronics Enclosure

1. Ensure that all wires are routed properly and are not causing any obstructions, and then carefully swing the electronics enclosure closed.
2. Adjust the wire clips for the parallel port until they are touching the parallel port.
3. Slide the electronics cover onto the print engine.
4. Reinstall the four electronics cover mounting screws.

Reinstall the Print Engine in the Applicator

1. To reinstall the print engine into the applicator, carefully place the keyhole on the center mounting bolt.



Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.

2. Replace the four corner mounting screws securing the print engine to the applicator.
3. Tighten the center mounting bolt.

Resume Printer Operation

1. Open the media cover.
2.

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.

Open the printhead latch, reinstall the media and ribbon, and close the printhead latch.

3. Reconnect the AC power cord and interface cables.
4. Turn on (I) the print engine.

Check the Print Line Quality

1. Check the print quality by performing a PAUSE Self-Test. Adjust the print line quality, if necessary.

For more detailed information on print line adjustments or the self-test, refer to the ZE500™ Series Print Engine Maintenance Manual in the Advanced User section.

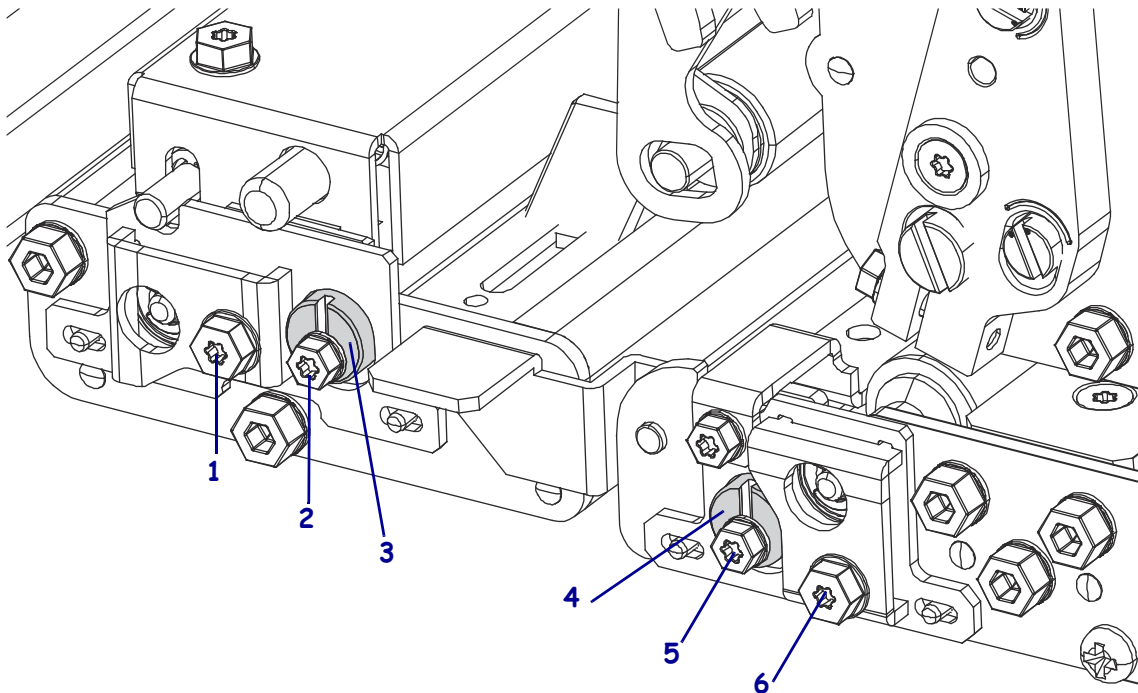
The installation is complete.

Adjust Media Tracking

1. Check the media tracking by performing a PAUSE Self-Test.
2. Adjust the media tracking, if necessary.
3. Which adjustments are necessary?

If you...	Then...
<ul style="list-style-type: none"> • Removed or replaced both of the roller plates 	<ul style="list-style-type: none"> • Perform the <i>Skew Adjustments</i>. • Perform the <i>Media Tension Adjustment across the Peel Bar</i>.
<ul style="list-style-type: none"> • Replaced the upper pinch roller • Replaced the media guide shelf or media sensor • Removed or replaced the pinch roller plate 	<ul style="list-style-type: none"> • Perform the <i>Skew Adjustments</i>. • Perform the <i>Pressure Balance Adjustment (between the Upper and Lower Pinch Rollers)</i>.

Figure 319 • Pinch and Peel Cams

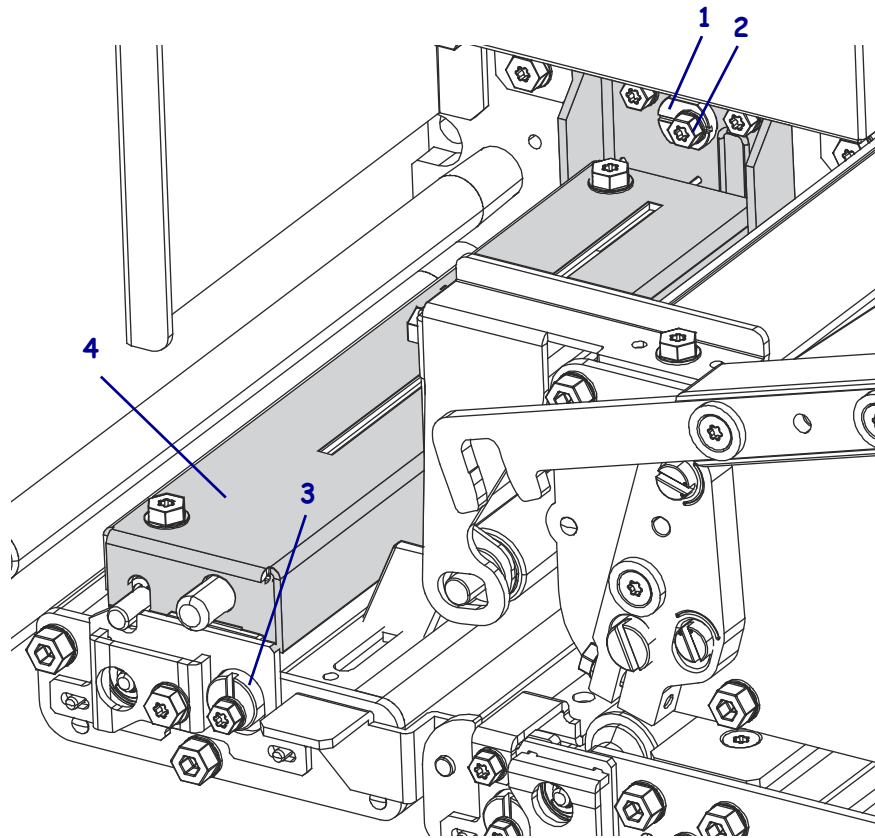


1	Pinch cam plate center mounting screw
2	Pinch cam locking screw
3	Pinch cam (shaded)
4	Peel cam (shaded)
5	Peel cam locking screw
6	Peel cam plate center mounting screw



Note • The pinch and peel cams are in the neutral position when the slot is vertical.

Figure 320 • Upper Segmented Pinch Roller



1	Upper pinch roller cam
2	Upper pinch roller cam locking screw
3	Pinch roller cam
4	Upper segmented pinch roller (shaded)



Note • The steps in these procedures are for the right-hand (RH) print engine. Steps for a left-hand (LH) print engine may be slightly different.

Skew Adjustments

In a RH print engine, perform the following steps:

1. See [Figure 319](#). Loosen the pinch cam plate center mounting screw and the pinch cam locking screw.
2. Using a flat-blade screwdriver, insert the screwdriver into the slot in the pinch cam.
3. Rotate the pinch cam to move the media.
 - Rotate *clockwise* to move the media closer to the inboard (main frame) side of the print engine.
 - Rotate *counterclockwise* to move the media closer to the outboard (media door) side of the print engine.
4. Tighten the pinch cam plate center mounting screw and the pinch cam locking screw.

Pressure Balance Adjustment (between the Upper and Lower Pinch Rollers)

In a RH print engine, perform the following steps:



Note • The upper pinch cam is in the neutral position when the slot is horizontal.

1. See [Figure 320](#). Loosen the upper pinch cam locking screw.
2. Using a flat-blade screwdriver, insert the screwdriver into the slot in the upper pinch cam.
3. Rotate the upper pinch cam to move the media.
 - Rotate *clockwise (upward)* to move the media closer to the outboard (media door) side of the print engine.
 - Rotate *counterclockwise (downward)* to move the media closer to the inboard (main frame) side of the print engine.
4. Tighten the pinch cam plate center mounting screw and the pinch cam locking screw.

The adjustments are complete.

Media Tension Adjustment across the Peel Bar

In a RH print engine, perform the following steps:

1. See [Figure 319](#). Loosen the peel cam plate center mounting screw and the peel cam locking screw.
2. Using a flat-blade screwdriver, insert the screwdriver into the slot in the peel cam.
3. Rotate the peel cam to tension the edge of the media.
 - Rotate *clockwise* to tension the inboard edge of the media (closer to the main frame side of the print engine).
 - Rotate *counterclockwise* to tension the outboard edge of the media (closer to the media door side of the print engine).
4. Hold the peel cam plate in place while tightening the peel cam plate center mounting screw and the peel cam locking screw.

The adjustments are complete.



Ribbon Spindles Maintenance Kit

Installation Instructions

This kit includes the parts and documentation necessary to install the Ribbon Spindles Maintenance Kit in the ZE500™ Series Print Engines. Read these instructions thoroughly before installing this kit.



Caution • This installation must be performed by a qualified service technician.

Parts List

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

Figure 321 • Kit Contents

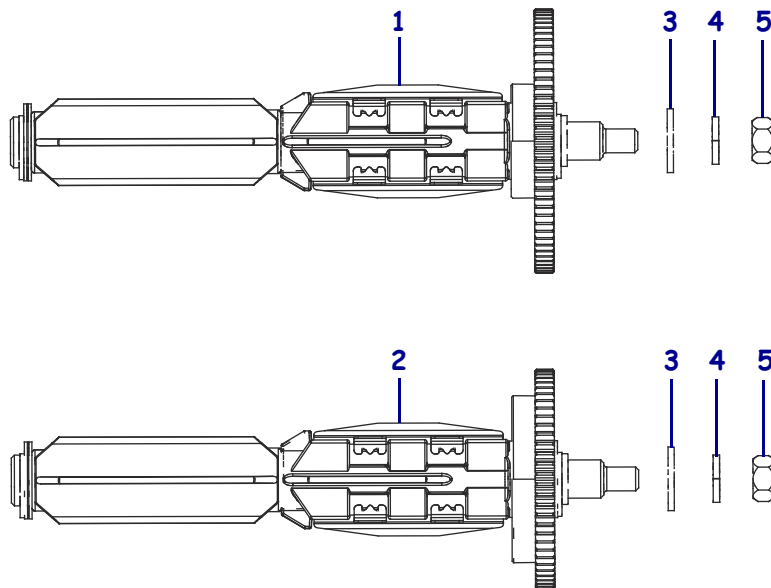


Table 50 • Parts List

✓	Item	Qty	Part Number	Description
	Ref	1	P1046696-037	Ribbon Spindles ZE500-4 RH/LH Maintenance Kit
		1	P1046696-038	Ribbon Spindles ZE500-6 RH/LH Maintenance Kit
	1	1	<i>N/A</i>	Supply Spindle/Gear Assembly, ZE500-4 RH/LH
			<i>N/A</i>	Supply Spindle/Gear Assembly, ZE500-6 RH/LH
	2		<i>N/A</i>	Take-Up Spindle/Gear Assembly, ZE500-4 RH/LH
			<i>N/A</i>	Take-Up Spindle/Gear Assembly, ZE500-6 RH/LH
	3	2	<i>HW45935</i>	Washer, Flat 0.625 × 0.265 (Qty of 25)
	4	2	<i>N/A</i>	Washer, Split M6
	5	2	<i>N/A</i>	Nut, M6 Zn

N/A = Not available as a separate part (listed for identification purposes only).

Tools Required



Tools • You need these tools to complete this procedure:

- Metric Hex Key (Allen Wrench) Set
- Metric Nutdriver Set
- Torx Key Set
- Antistatic Wriststrap and Mat
- Flat-blade Screwdriver Set
- Phillips Screwdriver Set
- Metric Open-End Wrench Set

Remove Power and Data Cables, Ribbon, and Media



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

Connect yourself to an antistatic device.



2. **Caution** • Turn off (O) the print engine and disconnect it from the power source before performing the following procedure.

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


3. **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.

Open the media door, the printhead latch, and remove media and ribbon from the print engine.

4. Close the printhead latch, and then close the media door.

Remove Print Engine from Applicator

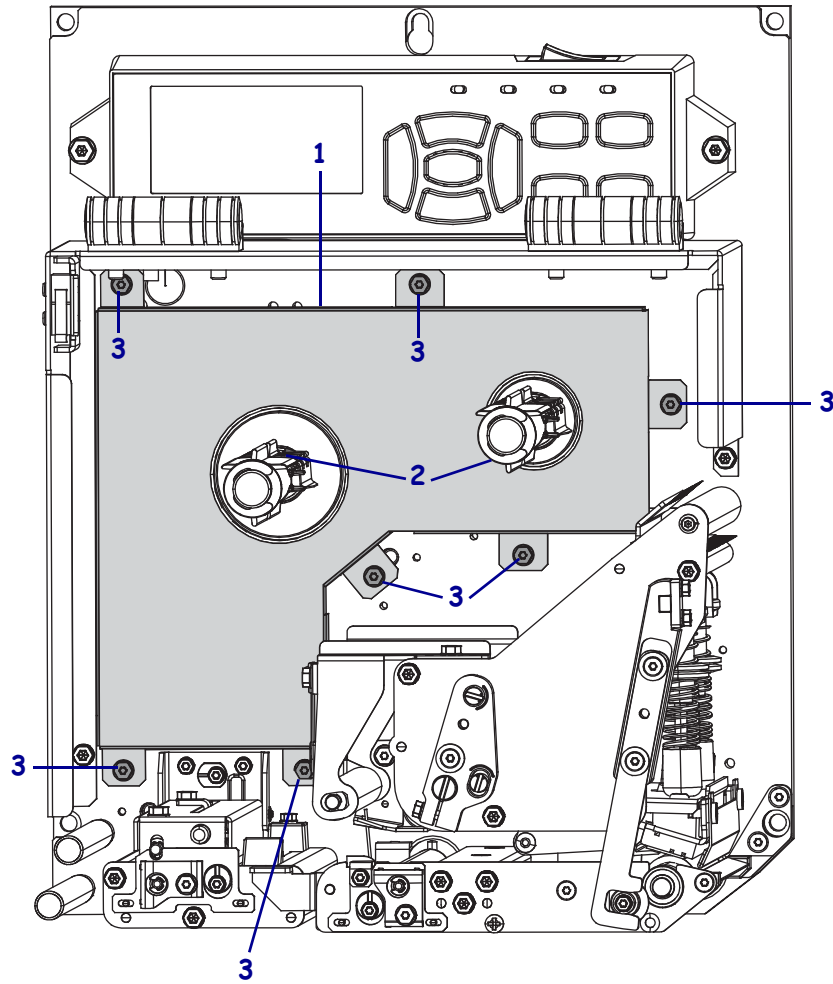
1. Does your applicator (or stand) permit open access to the rear of the print engine?

If you have an...	Then...
Open access	<p>You may swing the print engine open and work on it without removing the unit from the applicator.</p> <p>If you wish to remove the unit from the stand at any time, follow the instructions listed for the <i>Obstructed access</i> type applicator shown in this table.</p> <p>a. Go to <i>Remove the Electronics Cover</i>.</p>
Obstructed access	<p>You must remove the print engine from the applicator before you work on it.</p> <p>a. Remove the four corner mounting screws securing the print engine to the applicator.</p> <p>b. Loosen the center mounting bolt, but do not remove it.</p> <p> Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.</p> <p>c. Lift the print engine off the center mounting bolt and place on a workbench.</p>

Remove the Ribbon Drive Cover

1. See [Figure 322](#). From the media side, remove the seven mounting screws securing the ribbon drive cover.

Figure 322 • Ribbon Drive Cover



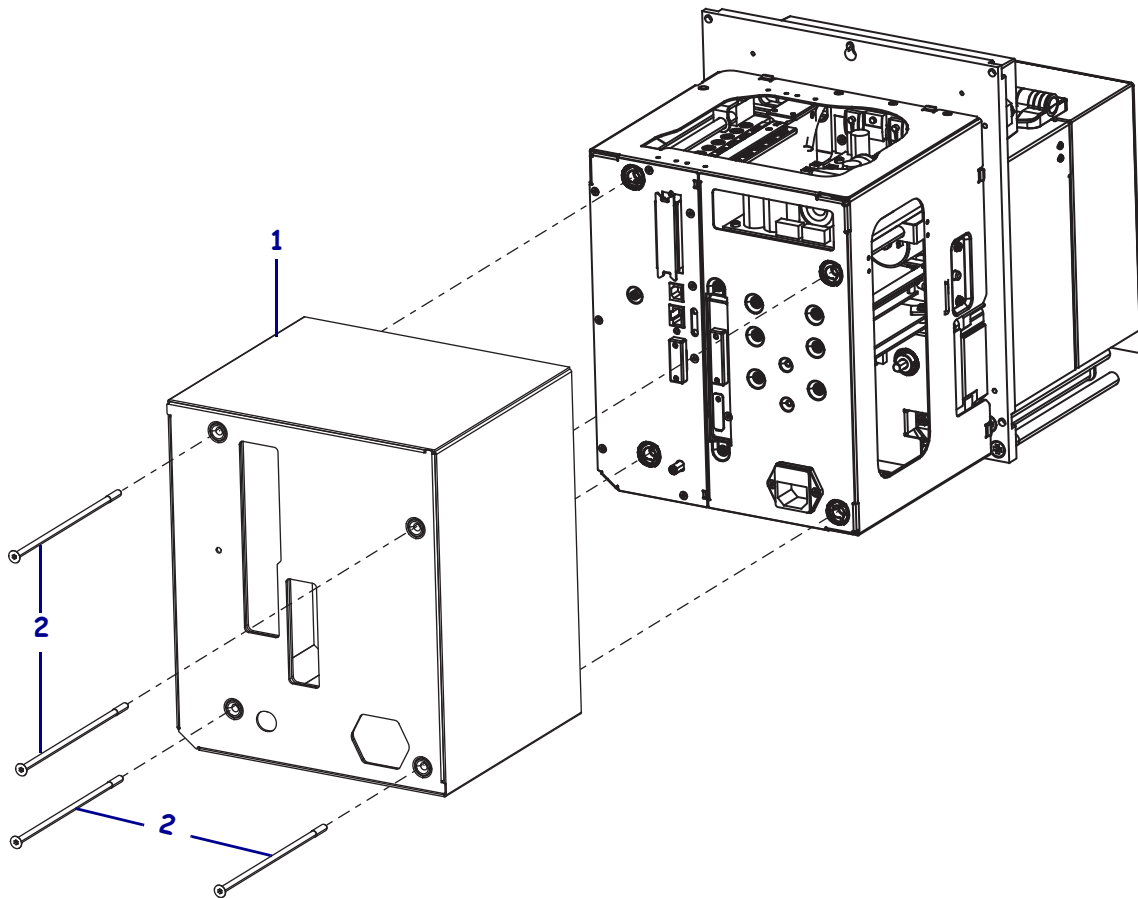
1	Ribbon drive cover (shaded)
2	Ribbon spindles
3	Mounting screws (7)

2. Pull the ribbon drive cover off of the ribbon spindles.

Remove the Electronics Cover

1. See [Figure 323](#). Remove the four long mounting screws securing the electronics cover.

Figure 323 • Electronics Cover



1	Electronics cover
2	Electronics cover mounting screws (4)

2. Slide the electronics cover off of the print engine.

Open the Electronics Enclosure

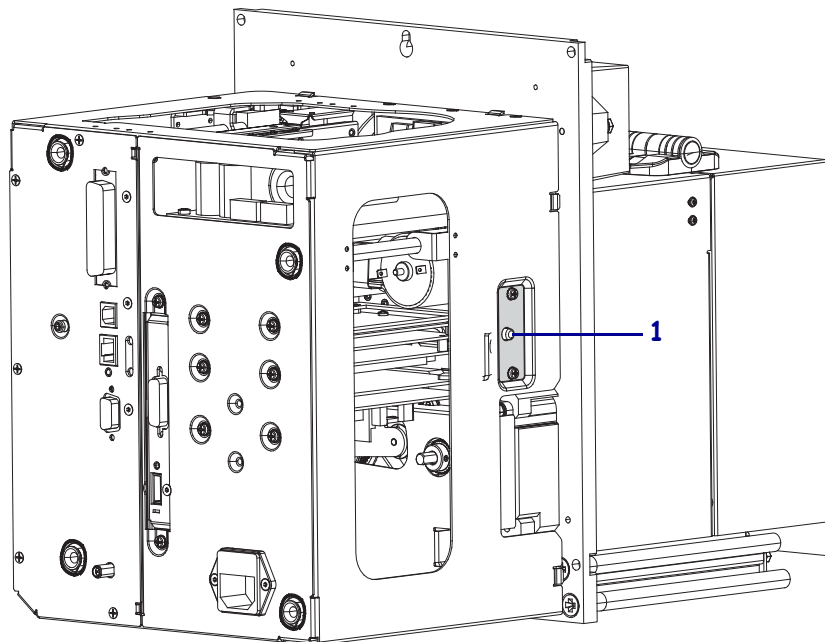
1. See [Figure 324](#). Locate the latch.



Note • For right-hand models, the latch is on the right side when looking from the back of the print engine. For left-hand models, the latch is on the left side.

2. Press the latch and swing the electronics enclosure open.

Figure 324 • Locate the Latch

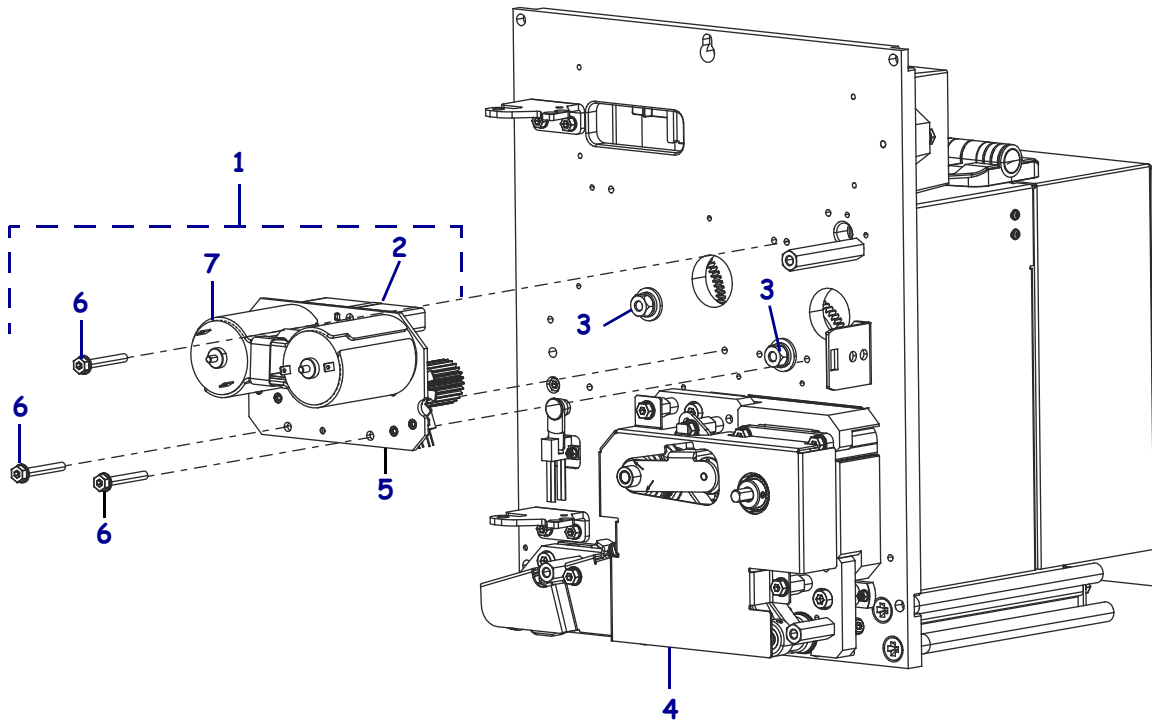


1	Latch
---	-------

Remove the Ribbon Spindles

1. See [Figure 325](#). From the electronics side, remove the three mounting screws securing the ribbon drive system.

Figure 325 • Ribbon Drive System



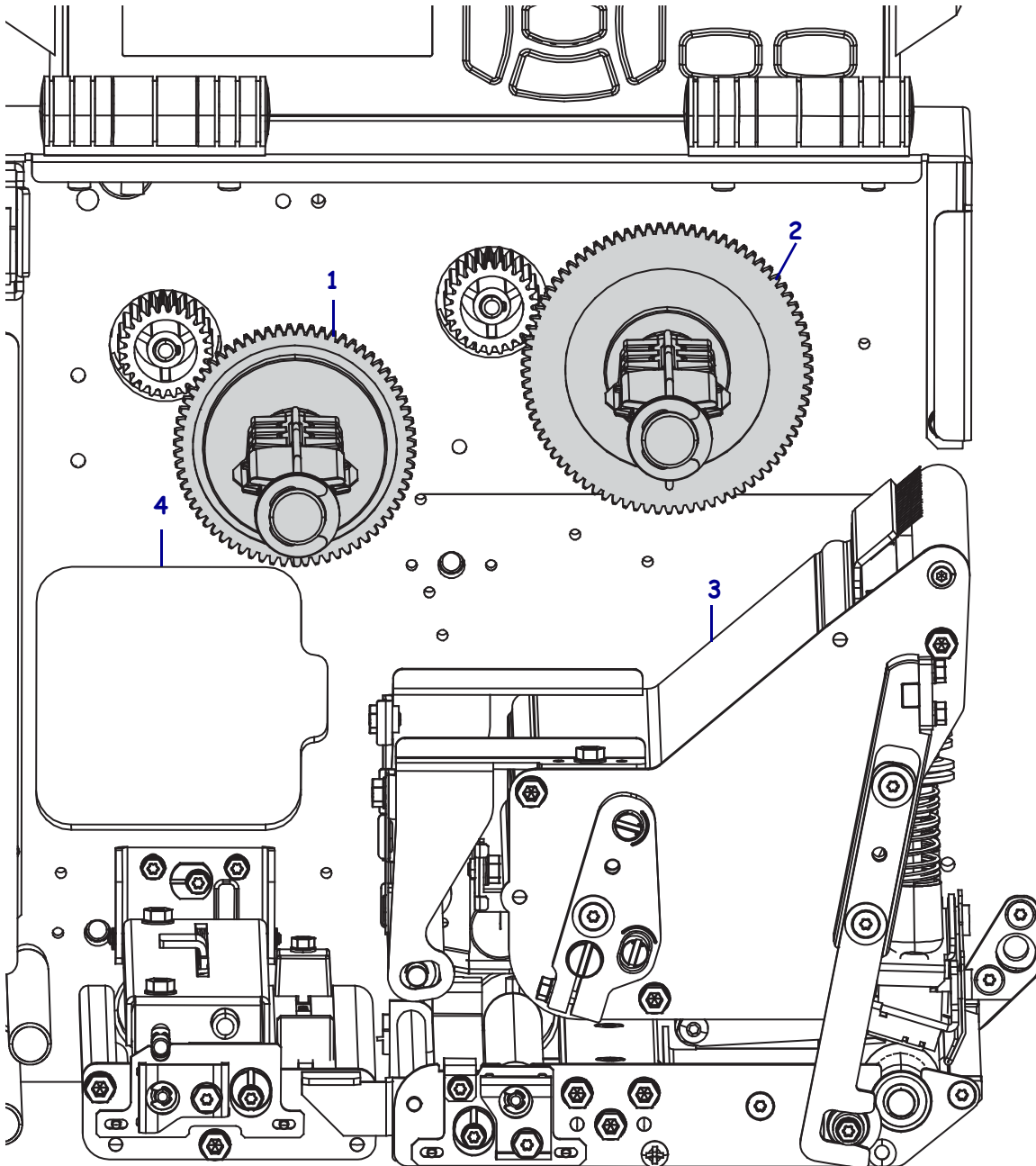
1	Ribbon drive system
2	Heat sink
3	Spindle nut (2)
4	Drive system
5	Ribbon drive bracket
6	Ribbon drive system mounting screws (3)
7	Ribbon drive motor

2. With all of the wires still attached to the ribbon drive motors, gently pull the ribbon motors and bracket away from the main frame and set the motor bracket on the top edge of the drive system to permit access to the two spindle nuts.
Ribbon drive motors will be pointing down.
3. Using a 10 mm nutdriver, remove the nut and two washers securing each ribbon spindle shaft.
4. From the media side, remove the two complete spindle assemblies.

Replace the Ribbon Spindles

1. See [Figure 326](#). From the media side, insert the larger supply spindle/gear assembly in the hole above the print mechanism.

Figure 326 • Ribbon Spindles



1	Supply spindle/gear assembly (shaded)
2	Take-up spindle/gear assembly (shaded)
3	Print mechanism
4	Stepper motor

2. Insert the smaller take-up spindle/gear assembly in the hole above the stepper motor.
3. From the electronics side, replace the items in this order:
 - Flat washer
 - Split washer
 - Nut
4. Using a 10 mm nutdriver, tighten each nut to secure each ribbon spindle shaft.
5. Lift the ribbon motor bracket off of the top edge of the drive system.
6. Align the heat sink and ribbon motor bracket with the two pins and three mounting holes on the main frame.
7. Reinstall the three mounting screws to secure the ribbon drive motors and bracket to the main frame.

Replace the Ribbon Drive Cover

1. From the media side, align the ribbon drive cover against the main frame.
2. Reinstall the seven mounting screws to secure the ribbon drive cover.

Close the Electronics Enclosure

1. Ensure that all wires are routed properly and are not causing any obstructions, and then carefully swing the electronics enclosure closed.
2. Adjust the wire clips for the parallel port until they are touching the parallel port.
3. Slide the electronics cover onto the print engine.
4. Reinstall the four electronics cover mounting screws.

Reinstall the Print Engine in the Applicator

1. To reinstall the print engine into the applicator, carefully place the keyhole on the center mounting bolt.



Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.

2. Replace the four corner mounting screws securing the print engine to the applicator.
3. Tighten the center mounting bolt.

Resume Printer Operation

1. Open the front cover.
2. **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.

Unlatch the printhead lever, reinstall the media and ribbon, and close and latch the printhead lever.

3. Ensure that the printhead toggles are positioned evenly across the width of the media.
4. Reconnect the AC power cord and interface cables.
5. Turn on (I) the print engine.

The installation is complete.



Notes • _____

Drive System Replacements

Contents

Drive System Overview	586
Drive System Kits	588
Drive System Maintenance Kit	590
Drive Belts Maintenance Kit	610
Stepper Motor Maintenance Kit	622

Figure 327 • Drive System Overview

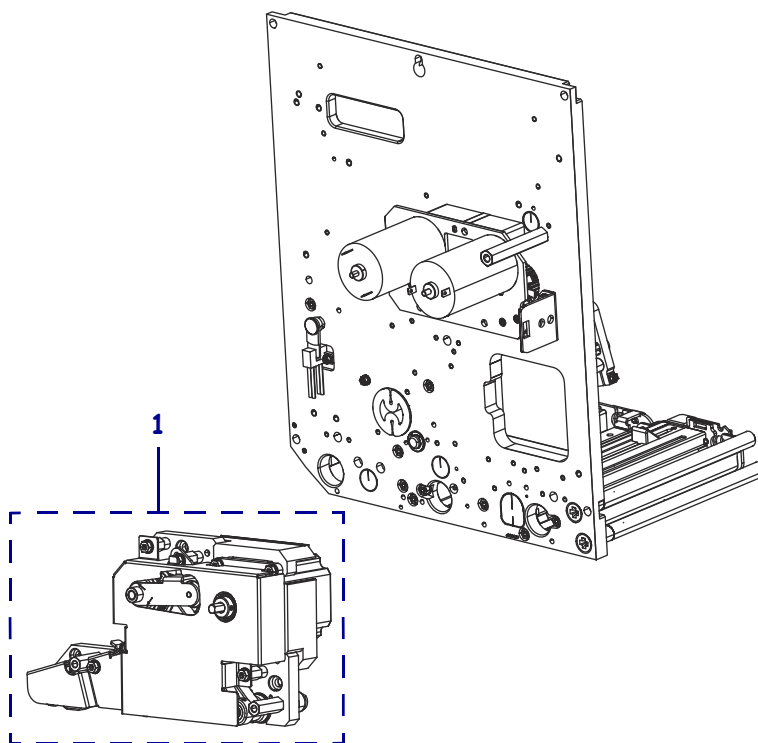


Table 51 • Drive System Overview

Item	Part Number	Description
1	P1046696-046	ZE500 Series Drive System Maintenance Kit, 203 dpi, RH, see Table 52 on page 589 .
	P1046696-047	ZE500 Series Drive System Maintenance Kit, 300 dpi, RH, see Table 52 on page 589 .
	P1046696-048	ZE500 Series Drive System Maintenance Kit, 203 dpi, LH, see Table 52 on page 589 .
	P1046696-049	ZE500 Series Drive System Maintenance Kit, 300 dpi, LH, see Table 52 on page 589 .
N/S	P1046696-050	ZE500 Series Drive Belts Maintenance Kit, see Table 52 on page 589 .
N/S	P1046696-051	ZE500 Series Stepper Motor Maintenance Kit, RH, see Table 52 on page 589 .
	P1046696-019	ZE500 Series Stepper Motor Maintenance Kit, LH, see Table 52 on page 589 .
N/S = Not Shown		

Figure 328 • Drive System Kits

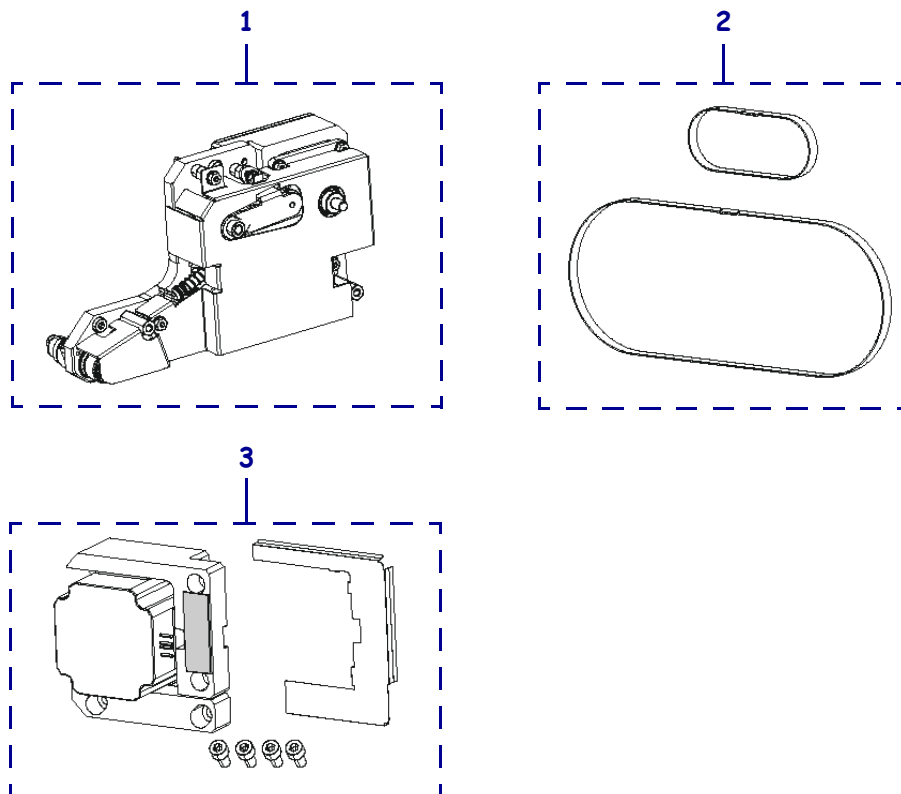


Table 52 • Drive System Kits Parts List

Item	Part Number	Description
1	P1046696-046	ZE500 Series Drive System Maintenance Kit, 203 dpi, RH See Drive System Maintenance Kit on page 590 .
	P1046696-047	ZE500 Series Drive System Maintenance Kit, 300 dpi, RH See Drive System Maintenance Kit on page 590 .
	P1046696-048	ZE500 Series Drive System Maintenance Kit, 203 dpi, LH See Drive System Maintenance Kit on page 590 .
	P1046696-049	ZE500 Series Drive System Maintenance Kit, 300 dpi, LH See Drive System Maintenance Kit on page 590 .
2	P1046696-050	ZE500 Series Drive Belts Maintenance Kit See Drive Belts Maintenance Kit on page 610 .
3	P1046696-051	ZE500 Series Stepper Motor Maintenance Kit, RH See Stepper Motor Maintenance Kit on page 622 .
	P1046696-019	ZE500 Series Stepper Motor Maintenance Kit, LH See Stepper Motor Maintenance Kit on page 622 .



Drive System Maintenance Kit

Installation Instructions

This kit includes the parts and documentation necessary to install the Drive System Maintenance Kit in the ZE500™ Series Print Engines. Read these instructions thoroughly before installing this kit.



Caution • This installation must be performed by a qualified service technician.

Parts List

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

Figure 329 • Kit Contents

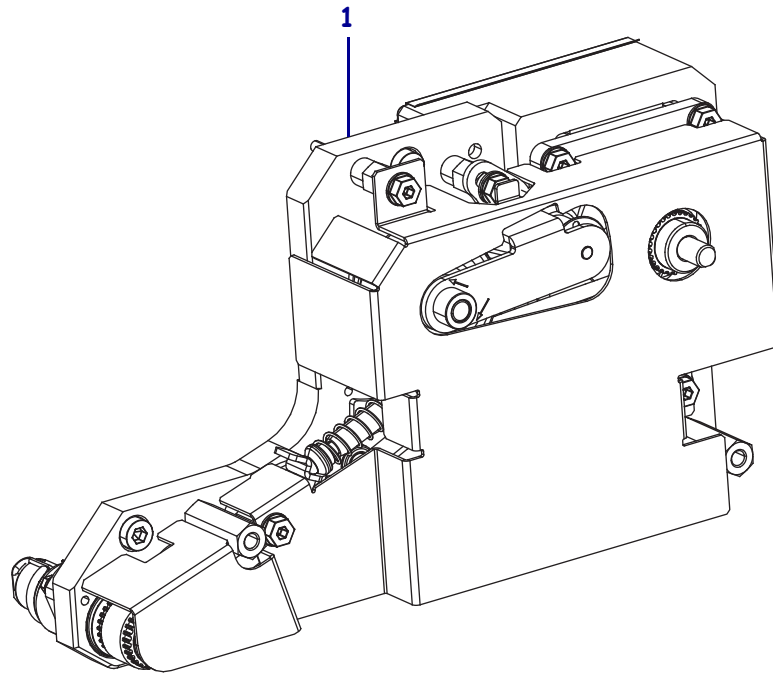


Table 53 • Parts List

✓	Item	Qty	Part Number	Description
	Ref	1	P1046696-046	Drive System Maintenance Kit 203 dpi RH
			P1046696-047	Drive System Maintenance Kit 300 dpi RH
			P1046696-048	Drive System Maintenance Kit 203 dpi LH
			P1046696-049	Drive System Maintenance Kit 300 dpi LH

Tools Required



Tools • You need these tools to complete this procedure:

- Metric Hex Key (Allen Wrench) Set
- Torx Key Set
- Antistatic Wriststrap and Mat
- Flat-blade Screwdriver Set
- Phillips Screwdriver Set

Remove Power and Data Cables



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

Connect yourself to an antistatic device.




2. **Caution** • Turn off (O) the print engine and disconnect it from the power source before performing the following procedure.

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

Remove Print Engine from Applicator

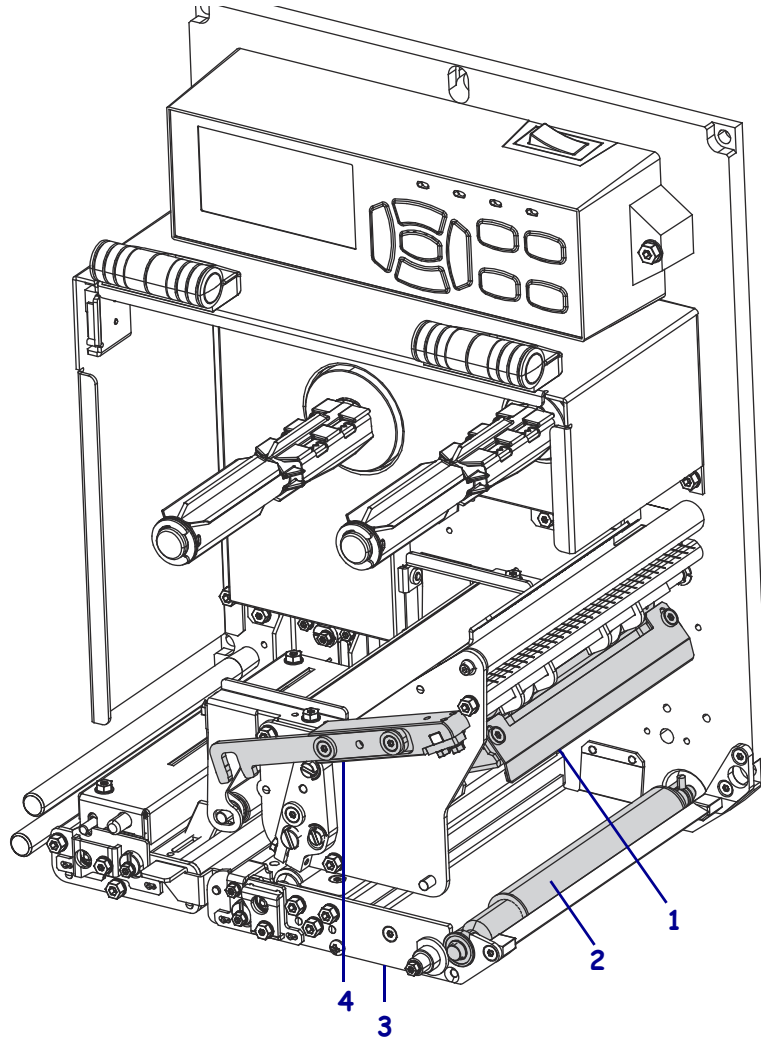
1. Does your applicator (or stand) permit open access to the rear of the print engine?

If you have an...	Then...
Open access	<p>You may swing the print engine open and work on it without removing the unit from the applicator.</p> <p>If you wish to remove the unit from the stand at any time, follow the instructions listed for the <i>Obstructed access</i> type applicator shown in this table.</p> <p>a. Go to <i>Remove the Electronics Cover</i>.</p>
Obstructed access	<p>You must remove the print engine from the applicator before you work on it.</p> <p>a. Remove the four corner mounting screws securing the print engine to the applicator.</p> <p>b. Loosen the center mounting bolt, but do not remove it.</p> <p> Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.</p> <p>c. Lift the print engine off the center mounting bolt and place on a workbench.</p>

Remove the Platen Roller

1. See [Figure 330](#). Using the printhead latch, open the printhead and press up until secured in the open position.

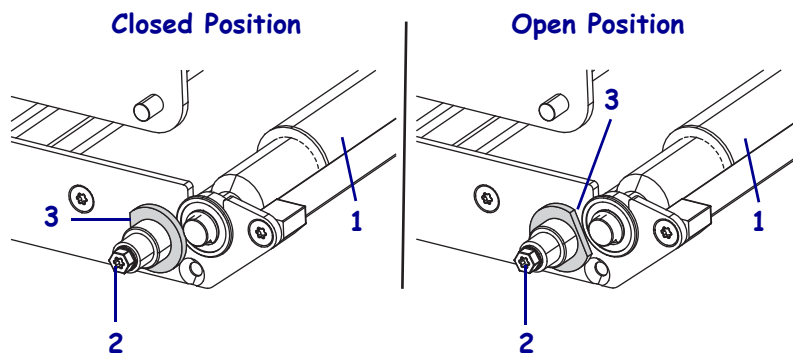
Figure 330 • Open Printhead



1	Printhead (shaded and shown in open position)
2	Platen roller (shaded)
3	Platen roller support plate
4	Printhead latch (shaded and shown in open position)

2. See [Figure 331](#). Using a Torx key, loosen the screw on the latch pin, and rotate the latch pin to the open position.

Figure 331 • Latch Pin



1	Platen roller
2	Latch pin screw
3	Latch pin (shaded)

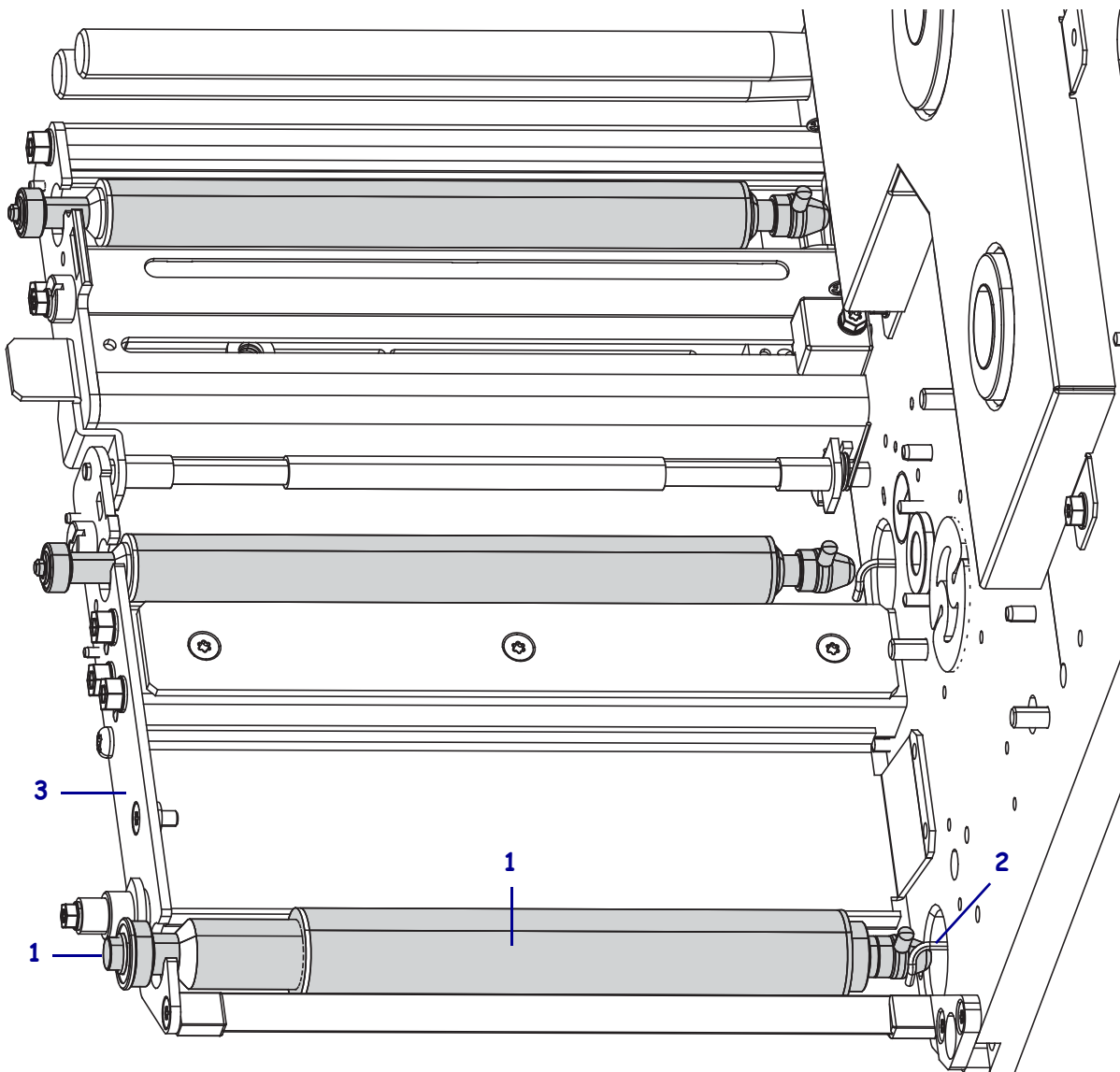
- See [Figure 332](#). Grasp the platen roller tightly and pull it toward the platen roller support plate to release the pin secured in the platen roller coupler.
The outboard bearing will extend past the end of the platen roller support plate.



Note • You may have to turn the roller slightly to be able to remove the roller.

- Lift the platen roller out of the print engine.

**Figure 332 • Roller Locations
(Top View with Subsystems Removed)**



1	Platen roller (shaded)
2	Platen roller coupler
3	Platen roller support plate

Remove the Peel Roller

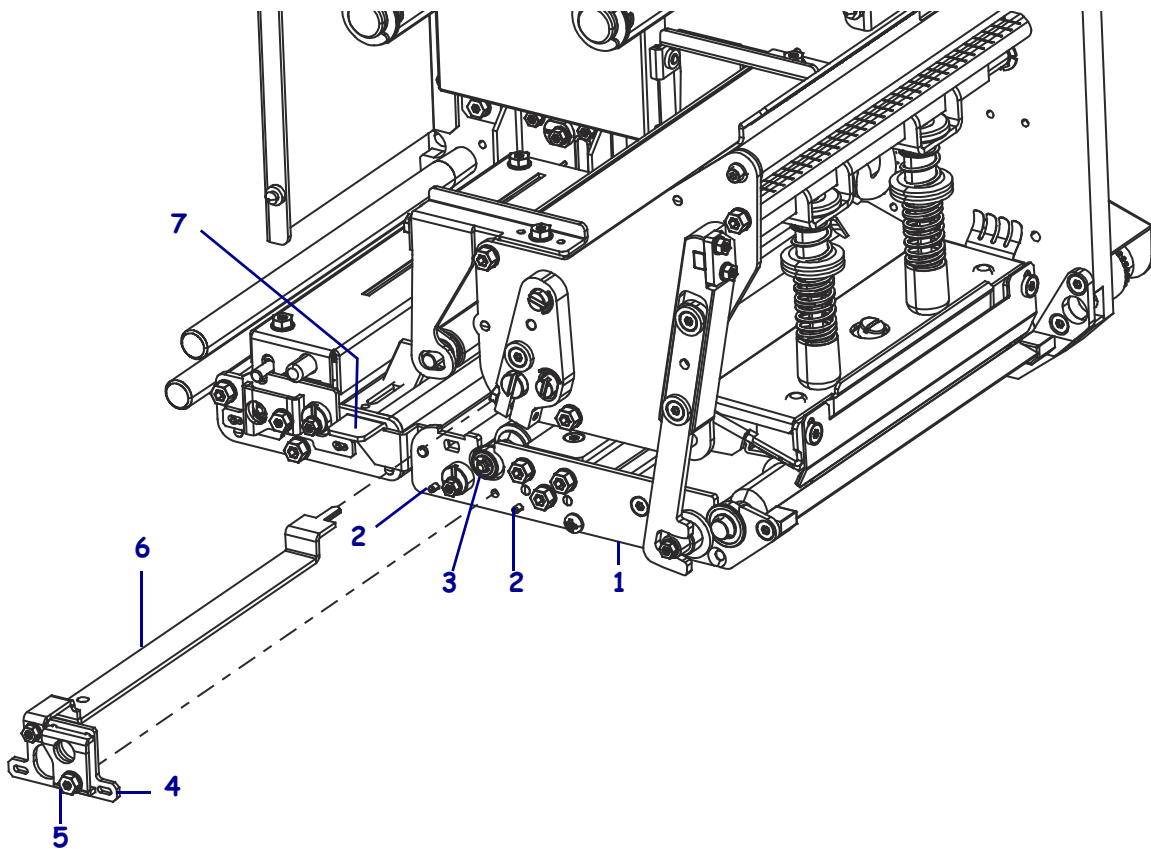
1. To open the peel roller bracket, push up on the latch.
2. See [Figure 333](#). To remove the peel roller cam plate, loosen the center mounting screw to release it from the platen roller support plate.



Note • The center mounting screw is captive within the peel roller cam plate.

3. Pull the peel roller cam plate (with the deflector plate attached) off of the two support pins on the platen roller support plate. Set the cam plate aside.

Figure 333 • Peel Roller



1	Platen roller support plate
2	Support pins
3	Peel roller
4	Peel roller cam plate
5	Peel roller cam plate center mounting screw
6	Peel roller deflector plate
7	Peel roller latch

4. Grasp the peel roller tightly and pull the peel roller toward the platen roller support plate to release the pin secured in the peel roller coupler.

The outboard bearing will extend past the end of the platen roller support plate.



Note • You may have to turn the roller slightly to be able to remove the roller.

5. Lift the peel roller out of the print engine.

Remove the Pinch Roller

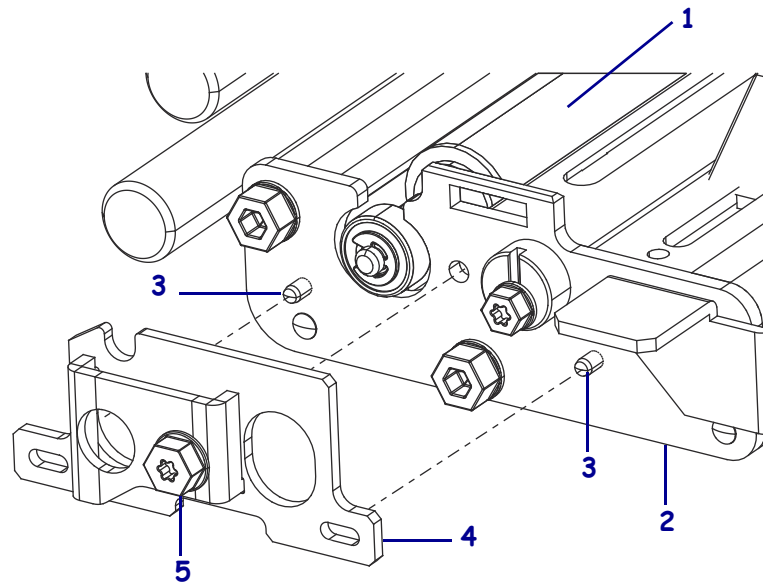
1. Open the upper pinch roller assembly by pressing on the release button located just above the pinch roller cam plate.
2. See [Figure 334](#). To remove the pinch roller cam plate, loosen the center mounting screw to release it from the pinch roller support plate.



Note • The center mounting screw is captive within the pinch roller cam plate.

3. Pull the cam plate off of the two support pins on the pinch roller support plate. Set the cam plate aside.

Figure 334 • Pinch Roller



1	Pinch roller (shaded)
2	Pinch roller support plate
3	Support pins
4	Pinch roller cam plate
5	Cam plate center mounting screw

4. Grasp the pinch roller tightly and pull the pinch roller toward the pinch roller support plate to release the pin secured in the pinch roller coupler.
The outboard bearing will extend past the end of the platen roller support plate.



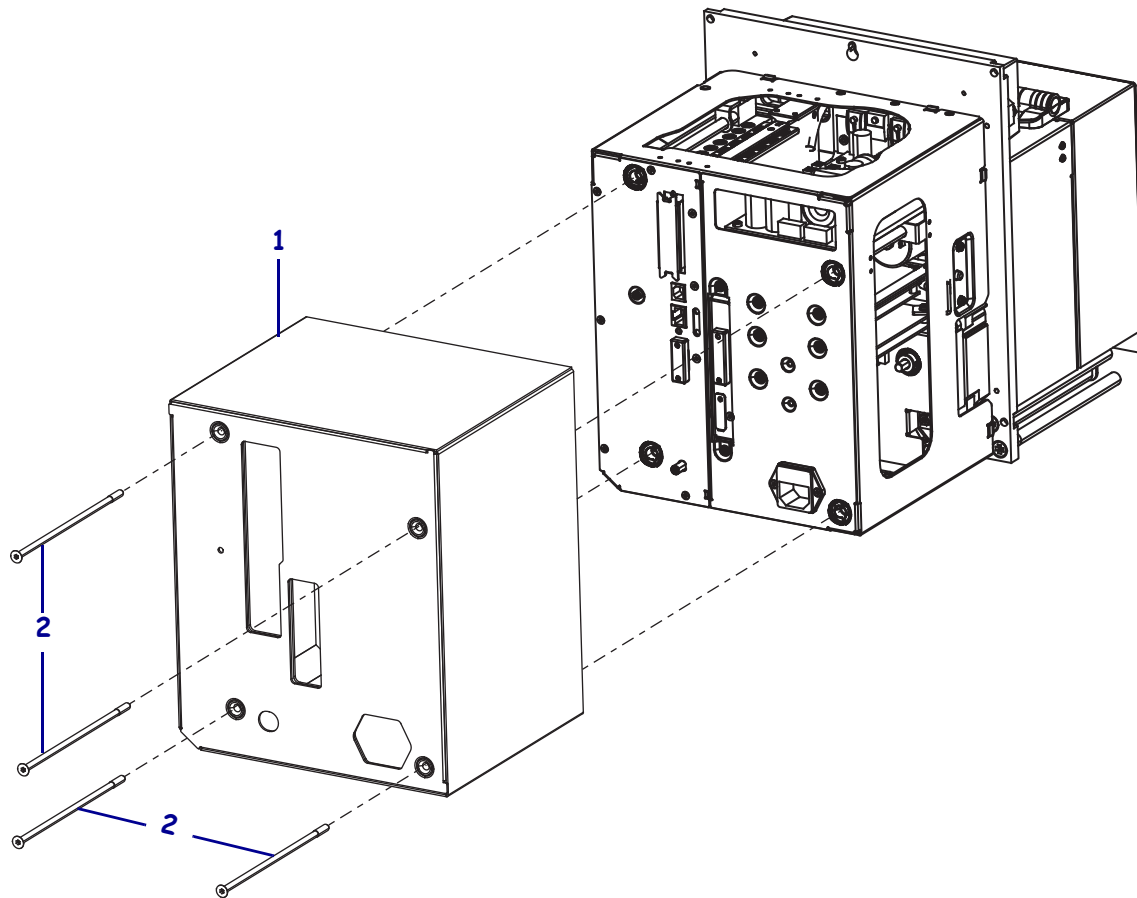
Note • You may have to turn the roller slightly to be able to remove the roller.

5. Lift the pinch roller out of the print engine.

Remove the Electronics Cover

1. See [Figure 335](#). Remove the four long mounting screws securing the electronics cover.

Figure 335 • Electronics Cover



1	Electronics cover
2	Electronics cover mounting screws (4)

2. Slide the electronics cover off of the print engine.

Open the Electronics Enclosure

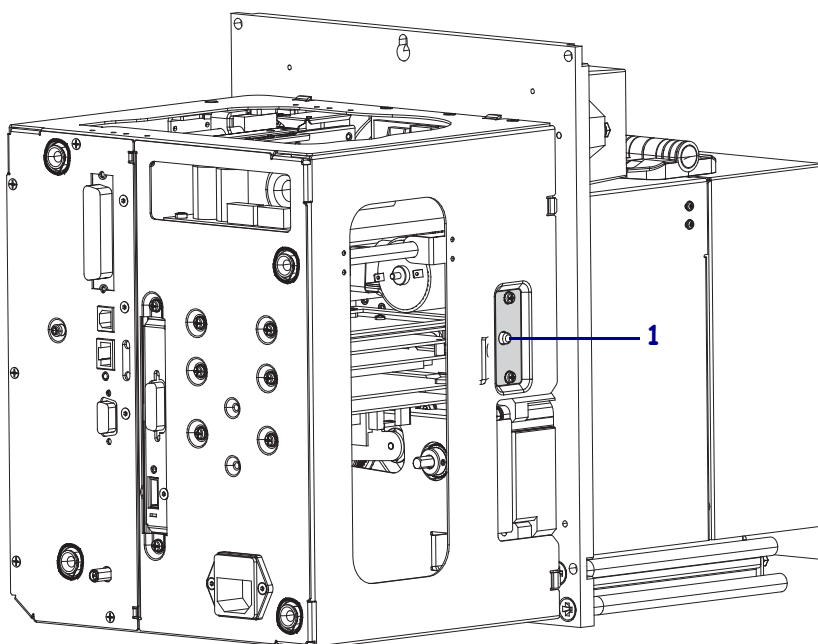
1. See [Figure 336](#). Locate the latch.



Note • For right-hand models, the latch is on the right side when looking from the back of the print engine. For left-hand models, the latch is on the left side.

2. Press the latch and swing the electronics enclosure open.

Figure 336 • Locate the Latch



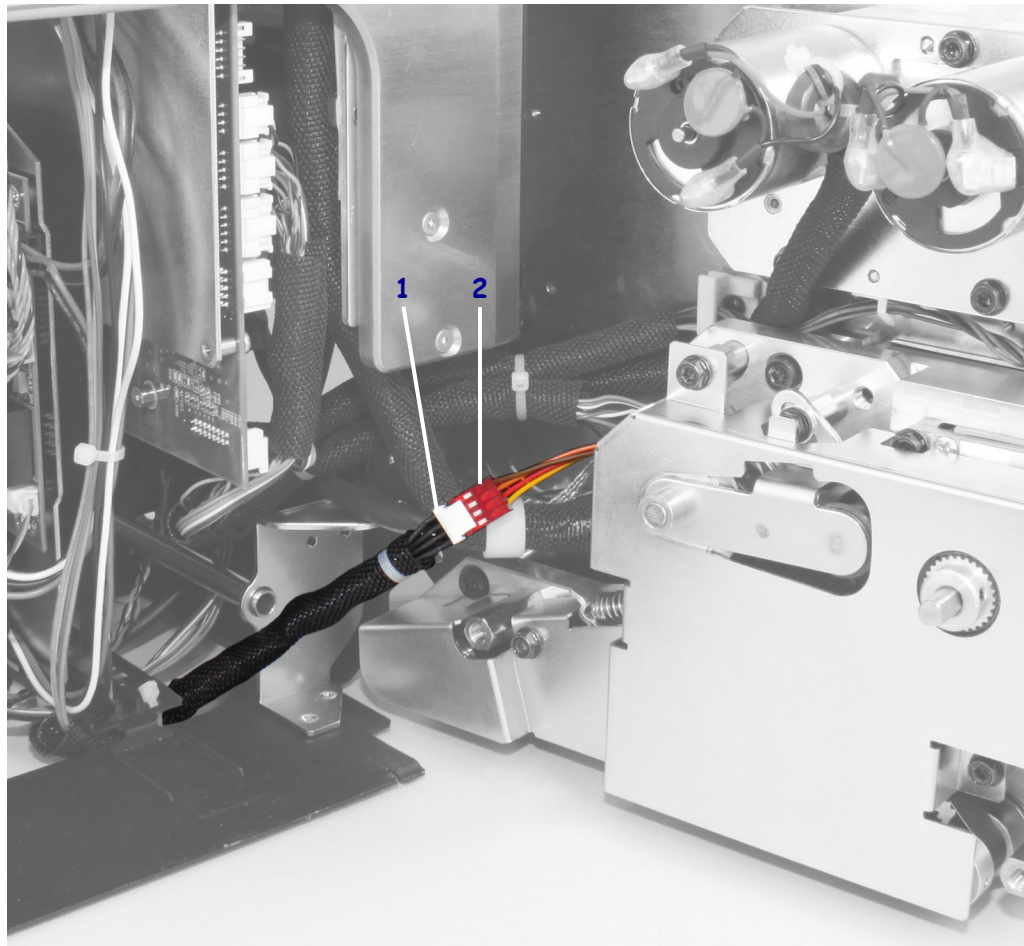
1	Latch
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Remove the Drive System

1. See [Figure 337](#). Separate the drive system cable connectors.

The short part of the cable is wired to the stepper motor. The long part of the cable plugs into J4 on the DC power supply board.

Figure 337 • Drive System Cable



1	Long drive system cable goes to the DC power supply
2	Short drive system cable connector goes to the stepper motor

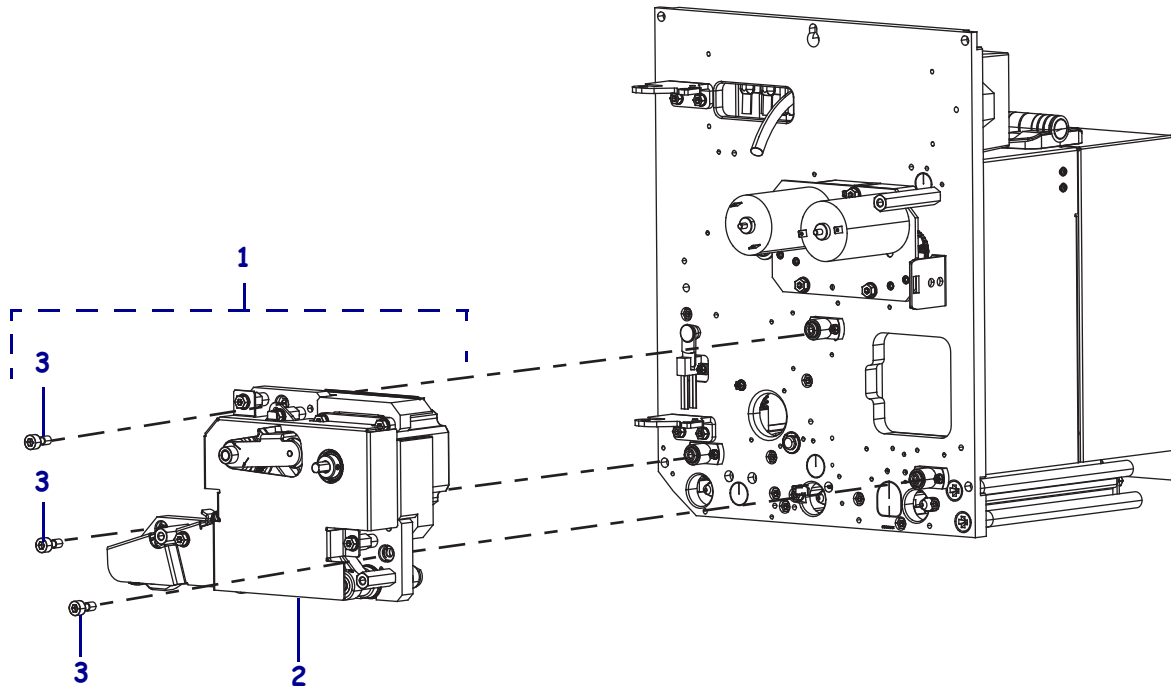
2. See [Figure 338](#). Loosen the three 4 mm mounting screws to release the drive system from the main frame.



Note • The three 4 mm mounting screws are captive within the drive system.

3. Remove the drive system from the main frame.

Figure 338 • Remove the Drive System



1	Drive system
2	Drive system cover
3	Drive system mounting screws (3)

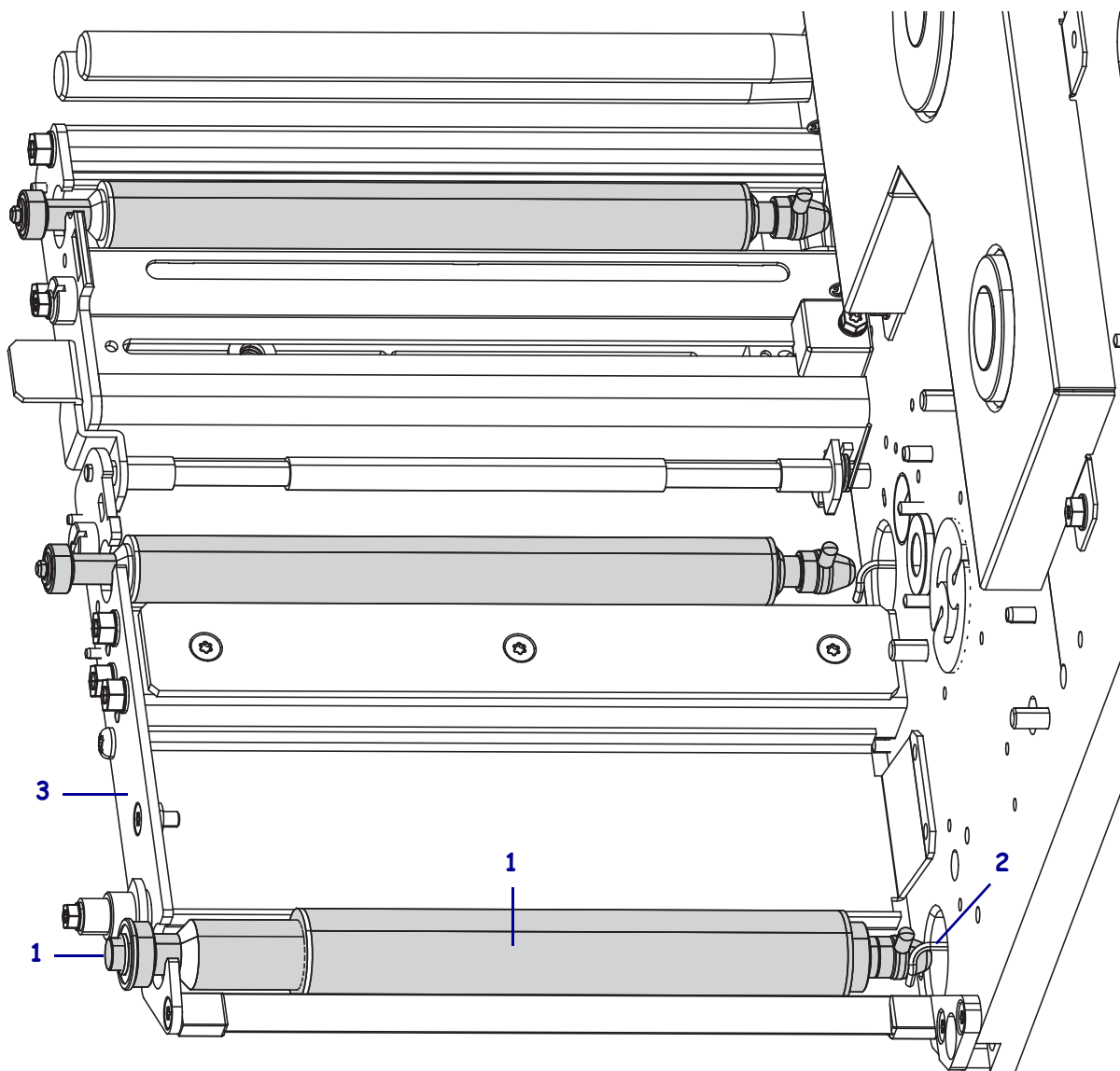
Reinstall the Drive System

1. See [Figure 338](#). Align the drive system with the drive system mounts on the main frame, and reinstall the three 4mm mounting screws.
2. See [Figure 337](#). Reconnect the stepper motor cable connectors. The short cable is wired to the drive motor. The long cable plugs into J4 on the DC power supply board.

Replace the Pinch Roller

1. See [Figure 339](#). Starting with the pin end of the roller, align the pin with the slot in the pinch roller coupler.

**Figure 339 • Roller Locations
(Top View with Subsystems Removed)**



1	Platen roller (shaded)
2	Platen roller coupler
3	Platen roller support plate

2. Lower the other end of the pinch shaft into the large hole on the pinch roller support plate.
3. Push the shaft into the pinch roller coupler to fully seat the pinch shaft.
You will hear a click when the pin is seated correctly or turn the roller slightly to confirm that the roller is firmly seated.
4. See [Figure 334](#). Replace the cam plate on the two support pins on the pinch roller support plate.
5. Reinstall the center mounting screw on the cam plate.
6. Close the upper pinch roller assembly.

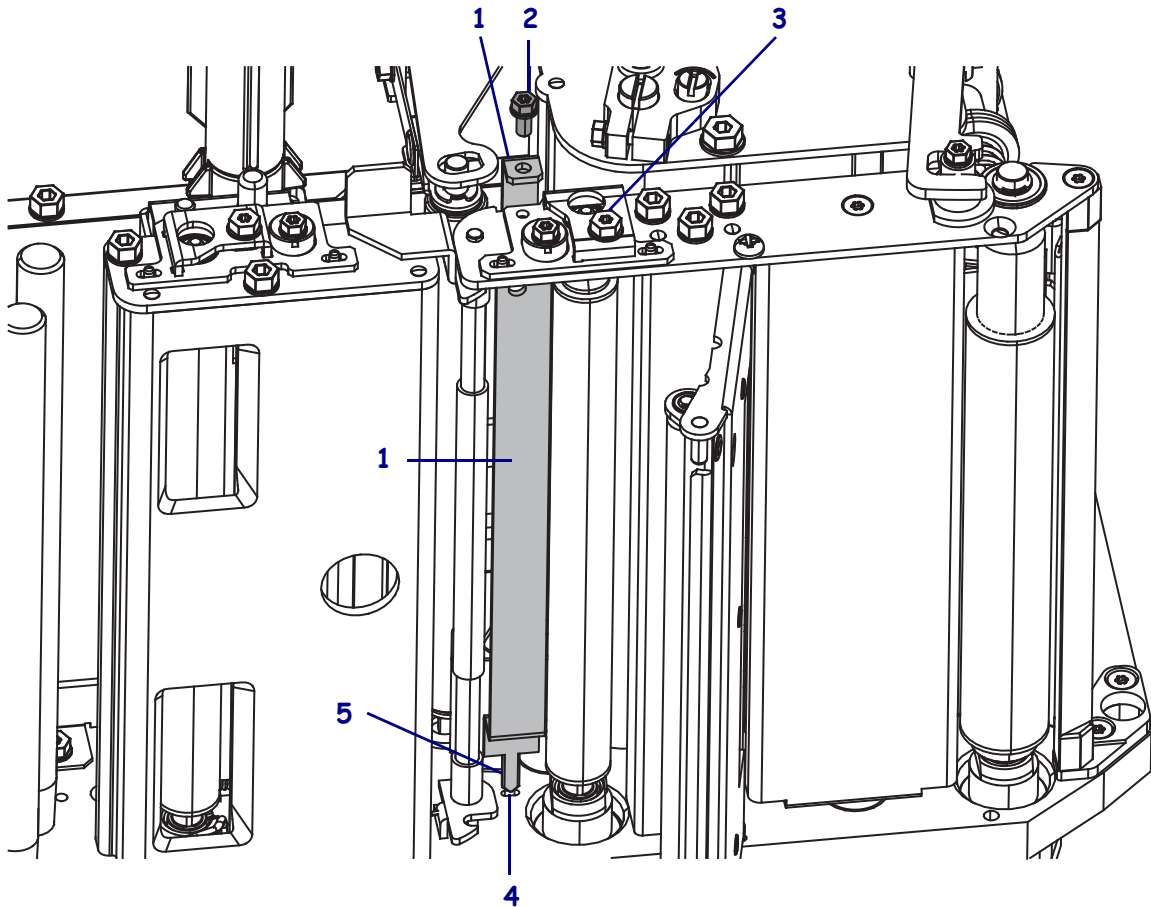
Replace the Peel Roller

1. Starting with the pin end of the roller, align the pin with the slot in the peel roller coupler.
2. Lower the other end of the peel roller shaft into the large hole on the platen roller support plate.
3. Push the shaft into the peel roller coupler to fully seat the peel shaft.
You will hear a click when the pin is seated correctly or turn the roller slightly to confirm that the roller is firmly seated.
4. See [Figure 340](#). Insert the tab on the deflector plate into the main frame slot.



Note • [Figure 340](#) shows the deflector plate separated from the platen roller cam plate. The deflector plate was designed to be attached to the cam plate during removal and installation.

Figure 340 • Deflector Plate



1	Deflector plate
2	Deflector plate mounting screw
3	Platen roller cam plate mounting screw
4	Slot
5	Tab

5. Replace the cam plate on the two support pins on the platen roller support plate.
6. Tighten the center mounting screw on the cam plate.
7. Close the peel roller bracket by pushing up until you hear the click.

Replace the Platen Roller

1. See [Figure 332](#). Starting with the pin end of the roller, align the pin with the slot in the platen roller coupler.
2. Lower the other end of the platen shaft into the large hole on the platen roller support plate.
3. Push the shaft toward the platen pulley to fully seat the platen shaft.
You will hear a click when the pin is seated correctly or turn the roller slightly to confirm that the roller is firmly seated.
4. See [Figure 331](#). Loosen the retaining screw for the platen latch pin, and rotate the latch pin to the closed position. Tighten the screw.
5. Close the printhead.

Close the Electronics Enclosure

1. Ensure that all wires are routed properly and are not causing any obstructions, and then carefully swing the electronics enclosure closed.
2. Adjust the wire clips for the parallel port until they are touching the parallel port.
3. Slide the electronics cover onto the print engine.
4. Reinstall the four electronics cover mounting screws.

Reinstall the Print Engine in the Applicator

1. To reinstall the print engine into the applicator, carefully place the keyhole on the center mounting bolt.



Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.

2. Replace the four corner mounting screws securing the print engine to the applicator.
3. Tighten the center mounting bolt.

Resume Printer Operation

1. Reconnect the AC power cord and interface cables.
2. Turn on (I) the print engine.

The installation is complete.



Drive Belts Maintenance Kit

Installation Instructions

This kit includes the parts and documentation necessary to install the Drive Belts Maintenance Kit in the ZE500™ Series Print Engines. Read these instructions thoroughly before installing this kit.



Caution • This installation must be performed by a qualified service technician.

Parts List

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

Figure 341 • Kit Contents

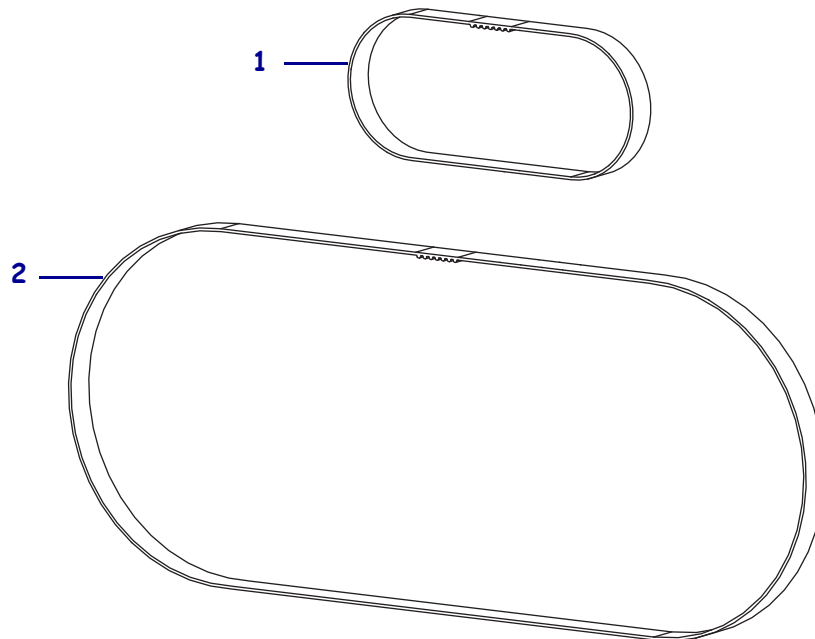


Table 54 • Parts List

✓	Item	Qty	Part Number	Description
	Ref	1	P1046696-050	Drive Belts Maintenance Kit
	1	1	N/A	Belt, GT3 116 Groove 2 mm
	2	1	N/A	Belt, GT3 300 Groove 2 mm

N/A = Not available as a separate part (listed for identification purposes only).

