



Zebra® ZXP Series 8™ Card Printer

User's Manual



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<http://www.zebra.com/environment>

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Introduction

Description

This manual contains installation, operation, and maintenance information for the Zebra ZXP Series 8 Card Printers manufactured by Zebra Technologies Corporation.

Zebra ZXP Series 8 Card Printers use reverse transfer printing technology to create photo-quality and over-the-edge images on plastic identification cards. Zebra's reverse transfer printers provide fast throughput and a range of encoding options for a variety of markets and applications.

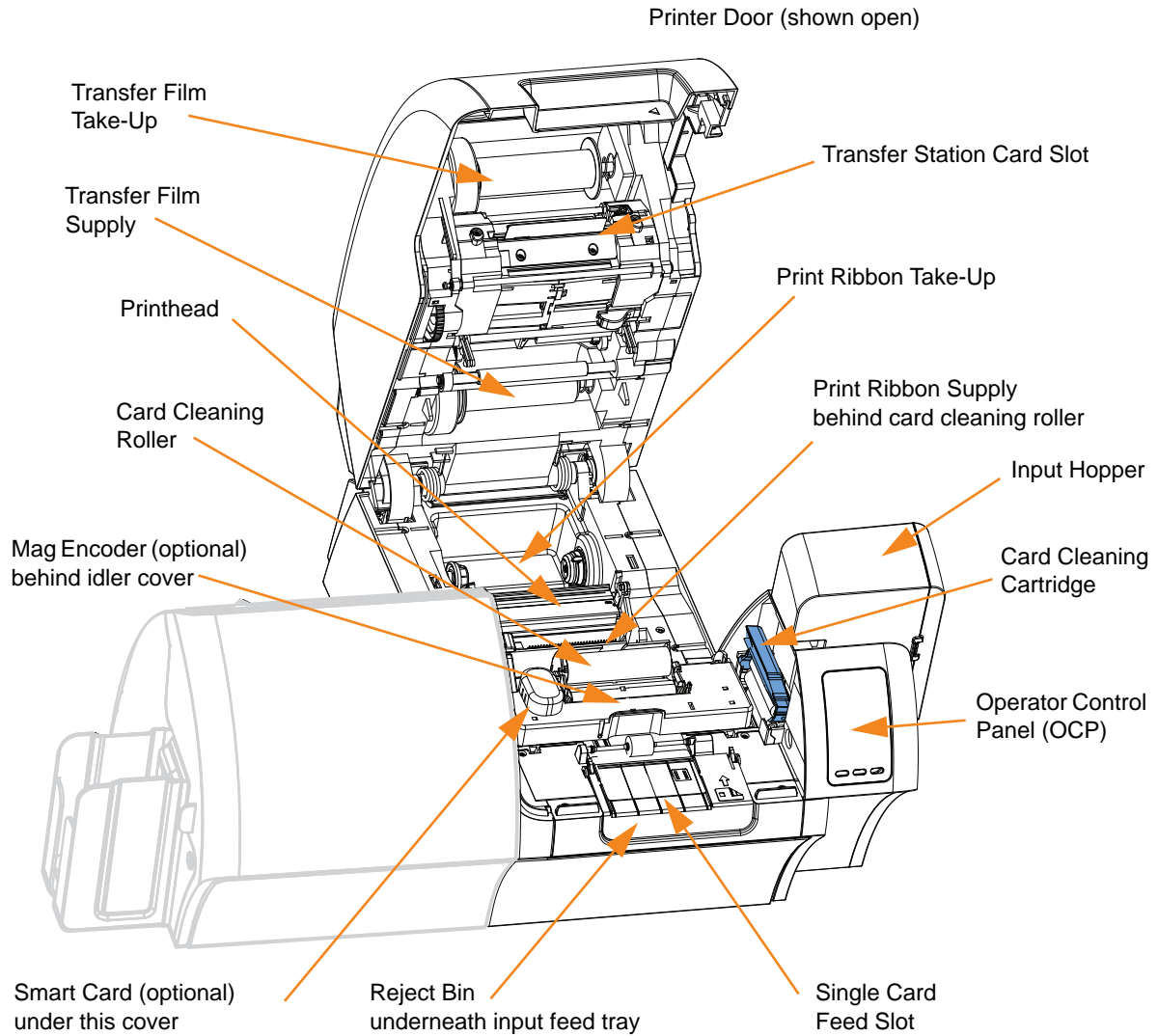
This manual describes single-sided and dual-sided ZXP Series 8 Card Printers and dual-sided ZXP Series 8 Card Printers with either a single-sided or dual-sided Laminator.

The single-sided Laminator lays down and seals a laminating film on the top surface of the printed card for added security; the dual-sided Laminator lays down and seals laminating film on both the top and bottom surfaces of the printed card.

References to “the laminator” in this document apply to either the single-sided or the dual-sided Laminator.

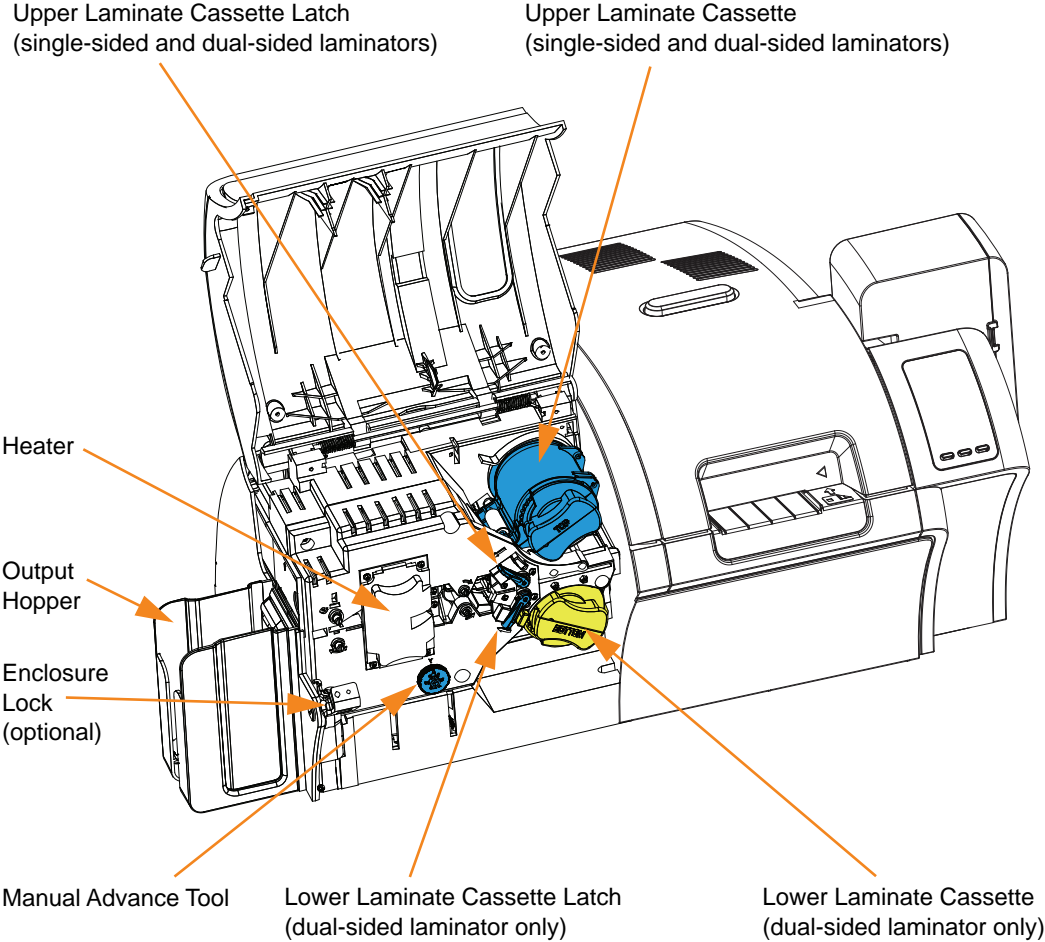
Printer Components

The following figure shows components of the Printer. If the Laminator is present, see [page 3](#) for details.



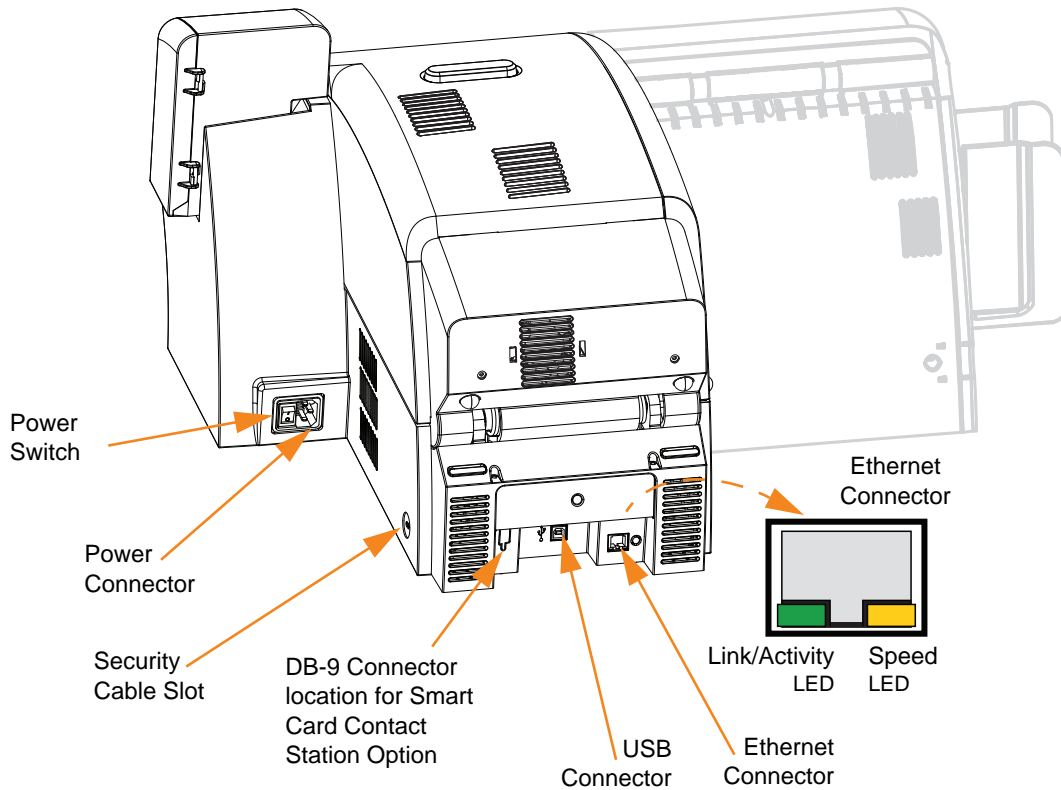
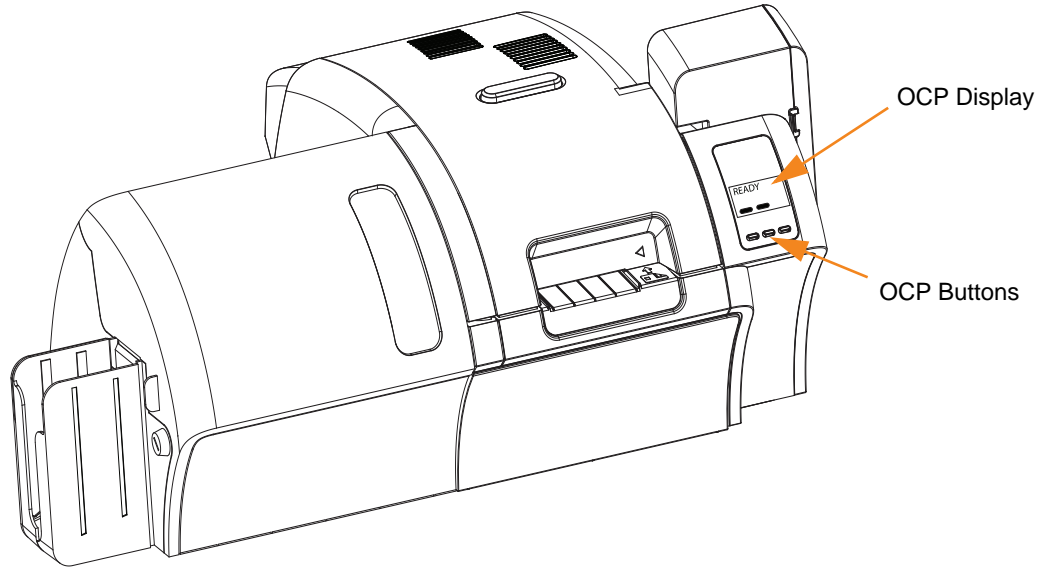
Laminator Components

The following figure shows components of the Laminator.



Controls, Connectors, and Indicators

The printer has an OCP Display and three OCP Buttons on the front and a power connector, power switch, and interface connectors on the rear panel.



Icons

Throughout this manual, different icons highlight important information, as follows:



Note • Indicates information that emphasizes or supplements important points of the main text.



Important • Advises you of information that is essential to complete a task, or points out the importance of specific information in the text.



Provides an example or scenario to demonstrate or clarify a section of text.



Electrostatic Discharge Caution • Warns you of the potential for electrostatic discharge.



Electric Shock Caution • Warns you of a potential electric shock situation.



Hot Surface • Warns you of a situation where excessive heat could cause a burn.



Caution • Advises you that failure to take or avoid a specific action could result in physical harm to you, or could result in physical damage to the hardware.

Zebra Supplies

Genuine Zebra supplies meet stringent quality standards and are recommended for optimal printing quality and proper printer performance. The ZXP Series 8 printer is designed to work only with Zebra True Colours® i Series™ Ribbons, Zebra True Colours i Series Transfer Film, and Zebra True Secure™ i Series Laminates; see www.zebra.com/supplies for details.





Installation and Setup

General Information

This section will guide you through the installation and setup of your Card Printer. This consists of the following procedures, which should be performed in the order presented.