Tools Required



Tools • You need these tools to complete this procedure:

- Metric Hex Key (Allen Wrench) Set
- Phillips Screwdriver Set
- Antistatic Wriststrap and Mat
- Torx Key Set
- Flat-blade Screwdriver Set

Remove Power and Data Cables



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

Connect yourself to an antistatic device.




2. **Caution** • Turn off (O) the print engine and disconnect it from the power source before performing the following procedure.

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

Remove Print Engine from Applicator

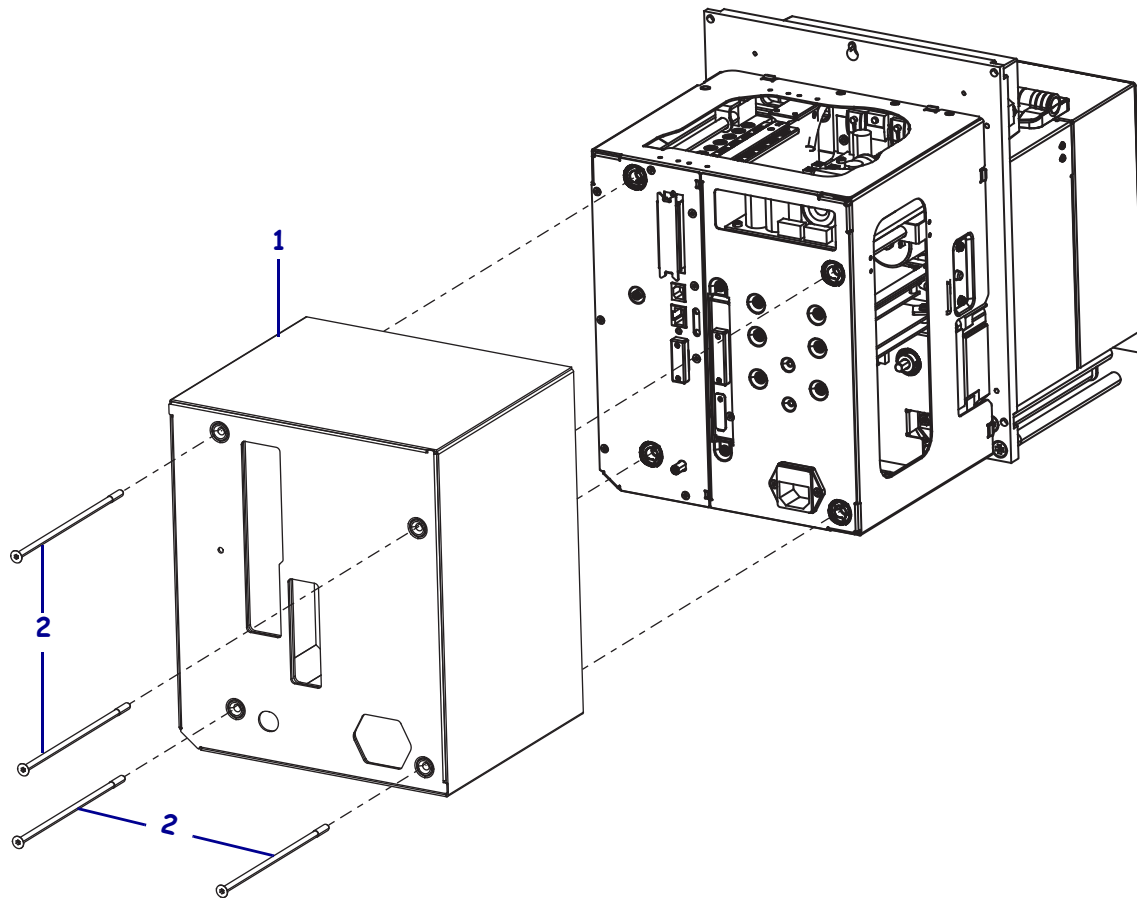
1. Does your applicator (or stand) permit open access to the rear of the print engine?

If you have an...	Then...
Open access	<p>You may swing the print engine open and work on it without removing the unit from the applicator.</p> <p>If you wish to remove the unit from the stand at any time, follow the instructions listed for the <i>Obstructed access</i> type applicator shown in this table.</p> <p>a. Go to <i>Remove the Electronics Cover</i>.</p>
Obstructed access	<p>You must remove the print engine from the applicator before you work on it.</p> <p>a. Remove the four corner mounting screws securing the print engine to the applicator.</p> <p>b. Loosen the center mounting bolt, but do not remove it.</p> <p> Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.</p> <p>c. Lift the print engine off the center mounting bolt and place on a workbench.</p>

Remove the Electronics Cover

1. See [Figure 342](#). Remove the four long mounting screws securing the electronics cover.

Figure 342 • Electronics Cover



1	Electronics cover
2	Electronics cover mounting screws (4)

2. Slide the electronics cover off of the print engine.

Open the Electronics Enclosure

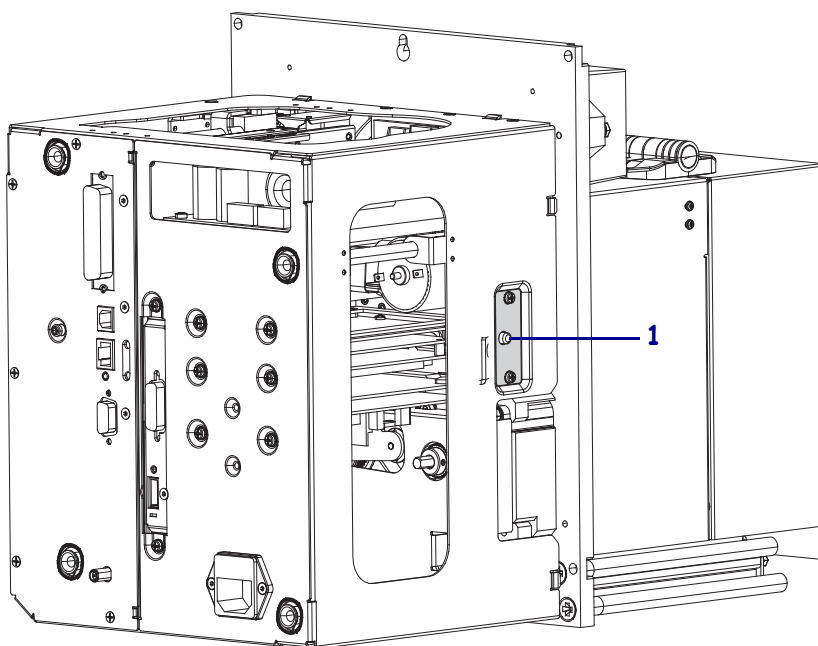
1. See [Figure 343](#). Locate the latch.



Note • For right-hand models, the latch is on the right side when looking from the back of the print engine. For left-hand models, the latch is on the left side.

2. Press the latch and swing the electronics enclosure open.

Figure 343 • Locate the Latch



1	Latch
----------	-------

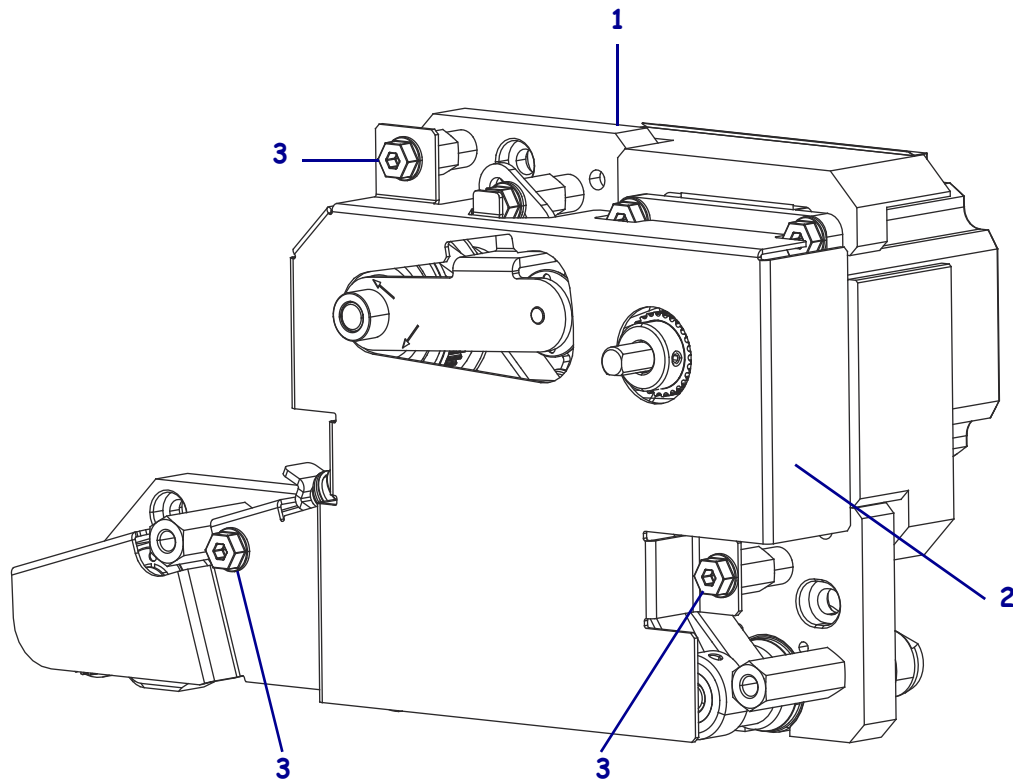
Remove the Drive System Cover

1. See [Figure 344](#). To remove the cover, loosen the three mounting screws.



Note • The three mounting screws are captive.

Figure 344 • Drive System Cover and Mounting Screws



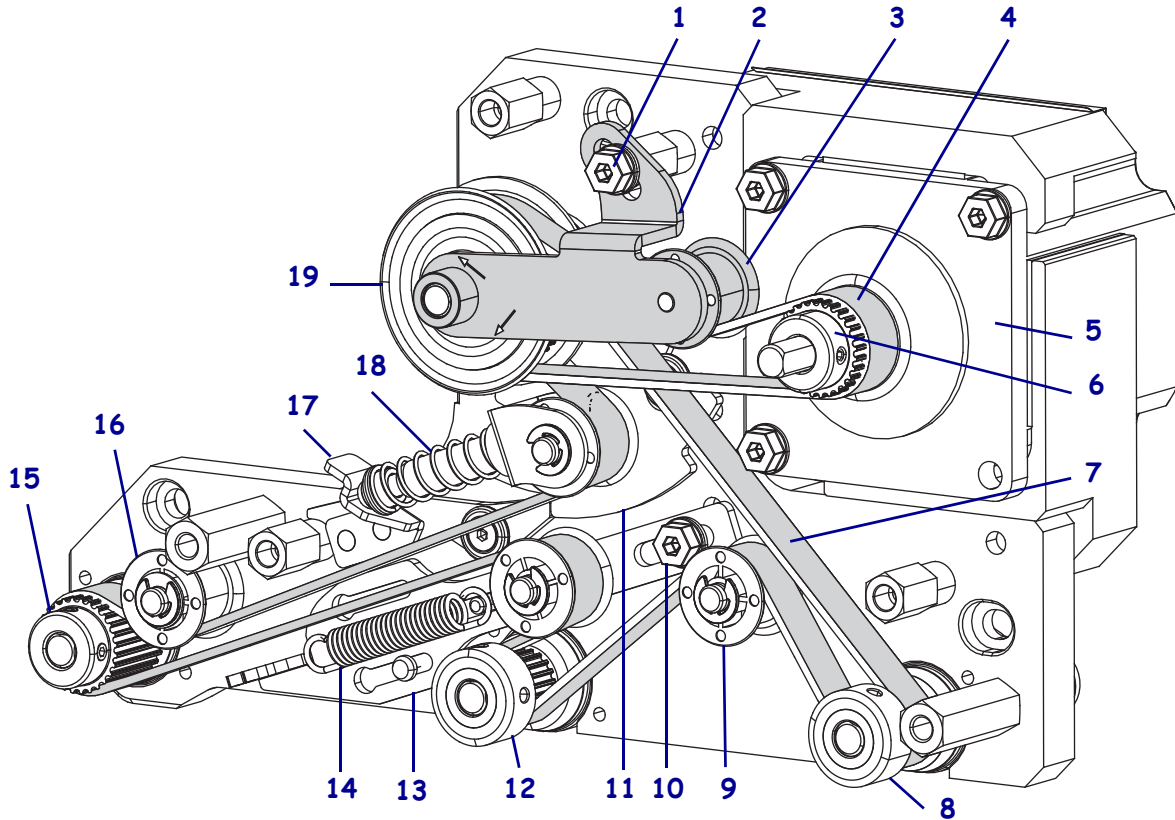
1	Drive system
2	Drive system cover
3	Cover mounting screws (3)

2. Lift off the drive system cover.

Remove the Belts

1. See [Figure 345](#). Note the location of the screw and washer in the stepper motor belt tensioner bracket.
2. Remove the mounting screw and washer securing the stepper motor belt tensioner bracket and slide the bracket assembly off of the compound pulley shaft.

Figure 345 • Drive System and Belt Path



1	Mounting screw and washer for stepper motor belt tensioner bracket
2	Stepper motor belt tensioner bracket (shaded)
3	Stepper motor idler pulley (shaded)
4	Stepper motor belt (shaded)
5	Stepper motor
6	Stepper motor pulley
7	Platen roller drive belt
8	Pinch roller pulley
9	Pinch roller idler pulley
10	Mounting screw for locking tensioner

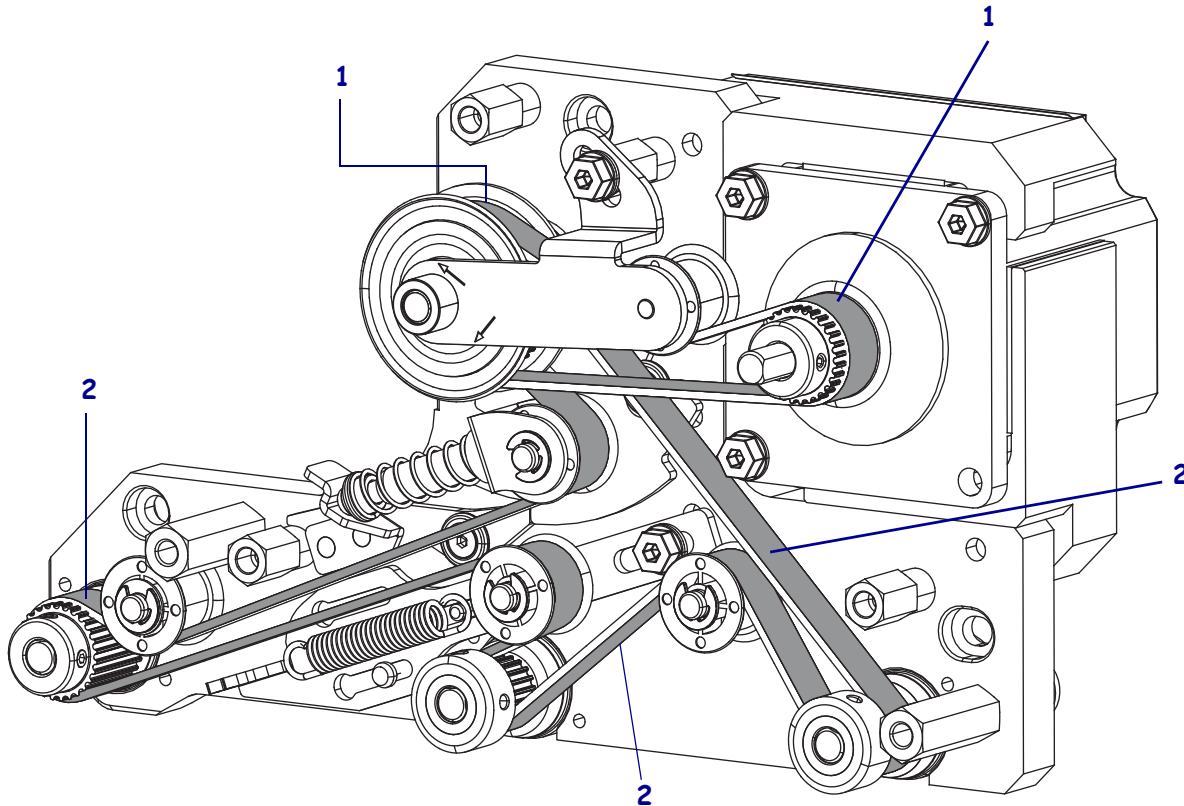
11	Dynamic tensioner mounting plate
12	Peel roller pulley
13	Locking tensioner mounting plate
14	Locking tensioner spring
15	Platen roller pulley
16	Platen roller idler pulley
17	Dynamic tensioner latch
18	Dynamic tensioner
19	Compound pulley

3. Remove the stepper motor belt.
4. Loosen the mounting screw on the locking tensioner mounting plate.
5. Push the locking tensioner mounting plate toward the platen roller pulley (and against the spring), until it stops. Tighten the mounting screw on the locking tensioner mounting plate.
6. Compress and swing the dynamic tensioner up slightly and out of its home position.
7. Push up on the dynamic tensioner latch to disengage the dynamic tensioner mounting plate. Swing the dynamic tensioner mounting plate to release the platen belt.
8. Remove the platen belt from all drive and idler pulleys.

Replace the Belts

1. Replace the platen belt on the compound pulley.
2. See [Figure 346](#). Thread the platen belt around all of the pulleys and idlers.

Figure 346 • Path for Drive Belts



1	Stepper motor belt (shaded) (rests on the larger 48 groove pulley)
2	Platen belt (shaded) (rests on the smaller pulley)

3. Rotate the dynamic tensioner mounting plate while pushing down on the dynamic tensioner latch to ensure that the latch is locked in place.
4. Swing the dynamic tensioner down as you compress the spring until the end is resting on the latch (home position).
5. Loosen the mounting screw on the locking tensioner mounting plate.
The locking tensioner is self-adjusting and will return to its normal tension.
6. Rotate the compound pulley two revolutions to equalize the belt tension. Tighten the mounting screw on the locking tensioner mounting plate.
7. Replace the stepper motor belt on the compound pulley and the stepper motor pulley.

8. Align the stepper motor belt tensioner bracket assembly on the compound pulley shaft.
Ensure that the idler rides on top of the stepper motor belt and that the belt is seated evenly on the stepper motor pulley.
9. Replace the mounting screw and washer for the stepper motor belt tensioner bracket.
10. Reset the stepper motor belt tensioner bracket to its original location and tighten the screw.



Important • The lower section of the stepper motor belt should be slightly taut. The middle of the belt should deflect upward approximately halfway to the bracket pulley under moderate finger pressure.

Reinstall the Drive System Cover

1. Align the drive system cover over the three mounting holes.
2. Reinstall the three mounting screws to secure the drive system cover.

Close the Electronics Enclosure

1. Ensure that all wires are routed properly and are not causing any obstructions, and then carefully swing the electronics enclosure closed.
2. Adjust the wire clips for the parallel port until they are touching the parallel port.
3. Slide the electronics cover onto the print engine.
4. Reinstall the four electronics cover mounting screws.

Reinstall the Print Engine in the Applicator

1. To reinstall the print engine into the applicator, carefully place the keyhole on the center mounting bolt.



Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.

2. Replace the four corner mounting screws securing the print engine to the applicator.
3. Tighten the center mounting bolt.

Resume Printer Operation

1. Reconnect the AC power cord and interface cables.
2. Turn on (I) the print engine.

The installation is complete.



Stepper Motor Maintenance Kit

Installation Instructions

This kit includes the parts and documentation necessary to install the Stepper Motor Maintenance Kit in the ZE500™ Series print engines. Read these instructions thoroughly before installing this kit.



Caution • This installation must be performed by a qualified service technician.

Parts List

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

Figure 347 • Kit Contents

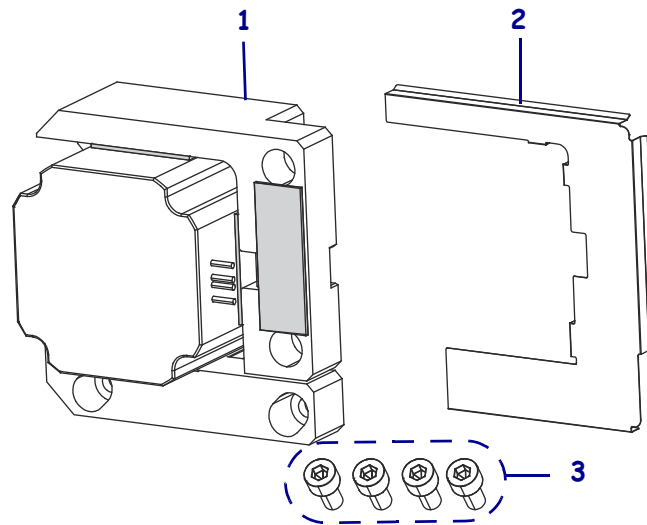


Table 55 • Parts List

✓	Item	Qty	Part Number	Description
	Ref	1	P1046696-051	Stepper Motor Maintenance Kit, RH
			P1046696-019	Stepper Motor Maintenance Kit, LH
	1	1	N/A	Assembly, 1.8 DC Stepper Motor
	2	1	N/A	Cover, Stepper Motor Frame
	3	4	N/A	Screw, M4 × 12 Hx So Zn

N/A = Not available as a separate part (listed for identification purposes only).

Tools Required



Tools • You need these tools to complete this procedure:

- Phillips Screwdriver Set
- Flat-blade Screwdriver Set
- Metric Hex Key (Allen Wrench) Set
- Antistatic Wriststrap and Mat
- Torx Key Set

Remove Power and Data Cables



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

Connect yourself to an antistatic device.




2. **Caution** • Turn off (O) the print engine and disconnect it from the power source before performing the following procedure.

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

Remove Print Engine from Applicator

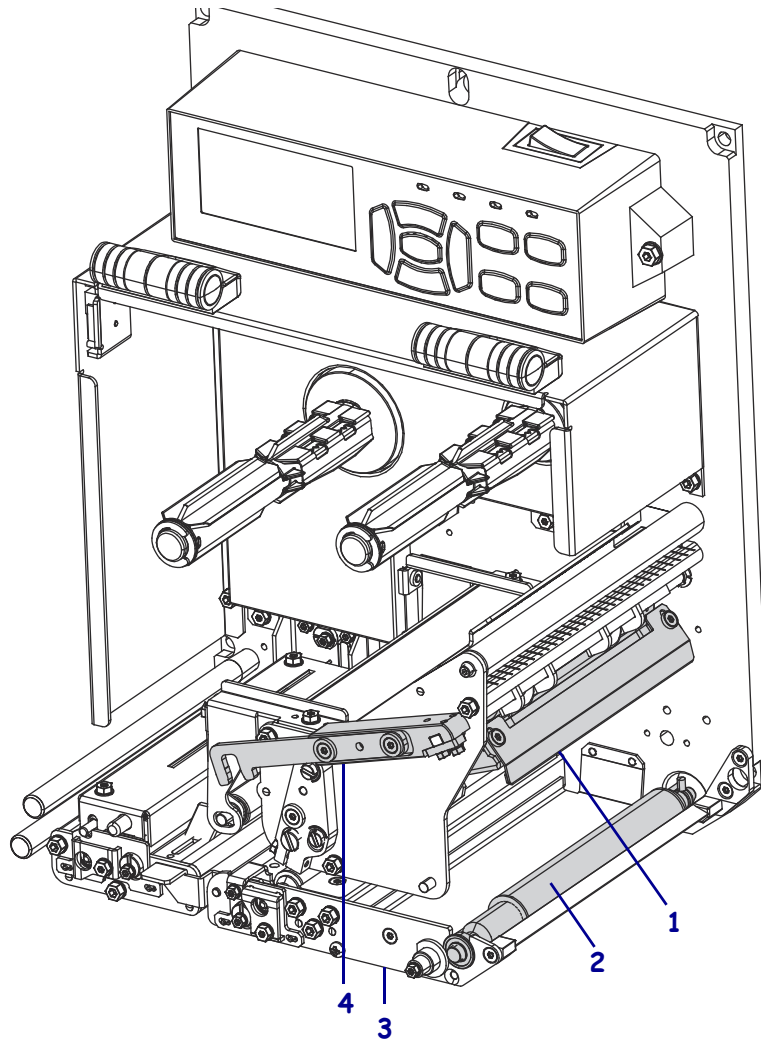
1. Does your applicator (or stand) permit open access to the rear of the print engine?

If you have an...	Then...
Open access	<p>You may swing the print engine open and work on it without removing the unit from the applicator.</p> <p>If you wish to remove the unit from the stand at any time, follow the instructions listed for the <i>Obstructed access</i> type applicator shown in this table.</p> <ol style="list-style-type: none"> a. Go to <i>Remove the Electronics Cover</i>.
Obstructed access	<p>You must remove the print engine from the applicator before you work on it.</p> <ol style="list-style-type: none"> a. Remove the four corner mounting screws securing the print engine to the applicator. b. Loosen the center mounting bolt, but do not remove it. <p> Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.</p> <ol style="list-style-type: none"> c. Lift the print engine off the center mounting bolt and place on a workbench.

Remove the Platen Roller

1. See [Figure 348](#). Using the printhead latch, open the printhead and press up until secured in the open position.

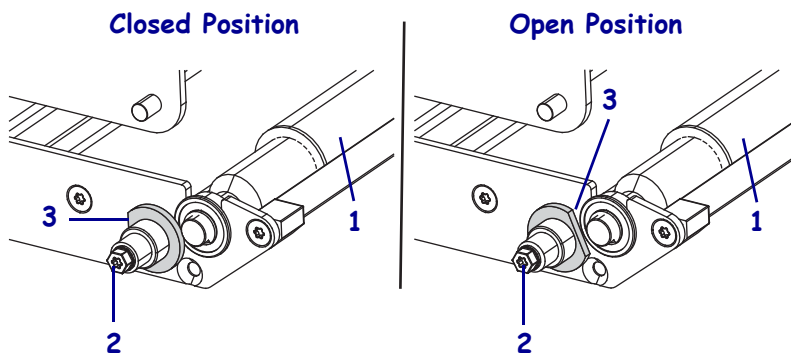
Figure 348 • Open Printhead



1	Printhead (shaded and shown in open position)
2	Platen roller (shaded)
3	Platen roller support plate
4	Printhead latch (shaded and shown in open position)

2. See [Figure 349](#). Using a Torx key, loosen the screw on the latch pin, and rotate the latch pin to the open position.

Figure 349 • Latch Pin



1	Platen roller
2	Latch pin screw
3	Latch pin (shaded)

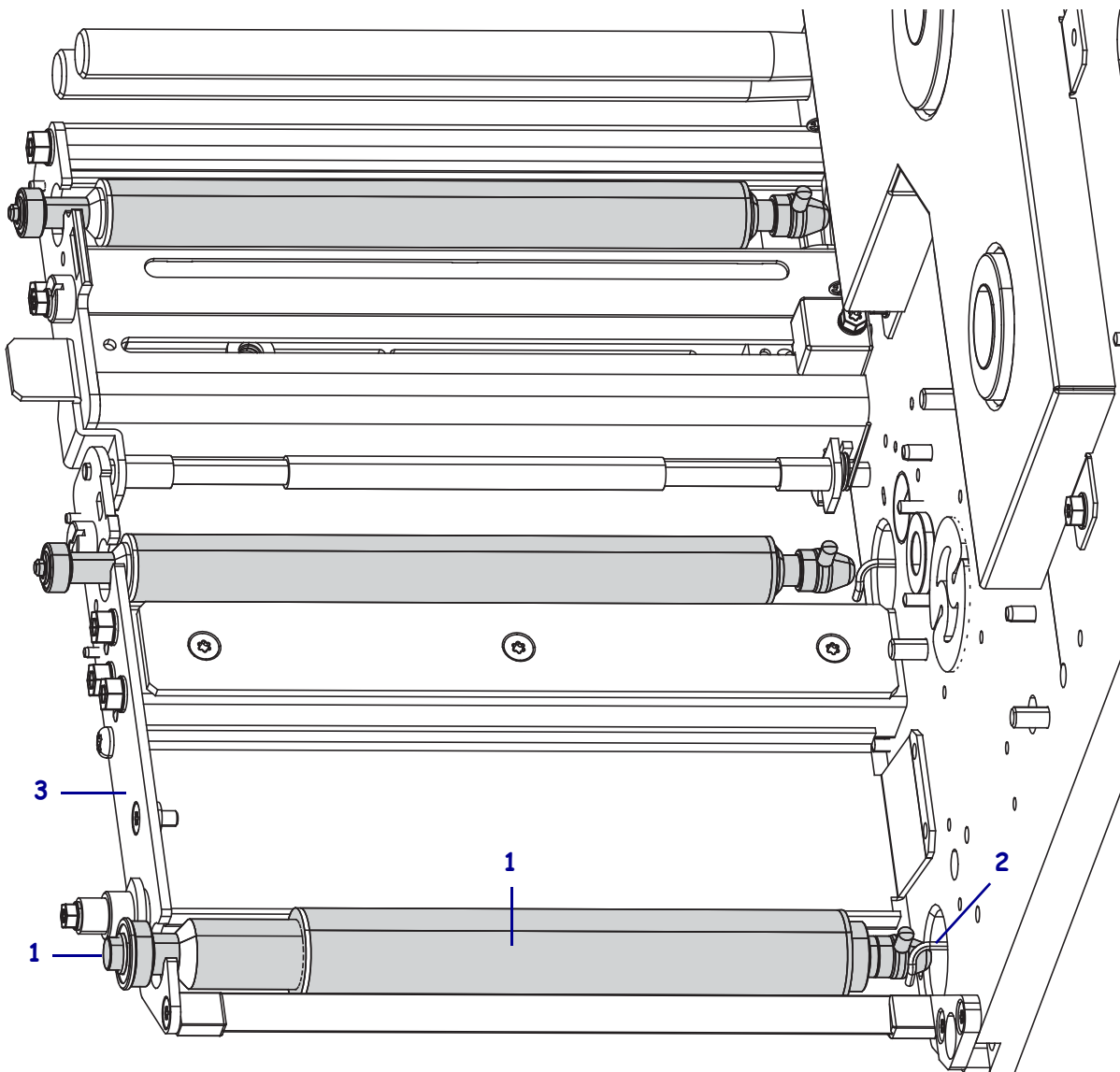
- See [Figure 350](#). Grasp the platen roller tightly and pull it toward the platen roller support plate to release the pin secured in the platen roller coupler.
The outboard bearing will extend past the end of the platen roller support plate.



Note • You may have to turn the roller slightly to be able to remove the roller.

- Lift the platen roller out of the print engine.

**Figure 350 • Roller Locations
(Top View with Subsystems Removed)**



1	Platen roller (shaded)
2	Platen roller coupler
3	Platen roller support plate

Remove the Peel Roller

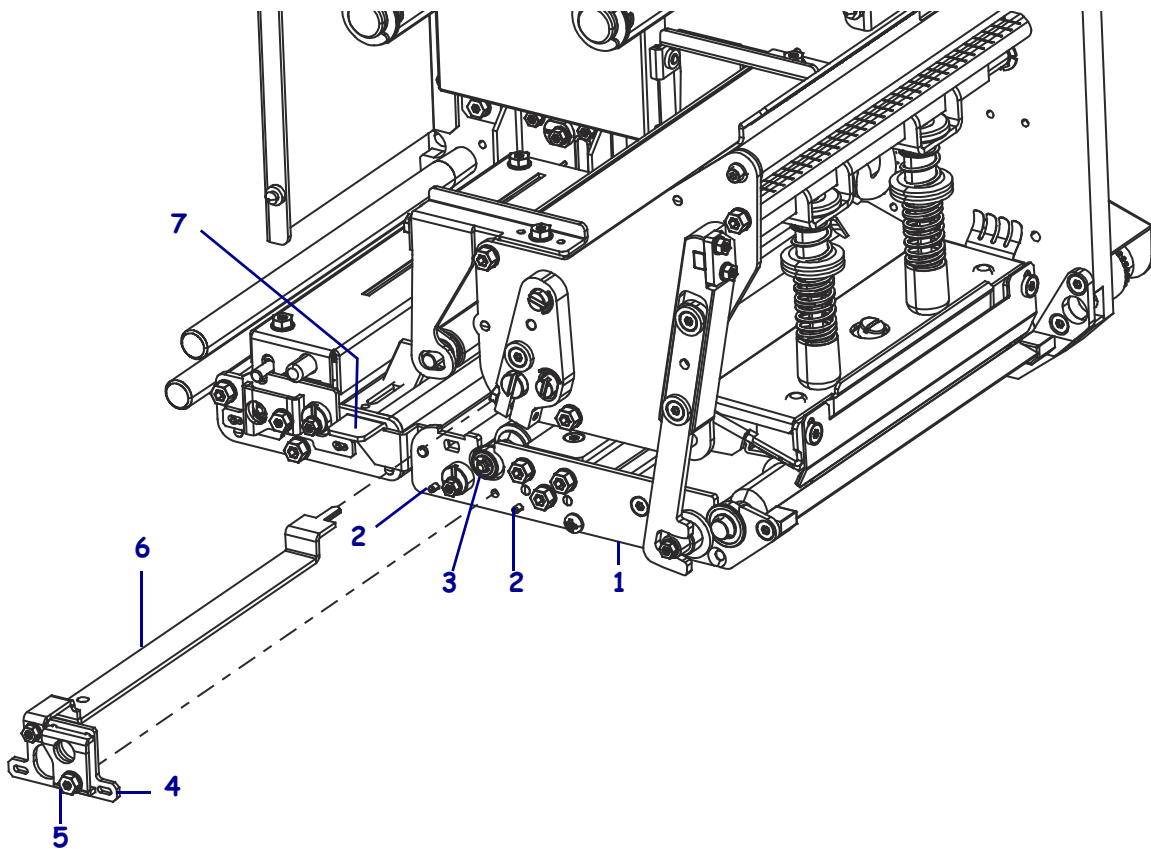
1. To open the peel roller bracket, push up on the latch.
2. See [Figure 351](#). To remove the peel roller cam plate, loosen the center mounting screw to release it from the platen roller support plate.



Note • The center mounting screw is captive within the peel roller cam plate.

3. Pull the peel roller cam plate (with the deflector plate attached) off of the two support pins on the platen roller support plate. Set the cam plate aside.

Figure 351 • Peel Roller



1	Platen roller support plate
2	Support pins
3	Peel roller
4	Peel roller cam plate
5	Peel roller cam plate center mounting screw
6	Peel roller deflector plate
7	Peel roller latch

4. Grasp the peel roller tightly and pull the peel roller toward the platen roller support plate to release the pin secured in the peel roller coupler.

The outboard bearing will extend past the end of the platen roller support plate.



Note • You may have to turn the roller slightly to be able to remove the roller.

5. Lift the peel roller out of the print engine.

Remove the Pinch Roller

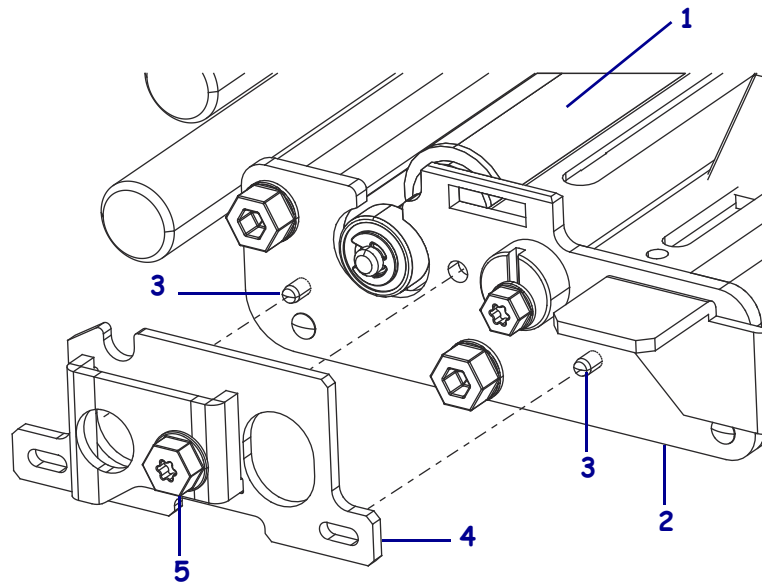
1. Open the upper pinch roller assembly by pressing on the release button located just above the pinch roller cam plate.
2. See [Figure 352](#). To remove the pinch roller cam plate, loosen the center mounting screw to release it from the pinch roller support plate.



Note • The center mounting screw is captive within the pinch roller cam plate.

3. Pull the cam plate off of the two support pins on the pinch roller support plate. Set the cam plate aside.

Figure 352 • Pinch Roller



1	Pinch roller (shaded)
2	Pinch roller support plate
3	Support pins
4	Pinch roller cam plate
5	Cam plate center mounting screw

4. Grasp the pinch roller tightly and pull the pinch roller toward the pinch roller support plate to release the pin secured in the pinch roller coupler.

The outboard bearing will extend past the end of the platen roller support plate.



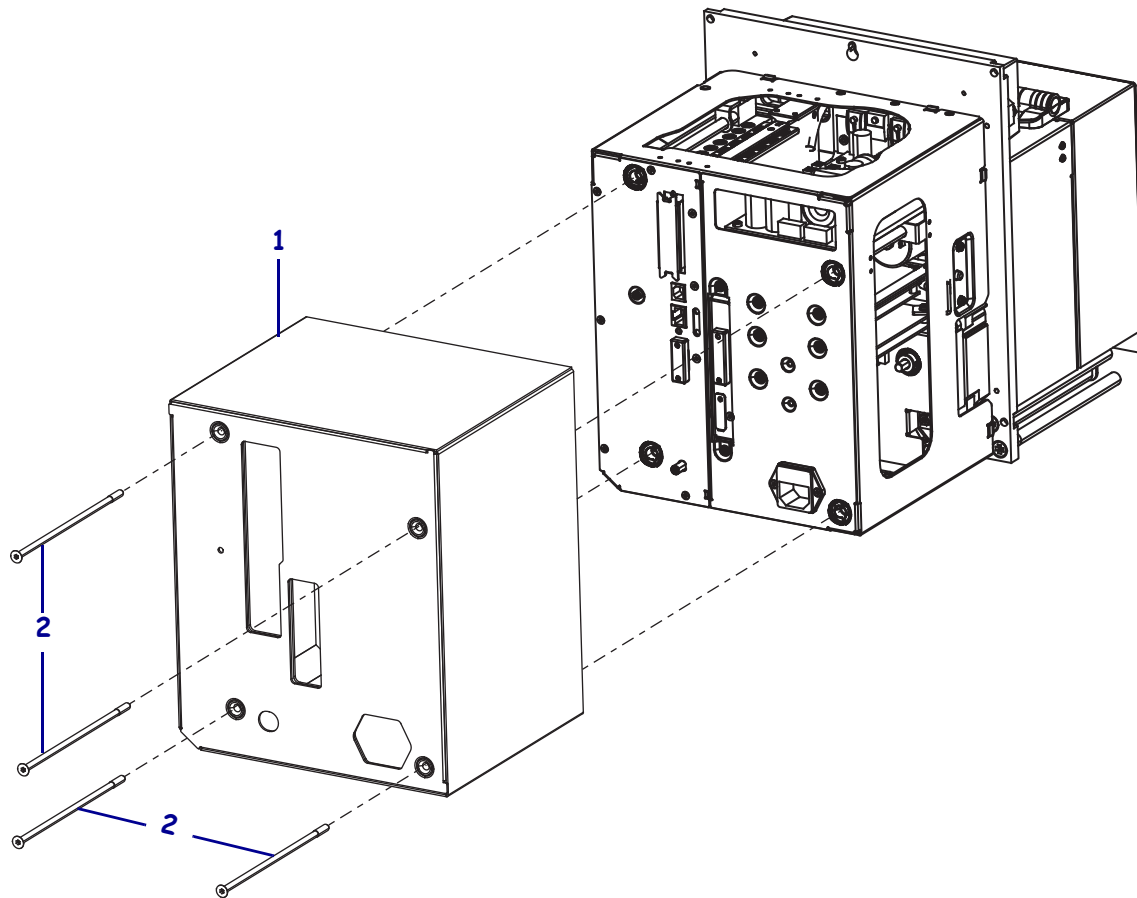
Note • You may have to turn the roller slightly to be able to remove the roller.

5. Lift the pinch roller out of the print engine.

Remove the Electronics Cover

1. See [Figure 353](#). Remove the four long mounting screws securing the electronics cover.

Figure 353 • Electronics Cover



1	Electronics cover
2	Electronics cover mounting screws (4)

2. Slide the electronics cover off of the print engine.

Open the Electronics Enclosure

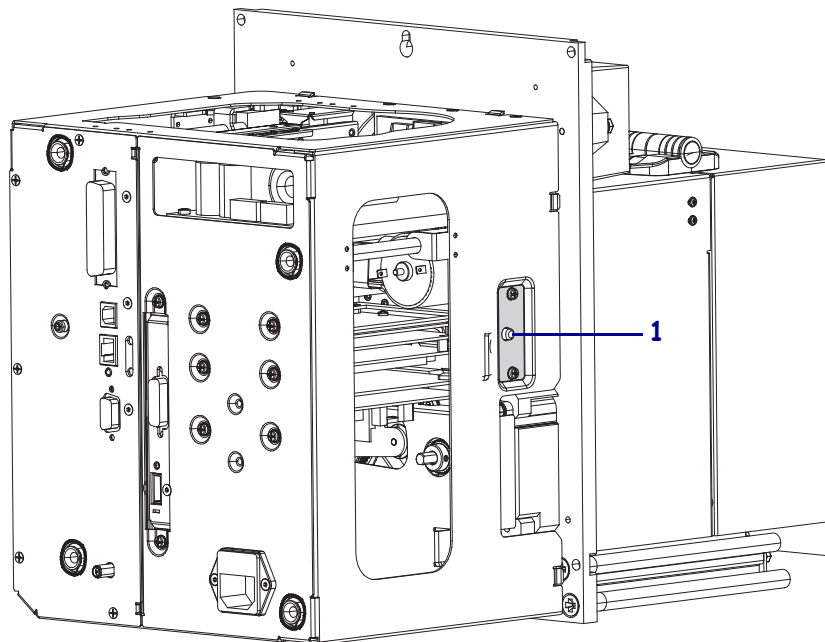
1. See [Figure 354](#). Locate the latch.



Note • For right-hand models, the latch is on the right side when looking from the back of the print engine. For left-hand models, the latch is on the left side.

2. Press the latch and swing the electronics enclosure open.

Figure 354 • Locate the Latch



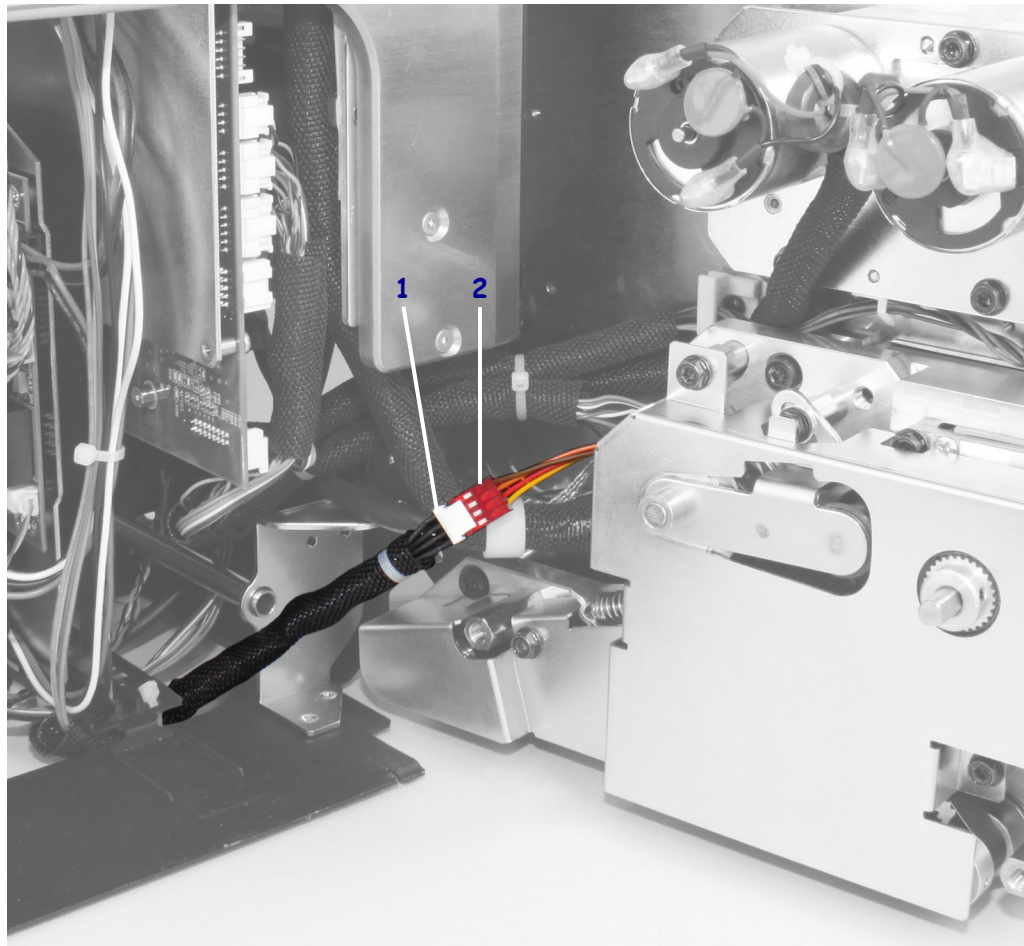
1	Latch
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Remove the Drive System

1. See [Figure 355](#). Separate the drive system cable connectors.

The short part of the cable is wired to the stepper motor. The long part of the cable plugs into J4 on the DC power supply board.

Figure 355 • Drive System Cable



1	Long drive system cable goes to the DC power supply
2	Short drive system cable connector goes to the stepper motor

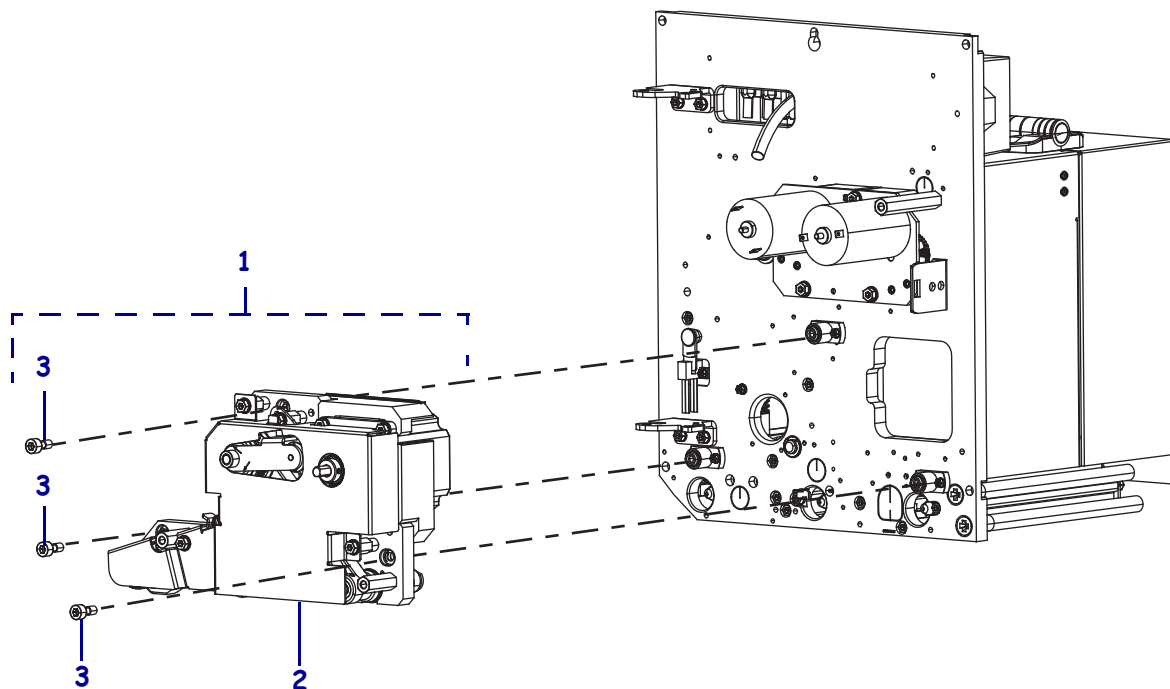
2. See [Figure 356](#). Loosen the three 4 mm mounting screws to release the drive system from the main frame.



Note • The three 4 mm mounting screws are captive within the drive system.

3. Remove the drive system from the main frame.

Figure 356 • Remove the Drive System



1	Drive system
2	Drive system cover
3	Drive system mounting screws (3)

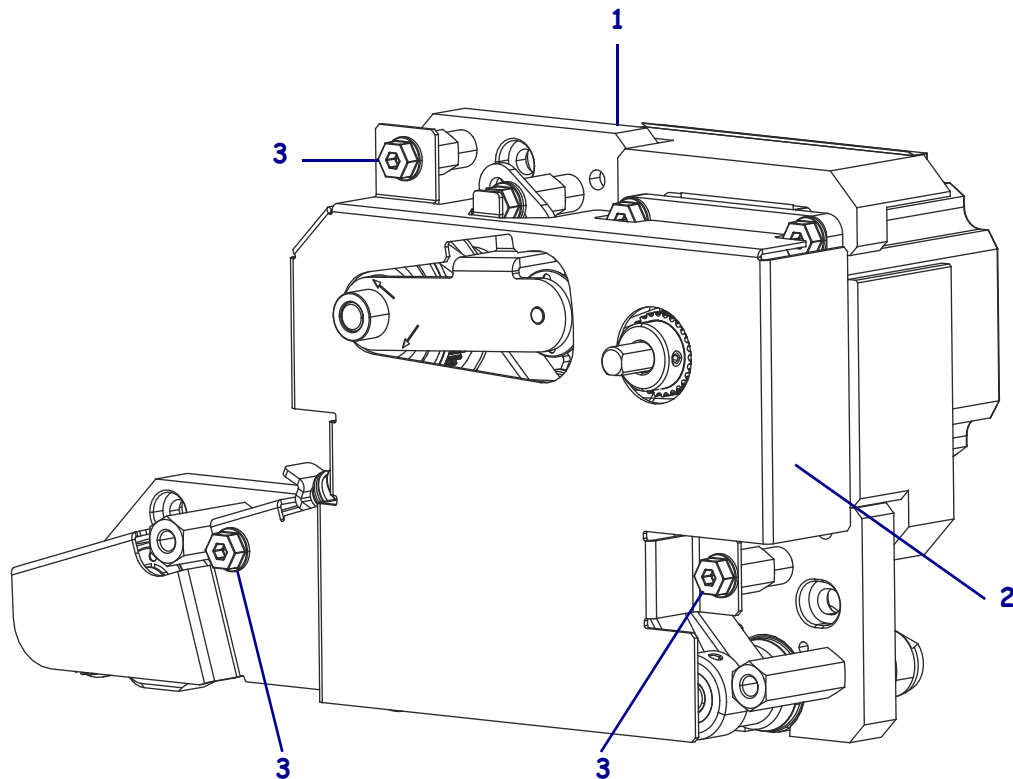
Remove the Drive System Cover

1. See [Figure 357](#). To remove the cover, loosen the three mounting screws.



Note • The three mounting screws are captive.

Figure 357 • Drive System Cover and Mounting Screws



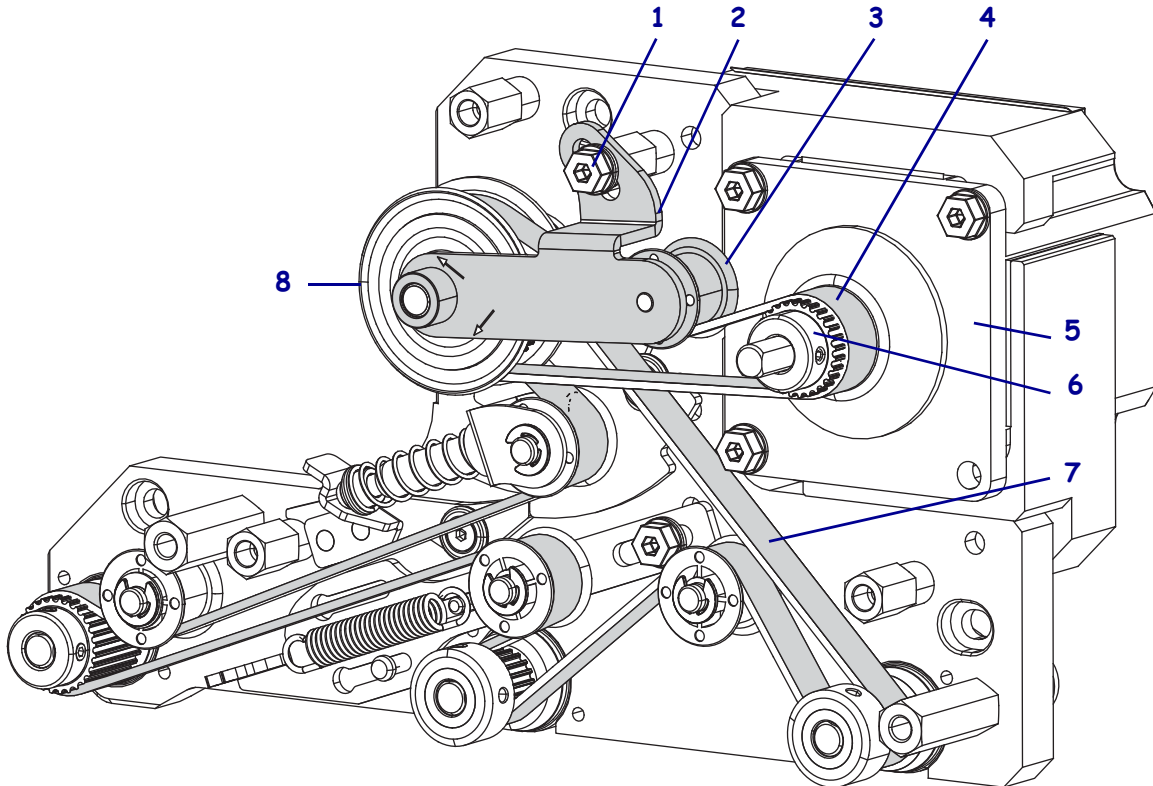
1	Drive system
2	Drive system cover
3	Cover mounting screws (3)

2. Lift off the drive system cover.

Remove the Belts

1. See [Figure 358](#). Note the location of the screw and washer in the stepper motor belt tensioner bracket.
2. Remove the mounting screw and washer securing the stepper motor belt tensioner bracket and slide the bracket assembly off of the compound pulley shaft.

Figure 358 • Drive System and Belt Path



1	Mounting screw and washer for stepper motor belt tensioner bracket
2	Stepper motor belt tensioner bracket (shaded)
3	Stepper motor idler pulley (shaded)
4	Stepper motor belt (shaded)
5	Stepper motor
6	Stepper motor pulley
7	Platen roller drive belt
8	Compound pulley

3. Remove the stepper motor belt.

Remove the Stepper Motor

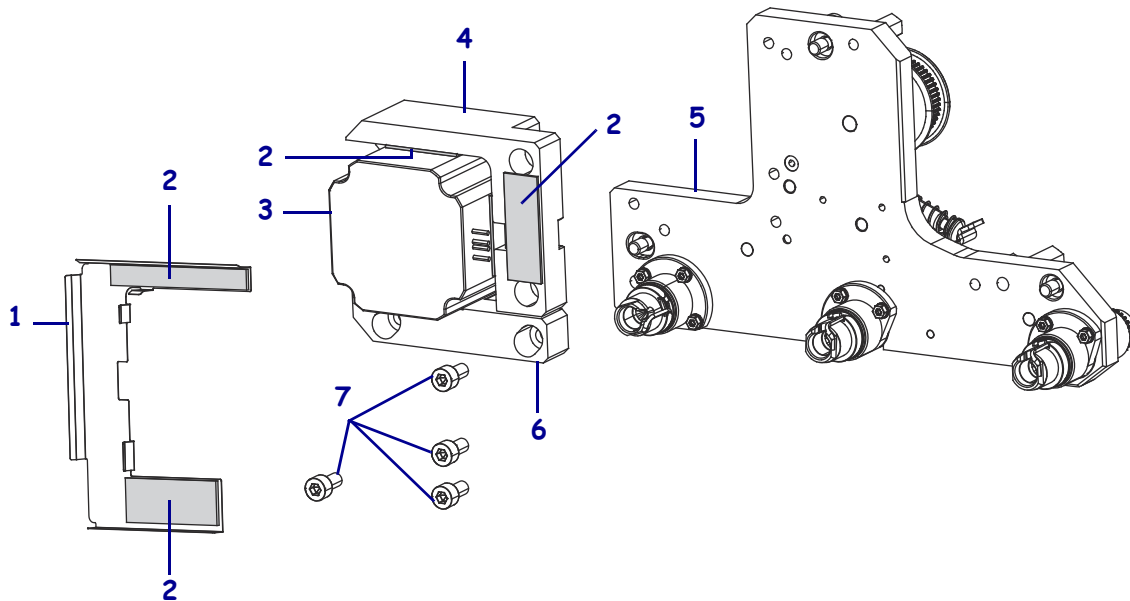


1. See [Figure 359](#). Lift off the stepper motor cover.
2. **Caution** • The thermal insulation pads contain substances which may irritate your eyes. Wear gloves when working with these pads and wash your hands after touching the pads or liners.

Lift up the end of the thermal insulation pads on the stepper motor frame, if necessary, to access the stepper motor frame mounting screws.

3. To remove the stepper motor, remove the four stepper motor frame mounting screws.
4. Remove the stepper motor cables from the cable clamps on the back of the drive system mounting plate.
5. Lift the stepper motor and attached frame sections off the back of the drive system mounting plate.

Figure 359 • Stepper Motor



1	Stepper motor cover (cover is flipped over to show the thermal insulation pads)
2	Thermal insulation pad (shaded)
3	Stepper motor
4	Upper section of stepper motor frame
5	Drive system mounting plate
6	Lower section of stepper motor frame
7	Stepper motor mounting screws (4)

Replace the Stepper Motor

1. Working from the back of the drive system, align the stepper motor/frame assembly with the four mounting holes.
2. Reinstall the four mounting screws to secure the stepper motor/frame assembly to the drive system.



-
3. **Caution** • The thermal insulation pads contain substances which may irritate your eyes. Wear gloves when working with these pads and wash your hands after touching the pads or liners.
-

Gently remove the liners on all of the thermal insulation pads on the motor, frame, and inside of the cover.

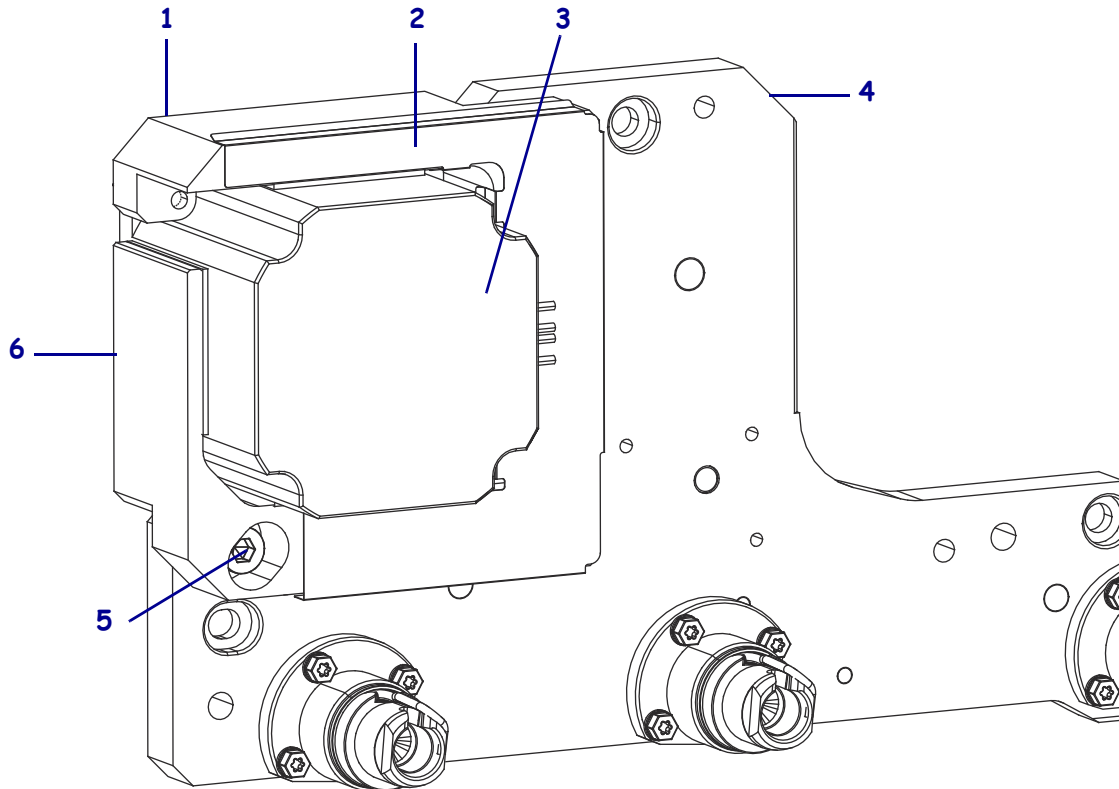
4. Route the stepper motor cables through the cable clamps on the back of the drive system mounting plate.

5. See [Figure 360](#). Gently press the thin metal stepper motor cover onto the back of the stepper motor frame.
Ensure that the cover adheres to the stepper motor frame.



Note • The cover has been provided to protect you and the thermal insulation pads.

Figure 360 • Stepper Motor, Frame and Cover Installed



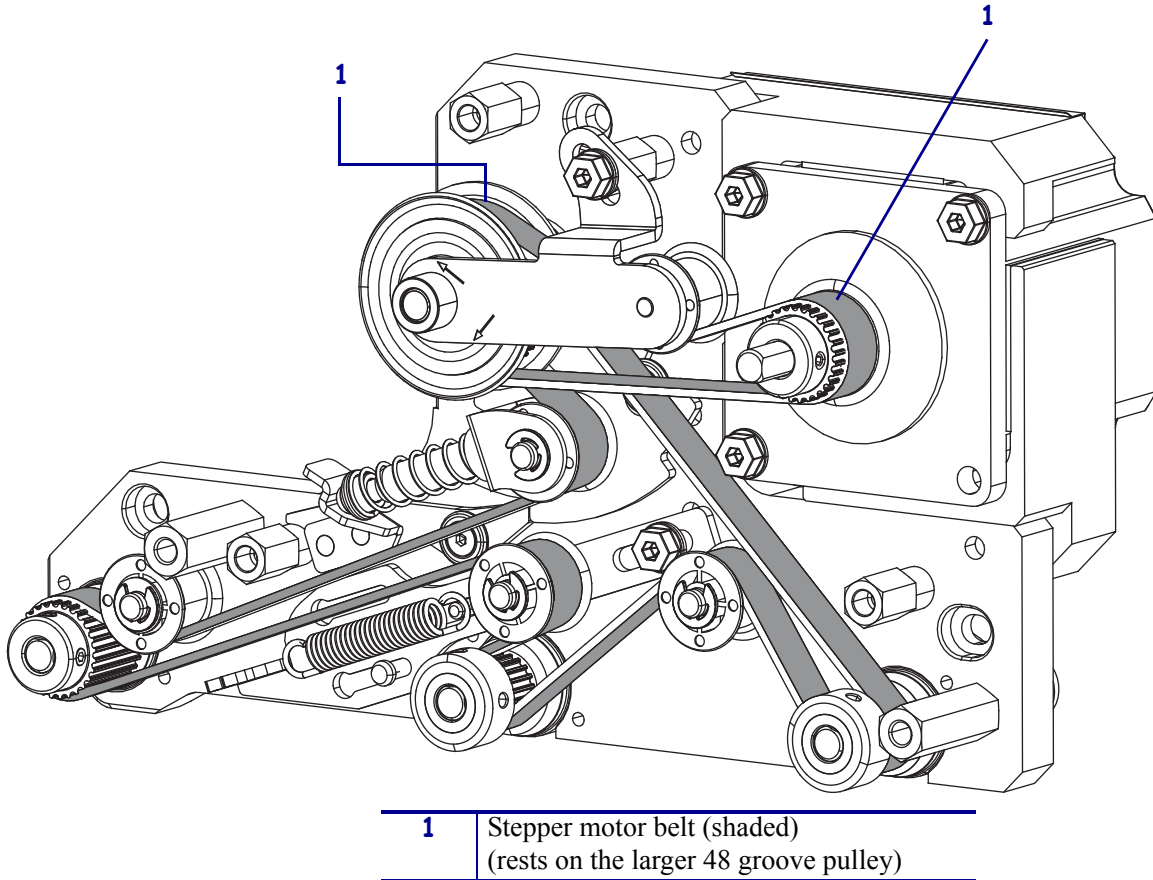
1	Upper section of stepper motor frame
2	Stepper motor cover
3	Stepper motor
4	Drive system mounting plate
5	Stepper motor mounting screws (4)
6	Lower section of stepper motor frame

6. Turn the drive system so that the stepper motor shaft is facing up.

Replace the Belts

1. See [Figure 361](#). Replace the stepper motor belt on the compound pulley and the stepper motor pulley.

Figure 361 • Path for Drive Belts



2. Align the stepper motor belt tensioner bracket assembly on the compound pulley shaft.
Ensure that the idler rides on top of the stepper motor belt and that the belt is seated evenly on the stepper motor pulley.
3. Replace the mounting screw and washer for the stepper motor belt tensioner bracket.
4. Reset the stepper motor belt tensioner bracket to its original location and tighten the screw.



Important • The lower section of the stepper motor belt should be slightly taut. The middle of the belt should deflect upward approximately halfway to the bracket pulley under moderate finger pressure.

Reinstall the Drive System Cover

1. Align the drive system cover over the three mounting holes.
2. Reinstall the three mounting screws to secure the drive system cover.

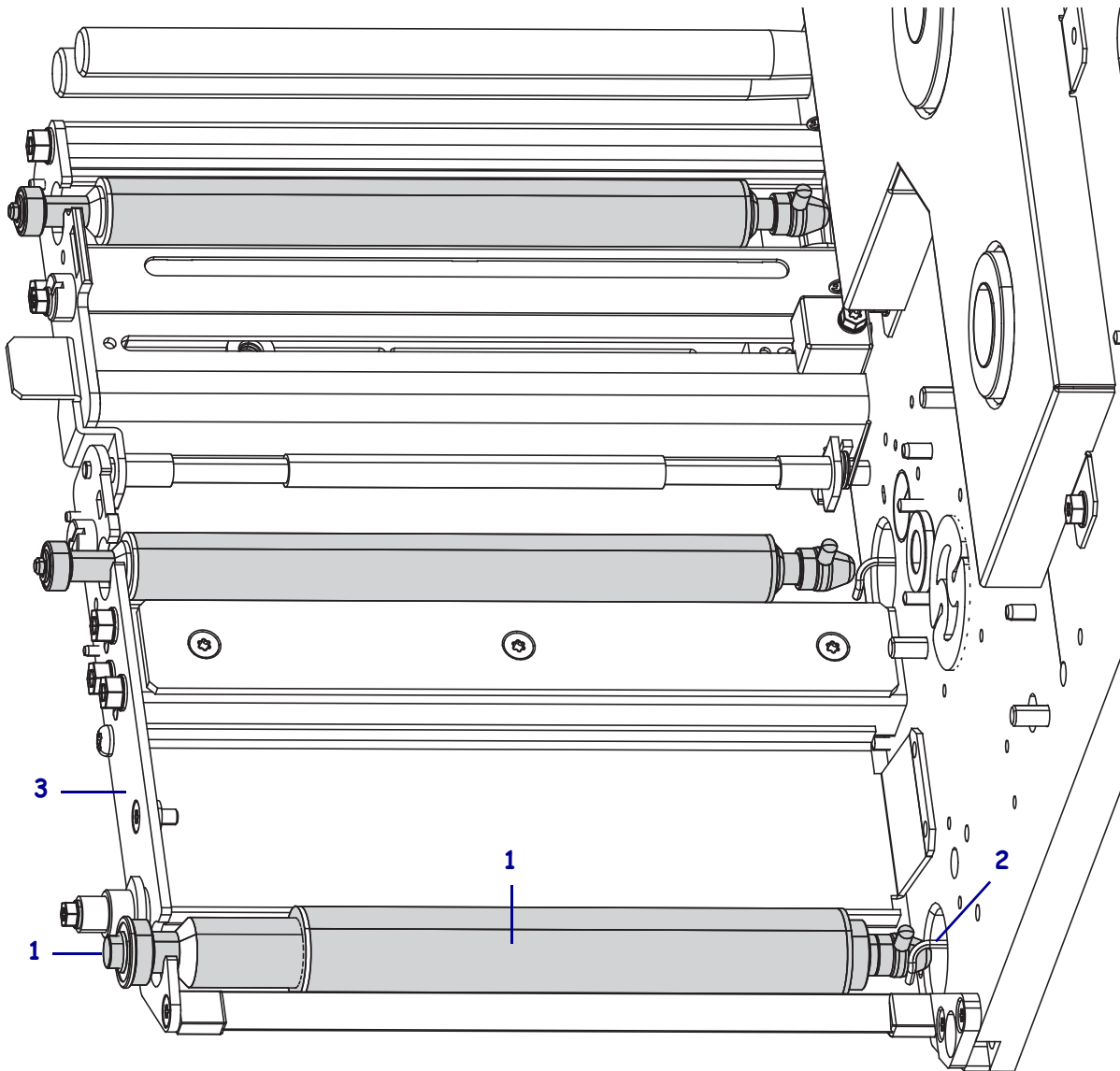
Reinstall the Drive System

1. See [Figure 356](#). Align the drive system with the drive system mounts on the main frame, and reinstall the three 4mm mounting screws.
2. See [Figure 355](#). Reconnect the stepper motor cable connectors. The short cable is wired to the drive motor. The long cable plugs into J4 on the DC power supply board.

Replace the Pinch Roller

1. See [Figure 362](#). Starting with the pin end of the roller, align the pin with the slot in the pinch roller coupler.

**Figure 362 • Roller Locations
(Top View with Subsystems Removed)**



1	Platen roller (shaded)
2	Platen roller coupler
3	Platen roller support plate

2. Lower the other end of the pinch shaft into the large hole on the pinch roller support plate.
3. Push the shaft into the pinch roller coupler to fully seat the pinch shaft.
You will hear a click when the pin is seated correctly or turn the roller slightly to confirm that the roller is firmly seated.
4. See [Figure 352](#). Replace the cam plate on the two support pins on the pinch roller support plate.
5. Reinstall the center mounting screw on the cam plate.
6. Close the upper pinch roller assembly.

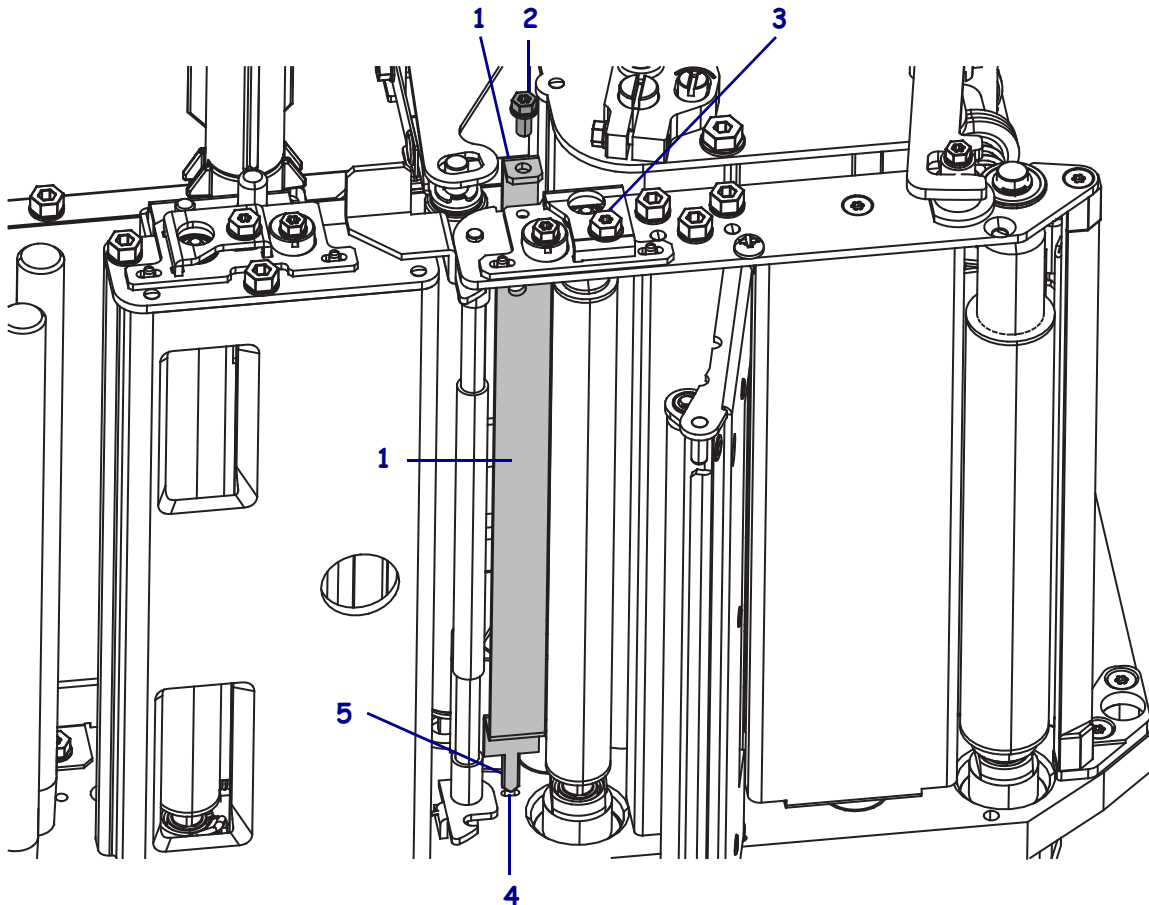
Replace the Peel Roller

1. Starting with the pin end of the roller, align the pin with the slot in the peel roller coupler.
2. Lower the other end of the peel roller shaft into the large hole on the platen roller support plate.
3. Push the shaft into the peel roller coupler to fully seat the peel shaft.
You will hear a click when the pin is seated correctly or turn the roller slightly to confirm that the roller is firmly seated.
4. See [Figure 363](#). Insert the tab on the deflector plate into the main frame slot.



Note • [Figure 363](#) shows the deflector plate separated from the platen roller cam plate. The deflector plate was designed to be attached to the cam plate during removal and installation.

Figure 363 • Deflector Plate



1	Deflector plate
2	Deflector plate mounting screw
3	Platen roller cam plate mounting screw
4	Slot
5	Tab

5. Replace the cam plate on the two support pins on the platen roller support plate.
6. Tighten the center mounting screw on the cam plate.
7. Close the peel roller bracket by pushing up until you hear the click.

Replace the Platen Roller

1. See [Figure 350](#). Starting with the pin end of the roller, align the pin with the slot in the platen roller coupler.
2. Lower the other end of the platen shaft into the large hole on the platen roller support plate.
3. Push the shaft toward the platen pulley to fully seat the platen shaft.
You will hear a click when the pin is seated correctly or turn the roller slightly to confirm that the roller is firmly seated.
4. See [Figure 349](#). Loosen the retaining screw for the platen latch pin, and rotate the latch pin to the closed position. Tighten the screw.
5. Close the printhead.

Close the Electronics Enclosure

1. Ensure that all wires are routed properly and are not causing any obstructions, and then carefully swing the electronics enclosure closed.
2. Adjust the wire clips for the parallel port until they are touching the parallel port.
3. Slide the electronics cover onto the print engine.
4. Reinstall the four electronics cover mounting screws.

Reinstall the Print Engine in the Applicator

1. To reinstall the print engine into the applicator, carefully place the keyhole on the center mounting bolt.



Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.

2. Replace the four corner mounting screws securing the print engine to the applicator.
3. Tighten the center mounting bolt.

Resume Printer Operation

1. Reconnect the AC power cord and interface cables.
2. Turn on (I) the print engine.

The installation is complete.