- Unpacking the Printer 8
- Installing the Card Hoppers 12
- Loading Cards 13
- Opening the Printer Door 14
- Installing the Cleaning Cartridge 15
- Installing the Cleaning Roller 16
- Loading the Transfer Film 17
- Loading a Print Ribbon 19
- Loading the Laminate 21
- Connecting Power 33
- Connecting the Printer to your Computer 34
- Installing the Windows Printer Driver 36

The procedure to be followed for Packing the Printer for Shipment is given at the end of this section.

Unpacking the Printer

Printer without a Laminator

Step 1. Inspect the shipping container to ensure that no damage has occurred during shipment. If any damage is apparent, file a claim with the shipper.

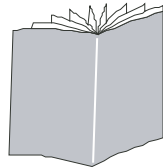
Step 2. Open the shipping container.

Step 3. Remove the packing material and accessories from around the top of the Printer.

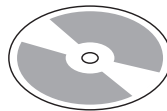


Important • Save all the packing material and the shipping carton in case the Printer needs to be moved or shipped. If the original material is lost or damaged, a replacement Shipping Kit can be ordered from Zebra.

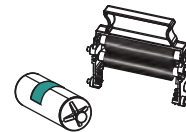
Step 4. Make sure the following items are included with your Printer:



Quick Start Guide



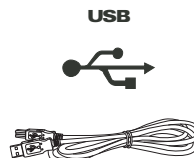
CD-ROM with InstallWizard



Cleaning Cartridge



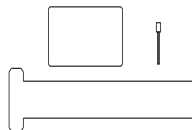
Cleaning Roller



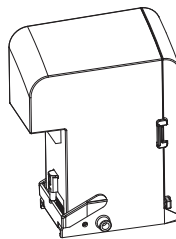
USB Cable



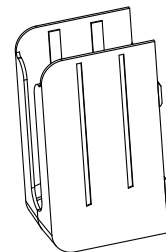
Power Cable



Cleaning Kit



Input Hopper



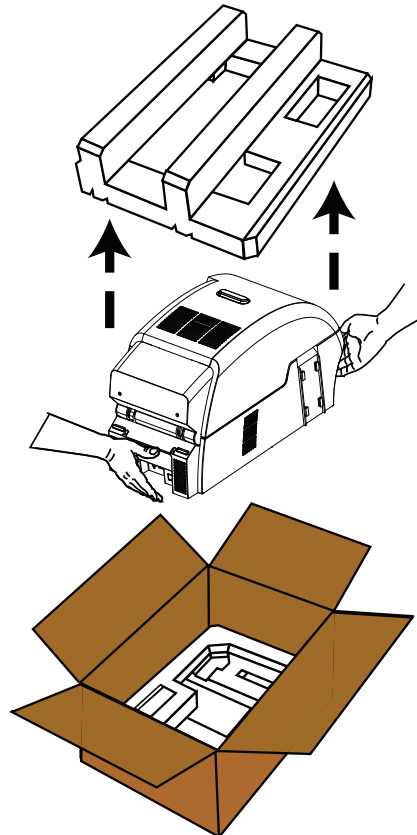
Output Hopper

If any items are missing, please contact your dealer. To reorder, refer to [Appendix I](#) of this manual.



Caution • The Printer weighs approximately 27.5 lbs (12.5 kg).

Step 5. Lift the Printer out of the carton by holding it with both hands.



Step 6. Place the Printer in a location that meets the following requirements:

- A reasonably dust- and dirt-free environment.
- Flat surface at least 27 in (686 mm) x 28 in (711 mm) that can support the weight of the Printer; additional space preferred. Allow a 4-inch clearance, minimum, on all sides.
- Vertical clearance at least 32 in (813 mm).
- Temperature within the range of 59° to 95°F (15° to 35°C).
- Relative Humidity 20 to 80% inclusive, non-condensing.
- AC power accessible.

Step 7. Remove the protective plastic bag from the Printer.

Printer with a Laminator

Step 1. Inspect the shipping container to ensure that no damage has occurred during shipment. If any damage is apparent, file a claim with the shipper.

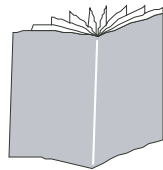
Step 2. Open the shipping container.

Step 3. Remove the packing material and accessories from around the top of the Printer.



Important • Save all the packing material and the shipping carton in case the Printer needs to be moved or shipped. If the original material is lost or damaged, a replacement Shipping Kit can be ordered from Zebra.

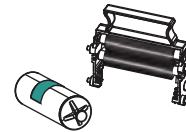
Step 4. Make sure the following items are included with the Printer:



Quick Start Guide



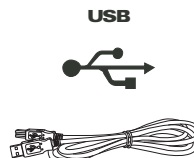
CD-ROM with InstallWizard



Cleaning Cartridge



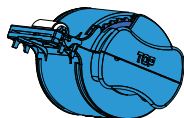
Cleaning Roller



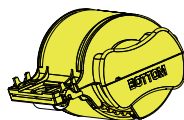
USB Cable



Power Cable

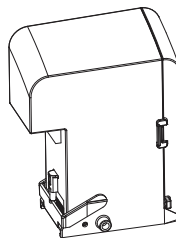


Single-
and
Dual-
sided

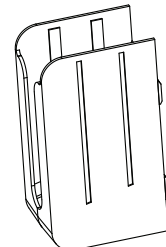


Dual-
sided
only

Laminate Cassette(s)



Input Hopper



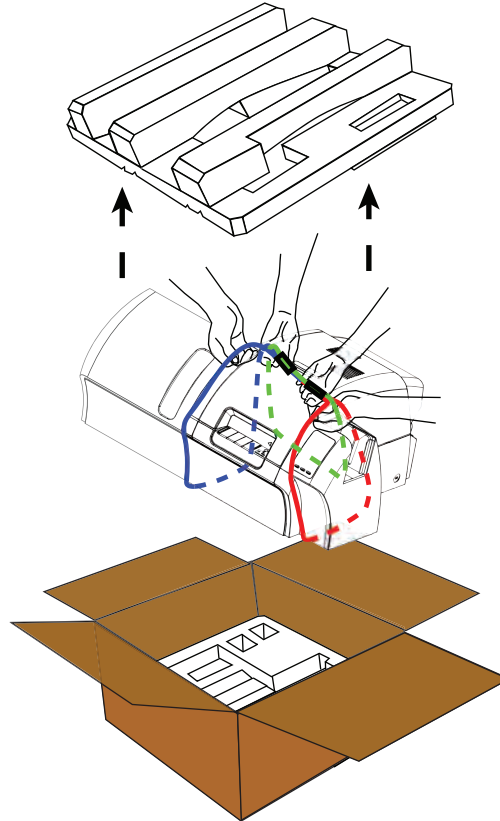
Output Hopper

If any items are missing, please contact your dealer. To reorder, refer to [Appendix I](#) of this manual.



Caution • The Printer weighs approximately 44 lbs (20 kg); use two people to lift it out of the shipping carton.

Step 5. With two people holding the carrying strap (colored **blue**, **green**, and **red** for clarity), carefully lift the Printer out of the recess in the lower foam insert.



Step 6. Place the Printer in a location that meets the following requirements:

- A reasonably dust- and dirt-free environment.
- Flat surface at least 38 in (965 mm) wide x 28 in (711 mm) deep that can support the weight of the Printer; additional space preferred. Allow a 4-inch clearance, minimum, on all sides.
- Vertical clearance at least 32 in (813 mm).
- Temperature within the range of 59° to 95°F (15° to 35°C).
- Relative Humidity 20 to 80% inclusive, non-condensing.
- AC power accessible.

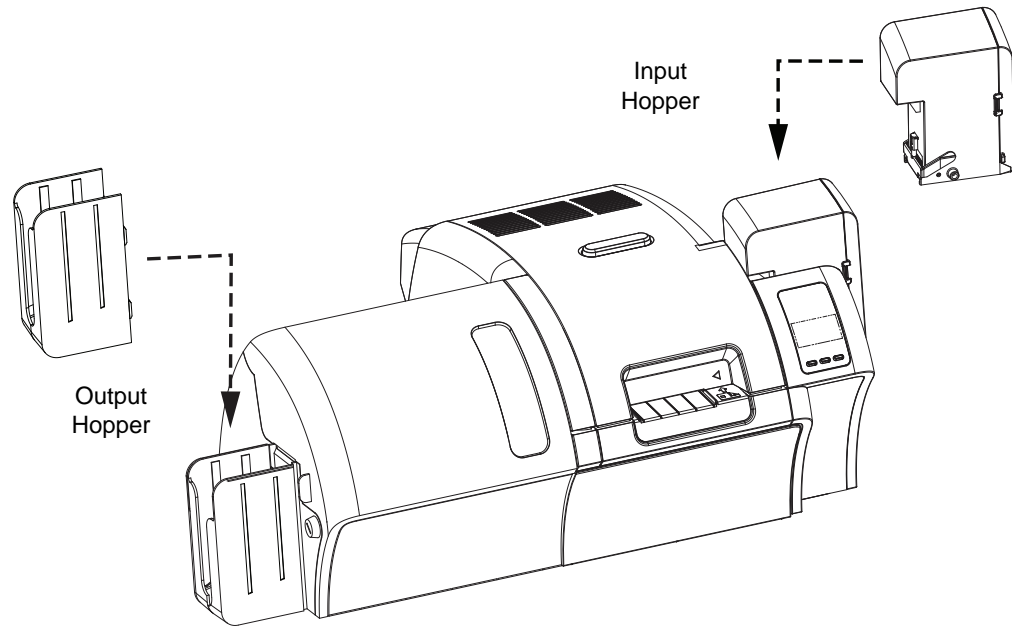
Remove the protective plastic bag from the Printer.

Installing the Card Hoppers

Input Hopper

The Input Hopper is positioned on the right side of the Printer and holds the cards to be printed.

- Step 1.** Install the Input Hopper by sliding the hopper into the receptacle on the right side of the Printer.
- Step 2.** Ensure that the Input Hopper locks securely in place.



Output Hopper

The Output Hopper is positioned on the left side of the Printer (or the left side of the Laminator if the printer includes a Laminator as shown above) and receives the printed cards.

- Step 1.** Install the Output Hopper by inserting the four tabs on the right side of the hopper into the four slots on the left side of the Printer or Laminator.
- Step 2.** Ensure that the Output Hopper locks securely in place.

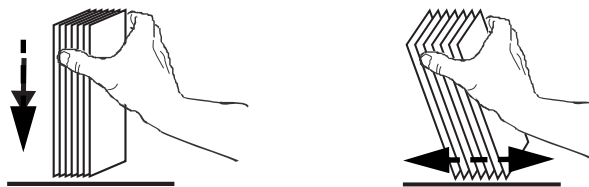
Loading Cards



Caution • DO NOT bend cards or touch print surfaces as this can reduce print quality. The surface of the cards must remain clean and dust free. Always store cards in an enclosed container. Ideally, use cards as soon as possible.

Step 1. Remove the wrapping from the card deck.

Step 2. Holding the card deck by the sides (**do not touch the print surfaces**), hold it vertically against a flat surface such as a desktop. If the deck is too thick for your hand to hold it comfortably, use about half a deck at a time.



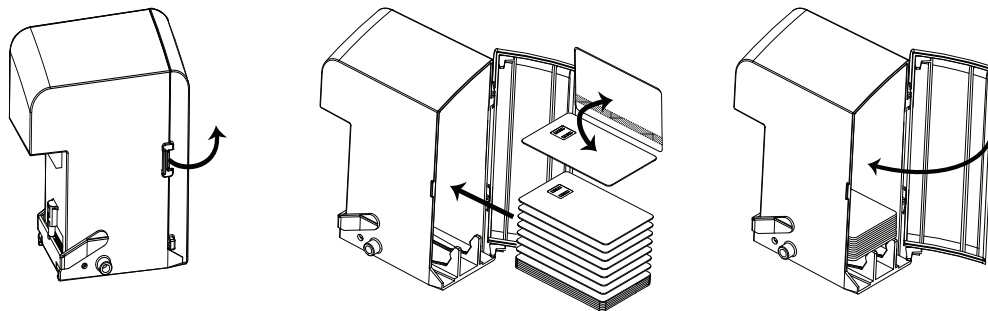
Step 3. Push the stack back and forth to an angle of about 45° from vertical, so as to separate all of the cards.



Note • Static charges and edge burrs from the card die-cutting process can render individual cards stuck together with significant adhesion force. These cards *must be* physically separated from each other before inserting into the feeder; if not separated, feeding or printing problems may occur.

Step 4. Restore the card stack to its original squared-off condition.

Step 5. Open the Input Hopper Door.