Media Path Replacements

Contents

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Media Guides Maintenance Kit	768
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Roller Plates Maintenance Kit	782

Figure 364 • Media Path Overview

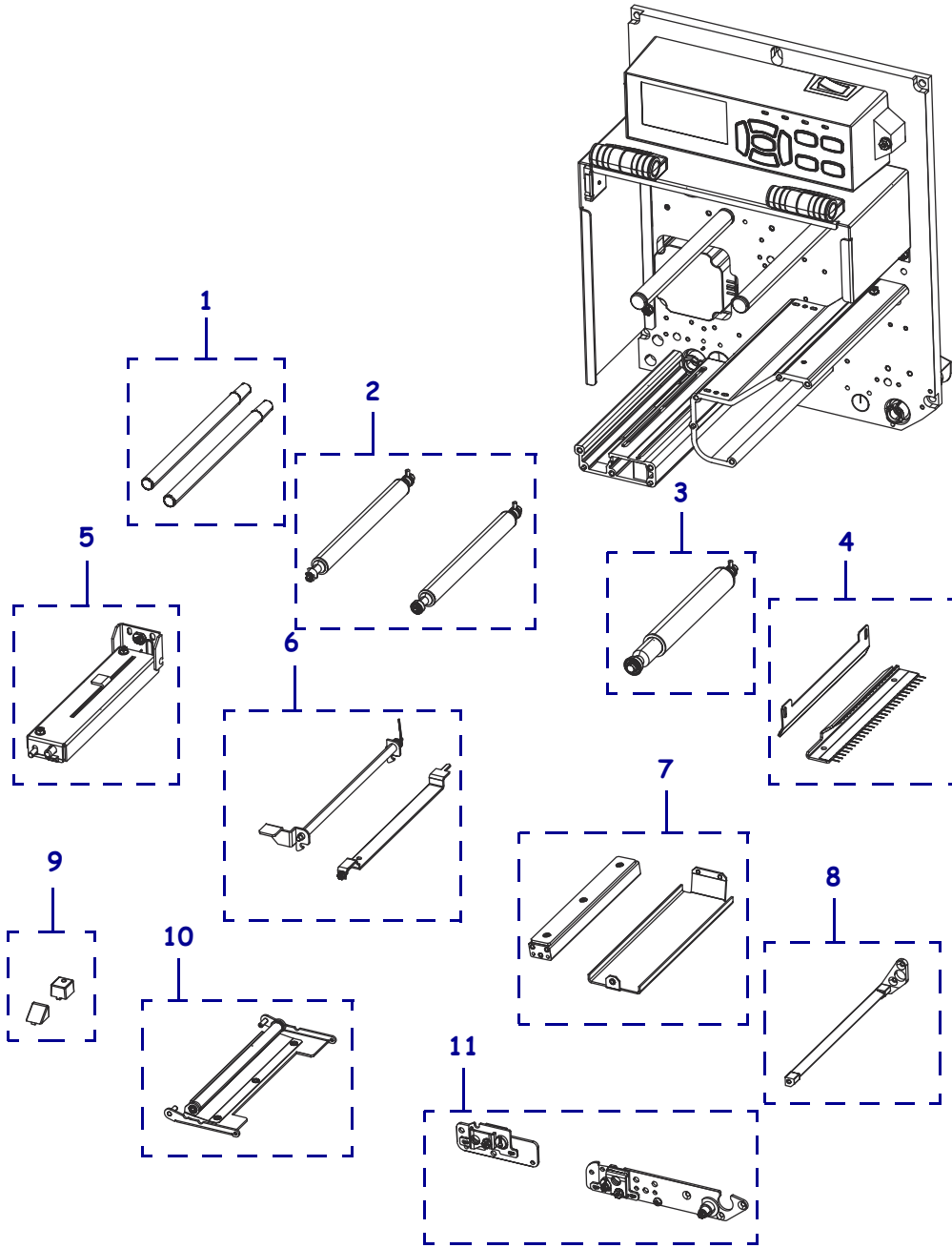


Table 56 • Media Path Overview

Item	Part Number	Description
1	P1046696-053	ZE500-4 Media Guide Posts Maintenance Kit, RH/LH, see Table 57 on page 653 .
	P1046696-054	ZE500-6 Media Guide Posts Maintenance Kit, RH/LH, see Table 57 on page 653 .
2	P1046696-059	ZE500-4 Pinch and Peel Roller Maintenance Kit ,RH/LH, see Table 57 on page 653 .
	P1046696-060	ZE500-6 Pinch and Peel Roller Maintenance Kit ,RH/LH, see Table 57 on page 653 .
3	P1046696-072	ZE500-4 Platen Roller Maintenance Kit, RH/LH, see Table 57 on page 653 .
	P1046696-073	ZE500-6 Platen Roller Maintenance Kit, RH/LH, see Table 57 on page 653 .
4	P1046696-043	ZE500-4 Strip Plate and Static Brush Maintenance Kit, see Table 57 on page 653 .
	P1046696-044	ZE500-6 Strip Plate and Static Brush Maintenance Kit, see Table 57 on page 653 .
5	P1046696-055	ZE500-4 Upper Segmented Pinch Roller Assembly Maintenance Kit, RH, see Table 57 on page 653 .
	P1046696-056	ZE500-4 Upper Segmented Pinch Roller Assembly Maintenance Kit, LH, see Table 57 on page 653 .
	P1046696-057	ZE500-6 Upper Segmented Pinch Roller Assembly Maintenance Kit, RH, see Table 57 on page 653 .
	P1046696-058	ZE500-6 Upper Segmented Pinch Roller Assembly Maintenance Kit, LH, see Table 57 on page 653 .
6	P1046696-064	ZE500-4 Peel Deflector and Latch Maintenance Kit, RH, see Table 57 on page 653 .
	P1046696-065	ZE500-4 Peel Deflector and Latch Maintenance Kit, LH, see Table 57 on page 653 .
	P1046696-066	ZE500-6 Peel Deflector and Latch Maintenance Kit, RH, see Table 57 on page 653 .
	P1046696-067	ZE500-6 Peel Deflector and Latch Maintenance Kit, LH, see Table 57 on page 653 .
7	P1046696-068	ZE500-4 Platen Support Bar and Printhead Guard Maintenance Kit, RH & LH, see Table 57 on page 653 .
	P1046696-069	ZE500-6 Platen Support Bar and Printhead Guard Maintenance Kit, RH & LH, see Table 57 on page 653 .
8	P1046696-074	ZE500-4 Peel Bar Maintenance Kit, see Table 57 on page 653 .
	P1046696-075	ZE500-6 Peel Bar Maintenance Kit, see Table 57 on page 653 .
9	P1046696-061	ZE500 Series Media Guides Maintenance Kit, see Table 57 on page 653 .
10	P1046696-062	ZE500-4 Peel Bracket Assembly Maintenance Kit, RH & LH, see Table 57 on page 653 .
	P1046696-063	ZE500-6 Peel Bracket Assembly Maintenance Kit, RH & LH, see Table 57 on page 653 .
11	P1046696-070	ZE500 Series Roller Plates Maintenance Kit, RH, see Table 57 on page 653 .
	P1046696-071	ZE500 Series Roller Plates Maintenance Kit, LH, see Table 57 on page 653 .

Figure 365 • Media Path Kits

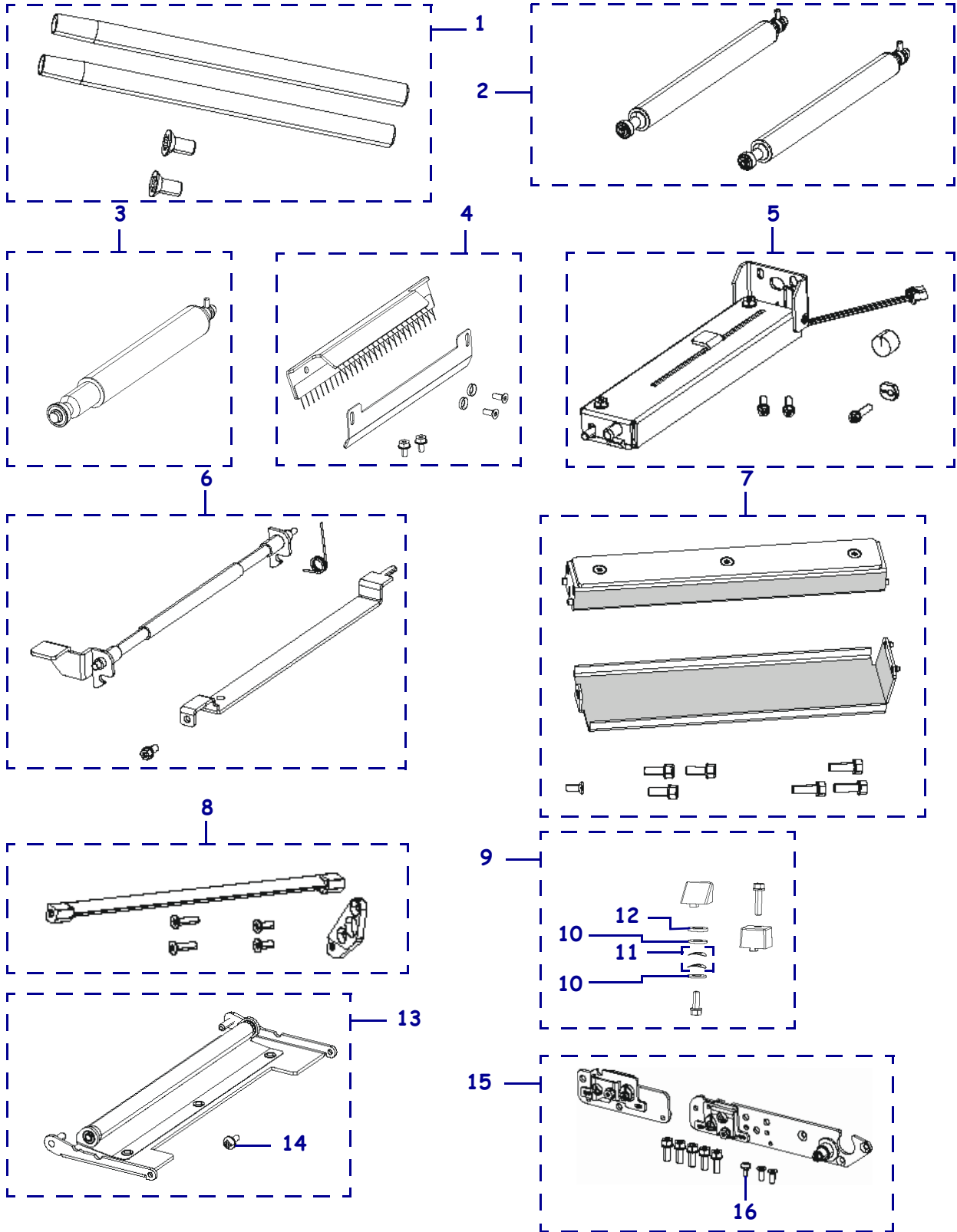


Table 57 • Media Path Kits Parts List

Item	Part Number	Description
1	P1046696-53	ZE500-4 Media Guide Posts Maintenance Kit, RH/LH See Media Guide Posts Maintenance Kit on page 655.
	P1046696-54	ZE500-6 Media Guide Posts Maintenance Kit, RH/LH See Media Guide Posts Maintenance Kit on page 655.
2	P1046696-059	ZE500-4 Pinch and Peel Roller Maintenance Kit ,RH/LH See Pinch and Peel Roller Maintenance Kit on page 677.
	P1046696-060	ZE500-6 Pinch and Peel Roller Maintenance Kit,RH/LH See Pinch and Peel Roller Maintenance Kit on page 677.
3	P1046696-072	ZE500-4 Platen Roller Maintenance Kit, RH/LH See Platen Roller Maintenance Kit on page 685.
	P1046696-073	ZE500-6 Platen Roller Maintenance Kit, RH/LH See Platen Roller Maintenance Kit on page 685.
4	P1046696-043	ZE500-4 Strip Plate and Static Brush Maintenance Kit See Strip Plate and Static Brush Maintenance Kit on page 691.
	P1046696-044	ZE500-6 Strip Plate and Static Brush Maintenance Kit See Strip Plate and Static Brush Maintenance Kit on page 691.
5	P1046696-055	ZE500-4 Upper Segmented Pinch Roller Assembly Maintenance Kit, RH See Upper Segmented Pinch Roller Maintenance Kit on page 699.
	P1046696-056	ZE500-4 Upper Segmented Pinch Roller Assembly Maintenance Kit, LH See Upper Segmented Pinch Roller Maintenance Kit on page 699.
	P1046696-057	ZE500-6 Upper Segmented Pinch Roller Assembly Maintenance Kit, RH See Upper Segmented Pinch Roller Maintenance Kit on page 699.
	P1046696-058	ZE500-6 Upper Segmented Pinch Roller Assembly Maintenance Kit, LH See Upper Segmented Pinch Roller Maintenance Kit on page 699.
6	P1046696-064	ZE500-4 Peel Deflector and Latch Maintenance Kit, RH See Peel Deflector and Latch Maintenance Kit on page 726.
	P1046696-065	ZE500-4 Peel Deflector and Latch Maintenance Kit, LH See Peel Deflector and Latch Maintenance Kit on page 726.
	P1046696-066	ZE500-6 Peel Deflector and Latch Maintenance Kit, RH See Peel Deflector and Latch Maintenance Kit on page 726.
	P1046696-067	ZE500-6 Peel Deflector and Latch Maintenance Kit, LH See Peel Deflector and Latch Maintenance Kit on page 726.
7	P1046696-068	ZE500-4 Platen Support Bar and Printhead Guard Maintenance Kit, RH & LH See Platen Support Bar and Printhead Guard Maintenance Kit on page 739.
	P1046696-069	ZE500-6 Platen Support Bar and Printhead Guard Maintenance Kit, RH & LH See Platen Support Bar and Printhead Guard Maintenance Kit on page 739.

Item	Part Number	Description
8	P1046696-074	ZE500-4 Peel Bar Maintenance Kit See Peel Bar Maintenance Kit on page 764.
	P1046696-075	ZE500-6 Peel Bar Maintenance Kit See Peel Bar Maintenance Kit on page 764.
9	P1046696-061	ZE500 Series Media Guides Maintenance Kit See Media Guides Maintenance Kit on page 768.
10	HW78806	Washer, Flat M4 (Qty. of 25)
11	HW40194	Washer, Curved 0.344 × 0.172 (Qty. of 25)
12	HW46128	Washer, Flat Nylon (Qty. of 25)
13	P1046696-062	ZE500-4 Peel Bracket Assembly Maintenance Kit, RH & LH See Peel Bracket Assembly Maintenance Kit on page 776.
	P1046696-063	ZE500-6 Peel Bracket Assembly Maintenance Kit, RH & LH See Peel Bracket Assembly Maintenance Kit on page 776.
14	HW43863	Screw, M3 Special (Qty. of 25)
15	P1046696-070	ZE500 Series Roller Plates Maintenance Kit ,RH See Roller Plates Maintenance Kit on page 782.
	P1046696-071	ZE500 Series Roller Plates Maintenance Kit, LH See Roller Plates Maintenance Kit on page 782.
16	HW43863	Screw, Pin (Qty. of 25)



Media Guide Posts Maintenance Kit

Installation Instructions

This kit includes the parts and documentation necessary to install the Media Guide Posts Maintenance Kit in the ZE500™ Series Print Engines. Read these instructions thoroughly before installing this kit.



Caution • This installation must be performed by a qualified service technician.

Parts List

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

Figure 366 • Kit Contents

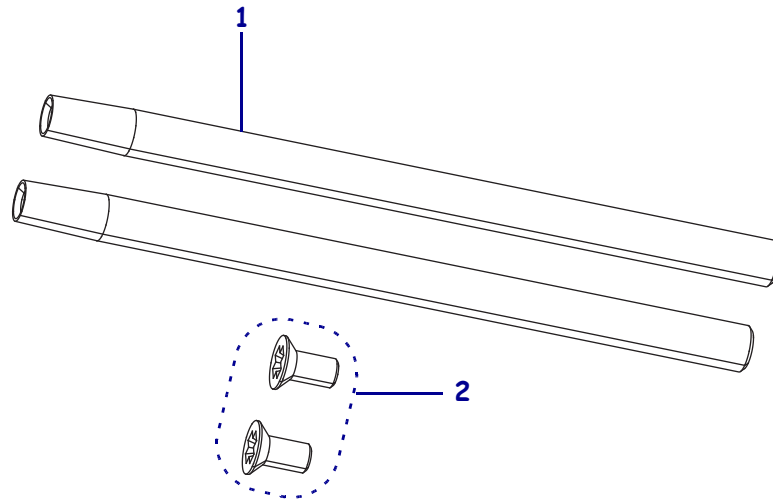


Table 58 • Parts List

✓	Item	Qty	Part Number	Description
	Ref	1	P1046696-53	Media Guide Posts Maintenance Kit ZE500-4 RH/LH
			P1046696-54	Media Guide Posts Maintenance Kit ZE500-6 RH/LH
	1	2	N/A	Post, Guide
	2	2	N/A	Screw M6 × 1.0 × 12 FL PH ZN

N/A = Not available as a separate part (listed for identification purposes only).

Tools Required



Tools • You need these tools to complete this procedure:

- Phillips Screwdriver Set
- Non-marring drift or wooden dowel
- Plastic mallet
- Metric Hex Key (Allen Wrench) Set
- Antistatic Wriststrap and Mat

Remove Power and Data Cables, Ribbon, and Media



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

Connect yourself to an antistatic device.



2. **Caution** • Turn off (O) the print engine and disconnect it from the power source before performing the following procedure.

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


3. **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.

Open the media door, the printhead latch, and remove media and ribbon from the print engine.

4. Close the printhead latch, and then close the media door.

Remove Print Engine from Applicator

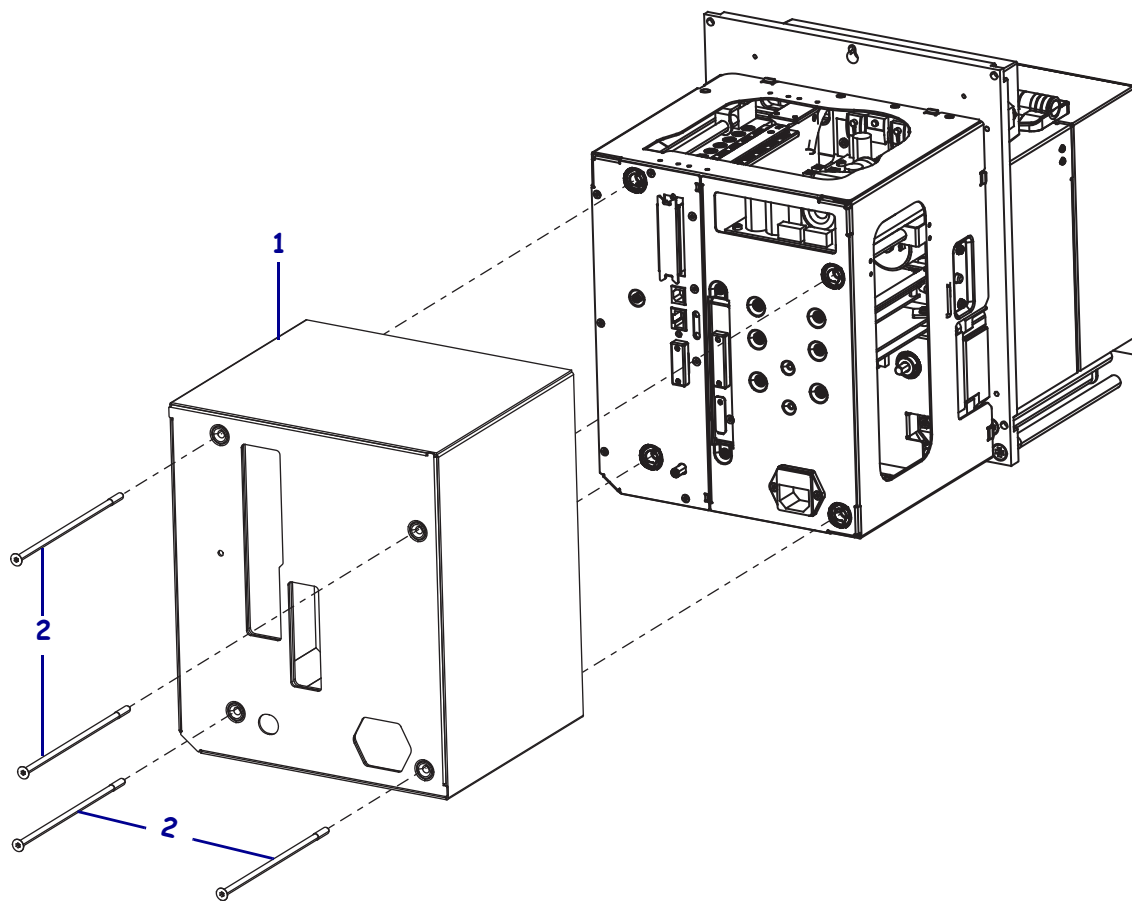
1. Does your applicator (or stand) permit open access to the rear of the print engine?

If you have an...	Then...
Open access	<p>You may swing the print engine open and work on it without removing the unit from the applicator.</p> <p>If you wish to remove the unit from the stand at any time, follow the instructions listed for the <i>Obstructed access</i> type applicator shown in this table.</p> <p>a. Go to <i>Remove the Electronics Cover</i>.</p>
Obstructed access	<p>You must remove the print engine from the applicator before you work on it.</p> <p>a. Remove the four corner mounting screws securing the print engine to the applicator.</p> <p>b. Loosen the center mounting bolt, but do not remove it.</p> <p> Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.</p> <p>c. Lift the print engine off the center mounting bolt and place on a workbench.</p>

Remove the Electronics Cover

1. See [Figure 367](#). Remove the four long mounting screws securing the electronics cover.

Figure 367 • Electronics Cover



1	Electronics cover
2	Electronics cover mounting screws (4)

2. Slide the electronics cover off of the print engine.

Open the Electronics Enclosure

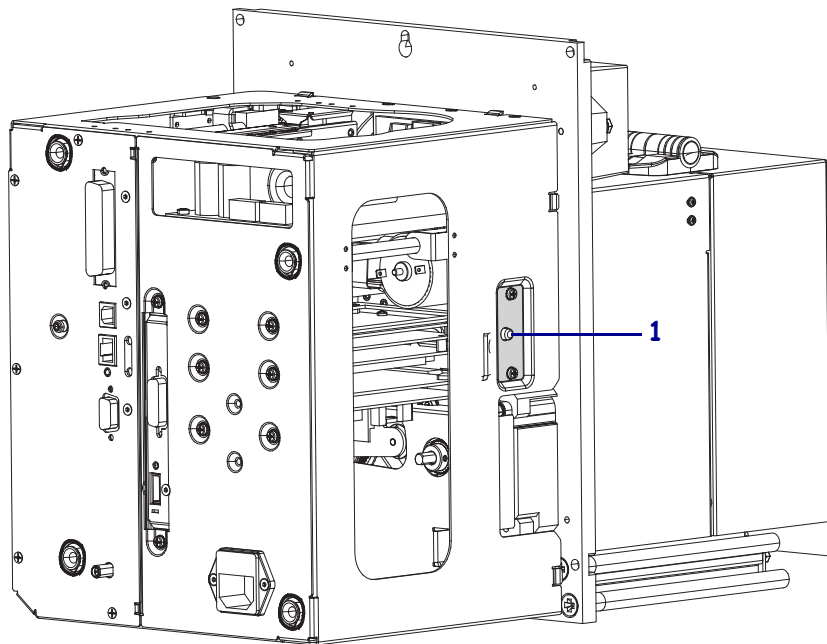
1. See [Figure 368](#). Locate the latch.



Note • For right-hand models, the latch is on the right side when looking from the back of the print engine. For left-hand models, the latch is on the left side.

2. Press the latch and swing the electronics enclosure open.

Figure 368 • Locate the Latch

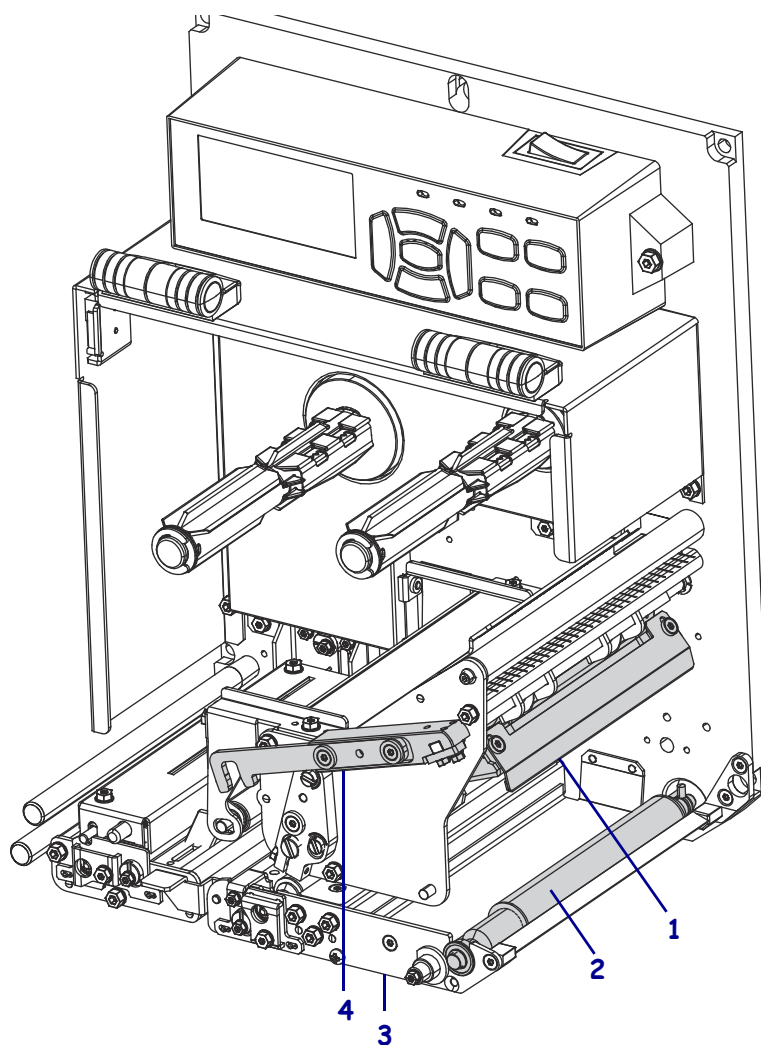


1	Latch
----------	-------

Remove the Platen Roller

1. See [Figure 369](#). Using the printhead latch, open the printhead and press up until secured in the open position.

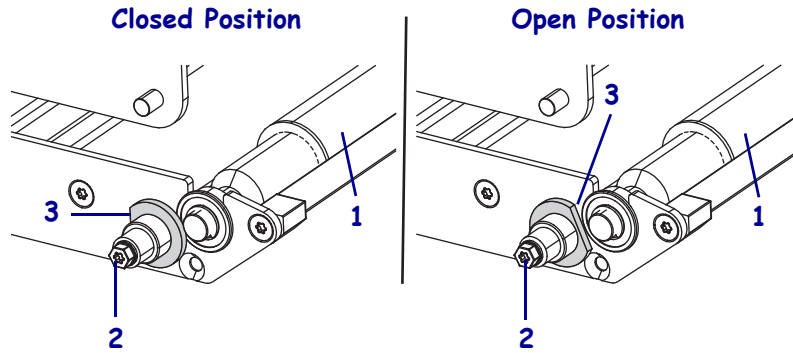
Figure 369 • Open Printhead



1	Printhead (shaded and shown in open position)
2	Platen roller (shaded)
3	Platen roller support plate
4	Printhead latch (shaded and shown in open position)

- See [Figure 370](#). Using a Torx key, loosen the screw on the latch pin, and rotate the latch pin to the open position.

Figure 370 • Latch Pin



1	Platen roller
2	Latch pin screw
3	Latch pin (shaded)

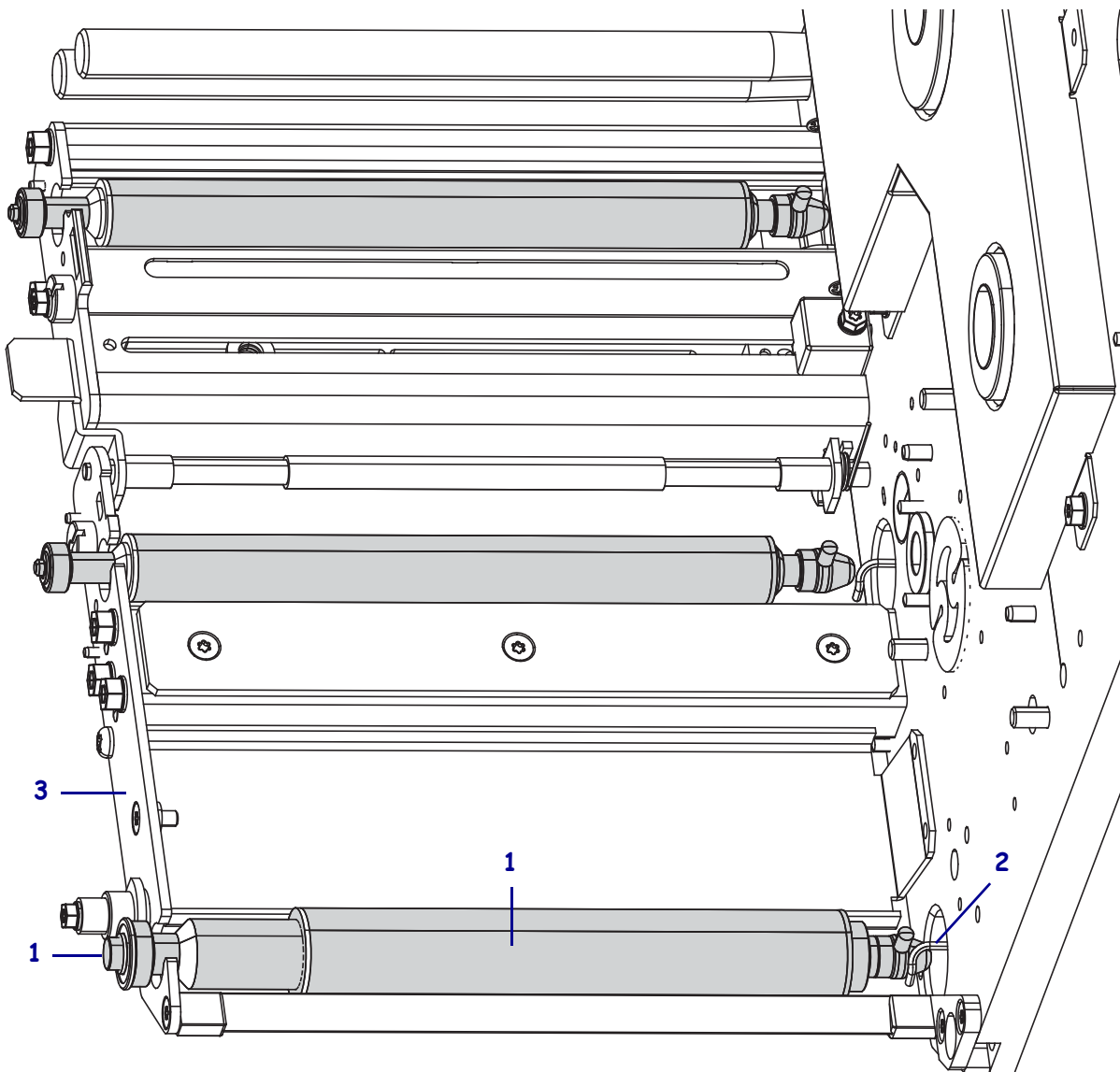
3. See [Figure 371](#). Grasp the platen roller tightly and pull it toward the platen roller support plate to release the pin secured in the platen roller coupler.
The outboard bearing will extend past the end of the platen roller support plate.



Note • You may have to turn the roller slightly to be able to remove the roller.

4. Lift the platen roller out of the print engine.

**Figure 371 • Roller Locations
(Top View with Subsystems Removed)**



1	Platen roller (shaded)
2	Platen roller coupler
3	Platen roller support plate

Remove the Peel Roller

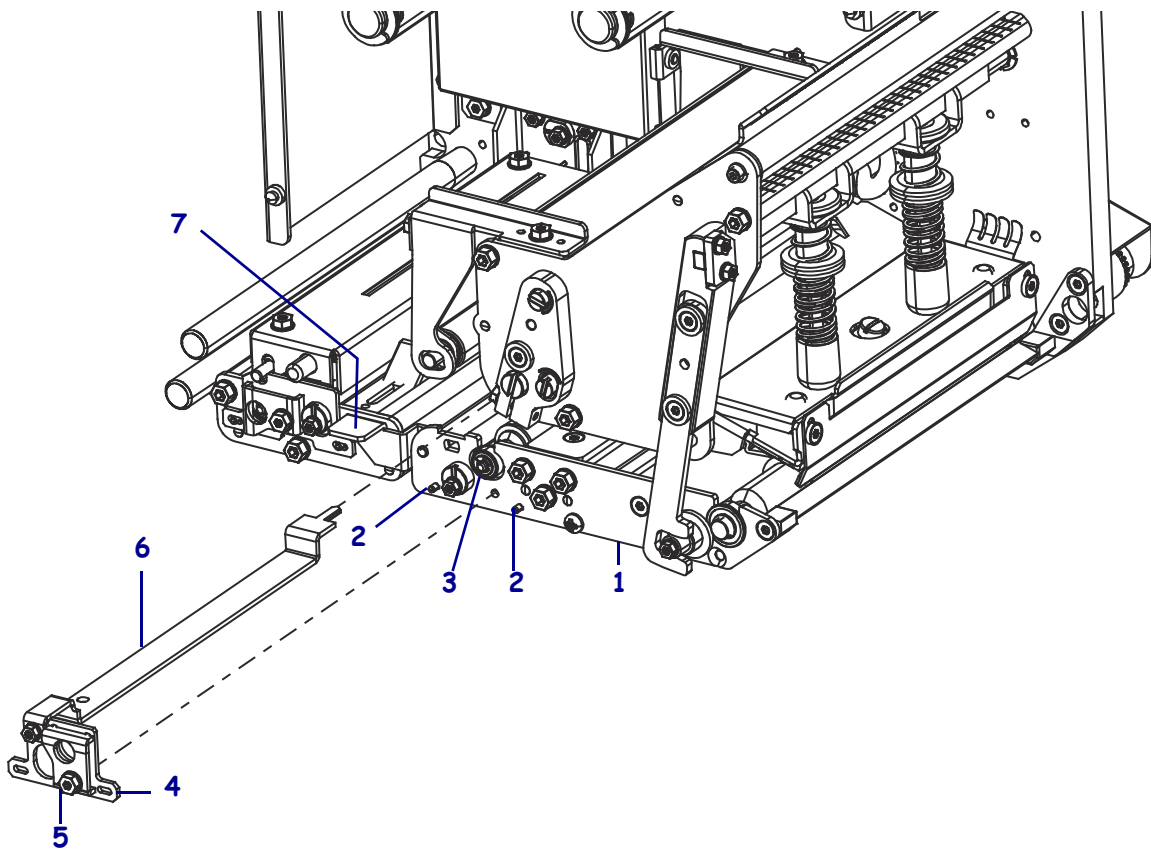
1. To open the peel roller bracket, push up on the latch.
2. See [Figure 372](#). To remove the peel roller cam plate, loosen the center mounting screw to release it from the platen roller support plate.



Note • The center mounting screw is captive within the peel roller cam plate.

3. Pull the peel roller cam plate (with the deflector plate attached) off of the two support pins on the platen roller support plate. Set the cam plate aside.

Figure 372 • Peel Roller



1	Platen roller support plate
2	Support pins
3	Peel roller
4	Peel roller cam plate
5	Peel roller cam plate center mounting screw
6	Peel roller deflector plate
7	Peel roller latch

4. Grasp the peel roller tightly and pull the peel roller toward the platen roller support plate to release the pin secured in the peel roller coupler.

The outboard bearing will extend past the end of the platen roller support plate.



Note • You may have to turn the roller slightly to be able to remove the roller.

5. Lift the peel roller out of the print engine.

Remove the Pinch Roller

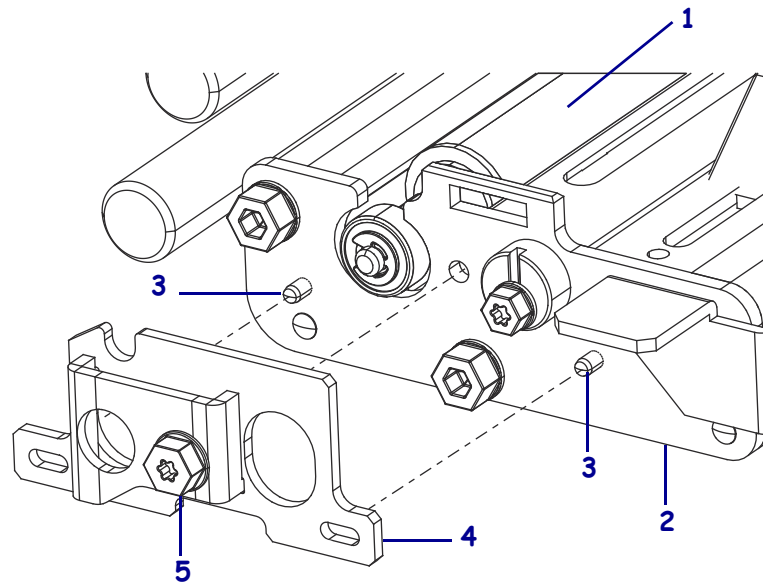
1. Open the upper pinch roller assembly by pressing on the release button located just above the pinch roller cam plate.
2. See [Figure 373](#). To remove the pinch roller cam plate, loosen the center mounting screw to release it from the pinch roller support plate.



Note • The center mounting screw is captive within the pinch roller cam plate.

3. Pull the cam plate off of the two support pins on the pinch roller support plate. Set the cam plate aside.

Figure 373 • Pinch Roller



1	Pinch roller (shaded)
2	Pinch roller support plate
3	Support pins
4	Pinch roller cam plate
5	Cam plate center mounting screw

4. Grasp the pinch roller tightly and pull the pinch roller toward the pinch roller support plate to release the pin secured in the pinch roller coupler.

The outboard bearing will extend past the end of the platen roller support plate.



Note • You may have to turn the roller slightly to be able to remove the roller.

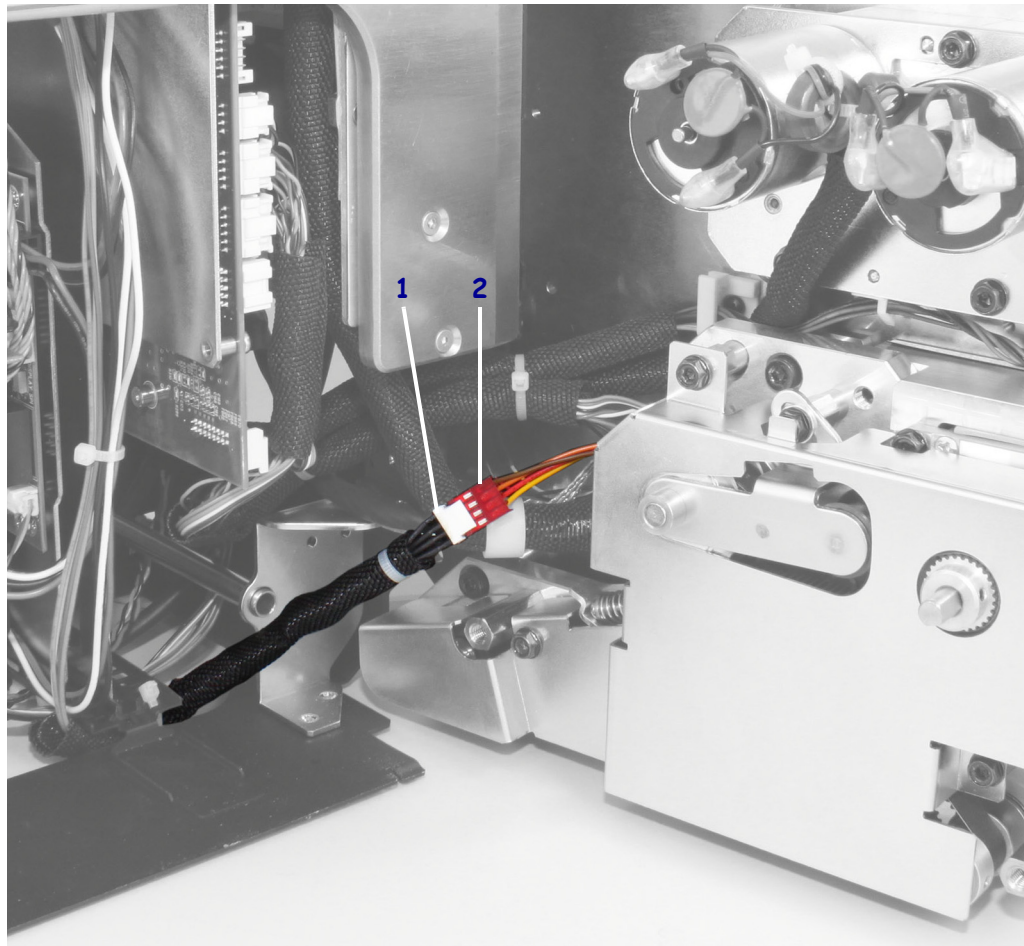
5. Lift the pinch roller out of the print engine.

Remove the Drive System

1. See [Figure 374](#). Separate the drive system cable connectors.

The short part of the cable is wired to the stepper motor. The long part of the cable plugs into J4 on the DC power supply board.

Figure 374 • Drive System Cable



1	Long drive system cable goes to the DC power supply
2	Short drive system cable connector goes to the stepper motor

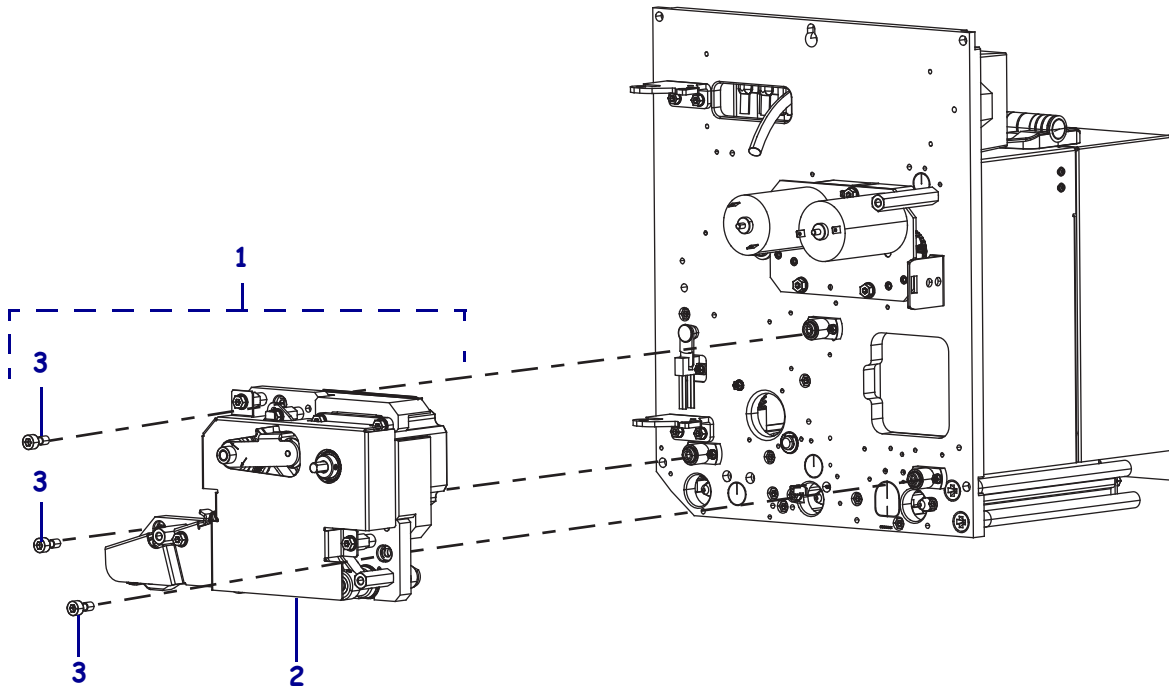
- See [Figure 375](#). Loosen the three 4 mm mounting screws to release the drive system from the main frame.



Note • The three 4 mm mounting screws are captive within the drive system.

- Remove the drive system from the main frame.

Figure 375 • Remove the Drive System

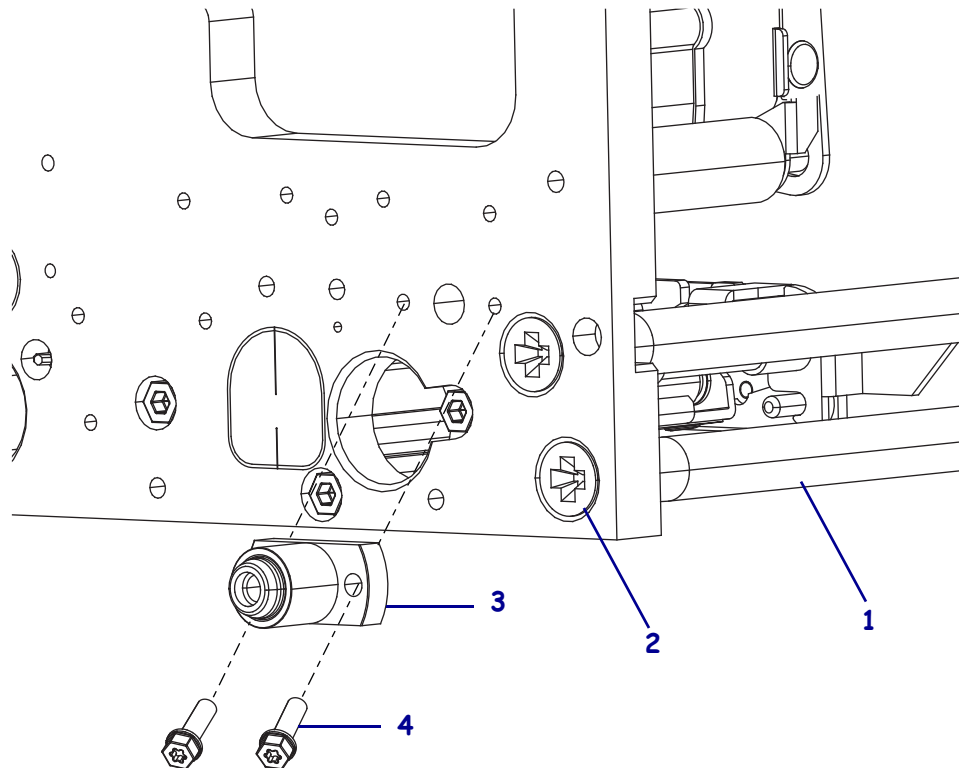


1	Drive system
2	Drive system cover
3	Drive system mounting screws (3)

Remove the Media Guide Posts

1. See [Figure 376](#). To access the media guide posts screw, remove the two mounting screws securing the drive system mount.
2. Remove the mount from the main frame.

Figure 376 • Guide Posts and Drive System Mount



1	Media guide post (2)
2	Media guide post mounting screws (2)
3	Drive system mount
4	Drive system mounting screws (2)

3. The end of the media guide post is tapered and could be locked into the main frame. Use the tap method to remove it to avoid damaging the main frame, post, or screw.
Using a Phillips screwdriver, loosen the media guide post mounting screw approximately two turns.
4. Using a non-marring drift or wooden dowel, tap the screw head solidly enough to push the screw back into (and flush with) the main frame.
5. Use the screwdriver to remove the media guide post the rest of the way.
6. Loosen the media guide post mounting screw and remove the screw and post.
7. Repeat [steps 3-6](#) for the other media guide post.

Replace the Media Guide Posts

1. From the media side of the print engine, insert the tapered end of the media guide post into the main frame.
2. From the electronics side of the print engine, insert the media guide post mounting screw several turns.
3. Using a plastic mallet or other non-marring tool, lightly tap on the end of the guide post several times to begin seating the post.
4. Tighten the mounting screw to completely seat the guide post.
5. Repeat [steps 1-4](#) for the other guide post.
6. Align the drive system mount with the mounting holes on the main frame.
7. Reinstall the two mounting screws to secure the drive system mount.

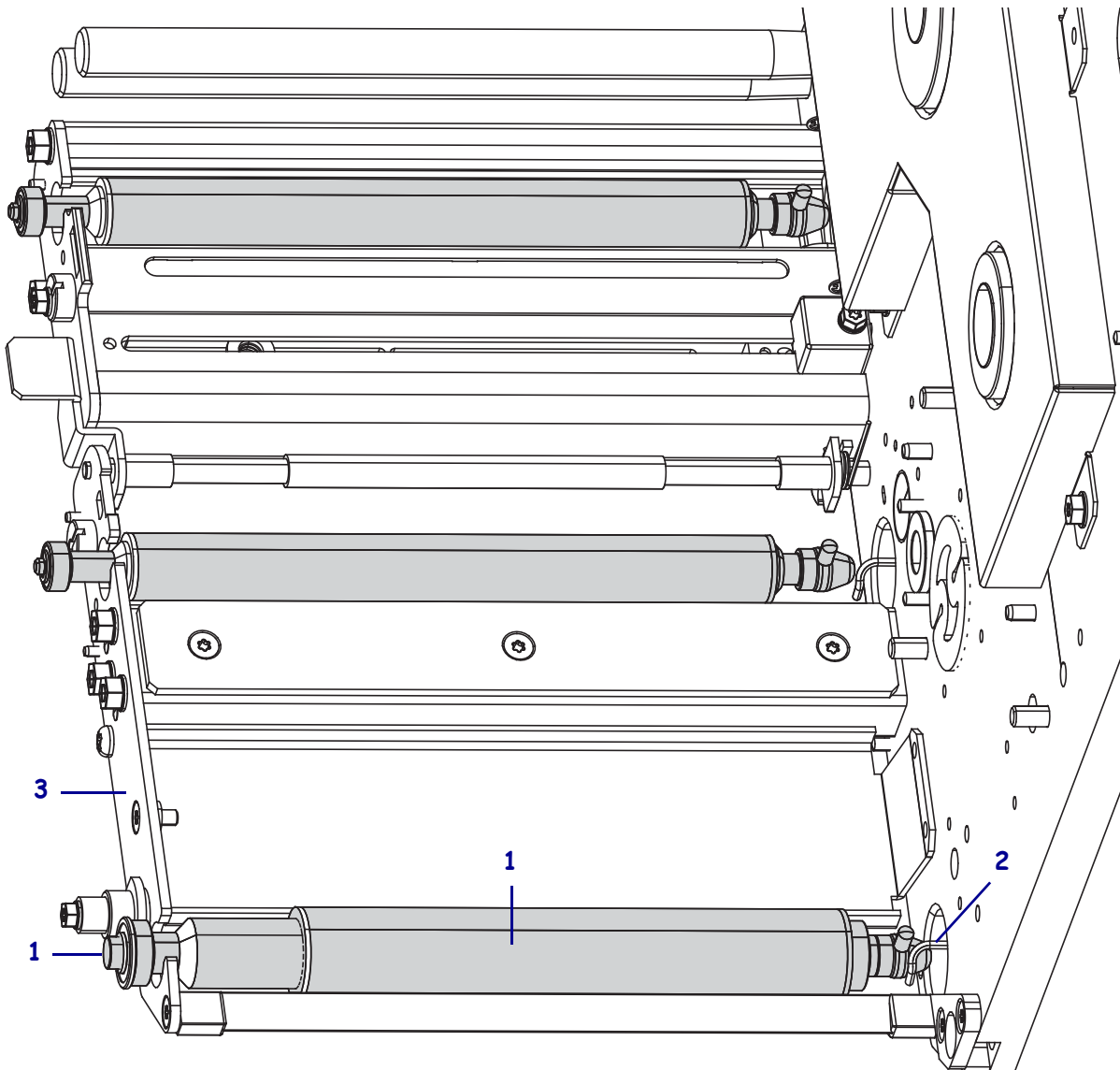
Reinstall the Drive System

1. See [Figure 375](#). Align the drive system with the drive system mounts on the main frame, and reinstall the three 4mm mounting screws.
2. See [Figure 374](#). Reconnect the stepper motor cable connectors. The short cable is wired to the drive motor. The long cable plugs into J4 on the DC power supply board.

Replace the Pinch Roller

1. See [Figure 377](#). Starting with the pin end of the roller, align the pin with the slot in the pinch roller coupler.

**Figure 377 • Roller Locations
(Top View with Subsystems Removed)**



1	Platen roller (shaded)
2	Platen roller coupler
3	Platen roller support plate

2. Lower the other end of the pinch shaft into the large hole on the pinch roller support plate.
3. Push the shaft into the pinch roller coupler to fully seat the pinch shaft.
You will hear a click when the pin is seated correctly or turn the roller slightly to confirm that the roller is firmly seated.
4. See [Figure 373](#). Replace the cam plate on the two support pins on the pinch roller support plate.
5. Reinstall the center mounting screw on the cam plate.
6. Close the upper pinch roller assembly.

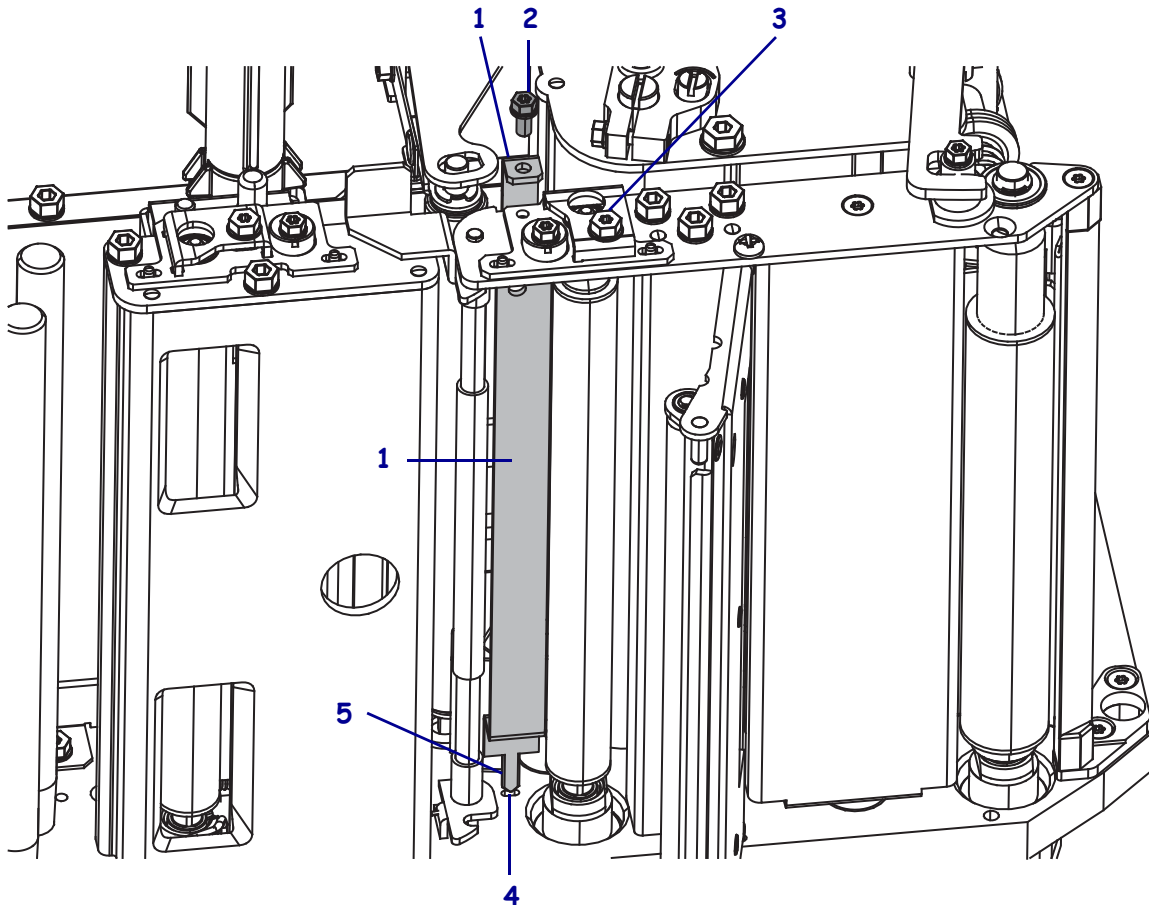
Replace the Peel Roller

1. Starting with the pin end of the roller, align the pin with the slot in the peel roller coupler.
2. Lower the other end of the peel roller shaft into the large hole on the platen roller support plate.
3. Push the shaft into the peel roller coupler to fully seat the peel shaft.
You will hear a click when the pin is seated correctly or turn the roller slightly to confirm that the roller is firmly seated.
4. See [Figure 378](#). Insert the tab on the deflector plate into the main frame slot.



Note • [Figure 378](#) shows the deflector plate separated from the platen roller cam plate. The deflector plate was designed to be attached to the cam plate during removal and installation.

Figure 378 • Deflector Plate



1	Deflector plate
2	Deflector plate mounting screw
3	Platen roller cam plate mounting screw
4	Slot
5	Tab

5. Replace the cam plate on the two support pins on the platen roller support plate.
6. Tighten the center mounting screw on the cam plate.
7. Close the peel roller bracket by pushing up until you hear the click.

Replace the Platen Roller

1. See [Figure 371](#). Starting with the pin end of the roller, align the pin with the slot in the platen roller coupler.
2. Lower the other end of the platen shaft into the large hole on the platen roller support plate.
3. Push the shaft toward the platen pulley to fully seat the platen shaft.
You will hear a click when the pin is seated correctly or turn the roller slightly to confirm that the roller is firmly seated.
4. See [Figure 370](#). Loosen the retaining screw for the platen latch pin, and rotate the latch pin to the closed position. Tighten the screw.
5. Close the printhead.

Close the Electronics Enclosure

1. Ensure that all wires are routed properly and are not causing any obstructions, and then carefully swing the electronics enclosure closed.
2. Adjust the wire clips for the parallel port until they are touching the parallel port.
3. Slide the electronics cover onto the print engine.
4. Reinstall the four electronics cover mounting screws.

Reinstall the Print Engine in the Applicator

1. To reinstall the print engine into the applicator, carefully place the keyhole on the center mounting bolt.



Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.

2. Replace the four corner mounting screws securing the print engine to the applicator.
3. Tighten the center mounting bolt.

Resume Printer Operation

1. Open the front cover.
2. **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.

Unlatch the printhead lever, reinstall the media and ribbon, and close and latch the printhead lever.

3. Ensure that the printhead toggles are positioned evenly across the width of the media.
4. Reconnect the AC power cord and interface cables.
5. Turn on (I) the print engine.

The installation is complete.



Pinch and Peel Roller Maintenance Kit

Installation Instructions

This kit includes the parts and documentation necessary to install the Pinch and Peel Roller Maintenance Kit in the ZE500™ Series Print Engines. Read these instructions thoroughly before installing this kit.

Parts List

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

Figure 379 • Kit Contents

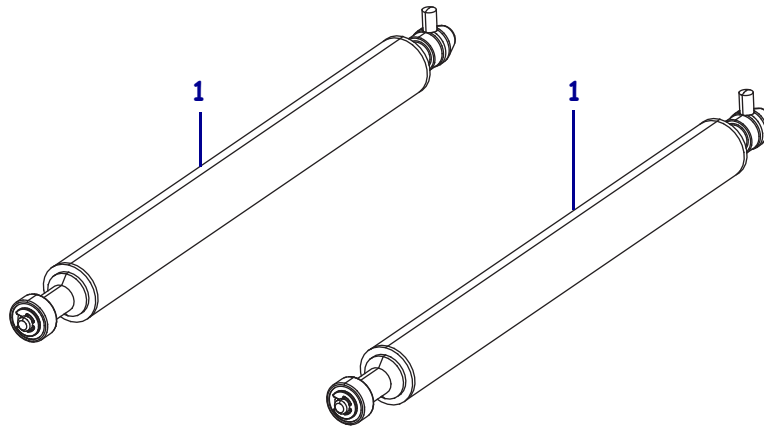


Table 59 • Parts List

✓	Item	Qty	Part Number	Description
	Ref	1	P1046696-059	ZE500-4 Pinch and Peel Roller Maintenance Kit RH/LH
			P1046696-060	ZE500-6 Pinch and Peel Roller Maintenance Kit RH/LH
	1	2	N/A	Pinch/Peel Roller Assembly

N/A = Not available as a separate part (listed for identification purposes only).

Tools Required



Tools • You need these tools to complete this procedure:

- Metric Hex Key (Allen Wrench) Set
- Flat-blade Screwdriver Set
- Phillips Screwdriver Set
- Torx Key Set

Remove Power and Data Cables, Ribbon, and Media



1. **Caution** • Turn off (O) the print engine and disconnect it from the power source before performing the following procedure.

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

2. **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.

Open the front cover, unlatch the printhead lever, and remove media and ribbon from the print engine.

3. Close and latch the printhead lever, and then close the front cover.

Remove the Pinch Roller

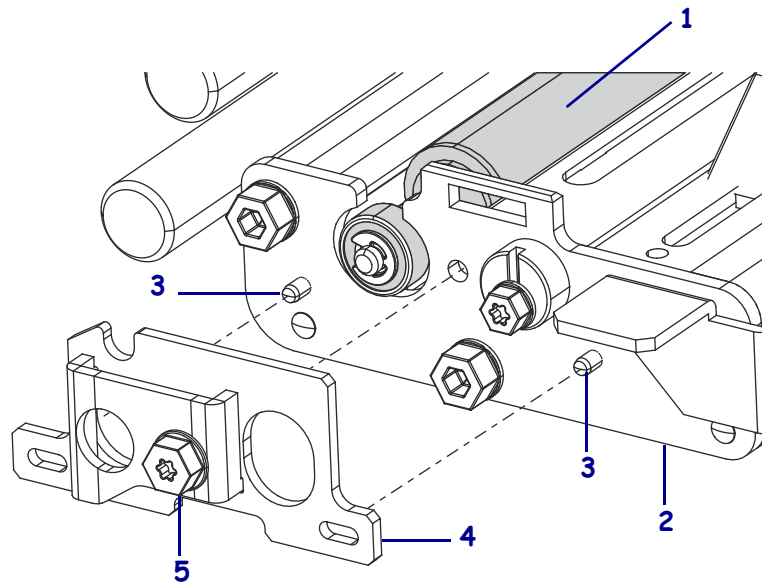
1. Open the upper pinch roller assembly by pressing on the release button located just above the pinch roller cam plate.
2. See [Figure 380](#). To remove the pinch roller cam plate, loosen the center mounting screw to release from the pinch roller cam plate.



Note • The center mounting screw is captive within the pinch roller cam plate.

3. Pull the cam plate off of the two support pins on the pinch roller cam plate. Set the cam plate aside.

Figure 380 • Pinch Roller



1	Pinch roller (shaded)
2	Pinch roller support plate
3	Support pins
4	Pinch roller cam plate
5	Cam plate center mounting screw

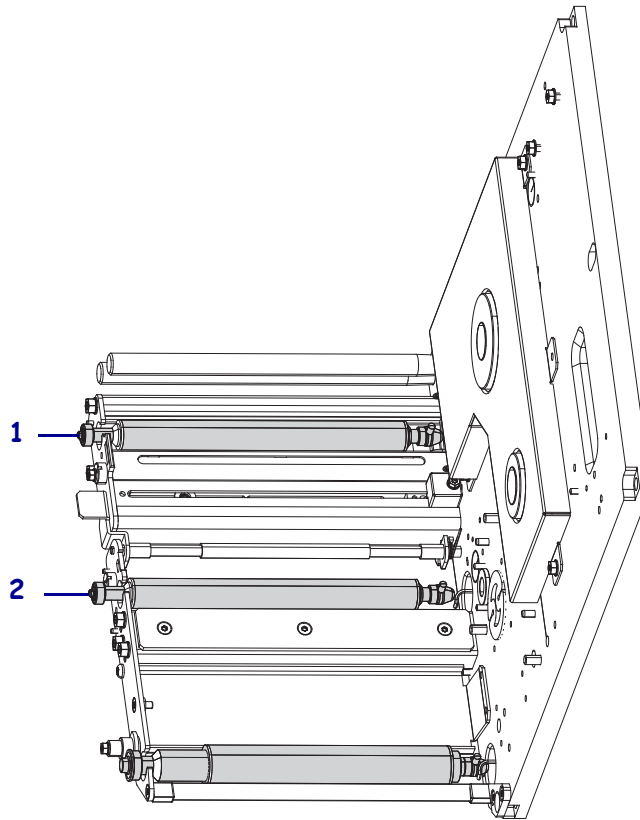
4. See [Figure 381](#). Grasp the pinch roller tightly and pull the pinch roller toward the pinch roller support plate to release the pin secured in the pinch roller coupler.
The outboard bearing will extend past the end of the platen roller support plate.



Note • You may have to turn the roller slightly to be able to move the roller forward laterally.

5. Lift the pinch roller out of the print engine.

**Figure 381 • Roller Locations
(Top View with Subsystems Removed)**



1	Pinch roller (shaded)
2	Peel roller (shaded)

Remove the Peel Roller

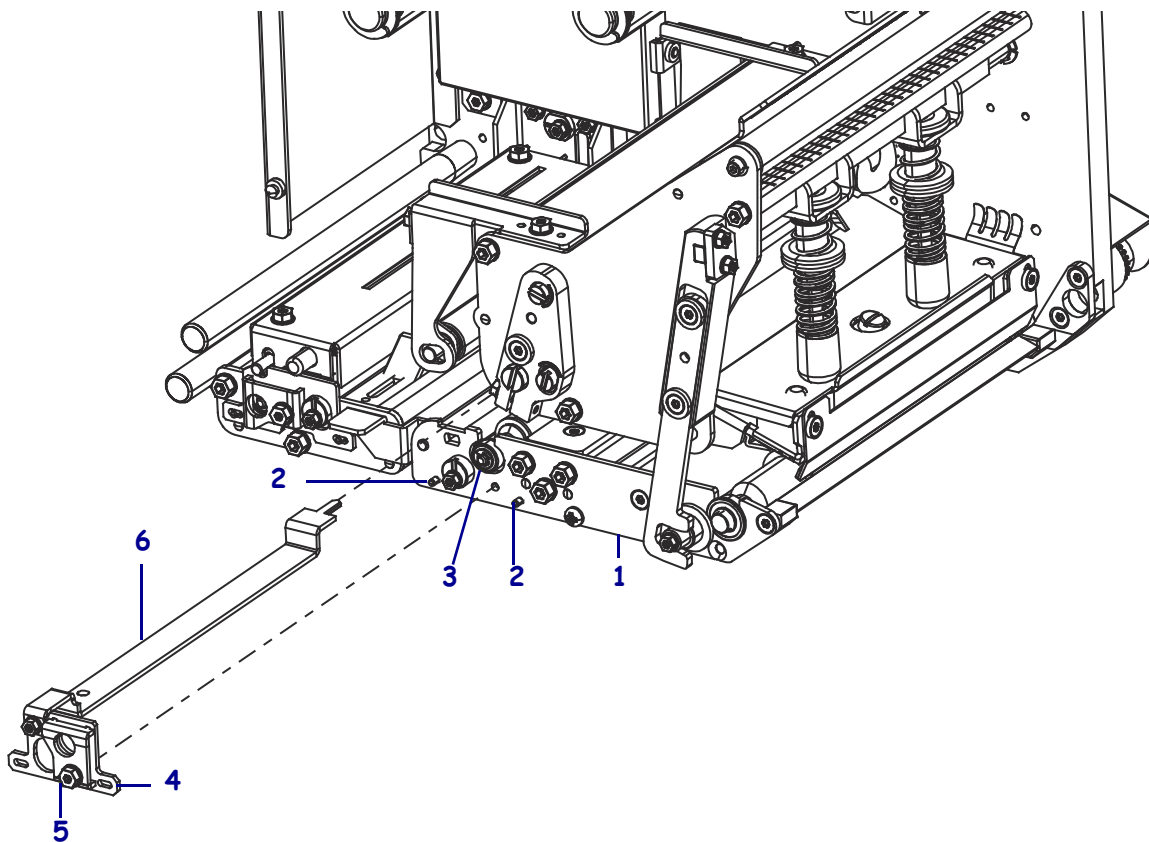
1. To open the peel roller bracket, push up on the latch.
2. See [Figure 382](#). To remove the peel roller cam plate, loosen the center mounting screw to release from the platen roller support plate.



Note • The center mounting screw is captive within the peel roller cam plate.

3. Pull the peel roller cam plate (with the deflector plate attached) off of the two support pins on the platen roller support plate. Set the cam plate aside.

Figure 382 • Peel Roller



1	Platen roller support plate
2	Support pins
3	Peel roller
4	Peel roller cam plate
5	Peel roller cam plate center mounting screw
6	Peel roller deflector plate

4. Grasp the peel roller tightly and pull the peel roller toward the platen roller support plate to release the pin secured in the peel roller coupler.

The outboard bearing will extend past the end of the platen roller support plate.



Note • You may have to turn the roller slightly to be able to move the roller forward laterally.

5. Lift the peel roller out of the print engine.

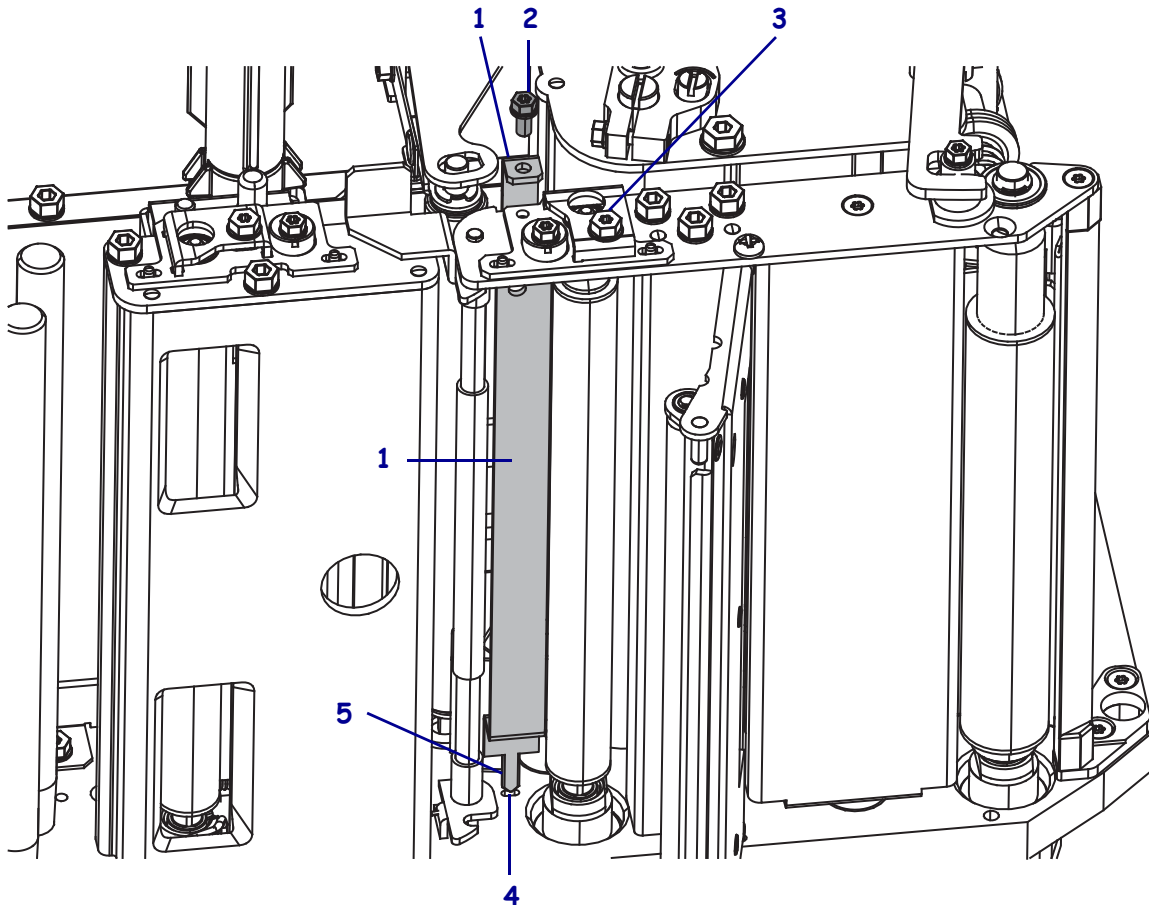
Replace the Peel Roller

1. Starting with the pin end of the roller, align the pin with the slot in the peel roller coupler.
2. Lower the other end of the peel roller shaft into the large hole on the platen roller support plate.
3. Push the shaft into the peel roller coupler to fully seat the peel shaft.
You will hear a click when the pin is seated correctly or turn the roller slightly to confirm that the roller is firmly seated.
4. See [Figure 383](#). Insert the tab on the deflector plate into the main frame slot.



Note • [Figure 383](#) shows the deflector plate separated from the peel roller cam plate. The deflector plate was designed to remain attached to the cam plate during removal and installation.

Figure 383 • Peel Roller Deflector Plate



1	Peel roller deflector plate
2	Deflector plate mounting screw
3	Platen roller cam plate mounting screw
4	Slot
5	Tab

5. Replace the cam plate on the two support pins on the platen roller support plate.
6. Tighten the center mounting screw on the cam plate.
7. Close the peel roller bracket by pushing up until you hear the click.

Replace the Pinch Roller

1. Starting with the pin end of the roller, align the pin with the slot in the pinch roller coupler.
2. Lower the other end of the pinch shaft into the large hole on the pinch roller support plate.
3. Push the shaft into the pinch roller coupler to fully seat the pinch shaft.
You will hear a click when the pin is seated correctly or turn the roller slightly to confirm that the roller is firmly seated.
4. Replace the cam plate on the two support pins on the pinch roller support plate.
5. Reinstall the center mounting screw on the cam plate.
6. Close the upper pinch roller assembly.

The installation is complete.



Platen Roller Maintenance Kit

Installation Instructions

This kit includes the parts and documentation necessary to install the Platen Roller Maintenance Kit in the ZE500™ Series Print Engines. Read these instructions thoroughly before installing this kit.

Parts List

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

Figure 384 • Kit Contents

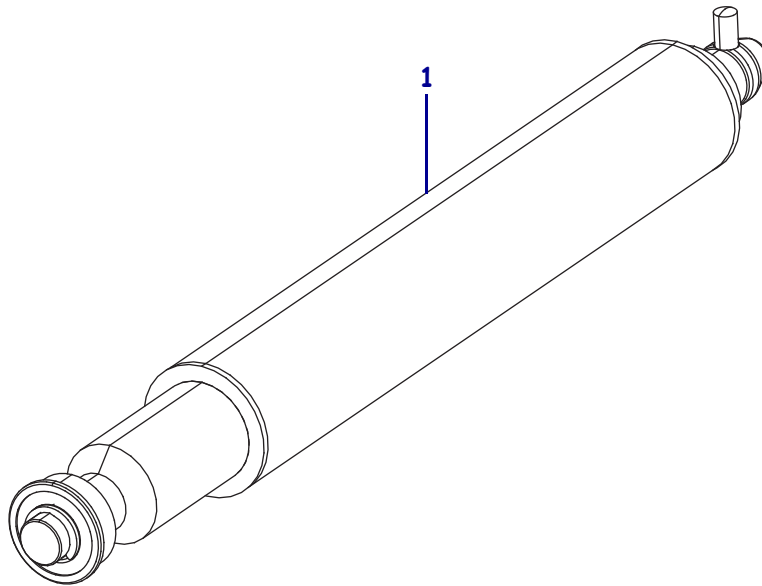


Table 60 • Parts List

✓	Item	Qty	Part Number	Description
	Ref	1	P1046696-072	ZE500-4 Platen Roller Maintenance Kit RH/LH
			P1046696-073	ZE500-6 Platen Roller Maintenance Kit RH/LH
	1	1	N/A	Platen Roller Assembly

N/A = Not available as a separate part (listed for identification purposes only).

Tools Required



Tools • You need these tools to complete this procedure:

- Metric Hex Key (Allen Wrench) Set

Remove Power and Data Cables, Ribbon, and Media



- Caution** • Turn off (O) the print engine and disconnect it from the power source before performing the following procedure.

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

- 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.

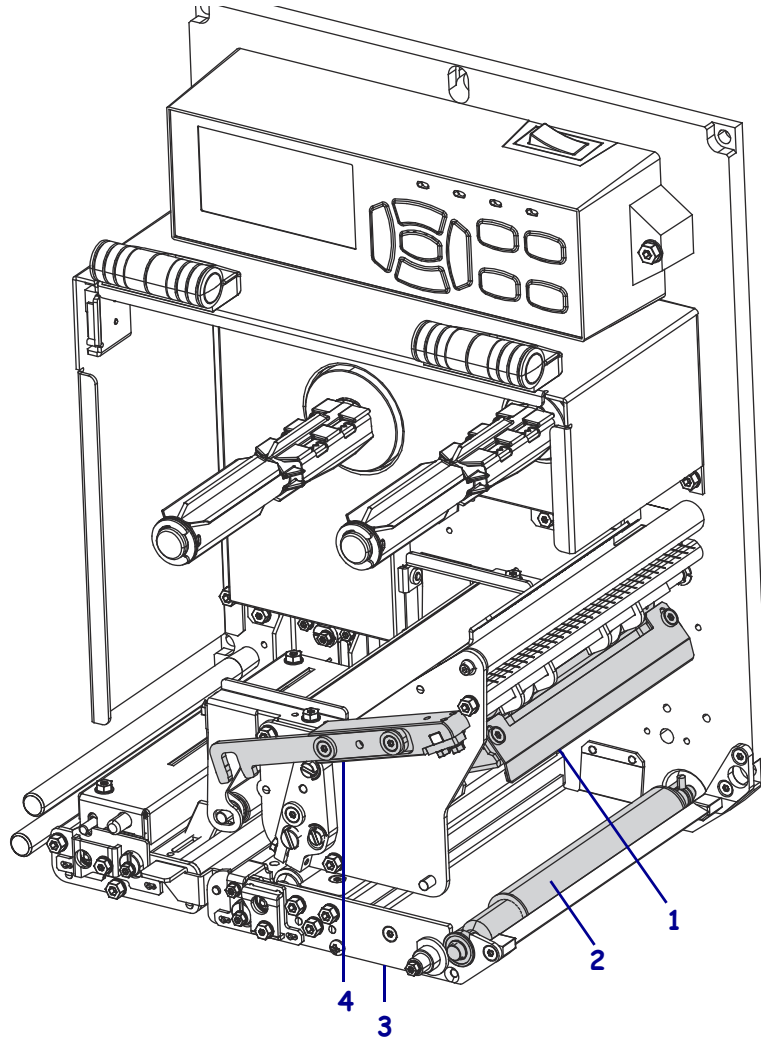
Open the front cover, unlatch the printhead lever, and remove media and ribbon from the print engine.

- Close and latch the printhead lever, and then close the front cover.

Remove the Platen Roller

1. See [Figure 385](#). Using the printhead latch, open the printhead and press up until secured in the open position.

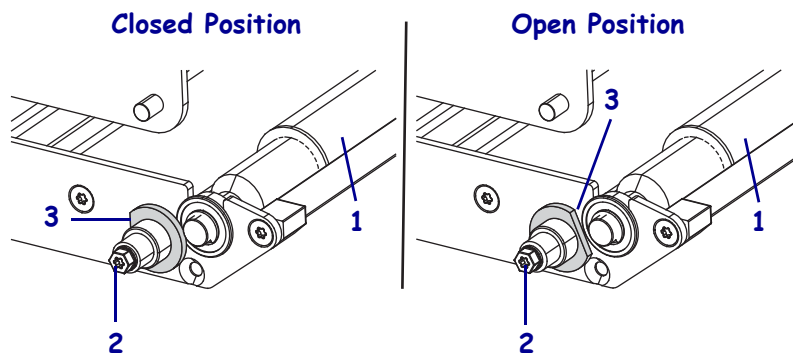
Figure 385 • Open Printhead



1	Printhead (shaded and shown in open position)
2	Platen roller (shaded)
3	Platen roller support plate
4	Printhead latch (shaded and shown in open position)

2. See [Figure 386](#). Using a Torx key, loosen the screw on the latch pin, and rotate the latch pin to the open position.