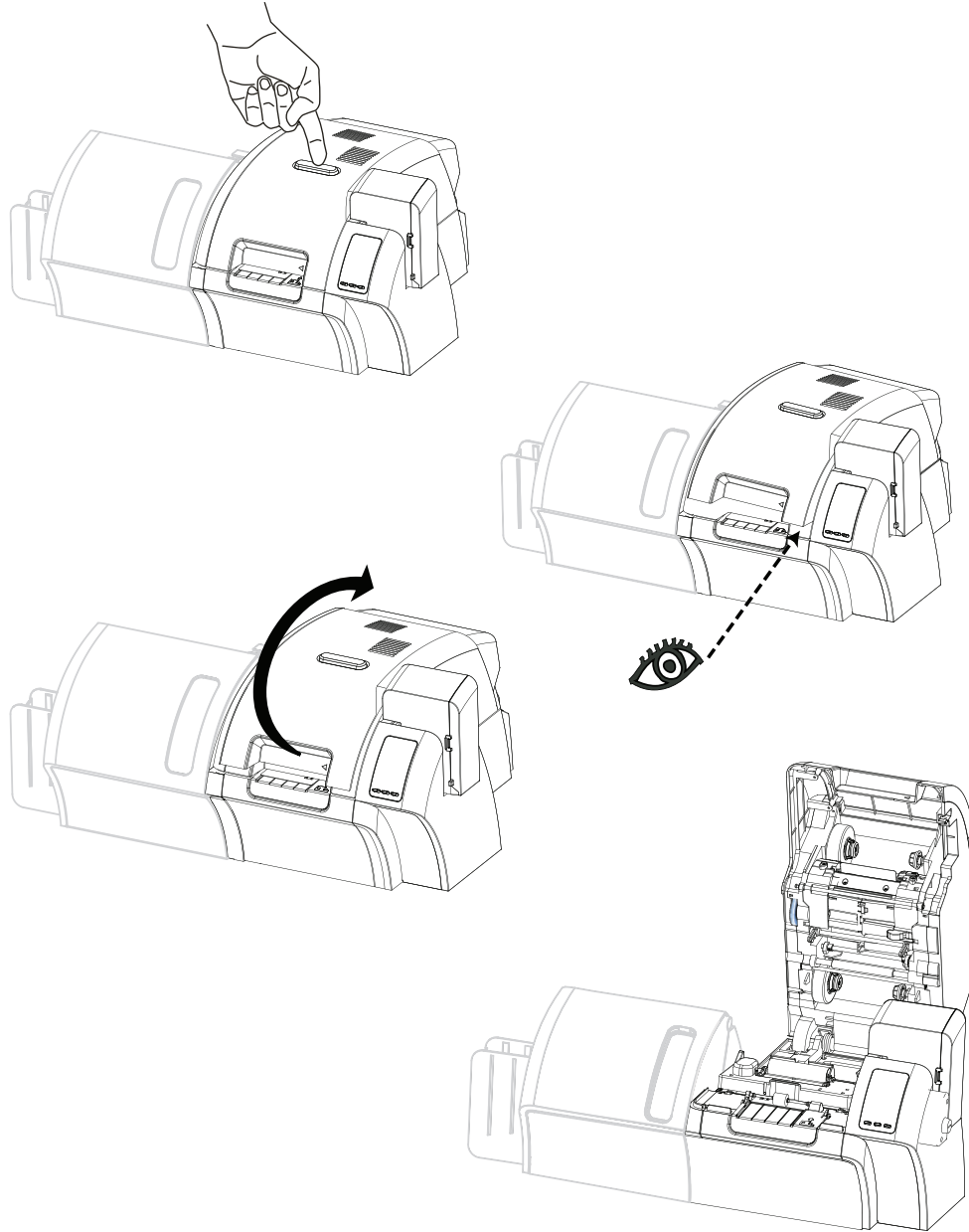


Step 6. Place the cards in the Input Hopper in the orientation as shown (smartcard contacts, if present, up and toward the body of the printer; mag stripe, if present, down and to the rear). Ensure that the cards are seated flat on the bottom of the hopper.

Step 7. Close the Input Hopper Door.

Opening the Printer Door

Step 1. Press the Door Release button on the top of the Printer.



Step 2. Observe that the Door releases and pops up approximately half an inch.

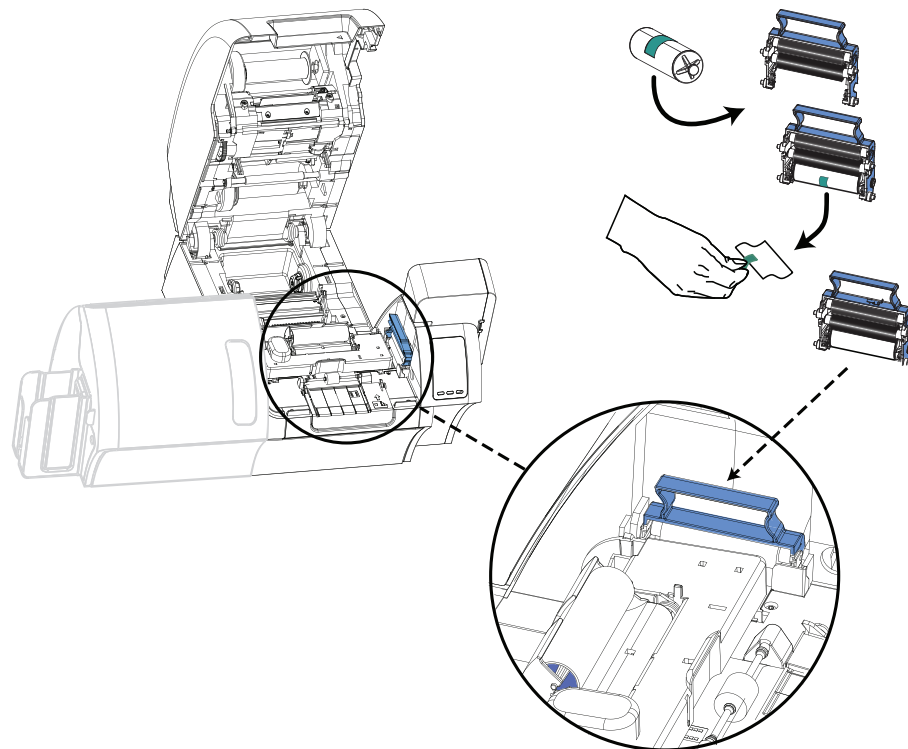
Step 3. Grasp the Door at the bottom front.

Step 4. Lift the Door to its upright position. It will remain in that position.

Installing the Cleaning Cartridge

The Cleaning Cartridge cleans the cards entering the Printer from the Input Hopper. The Cleaning Cartridge consists of a Cartridge Frame and an Adhesive Roller, which are packed together.

- Step 1.** Remove the Cartridge Frame and the Adhesive Roller from their packaging.
- Step 2.** Insert the Adhesive Roller into the Cartridge Frame. To avoid contamination, always hold the frame and the roller by the ends.
- Step 3.** **Peel the protective wrapper from the Adhesive Roller.**
- Step 4.** Open the Printer Door by pressing the Door Release button on the top of the Printer.
- Step 5.** Locate the area where the Cleaning Cartridge will be installed (adjacent to the Input Hopper); circled below.

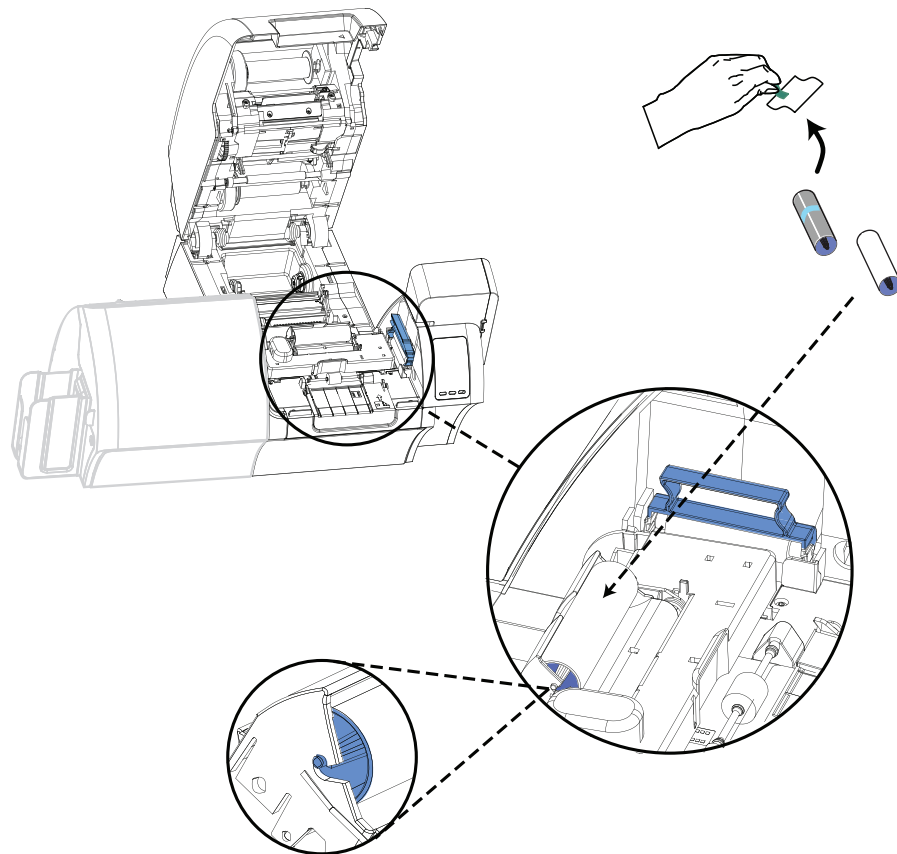


- Step 6.** Hold the Cleaning Cartridge by the extended handle.
- Step 7.** With the cartridge at about a 30° angle (pointing downward), insert the lip of the cartridge into the slot, until the cartridge seats against the back wall.
- Step 8.** Press the front of the cartridge down until it seats all the way down and latches with an audible click.
- Step 9.** Close the Printer's Door.

Installing the Cleaning Roller

The Cleaning Roller cleans the cards entering the Printer from either the Input Hopper or the Single-Feed Input.

- Step 1.** Remove the Cleaning Roller from its packaging. To avoid contamination, always hold the roller by the ends.
- Step 2.** Peel the protective wrapper from the Cleaning Roller.
- Step 3.** Open the Printer Door by pressing the Door Release button on the top of the Printer.
- Step 4.** Locate the area where the Cleaning Roller will be installed; circled below.

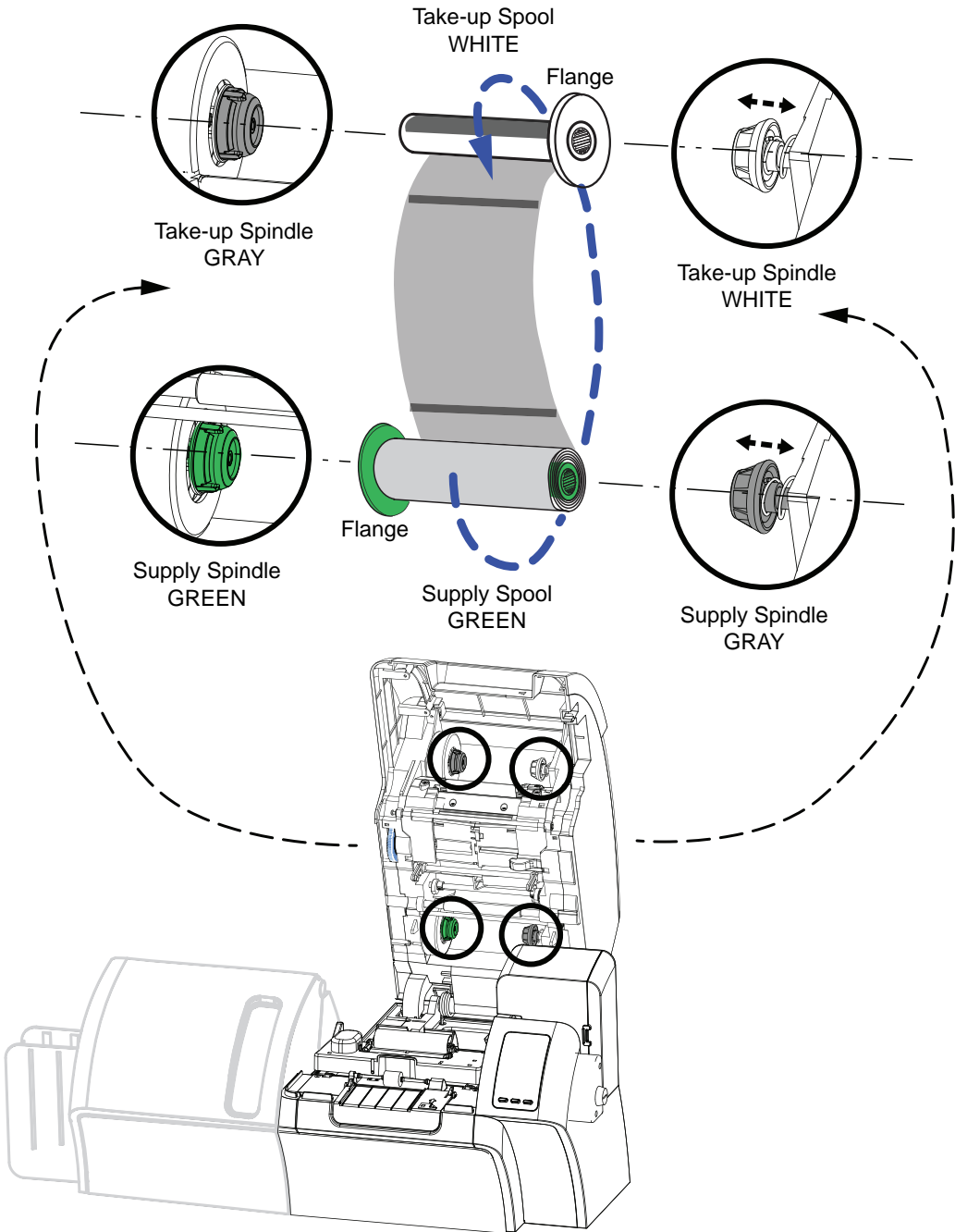


- Step 5.** Hold the Cleaning Roller by the ends.
- Step 6.** Position the ends of the Cleaning Roller in the slots.
- Step 7.** Push down until the roller fully seats and latches.
- Step 8.** Close the Printer's Door.

Loading the Transfer Film

The ZXP Series 8 Card Printer is designed to work only with Zebra True Colours® i Series™ Transfer Film for near photographic print resolution and over-the-edge printing.