Figure 386 • Latch Pin



1	Platen roller
2	Latch pin screw
3	Latch pin (shaded)

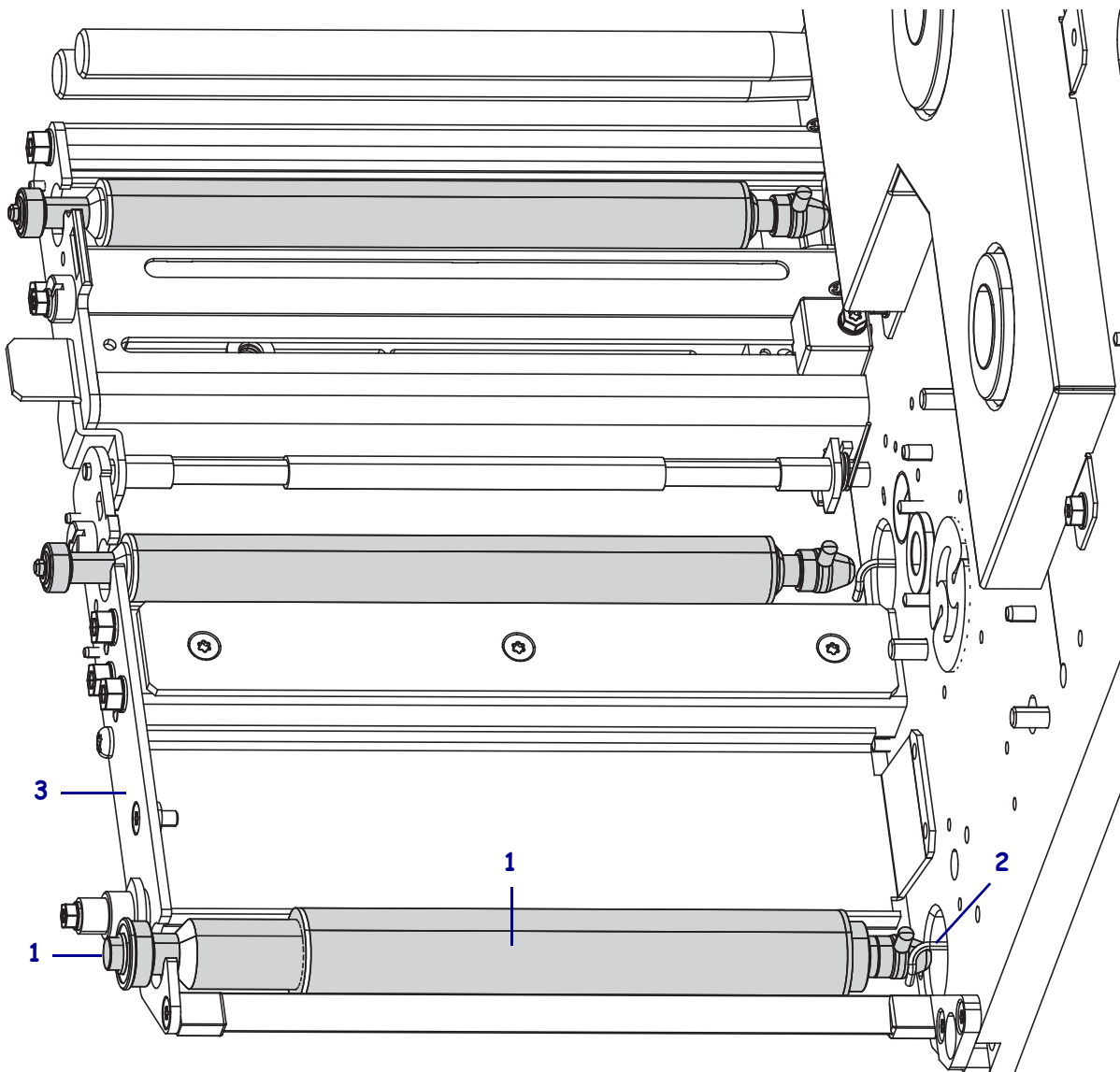
- See [Figure 387](#). Grasp the platen roller tightly and pull it toward the platen roller support plate to release the pin secured in the platen roller coupler.
The outboard bearing will extend past the end of the platen roller support plate.



Note • You may have to turn the roller slightly to be able to remove the roller.

- Lift the platen roller out of the print engine.

**Figure 387 • Roller Locations
(Top View with Subsystems Removed)**



1	Platen roller (shaded)
2	Platen roller coupler
3	Platen roller support plate

Replace the Platen Roller

1. See [Figure 387](#). Starting with the pin end of the roller, align the pin with the slot in the platen roller coupler.
2. Lower the other end of the platen shaft into the large hole on the platen roller support plate.
3. Push the shaft toward the platen pulley to fully seat the platen shaft.
You will hear a click when the pin is seated correctly or turn the roller slightly to confirm that the roller is firmly seated.
4. See [Figure 386](#). Loosen the retaining screw for the platen latch pin, and rotate the latch pin to the closed position. Tighten the screw.
5. Close the printhead.



Strip Plate and Static Brush Maintenance Kit

Installation Instructions

This kit includes the parts and documentation necessary to install the Strip Plate and Static Brush Maintenance Kit in the ZE500™ Series Print Engines. Read these instructions thoroughly before installing this kit.



Caution • This installation must be performed by a qualified service technician.



Note • The graphics and steps in this procedure are for the right-hand (RH) print engine. Steps for a left-hand (LH) print engine may be slightly different.

Parts List

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

Figure 388 • Kit Contents

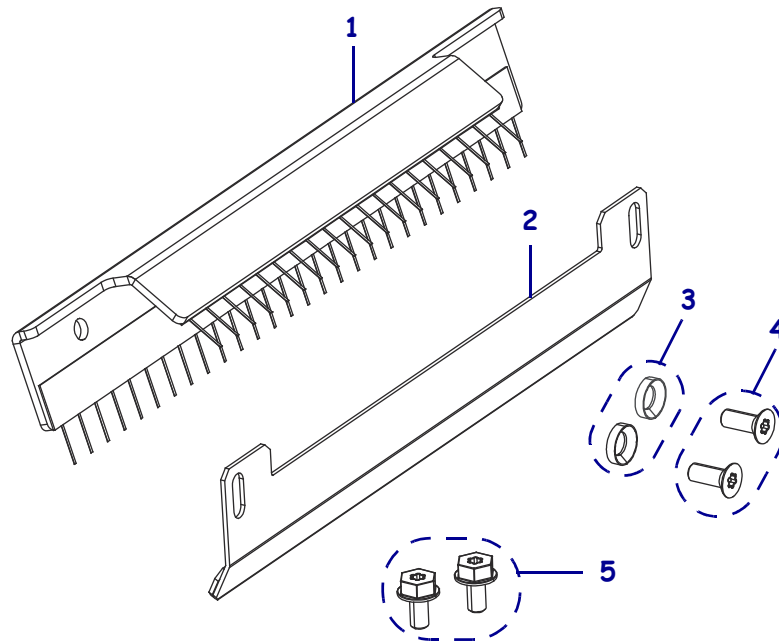


Table 61 • Parts List

✓	Item	Qty	Part Number	Description
	Ref	1	P1046696-043	ZE500-4 Strip Plate and Static Brush Maintenance Kit
			P1046696-044	ZE500-6 Strip Plate and Static Brush Maintenance Kit
	1	1	N/A	Static Brush
	2	1	N/A	Strip Plate
	3	2	N/A	Washer, 6.8 × 4 × 1.6
	4	2	N/A	Screw, M3 × 6 Hx Tx Ni
	5	2	N/A	Screw, M3 × 5 Fl Tx Ni
N/A = Not available as a separate part (listed for identification purposes only).				

Tools Required



Tools • You need these tools to complete this procedure:

- Phillips Screwdriver Set
- Flat-blade Screwdriver Set
- Metric Hex Key (Allen Wrench) Set
- Torx Key Set

Remove Power and Data Cables, Ribbon, and Media



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

Connect yourself to an antistatic device.



2. **Caution** • Turn off (O) the print engine and disconnect it from the power source before performing the following procedure.

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


3. **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.

Open the media door, the printhead latch, and remove media and ribbon from the print engine.

4. Close the printhead latch, and then close the media door.

Remove Print Engine from Applicator

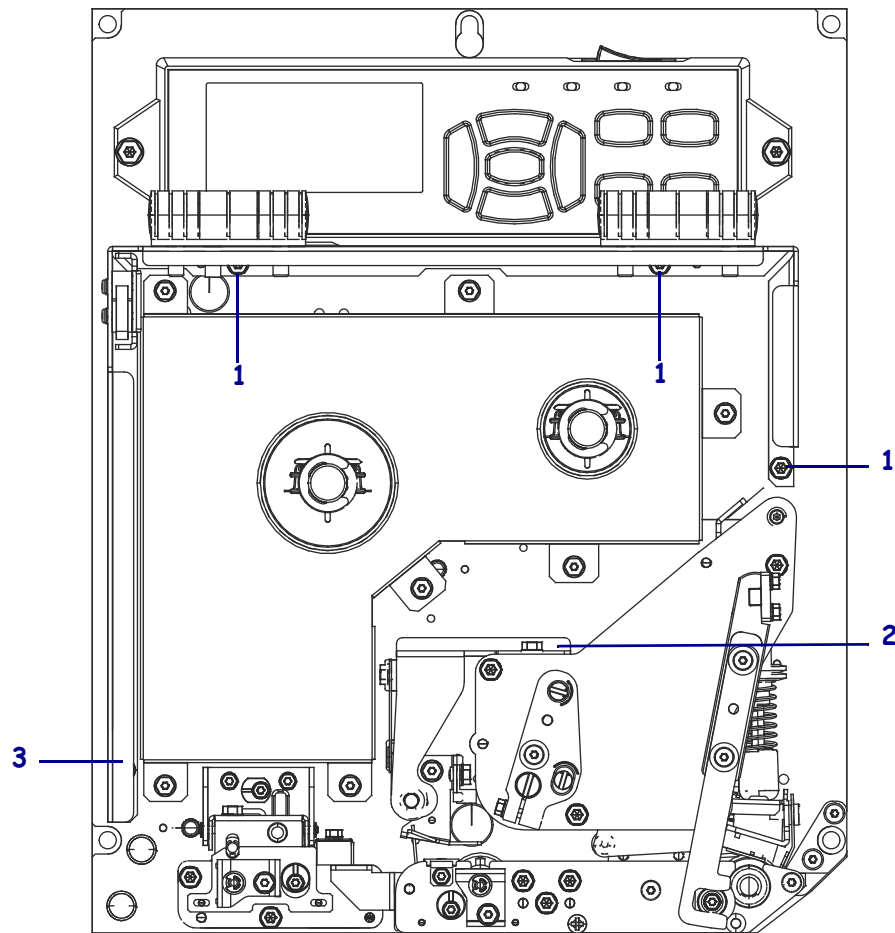
1. Does your applicator (or stand) permit open access to the rear of the print engine?

If you have an...	Then...
Open access	<p>You may swing the print engine open and work on it without removing the unit from the applicator.</p> <p>If you wish to remove the unit from the stand at any time, follow the instructions listed for the <i>Obstructed access</i> type applicator shown in this table.</p> <ol style="list-style-type: none"> a. Go to <i>Remove the Media Door</i>.
Obstructed access	<p>You must remove the print engine from the applicator before you work on it.</p> <ol style="list-style-type: none"> a. Remove the four corner mounting screws securing the print engine to the applicator. b. Loosen the center mounting bolt, but do not remove it. <p> Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.</p> <ol style="list-style-type: none"> c. Lift the print engine off the center mounting bolt and place on a workbench.

Remove the Media Door

1. See [Figure 389](#). Remove the four hex screws securing the media door assembly to the main frame.

**Figure 389 • Media Door Mounting Screws
(Shown with Front Section of Media Door Removed)**



1	Media door mounting screw (3)
2	Dancer bracket
3	Media door mounting screw (hidden behind a small flange)

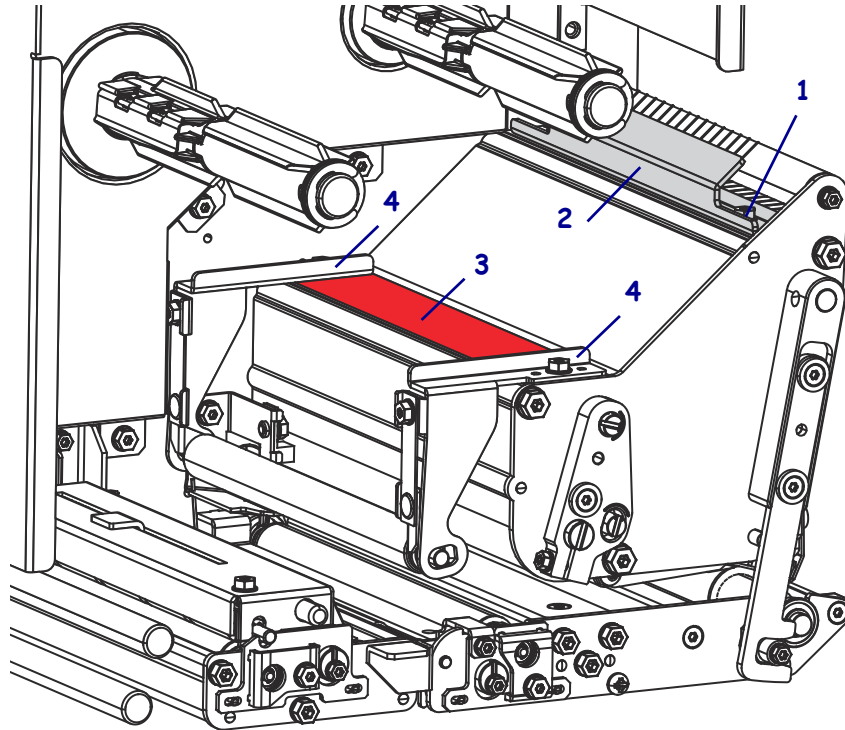
2. See [Figure 390](#). Reposition the media door so the shorter side is resting on the flat surface (of the print mechanism extrusion) where the dancer bracket is mounted.

The media door is still connected by the door-open sensor cable.

Remove the Static Brush

1. See [Figure 390](#). Remove the two mounting screws securing the static brush.
2. Slide the static brush back toward the ribbon spindle to remove it.

Figure 390 • Static Brush



1	Static brush mounting screws (Total 2: 1 hidden)
2	Static brush (shaded)
3	Flat surface of the print mechanism extrusion (shown in red)
4	Dancer bracket

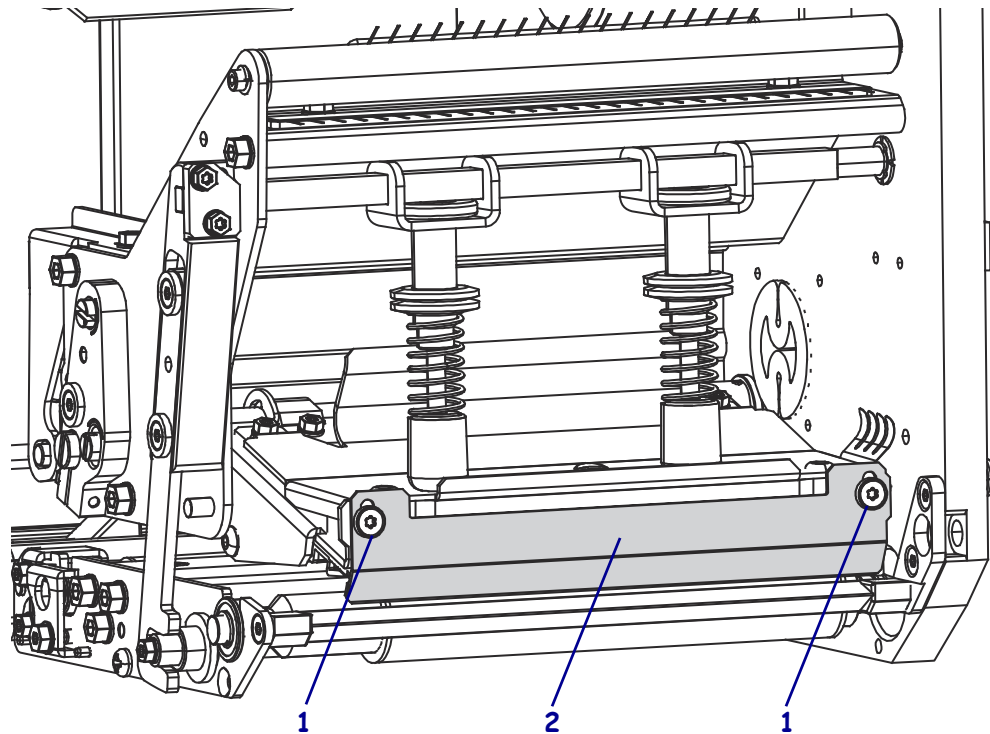
Remove the Strip Plate



Note • Note the position of the strip plate mounting screws in their slots before removing them.

1. See [Figure 391](#). Remove the two mounting screws and special washers to remove the strip plate.

Figure 391 • Strip Plate



1	Strip plate mounting screws (2)
2	Strip plate

Replace the Strip Plate

1. See [Figure 391](#). Align the strip plate slots with the two mounting holes on the front of the print mechanism.
2. Install the two special washers and mounting screws, but do not tighten them completely.
3. Align the mounting screws in the slots at the same position as when you removed them and tighten the screws.

Replace the Static Brush

1. See [Figure 390](#). Align the static brush mounting holes with the holes in the print mechanism extrusion.
2. Install the two mounting screws to secure the static brush.

Replace the Media Door

1. See [Figure 389](#). Align the media door with the two locating pins on the main frame.



Note • Ensure that the door-open sensor cable is not trapped or pinched between the door and the main frame.

2. Reinstall the four hex screws to secure the media door.

Reinstall the Print Engine in the Applicator

1. To reinstall the print engine into the applicator, carefully place the keyhole on the center mounting bolt.



Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.

2. Replace the four corner mounting screws securing the print engine to the applicator.
3. Tighten the center mounting bolt.

Resume Printer Operation

1. Open the front cover.
2. **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.

Unlatch the printhead lever, reinstall the media and ribbon, and close and latch the printhead lever.

3. Reconnect the AC power cord and interface cables.
4. Turn on (I) the print engine.

Check and Adjust the Print Quality

1. Check the print quality by performing a PAUSE Self-Test. Adjust the print line quality, if necessary.
For more detailed information on the self-test or print line adjustments, refer to the ZE500 User Guide on the User CD.

The installation is complete.



Upper Segmented Pinch Roller Maintenance Kit

Installation Instructions

This kit includes the parts and documentation necessary to install the Upper Segmented Pinch Roller Maintenance Kit in the ZE500™ Series Print Engines. Read these instructions thoroughly before installing this kit.



Caution • This installation must be performed by a qualified service technician.



Note • The graphics and steps in this procedure are for the right-hand (RH) print engine. Steps for a left-hand (LH) print engine may be slightly different.

Parts List

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

Figure 392 • Kit Contents

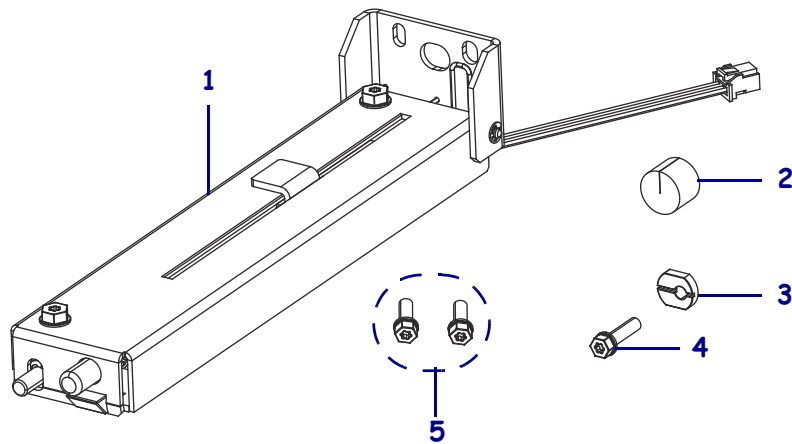


Table 62 • Parts List

✓	Item	Qty	Part Number	Description
	Ref	1	P1046696-055	ZE500-4 Upper Segmented Pinch Roller Assembly Maintenance Kit, RH
		1	P1046696-056	ZE500-4 Upper Segmented Pinch Roller Assembly Maintenance Kit, LH
		1	P1046696-057	ZE500-6 Upper Segmented Pinch Roller Assembly Maintenance Kit, RH
		1	P1046696-058	ZE500-6 Upper Segmented Pinch Roller Assembly Maintenance Kit, LH
	1	1	<i>N/A</i>	Upper Segmented Pinch Roller Assembly
	2	1	<i>N/A</i>	Plug, Sealing
	3	1	<i>N/A</i>	Cam
	4	1	<i>N/A</i>	Screw, M3 × 12 Hx Tx Ni
	5	2	<i>N/A</i>	Screw, M3 × 8 Hx Tx Zn Flng
N/A = Not available as a separate part (listed for identification purposes only).				

Tools Required



Tools • You need these tools to complete this procedure:

- Phillips Screwdriver Set
- Metric Hex Key (Allen Wrench) Set
- Anti-Static Wriststrap and Mat
- Flat-blade Screwdriver Set
- Torx Key Set
- Safety Goggles

Remove Power and Data Cables, Ribbon, and Media



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

Connect yourself to an antistatic device.



2. **Caution** • Turn off (O) the print engine and disconnect it from the power source before performing the following procedure.

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


3. **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.

Open the media door, the printhead latch, and remove media and ribbon from the print engine.

4. Close the printhead latch, and then close the media door.

Remove Print Engine from Applicator

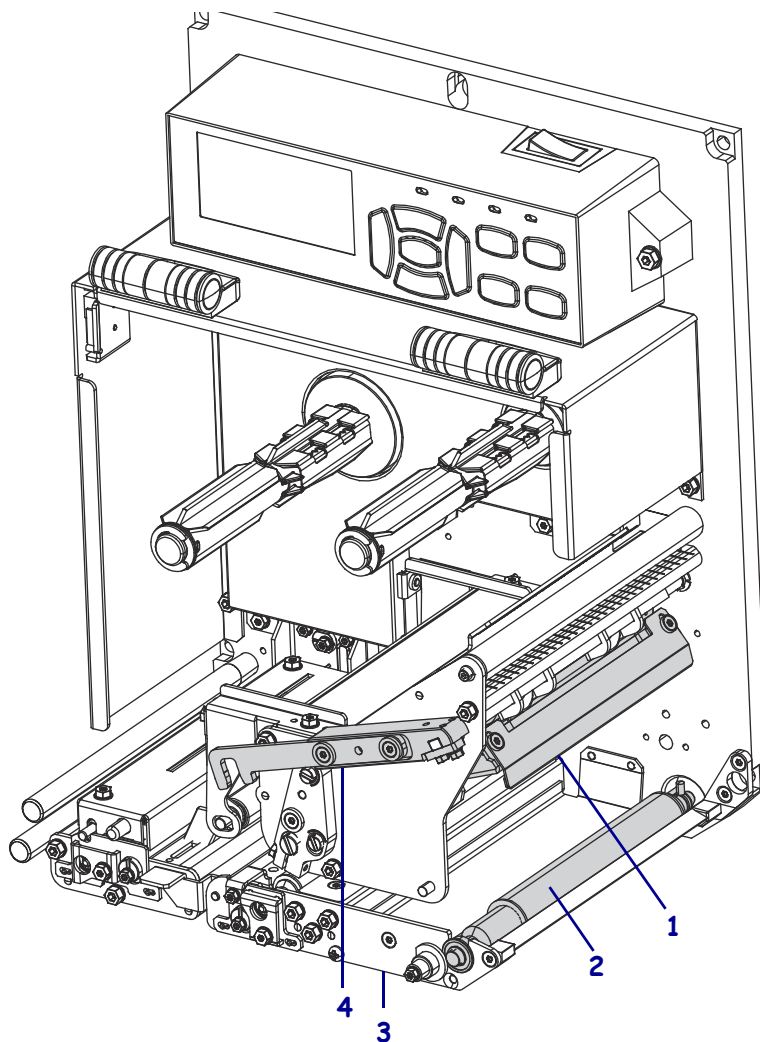
1. Does your applicator (or stand) permit open access to the rear of the print engine?

If you have an...	Then...
Open access	<p>You may swing the print engine open and work on it without removing the unit from the applicator.</p> <p>If you wish to remove the unit from the stand at any time, follow the instructions listed for the <i>Obstructed access</i> type applicator shown in this table.</p> <p>a. Go to <i>Remove the Electronics Cover</i>.</p>
Obstructed access	<p>You must remove the print engine from the applicator before you work on it.</p> <p>a. Remove the four corner mounting screws securing the print engine to the applicator.</p> <p>b. Loosen the center mounting bolt, but do not remove it.</p> <p> Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.</p> <p>c. Lift the print engine off the center mounting bolt and place on a workbench.</p>

Remove the Platen Roller

1. See [Figure 393](#). Using the printhead latch, open the printhead and press up until secured in the open position.

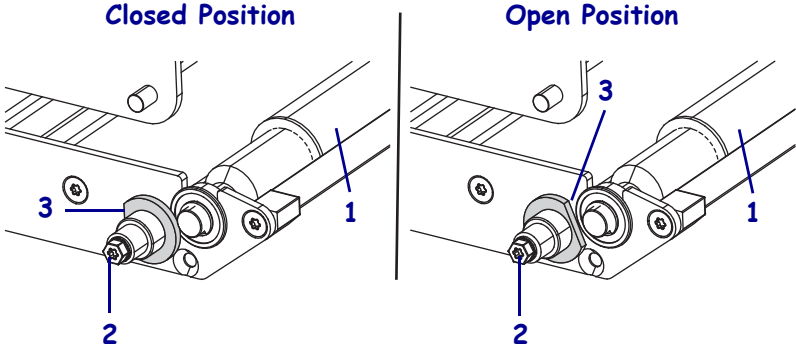
Figure 393 • Open Printhead



1	Printhead (shaded and shown in open position)
2	Platen roller (shaded)
3	Platen roller support plate
4	Printhead latch (shaded and shown in open position)

- 2. See [Figure 394](#). Using a Torx key, loosen the screw on the latch pin, and rotate the latch pin to the open position.

Figure 394 • Latch Pin



1	Platen roller
2	Latch pin screw
3	Latch pin (shaded)

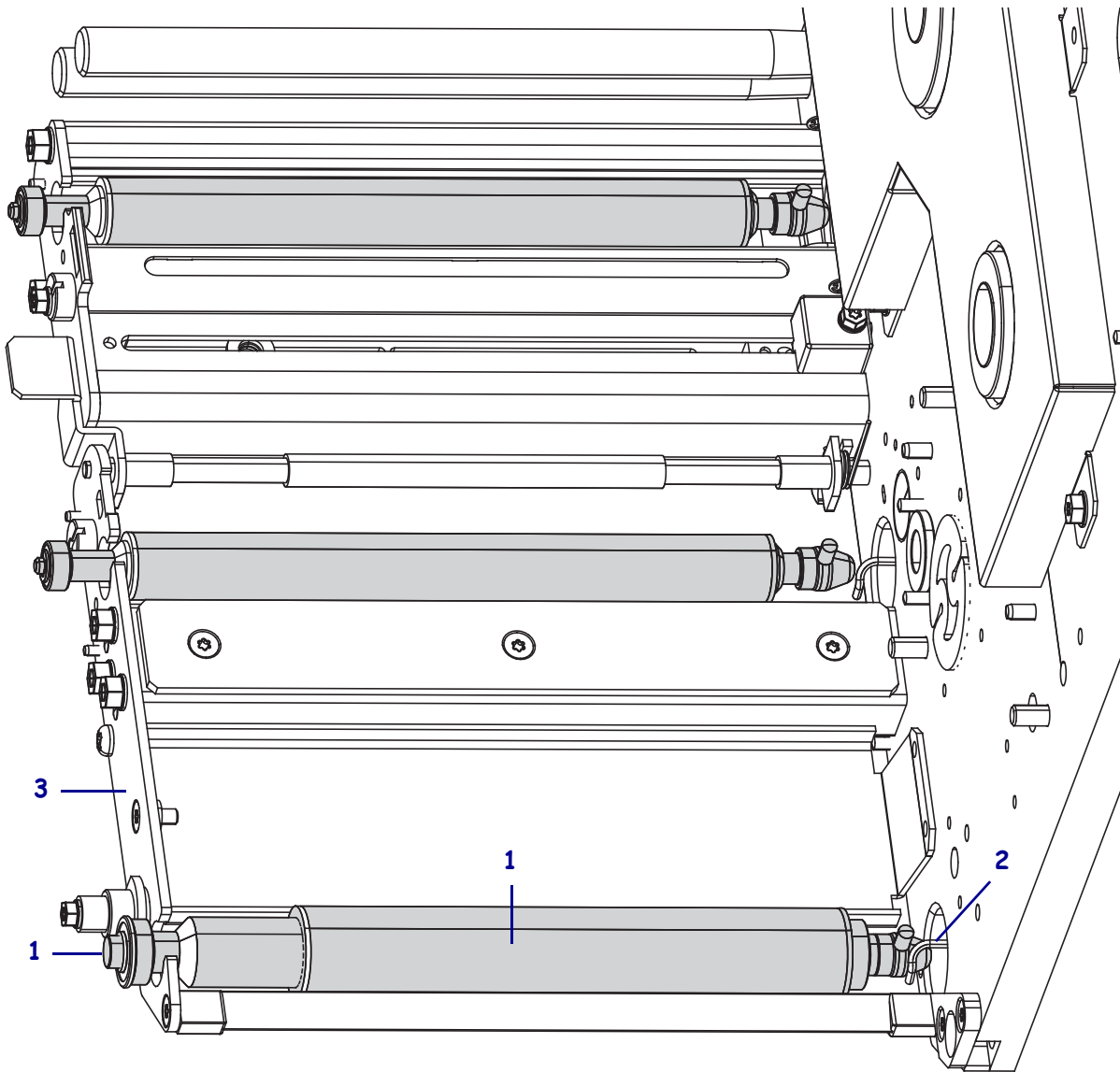
3. See [Figure 395](#). Grasp the platen roller tightly and pull it toward the platen roller support plate to release the pin secured in the platen roller coupler.
The outboard bearing will extend past the end of the platen roller support plate.



Note • You may have to turn the roller slightly to be able to remove the roller.

4. Lift the platen roller out of the print engine.

**Figure 395 • Roller Locations
(Top View with Subsystems Removed)**



1	Platen roller (shaded)
2	Platen roller coupler
3	Platen roller support plate

Remove the Peel Roller

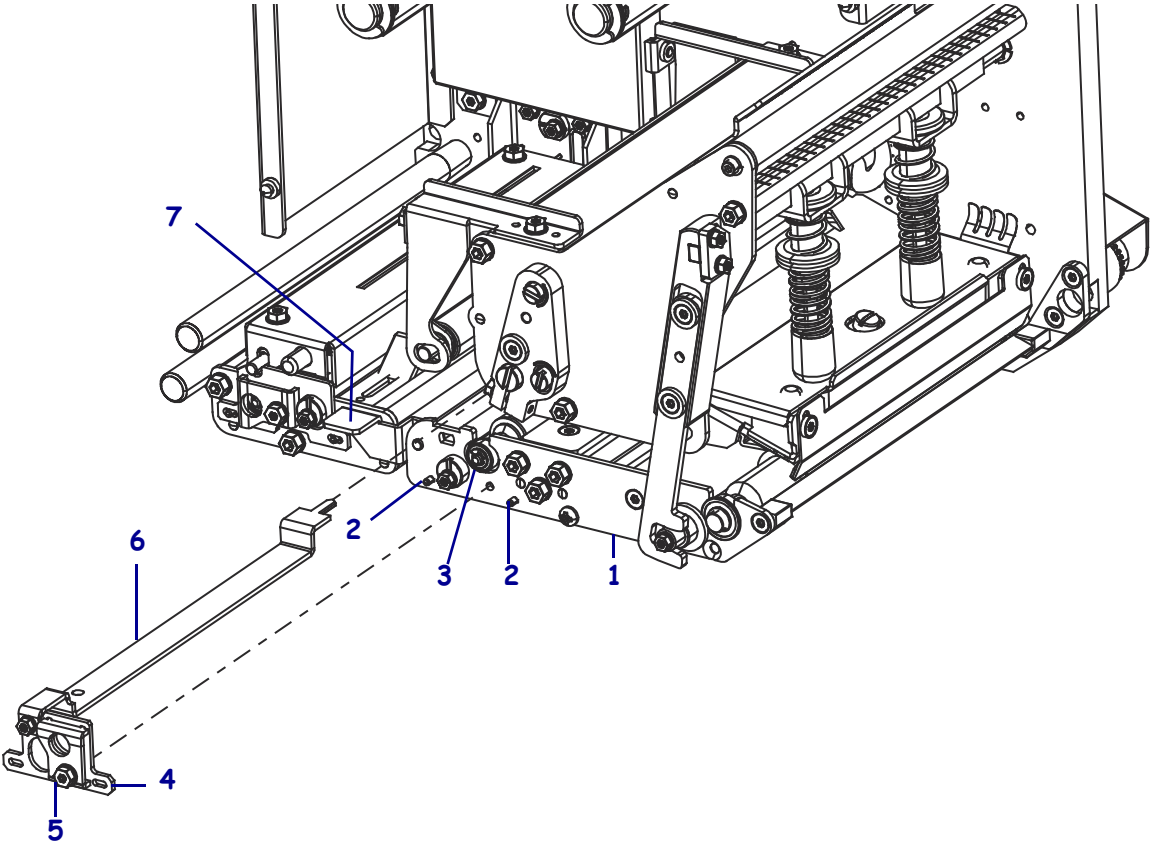
1. To open the peel roller bracket, push up on the latch.
2. See [Figure 396](#). To remove the peel roller cam plate, loosen the center mounting screw to release it from the platen roller support plate.



Note • The center mounting screw is captive within the peel roller cam plate.

3. Pull the peel roller cam plate (with the deflector plate attached) off of the two support pins on the platen roller support plate. Set the cam plate aside.

Figure 396 • Peel Roller



1	Platen roller support plate
2	Support pins
3	Peel roller
4	Peel roller cam plate
5	Peel roller cam plate center mounting screw
6	Peel roller deflector plate
7	Peel roller latch

4. Grasp the peel roller tightly and pull the peel roller toward the platen roller support plate to release the pin secured in the peel roller coupler.

The outboard bearing will extend past the end of the platen roller support plate.



Note • You may have to turn the roller slightly to be able to remove the roller.

5. Lift the peel roller out of the print engine.

Remove the Pinch Roller

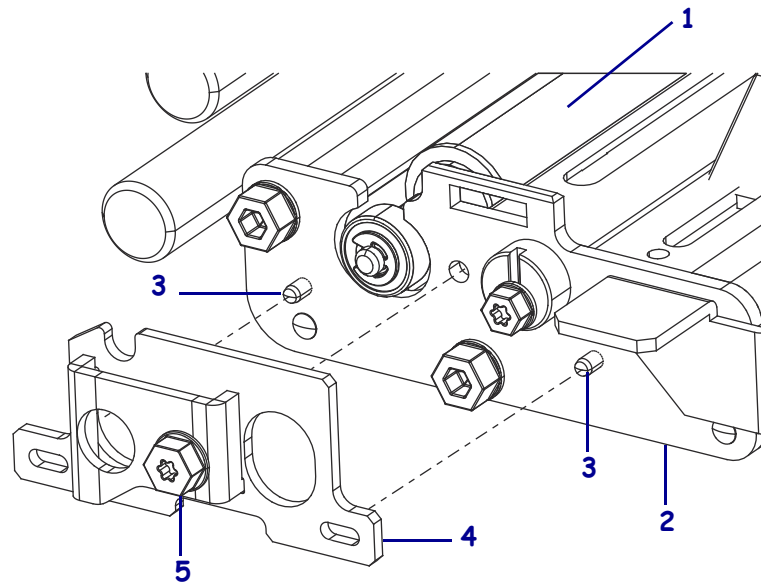
1. Open the upper pinch roller assembly by pressing on the release button located just above the pinch roller cam plate.
2. See [Figure 397](#). To remove the pinch roller cam plate, loosen the center mounting screw to release it from the pinch roller support plate.



Note • The center mounting screw is captive within the pinch roller cam plate.

3. Pull the cam plate off of the two support pins on the pinch roller support plate. Set the cam plate aside.

Figure 397 • Pinch Roller



1	Pinch roller (shaded)
2	Pinch roller support plate
3	Support pins
4	Pinch roller cam plate
5	Cam plate center mounting screw

4. Grasp the pinch roller tightly and pull the pinch roller toward the pinch roller support plate to release the pin secured in the pinch roller coupler.
The outboard bearing will extend past the end of the platen roller support plate.



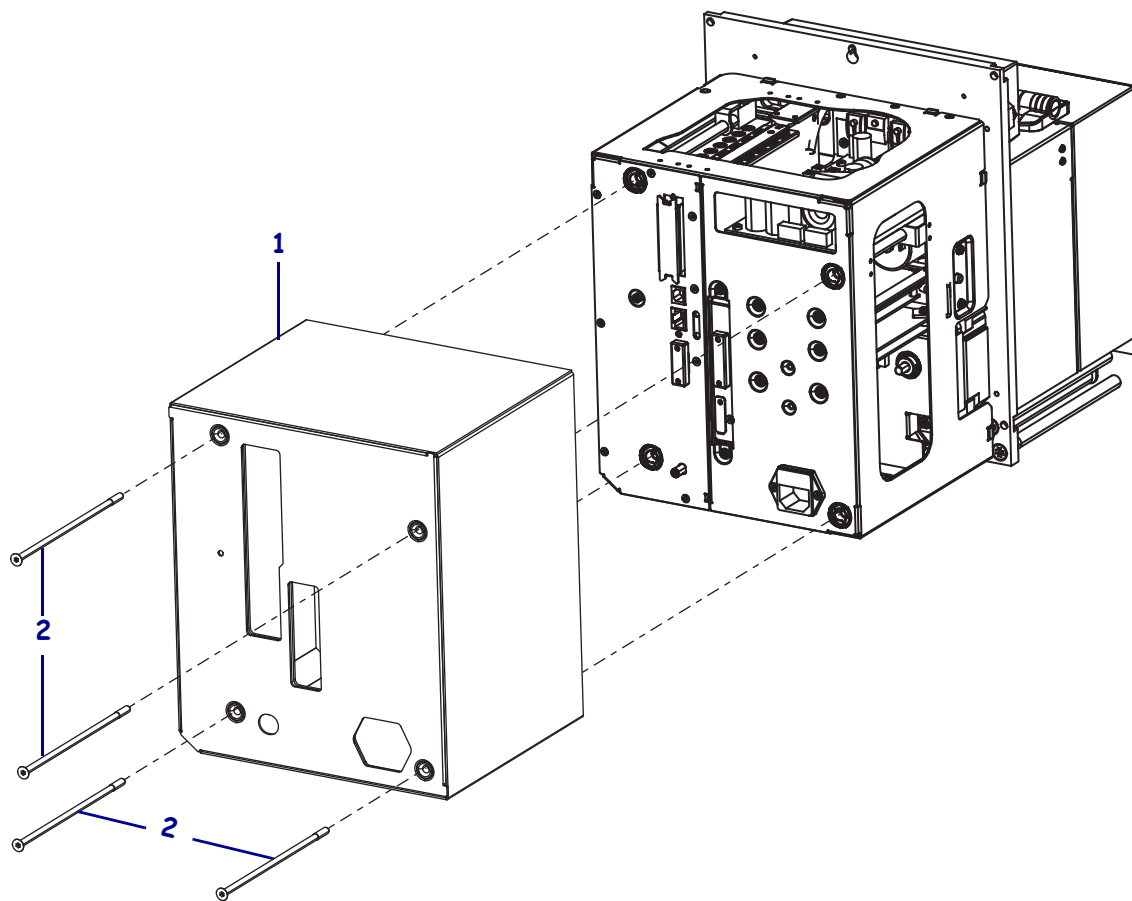
Note • You may have to turn the roller slightly to be able to remove the roller.

5. Lift the pinch roller out of the print engine.

Remove the Electronics Cover

1. See [Figure 398](#). Remove the four long mounting screws securing the electronics cover.

Figure 398 • Electronics Cover



1	Electronics cover
2	Electronics cover mounting screws (4)

2. Slide the electronics cover off of the print engine.

Open the Electronics Enclosure

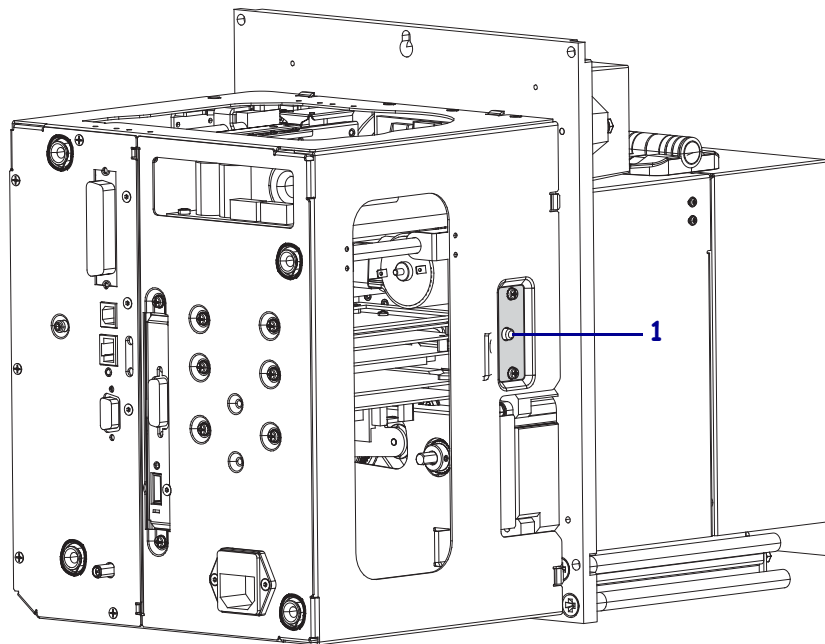
1. See [Figure 399](#). Locate the latch.



Note • For right-hand models, the latch is on the right side when looking from the back of the print engine. For left-hand models, the latch is on the left side.

2. Press the latch and swing the electronics enclosure open.

Figure 399 • Locate the Latch



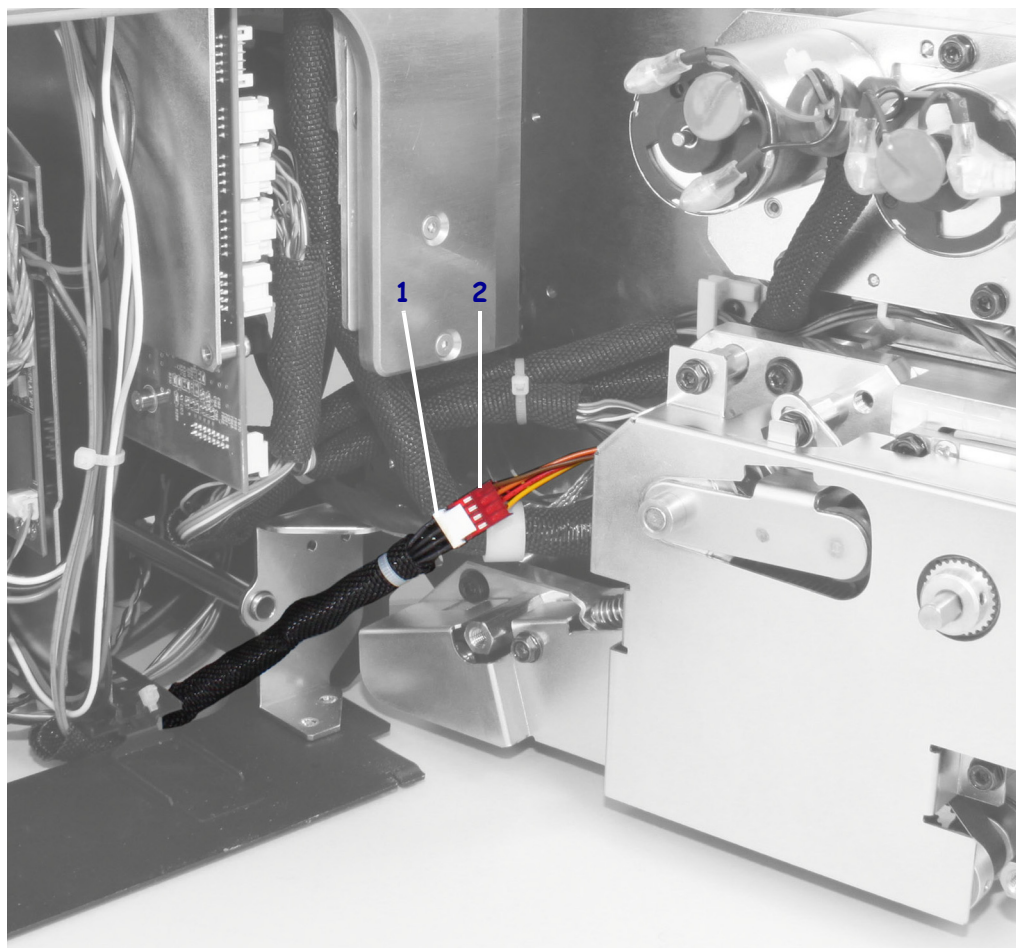
1	Latch
----------	-------

Remove the Drive System

1. See [Figure 400](#). Separate the drive system cable connectors.

The short part of the cable is wired to the stepper motor. The long part of the cable plugs into J4 on the DC power supply board.

Figure 400 • Drive System Cable



1	Long drive system cable goes to the DC power supply
2	Short drive system cable connector goes to the stepper motor

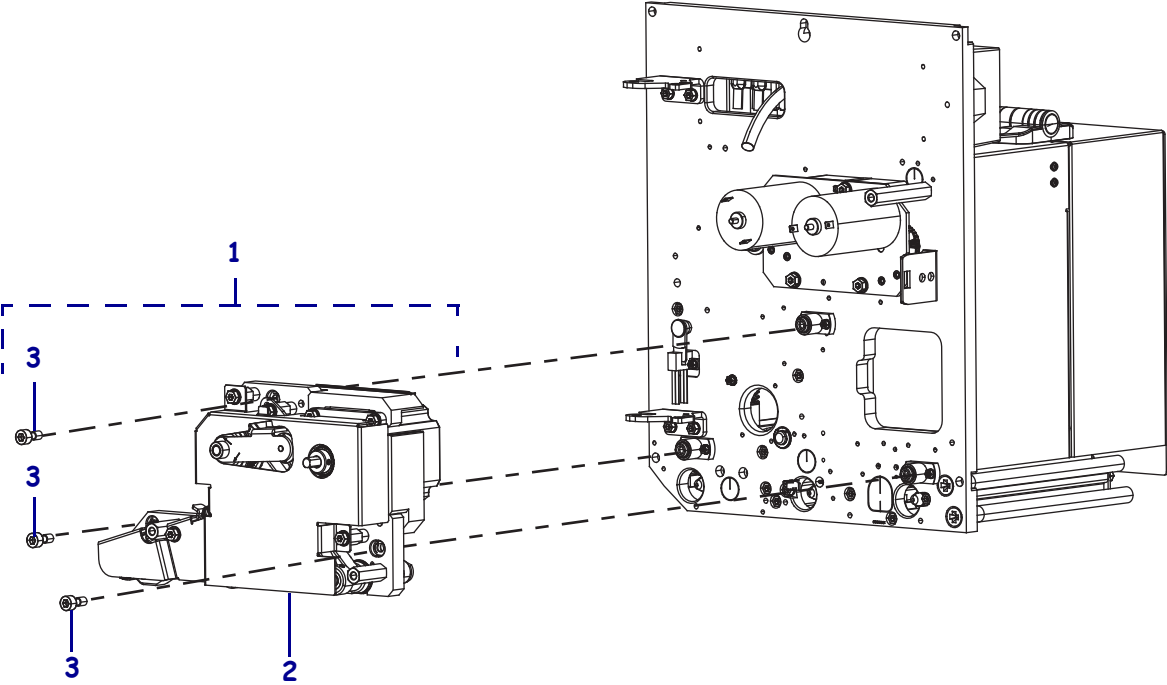
- See [Figure 401](#). Loosen the three 4 mm mounting screws to release the drive system from the main frame.



Note • The three 4 mm mounting screws are captive within the drive system.

- Remove the drive system from the main frame.

Figure 401 • Remove the Drive System



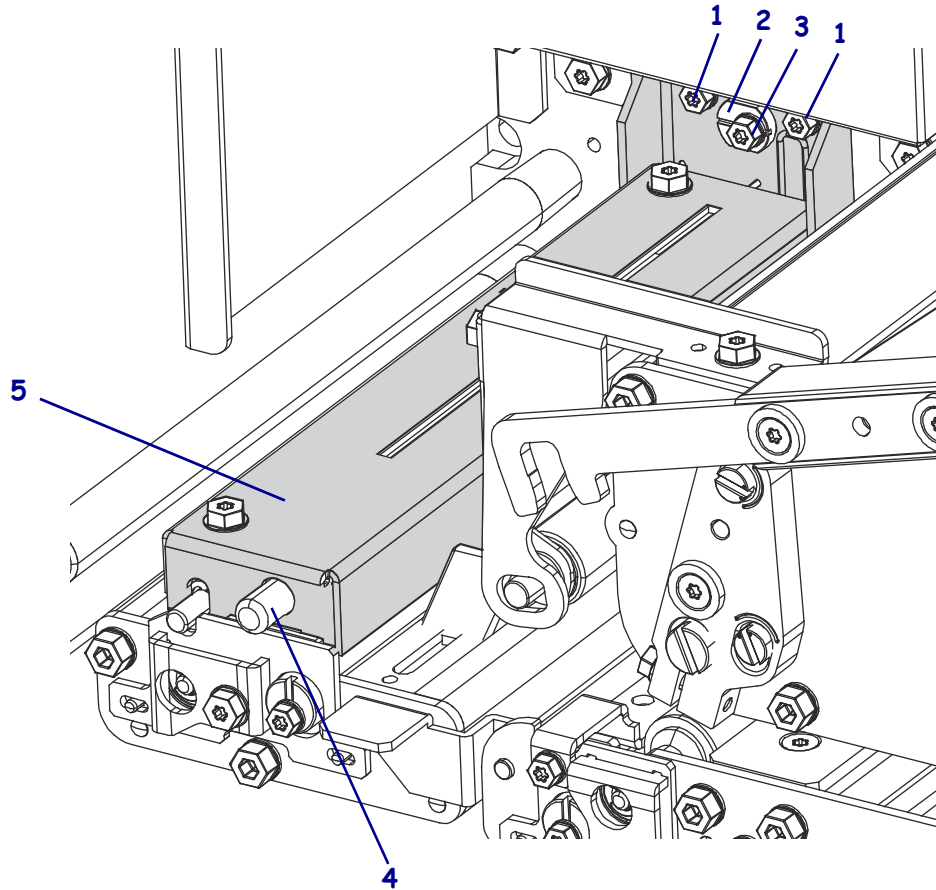
1	Drive system
2	Drive system cover
3	Drive system mounting screws (3)

Remove the Upper Segmented Pinch Roller

1. See [Figure 402](#). From the media side, remove the two mounting screws, upper pinch cam locking screw, and cam securing the upper segmented pinch roller assembly to the main frame.

Do not try to remove the assembly at this time.

Figure 402 • Upper Segmented Pinch Roller

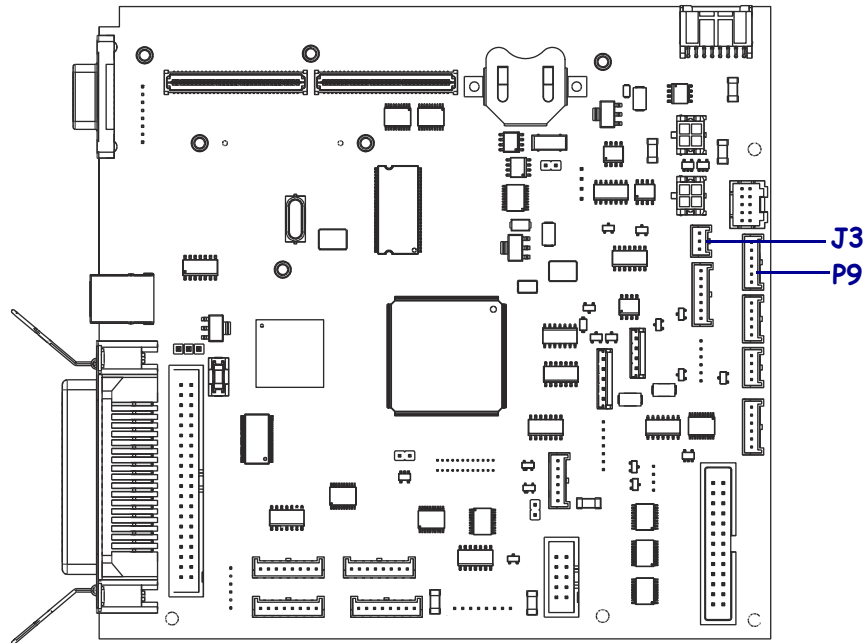


1	Upper pinch roller mounting screws (2) (unshaded)
2	Upper pinch roller cam (unshaded)
3	Upper pinch roller cam locking screw (unshaded)
4	Release button (unshaded)
5	Upper segmented pinch roller (shaded)

2. From the electronics side, open the quick-release cable clamps securing the upper media sensor cable (black, white, gray, and purple wires).

- See Figure 403. Disconnect the upper media sensor cable from J3 on the MLB.

Figure 403 • MLB Connections



J3	Upper media sensor (transmissive sensor receiver)
P9	Lower media sensor (transmissive sensor emitter)

- Remove the sealing plug from the main frame.
- Remove the upper media cable from the sealing plug.
- Open the upper segmented pinch roller assembly by pressing the release button.
- **Caution** • Wear protective eyewear when installing or removing E-rings, C-clips, snap rings, springs, and mounting buttons. These are under tension and could fly off.

Pull the upper segmented pinch roller assembly and the cable out of the print engine.

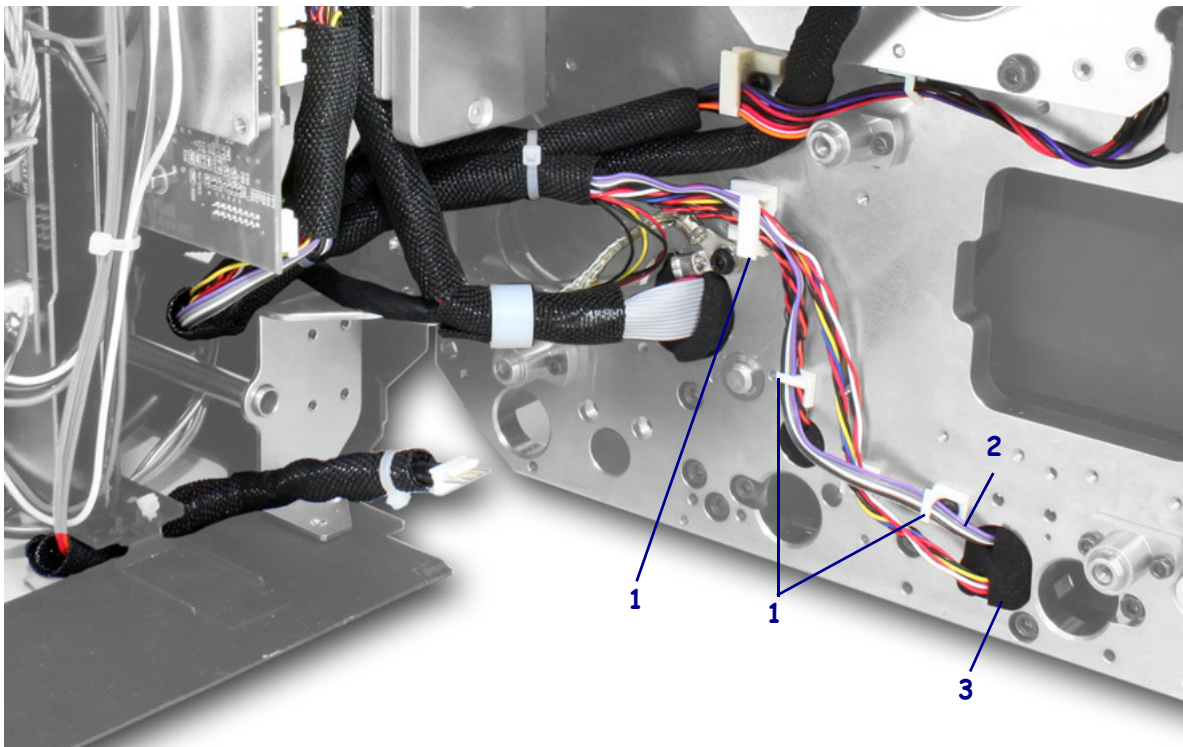


Note • In addition to the mounting screws removed earlier, the upper segmented pinch roller assembly is held in place by two long wire spring legs. Remove the assembly slowly.

Replace the Upper Segmented Pinch Roller

1. See [Figure 404](#). From the media side, thread the upper sensor media cable through the sealing plug in the main frame.
2. Insert the two wire spring legs into the tiny holes in the main frame and align the upper pinch roller bracket with the three mounting holes.
3. See [Figure 402](#). Reinstall the cam and all three mounting screws to secure the upper segmented pinch roller assembly to the main frame.
4. Rotate the cam slot to a horizontal orientation and tighten the mounting screw to secure the cam in the neutral position.
5. Close the upper segmented pinch roller assembly.
6. See [Figure 404](#). Route the media sensor cable through the quick-release cable clamps and close them.

Figure 404 • Routing the Media Sensor Cable



1	Quick-release cable clamps (2)
2	Media sensor cable (black, white, gray, and purple wires)
3	Sealing plug

7. See [Figure 403](#). Reconnect the upper sensor media cable to J3 on the MLB.

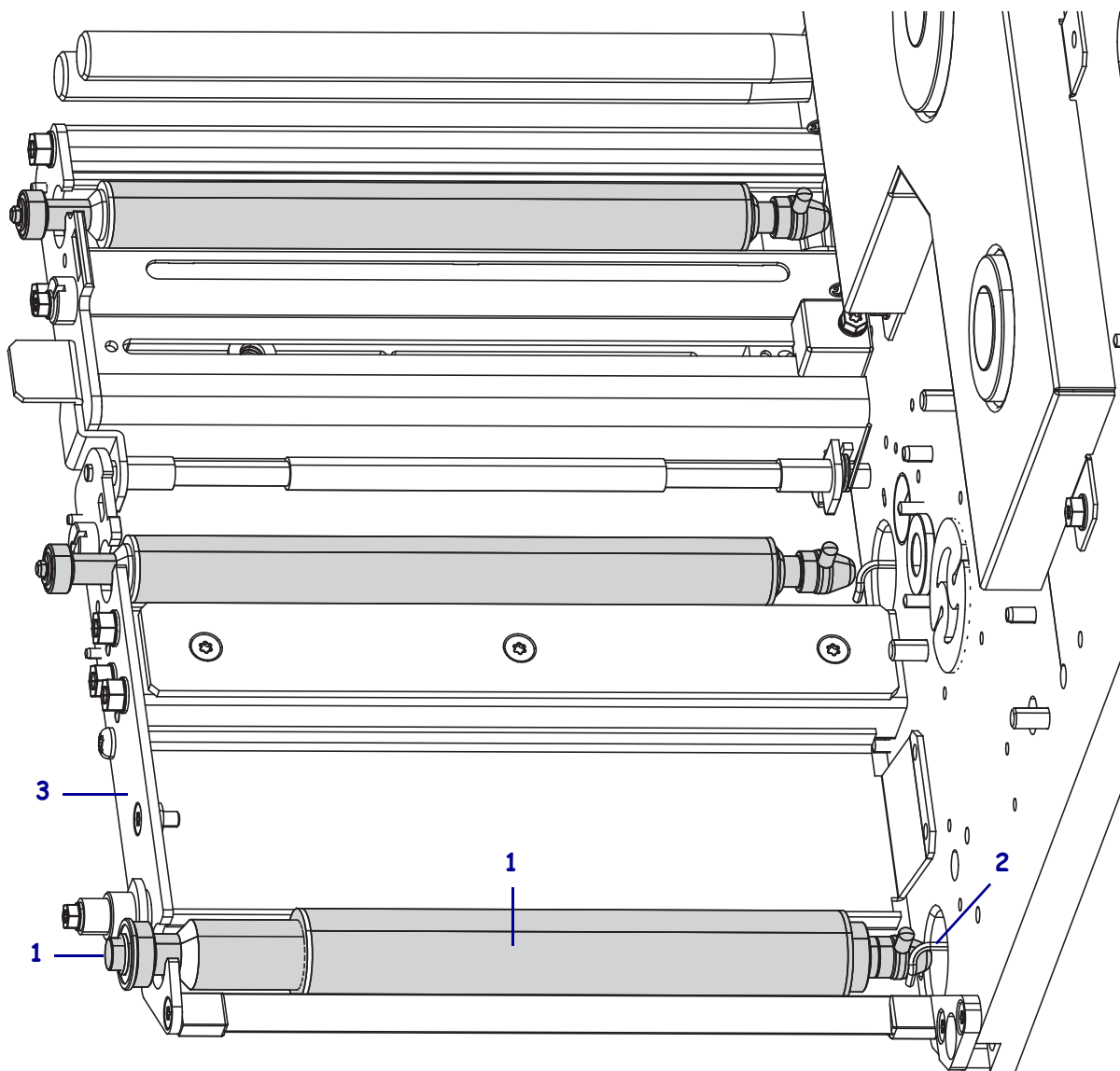
Reinstall the Drive System

1. See [Figure 401](#). Align the drive system with the drive system mounts on the main frame, and reinstall the three 4mm mounting screws.
2. See [Figure 400](#). Reconnect the stepper motor cable connectors. The short cable is wired to the drive motor. The long cable plugs into J4 on the DC power supply board.

Replace the Pinch Roller

1. See [Figure 405](#). Starting with the pin end of the roller, align the pin with the slot in the pinch roller coupler.

**Figure 405 • Roller Locations
(Top View with Subsystems Removed)**



1	Platen roller (shaded)
2	Platen roller coupler
3	Platen roller support plate

2. Lower the other end of the pinch shaft into the large hole on the pinch roller support plate.
3. Push the shaft into the pinch roller coupler to fully seat the pinch shaft.
You will hear a click when the pin is seated correctly or turn the roller slightly to confirm that the roller is firmly seated.
4. See [Figure 397](#). Replace the cam plate on the two support pins on the pinch roller support plate.
5. Reinstall the center mounting screw on the cam plate.
6. Close the upper pinch roller assembly.

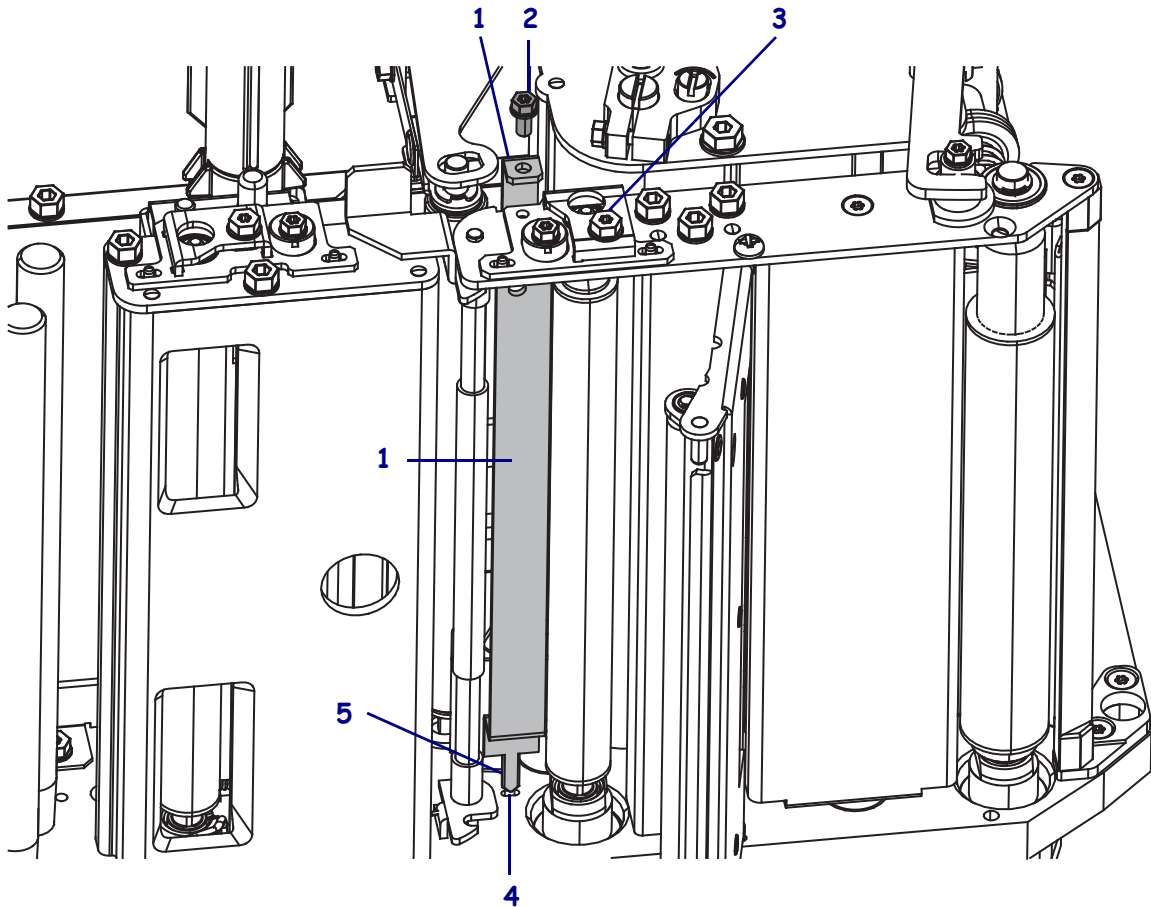
Replace the Peel Roller

1. Starting with the pin end of the roller, align the pin with the slot in the peel roller coupler.
2. Lower the other end of the peel roller shaft into the large hole on the platen roller support plate.
3. Push the shaft into the peel roller coupler to fully seat the peel shaft.
You will hear a click when the pin is seated correctly or turn the roller slightly to confirm that the roller is firmly seated.
4. See [Figure 406](#). Insert the tab on the deflector plate into the main frame slot.



Note • [Figure 406](#) shows the deflector plate separated from the platen roller cam plate. The deflector plate was designed to be attached to the cam plate during removal and installation.

Figure 406 • Deflector Plate



1	Deflector plate
2	Deflector plate mounting screw
3	Platen roller cam plate mounting screw
4	Slot
5	Tab

5. Replace the cam plate on the two support pins on the platen roller support plate.
6. Tighten the center mounting screw on the cam plate.
7. Close the peel roller bracket by pushing up until you hear the click.

Replace the Platen Roller

1. See [Figure 395](#). Starting with the pin end of the roller, align the pin with the slot in the platen roller coupler.
2. Lower the other end of the platen shaft into the large hole on the platen roller support plate.
3. Push the shaft toward the platen pulley to fully seat the platen shaft.
You will hear a click when the pin is seated correctly or turn the roller slightly to confirm that the roller is firmly seated.
4. See [Figure 394](#). Loosen the retaining screw for the platen latch pin, and rotate the latch pin to the closed position. Tighten the screw.
5. Close the printhead.

Close the Electronics Enclosure

1. Ensure that all wires are routed properly and are not causing any obstructions, and then carefully swing the electronics enclosure closed.
2. Adjust the wire clips for the parallel port until they are touching the parallel port.
3. Slide the electronics cover onto the print engine.
4. Reinstall the four electronics cover mounting screws.

Reinstall the Print Engine in the Applicator

1. To reinstall the print engine into the applicator, carefully place the keyhole on the center mounting bolt.



Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.

2. Replace the four corner mounting screws securing the print engine to the applicator.
3. Tighten the center mounting bolt.

Resume Printer Operation

1. Open the front cover.
2. **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.

Unlatch the printhead lever, reinstall the media and ribbon, and close and latch the printhead lever.

3. Ensure that the printhead toggles are positioned evenly across the width of the media.
4. Reconnect the AC power cord and interface cables.
5. Turn on (I) the print engine.

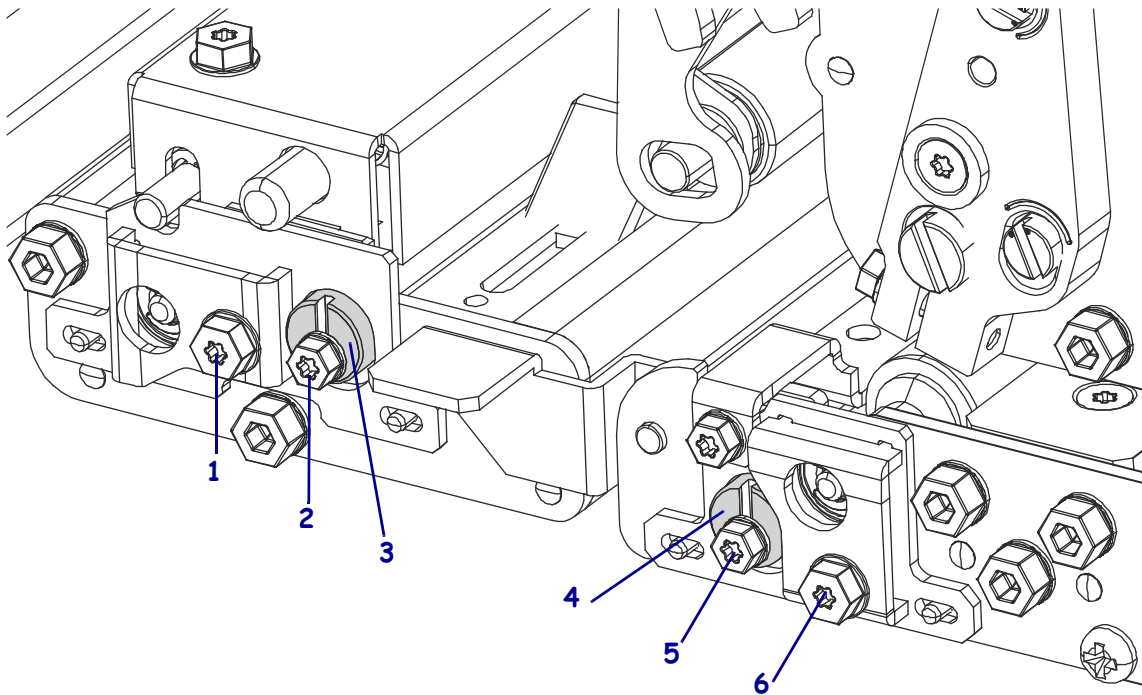
The installation is complete.

Adjust Media Tracking

1. Check the media tracking by performing a PAUSE Self-Test.
2. Adjust the media tracking, if necessary.
3. Which adjustments are necessary?

If you...	Then...
<ul style="list-style-type: none"> • Removed or replaced both of the roller plates 	<ul style="list-style-type: none"> • Perform the <i>Skew Adjustments</i>. • Perform the <i>Media Tension Adjustment across the Peel Bar</i>.
<ul style="list-style-type: none"> • Replaced the upper pinch roller • Replaced the media guide shelf or media sensor • Removed or replaced the pinch roller plate 	<ul style="list-style-type: none"> • Perform the <i>Skew Adjustments</i>. • Perform the <i>Pressure Balance Adjustment (between the Upper and Lower Pinch Rollers)</i>.

Figure 407 • Pinch and Peel Cams

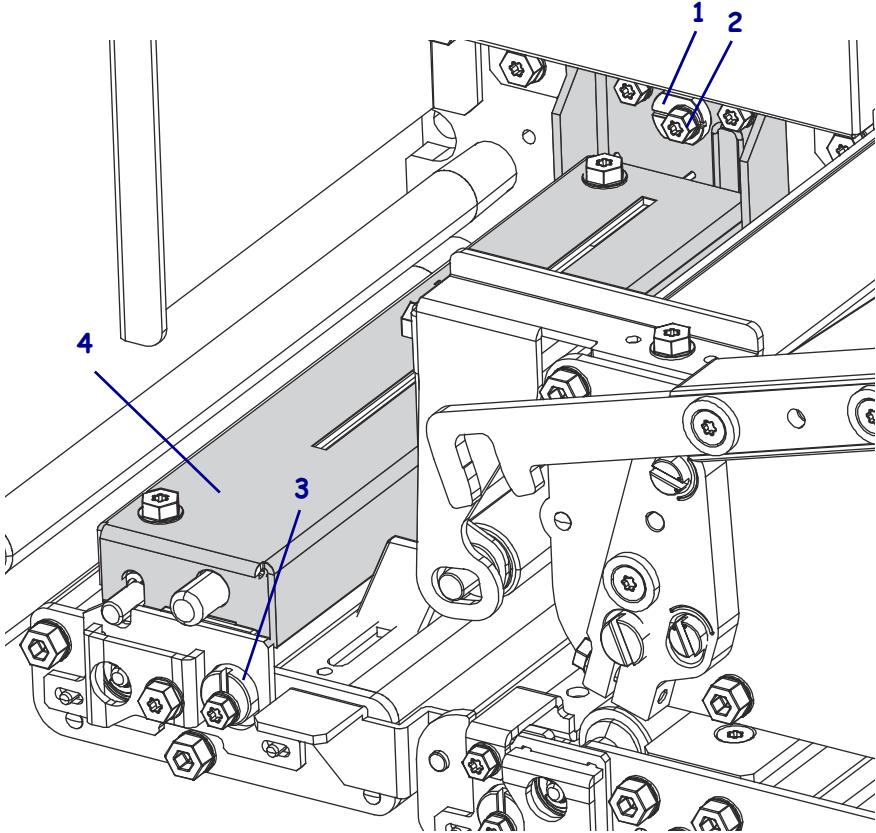


1	Pinch cam plate center mounting screw
2	Pinch cam locking screw
3	Pinch cam (shaded)
4	Peel cam (shaded)
5	Peel cam locking screw
6	Peel cam plate center mounting screw



Note • The pinch and peel cams are in the neutral position when the slot is vertical.

Figure 408 • Upper Segmented Pinch Roller



1	Upper pinch roller cam
2	Upper pinch roller cam locking screw
3	Pinch roller cam
4	Upper segmented pinch roller (shaded)



Note • The steps in these procedures are for the right-hand (RH) print engine. Steps for a left-hand (LH) print engine may be slightly different.

Skew Adjustments

In a RH print engine, perform the following steps:

1. See [Figure 407](#). Loosen the pinch cam plate center mounting screw and the pinch cam locking screw.
2. Using a flat-blade screwdriver, insert the screwdriver into the slot in the pinch cam.
3. Rotate the pinch cam to move the media.
 - Rotate *clockwise* to move the media closer to the inboard (main frame) side of the print engine.
 - Rotate *counterclockwise* to move the media closer to the outboard (media door) side of the print engine.
4. Tighten the pinch cam plate center mounting screw and the pinch cam locking screw.

Pressure Balance Adjustment (between the Upper and Lower Pinch Rollers)

In a RH print engine, perform the following steps:



Note • The upper pinch cam is in the neutral position when the slot is horizontal.

1. See [Figure 408](#). Loosen the upper pinch cam locking screw.
2. Using a flat-blade screwdriver, insert the screwdriver into the slot in the upper pinch cam.
3. Rotate the upper pinch cam to move the media.
 - Rotate *clockwise (upward)* to move the media closer to the outboard (media door) side of the print engine.
 - Rotate *counterclockwise (downward)* to move the media closer to the inboard (main frame) side of the print engine.
4. Tighten the pinch cam plate center mounting screw and the pinch cam locking screw.

The adjustments are complete.

Media Tension Adjustment across the Peel Bar

In a RH print engine, perform the following steps:

1. See [Figure 407](#). Loosen the peel cam plate center mounting screw and the peel cam locking screw.
2. Using a flat-blade screwdriver, insert the screwdriver into the slot in the peel cam.
3. Rotate the peel cam to tension the edge of the media.
 - Rotate *clockwise* to tension the inboard edge of the media (closer to the main frame side of the print engine).
 - Rotate *counterclockwise* to tension the outboard edge of the media (closer to the media door side of the print engine).
4. Hold the peel cam plate in place while tightening the peel cam plate center mounting screw and the peel cam locking screw.

The adjustments are complete.



Peel Deflector and Latch Maintenance Kit

Installation Instructions

This kit includes the parts and documentation necessary to install the Peel Deflector and Latch Maintenance Kit in the ZE500™ Series Print Engines. Read these instructions thoroughly before installing this kit.



Caution • This installation must be performed by a qualified service technician.



Note • The graphics and steps in this procedure are for the right-hand (RH) print engine. Steps for a left-hand (LH) print engine may be slightly different.

Parts List

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

Figure 409 • Kit Contents

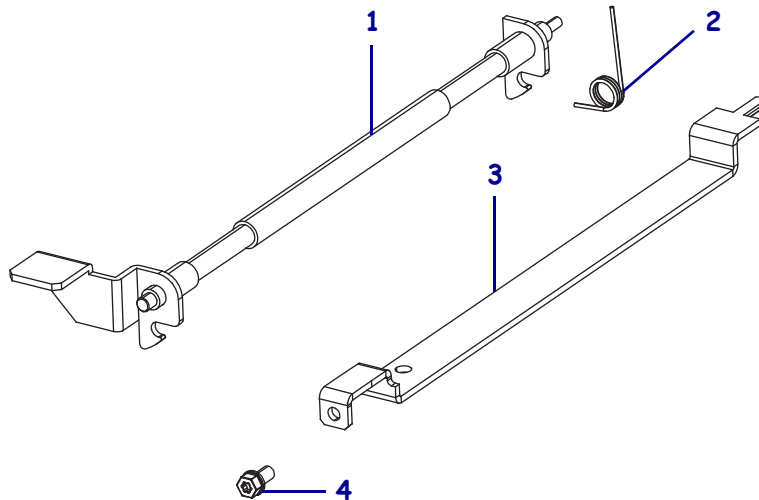


Table 63 • Parts List

✓	Item	Qty	Part Number	Description
	Ref	1	P1046696-064	ZE500-4 Peel Deflector and Latch Maintenance Kit, RH
		1	P1046696-065	ZE500-4 Peel Deflector and Latch Maintenance Kit, LH
		1	P1046696-066	ZE500-6 Peel Deflector and Latch Maintenance Kit, RH
		1	P1046696-067	ZE500-6 Peel Deflector and Latch Maintenance Kit, LH
	1	1	<i>N/A</i>	Peel Roller Latch
	2	1	<i>N/A</i>	Torsion Spring
	3	1	<i>N/A</i>	Deflector Plate
	4	1	<i>N/A</i>	Screw, M3 × 6 Hx Tx Ni

N/A = Not available as a separate part (listed for identification purposes only).

Tools Required



Tools • You need these tools to complete this procedure:

- Phillips Screwdriver Set
- Flat-blade Screwdriver Set
- Metric Hex Key (Allen Wrench) Set
- Torx Key Set
- Anti-Static Wriststrap and Mat

Remove Power and Data Cables, Ribbon, and Media



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

Connect yourself to an antistatic device.



2. **Caution** • Turn off (O) the print engine and disconnect it from the power source before performing the following procedure.

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


3. **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.

Open the media door, the printhead latch, and remove media and ribbon from the print engine.

4. Close the printhead latch, and then close the media door.

Remove Print Engine from Applicator

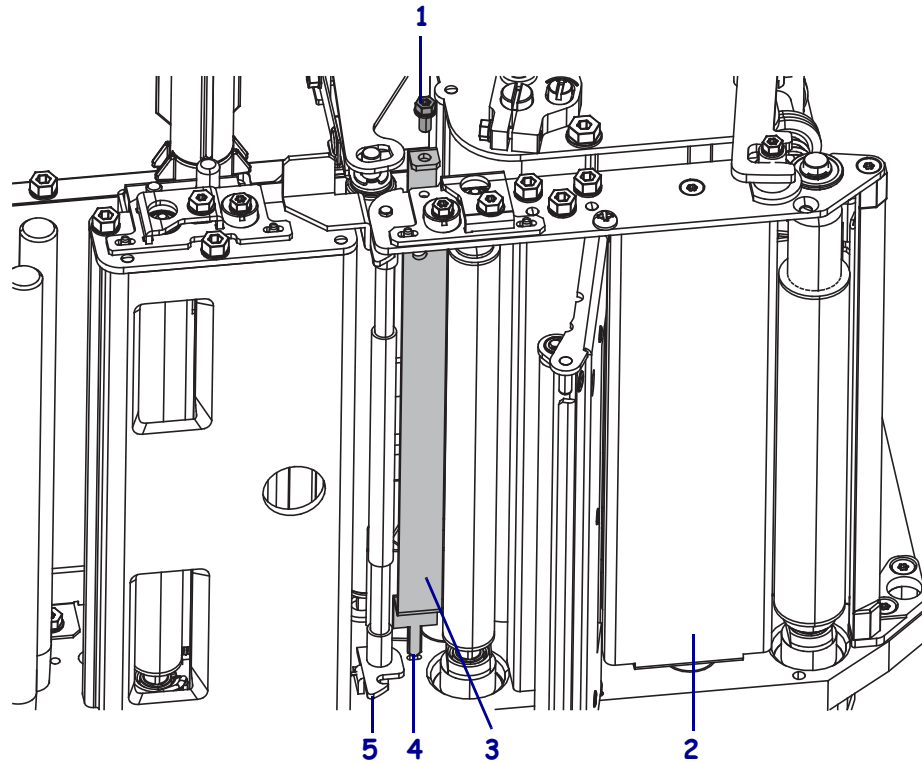
1. Does your applicator (or stand) permit open access to the rear of the print engine?

If you have an...	Then...
Open access	<p>You may swing the print engine open and work on it without removing the unit from the applicator.</p> <p>If you wish to remove the unit from the stand at any time, follow the instructions listed for the <i>Obstructed access</i> type applicator shown in this table.</p> <ol style="list-style-type: none"> a. Go to <i>Remove the Platen Roller Support Plate</i>.
Obstructed access	<p>You must remove the print engine from the applicator before you work on it.</p> <ol style="list-style-type: none"> a. Remove the four corner mounting screws securing the print engine to the applicator. b. Loosen the center mounting bolt, but do not remove it. <p> Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.</p> <ol style="list-style-type: none"> c. Lift the print engine off the center mounting bolt and place on a workbench.

Remove the Platen Roller Support Plate

1. Place the print engine with the media door face up.
2. Open the media door.
3. See [Figure 410](#). To remove the deflector plate, remove the mounting screw.

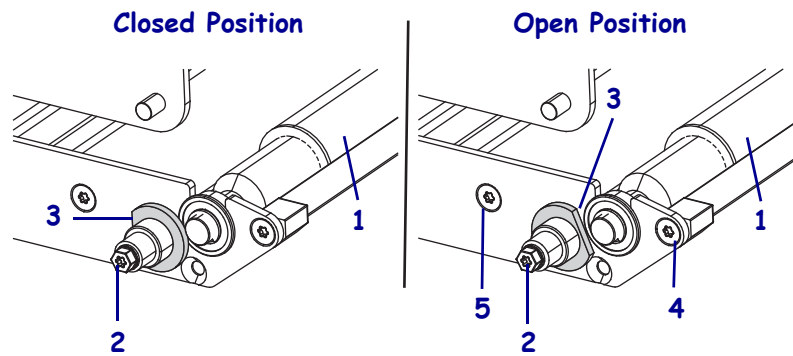
Figure 410 • Deflector Plate and Peel Roller Latch



1	Deflector plate mounting screw
2	Deflector plate
3	Peel roller deflector plate
4	Deflector plate slot
5	Peel roller latch

4. Open the printhead latch.
5. See [Figure 411](#). Using a Torx key, loosen the screw securing the latch pin, and rotate the latch to the open position.

Figure 411 • Latch Pin



1	Platen roller
2	Latch pin screw
3	Latch pin (shaded)

6. Grasp the platen roller tightly and pull it toward the platen roller support plate to release the pin secured in the platen roller coupler.

The outboard bearing will extend past the end of the platen roller support plate.

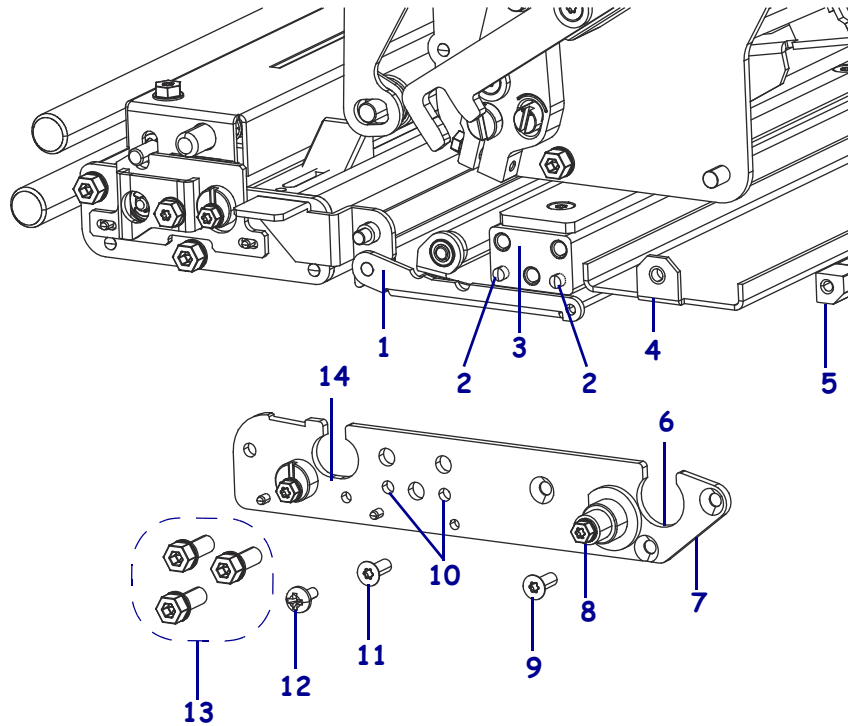


Note • You may have to turn the roller slightly to be able to remove the roller.

7. Lift the platen roller out of the print engine.

8. See [Figure 412](#). Using a Torx key, remove the mounting screw securing the peel bar.

Figure 412 • Platen Roller Support Plate



1	Pressure roller frame	8	Latch pin
2	Support pins	9	Peel bar mounting screw
3	Platen support plate mounting bar	10	Support pin locating holes
4	Printhead guard	11	Printhead guard mounting screw
5	Peel bar	12	Pressure roller frame pivot screw
6	Platen roller support plate	13	Platen support plate mounting bar mounting screws (3)
7	Platen roller cutout	14	Peel roller cutout

9. Using a Torx key, remove the mounting screw securing the printhead guard. Lower the guard away from the unit.
10. Remove the Phillips pivot screw securing the pressure roller frame. The bracket may drop out. If it does not, tilt the front and lift the back off of the pivot pin.
11. Remove the three hex mounting screws securing the platen roller support plate to the platen support plate mounting bar.
12. While holding the peel roller latch in place, gently lift the platen roller support plate away from the mounting bar support pins.
13. Lift the peel roller latch and its spring out of the print engine.

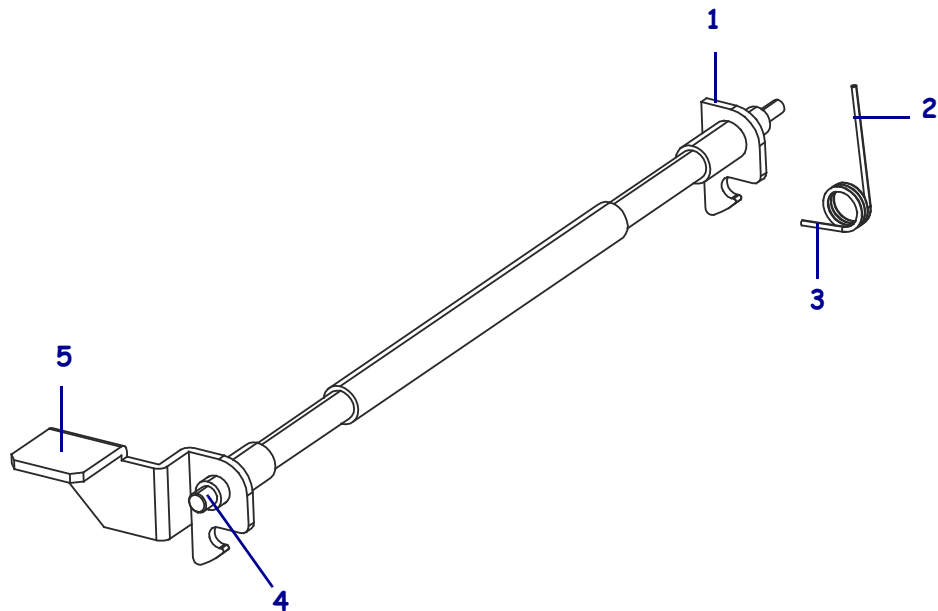
Replace the Platen Roller Support Plate

1. See [Figure 413](#). Leading with the short leg of the spring, slide the spring onto the peel roller shaft.
2. Insert the short spring leg into the catch tab on the inboard end of the latch.
3. Holding the spring in place, insert the inboard end of the latch in the small hole in the main frame.



Note • Ensure that the long leg of the spring is resting against the ribbon sensor bracket on the main frame wall.

Figure 413 • Peel Roller Latch and Spring



1	Inboard end of the peel roller latch
2	Long leg of the latch spring
3	Short leg of the latch spring
4	Peel roller shaft
5	Peel roller latch

4. See [Figure 412](#). Align the platen roller support plate with the peel roller latch shaft and the platen support plate mounting bar support pins and secure with the three hex mounting screws.
5. With the knurled roller facing the bottom of the print engine, install the pressure roller frame onto the main frame pivot pin and secure the frame using the Phillips pivot screw through the platen roller support plate.
6. Leave the pressure roller frame open for now. Swing it all the way up against the bottom of the print engine to keep the frame out of the way, but leave the area accessible.

7. Insert the two pins on the printhead guard into the main frame and secure in place with the Torx mounting screw.
8. Using a Torx key, install the mounting screw to secure the peel bar.
9. Starting with the pin end of the platen roller, align the pin with the slot in the platen roller coupler.
10. See [Figure 412](#). Lower the other end of the platen shaft into the platen roller cutout on the platen roller support plate.
The bearing will extend out past the platen roller support plate.
11. Push the shaft toward the platen roller coupler to fully seat the platen shaft.
You will hear a click when the pin is seated correctly or turn the roller slightly to confirm that the roller is firmly seated.



Note • Ensure that the platen roller bearing is completely seated in the cam cutout.

12. See [Figure 411](#). Turn the latch pin to the closed position and tighten the mounting screw to hold it in position.
13. Close the printhead latch.
14. See [Figure 410](#). Insert the tab on the end of the deflector plate into the slot on the main frame.
15. Align the cam plate with the two support pins on the platen roller support plate and tighten the center mounting screw.



Note • Ensure that the peel roller bearing is completely seated in the cam cutout.

16. Close the pressure roller mounting frame.
17. Reposition the print engine in the upright position.

Close the Electronics Enclosure

1. Ensure that all wires are routed properly and are not causing any obstructions, and then carefully swing the electronics enclosure closed.
2. Adjust the wire clips for the parallel port until they are touching the parallel port.
3. Slide the electronics cover onto the print engine.
4. Reinstall the four electronics cover mounting screws.

Reinstall the Print Engine in the Applicator

1. To reinstall the print engine into the applicator, carefully place the keyhole on the center mounting bolt.



Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.

2. Replace the four corner mounting screws securing the print engine to the applicator.
3. Tighten the center mounting bolt.

Resume Printer Operation

1. Open the front cover.
2. **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.

Unlatch the printhead lever, reinstall the media and ribbon, and close and latch the printhead lever.

3. Ensure that the printhead toggles are positioned evenly across the width of the media.
4. Reconnect the AC power cord and interface cables.
5. Turn on (I) the print engine.

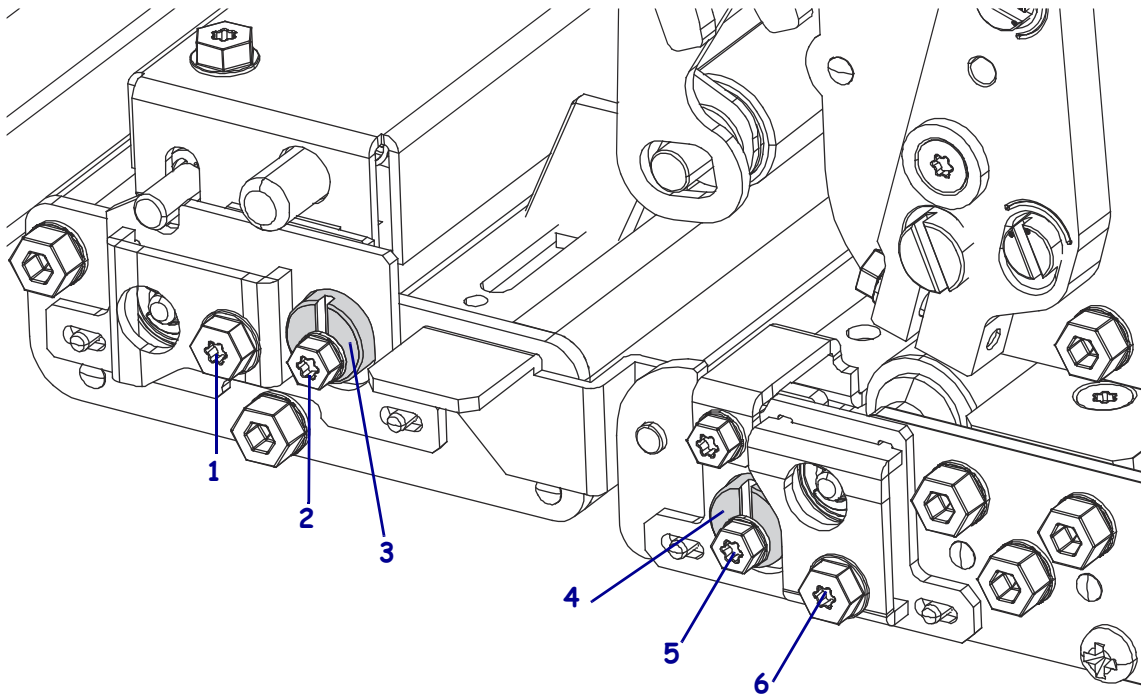
The installation is complete.

Adjust Media Tracking

1. Check the media tracking by performing a PAUSE Self-Test.
2. Adjust the media tracking, if necessary.
3. Which adjustments are necessary?

If you...	Then...
<ul style="list-style-type: none"> • Removed or replaced both of the roller plates 	<ul style="list-style-type: none"> • Perform the <i>Skew Adjustments</i>. • Perform the <i>Media Tension Adjustment across the Peel Bar</i>.
<ul style="list-style-type: none"> • Replaced the upper pinch roller • Replaced the media guide shelf or media sensor • Removed or replaced the pinch roller plate 	<ul style="list-style-type: none"> • Perform the <i>Skew Adjustments</i>. • Perform the <i>Pressure Balance Adjustment (between the Upper and Lower Pinch Rollers)</i>.

Figure 414 • Pinch and Peel Cams

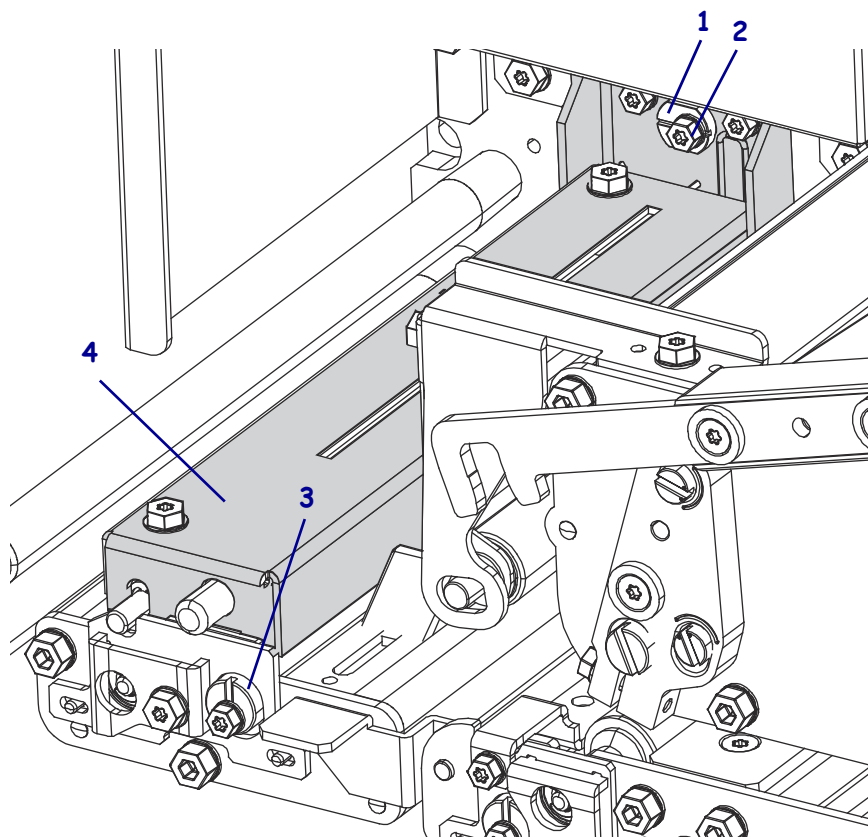


1	Pinch cam plate center mounting screw
2	Pinch cam locking screw
3	Pinch cam (shaded)
4	Peel cam (shaded)
5	Peel cam locking screw
6	Peel cam plate center mounting screw



Note • The pinch and peel cams are in the neutral position when the slot is vertical.

Figure 415 • Upper Segmented Pinch Roller



1	Upper pinch roller cam
2	Upper pinch roller cam locking screw
3	Pinch roller cam
4	Upper segmented pinch roller (shaded)



Note • The steps in these procedures are for the right-hand (RH) print engine. Steps for a left-hand (LH) print engine may be slightly different.

Skew Adjustments

In a RH print engine, perform the following steps:

1. See [Figure 414](#). Loosen the pinch cam plate center mounting screw and the pinch cam locking screw.
2. Using a flat-blade screwdriver, insert the screwdriver into the slot in the pinch cam.
3. Rotate the pinch cam to move the media.
 - Rotate *clockwise* to move the media closer to the inboard (main frame) side of the print engine.
 - Rotate *counterclockwise* to move the media closer to the outboard (media door) side of the print engine.
4. Tighten the pinch cam plate center mounting screw and the pinch cam locking screw.

Pressure Balance Adjustment (between the Upper and Lower Pinch Rollers)

In a RH print engine, perform the following steps:



Note • The upper pinch cam is in the neutral position when the slot is horizontal.

1. See [Figure 415](#). Loosen the upper pinch cam locking screw.
2. Using a flat-blade screwdriver, insert the screwdriver into the slot in the upper pinch cam.
3. Rotate the upper pinch cam to move the media.
 - Rotate *clockwise (upward)* to move the media closer to the outboard (media door) side of the print engine.
 - Rotate *counterclockwise (downward)* to move the media closer to the inboard (main frame) side of the print engine.
4. Tighten the pinch cam plate center mounting screw and the pinch cam locking screw.

The adjustments are complete.

Media Tension Adjustment across the Peel Bar

In a RH print engine, perform the following steps:

1. See [Figure 414](#). Loosen the peel cam plate center mounting screw and the peel cam locking screw.
2. Using a flat-blade screwdriver, insert the screwdriver into the slot in the peel cam.
3. Rotate the peel cam to tension the edge of the media.
 - Rotate *clockwise* to tension the inboard edge of the media (closer to the main frame side of the print engine).
 - Rotate *counterclockwise* to tension the outboard edge of the media (closer to the media door side of the print engine).
4. Hold the peel cam plate in place while tightening the peel cam plate center mounting screw and the peel cam locking screw.

The adjustments are complete.



Platen Support Bar and Printhead Guard Maintenance Kit

Installation Instructions

This kit includes the parts and documentation necessary to install the Platen Support Bar and Printhead Guard Maintenance Kit in the ZE500™ Series Print Engines. Read these instructions thoroughly before installing this kit.



Caution • This installation must be performed by a qualified service technician.



Note • The graphics and steps in this procedure are for the right-hand (RH) print engine. Steps for a left-hand (LH) print engine may be slightly different.

Parts List

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

Figure 416 • Kit Contents

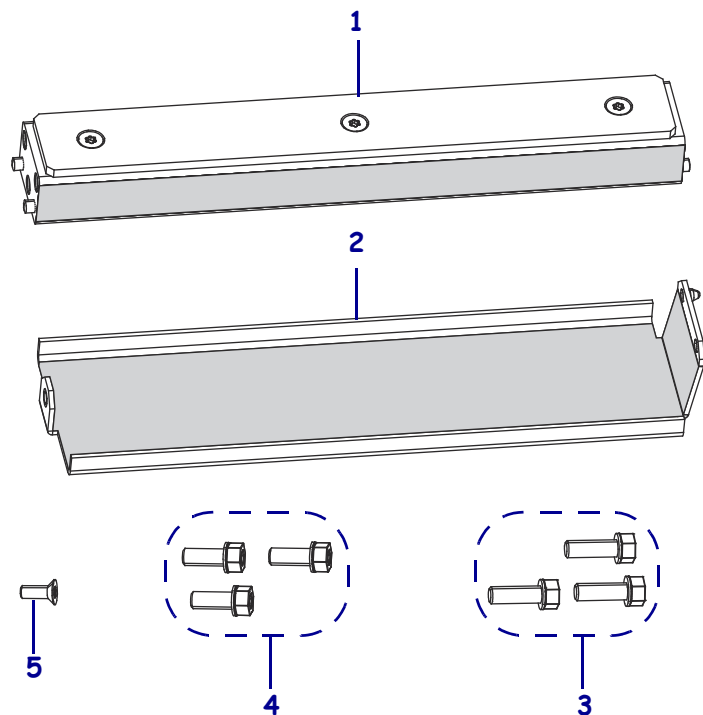


Table 64 • Parts List

✓	Item	Qty	Part Number	Description
	Ref	1	P1046696-068	ZE500-4 Platen Support Bar and Printhead Guard Maintenance Kit, RH & LH
			P1046696-069	ZE500-6 Platen Support Bar and Printhead Guard Maintenance Kit, RH & LH
	1	1	<i>N/A</i>	Assembly, Platen Support Bar
	2	1	<i>N/A</i>	Printhead Guard
	3	3	<i>N/A</i>	Screw, M3 × 12 Hx So Ni
	4	3	<i>N/A</i>	Screw, M3 × 10 Hx So Ni
	5	1	<i>N/A</i>	Screw, M3 × 8 Fl Tx Ni
N/A = Not available as a separate part (listed for identification purposes only).				

Tools Required



Tools • You need these tools to complete this procedure:

- Phillips Screwdriver Set
- Flat-blade Screwdriver Set
- Metric Hex Key (Allen Wrench) Set
- Torx Key Set
- Anti-Static Wriststrap and Mat
- Safety Goggles

Remove Power and Data Cables, Ribbon, and Media



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

Connect yourself to an antistatic device.



2. **Caution** • Turn off (O) the print engine and disconnect it from the power source before performing the following procedure.

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


3. **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.

Open the media door, the printhead latch, and remove media and ribbon from the print engine.

4. Close the printhead latch, and then close the media door.

Remove Print Engine from Applicator

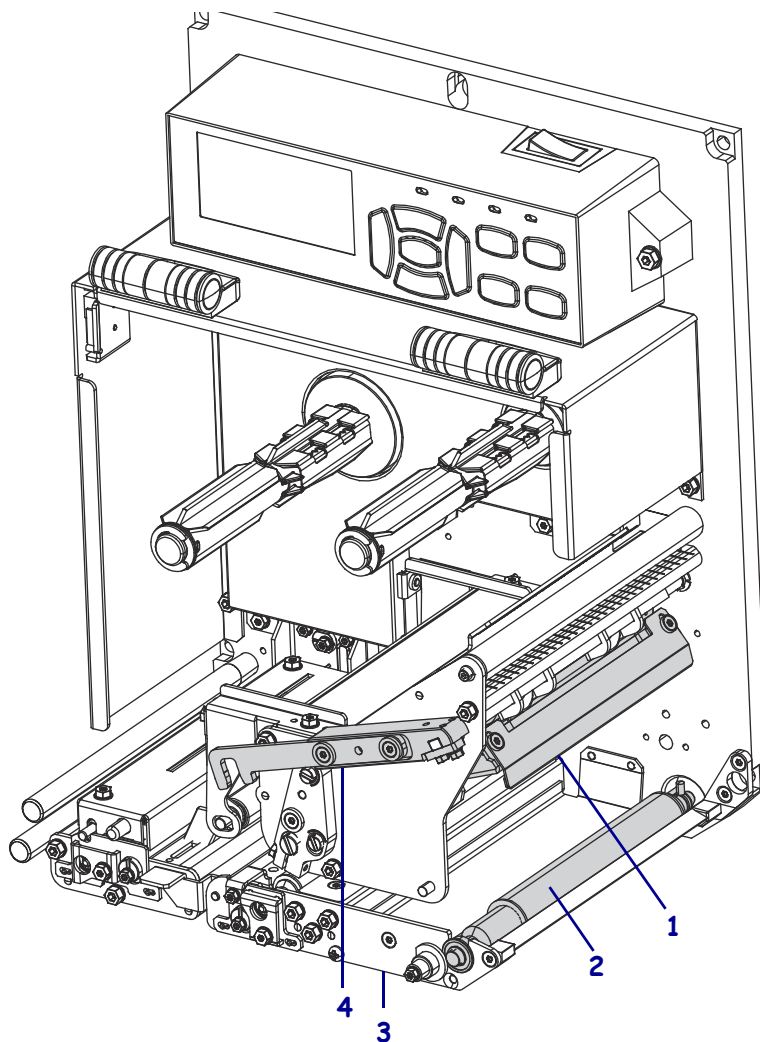
1. Does your applicator (or stand) permit open access to the rear of the print engine?

If you have an...	Then...
Open access	<p>You may swing the print engine open and work on it without removing the unit from the applicator.</p> <p>If you wish to remove the unit from the stand at any time, follow the instructions listed for the <i>Obstructed access</i> type applicator shown in this table.</p> <p>a. Go to <i>Remove the Electronics Cover</i>.</p>
Obstructed access	<p>You must remove the print engine from the applicator before you work on it.</p> <p>a. Remove the four corner mounting screws securing the print engine to the applicator.</p> <p>b. Loosen the center mounting bolt, but do not remove it.</p> <p> Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.</p> <p>c. Lift the print engine off the center mounting bolt and place on a workbench.</p>

Remove the Platen Roller

1. See [Figure 417](#). Using the printhead latch, open the printhead and press up until secured in the open position.

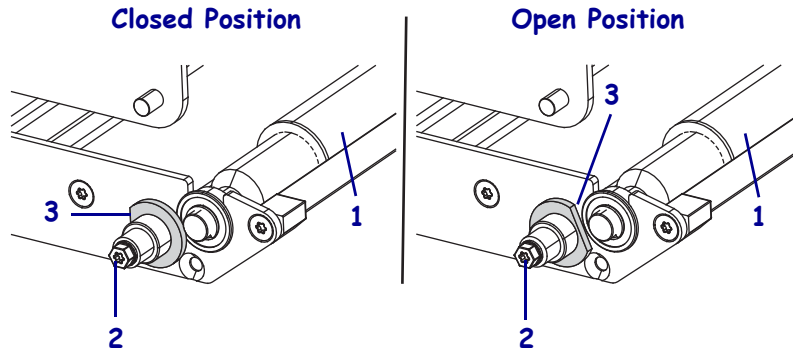
Figure 417 • Open Printhead



1	Printhead (shaded and shown in open position)
2	Platen roller (shaded)
3	Platen roller support plate
4	Printhead latch (shaded and shown in open position)

2. See [Figure 418](#). Using a Torx key, loosen the screw on the latch pin, and rotate the latch pin to the open position.

Figure 418 • Latch Pin



1	Platen roller
2	Latch pin screw
3	Latch pin (shaded)

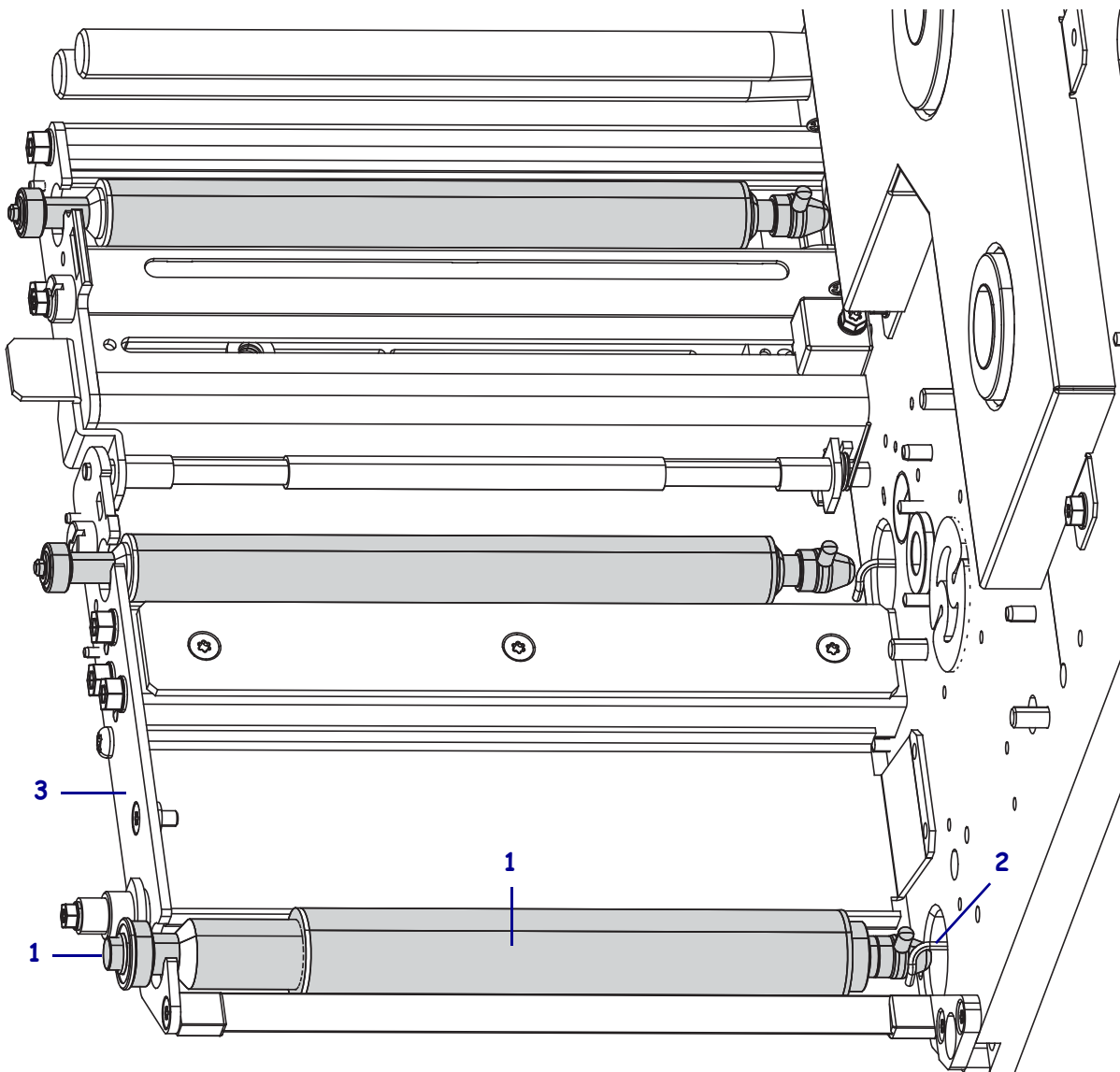
3. See [Figure 419](#). Grasp the platen roller tightly and pull it toward the platen roller support plate to release the pin secured in the platen roller coupler.
The outboard bearing will extend past the end of the platen roller support plate.



Note • You may have to turn the roller slightly to be able to remove the roller.

4. Lift the platen roller out of the print engine.

**Figure 419 • Roller Locations
(Top View with Subsystems Removed)**



1	Platen roller (shaded)
2	Platen roller coupler
3	Platen roller support plate

Remove the Peel Roller

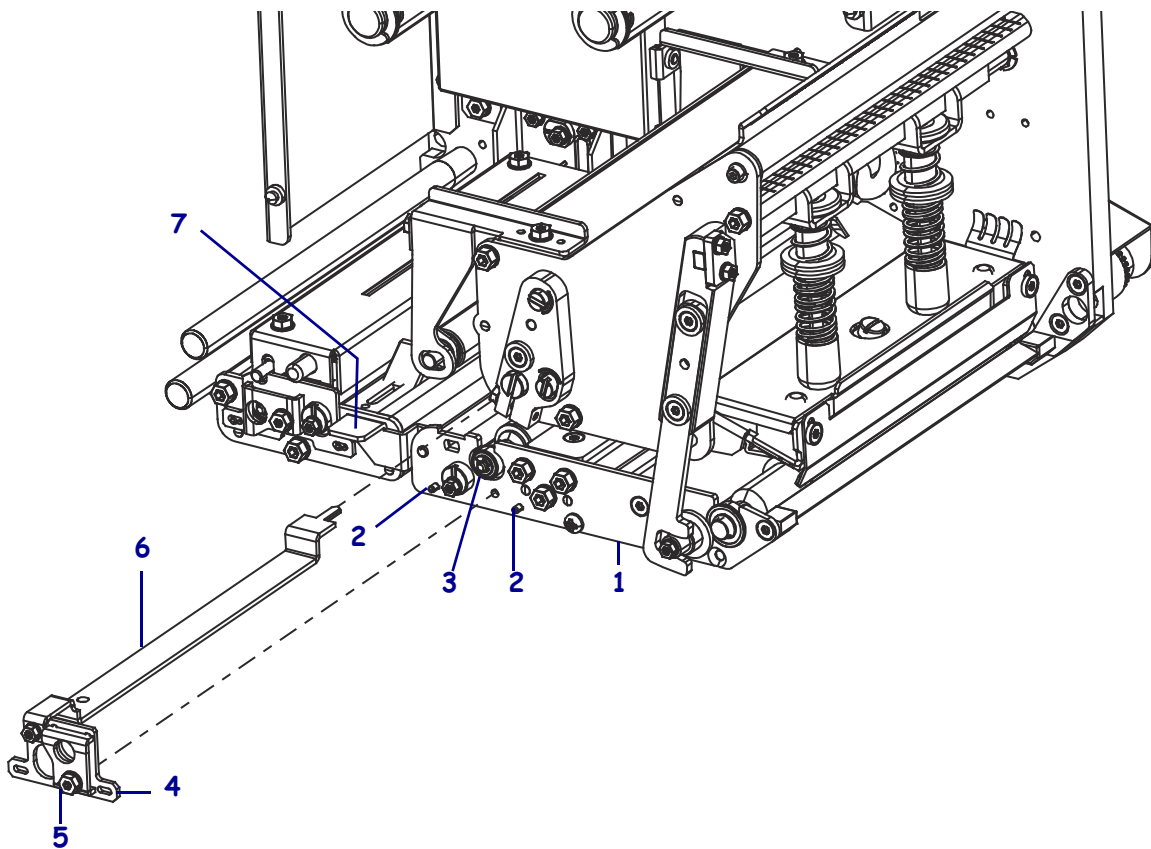
1. To open the peel roller bracket, push up on the latch.
2. See [Figure 420](#). To remove the peel roller cam plate, loosen the center mounting screw to release it from the platen roller support plate.



Note • The center mounting screw is captive within the peel roller cam plate.

3. Pull the peel roller cam plate (with the deflector plate attached) off of the two support pins on the platen roller support plate. Set the cam plate aside.

Figure 420 • Peel Roller



1	Platen roller support plate
2	Support pins
3	Peel roller
4	Peel roller cam plate
5	Peel roller cam plate center mounting screw
6	Peel roller deflector plate
7	Peel roller latch

4. Grasp the peel roller tightly and pull the peel roller toward the platen roller support plate to release the pin secured in the peel roller coupler.

The outboard bearing will extend past the end of the platen roller support plate.



Note • You may have to turn the roller slightly to be able to remove the roller.

5. Lift the peel roller out of the print engine.

Remove the Pinch Roller

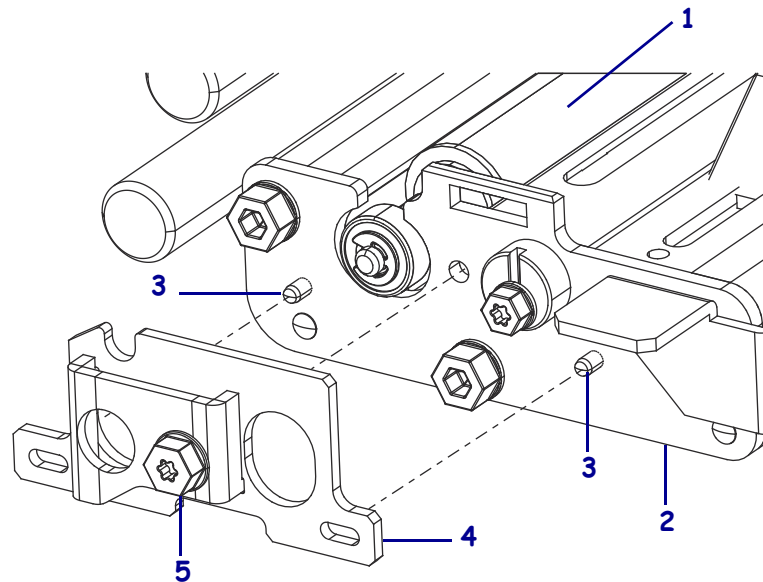
1. Open the upper pinch roller assembly by pressing on the release button located just above the pinch roller cam plate.
2. See [Figure 421](#). To remove the pinch roller cam plate, loosen the center mounting screw to release it from the pinch roller support plate.



Note • The center mounting screw is captive within the pinch roller cam plate.

3. Pull the cam plate off of the two support pins on the pinch roller support plate. Set the cam plate aside.

Figure 421 • Pinch Roller



1	Pinch roller (shaded)
2	Pinch roller support plate
3	Support pins
4	Pinch roller cam plate
5	Cam plate center mounting screw

4. Grasp the pinch roller tightly and pull the pinch roller toward the pinch roller support plate to release the pin secured in the pinch roller coupler.
The outboard bearing will extend past the end of the platen roller support plate.



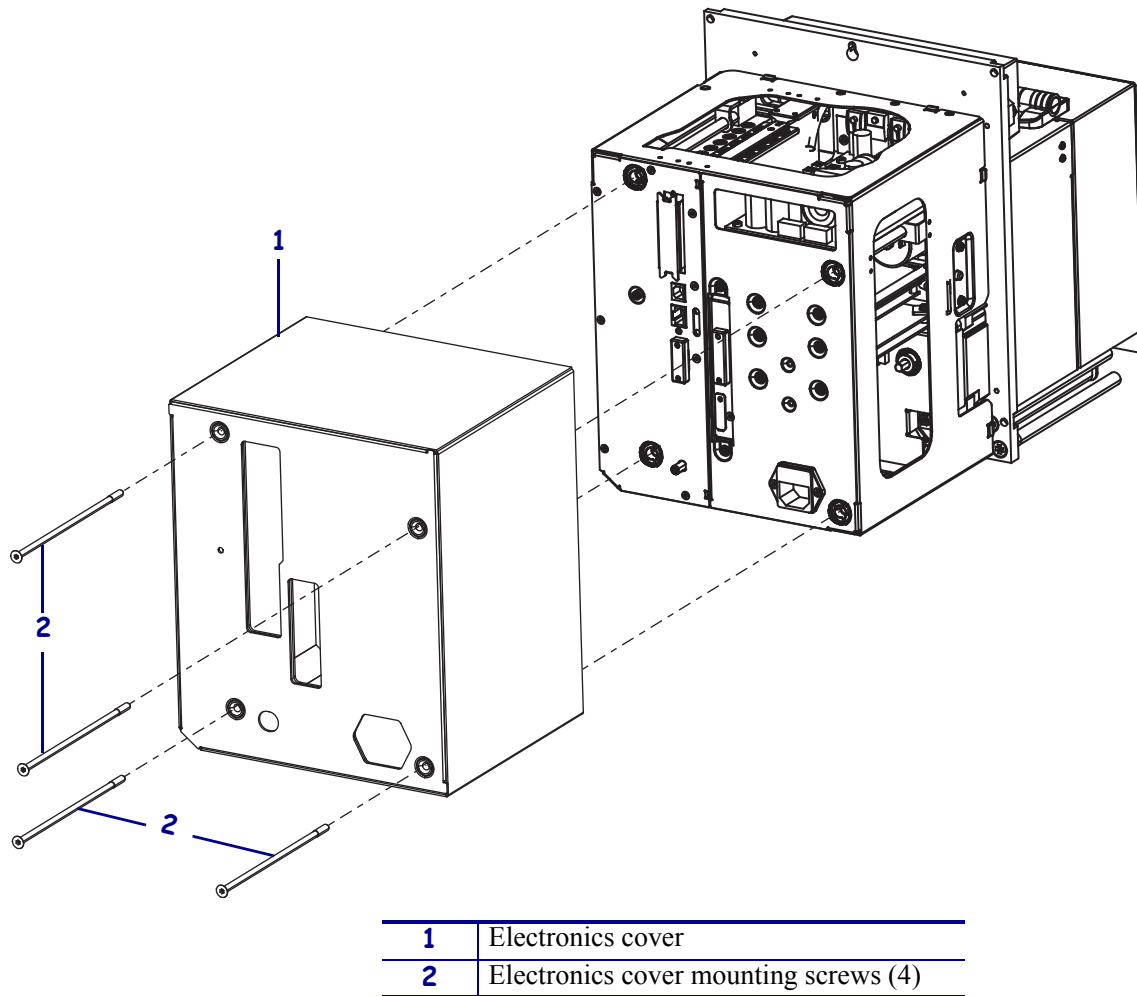
Note • You may have to turn the roller slightly to be able to remove the roller.

5. Lift the pinch roller out of the print engine.

Remove the Electronics Cover

1. See [Figure 422](#). Remove the four long mounting screws securing the electronics cover.

Figure 422 • Electronics Cover



2. Slide the electronics cover off of the print engine.

Open the Electronics Enclosure

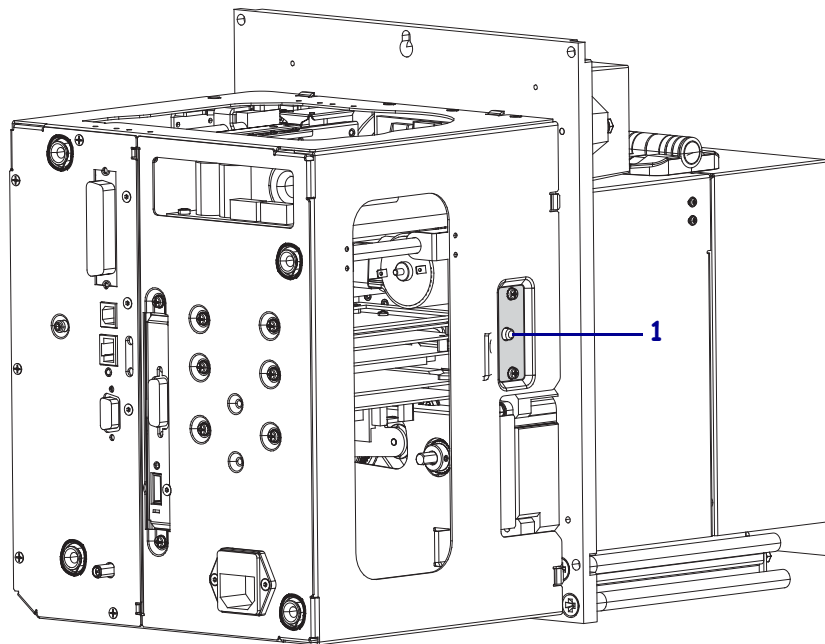
1. See [Figure 423](#). Locate the latch.



Note • For right-hand models, the latch is on the right side when looking from the back of the print engine. For left-hand models, the latch is on the left side.

2. Press the latch and swing the electronics enclosure open.

Figure 423 • Locate the Latch

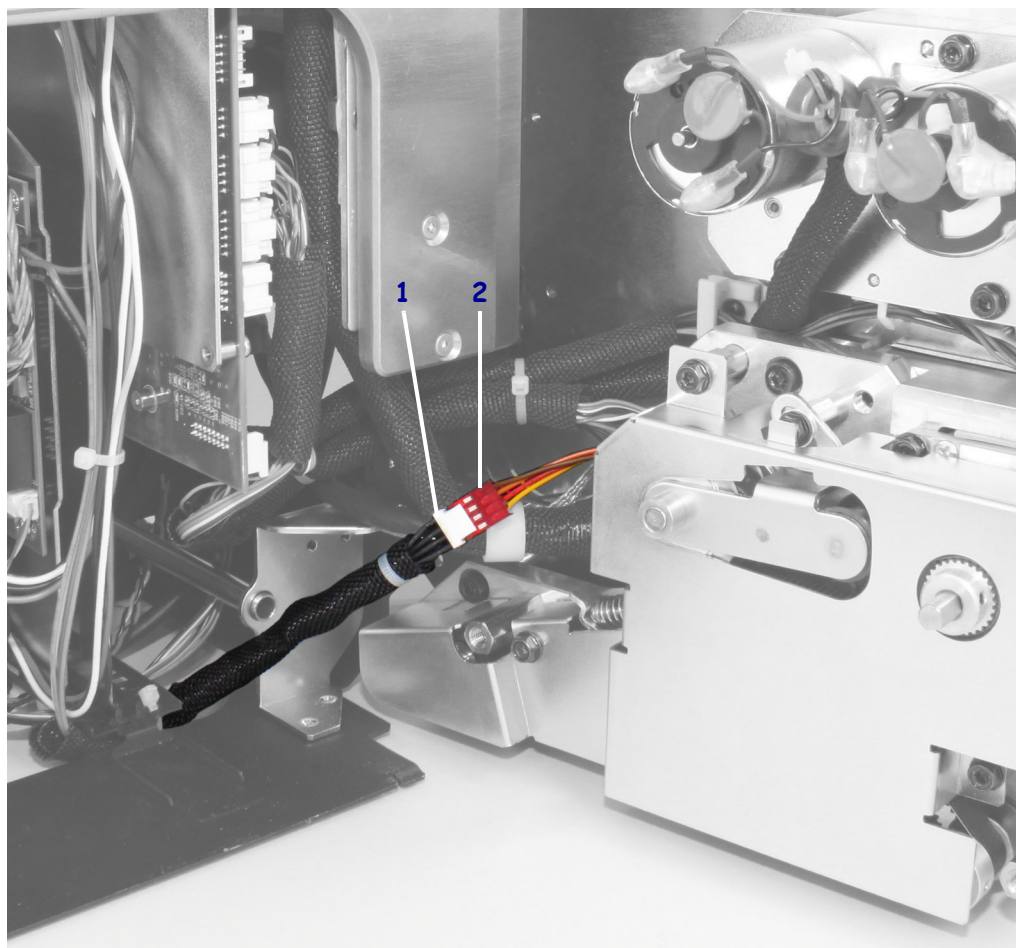


1	Latch
----------	-------

Remove the Drive System

1. See [Figure 424](#). Separate the drive system cable connectors.
The short part of the cable is wired to the stepper motor. The long part of the cable plugs into J4 on the DC power supply board.

Figure 424 • Drive System Cable



1	Long drive system cable goes to the DC power supply
2	Short drive system cable connector goes to the stepper motor

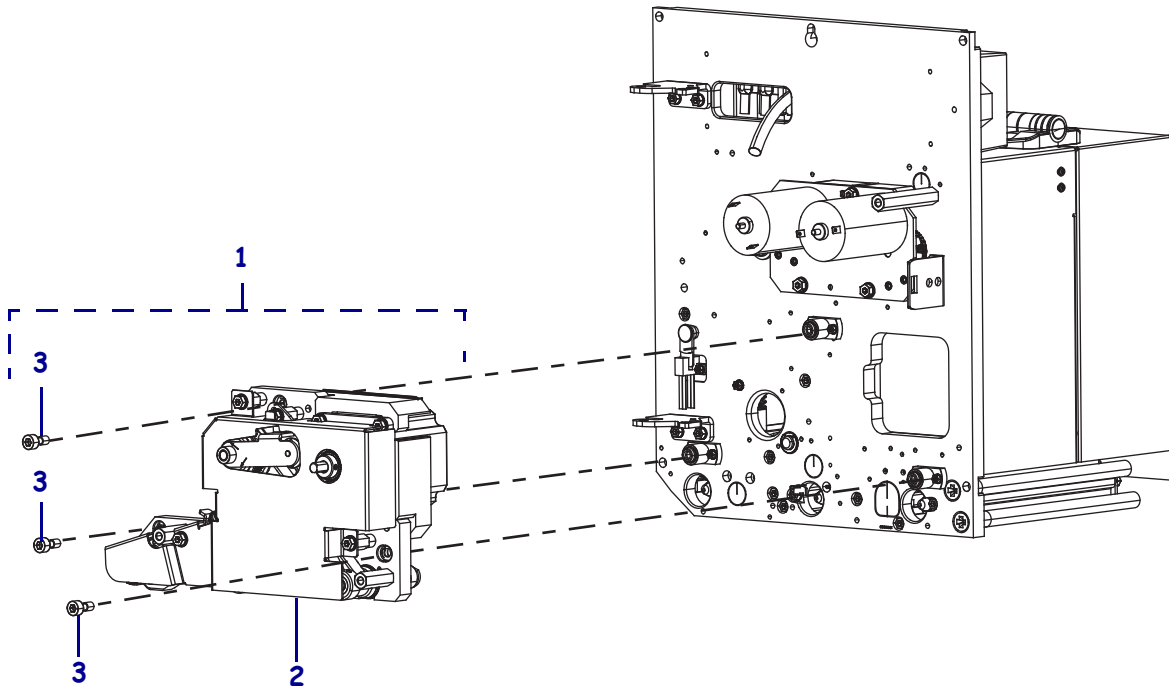
- See [Figure 425](#). Loosen the three 4 mm mounting screws to release the drive system from the main frame.



Note • The three 4 mm mounting screws are captive within the drive system.

- Remove the drive system from the main frame.

Figure 425 • Remove the Drive System

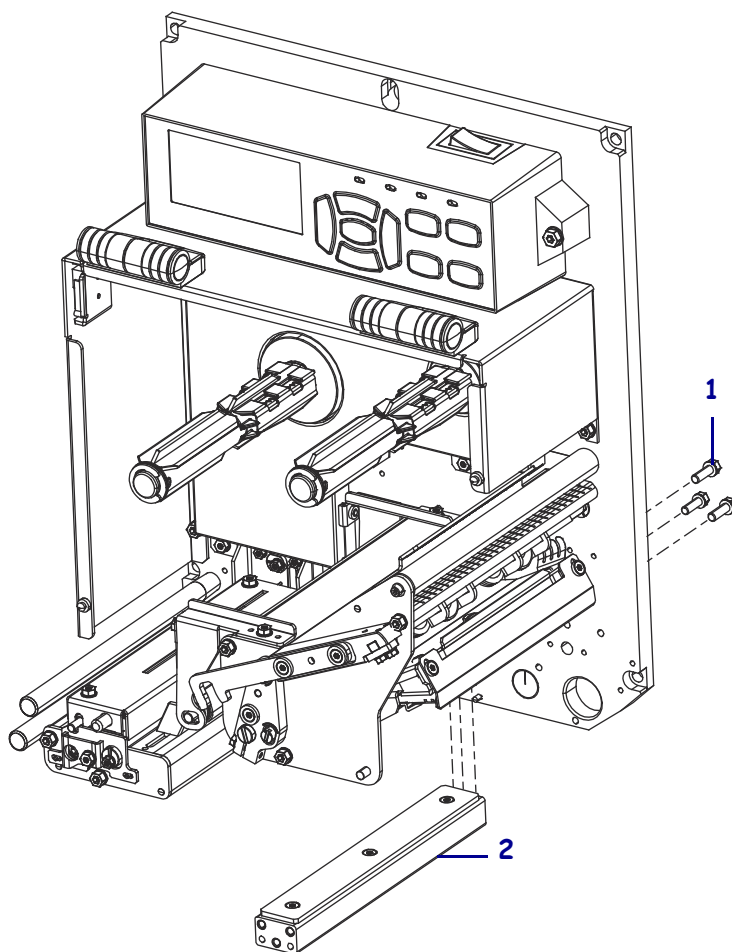


1	Drive system
2	Drive system cover
3	Drive system mounting screws (3)

Remove the Platen Support Bar on the Electronics Side

1. See [Figure 426](#). From the electronics side, remove the three platen support bar long mounting screws.

**Figure 426 • Platen Support Bar Mounting Screws
(Shown with Platen Roller Support Plate Removed)**



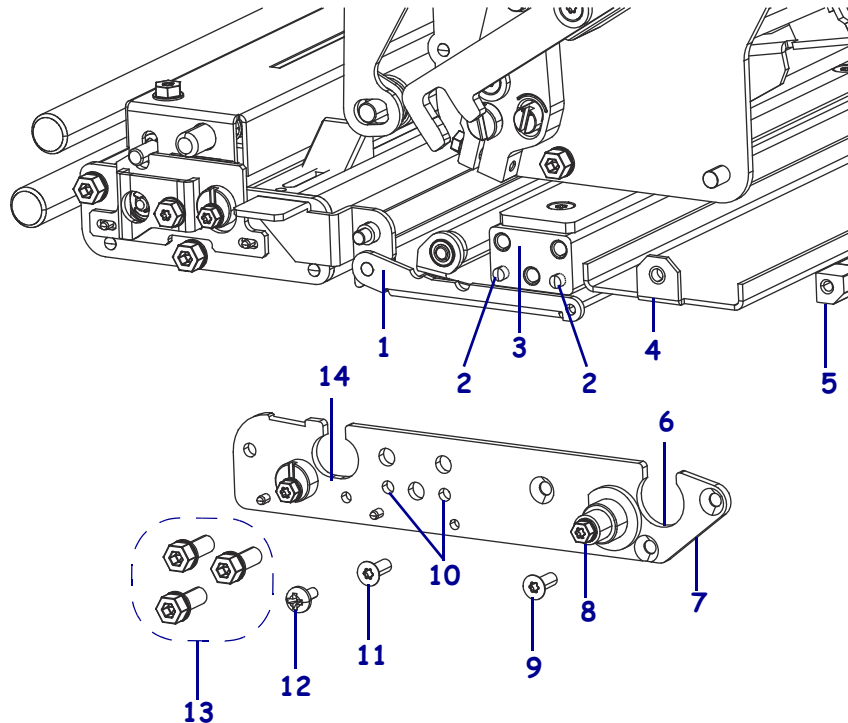
1	Platen support bar long mounting screws
2	Platen support bar

2. Close the electronics enclosure.

Remove the Platen Roller Support Plate, Platen Support Bar, and Printhead Guard

1. See [Figure 427](#). Using a Torx key, remove the mounting screw securing the peel bar.

Figure 427 • Platen Roller Support Plate



1	Pressure roller frame	8	Latch pin
2	Support pins	9	Peel bar mounting screw
3	Platen support bar	10	Support pin locating holes
4	Printhead guard	11	Printhead guard mounting screw
5	Peel bar	12	Pressure roller frame pivot screw
6	Platen roller support plate	13	Platen support bar mounting screws (3)
7	Platen roller cutout	14	Peel roller cutout

2. Using a Torx key, remove the mounting screw securing the printhead guard. Lower the guard away from the unit.
3. Remove the Phillips pivot screw securing the pressure roller frame. The bracket may drop out. If it does not, tilt the front and lift the back off of the pivot pin.
4. Remove the three hex mounting screws securing the platen roller support plate to the platen support bar.
5. While holding the peel roller latch in place, gently lift the platen roller support plate away from the mounting bar support pins.

Replace the Platen Roller Support Plate, Platen Support Bar, and Printhead Guard



1. **Caution** • Wear protective eyewear when installing or removing E-rings, C-clips, snap rings, springs, and mounting buttons. These are under tension and could fly off.

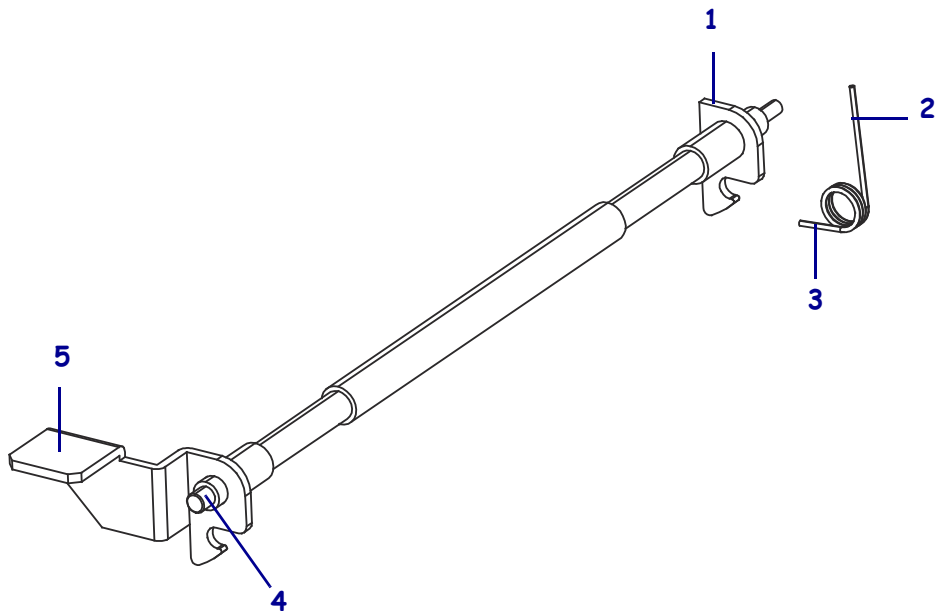
See [Figure 428](#). Leading with the short leg of the spring, slide the spring onto the peel roller shaft.

2. Insert the short spring leg into the catch tab on the inboard end of the latch.
3. Holding the spring in place, insert the inboard end of the latch in the small hole in the main frame.



Note • Ensure that the long leg of the spring is resting against the ribbon sensor bracket on the main frame wall.

Figure 428 • Peel Roller Latch and Spring



1	Inboard end of the peel roller latch
2	Long leg of the latch spring
3	Short leg of the latch spring
4	Peel roller shaft
5	Peel roller latch

4. Align the mounting holes in the platen support bar with the mounting holes in the main frame wall.
5. See [Figure 427](#). Align the platen roller support plate with the peel roller latch shaft and the platen support bar support pins and secure with the three hex mounting screws.

6. With the knurled roller facing the bottom of the print engine, install the pressure roller frame onto the main frame pivot pin and secure the frame using the Phillips pivot screw through the platen roller support plate.
7. Leave the pressure roller frame open for now. Swing it all the way up against the bottom of the print engine to keep the frame out of the way, but leave the area accessible.
8. Insert the two pins on the printhead guard into the main frame and secure in place with the Torx mounting screw.
9. Using a Torx key, install the mounting screw to secure the peel bar.
10. Starting with the pin end of the platen roller, align the pin with the slot in the platen roller coupler.
11. Insert the tab on the end of the peel deflector plate into the slot on the main frame.
12. Close the pressure roller mounting frame.
13. Reposition the print engine in the upright position.

Replace the Platen Support Bar on the Electronics Side

1. Open the electronics enclosure.
2. Install the three platen support bar long mounting screws.

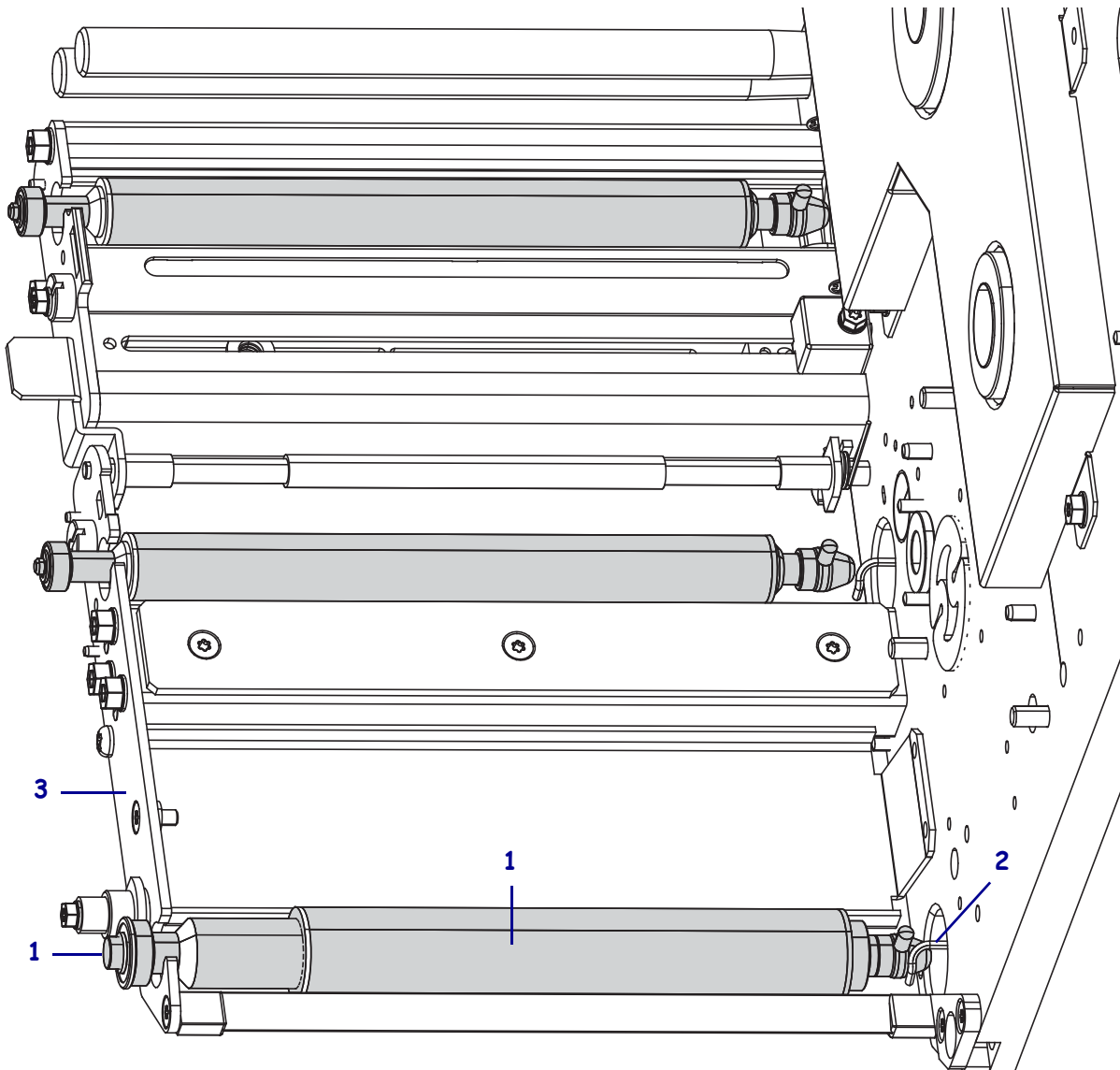
Reinstall the Drive System

1. See [Figure 425](#). Align the drive system with the drive system mounts on the main frame, and reinstall the three 4mm mounting screws.
2. See [Figure 424](#). Reconnect the stepper motor cable connectors. The short cable is wired to the drive motor. The long cable plugs into J4 on the DC power supply board.

Replace the Pinch Roller

1. See [Figure 429](#). Starting with the pin end of the roller, align the pin with the slot in the pinch roller coupler.

**Figure 429 • Roller Locations
(Top View with Subsystems Removed)**



1	Platen roller (shaded)
2	Platen roller coupler
3	Platen roller support plate

2. Lower the other end of the pinch shaft into the large hole on the pinch roller support plate.
3. Push the shaft into the pinch roller coupler to fully seat the pinch shaft.
You will hear a click when the pin is seated correctly or turn the roller slightly to confirm that the roller is firmly seated.
4. See [Figure 421](#). Replace the cam plate on the two support pins on the pinch roller support plate.
5. Reinstall the center mounting screw on the cam plate.
6. Close the upper pinch roller assembly.

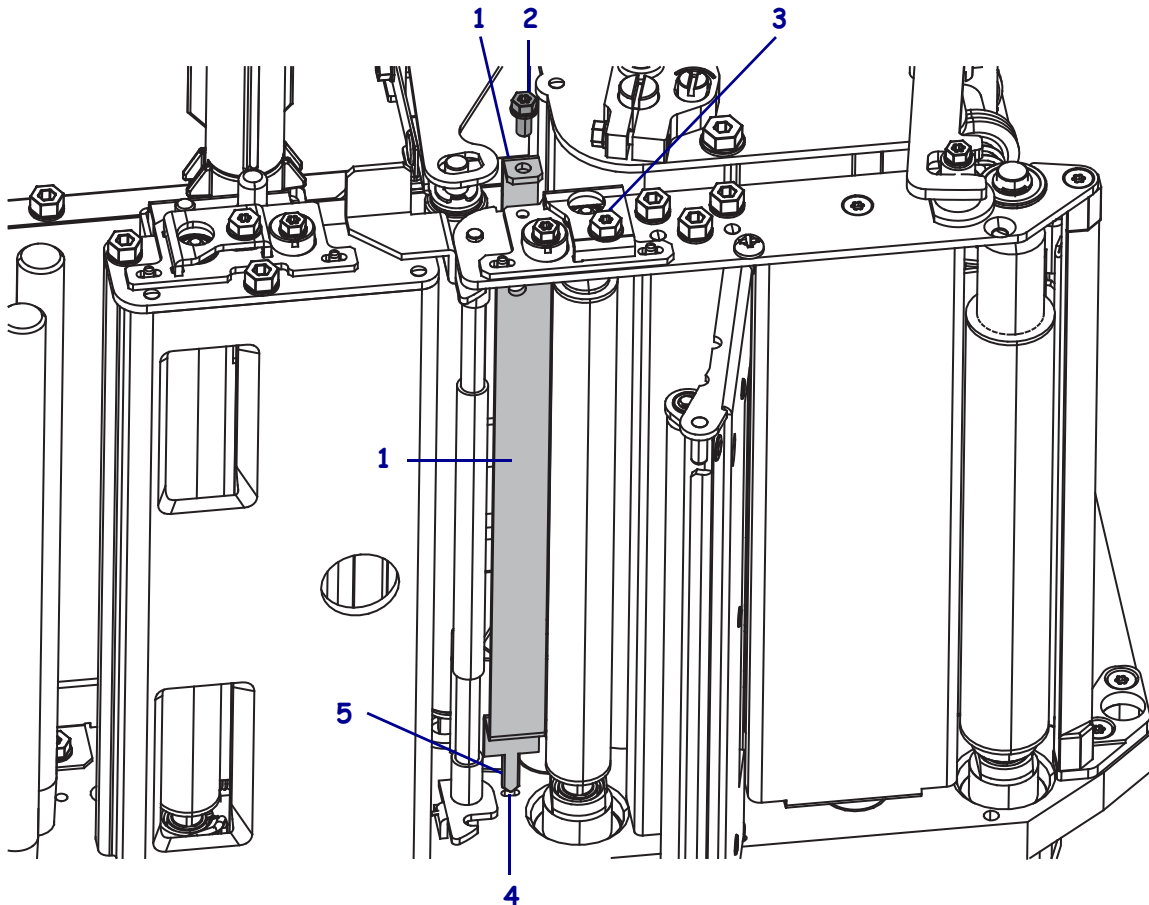
Replace the Peel Roller

1. Starting with the pin end of the roller, align the pin with the slot in the peel roller coupler.
2. Lower the other end of the peel roller shaft into the large hole on the platen roller support plate.
3. Push the shaft into the peel roller coupler to fully seat the peel shaft.
You will hear a click when the pin is seated correctly or turn the roller slightly to confirm that the roller is firmly seated.
4. See [Figure 430](#). Insert the tab on the deflector plate into the main frame slot.



Note • [Figure 430](#) shows the deflector plate separated from the platen roller cam plate. The deflector plate was designed to be attached to the cam plate during removal and installation.

Figure 430 • Deflector Plate



1	Deflector plate
2	Deflector plate mounting screw
3	Platen roller cam plate mounting screw
4	Slot
5	Tab

5. Replace the cam plate on the two support pins on the platen roller support plate.
6. Tighten the center mounting screw on the cam plate.
7. Close the peel roller bracket by pushing up until you hear the click.

Replace the Platen Roller

1. See [Figure 419](#). Starting with the pin end of the roller, align the pin with the slot in the platen roller coupler.
2. Lower the other end of the platen shaft into the large hole on the platen roller support plate.
3. Push the shaft toward the platen pulley to fully seat the platen shaft.
You will hear a click when the pin is seated correctly or turn the roller slightly to confirm that the roller is firmly seated.
4. See [Figure 418](#). Loosen the retaining screw for the platen latch pin, and rotate the latch pin to the closed position. Tighten the screw.
5. Close the printhead.

Close the Electronics Enclosure

1. Ensure that all wires are routed properly and are not causing any obstructions, and then carefully swing the electronics enclosure closed.
2. Adjust the wire clips for the parallel port until they are touching the parallel port.
3. Slide the electronics cover onto the print engine.
4. Reinstall the four electronics cover mounting screws.

Reinstall the Print Engine in the Applicator

1. To reinstall the print engine into the applicator, carefully place the keyhole on the center mounting bolt.



Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.

2. Replace the four corner mounting screws securing the print engine to the applicator.
3. Tighten the center mounting bolt.

Resume Printer Operation

1. Open the media cover.
2.

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.

Open the printhead latch, reinstall the media and ribbon, and close the printhead latch.

3. Reconnect the AC power cord and interface cables.
4. Turn on (I) the print engine.

Check the Print Line Quality

1. Check the print quality by performing a PAUSE Self-Test. Adjust the print line quality, if necessary.

For more detailed information on print line adjustments or the self-test, refer to the ZE500™ Series Print Engine Maintenance Manual in the Advanced User section.

The installation is complete.

Peel Bar Maintenance Kit

Installation Instructions

This kit includes the parts and documentation necessary to install the Peel Bar Maintenance Kit in the ZE500™ Series Print Engines. Read these instructions thoroughly before installing this kit.



Caution • This installation must be performed by a qualified service technician.

Parts List

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

Figure 431 • Kit Contents

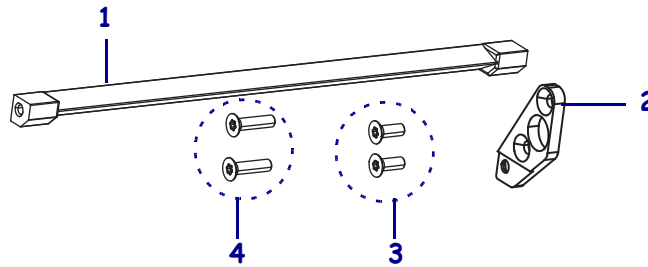


Table 65 • Parts List

✓	Item	Qty	Part Number	Description
	Ref	1	P1046696-074	ZE500-4 Peel Bar Maintenance Kit
			P1046696-075	ZE500-6 Peel Bar Maintenance Kit
	1	1	N/A	Bar, Peel
	2	1	N/A	Plate, Peel Bar Mounting RH
			N/S	Plate, Peel Bar Mounting LH
	3	2	N/A	Screw, M3 × 8 FL
	4	2	N/A	Screw, M3 × 12 FL
N/A = Not available as a separate part (listed for identification purposes only).				

Tools Required



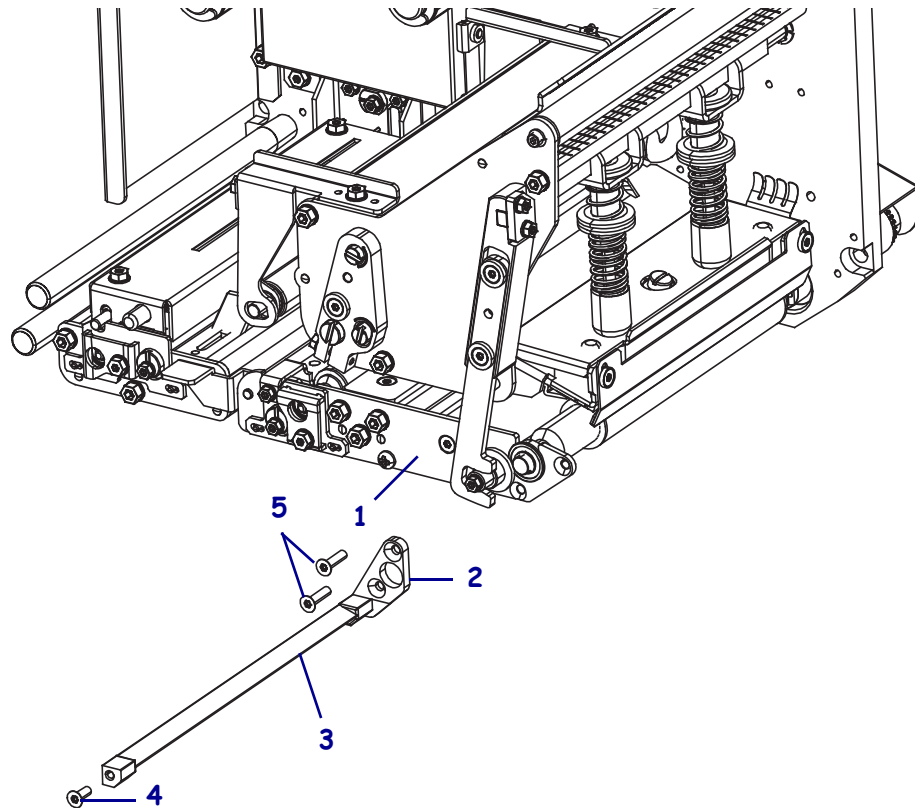
Tools • You need these tools to complete this procedure:

- Metric Hex Key (Allen Wrench) Set
- Torx Key Set

Remove the Peel Bar

1. See [Figure 432](#). On the platen roller support plate, remove the mounting screw securing the peel bar.

Figure 432 • Peel Bar



1	Platen roller support plate
2	Peel bar mounting plate
3	Peel bar
4	Peel bar mounting screw (2)
5	Plate mounting screw (2)

2. From the main frame, remove the two mounting screws securing the peel bar mounting plate and discard them.
3. Remove the peel bar, mounting plate, and discard.

Replace the Peel Bar

1. Align the peel bar with the mounting plate.
Ensure that you are installing the correct mounting plate for your print engine.
2. Install the peel bar mounting screw.
3. Align the mounting holes in the peel bar mounting plate with the main frame.
4. Reinstall the two mounting screws into the main frame.
5. Reinstall the mounting screw on the end of the platen roller support plate into the end of the peel bar.

The installation is complete.



Media Guides Maintenance Kit

Installation Instructions

This kit includes the parts and documentation necessary to install the Media Guides Maintenance Kit in the ZE500™ Series Print Engines. Read these instructions thoroughly before installing this kit.



Caution • This installation must be performed by a qualified service technician.

Parts List

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

Figure 433 • Kit Contents

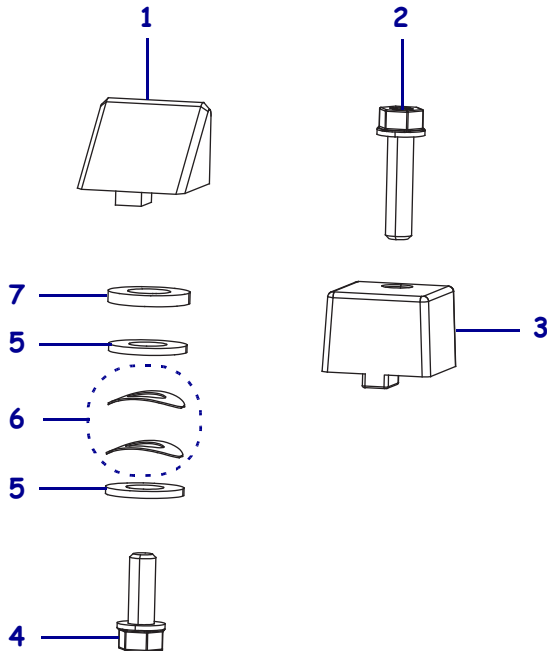


Table 66 • Parts List

✓	Item	Qty	Part Number	Description
	Ref	1	P1046696-061	Media Guides Maintenance Kit
	1	1	N/A	Guide, Outboard Media
	2	1	N/A	Screw, M3 × 12 HX TX NI
	3	1	N/A	Guide, Inboard Media
	4	1	N/A	Screw, M3 × 8 HX TX NI
	5	2	HW78806	Washer, Flat M4 (Qty. of 25)
	6	2	HW40194	Washer, Curved 0.344 × 0.172 (Qty. of 25)
	7	1	HW46128	Washer, Flat Nylon (Qty. of 25)

N/A = Not available as a separate part (listed for identification purposes only).

Tools Required



Tools • You need these tools to complete this procedure:

- Metric Hex Key (Allen Wrench) Set Torx Key Set

Remove Power and Data Cables, Ribbon, and Media



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

Connect yourself to an antistatic device.



2. **Caution** • Turn off (O) the print engine and disconnect it from the power source before performing the following procedure.

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


3. **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.

Open the media door, the printhead latch, and remove media and ribbon from the print engine.

4. Close the printhead latch, and then close the media door.

Remove Print Engine from Applicator

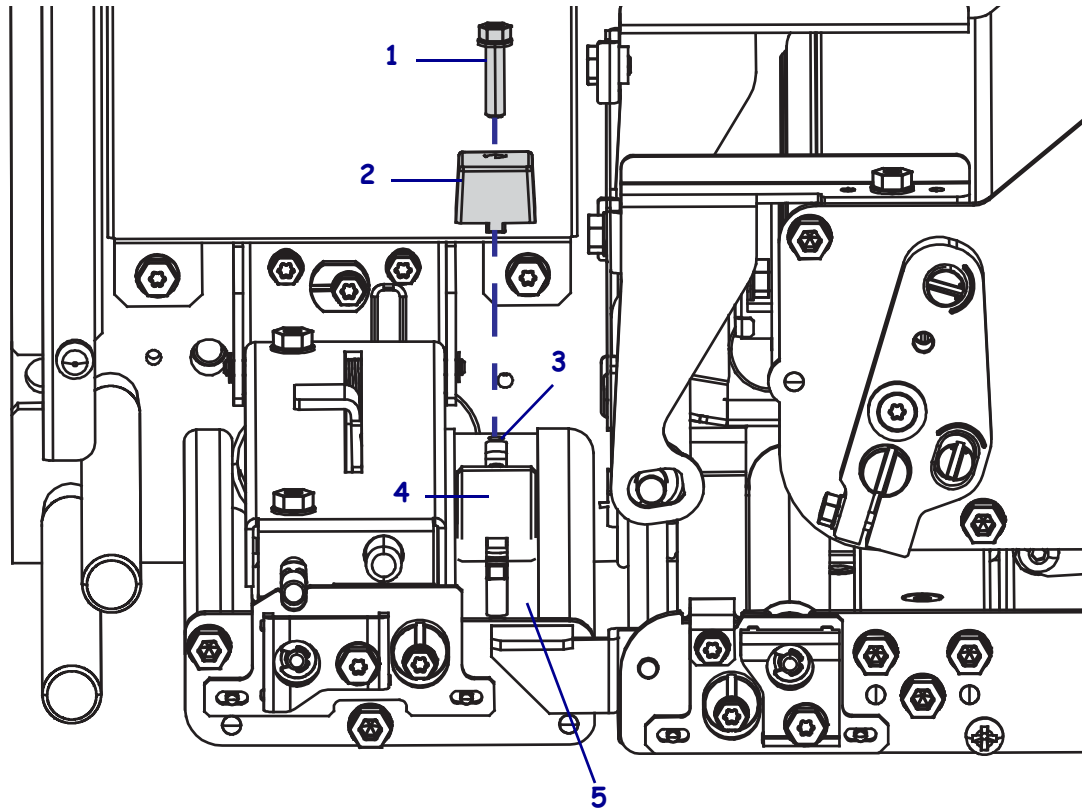
1. Does your applicator (or stand) permit open access to the rear of the print engine?