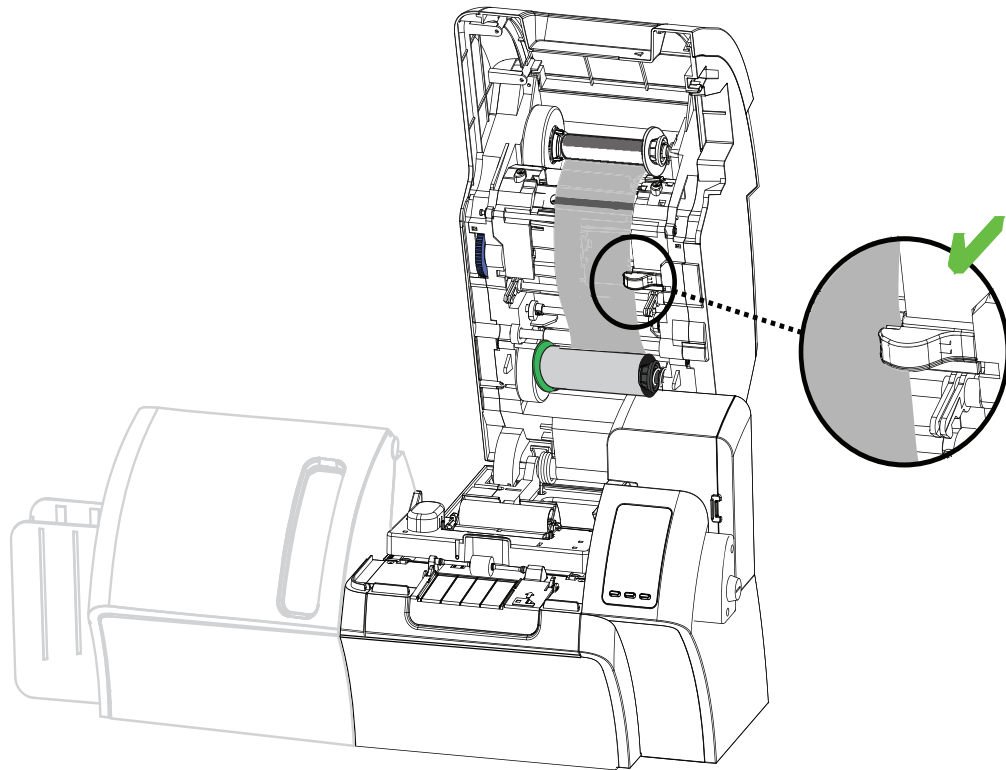
Step 1. Locate the transfer film supply spindles and the transfer film take-up spindles. Note that the Flanges and Spindles are color coded (white-to-white, green-to-green).



2: Installation and Setup

Loading the Transfer Film

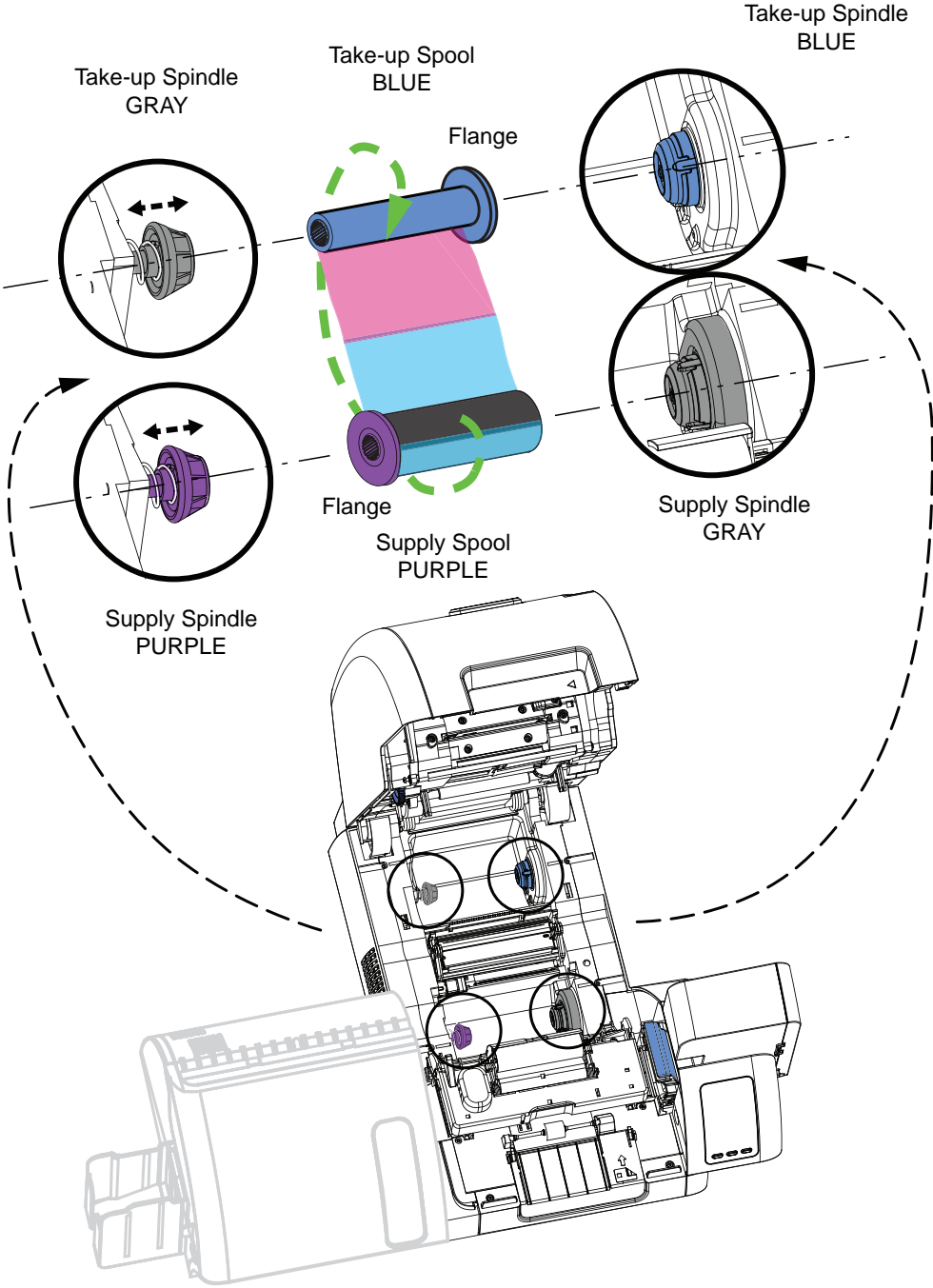
- Step 2.** Unroll about 1 foot (30 cm) from the full roll of transfer film on the supply spool; and wind it, 2 wraps, onto the empty take-up spool.
- Step 3.** Load transfer film supply spool onto the supply spindles, **green flange side to the left.**
- Step 4.** Load the empty take-up spool onto the take-up spindles, **white flange side to the right.**
- Step 5.** Make sure the spring-loaded spindles on the right seat into the spools.
- Step 6.** Make sure the transfer film comes off the bottom of the supply spool and feeds to the bottom of the take-up spool.
- Step 7.** The figure below shows the proper installation of the transfer film.



Loading a Print Ribbon

The ZXP Series 8 Card Printer is designed to work only with Zebra True Colours® i Series™ Ribbons in order to achieve rich, vibrant, image production over the full-color spectrum.