If you have an...	Then...
Open access	<p>You may swing the print engine open and work on it without removing the unit from the applicator.</p> <p>If you wish to remove the unit from the stand at any time, follow the instructions listed for the <i>Obstructed access</i> type applicator shown in this table.</p> <ol style="list-style-type: none"> a. Go to <i>Remove the Media Guides</i>.
Obstructed access	<p>You must remove the print engine from the applicator before you work on it.</p> <ol style="list-style-type: none"> a. Remove the four corner mounting screws securing the print engine to the applicator. b. Loosen the center mounting bolt, but do not remove it. <p> Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.</p> <ol style="list-style-type: none"> c. Lift the print engine off the center mounting bolt and place on a workbench.

Remove the Media Guides

1. See [Figure 434](#). Remove the mounting screw securing the inboard media guide located against the main frame and on top of the lower media guide shelf.

Figure 434 • Media Guides

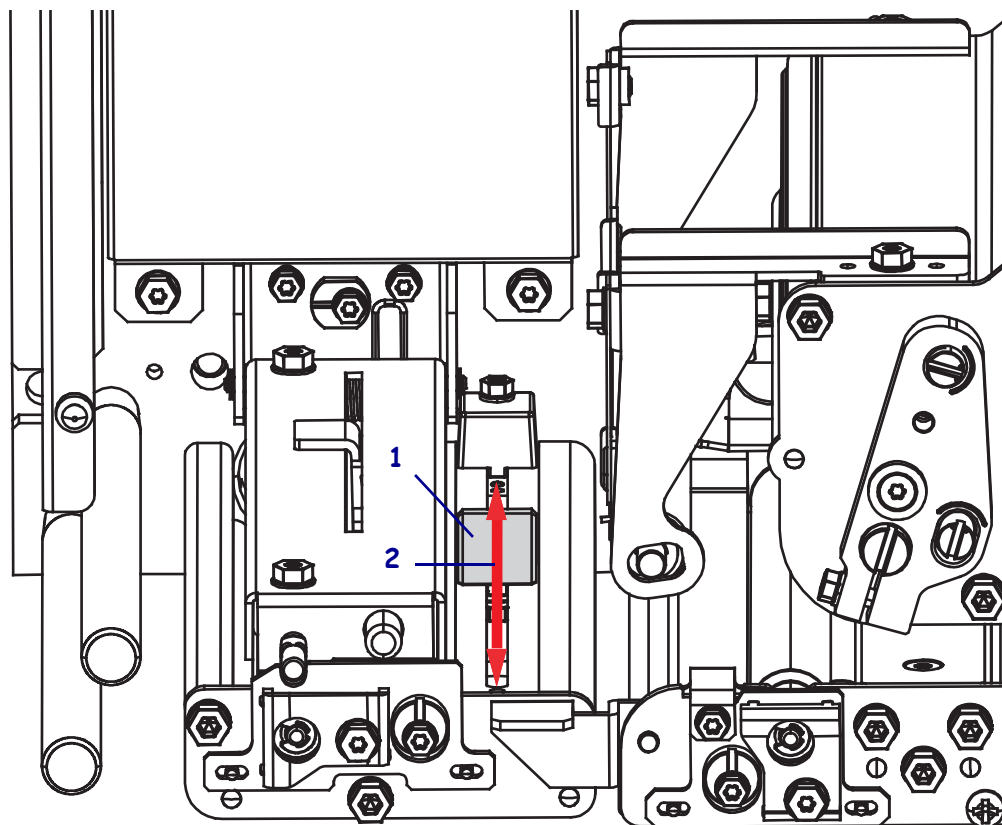


1	Inboard mounting screw
2	Inboard media guide
3	Access hole
4	Outboard media guides
5	Lower media guide shelf

2. Lift the media guide out of the print engine.
3. Close the media door.
4. Reposition the print engine with the media door face up.
5. Open the media door.

6. See [Figure 435](#). Slide the outboard media guide back until you can see and reach the mounting screw through the access hole in the lower media guide shelf.

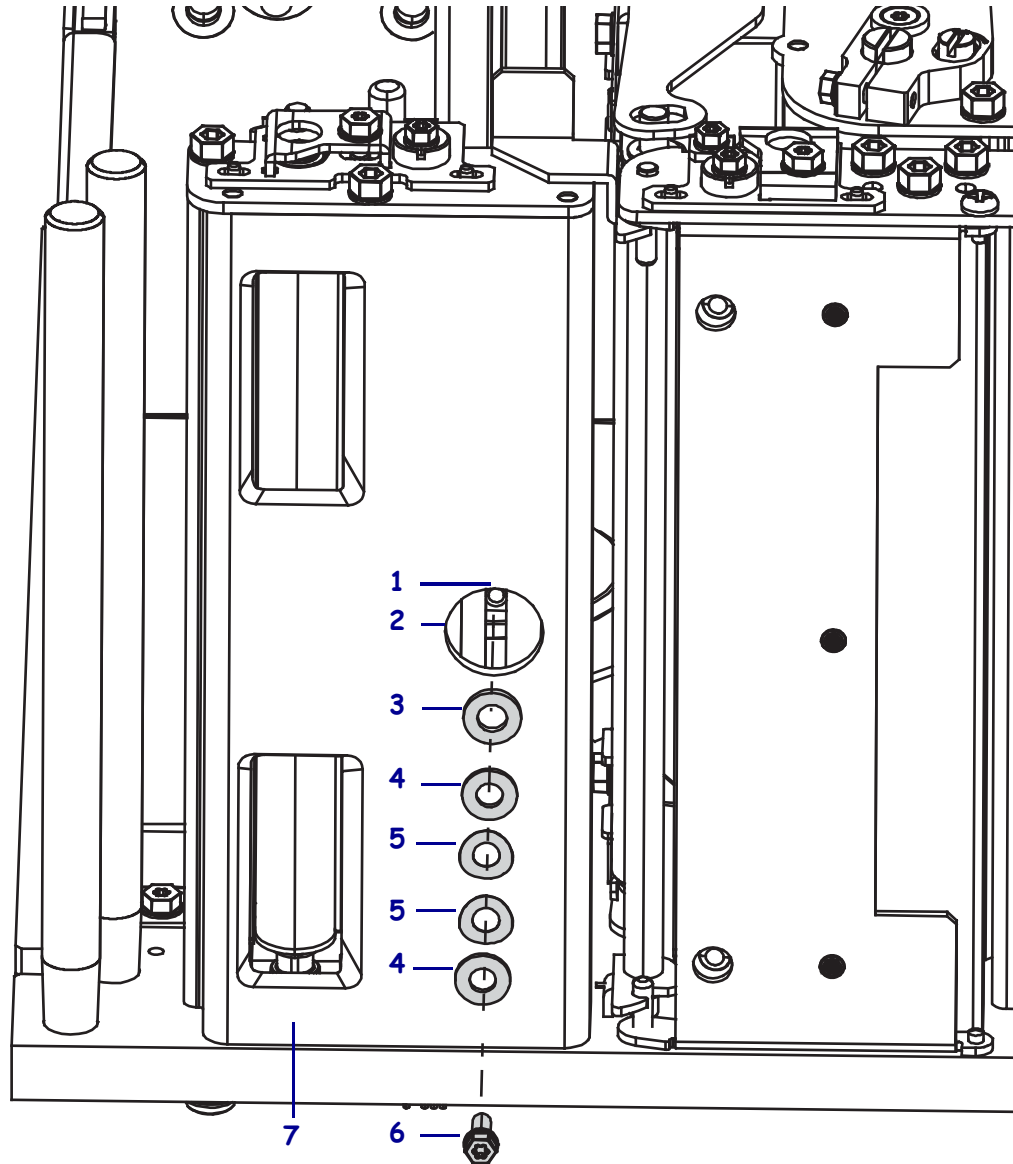
**Figure 435 • Outboard Media Guide
(Shown from Media Side)**



1	Outboard media guide
2	Red arrow denotes direction

7. See [Figure 436](#). Remove the mounting screw and washers securing the outboard media guide.

**Figure 436 • Outboard Media Guide
(Shown from Underside of Print Engine)**



1	Outboard mounting screw hole
2	Access hole
3	Nylon washer
4	Washer (2)
5	Curved washer (2)
6	Outboard mounting screw
7	Lower media guide shelf

8. Discard mounting screws, washers, and both media guides.

Replace the Media Guides

1. Insert the outboard media guide in the slot on top of the lower media guide shelf and push it about halfway toward the back. The media guide should be visible in the access hole on the bottom of the lower media guide shelf.

Ensure that the perpendicular end of the outboard media guide is facing the main frame.

2. Load the washers onto the screw in the following order:

- a. Flat washer
- b. Two curved washers
- c. Flat washer
- d. Nylon washer

3. Place the mounting screw and washers on the end of the Torx key.

Hold the screw and washers on the end of the Torx key as you insert them.

4. While holding the media guide in the slot with one hand, carefully insert the Torx key, mounting screw, and washers through the access hole (in the lower media guide shelf) and tighten the mounting screw.

To allow the media guide to slide, back the screw out about 1/4 turn.

5. Slide the outboard media guide back to the outboard edge of the lower media guide shelf.

6. Close the media door.

7. Reposition the print engine so the media door is facing the front.

8. Open the media door.

9. Using a Torx key, reinstall the inboard media guide and mounting screw against the main frame.

Close the Electronics Enclosure

1. Ensure that all wires are routed properly and are not causing any obstructions, and then carefully swing the electronics enclosure closed.
2. Adjust the wire clips for the parallel port until they are touching the parallel port.
3. Slide the electronics cover onto the print engine.
4. Reinstall the four electronics cover mounting screws.

Reinstall the Print Engine in the Applicator

1. To reinstall the print engine into the applicator, carefully place the keyhole on the center mounting bolt.



Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.

2. Replace the four corner mounting screws securing the print engine to the applicator.
3. Tighten the center mounting bolt.

Resume Printer Operation

1. Open the front cover.
2. **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.

Unlatch the printhead lever, reinstall the media and ribbon, and close and latch the printhead lever.

3. Ensure that the printhead toggles are positioned evenly across the width of the media.
4. Reconnect the AC power cord and interface cables.
5. Turn on (I) the print engine.

The installation is complete.



Peel Bracket Assembly Maintenance Kit

Installation Instructions

This kit includes the parts and documentation necessary to install the Peel Bracket Assembly Maintenance Kit in the ZE500™ Series print engines. Read these instructions thoroughly before installing this kit.



Caution • This installation must be performed by a qualified service technician.

Parts List

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

Figure 437 • Kit Contents

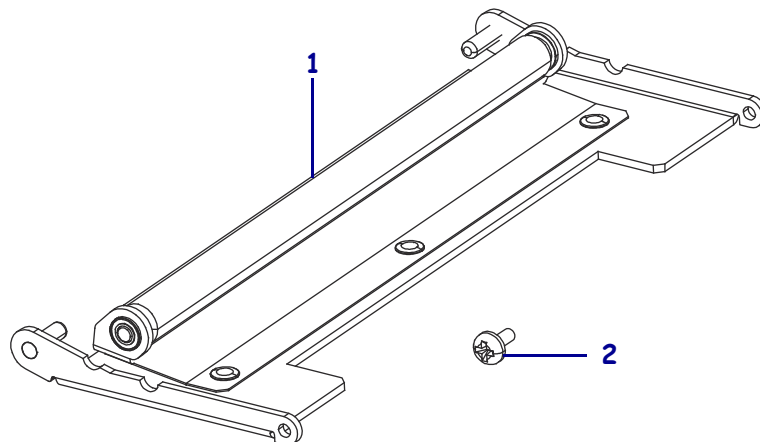


Table 67 • Parts List

✓	Item	Qty	Part Number	Description
	Ref	1	P1046696-062	ZE500-4 Peel Bracket Assembly Maintenance Kit, RH & LH
			P1046696-063	ZE500-6 Peel Bracket Assembly Maintenance Kit, RH & LH
	1	1	N/A	Assembly, Peel Bracket
	2	1	HW43863	Screw, M3 Special (Qty. of 25)

N/A = Not available as a separate part (listed for identification purposes only).

Tools Required



Tools • You need these tools to complete this procedure:

- Phillips Screwdriver Set
- Flat-blade Screwdriver Set
- Metric Hex Key (Allen Wrench) Set
- Torx Key Set
- Anti-Static Wriststrap and Mat

Remove Power and Data Cables, Ribbon, and Media



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

Connect yourself to an antistatic device.



2. **Caution** • Turn off (O) the print engine and disconnect it from the power source before performing the following procedure.

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


3. **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.

Open the media door, the printhead latch, and remove media and ribbon from the print engine.

4. Close the printhead latch, and then close the media door.

Remove Print Engine from Applicator

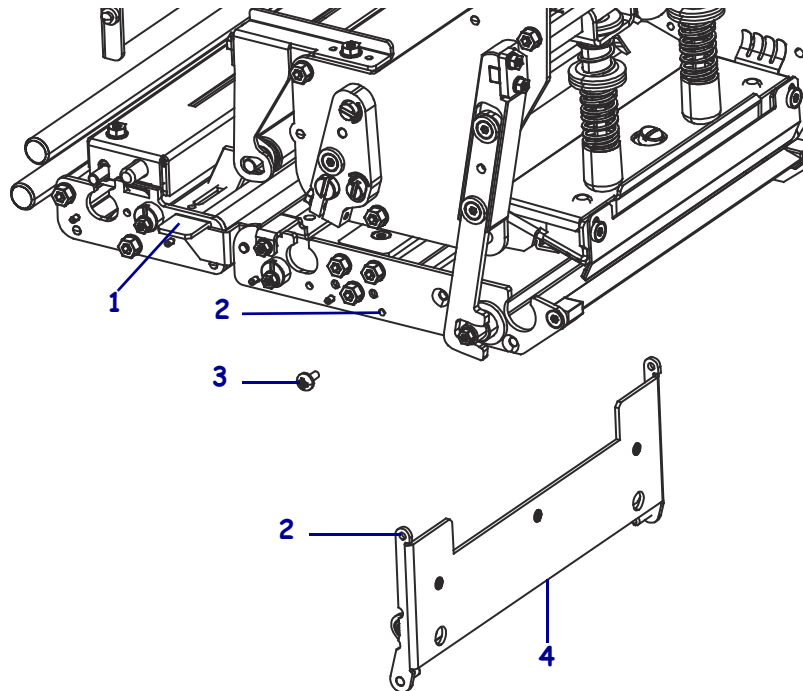
1. Does your applicator (or stand) permit open access to the rear of the print engine?

If you have an...	Then...
Open access	<p>You may swing the print engine open and work on it without removing the unit from the applicator.</p> <p>If you wish to remove the unit from the stand at any time, follow the instructions listed for the <i>Obstructed access</i> type applicator shown in this table.</p> <ol style="list-style-type: none"> a. Go to <i>Remove the Peel Bracket</i>.
Obstructed access	<p>You must remove the print engine from the applicator before you work on it.</p> <ol style="list-style-type: none"> a. Remove the four corner mounting screws securing the print engine to the applicator. b. Loosen the center mounting bolt, but do not remove it. <p> Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.</p> <ol style="list-style-type: none"> c. Lift the print engine off the center mounting bolt and place on a workbench.

Remove the Peel Bracket

1. Place the print engine with the media door facing up.
2. Lift up on the peel bracket latch.
3. See [Figure 438](#). Remove the mounting screw securing the peel bracket.

Figure 438 • Peel Bracket and Mounting Screw



1	Peel bracket latch
2	Peel bracket mounting hole
3	Peel bracket mounting screw
4	Peel bracket

4. Tilt the outboard end of the peel bracket out slightly and lift the inboard end up and off of the pivot pin.

Replace the Peel Bracket

1. With the knurled roller facing the bottom of the print engine, place the inboard end of the peel roller bracket on the pivot pin.
2. See [Figure 438](#). Align the mounting holes in the peel bracket and the platen roller support plate.
3. Reinstall the Phillips mounting screw to secure the peel bracket.
Push the bracket up and against the peel latch to close.
4. Replace the print engine in the upright position, if desired.

Reinstall the Print Engine in the Applicator

1. To reinstall the print engine into the applicator, carefully place the keyhole on the center mounting bolt.



Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.

2. Replace the four corner mounting screws securing the print engine to the applicator.
3. Tighten the center mounting bolt.

Resume Printer Operation

1. Open the front cover.
2. **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.

Unlatch the printhead lever, reinstall the media and ribbon, and close and latch the printhead lever.

3. Reconnect the AC power cord and interface cables.
4. Turn on (I) the print engine.

The installation is complete.

Roller Plates Maintenance Kit

Installation Instructions

This kit includes the parts and documentation necessary to install the Roller Plates Maintenance Kit in the ZE500™ Series Print Engines. Read these instructions thoroughly before installing this kit.

Parts List

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

Figure 439 • Kit Contents

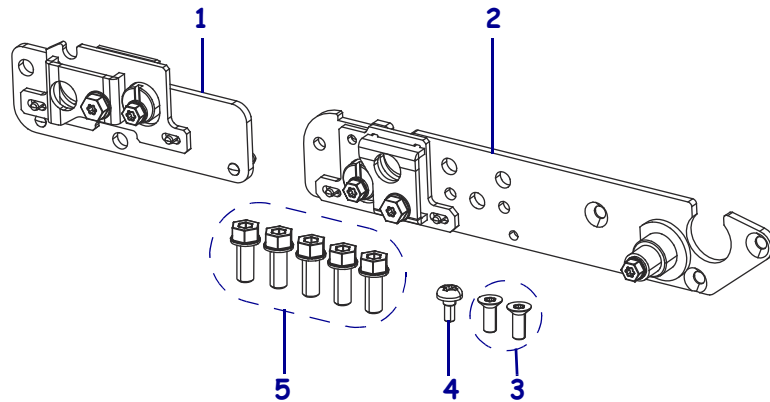


Table 68 • Parts List

✓	Item	Qty	Part Number	Description
	Ref	1	P1046696-070	Roller Plates Maintenance Kit RH
			P1046696-071	Roller Plates Maintenance Kit LH
	1	1	N/A	Plate, Pinch Roller Support
	2	1	N/A	Plate, Platen Roller Support
	3	2	N/A	Screw, M3 × 8 Fl Tx Ni
	4	1	HW43863	Screw, Pin (Qty. of 25)
	5	5	N/A	Screw, M4 × 10
N/A = Not available as a separate part (listed for identification purposes only).				

Tools Required



Tools • You need these tools to complete this procedure:

- Metric Hex Key (Allen Wrench) Set
- Phillips Screwdriver Set
- Safety Goggles
- Flat-blade Screwdriver Set
- Torx Key Set

Remove Power and Data Cables, Ribbon, and Media



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

Connect yourself to an antistatic device.



2. **Caution** • Turn off (O) the print engine and disconnect it from the power source before performing the following procedure.

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


3. **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.

Open the media door, the printhead latch, and remove media and ribbon from the print engine.

4. Close the printhead latch, and then close the media door.

Remove Print Engine from Applicator

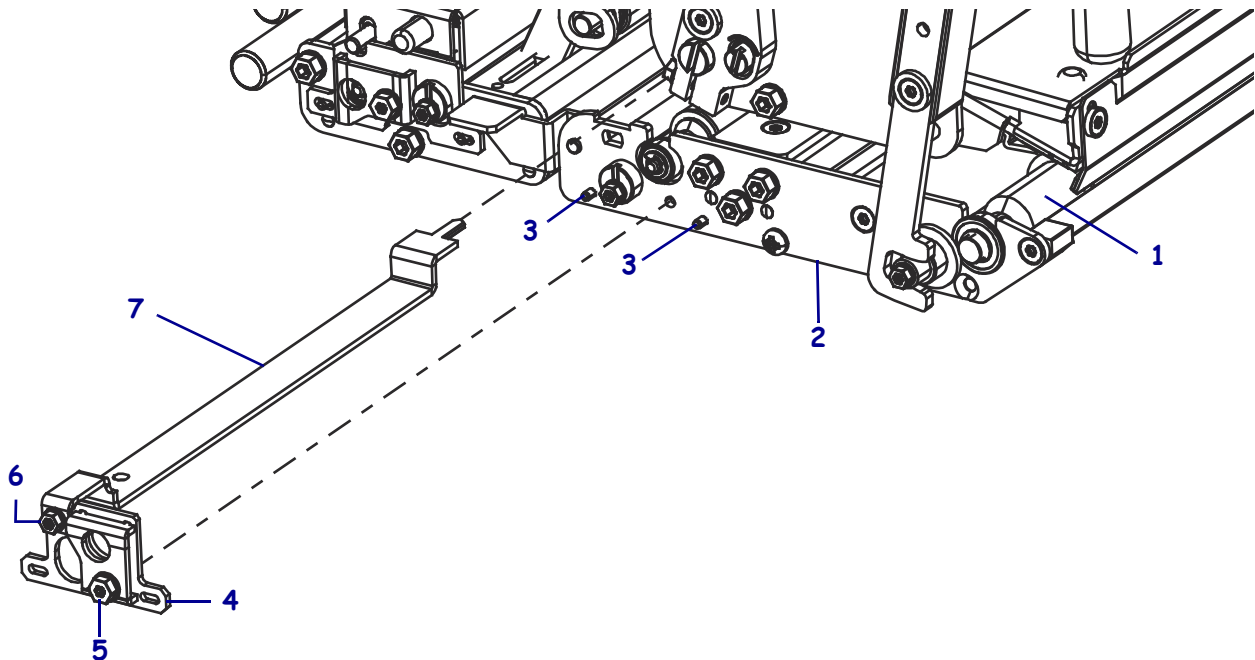
1. Does your applicator (or stand) permit open access to the rear of the print engine?

If you have an...	Then...
Open access	<p>You may swing the print engine open and work on it without removing the unit from the applicator.</p> <p>If you wish to remove the unit from the stand at any time, follow the instructions listed for the <i>Obstructed access</i> type applicator shown in this table.</p> <ol style="list-style-type: none"> a. Go to <i>Remove the Platen Roller Support Plate</i>.
Obstructed access	<p>You must remove the print engine from the applicator before you work on it.</p> <ol style="list-style-type: none"> a. Remove the four corner mounting screws securing the print engine to the applicator. b. Loosen the center mounting bolt, but do not remove it. <p> Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.</p> <ol style="list-style-type: none"> c. Lift the print engine off the center mounting bolt and place on a workbench.

Remove the Platen Roller Support Plate

1. Reposition the print engine with the media door face up.
2. Open the media door.
3. See [Figure 440](#). Loosen the peel roller cam plate mounting screw.
4. Pull the peel roller cam plate (with attached deflector plate) off of the two support pins on the platen roller support plate.

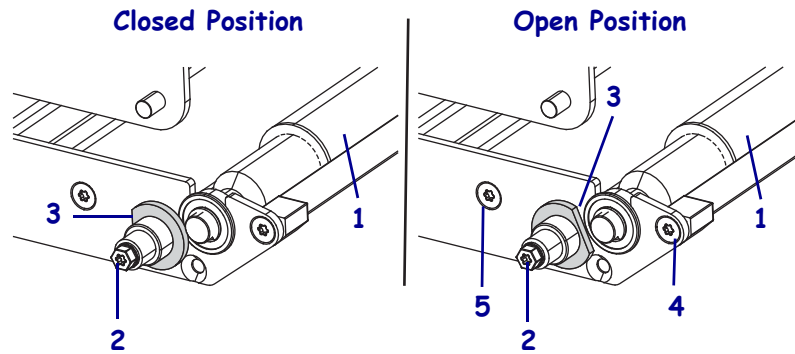
Figure 440 • Peel Roller Cam Plate



1	Platen roller
2	Platen roller support plate
3	Support pin (2)
4	Peel roller cam plate
5	Peel roller cam plate mounting screw
6	Deflector plate mounting screw
7	Peel roller deflector plate

5. Open the printhead latch.
6. See [Figure 441](#). Using a Torx key, loosen the screw securing the latch pin, and rotate the latch to the open position.

Figure 441 • Latch Pin



1	Platen roller
2	Latch pin screw
3	Latch pin (shaded)

7. Grasp the platen roller tightly and pull it toward the platen roller support plate to release the pin secured in the platen roller coupler.

The outboard bearing will extend past the end of the platen roller support plate.

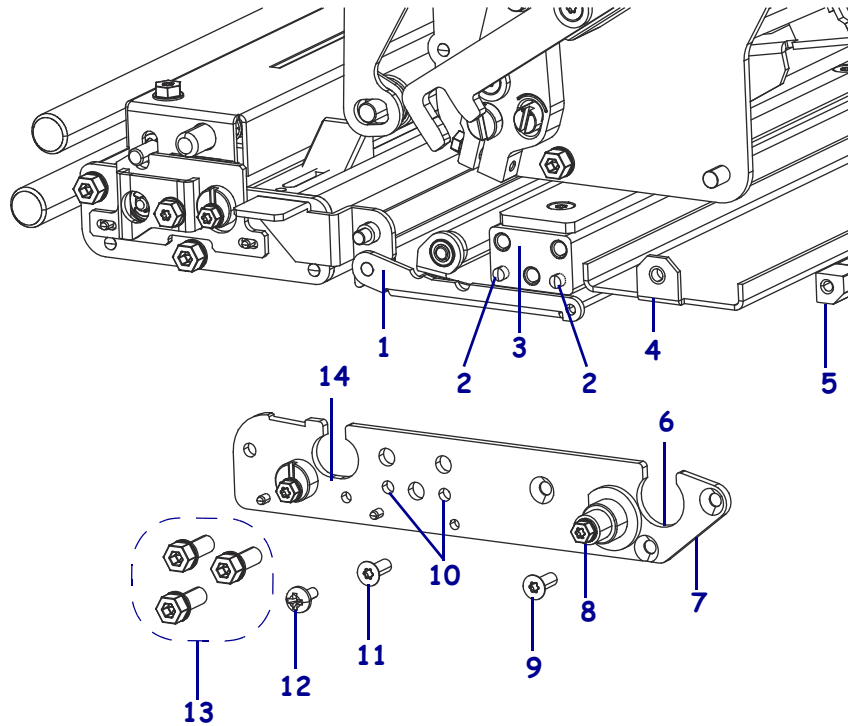


Note • You may have to turn the roller slightly to be able to remove the roller.

8. Lift the platen roller out of the print engine.

9. See [Figure 442](#). Using a Torx key, remove the mounting screw securing the peel bar.

Figure 442 • Platen Roller Support Plate



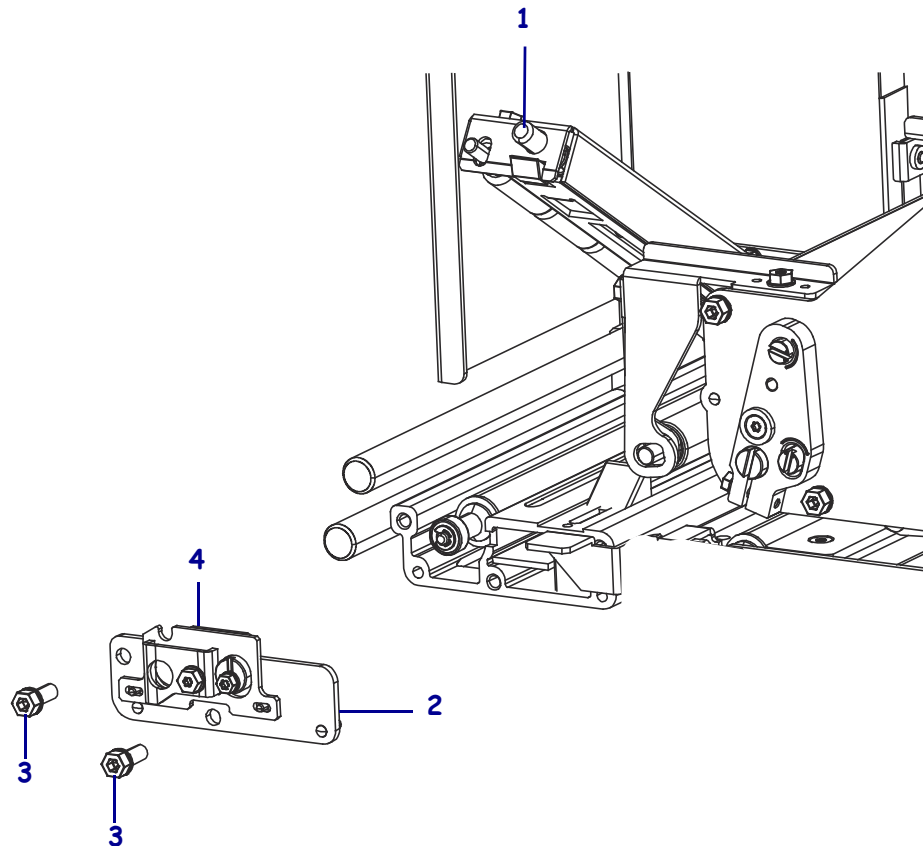
1	Pressure roller frame	8	Latch pin
2	Support pins	9	Peel bar mounting screw
3	Platen support plate mounting bar	10	Support pin locating holes
4	Printhead guard	11	Printhead guard mounting screw
5	Peel bar	12	Pressure roller frame pivot screw
6	Platen roller support plate	13	Platen support plate mounting bar mounting screws (3)
7	Platen roller cutout	14	Peel roller cutout

10. Using a Torx key, remove the mounting screw securing the printhead guard. Lower the guard away from the unit.
11. Remove the Phillips pivot screw securing the pressure roller frame. The bracket may drop out. If it does not, tilt the front and lift the back off of the pivot pin.
12. Remove the three hex mounting screws securing the platen roller support plate to the platen support plate mounting bar.
13. While holding the peel roller latch in place, gently lift the platen roller support plate away from the mounting bar support pins.
14. Lift the peel roller latch and its spring out of the print engine.

Remove the Pinch Roller Support Plate

1. See [Figure 443](#). Open the upper pinch roller assembly by pressing on the release button located just above the pinch roller cam plate.
2. To remove the pinch roller support plate, remove the two mounting screws.
The pinch roller support plate is designed to be removed with the pinch roller cam plate attached.
3. Gently lift the pinch roller support plate away from the roller plate support pins.

Figure 443 • Pinch Roller Support Plate



1	Upper pinch roller release button
2	Pinch roller support plate
3	Pinch roller mounting screw (2)
4	Pinch roller cam plate

Replace the Platen Roller Support Plate



- Caution** • Wear protective eyewear when installing or removing E-rings, C-clips, snap rings, springs, and mounting buttons. These are under tension and could fly off.

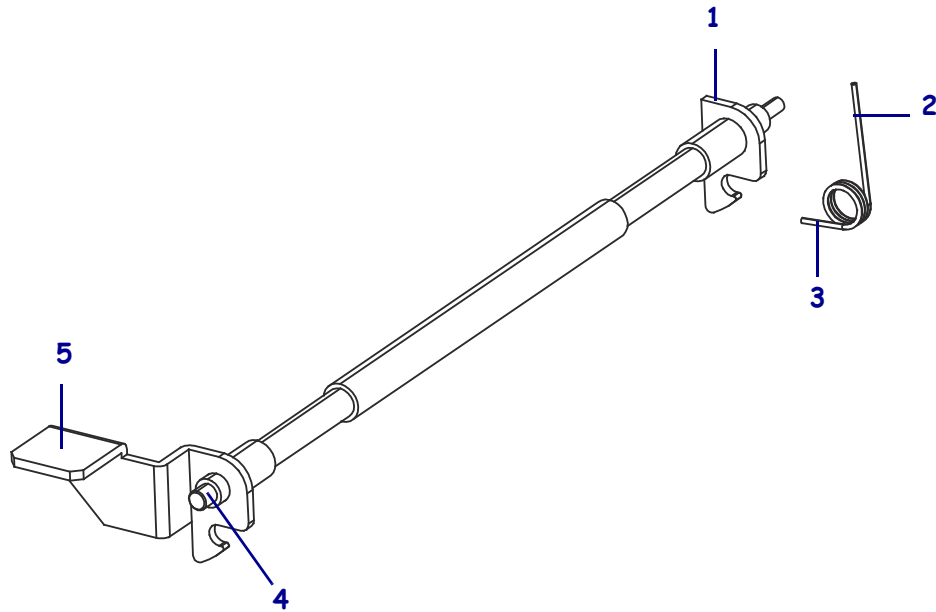
See [Figure 444](#). Leading with the short leg of the spring, slide the spring onto the peel roller shaft.

- Insert the short spring leg into the catch tab on the inboard end of the latch.
- Holding the spring in place, insert the inboard end of the latch in the small hole in the main frame.



Note • Ensure that the long leg of the spring is resting against the ribbon sensor bracket on the main frame wall.

Figure 444 • Peel Roller Latch and Spring



1	Inboard end of the peel roller latch
2	Long leg of the latch spring
3	Short leg of the latch spring
4	Peel roller shaft
5	Peel roller latch

- See [Figure 442](#). Align the platen roller support plate with the peel roller latch shaft and the platen support plate mounting bar support pins and secure with the three hex mounting screws.
- With the knurled roller facing the bottom of the print engine, install the pressure roller frame onto the main frame pivot pin and secure the frame using the Phillips pivot screw through the platen roller support plate.

6. Leave the pressure roller frame open for now. Swing it all the way up against the bottom of the print engine to keep the frame out of the way, but leave the area accessible.
7. Insert the two pins on the printhead guard into the main frame and secure in place with the Torx mounting screw.
8. Using a Torx key, install the mounting screw to secure the peel bar.
9. Starting with the pin end of the platen roller, align the pin with the slot in the platen roller coupler.
10. See [Figure 442](#). Lower the other end of the platen shaft into the platen roller cutout on the platen roller support plate.
The bearing will extend out past the platen roller support plate.
11. Push the shaft toward the platen roller coupler to fully seat the platen shaft.
You will hear a click when the pin is seated correctly or turn the roller slightly to confirm that the roller is firmly seated.



Note • Ensure that the platen roller bearing is completely seated in the cam cutout.

12. See [Figure 441](#). Turn the latch pin to the closed position and tighten the mounting screw to hold it in position.
13. Close the printhead latch.
14. See [Figure 440](#). Insert the tab on the end of the deflector plate into the slot on the main frame.
15. Align the cam plate with the two support pins on the platen roller support plate and tighten the center mounting screw.



Note • Ensure that the peel roller bearing is completely seated in the cam cutout.

16. Close the pressure roller mounting frame.

Replace the Pinch Roller Plate

1. See [Figure 443](#). Align the pinch roller support plate with the roller plate support pins.
2. Install the two mounting screws.
3. Close the upper pinch roller assembly.
4. Reposition the print engine to the upright position.

Close the Electronics Enclosure

1. Ensure that all wires are routed properly and are not causing any obstructions, and then carefully swing the electronics enclosure closed.
2. Adjust the wire clips for the parallel port until they are touching the parallel port.
3. Slide the electronics cover onto the print engine.
4. Reinstall the four electronics cover mounting screws.

Reinstall the Print Engine in the Applicator

1. To reinstall the print engine into the applicator, carefully place the keyhole on the center mounting bolt.



Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.

2. Replace the four corner mounting screws securing the print engine to the applicator.
3. Tighten the center mounting bolt.

Resume Printer Operation

1. Open the front cover.
2. **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.

Unlatch the printhead lever, reinstall the media and ribbon, and close and latch the printhead lever.

3. Ensure that the printhead toggles are positioned evenly across the width of the media.
4. Reconnect the AC power cord and interface cables.
5. Turn on (I) the print engine.

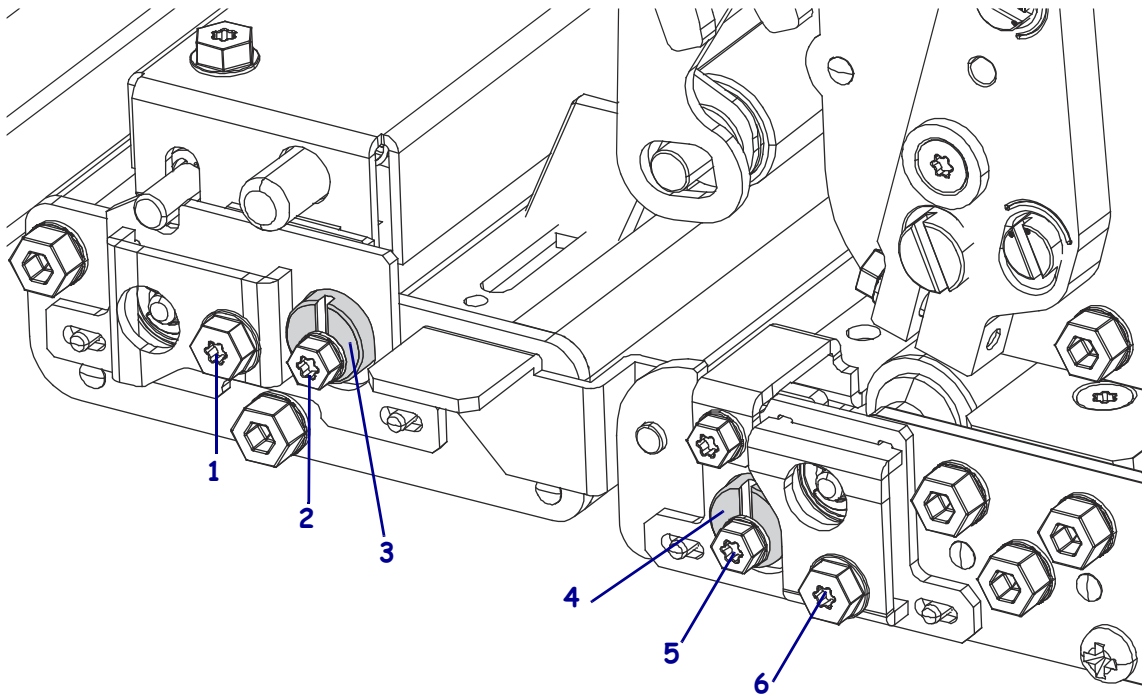
The installation is complete.

Adjust Media Tracking

1. Check the media tracking by performing a PAUSE Self-Test.
2. Adjust the media tracking, if necessary.
3. Which adjustments are necessary?

If you...	Then...
<ul style="list-style-type: none"> • Removed or replaced both of the roller plates 	<ul style="list-style-type: none"> • Perform the <i>Skew Adjustments</i>. • Perform the <i>Media Tension Adjustment across the Peel Bar</i>.
<ul style="list-style-type: none"> • Replaced the upper pinch roller • Replaced the media guide shelf or media sensor • Removed or replaced the pinch roller plate 	<ul style="list-style-type: none"> • Perform the <i>Skew Adjustments</i>. • Perform the <i>Pressure Balance Adjustment (between the Upper and Lower Pinch Rollers)</i>.

Figure 445 • Pinch and Peel Cams

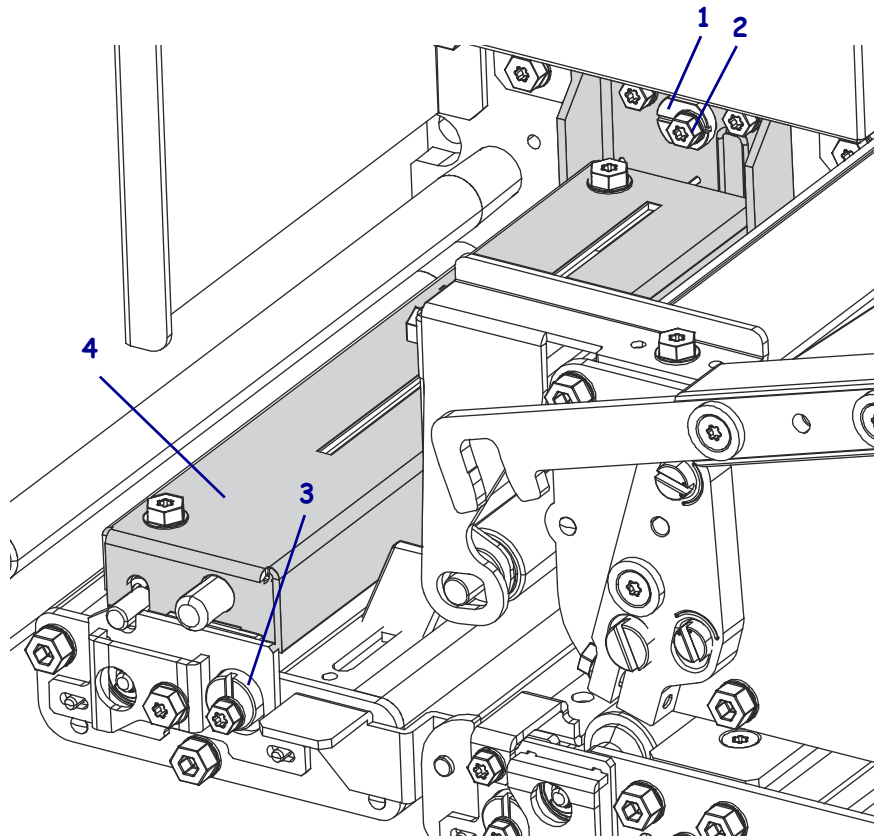


1	Pinch cam plate center mounting screw
2	Pinch cam locking screw
3	Pinch cam (shaded)
4	Peel cam (shaded)
5	Peel cam locking screw
6	Peel cam plate center mounting screw



Note • The pinch and peel cams are in the neutral position when the slot is vertical.

Figure 446 • Upper Segmented Pinch Roller



1	Upper pinch roller cam
2	Upper pinch roller cam locking screw
3	Pinch roller cam
4	Upper segmented pinch roller (shaded)



Note • The steps in these procedures are for the right-hand (RH) print engine. Steps for a left-hand (LH) print engine may be slightly different.

Skew Adjustments

In a RH print engine, perform the following steps:

1. See [Figure 445](#). Loosen the pinch cam plate center mounting screw and the pinch cam locking screw.
2. Using a flat-blade screwdriver, insert the screwdriver into the slot in the pinch cam.
3. Rotate the pinch cam to move the media.
 - Rotate *clockwise* to move the media closer to the inboard (main frame) side of the print engine.
 - Rotate *counterclockwise* to move the media closer to the outboard (media door) side of the print engine.
4. Tighten the pinch cam plate center mounting screw and the pinch cam locking screw.

Pressure Balance Adjustment (between the Upper and Lower Pinch Rollers)

In a RH print engine, perform the following steps:



Note • The upper pinch cam is in the neutral position when the slot is horizontal.

1. See [Figure 446](#). Loosen the upper pinch cam locking screw.
2. Using a flat-blade screwdriver, insert the screwdriver into the slot in the upper pinch cam.
3. Rotate the upper pinch cam to move the media.
 - Rotate *clockwise (upward)* to move the media closer to the outboard (media door) side of the print engine.
 - Rotate *counterclockwise (downward)* to move the media closer to the inboard (main frame) side of the print engine.
4. Tighten the pinch cam plate center mounting screw and the pinch cam locking screw.

The adjustments are complete.

Media Tension Adjustment across the Peel Bar

In a RH print engine, perform the following steps:

1. See [Figure 445](#). Loosen the peel cam plate center mounting screw and the peel cam locking screw.
2. Using a flat-blade screwdriver, insert the screwdriver into the slot in the peel cam.
3. Rotate the peel cam to tension the edge of the media.
 - Rotate *clockwise* to tension the inboard edge of the media (closer to the main frame side of the print engine).
 - Rotate *counterclockwise* to tension the outboard edge of the media (closer to the media door side of the print engine).
4. Hold the peel cam plate in place while tightening the peel cam plate center mounting screw and the peel cam locking screw.

The adjustments are complete.



Notes • _____

Exterior Replacements

Contents

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Chassis Latch Maintenance Kit	855
Electronics Cover Screws Maintenance Kit	863

Figure 447 • Exterior Overview

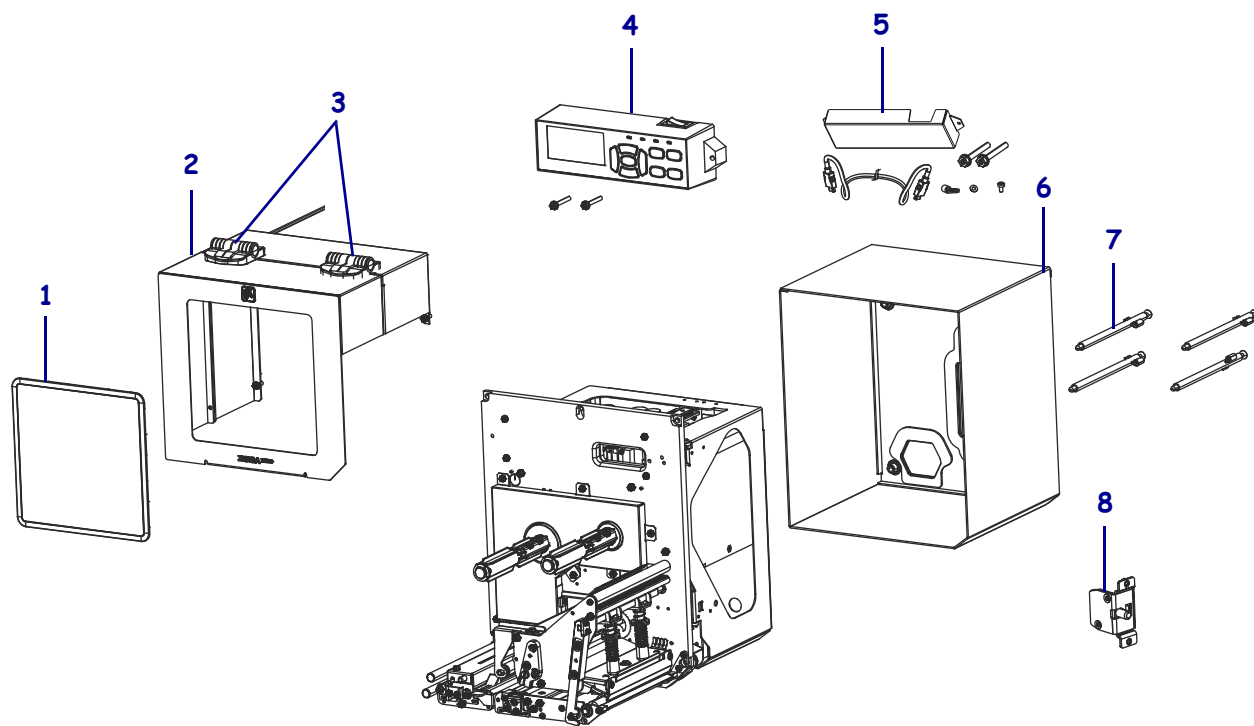


Table 69 • Exterior Overview

Item	Part Number	Description
1	P1046696-080	ZE500 Series Media Cover Window Maintenance Kit, see Table 70 on page 801 .
2	P1046696-076	ZE500-4 Media Cover Maintenance Kit, RH, see Table 70 on page 801 .
	P1046696-077	ZE500-4 Media Cover Maintenance Kit, LH, see Table 70 on page 801 .
	P1046696-078	ZE500-6 Media Cover Maintenance Kit, RH, see Table 70 on page 801 .
	P1046696-079	ZE500-6 Media Cover Maintenance Kit, LH, see Table 70 on page 801 .
3	P1046696-081	ZE500 Series Media Cover Hinges Maintenance Kit, see Table 70 on page 801 .
4	P1046696-082	ZE500 Series Control Panel Maintenance Kit, see Table 70 on page 801 .
5	P1046696-002	ZE500 Series Deported Control Panel Hardware, see Table 70 on page 801 .
6	P1046696-083	ZE500 Series Electronics Cover Maintenance Kit, RH, see Table 70 on page 801 .
	P1046696-084	ZE500 Series Electronics Cover Maintenance Kit, LH, see Table 70 on page 801 .
7	P1046696-085	ZE500 Series Electronics Cover Screws Maintenance Kit, see Table 70 on page 801 .
8	P1046696-087	ZE500 Series Chassis Latch Maintenance Kit, see Table 70 on page 801 .
N/S	P1046696-086	ZE500 Series Electronics Opening Covers*, see Table 70 on page 801 .
N/S = Not Shown		
*Note: No installation instructions available.		

Figure 448 • Exterior Kits

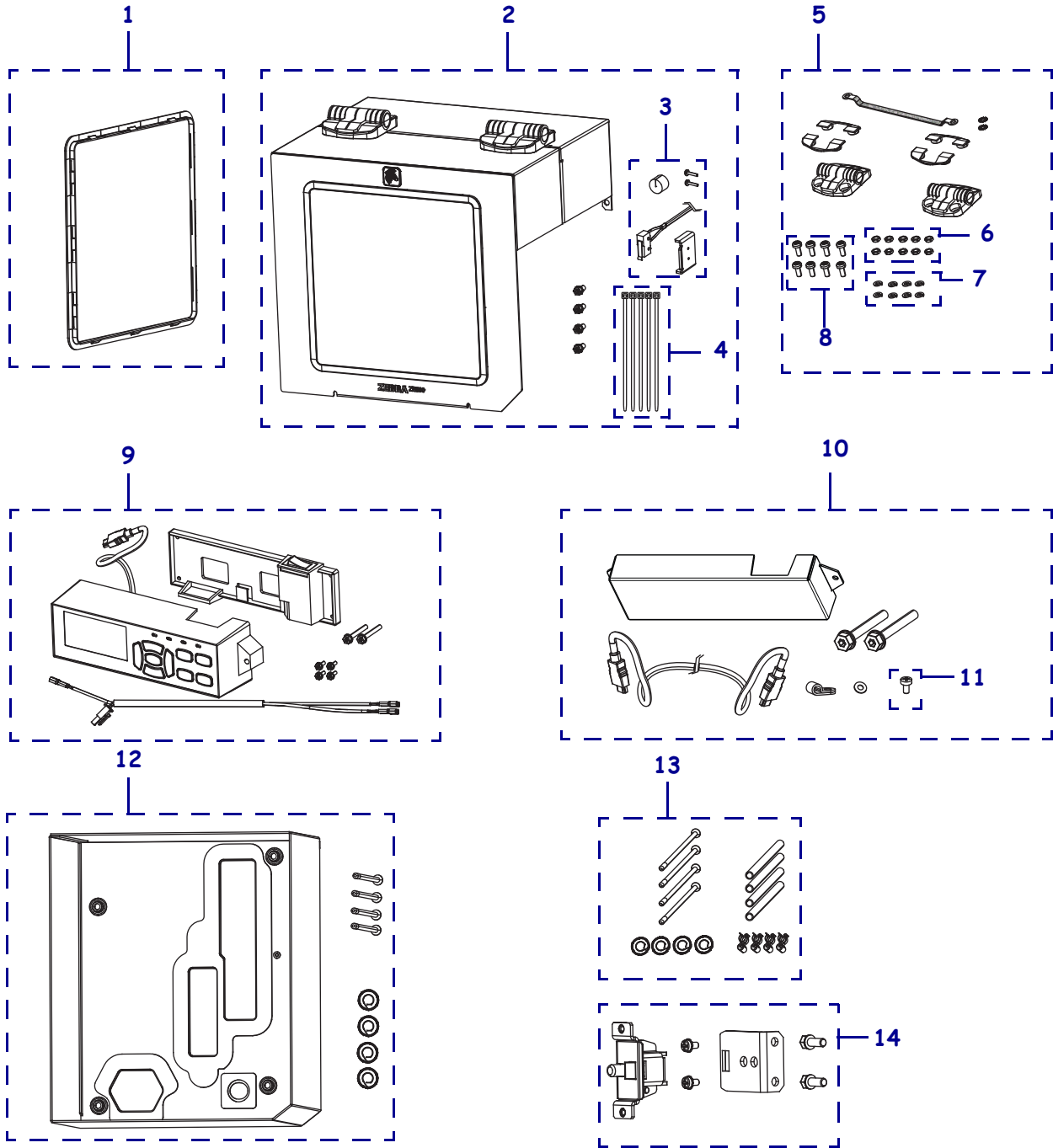


Table 70 • Exterior Kits Parts List

Item	Part Number	Description
1	P1046696-080	ZE500 Series Media Window Maintenance Kit See Printhead Maintenance Kit on page 103 .
2	P1046696-076	ZE500-4 Media Door Maintenance Kit, RH See Media Door Maintenance Kit on page 825 .
	P1046696-077	ZE500-4 Media Door Maintenance Kit, LH See Media Door Maintenance Kit on page 825 .
	P1046696-078	ZE500-6 Media Door Maintenance Kit, RH See Media Door Maintenance Kit on page 825 .
	P1046696-079	ZE500-6 Media Door Maintenance Kit, LH See Media Door Maintenance Kit on page 825 .
3	P1046696-032	Switch, Door-Open
4	HWQ06020	Cable Tie, 0.09 × 3.62 (sold in quantities of 20)
5	P1046696-081	ZE500 Series Media Cover Hinges Maintenance Kit See Media Door Hinges Maintenance Kit on page 839 .
6	HW44055	Nut (Qty. of 25)
7	HW32410	Washer, Split (Qty. of 10)
8	HW43971	Screw (Qty. of 25)
9	P1046696-082	ZE500 Series Control Panel Maintenance Kit See Control Panel Maintenance Kit on page 802 .
10	P1046696-002	ZE500 Series Deported Control Panel Maintenance Kit See Deported Control Panel Option Kit on page 814 .
11	HW43968	Screw, M3 × 0.5 × 6 Pn Ph Zn (Qty. of 25)
12	P1046696-083	ZE500 Series Electronics Cover Maintenance Kit, RH See Electronics Cover Maintenance Kit on page 848 .
	P1046696-084	ZE500 Series Electronics Cover Maintenance Kit, LH See Electronics Cover Maintenance Kit on page 848 .
13	P1046696-085	ZE500 Series Electronics Cover Screws Maintenance Kit See Electronics Cover Screws Maintenance Kit on page 863 .
14	P1046696-087	ZE500 Series Chassis Latch Maintenance Kit See Chassis Latch Maintenance Kit on page 855 .
N/S	P1046696-086	ZE500 Series Electronics Opening Covers*
N/S = Not Shown		
*Note: No installation instructions available.		

Control Panel Maintenance Kit

Installation Instructions

This kit includes the parts and documentation necessary to install the Control Panel in the ZE500™ Series Print Engines. Read these instructions thoroughly before installing this kit.



Caution • This installation must be performed by a qualified service technician.

Parts List

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

Figure 449 • Kit Contents

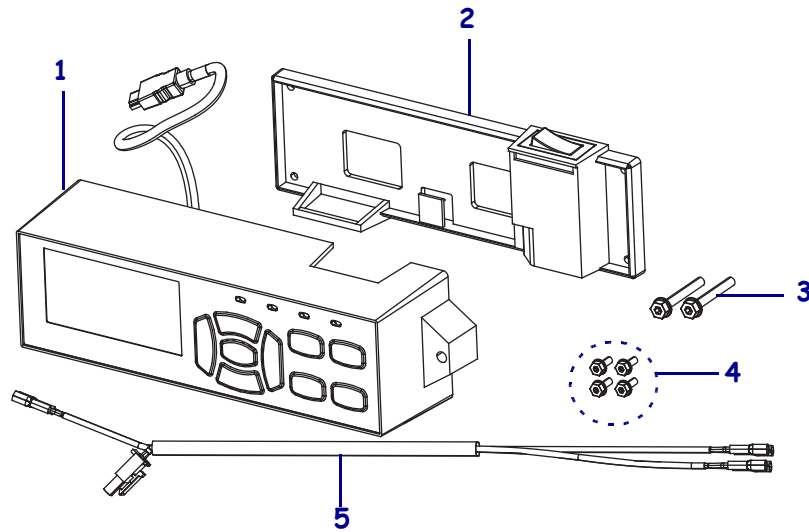


Table 71 • Parts List

✓	Item	Qty	Part Number	Description
	Ref	1	P1046696-082	Control Panel Maintenance Kit
	1	1	N/A	Module, Display
	2	1	N/A	Switch, Rocker Panel and Power
	3	2	N/A	Screw, M4 × 30 Hx So Zn
	4	4	N/A	Screw, M3 × 0.5 × 6 (Qty. of 25)
	5	1	N/A	Cable, Power Switch
N/A = Not available as a separate part (listed for identification purposes only).				

Tools Required



Tools • You need these tools to complete this procedure:

- Phillips Screwdriver Set
- Flat-blade Screwdriver Set
- Metric Hex Key (Allen Wrench) Set
- Antistatic Wriststrap and Mat
- Torx Key Set

Remove Power and Data Cables



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

Connect yourself to an antistatic device.




2. **Caution** • Turn off (O) the print engine and disconnect it from the power source before performing the following procedure.

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

Remove Print Engine from Applicator

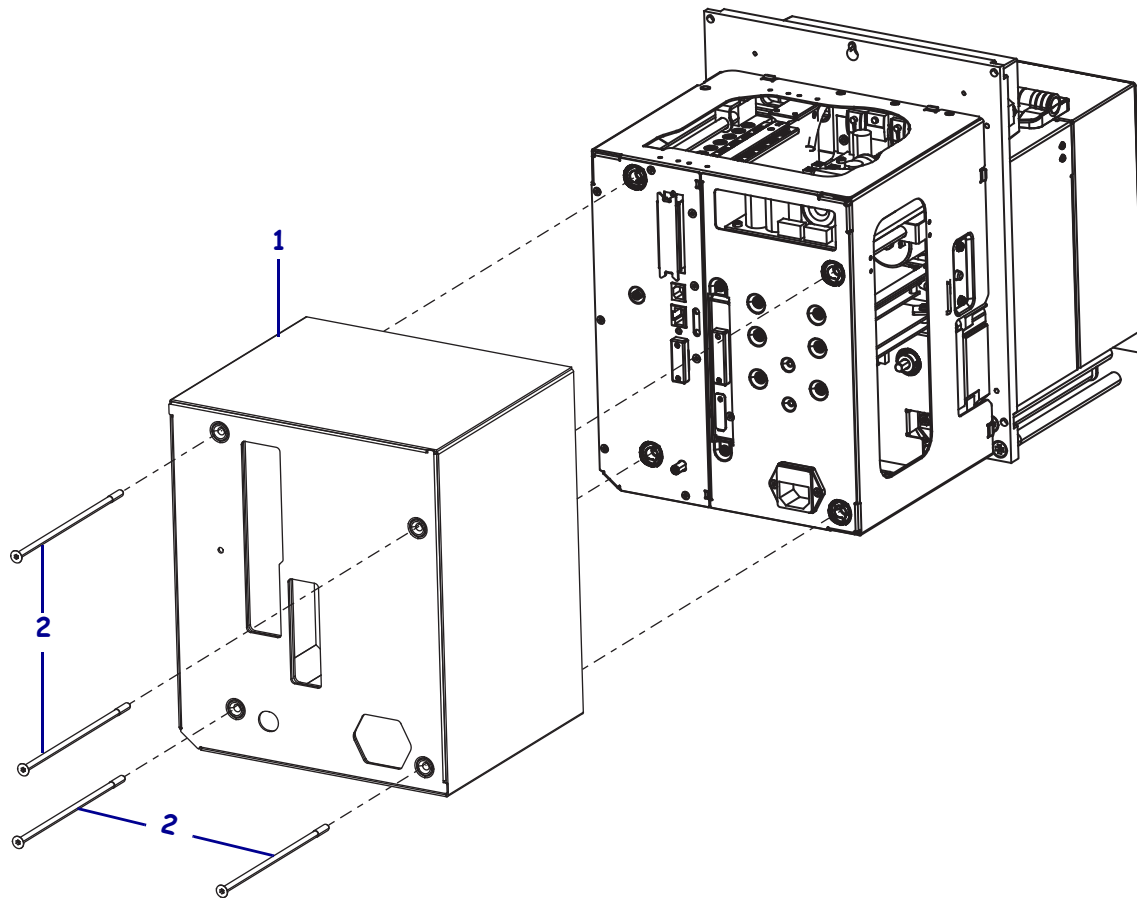
1. Does your applicator (or stand) permit open access to the rear of the print engine?

If you have an...	Then...
Open access	<p>You may swing the print engine open and work on it without removing the unit from the applicator.</p> <p>If you wish to remove the unit from the stand at any time, follow the instructions listed for the <i>Obstructed access</i> type applicator shown in this table.</p> <ol style="list-style-type: none"> a. Go to <i>Remove the Electronics Cover</i>.
Obstructed access	<p>You must remove the print engine from the applicator before you work on it.</p> <ol style="list-style-type: none"> a. Remove the four corner mounting screws securing the print engine to the applicator. b. Loosen the center mounting bolt, but do not remove it. <p> Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.</p> <ol style="list-style-type: none"> c. Lift the print engine off the center mounting bolt and place on a workbench.

Remove the Electronics Cover

1. See [Figure 450](#). Remove the four long mounting screws securing the electronics cover.

Figure 450 • Electronics Cover



1	Electronics cover
2	Electronics cover mounting screws (4)

2. Slide the electronics cover off of the print engine.

Open the Electronics Enclosure

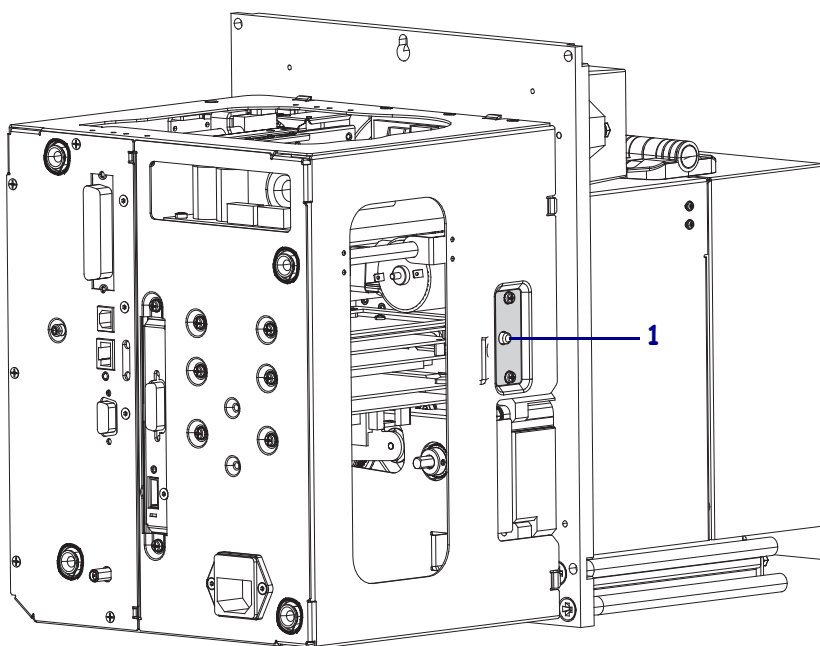
1. See [Figure 451](#). Locate the latch.



Note • For right-hand models, the latch is on the right side when looking from the back of the print engine. For left-hand models, the latch is on the left side.

2. Press the latch and swing the electronics enclosure open.

Figure 451 • Locate the Latch

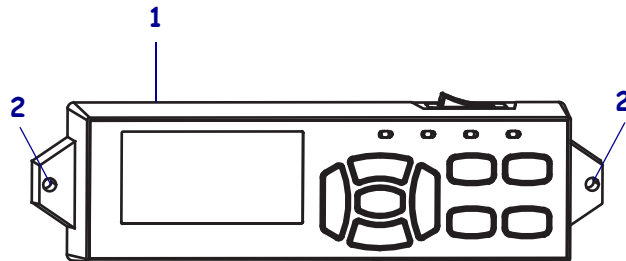


1	Latch
---	-------

Remove the Control Panel

1. See [Figure 452](#). Remove the two mounting screws securing the control panel.

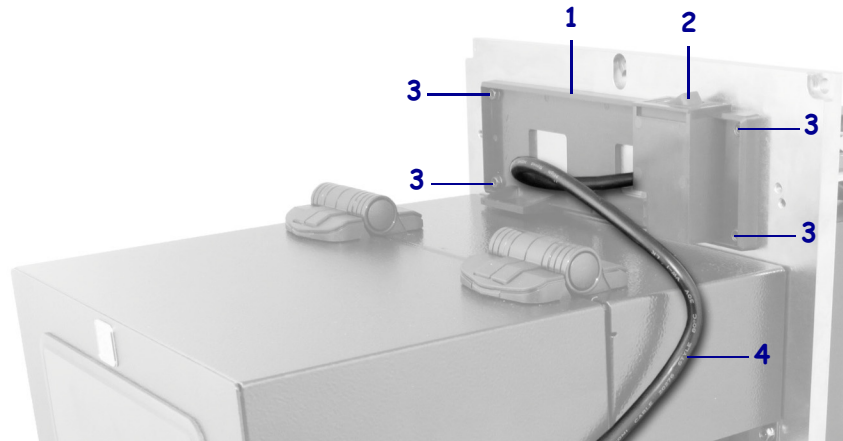
Figure 452 • Front View of Control Panel



1	Control panel
2	Control panel mounting screws (2)

2. See [Figure 453](#). Remove the four mounting screws securing the control panel bracket to the main frame.

Figure 453 • Front View of Control Panel Bracket

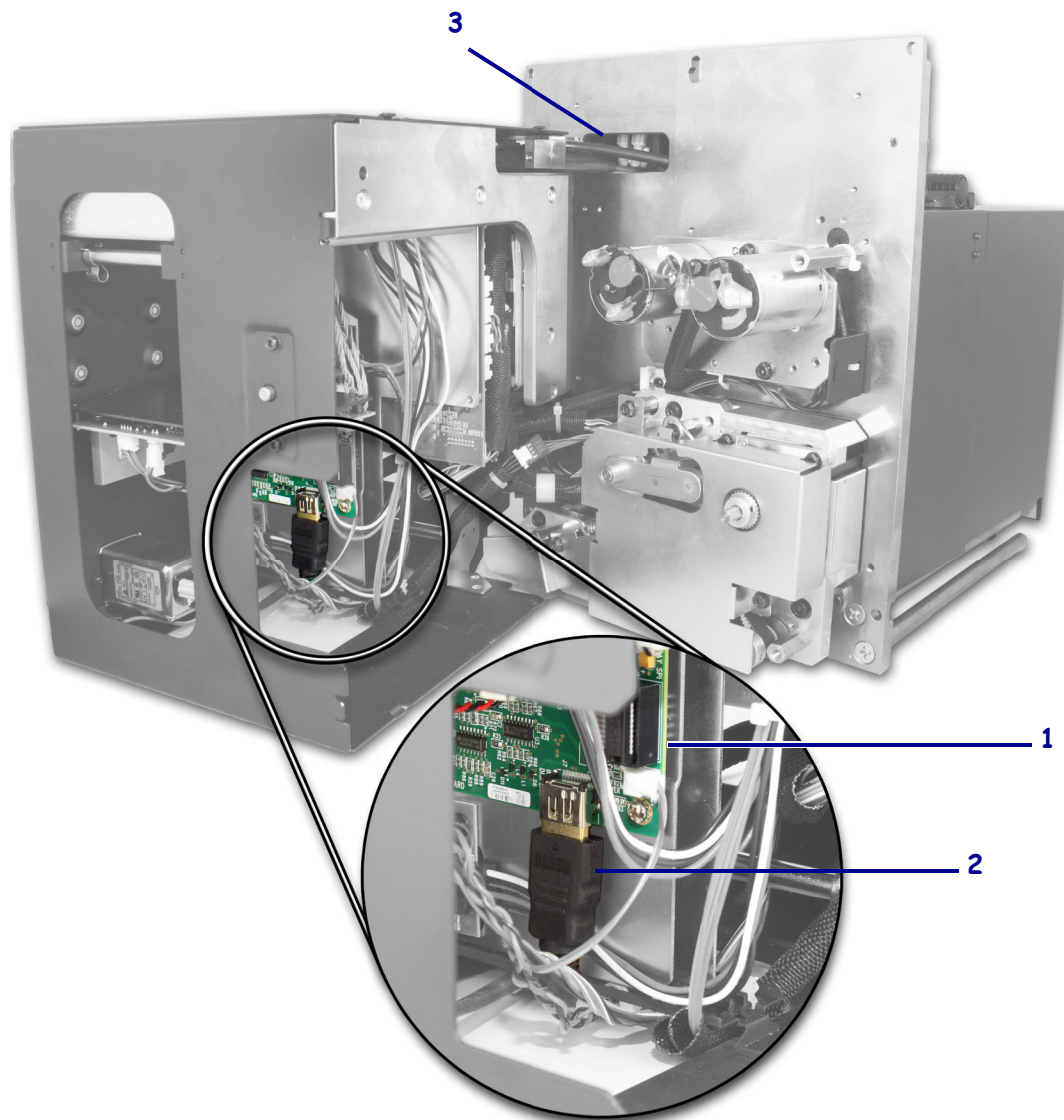


1	Control panel bracket
2	Power switch
3	Control panel bracket mounting screws (4)
4	HDMI cable

Remove the Control Panel Cables

1. See [Figure 454](#). Disconnect the control panel cable from the internal HDMI connector on the applicator interface board.

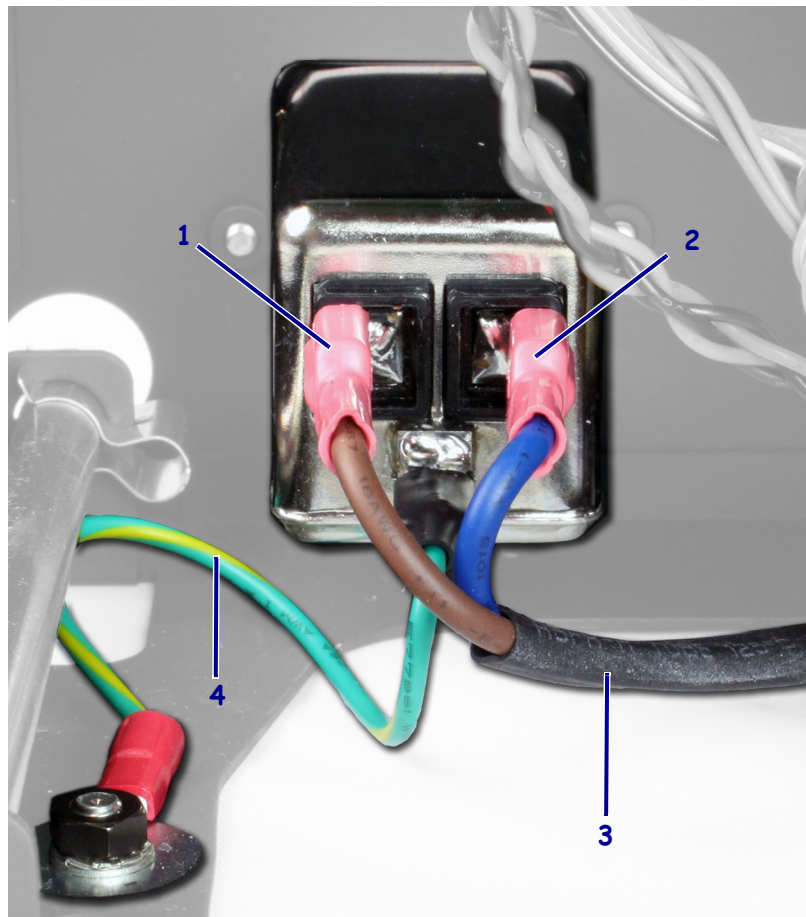
Figure 454 • HDMI Cable Routing Inside of the Print Engine



1	Applicator interface board
2	HDMI internal connector (used with the control panel)
3	Large hole in main frame

2. Trace the HDMI cable to the upper electronics enclosure hinge. Remove the cable from any flexible conduit or cable ties securing it.
3. Ease the HDMI cable out of the electronics enclosure.
4. See [Figure 455](#). Disconnect the power switch cable from the power entry module.

Figure 455 • Power Entry Module and Cable Connections



1	Brown wire (Line)
2	Blue wire (Neutral)
3	Power switch cable
4	Green/yellow wire (Earth ground)

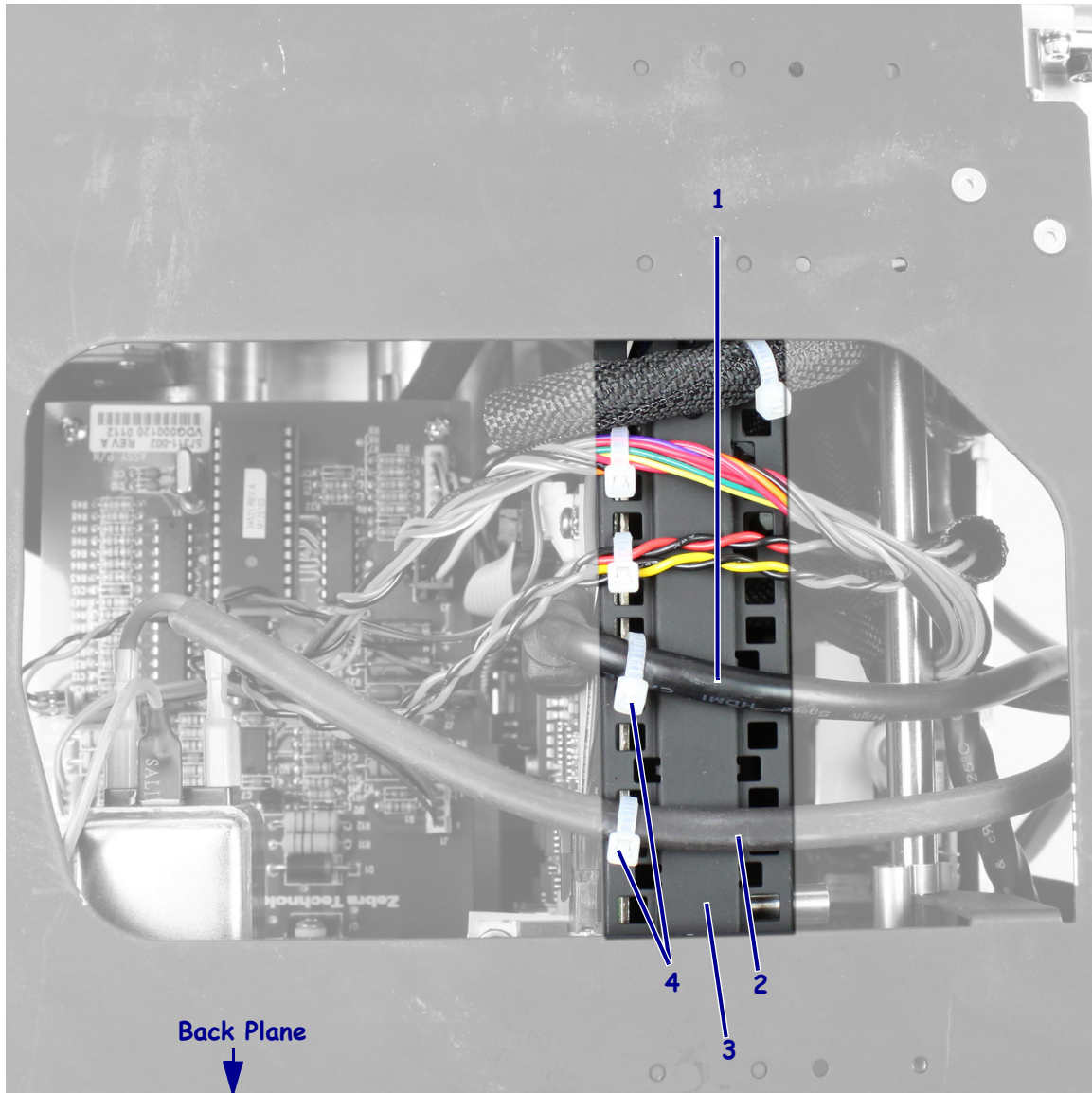
5. Trace the power switch cable to the upper electronics enclosure hinge. Remove the cable from any flexible conduit or cable ties securing it.
6. Ease the power switch cable out of the electronics enclosure.
7. See [Figure 454](#). Lift the control panel and bracket off of the front of the print engine and pull the two cables through the large hole in the main frame.

Replace the Control Panel

1. See [Figure 454](#). Place the control panel bracket on top of the media door and route the attached power switch cable through the large hole in the main frame.
2. See [Figure 453](#). Align the control panel bracket with the mounting holes in the main frame.
3. Reinstall the four mounting screws to secure the control panel bracket.
4. See [Figure 454](#). Place the control panel on the top of the media door and route the attached HDMI cable through the large hole in the main frame.
5. Align the two control panel mounting holes with the main frame.
6. Reinstall the two mounting screws to secure the control panel.
7. Reposition the print engine on its side (latch side down).
8. See [Figure 454](#). Thread the HDMI and power switch cables through the electronics enclosure.
The cables are routed down the inside of the electronics chassis, across the bottom, and under the applicator interface board.
9. See [Figure 454](#). Connect the HDMI cable to J7 on the applicator interface board.

- See [Figure 456](#). Secure the HDMI cable to the bottom rail of the electronics chassis with a cable tie and trim the excess.

**Figure 456 • Bottom Chassis Rail
(View from Under the Print Engine)**



1	HDMI cable
2	Power switch cable
3	Bottom chassis rail
4	Cable ties (2)

11. See [Figure 457](#). Connect the power switch cable to the two posts on the power entry module as follows.
 - a. Insert the blue wire connector on the right tab.
 - b. Insert the brown wire connector on the left tab.

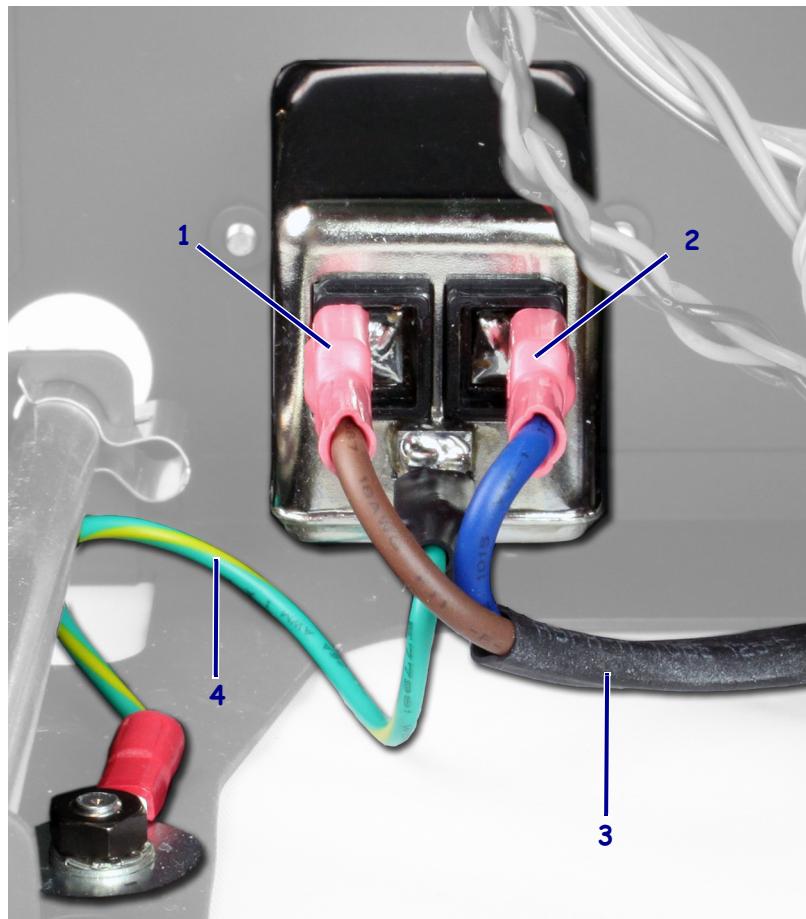


Note • Connections at the power entry module are the same for right-hand and left-hand models.



Caution • Improper connection to the power entry module will compromise the fuse functionality. Ensure that the connections are made exactly as shown in [Figure 457](#).

Figure 457 • Power Entry Module and Cable Connections



1	Brown wire (Line)
2	Blue wire (Neutral)
3	Power switch cable
4	Green/yellow wire (Earth ground)

12. See [Figure 456](#). Secure the power switch cable to the bottom rail of the electronics chassis with a cable tie and trim the excess.

Close the Electronics Enclosure

1. Ensure that all wires are routed properly and are not causing any obstructions, and then carefully swing the electronics enclosure closed.
2. Adjust the wire clips for the parallel port until they are touching the parallel port.
3. Slide the electronics cover onto the print engine.
4. Reinstall the four electronics cover mounting screws.

Reinstall the Print Engine in the Applicator

1. To reinstall the print engine into the applicator, carefully place the keyhole on the center mounting bolt.



Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.

2. Replace the four corner mounting screws securing the print engine to the applicator.
3. Tighten the center mounting bolt.

Resume Printer Operation

1. Reconnect the AC power cord and interface cables.
2. Turn on (I) the print engine.

The installation is complete.



Deported Control Panel Option Kit

Installation Instructions

This kit includes the parts and documentation necessary to install the Deported Control Panel Option Kit in the ZE500™ Series Print Engines. Read these instructions thoroughly before installing this kit.



Caution • This installation must be performed by a qualified service technician.

Parts List

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

Figure 458 • Kit Contents

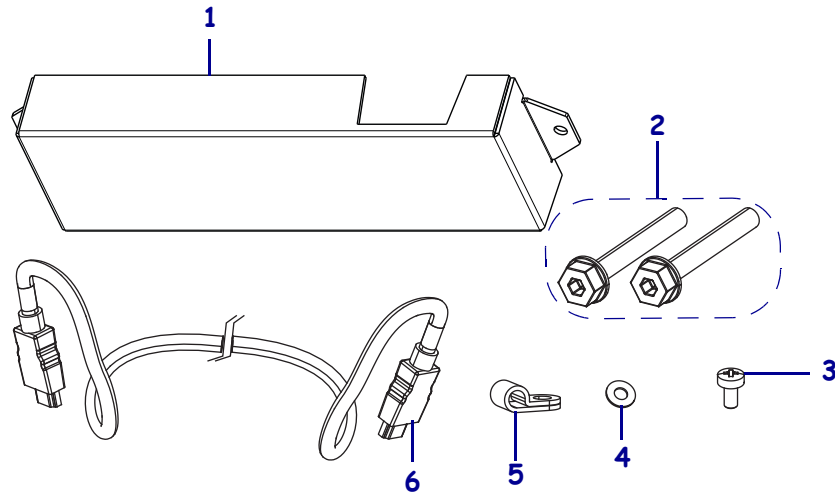


Table 72 • Parts List

✓	Item	Qty	Part Number	Description
	Ref	1	P1046696-002	Deported Control Panel Maintenance Kit
	1	1	N/A	Cover, Display
	2	2	N/A	Screw, M4 × 12 Hx So Zn
	3	1	HW43968	Screw, M3 × 0.5 × 6 Pn Ph Zn (Qty. of 25)
	4	1	N/A	Washer, Flat M3
	5	1	N/A	Clamp, Cable 0.188
	6	1	N/A	Cable, HDMI 2m

N/A = Not available as a separate part (listed for identification purposes only).

Tools Required



Tools • You need these tools to complete this procedure:

- Phillips Screwdriver Set
- Antistatic Wriststrap and Mat
- Metric Hex Key (Allen Wrench) Set
- Flat-blade Screwdriver Set

Remove Power and Data Cables



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

Connect yourself to an antistatic device.




2. **Caution** • Turn off (O) the print engine and disconnect it from the power source before performing the following procedure.

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

Remove Print Engine from Applicator

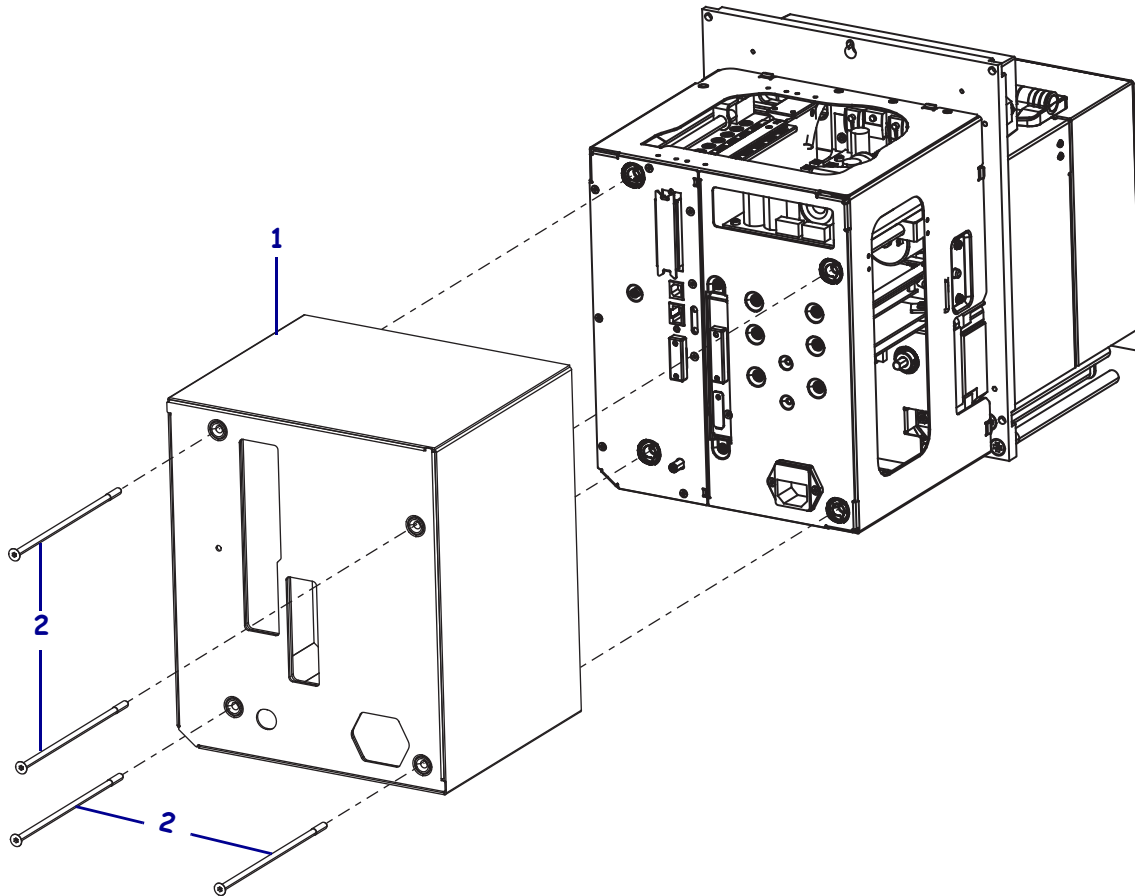
1. Does your applicator (or stand) permit open access to the rear of the print engine?

If you have an...	Then...
Open access	<p>You may swing the print engine open and work on it without removing the unit from the applicator.</p> <p>If you wish to remove the unit from the stand at any time, follow the instructions listed for the <i>Obstructed access</i> type applicator shown in this table.</p> <ol style="list-style-type: none"> a. Go to <i>Remove the Electronics Cover</i>.
Obstructed access	<p>You must remove the print engine from the applicator before you work on it.</p> <ol style="list-style-type: none"> a. Remove the four corner mounting screws securing the print engine to the applicator. b. Loosen the center mounting bolt, but do not remove it. <p> Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.</p> <ol style="list-style-type: none"> c. Lift the print engine off the center mounting bolt and place on a workbench.

Remove the Electronics Cover

1. See [Figure 459](#). Remove the four long mounting screws securing the electronics cover.

Figure 459 • Electronics Cover



1	Electronics cover
2	Electronics cover mounting screws (4)

2. Slide the electronics cover off of the print engine.

Open the Electronics Enclosure

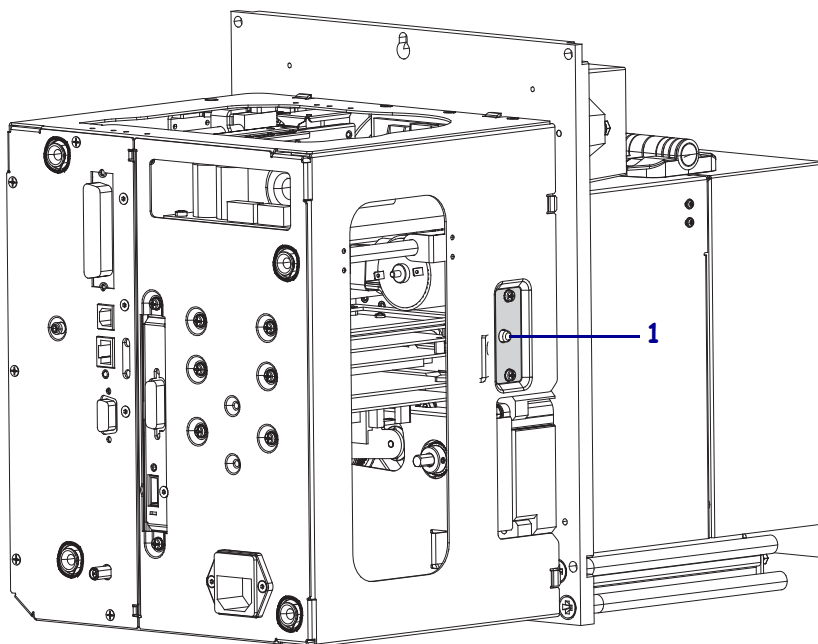
1. See [Figure 460](#). Locate the latch.



Note • For right-hand models, the latch is on the right side when looking from the back of the print engine. For left-hand models, the latch is on the left side.

2. Press the latch and swing the electronics enclosure open.

Figure 460 • Locate the Latch

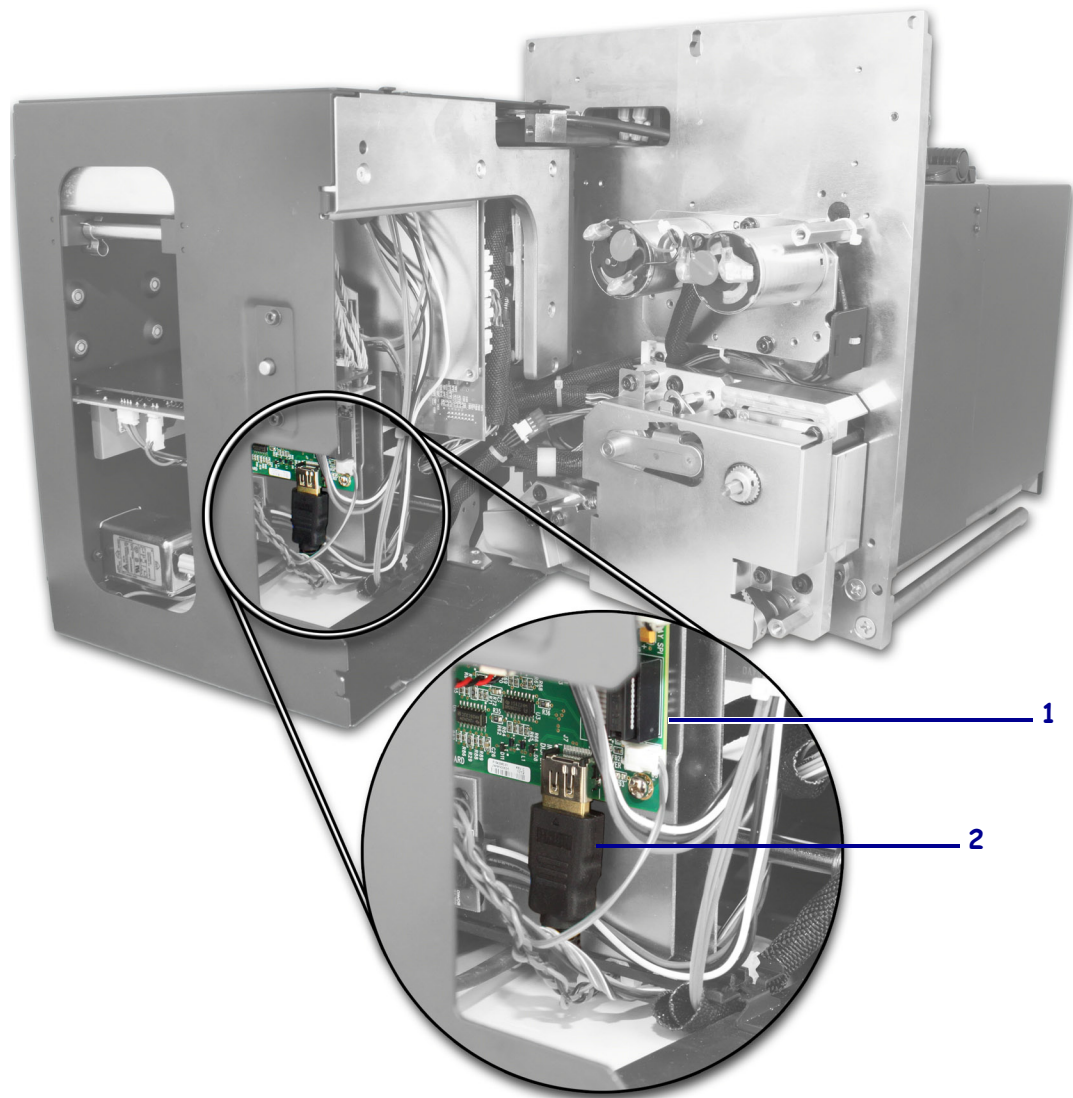


1	Latch
---	-------

Remove the Control Panel

1. See [Figure 461](#). Disconnect the control panel cable from the internal connector on the applicator interface board.

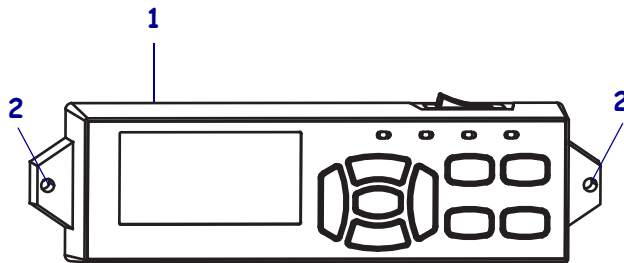
Figure 461 • HDMI Cable Routing Inside of the Print Engine



1	Applicator interface board
2	HDMI internal connector (used with the standard control panel)

2. See [Figure 462](#). Remove the two mounting screws securing the control panel.

Figure 462 • Front View of Control Panel



1	Control panel
2	Control panel mounting screws (2)

3. Lift the control panel off of the print engine and ease the attached cable out of the electronics enclosure.

Install the Control Panel Cover

1. To secure the control panel cover over the on/off switch, align the cover mounting holes with the holes in the main frame and install the two mounting screws previously removed.

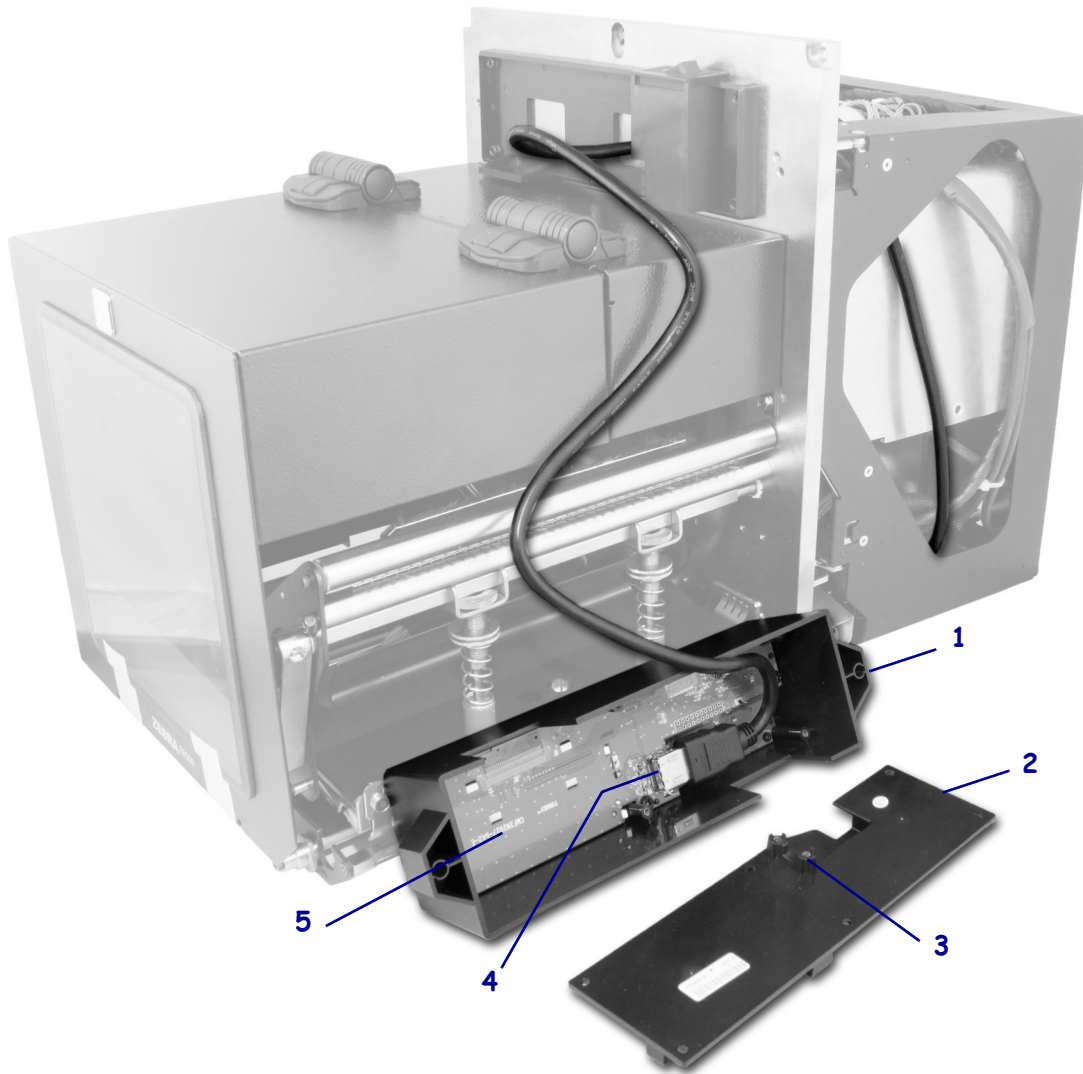


Note • Do not attempt to operate two control panel displays simultaneously.

Install the Long Control Panel Cable

1. See [Figure 463](#). From the back of the control panel, remove the two mounting screws and the cable clamp securing the control panel cable.
2. Remove the six mounting screws securing the control panel back plate.
3. Disconnect the short control panel cable from the control panel circuit board.

Figure 463 • Back of the Control Panel



1	Control panel
2	Control panel back plate
3	Cable clamp mounting holes (2)
4	HDMI Connector
5	Control panel circuit board

4. Connect the long (2 m.) control panel cable (included in the kit) to the control panel circuit board.
5. Replace the control panel back plate and reinstall the six mounting screws to secure it.
6. Thread the cable through the cable clamp and reinstall the cable clamp using the two mounting screws.

Replace the Electronics Cover

1. Ensure that the electronics enclosure is securely latched.
2. Adjust the wire clips for the parallel port, so they are touching the parallel port.
3. Slide the electronics cover onto the print engine.
4. Reinstall the four long electronics cover mounting screws.

Install the Deported Control Panel

1. Mount the deported control panel in a convenient location (within two meters of the print engine) and install using your choice of hardware.

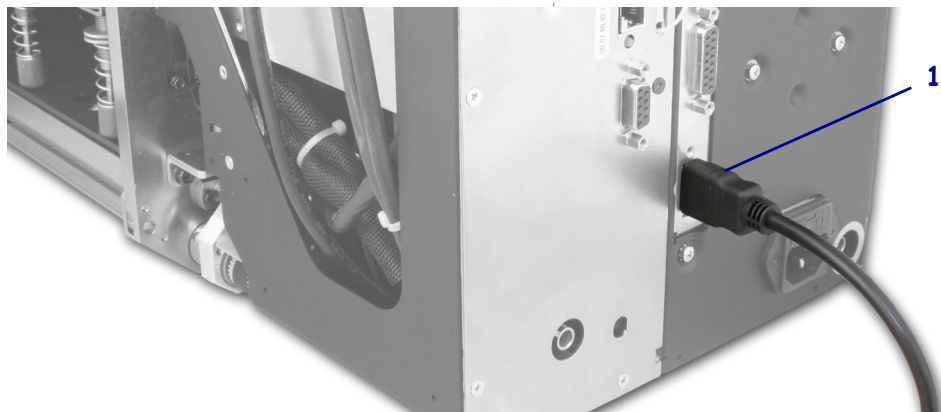
Connect the Cable

1. See [Figure 464](#). Connect the free end of the deported control panel cable to the external connector for the applicator interface board on the back of the print engine.



Note • This is an external connector and is in a different location than where you disconnected the short cable. The short cable plugs into an internal connector on the applicator interface board. The long cable plugs into an external connector on the outside of the electronics cover and at the back of the print engine.

Figure 464 • External Connector for Applicator Interface Board (shown with cover removed)



1	HDMI cable for deported control connected to external applicator interface connector
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Reinstall the Print Engine in the Applicator

1. To reinstall the print engine into the applicator, carefully place the keyhole on the center mounting bolt.



Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.

2. Replace the four corner mounting screws securing the print engine to the applicator.
3. Tighten the center mounting bolt.

Resume Printer Operation

1. Reconnect the AC power cord and interface cables.
2. Turn on (I) the print engine.

The installation is complete.



Media Door Maintenance Kit

Installation Instructions

This kit includes the parts and documentation necessary to install the Media Door Maintenance Kit in the ZE500™ Series Print Engines. Read these instructions thoroughly before installing this kit.



Caution • This installation must be performed by a qualified service technician.

Parts List

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

Figure 465 • Kit Contents

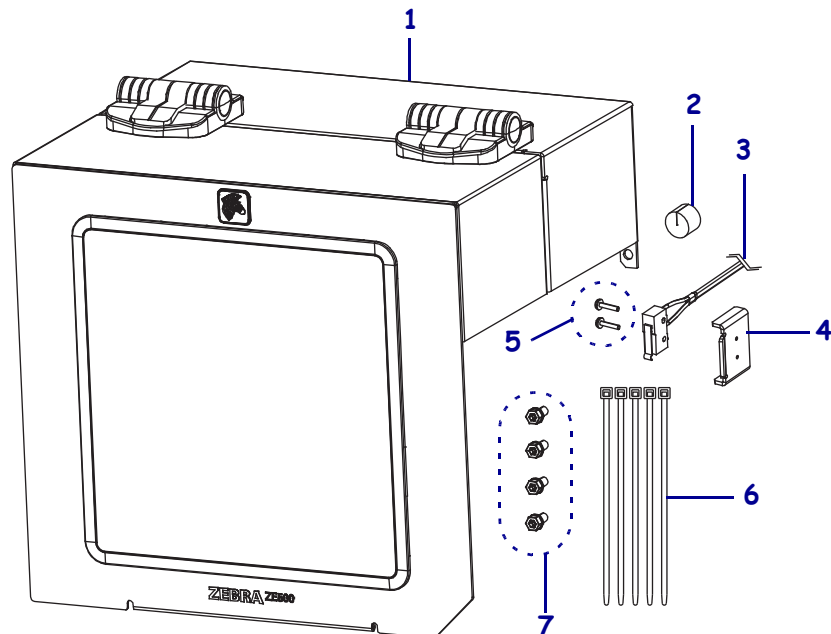


Table 73 • Parts List

✓	Item	Qty	Part Number	Description
	Ref	1	P1046696-076	ZE500-4 Media Cover Maintenance Kit, RH
			P1046696-077	ZE500-4 Media Cover Maintenance Kit, LH
			P1046696-078	ZE500-6 Media Cover Maintenance Kit, RH
			P1046696-079	ZE500-6 Media Cover Maintenance Kit, LH
	1	1	<i>N/A</i>	Assembly, Media Door
	2	1	<i>N/A</i>	Plug, Sealing
	3	1	P1046696-032	Switch, Door-Open
	4	1	<i>N/A</i>	Bracket, Door-Open
	5	2	<i>N/A</i>	Screw, M2 × 4 × 10 FLNG BU SO ZN
	6	5	<i>HWQ06020</i>	Cable Tie
	7	4	<i>N/A</i>	Screw
N/A = Not available as a separate part (listed for identification purposes only).				

Tools Required



Tools • You need these tools to complete this procedure:

- Phillips Screwdriver Set
- Flat-blade Screwdriver Set
- Metric Hex Key (Allen Wrench) Set
- Antistatic Wriststrap and Mat
- Torx Key Set

Remove Power and Data Cables, Ribbon, and Media



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

Connect yourself to an antistatic device.



2. **Caution** • Turn off (O) the print engine and disconnect it from the power source before performing the following procedure.

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


3. **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.

Open the media door, the printhead latch, and remove media and ribbon from the print engine.

4. Close the printhead latch, and then close the media door.

Remove Print Engine from Applicator

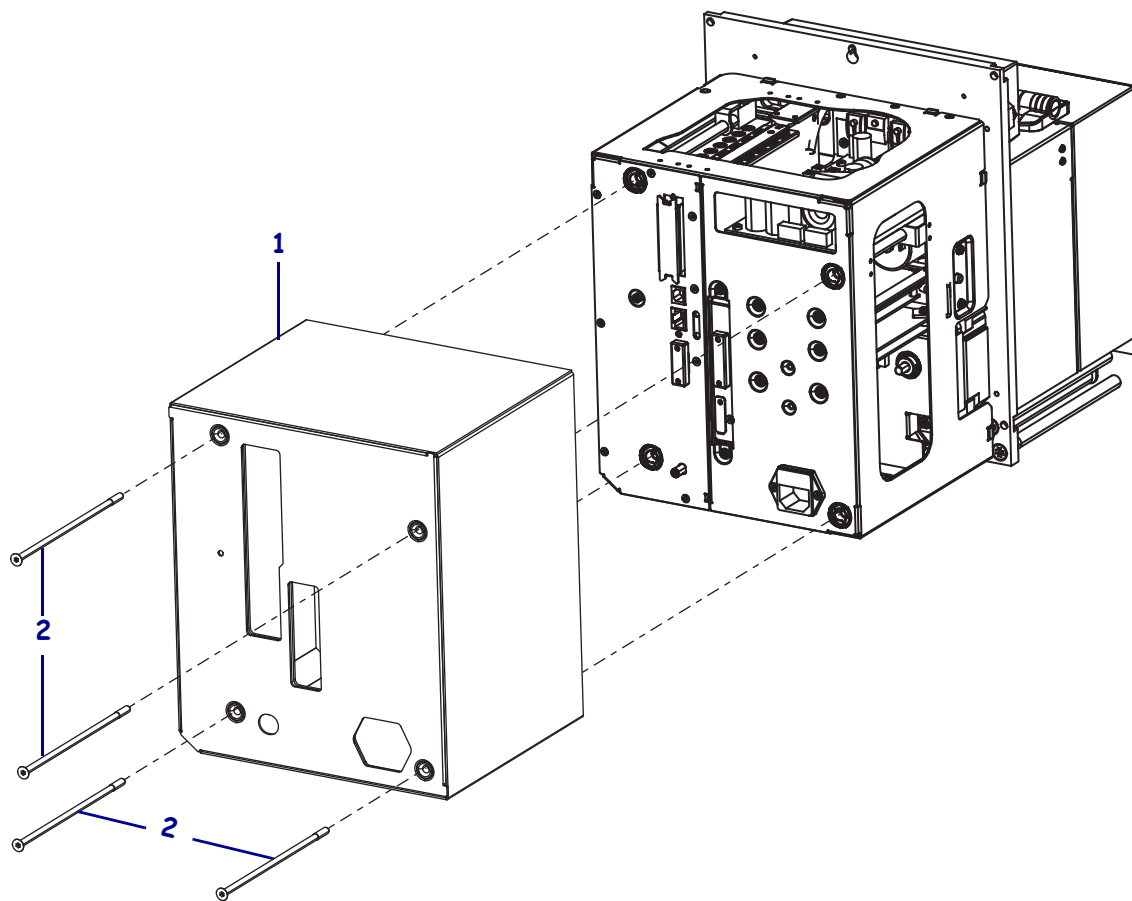
1. Does your applicator (or stand) permit open access to the rear of the print engine?

If you have an...	Then...
Open access	<p>You may swing the print engine open and work on it without removing the unit from the applicator.</p> <p>If you wish to remove the unit from the stand at any time, follow the instructions listed for the <i>Obstructed access</i> type applicator shown in this table.</p> <p>a. Go to <i>Remove the Electronics Cover</i>.</p>
Obstructed access	<p>You must remove the print engine from the applicator before you work on it.</p> <p>a. Remove the four corner mounting screws securing the print engine to the applicator.</p> <p>b. Loosen the center mounting bolt, but do not remove it.</p> <p> Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.</p> <p>c. Lift the print engine off the center mounting bolt and place on a workbench.</p>

Remove the Electronics Cover

1. See [Figure 466](#). Remove the four long mounting screws securing the electronics cover.

Figure 466 • Electronics Cover



1	Electronics cover
2	Electronics cover mounting screws (4)

2. Slide the electronics cover off of the print engine.

Open the Electronics Enclosure

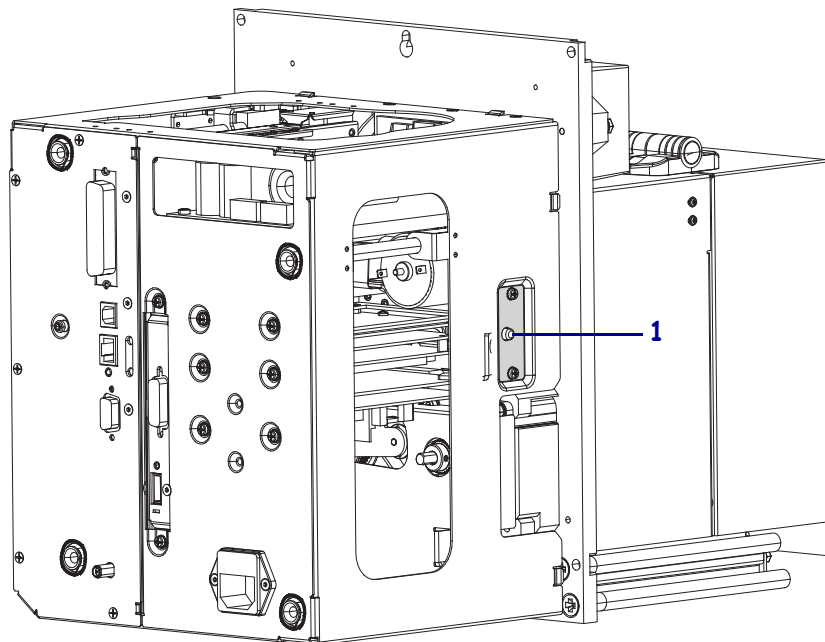
1. See [Figure 467](#). Locate the latch.



Note • For right-hand models, the latch is on the right side when looking from the back of the print engine. For left-hand models, the latch is on the left side.

2. Press the latch and swing the electronics enclosure open.

Figure 467 • Locate the Latch

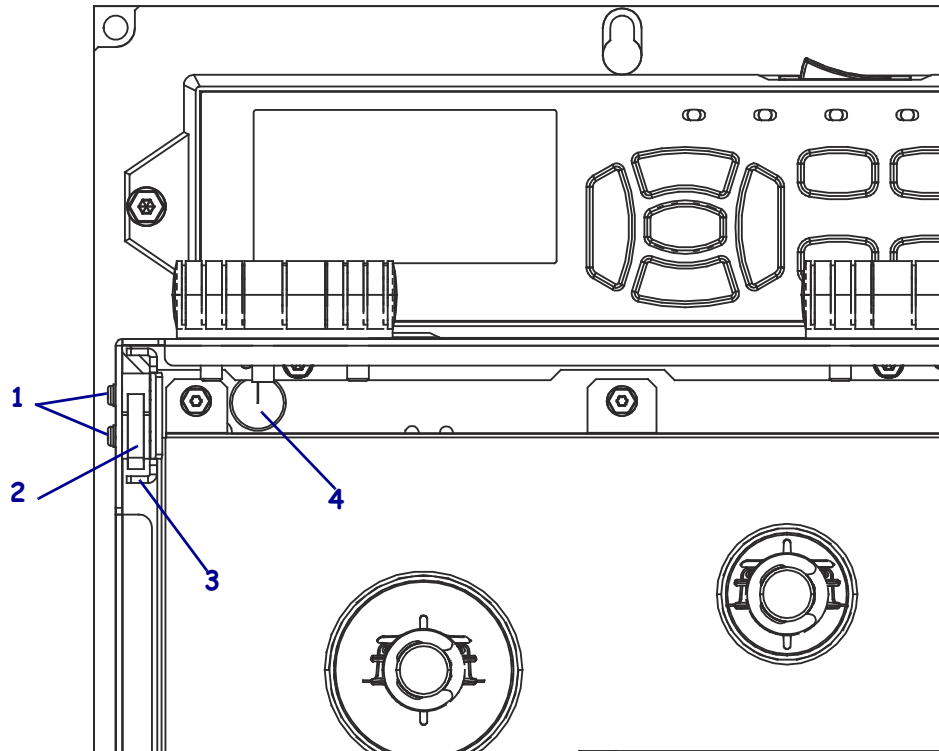


1	Latch
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Remove the Door-Open Sensor

1. See [Figure 468](#). Remove one of the door-open mounting screws.
2. Place one hand under the door-open sensor while you remove the other mounting screw.
The door-open sensor bracket will drop into your hand and the sensor will remain suspended by its cable.

Figure 468 • Door-Open Sensor

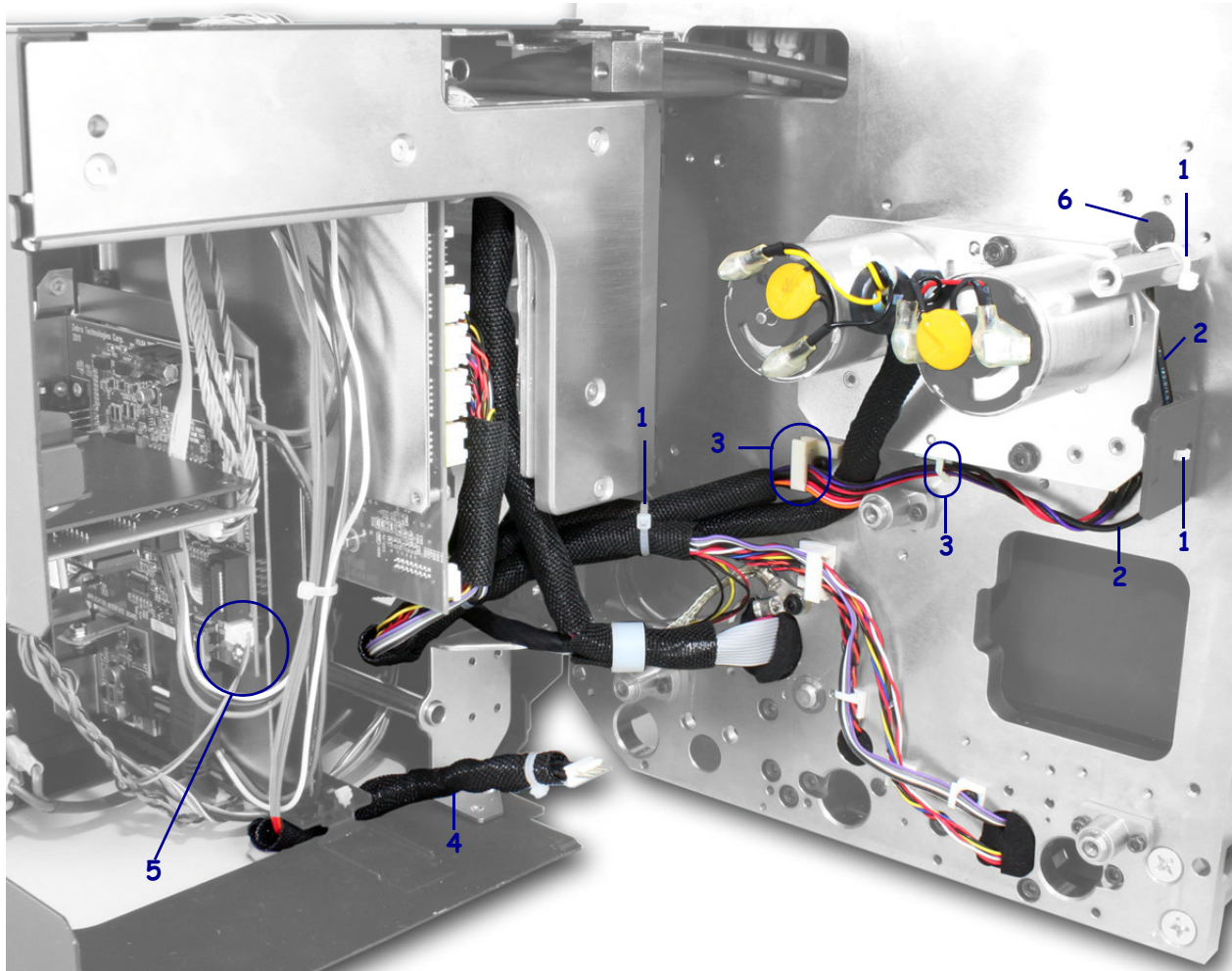


1	Door-open sensor mounting screws (2)
2	Door-open sensor
3	Door-open bracket
4	Sealing plug in main frame

3. Remove the sealing plug in the main frame wall.

- See [Figure 469](#). From the electronics side, trace the black door-open sensor cable from the hole in the main frame and cut the two cable ties securing the cable to the ribbon drive bracket.

Figure 469 • Door-Open Sensor Cable Routing and Cable Ties (Shown with Drive System Removed)

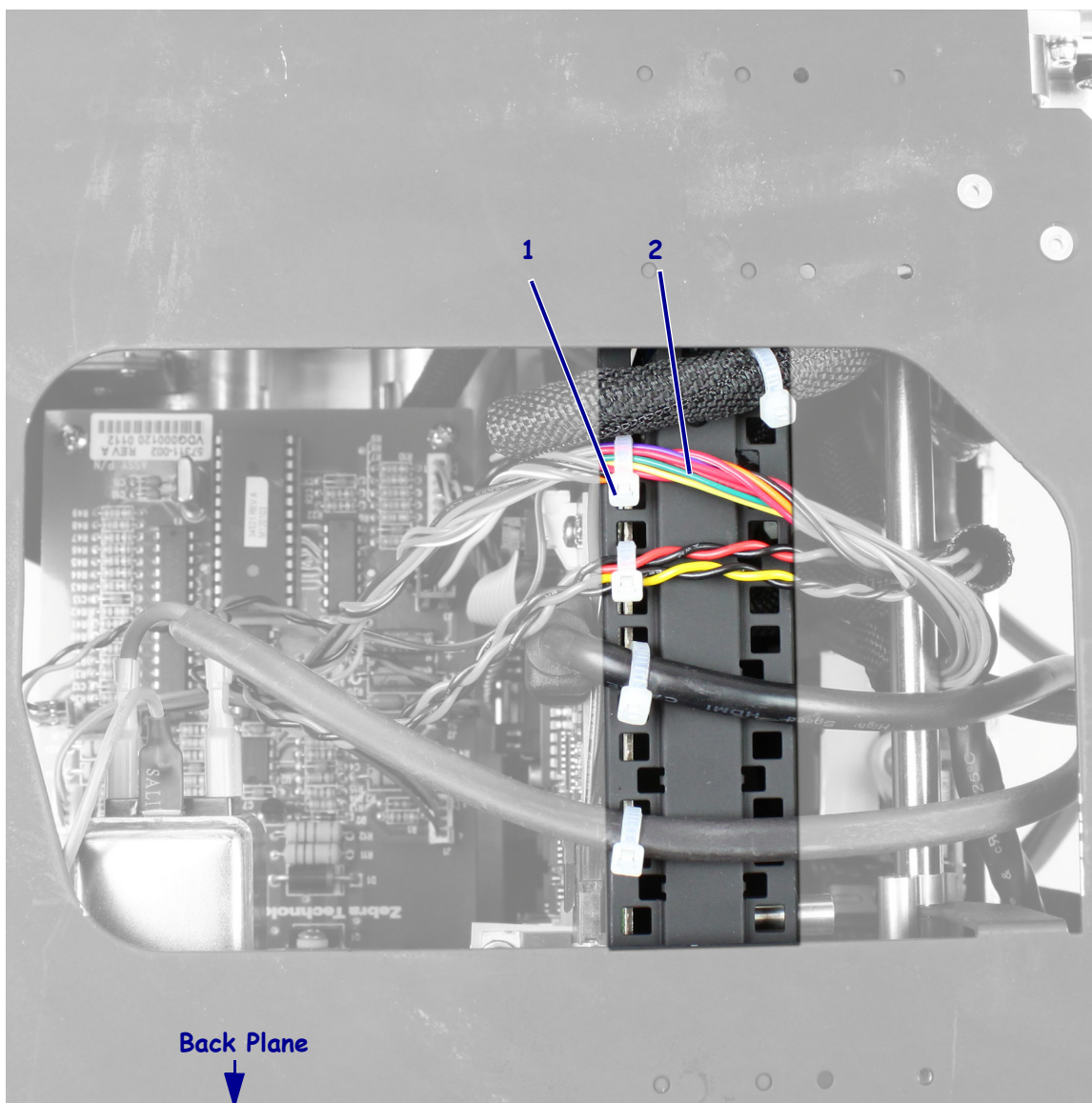


1	Cable tie (3)
2	Door-open sensor cable
3	Cable clamp (2)
4	Flexible conduit
5	J9: Applicator interface board and door-open sensor cable
6	Sealing plug in main frame

- Open the cable clamps securing the sensor cable.
- Cut the cable tie around the flexible conduit and remove the sensor cable.

7. See [Figure 470](#). Cut the cable tie securing the cable on the bottom rail of the electronics chassis.

**Figure 470 • Bottom Chassis Rail
(View from Under the Print Engine)**



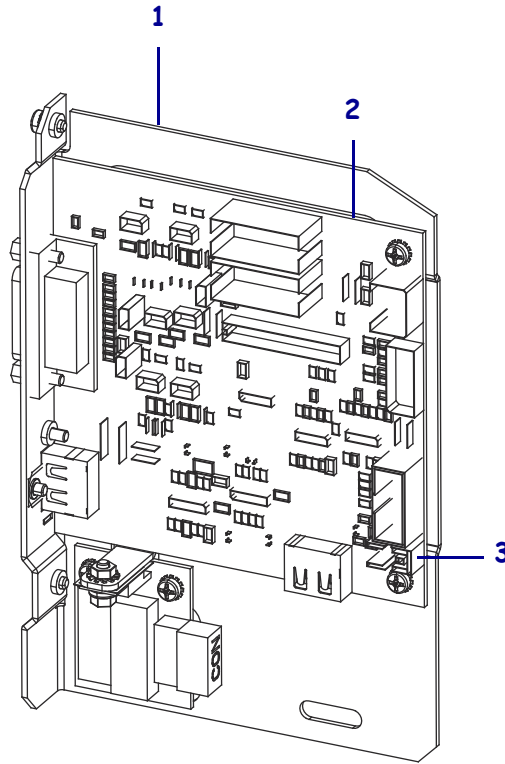
1	Cable tie
2	Door-open sensor cable

- See Figure 471. Disconnect the door-open sensor cable from J9 on the applicator interface board.



Note • You do not need to remove the board to disconnect this cable.

Figure 471 • Applicator Interface Board Connection



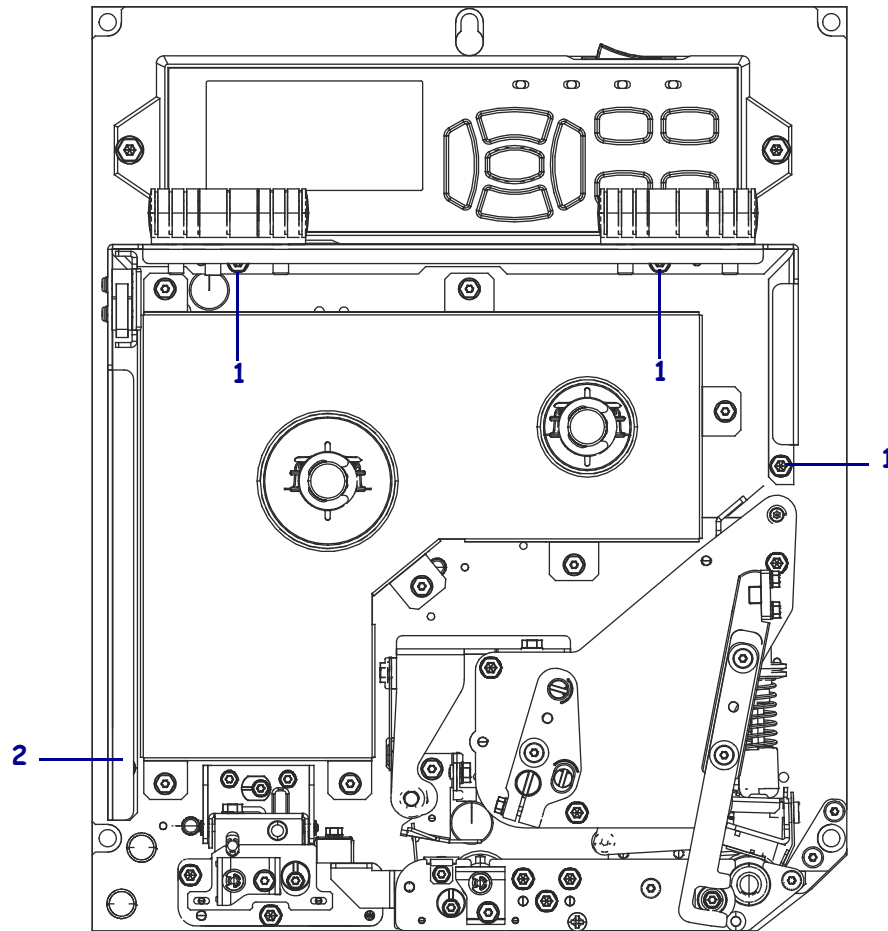
1	Applicator interface board mounting plate
2	Applicator interface board
3	J9: Door-open sensor

- Gently pull the door-open sensor out of the print engine.

Remove the Media Door

1. See [Figure 472](#). Remove the four hex screws securing the media door assembly to the main frame.

**Figure 472 • Media Door Mounting Screws
(Shown with Front Section of Media Door Removed)**



1	Media door mounting screw (3)
2	Media door mounting screw (hidden behind a small flange)

2. Remove the media door.

Replace the Media Door

1. See [Figure 472](#). Align the media door with the two locating pins on the main frame.
2. Reinstall the four hex screws.

Replace the Door-Open Sensor

1. Place the print engine with the media door face up.
2. Open the media cover.
3. See [Figure 201](#). Insert the sensor cable through the sealing plug and insert both through the hole in the main frame.
Ensure that the connector is on the electronics side and the plug is closing the hole in the main frame.
4. Align the door-open sensor and its bracket on the inside of the media door.
5. Reinstall the two mounting screws to secure the sensor. Snug the screws, but do not tighten.

6. See [Figure 473](#). Starting with the screws positioned in the center of the slots, close the media door, and listen for the trip of the actuator switch.
 - a. If the switch does **not** trip, slide the two screws forward and repeat the switch adjustment.



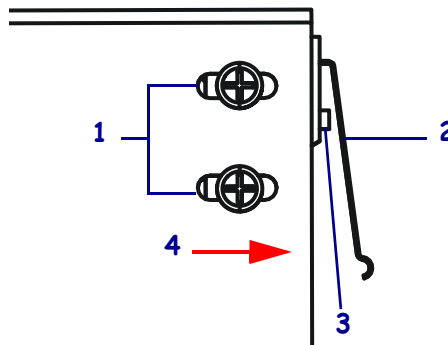
Note • Ensure that both screws are vertically aligned (parallel to the front of the media door).

- b. If the switch does trip, tighten both of the screws to secure the door-open sensor.



Note • If you receive a **Cover Open** error during power up, repeat the switch adjustment.

Figure 473 • Door-Open Sensor Adjustment



1	Switch lever
2	Mounting screws shown inside of slots (2)
3	Actuator
4	Direction of adjustment

7. Route the sensor cable along the media cover wall to the back of the media enclosure.

Route the Door-Open Sensor Cable

1. See [Figure 469](#). From the electronics side, replace the two cable ties to secure the cable.
One cable tie attaches the sensor cable to the outside post for the ribbon drive bracket, and the other tie attaches the cable to the bottom of the electronics latch.
2. Thread the sensor cable across, under the ribbon drive system bracket, and through the small and large cable clamps.
Ensure that the cable clamps are closed and include the sensor cable.
3. Insert the door-open sensor cable through the flexible conduit.
4. Secure all flexible conduit with a cable tie.
5. Thread the door-open sensor cable over the lower hinge, under the electronics cover spacer tube, over the bottom rail of the electronics chassis.
6. See [Figure 470](#). Secure the door-open sensor cable to the bottom rail using a cable tie.
7. See [Figure 471](#). Connect the door-open sensor cable (green and yellow wires) to J9 on the applicator interface board.

Reinstall the Print Engine in the Applicator

1. To reinstall the print engine into the applicator, carefully place the keyhole on the center mounting bolt.



Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.

2. Replace the four corner mounting screws securing the print engine to the applicator.
3. Tighten the center mounting bolt.

Resume Printer Operation

1. Open the front cover.
2. **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.

Unlatch the printhead lever, reinstall the media and ribbon, and close and latch the printhead lever.

3. Reconnect the AC power cord and interface cables.
4. Turn on (I) the print engine.

The installation is complete.



Media Door Hinges Maintenance Kit

Installation Instructions

This kit includes the parts and documentation necessary to install the Media Door Maintenance Kit in the ZE500™ Series Print Engines. Read these instructions thoroughly before installing this kit.



Caution • This installation must be performed by a qualified service technician.

Parts List

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

Figure 474 • Kit Contents

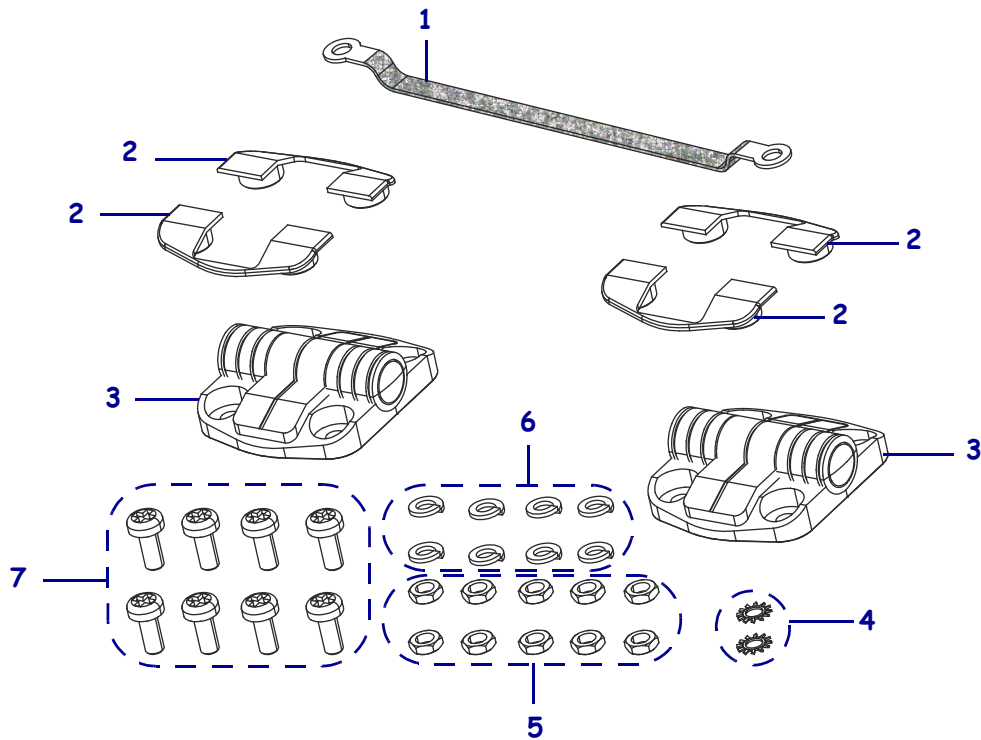


Table 74 • Parts List

✓	Item	Qty	Part Number	Description
	Ref	1	P1046696-081	Media Door Hinges Maintenance Kit
	1	1	<i>N/A</i>	Cable, Ground Braid 4 in.
	2	4	<i>N/A</i>	Cover, Door Hinge Screw
	3	2	<i>N/A</i>	Media Door Positioning Hinge
	4	2	<i>N/A</i>	Washer
	5	10	HW44055	Nut (Qty. of 25)
	6	8	HW32410	Washer, Split (Qty. of 10)
	7	8	HW43971	Screw (Qty. of 25)
N/A = Not available as a separate part (listed for identification purposes only).				

Tools Required



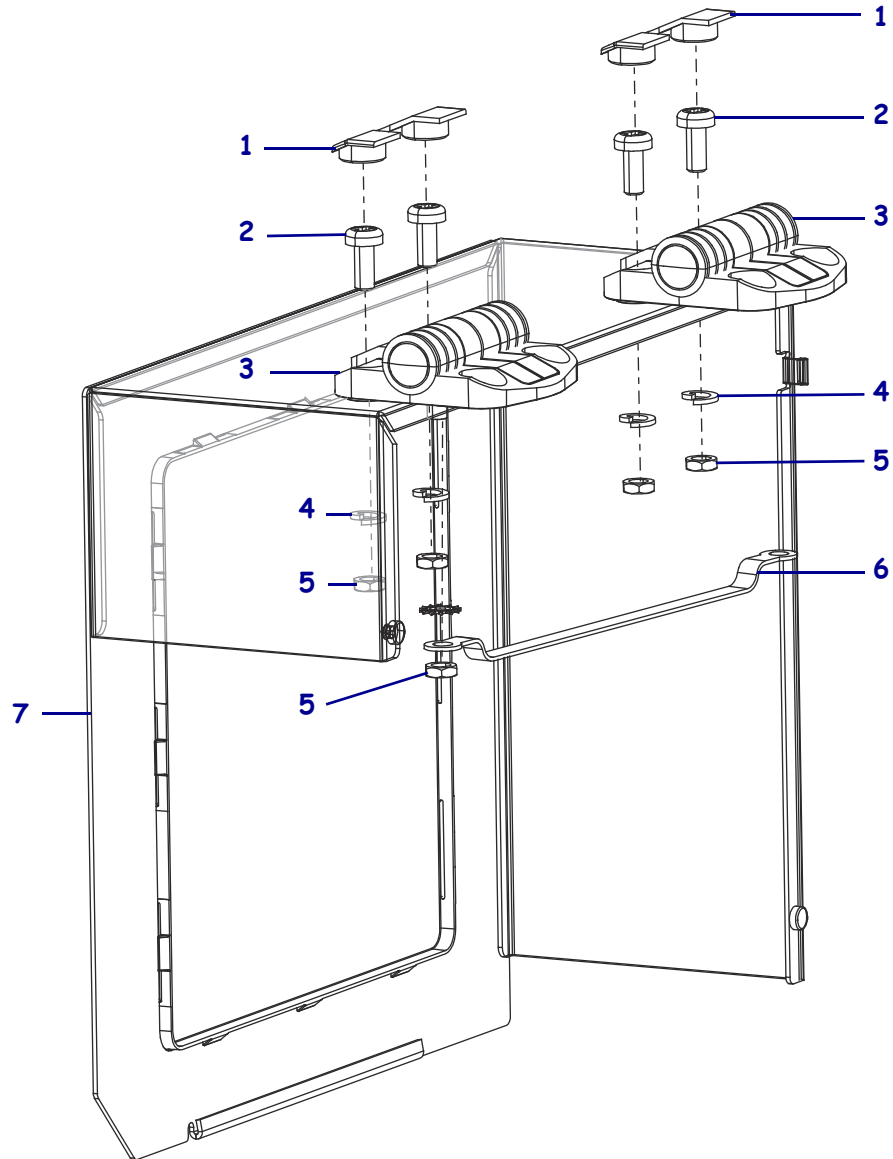
Tools • You need these tools to complete this procedure:

- Phillips Screwdriver Set
- Flat-blade Screwdriver Set
- Metric Open-End Wrench Set

Remove the Media Door Hinges

1. See [Figure 475](#). Using a flat-blade screwdriver, pry off all four of the hinge covers.

Figure 475 • Media Door and Hinges



1	Hinge cover (4)
2	Hinge mounting screw (4)
3	Media door hinges (2)
4	Split lock washer (4 shown)
5	Nut (4 shown)
6	Ground strap
7	Media door

2. Remove the star washers and nuts and disconnect the ground strap from each threaded stud.
3. To remove the media door, remove the two Phillips screws, split lock washers, and nuts from each hinge.
4. Remove the media door.
5. Remove the two Phillips screws, split lock washers, and nuts securing each hinge to the stationary media cover and discard all of the parts.

Replace the Media Door and Hinges

1. Align each hinge with the stationary cover.
2. See [Figure 475](#). Reinstall the two Phillips screws for each hinge.
3. Align the media door with the other hinge mounting holes.
4. Reinstall the two Phillips screws, split lock washers, and nuts for each hinge.
5. Reconnect the ground strap to the threaded studs using the star washers and nuts.
6. Snap the hinge covers into place.

The installation is complete.



Media Window Maintenance Kit

Installation Instructions

This kit includes the parts and documentation necessary to install the Media Window Maintenance Kit in the ZE500™ Series Print Engines. Read these instructions thoroughly before installing this kit.



Caution • This installation must be performed by a qualified service technician.

Parts List

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

Figure 476 • Kit Contents

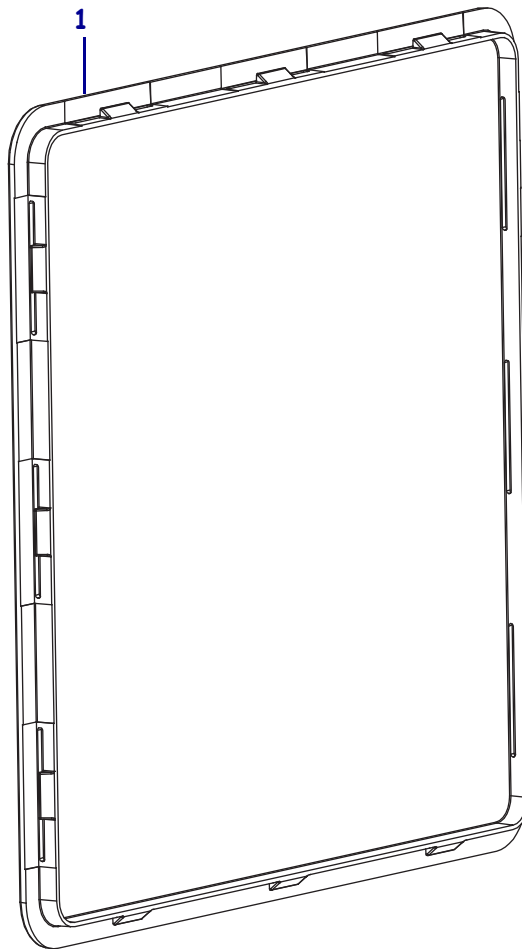


Table 75 • Parts List

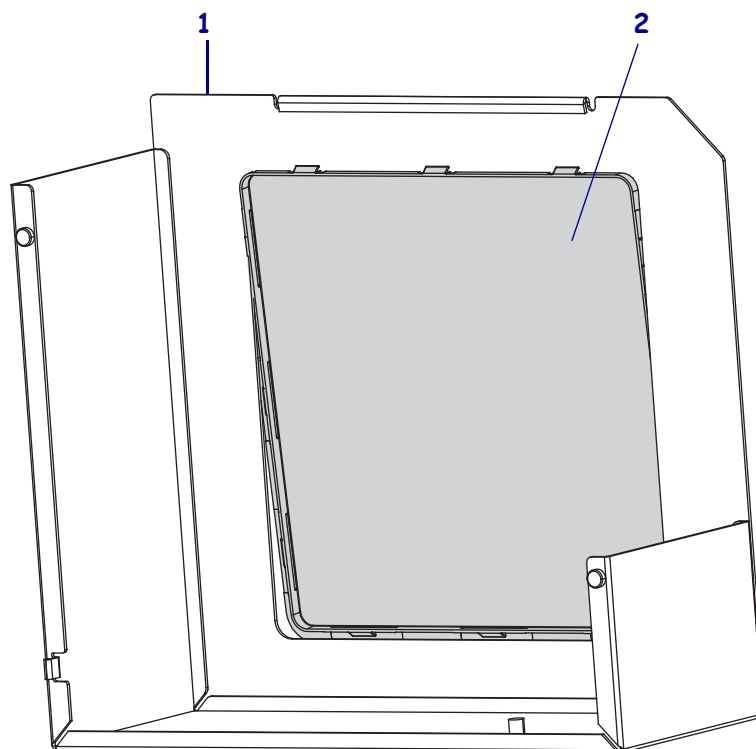
✓	Item	Qty	Part Number	Description
	Ref	1	P1046696-080	Media Window Maintenance Kit
	1	1	<i>N/A</i>	Media Window

N/A = Not available as a separate part (listed for identification purposes only).

Remove the Media Window

1. Open the media door.
2. See [Figure 477](#). To remove the media window, pop the window out by pressing from the inside of the door until the small tabs clear the edge of the door.
3. Discard the window.

Figure 477 • Media Door and Window



1	Media door
2	Media window

4. Close the media door.

Replace the Media Window

1. The media window has one side with fixed tabs and three sides with flexing tabs. Locate the side with the fixed tabs and align the media window with the outer opening of the media door.
2. With the media door closed, seat the fixed tabs side against the window opening by pushing it into place. Snap the remaining three sides into place making sure that window is seated properly.

The installation is complete.



Electronics Cover Maintenance Kit

Installation Instructions

This kit includes the parts and documentation necessary to install the Electronics Cover Maintenance Kit in the ZE500™ Series Print Engines. Read these instructions thoroughly before installing this kit.



Caution • This installation must be performed by a qualified service technician.

Parts List

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

Figure 478 • Kit Contents

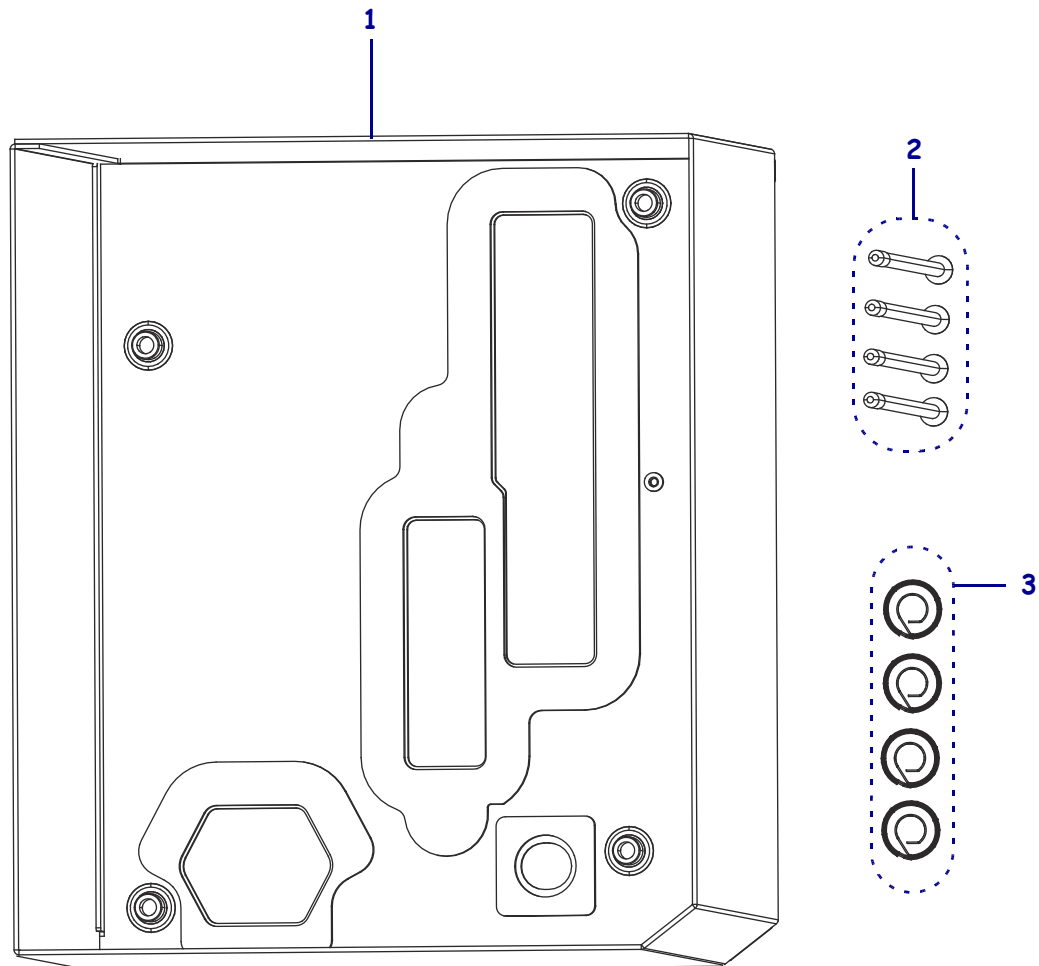


Table 76 • Parts List

✓	Item	Qty	Part Number	Description
	Ref	1	P1046696-083	Electronics Cover Maintenance Kit RH
			P1046696-084	Electronics Cover Maintenance Kit LH
	1	1	<i>N/A</i>	Enclosure Cover Assembly
	2	4	<i>N/A</i>	Screw, M4 × 145 FL PH PN
	3	4	<i>N/A</i>	Spring, Conduction

N/A = Not available as a separate part (listed for identification purposes only).

Tools Required



Tools • You need these tools to complete this procedure:

- Metric Hex Key (Allen Wrench) Set
- Flat-blade Screwdriver Set

Remove Power and Data Cables



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

Connect yourself to an antistatic device.




2. **Caution** • Turn off (O) the print engine and disconnect it from the power source before performing the following procedure.

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

Remove Print Engine from Applicator

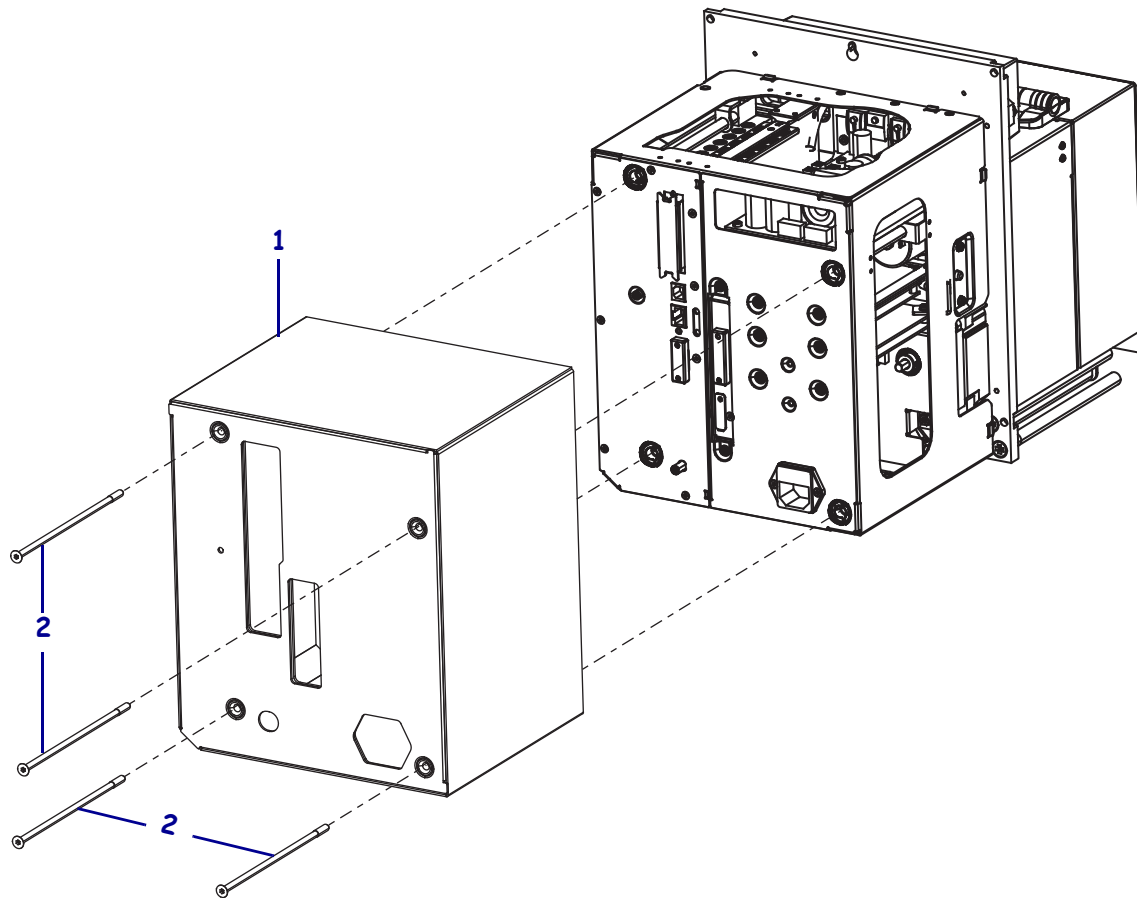
1. Does your applicator (or stand) permit open access to the rear of the print engine?

If you have an...	Then...
Open access	<p>You may swing the print engine open and work on it without removing the unit from the applicator.</p> <p>If you wish to remove the unit from the stand at any time, follow the instructions listed for the <i>Obstructed access</i> type applicator shown in this table.</p> <ol style="list-style-type: none"> a. Go to <i>Remove the Electronics Cover</i>.
Obstructed access	<p>You must remove the print engine from the applicator before you work on it.</p> <ol style="list-style-type: none"> a. Remove the four corner mounting screws securing the print engine to the applicator. b. Loosen the center mounting bolt, but do not remove it. <p> Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.</p> <ol style="list-style-type: none"> c. Lift the print engine off the center mounting bolt and place on a workbench.

Remove the Electronics Cover

1. See [Figure 479](#). Remove the four long mounting screws securing the electronics cover.

Figure 479 • Electronics Cover



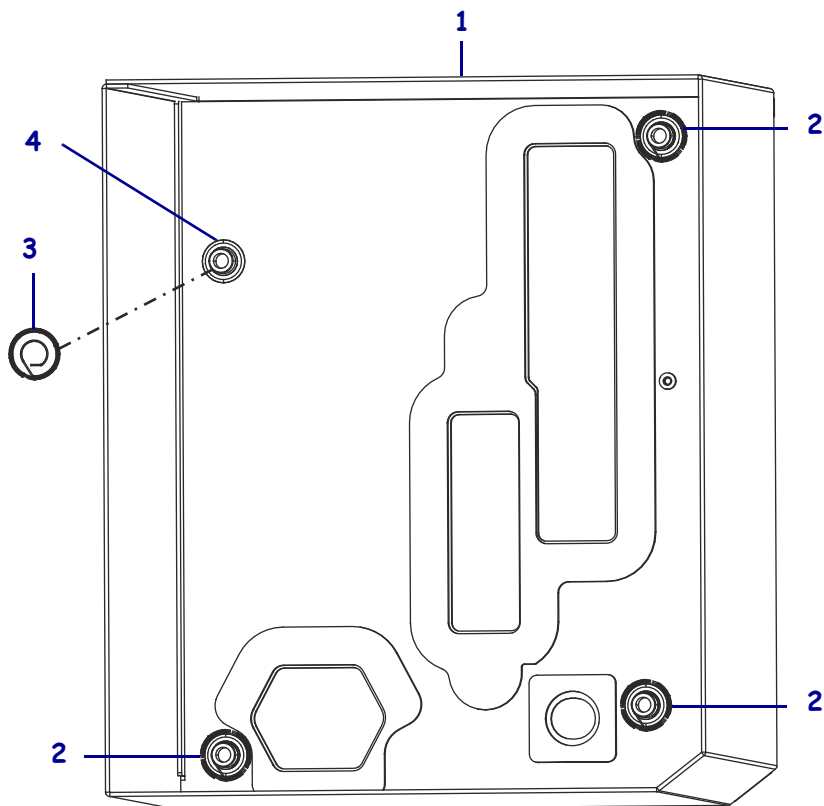
1	Electronics cover
2	Electronics cover mounting screws (4)

2. Slide the electronics cover off of the print engine.

Install the Conduction Springs

1. See [Figure 480](#). Working from inside of the electronics cover, locate the boss for each of the four mounting screw holes.

Figure 480 • Boss and Conduction Springs

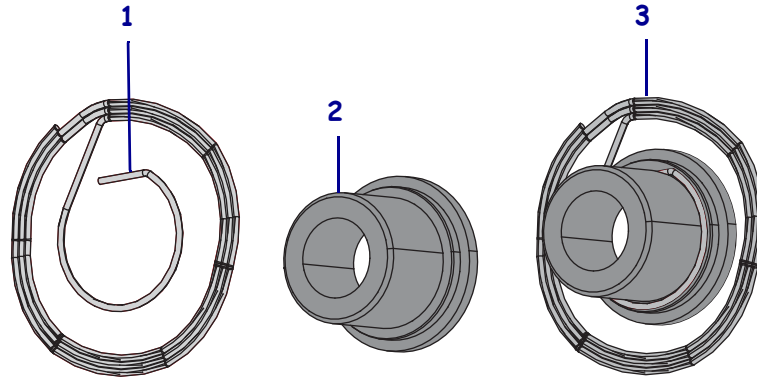


1	Electronics cover
2	Conduction springs and boss (3)
3	Conduction spring
4	Boss

- See [Figure 481](#). Press the flat of the conduction spring to the base of the boss for each of the four mounting screw holes.

The flat holds the spring in place inside of the electronics cover.

Figure 481 • Close-up of Conduction Springs



1	Flat on the conduction spring
2	Electronics cover boss
3	Installed conduction spring

Replace the Electronics Cover

- Ensure that the electronics enclosure is securely latched.
- Adjust the wire clips for the parallel port, so they are touching the parallel port.
- Slide the electronics cover onto the print engine.
- Reinstall the four long electronics cover mounting screws.

Reinstall the Print Engine in the Applicator

1. To reinstall the print engine into the applicator, carefully place the keyhole on the center mounting bolt.



Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.

2. Replace the four corner mounting screws securing the print engine to the applicator.
3. Tighten the center mounting bolt.

Resume Printer Operation

1. Reconnect the AC power cord and interface cables.
2. Turn on (I) the print engine.

The installation is complete.



Chassis Latch Maintenance Kit

Installation Instructions

This kit includes the parts and documentation necessary to install the Chassis Latch Maintenance Kit in the ZE500™ Series Print Engines. Read these instructions thoroughly before installing this kit.



Caution • This installation must be performed by a qualified service technician.

Parts List

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

Figure 482 • Kit Contents

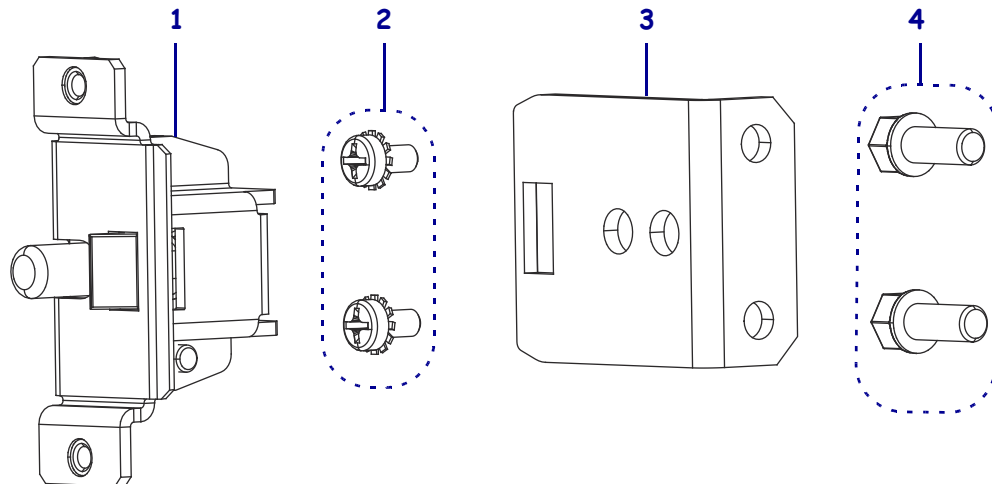


Table 77 • Parts List

✓	Item	Qty	Part Number	Description
	Ref	1	P1046696-087	Chassis Latch
	1	1	N/A	Chassis Latch Assembly
	2	2	N/A	Screw, M3 × 6 HX TX NI Flng
	3	1	N/A	Bracket, Catch
	4	2	N/A	Screw, M4 × 8 HX SO ZN

N/A = Not available as a separate part (listed for identification purposes only).

Tools Required



Tools • You need these tools to complete this procedure:

- Phillips Screwdriver Set
- Flat-blade Screwdriver Set
- Metric Hex Key (Allen Wrench) Set
- Torx Key Set

Remove Power and Data Cables



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

Connect yourself to an antistatic device.




2. **Caution** • Turn off (O) the print engine and disconnect it from the power source before performing the following procedure.

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

Remove Print Engine from Applicator

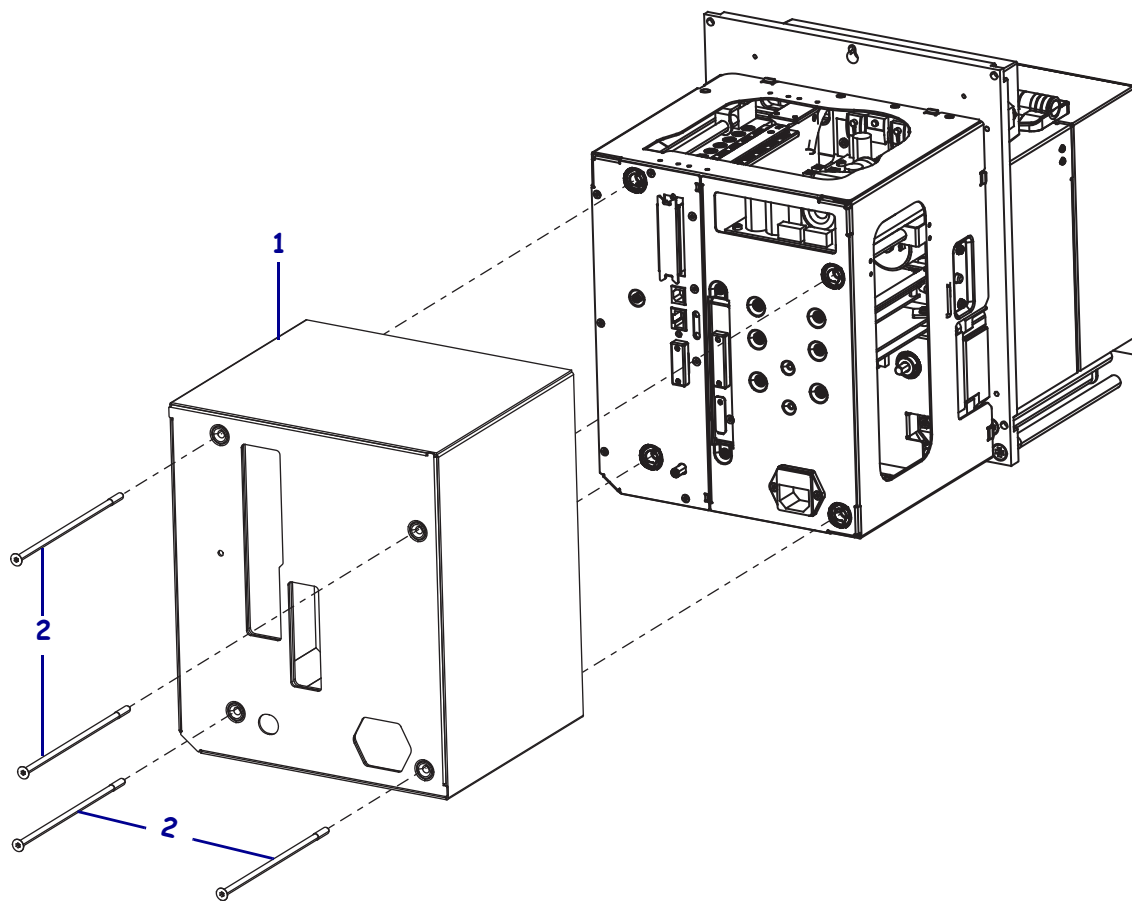
1. Does your applicator (or stand) permit open access to the rear of the print engine?

If you have an...	Then...
Open access	<p>You may swing the print engine open and work on it without removing the unit from the applicator.</p> <p>If you wish to remove the unit from the stand at any time, follow the instructions listed for the <i>Obstructed access</i> type applicator shown in this table.</p> <p>a. Go to <i>Remove the Electronics Cover</i>.</p>
Obstructed access	<p>You must remove the print engine from the applicator before you work on it.</p> <p>a. Remove the four corner mounting screws securing the print engine to the applicator.</p> <p>b. Loosen the center mounting bolt, but do not remove it.</p> <p> Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.</p> <p>c. Lift the print engine off the center mounting bolt and place on a workbench.</p>

Remove the Electronics Cover

1. See [Figure 483](#). Remove the four long mounting screws securing the electronics cover.

Figure 483 • Electronics Cover



1	Electronics cover
2	Electronics cover mounting screws (4)

2. Slide the electronics cover off of the print engine.

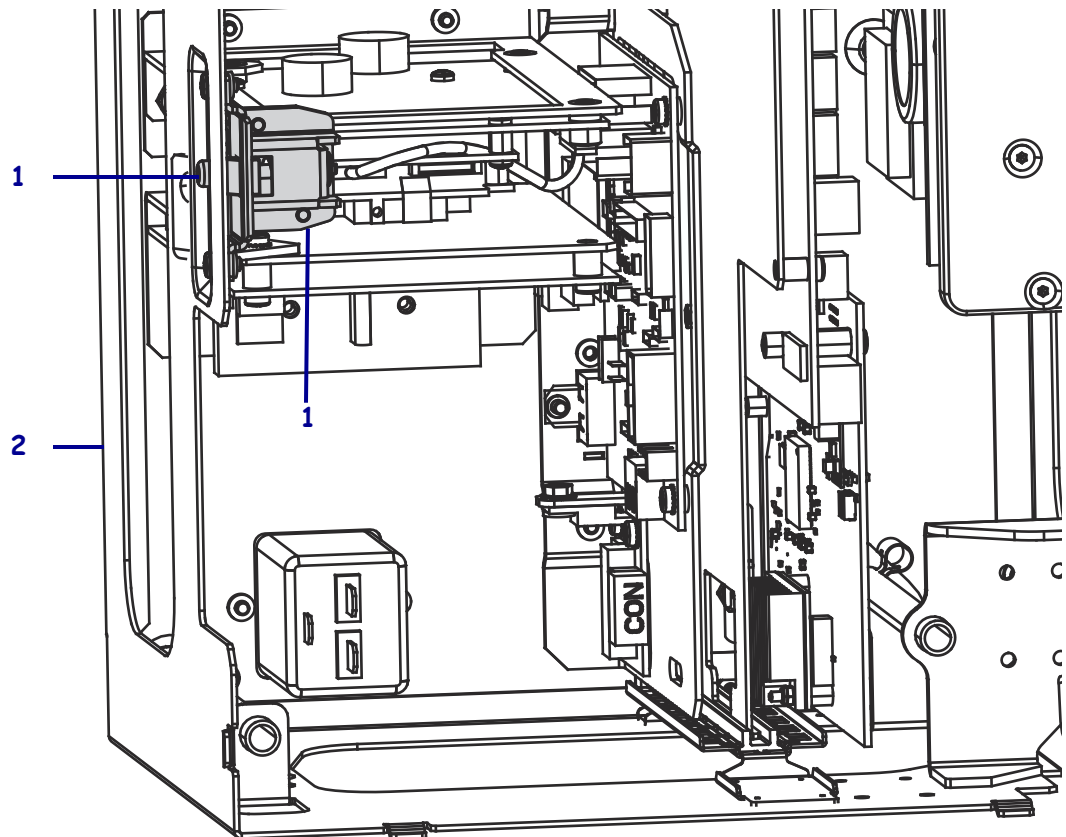
Remove the Chassis Latch

1. See [Figure 484](#). Press the latch button and swing the electronics enclosure open.



Note • The latch may be located on the right or left side of the electronics enclosure, depending on the model.

Figure 484 • Chassis Latch



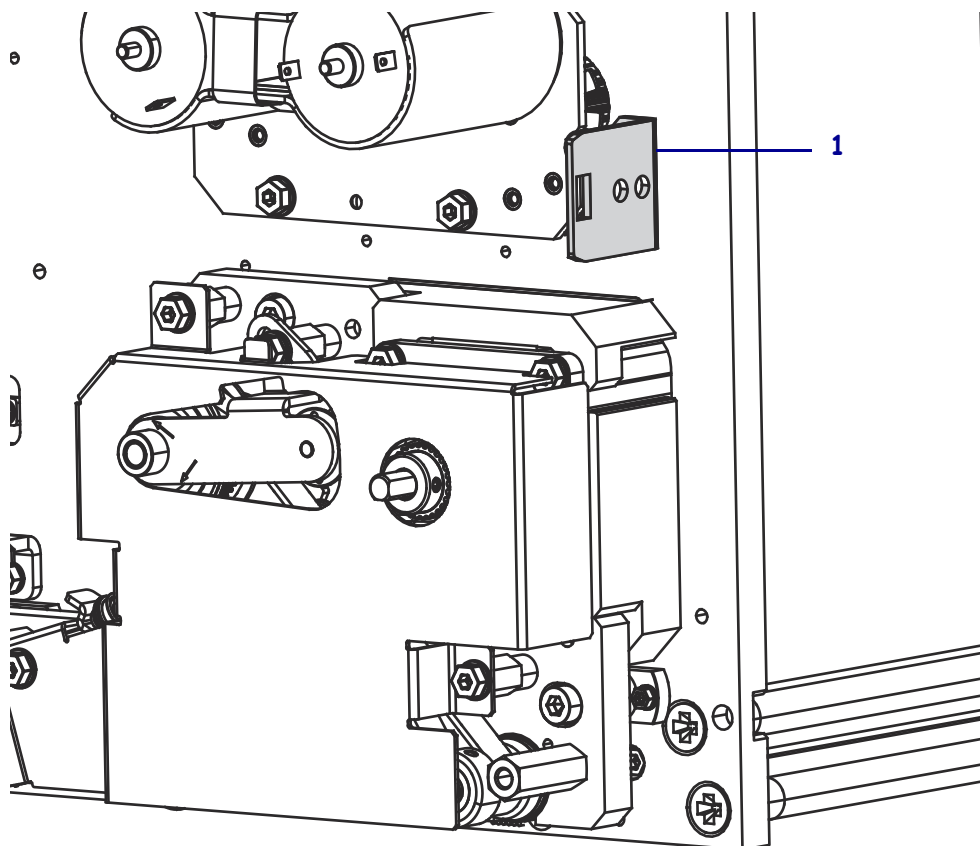
1	Chassis latch (shaded)
2	Electronics chassis

2. Remove the two mounting screws securing the chassis latch.

Remove the Chassis Catch

1. See [Figure 485](#). From the main frame, remove the two mounting screws securing the chassis catch bracket.

Figure 485 • Chassis Catch



1	Chassis catch bracket (shaded)
---	--------------------------------

Replace the Chassis Latch

1. Reinstall the two mounting screws securing the chassis latch.

Replace the Chassis Catch

1. From the main frame, reinstall the two mounting screws securing the chassis catch bracket

Close the Electronics Enclosure

1. Ensure that all wires are routed properly and are not causing any obstructions, and then carefully swing the electronics enclosure closed.
2. Adjust the wire clips for the parallel port until they are touching the parallel port.
3. Slide the electronics cover onto the print engine.
4. Reinstall the four electronics cover mounting screws.

Reinstall the Print Engine in the Applicator

1. To reinstall the print engine into the applicator, carefully place the keyhole on the center mounting bolt.



Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.

2. Replace the four corner mounting screws securing the print engine to the applicator.
3. Tighten the center mounting bolt.

Resume Printer Operation

1. Reconnect the AC power cord and interface cables.
2. Turn on (I) the print engine.

The installation is complete.



Electronics Cover Screws Maintenance Kit

Installation Instructions

This kit includes the parts and documentation necessary to install the Electronics Cover Screws Maintenance Kit in the ZE500™ Series Print Engines. Read these instructions thoroughly before installing this kit.



Caution • This installation must be performed by a qualified service technician.

Parts List

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

Figure 486 • Kit Contents

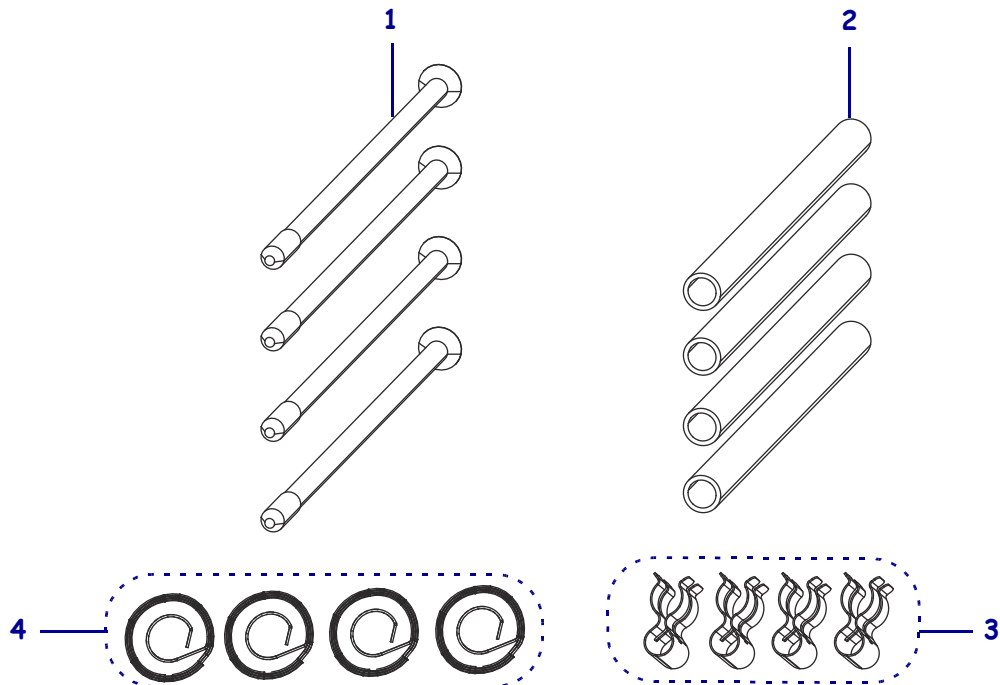


Table 78 • Parts List

✓	Item	Qty	Part Number	Description
	Ref	1	P1046696-085	Electronics Cover Screws Maintenance Kit
	1	4	<i>N/A</i>	Screw, M5 × 145 FL PH ZN
	2	4	<i>N/A</i>	Tube, Spacer
	3	4	<i>N/A</i>	Clamp, Tube
	4	4	<i>N/A</i>	Spring, Conduction

N/A = Not available as a separate part (listed for identification purposes only).

Tools Required



Tools • You need these tools to complete this procedure:

- Metric Hex Key (Allen Wrench) Set
- Phillips Screwdriver Set
- Flat-blade Screwdriver Set
- Antistatic Wriststrap and Mat

Remove Power and Data Cables



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

Connect yourself to an antistatic device.




2. **Caution** • Turn off (O) the print engine and disconnect it from the power source before performing the following procedure.

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

Remove Print Engine from Applicator

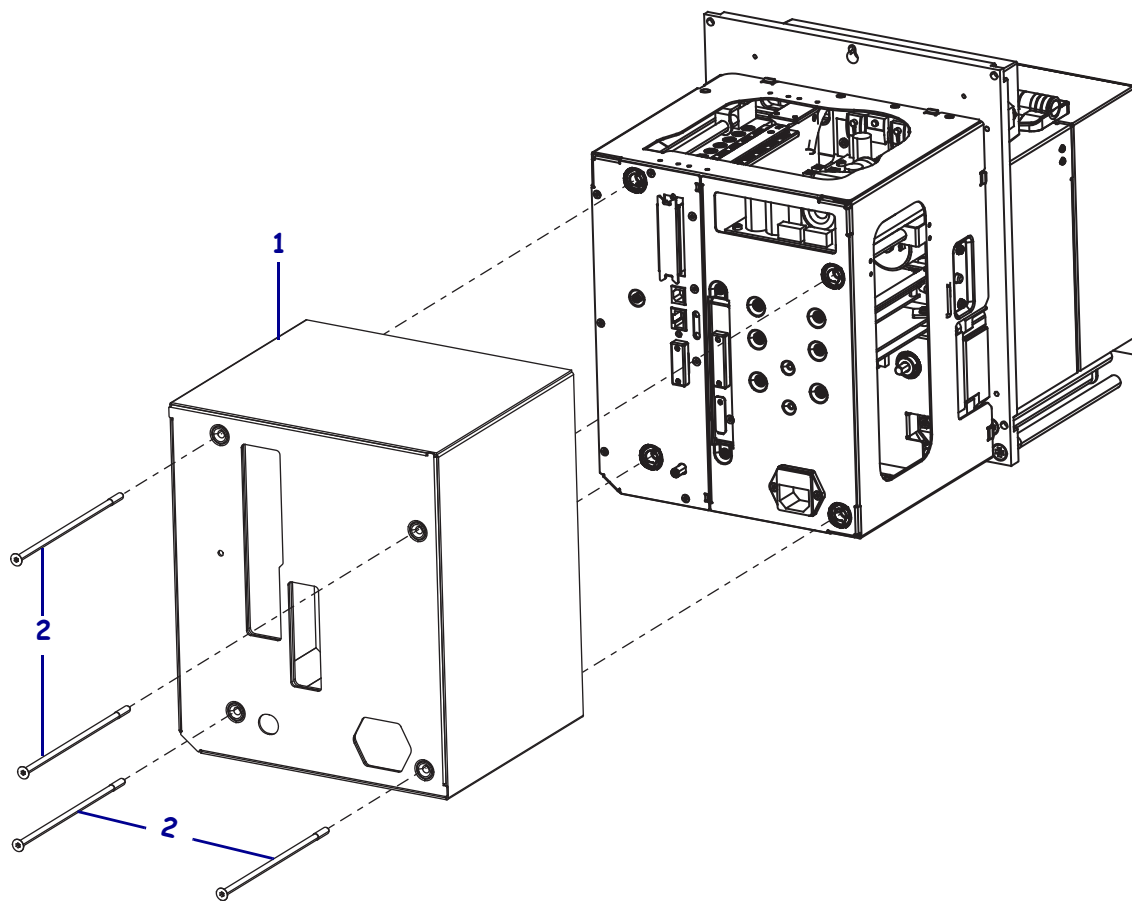
1. Does your applicator (or stand) permit open access to the rear of the print engine?

If you have an...	Then...
Open access	<p>You may swing the print engine open and work on it without removing the unit from the applicator.</p> <p>If you wish to remove the unit from the stand at any time, follow the instructions listed for the <i>Obstructed access</i> type applicator shown in this table.</p> <ol style="list-style-type: none"> a. Go to <i>Remove the Electronics Cover</i>.
Obstructed access	<p>You must remove the print engine from the applicator before you work on it.</p> <ol style="list-style-type: none"> a. Remove the four corner mounting screws securing the print engine to the applicator. b. Loosen the center mounting bolt, but do not remove it. <p> Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.</p> <ol style="list-style-type: none"> c. Lift the print engine off the center mounting bolt and place on a workbench.

Remove the Electronics Cover

1. See [Figure 487](#). Remove the four long mounting screws securing the electronics cover.

Figure 487 • Electronics Cover



1	Electronics cover
2	Electronics cover mounting screws (4)

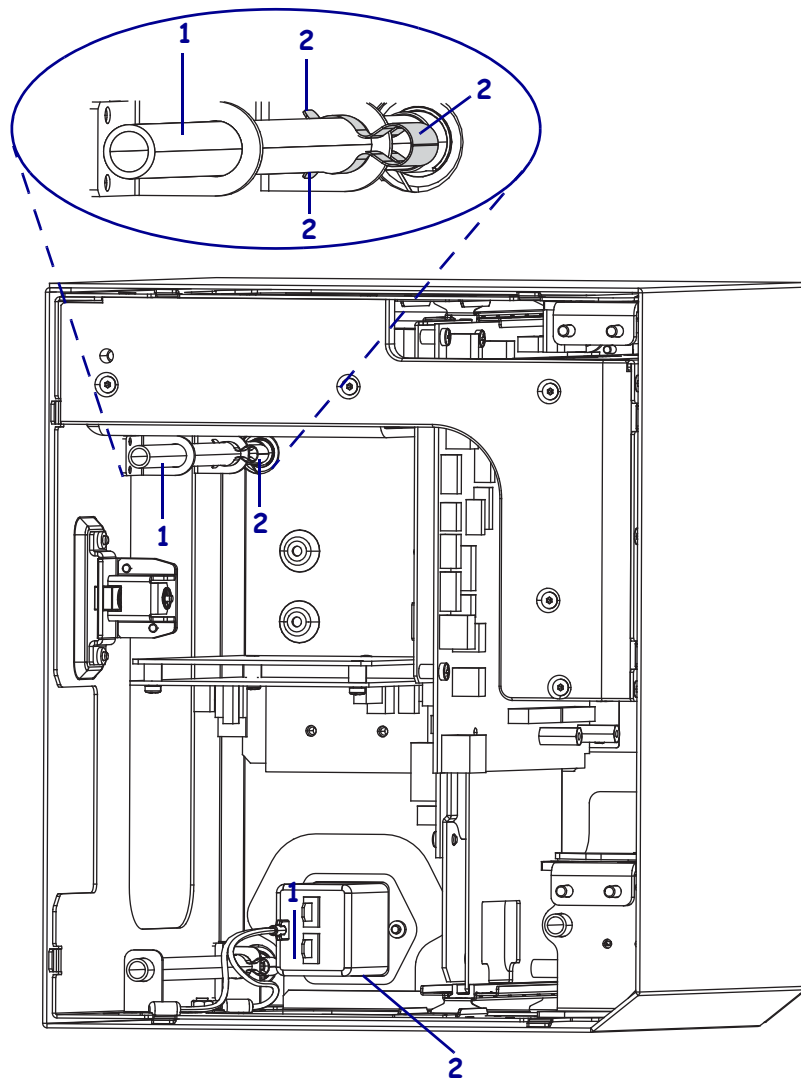
2. Slide the electronics cover off of the print engine.

Remove the Spacer Tubes and Tube Clamps

1. Press the latch button and swing the electronics enclosure open.
2. See [Figure 488](#). Reach into the electronics chassis and remove the four tube clamps securing the spacer tubes.

The spacer tubes guide the cover screws and assist in securing the electronics cover to the chassis and the main frame.

Figure 488 • Tube Clamps and Spacer Tubes



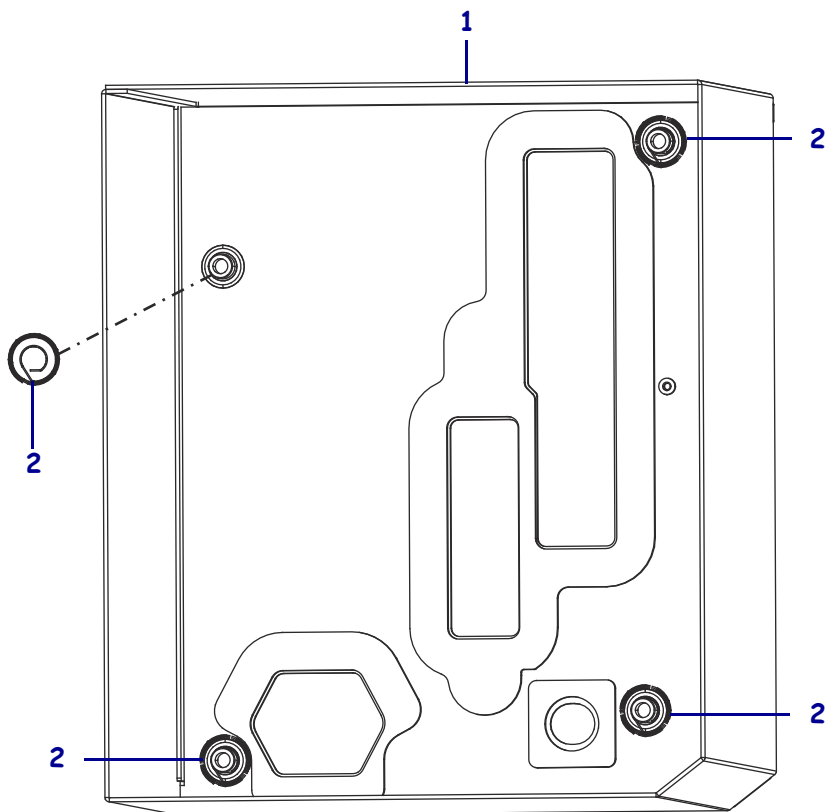
1	Spacer tube (4)
2	Tube clamps (4) (shaded in close-up)

3. Pull the four spacer tubes out of the print engine.

Remove the Conduction Springs

1. See [Figure 489](#). Working from inside of the electronics cover, remove the four conduction springs located at each of the four mounting screw holes.

Figure 489 • Conduction Springs



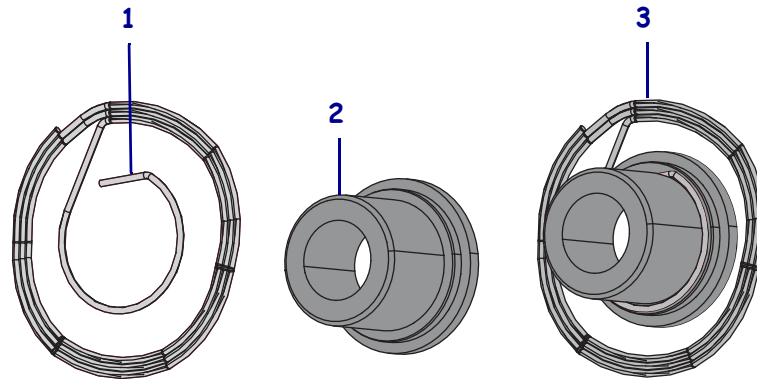
1	Electronics cover
2	Conduction Springs

Replace the Conduction Springs

1. See [Figure 490](#). Press the flat of the conduction spring to the base of the boss for each of the four mounting screw holes.

The flat holds the spring in place inside of the electronics cover.

Figure 490 • Close-up of Conduction Springs



1	Flat on the conduction spring
2	Electronics cover boss
3	Installed conduction spring

Replace the Spacer Tubes and Tube Clamps

1. Working from inside of the electronics chassis, insert each spacer tube through the vertical tab and hole near the four corners of the back plane.

Ensure that the spacer tube is supported by two brackets.

2. See [Figure 488](#). Reach into the electronics chassis and install the four tube clamps securing the spacer tubes.

The tube clamp slot straddles the vertical tab and fits around the spacer tube to prevent the tube from sliding out of place.

Close the Electronics Enclosure

1. Ensure that all wires are routed properly and are not causing any obstructions, and then carefully swing the electronics enclosure closed.
2. Adjust the wire clips for the parallel port until they are touching the parallel port.
3. Slide the electronics cover onto the print engine.
4. Reinstall the four electronics cover mounting screws.

Reinstall the Print Engine in the Applicator

1. To reinstall the print engine into the applicator, carefully place the keyhole on the center mounting bolt.



Note • The keyhole and the center mounting bolt are designed to support the print engine and assist in installing and removing the four mounting screws.

2. Replace the four corner mounting screws securing the print engine to the applicator.
3. Tighten the center mounting bolt.

Resume Printer Operation

1. Reconnect the AC power cord and interface cables.
2. Turn on (I) the print engine.

The installation is complete.

Miscellaneous Replacements

Contents

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Figure 491 • Miscellaneous Drive Covers Kit Parts List

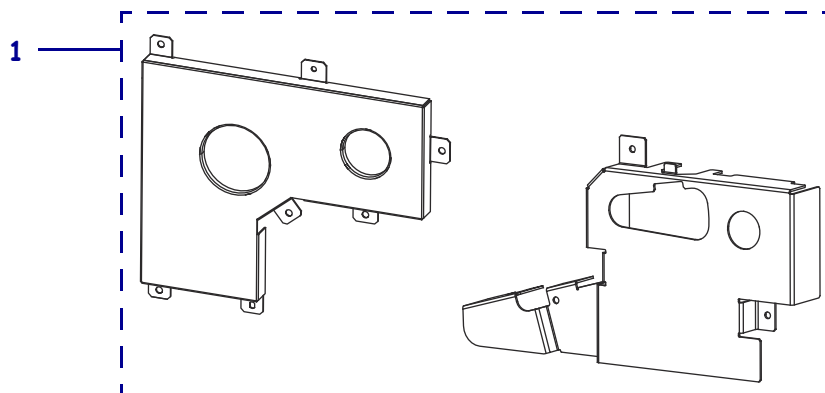


Table 79 • Miscellaneous Drive Covers Kit Parts List

Item	Part Number	Description
1	P1046696-091	Ribbon Drive and System Drive Covers Maintenance Kit, RH*
	P1046696-092	Ribbon Drive and System Drive Covers Maintenance Kit, LH*
*Note: No installation instructions available.		

Table 80 • Packaging Kit Parts List

Item	Part Number	Description
N/S	P1046696-095	ZE500 Series Packaging Kit, RH & LH See ZE500 Packaging Kit Instructions on page 878 .
N/S	HWQ06020	Cable Tie, 0.09 × 3.62 (sold in quantities of 20)

N/S = Not Shown

Figure 492 • Assorted Hardware Kit Parts List

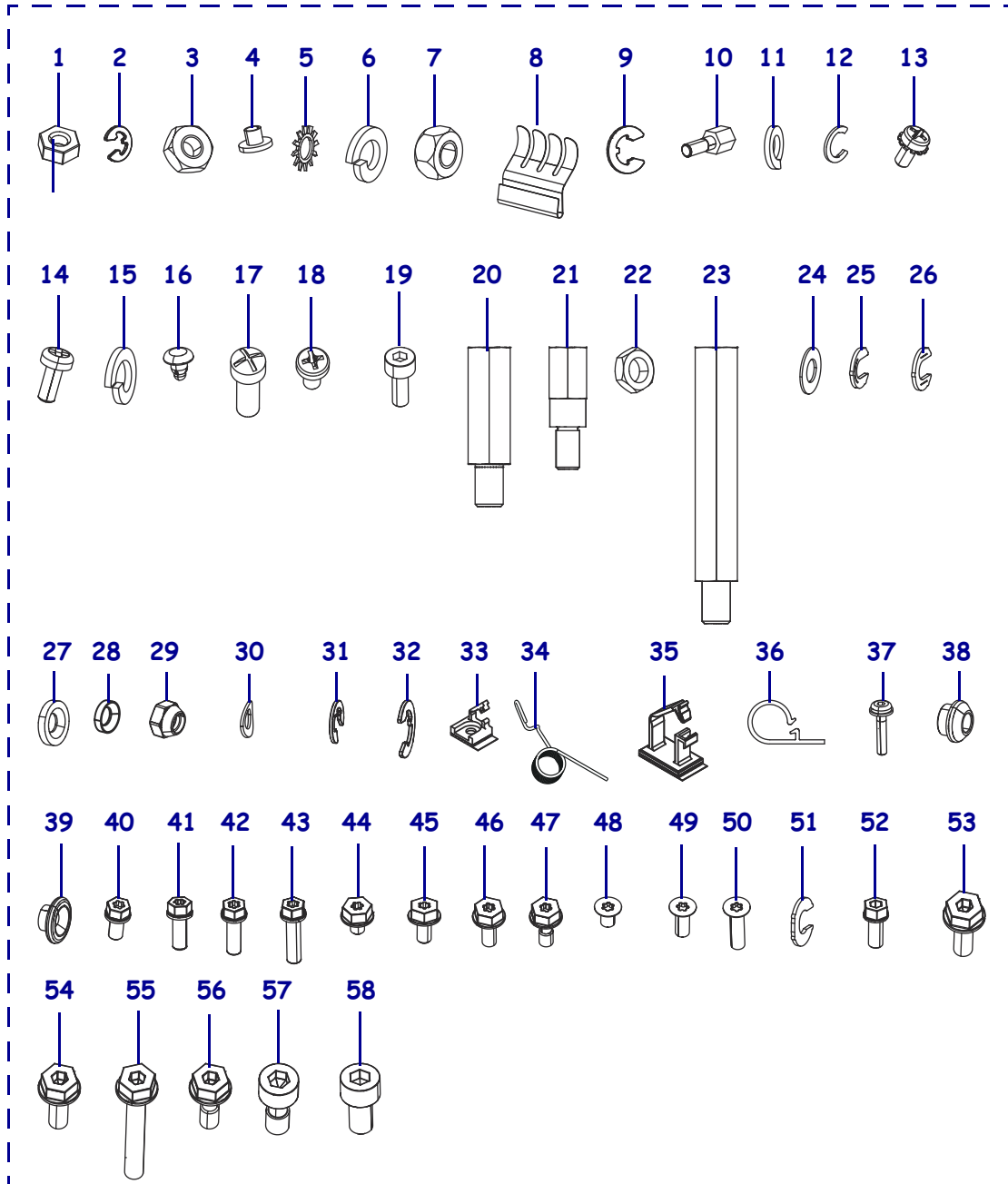


Table 81 • Assorted Hardware Kit Parts List

Item	Part Number	Description
Ref	P1046696-096	Assorted Hardware Kit See ZE500 Assorted Hardware Kit on page 880.
1	N/A	Nut, M3
2	N/A	Circlip, RS 2.3
3	N/A	Nut, M4
4	N/A	Shoulder Washer, 0.127
5	N/A	External Lock Washer, 5 mm
6	N/A	Split Washer, M6
7	N/A	Nut, M6
8	N/A	Ground Fingers
9	N/A	E-ring 6 mm
10	HW32406	Standoff, 4-40 (sold in quantities of 25)
11	HW32410	Split Washer, M5 (sold in quantities of 25)
12	HW33810	External Crescent Ring, 0.25 (sold in quantities of 100)
13	HW43495	Screw, M3 × 0.5 × 6 (sold in quantities of 25)
14	HW43971	Screw, M5 × 0.8 × 12 (sold in quantities of 25)
15	HW45945	Lock Washer, #4 (sold in quantities of 100)
16	HW48182	Snap Rivet (sold in quantities of 10)
17	HW78802	Screw, 4-40 × 0.31 (sold in quantities of 25)
18	HW78804	Screw, M3 × 0.5 × 6 (sold in quantities of 50)
19	N/A	Screw, M3 × 8
20	N/A	Spacer, 9 × 25
21	N/A	Spacer, 8 × 17
22	N/A	Nut
23	N/A	Spacer, Hex 9 × 50
24	N/A	Idler Pulley Washer
25	N/A	Washer, 9
26	N/A	Washer, 9.5
27	N/A	Washer, 9.4 × 4 × 1.6
28	N/A	Washer, 6.8 × 4 × 1.6
29	N/A	Lock Nut, M4
30	N/A	Wave Washer, M4
31	N/A	Circlip, RS-4
32	N/A	Circlip, RS-6
33	N/A	Micro Wire Saddle
34	N/A	Printhead-Open Torsion Spring
35	N/A	Wire Saddle Lock
36	N/A	Cable Tie, Screw
37	N/A	Screw, M2 × 0.4 × 10
N/A = Not Available		

Table 81 • Assorted Hardware Kit Parts List

Item	Part Number	Description
38	N/A	Belt Stretcher Washer
39	N/A	Stretch Roller Bushing
40	N/A	Screw, M3 × 6
41	N/A	Screw, M3 × 8
42	N/A	Screw, M3 × 10
43	N/A	M3 × 12
44	N/A	Screw, M3 × 4
45	N/A	Screw, M3 × 6
46	N/A	Screw, M3 × 8
47	N/A	Captive Screw, M3 × 6
48	N/A	Screw, M3 × 0.5 × 5
49	N/A	Screw, M3 × 8
50	N/A	Screw, M3 × 0.5 × 12
51	N/A	Washer, 9 × 11
52	N/A	Screw, M4 × 10
53	N/A	Screw, M4 × 8
54	N/A	Screw, M4 × 12
55	N/A	Screw, M4 × 30
56	N/A	Captive Screw, M4 × 12
57	N/A	Captive Screw, M5 × 12
58	N/A	Screw, M5 × 10
N/A = Not Available		

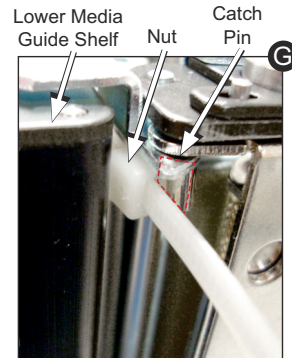
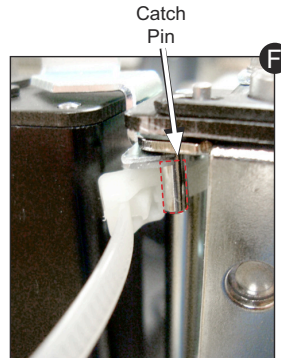
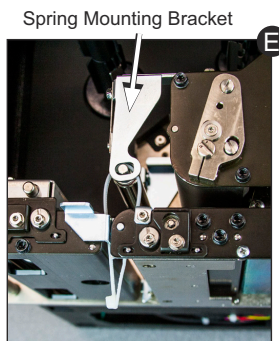
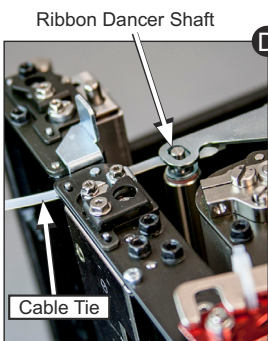
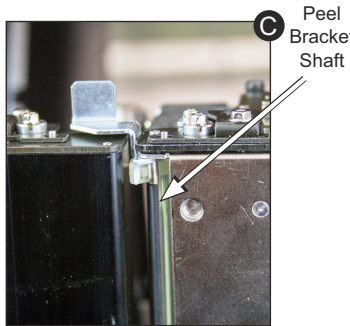
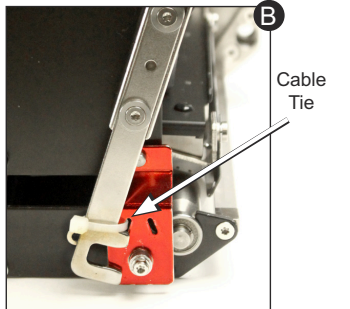
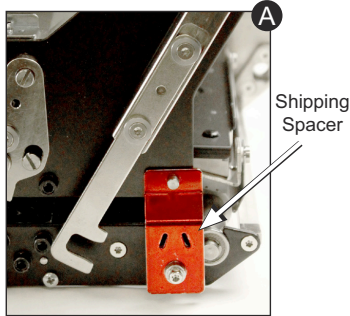
Figure 493 • ZE500 Packaging Kit Instructions



Repacking Instructions

IMPORTANT! Before repacking, call 1.847.913.2259 for a Return Material Authorization (RMA) number.

Secure the Print Engine



The following instructions are for **ZE500™ Series** Print Engines. This kit includes all of the material needed to pack the print engine for safe transport. Remove the media and ribbon. Secure and pack the print engine as shown.

1. Open the media door.
2. Open the printhead.
3. Remove the shipping spacer from the kit.
4. Align the shipping spacer as shown and partially close the printhead **A**.
5. Thread the short cable tie behind the shipping spacer and through the proper slot in the spacer **B**. For a RH print engine, use the left slot. For a LH print engine, use the right slot.
6. Wrap the short cable tie from step 5 around the printhead latch, and slowly tighten the cable tie until the latch is secure **B**.



Caution • Do not over-tighten the cable tie to avoid damaging the printhead latch.

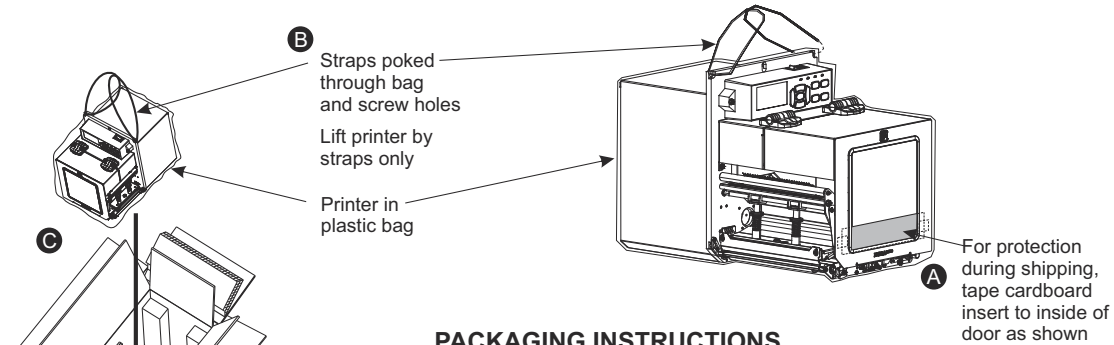
7. Place the print engine on its back with the media door face up. Open the media door.
8. Insert the long cable tie to the side of the peel bracket shaft **C**.
9. Push the cable tie straight up until it completely passes the ribbon dancer shaft **D**.
10. Bend the cable tie around the ribbon dancer shaft routing it between the shaft and the spring mounting bracket **E**.
11. Insert the free end of the cable tie through the cable tie nut. Leave the cable tie loose at this time.
12. Push the nut to the outside of the catch pin.



Note • The cable tie should not wrap around or include the catch pin **F**.

13. Pull the cable tie completely tight.
14. Tuck the nut into the small space between the peel bracket shaft and the lower media guide shelf **G**.
15. Trim the excess cable tie length so it is shorter than or even with the bottom plane of the peel bracket **G**.

Figure 494 • Packaging Instructions

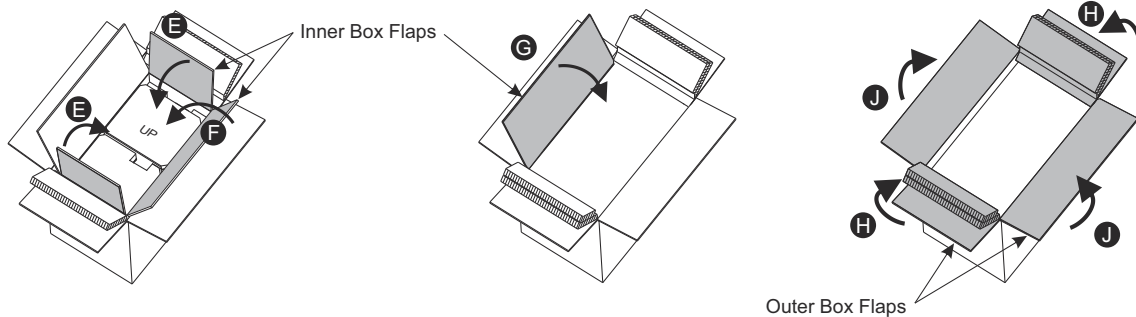


PACKAGING INSTRUCTIONS

1. To protect the window during shipping, tape the cardboard insert to the inside bottom center of door (A).
2. Drape the plastic bag over the printer.
3. Poke the two lift-out straps through the bag and the mounting screw holes, forming loops (B).
4. Gather the bag at bottom of printer and tape it shut.
5. Lift the print engine by the straps and place it into the inner box (C).
6. Position the panel cushion inserts (D).
7. Close the inner box end flaps (E).
8. Close the inner box side flap (F).
9. Close the remaining inner box side flap (G).
10. Close the flaps of the outer box as shown and seal with postal quality shipping tape (H and J).
11. Label and send insured to:
Zebra Technologies Corporation
333 Corporate Woods Parkway
Vernon Hills, Illinois
60061-3109

RMA#XXXXXX

NOTE: Write the RMA number on the mailing label and in large letters and numbers on top of the box.





ZE500 Assorted Hardware Kit

Installation Instructions

Parts List

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

Figure 495 • Kit Contents

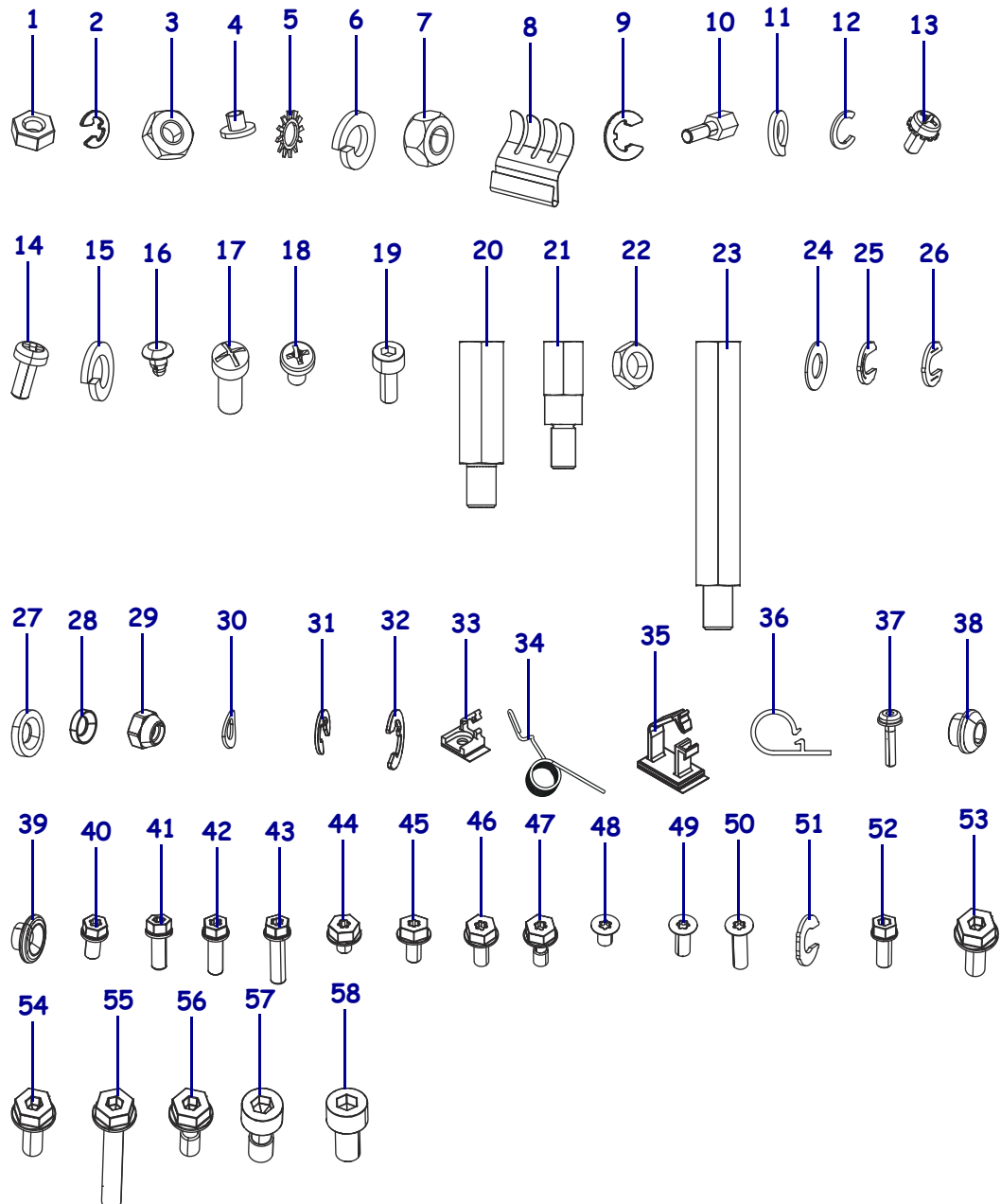


Table 82 • Parts List

✓	Item	Qty	Part Number	Description
	Ref	1	P1046696-096	Assorted Hardware Kit
	1	10	09022-310	Nut, M3
	2	10	09045-106	Circlip, RS2.3
	3	10	10461	Nut, M4
	4	10	31027	Shoulder Washer, 0.127
	5	10	43483	External Lock Washer, 5 mm
	6	10	43977	Split Washer, M6
	7	5	43980	Nut, M6
	8	0.5	58763	Ground Fingers
	9	10	806387-001	E-ring 6 mm
	10	10	HW32406	Standoff, 4-40 (sold in quantities of 25)
	11	10	HW32410	Split Washer, M5 (sold in quantities of 25)
	12	10	HW33810	External Crescent Ring, 0.25 (sold in quantities of 100)
	13	10	HW43495	Screw, M3 × 0.5 × 6 (sold in quantities of 25)
	14	10	HW43971	Screw, M5 × 0.8 × 12 (sold in quantities of 25)
	15	10	HW45945	Lock Washer, #4 (sold in quantities of 100)
	16	10	HW48182	Snap Rivet (sold in quantities of 10)
	17	10	HW78802	Screw, 4-40 × 0.31 (sold in quantities of 25)
	18	10	HW78804	Screw, M3 × 0.5 × 6 (sold in quantities of 50)
	19	10	<i>P1040018-008</i>	Screw, M3 × 8
	20	10	<i>P1040490</i>	Spacer, 9 × 25
	21	10	<i>P1040491</i>	Spacer, 8 × 17
	22	10	<i>P1040550</i>	Nut
	23	10	<i>P1042297</i>	Spacer, Hex 9 × 50
	24	10	<i>P1044725</i>	Idler Pulley Washer
	25	10	<i>P1044759</i>	Washer, 9
	26	10	<i>P1044761</i>	Washer, 9.5
	27	10	<i>P1045546-1</i>	Washer, 9.4 × 4 × 1.6
	28	10	<i>P1045546-2</i>	Washer, 6.8 × 4 × 1.6
	29	10	<i>P1046822</i>	Lock Nut, M4
	30	10	<i>P1046823</i>	Wave Washer, M4
	31	10	<i>P1046998-04</i>	Circlip, RS-4
	32	10	<i>P1046998-06</i>	Circlip, RS-6
	33	10	<i>P1047591</i>	Micro Wire Saddle
	34	5	<i>P1048658</i>	Printhead-Open Torsion Spring
	35	10	<i>P1048904</i>	Wire Saddle Lock
	36	10	<i>P1048905</i>	Cable Tie, Screw
	37	10	<i>P1049407</i>	Screw, M2 × 0.4 × 10
N/A = Not available as a separate part (listed for identification purposes only).				

Table 82 • Parts List

✓	Item	Qty	Part Number	Description
	38	10	<i>P1050179</i>	Belt Stretcher Washer
	39	10	<i>P1050182</i>	Stretch Roller Bushing
	40	20	<i>P1051017-06</i>	Screw, M3 × 6
	41	10	<i>P1051017-08</i>	Screw, M3 × 8
	42	20	<i>P1051017-10</i>	Screw, M3 × 10
	43	10	<i>P1051017-12</i>	M3 × 12
	44	10	<i>P1051018-04</i>	Screw, M3 × 4
	45	10	<i>P1051018-06</i>	Screw, M3 × 6
	46	10	<i>P1051018-08</i>	Screw, M3 × 8
	47	10	<i>P1051019</i>	Captive Screw, M3 × 6
	48	10	<i>P1051020-05</i>	Screw, M3 × 0.5 × 5
	49	10	<i>P1051020-08</i>	Screw, M3 × 8
	50	10	<i>P1051020-12</i>	Screw, M3 × 0.5 × 12
	51	10	<i>P1051021</i>	Washer, 9 × 11
	52	10	<i>P1052804-10</i>	Screw, M4 × 10
	53	10	<i>P1052805-08</i>	Screw, M4 × 8
	54	10	<i>P1052805-12</i>	Screw, M4 × 12
	55	10	<i>P1052805-30</i>	Screw, M4 × 30
	56	10	<i>P1052807</i>	Captive Screw, M4 × 12
	57	10	<i>P1052808</i>	Captive Screw, M5 × 12
	58	10	<i>P1052809</i>	Screw, M5 × 10
N/A = Not available as a separate part (listed for identification purposes only).				

Figure 496 • Front View

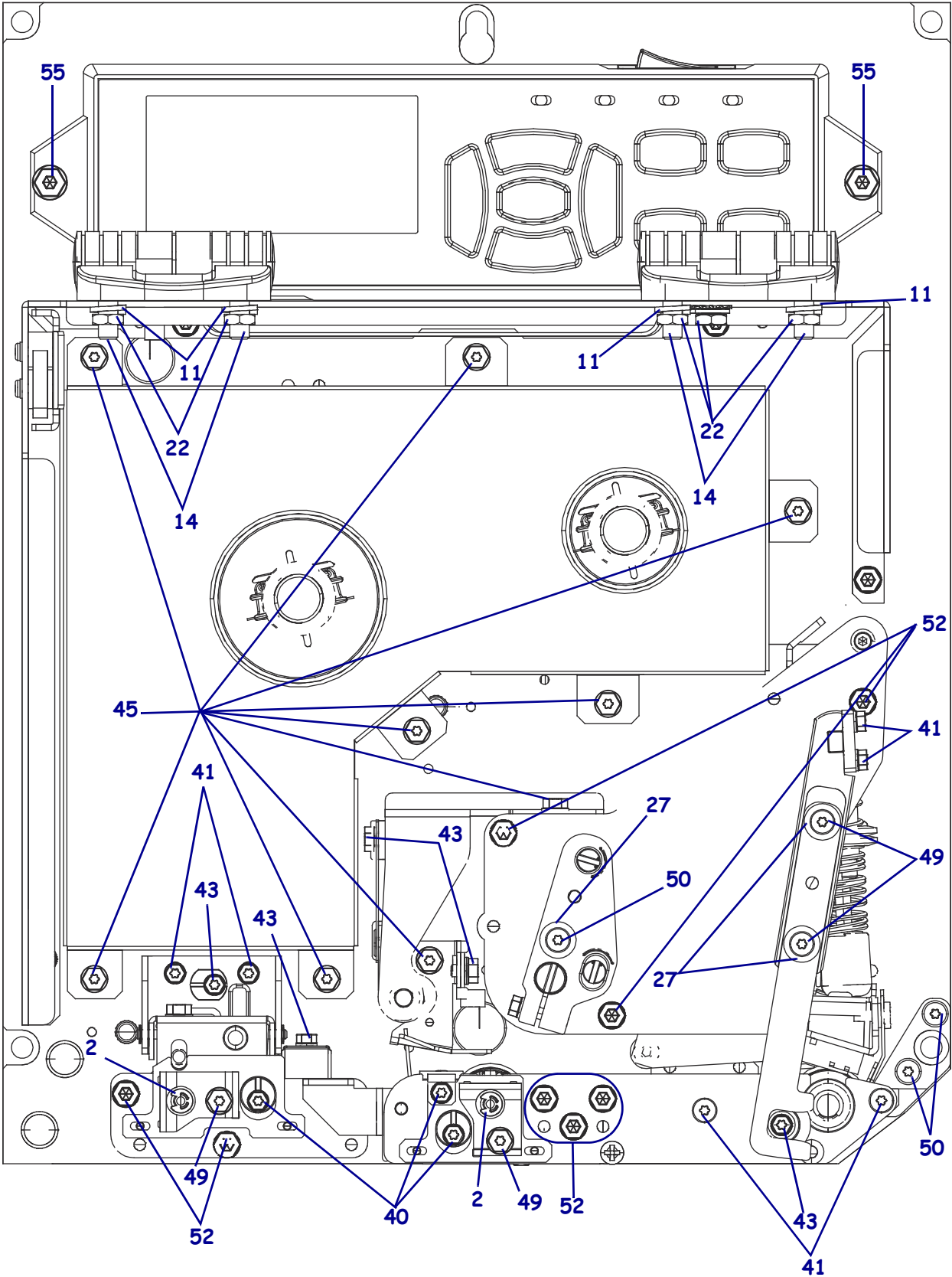


Figure 497 • Rear View

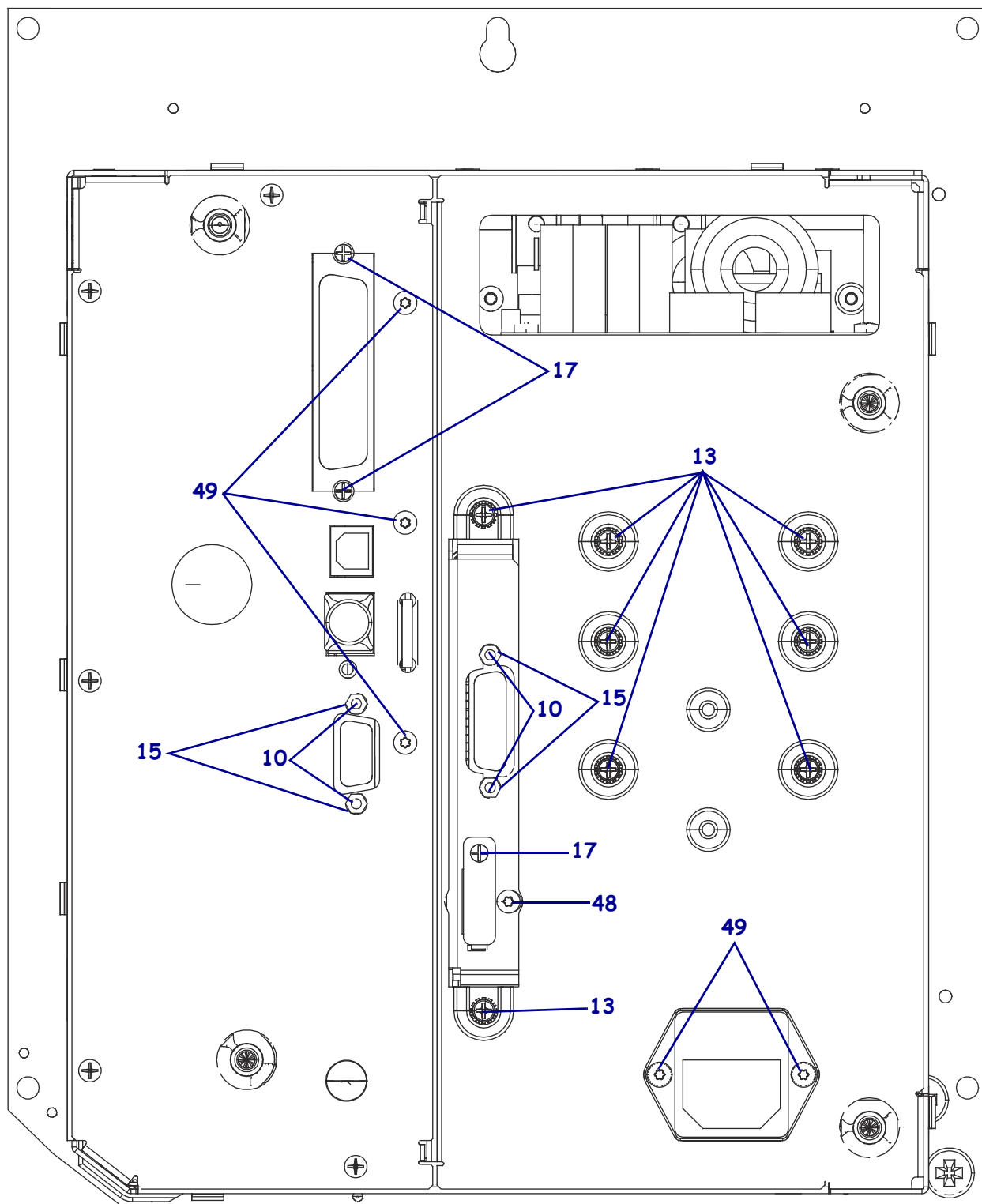


Figure 498 • Right Side View (RH)

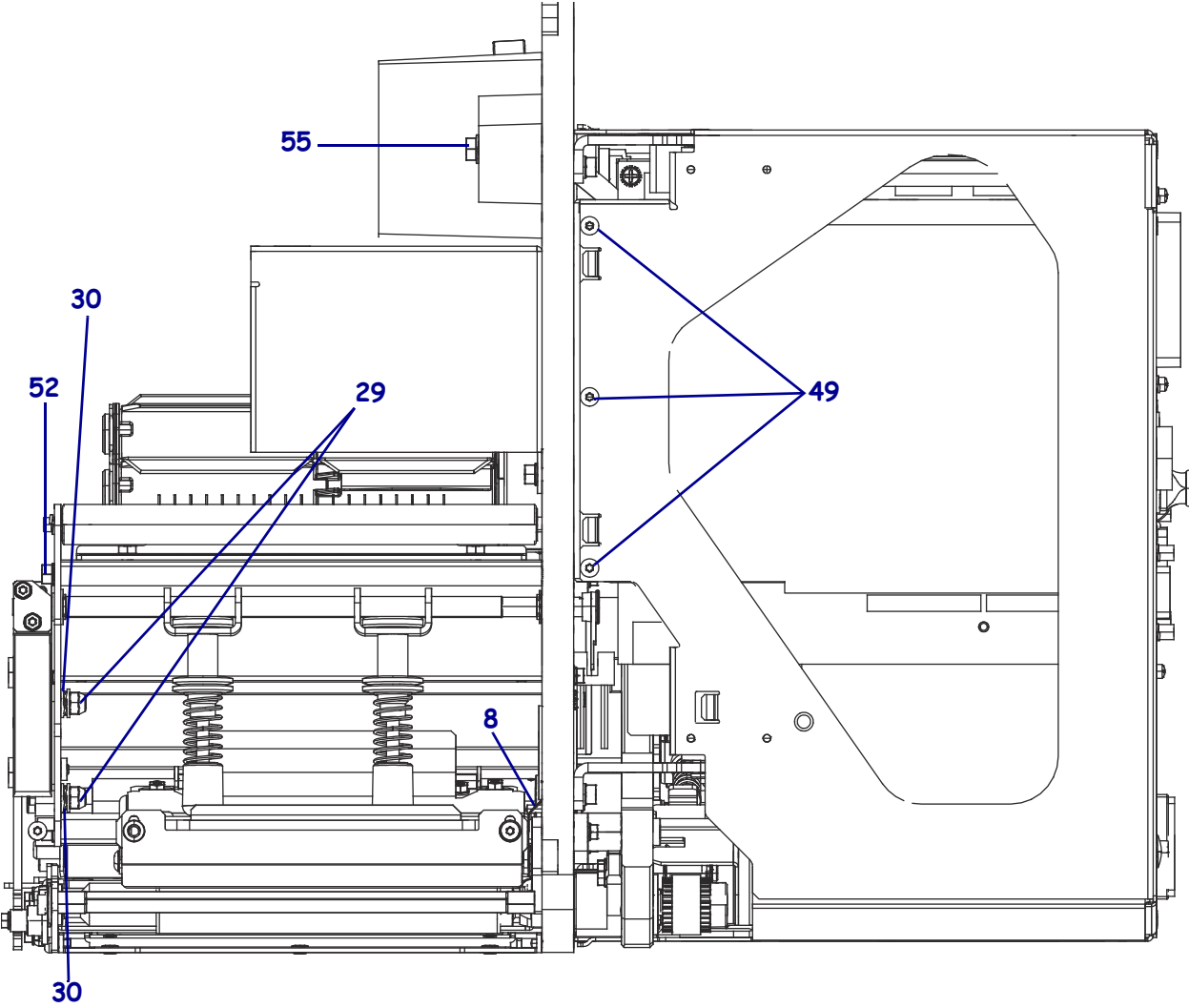


Figure 499 • Left Side (RH)

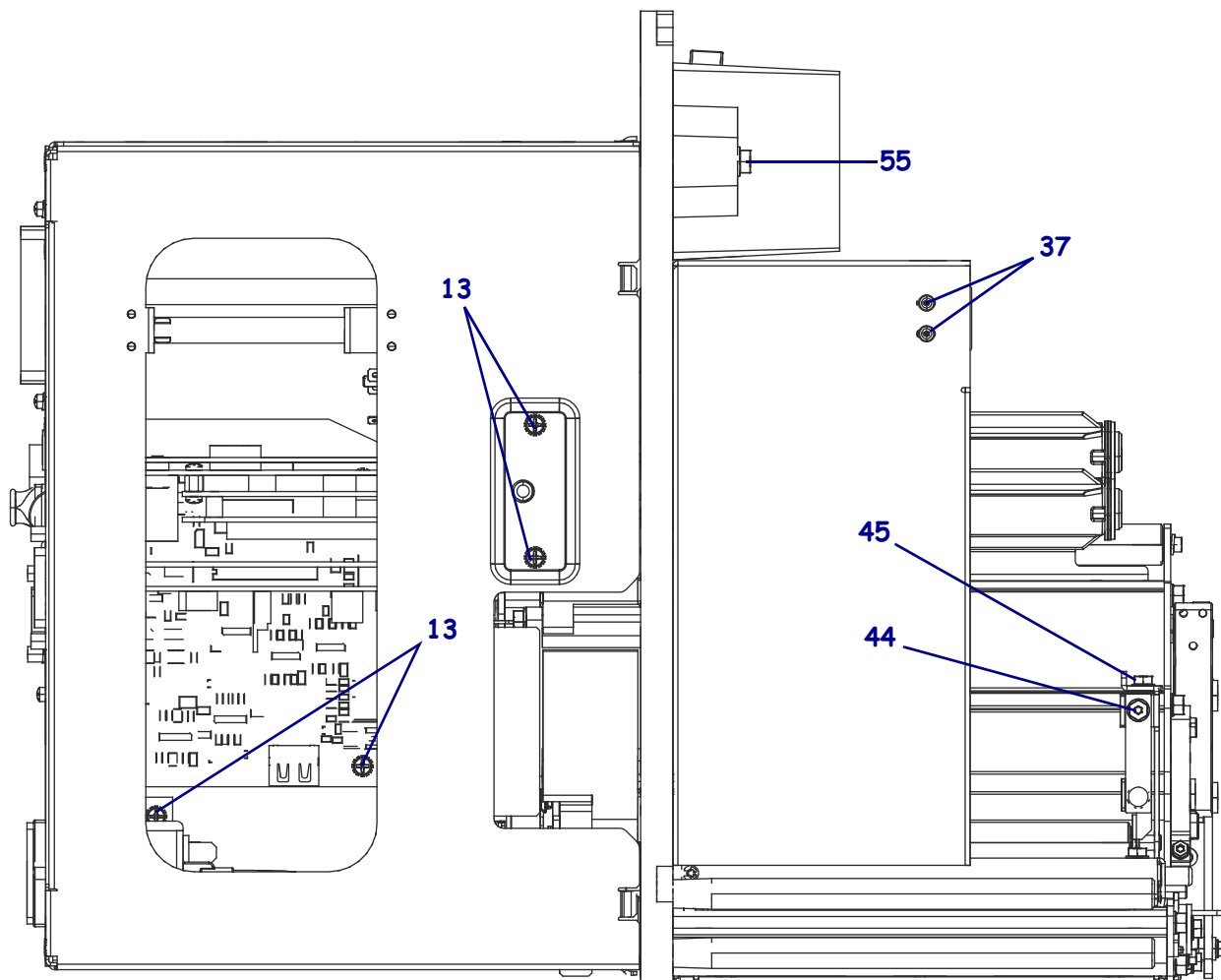


Figure 500 • Rear of Front Section

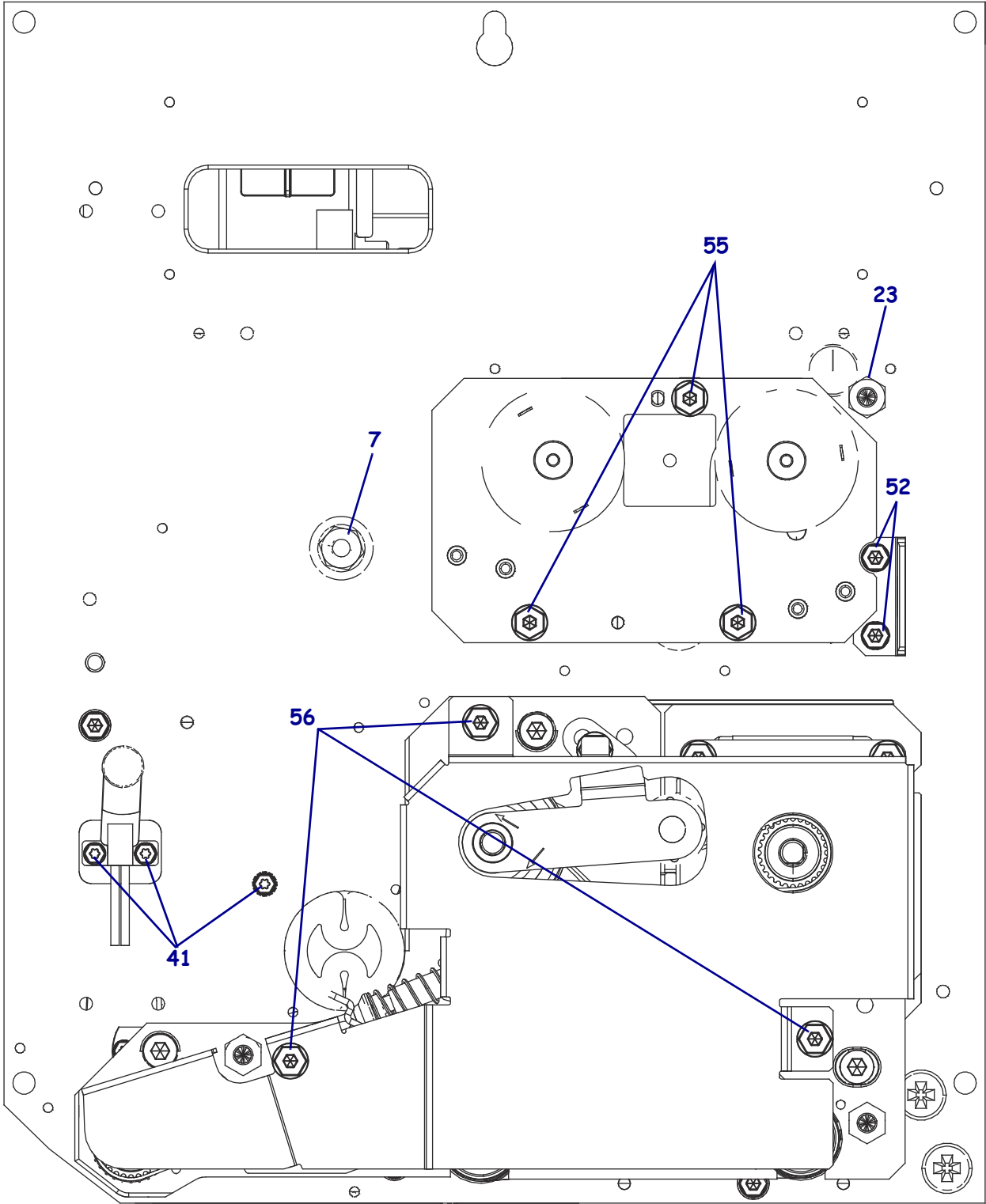


Figure 501 • Drive System hardware

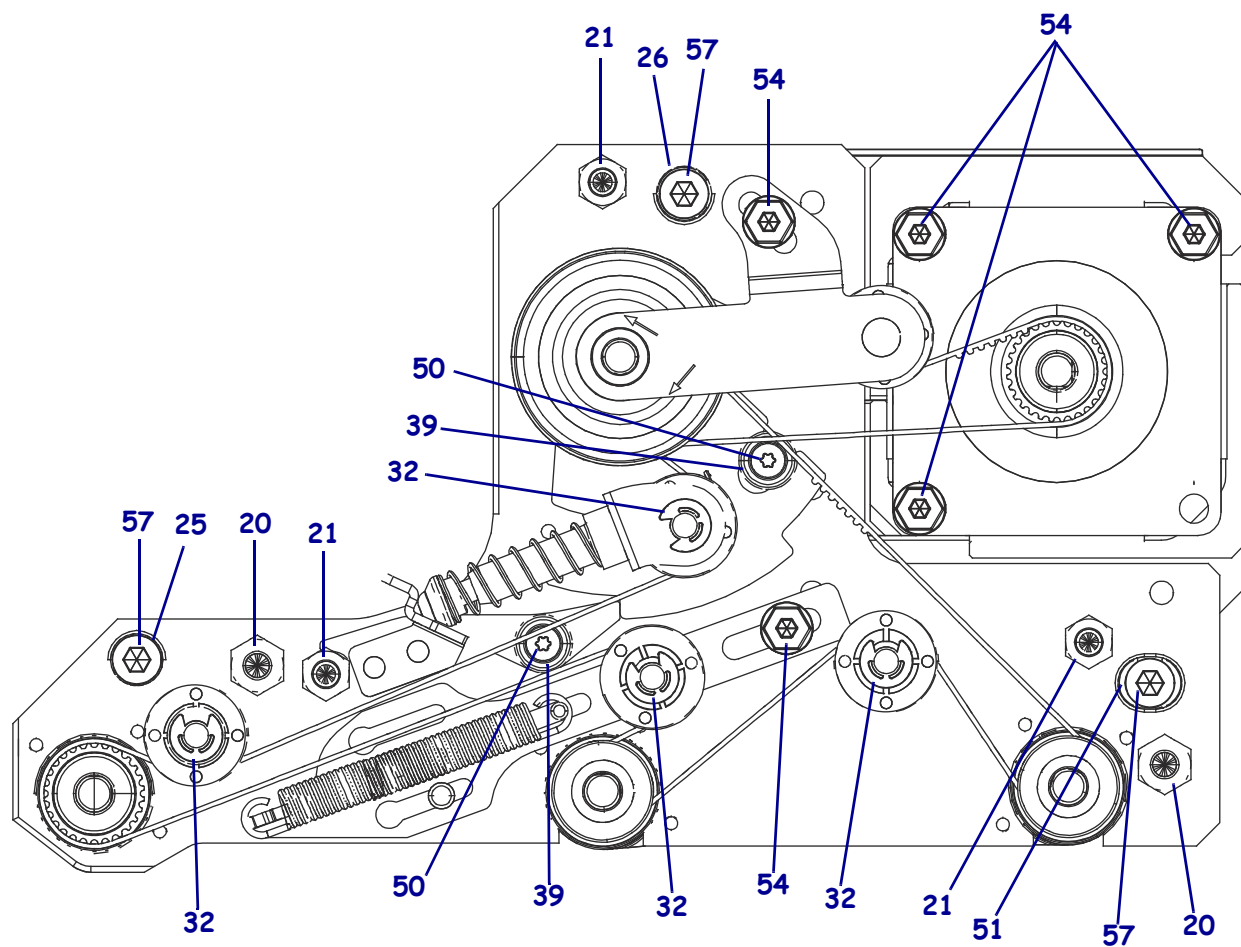


Figure 502 • Drive Unit Removed

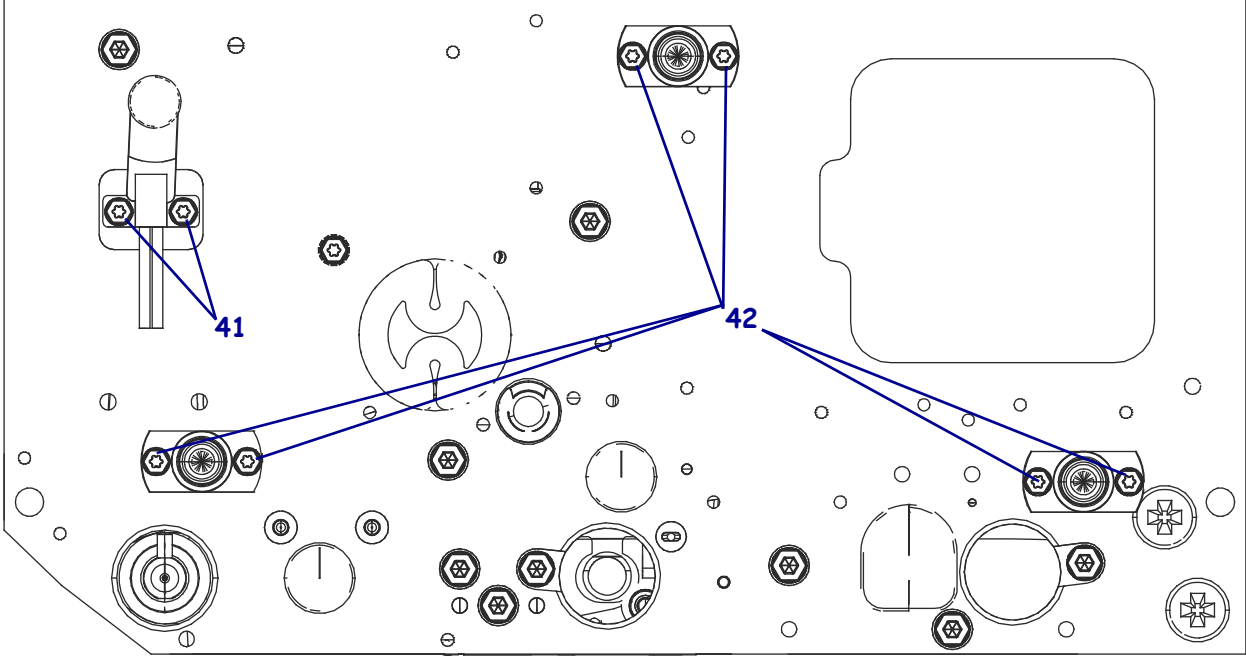
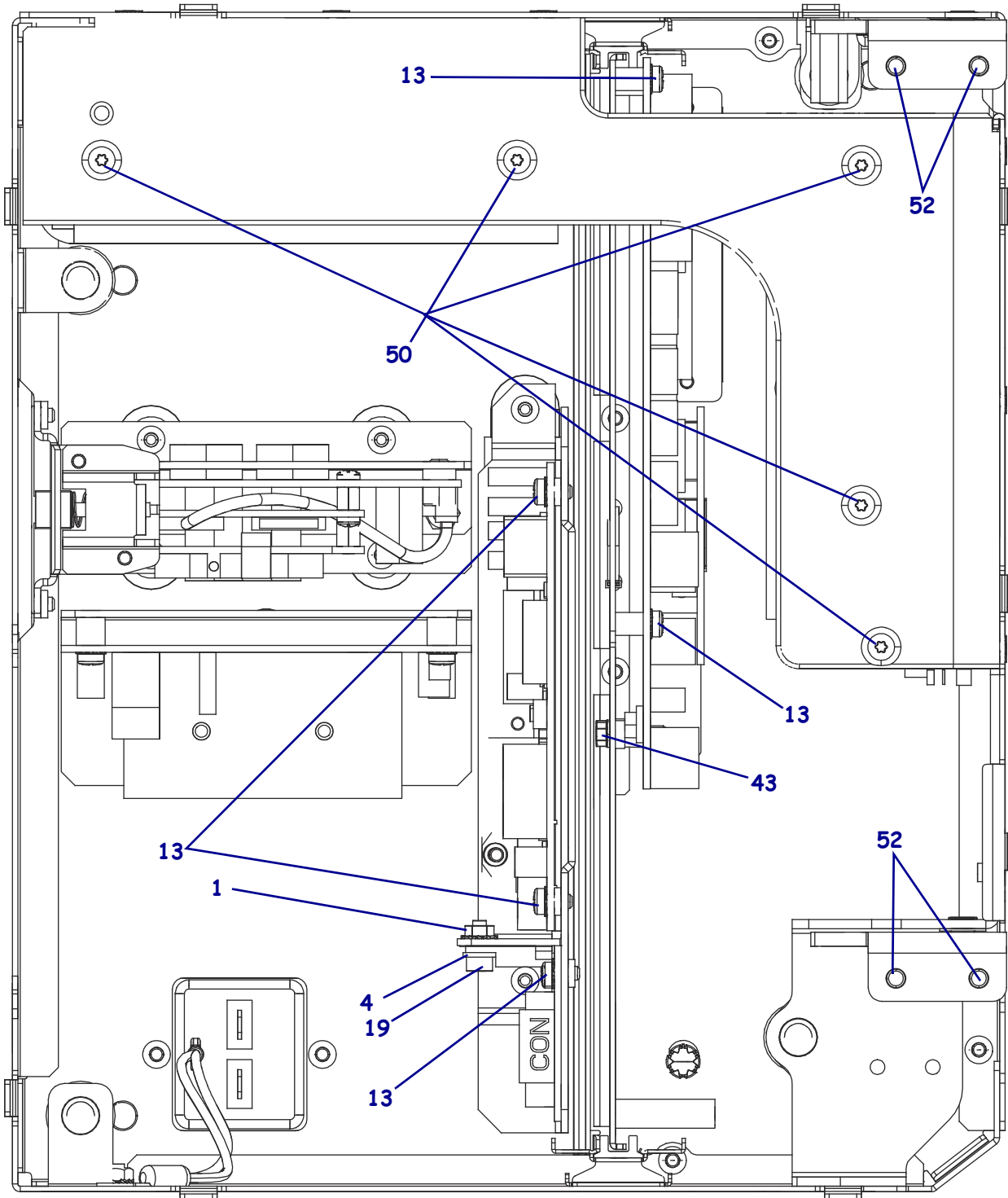


Figure 503 • Rear Enclosure Front View





Zebra Technologies Corporation

Zebra Technologies Corporation
475 Half Day Road, Suite 500
Lincolnshire, IL 60069 USA
T: +1 847 634 6700
Toll-free +1 866 230 9494
F: +1 847 913 8766

Zebra Technologies Europe Limited

Dukes Meadow
Millboard Road
Bourne End
Buckinghamshire, SL8 5XF, UK
T: +44 (0)1628 556000
F: +44 (0)1628 556001

Zebra Technologies Asia Pacific, LLC

120 Robinson Road
#06-01 Parakou Building
Singapore 068913
T: +65 6858 0722
F: +65 6885 0838

<http://www.zebra.com>