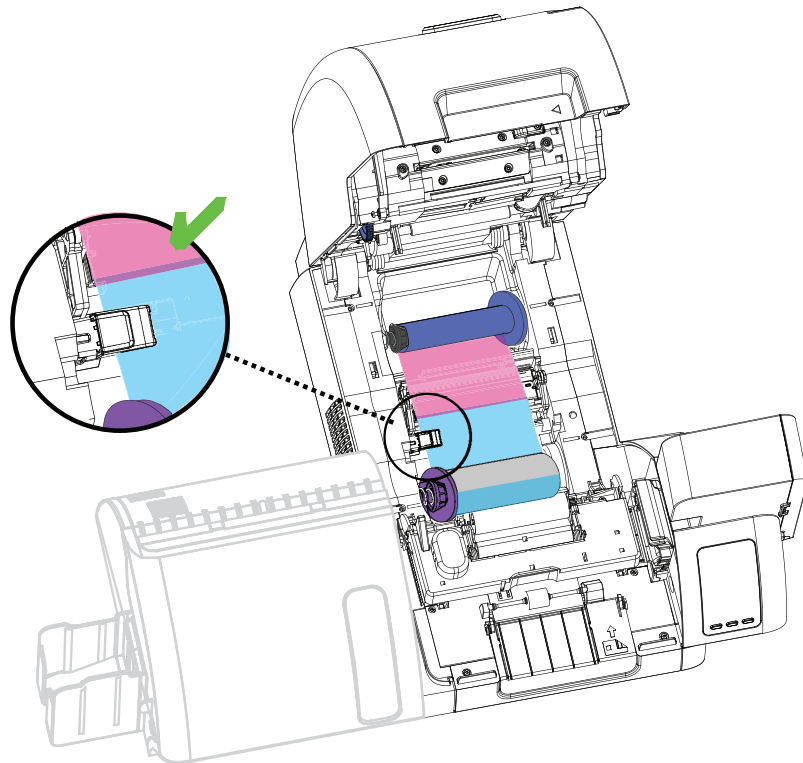
Step 1. Locate the print ribbon supply spindles and the print ribbon take-up spindles. Note that the Flanges and Spindles are color coded (blue-to-blue, purple-to-purple).



2: Installation and Setup

Loading a Print Ribbon

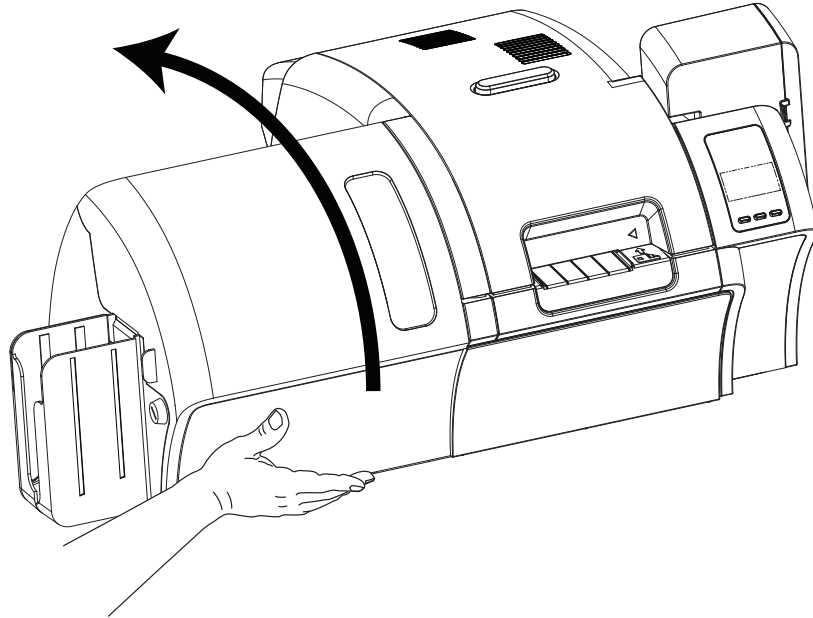
- Step 2.** Load the print ribbon supply spool onto the supply spindles, **purple flange side to the left**.
- Step 3.** Load the empty take-up spool onto the take-up spindle, **blue flange side to the right**.
- Step 4.** Make sure the spring-loaded spindles on the left seat into the spools.
- Step 5.** Make sure the print ribbon comes off the bottom of the supply spool and feeds to the bottom of the take-up spool.
- Step 6.** The figure below shows the proper installation of the print ribbon.



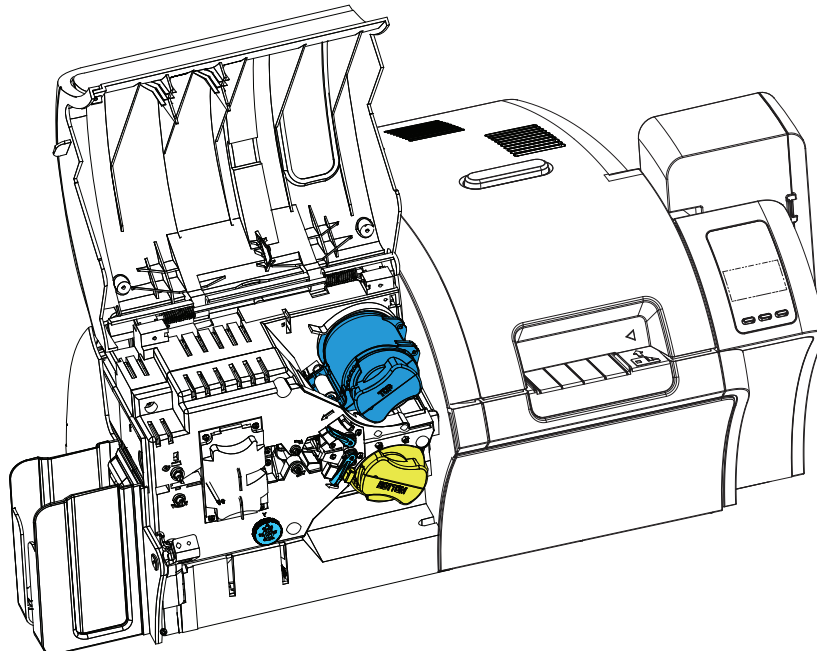
Loading the Laminate

Opening the Laminator Door

Step 1. Grasp the Door at the bottom front.

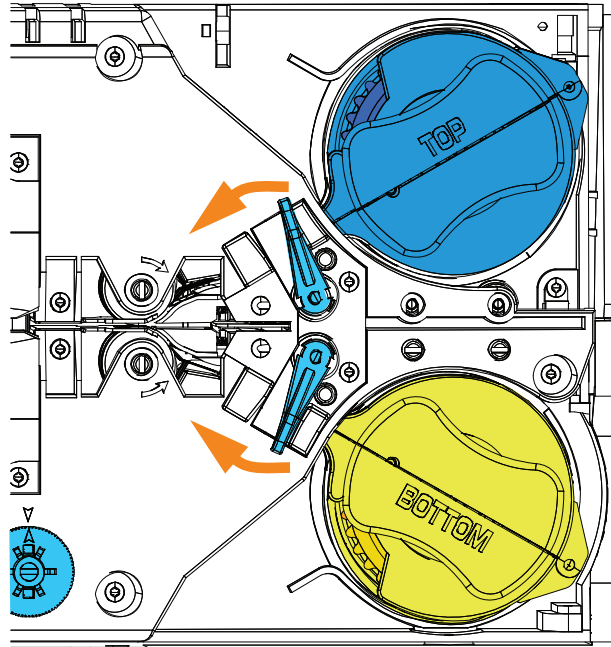


Step 2. Lift the Door to its upright position. It will remain in that position. Note that the Lower Laminate Cassette is only present on the dual-sided laminator.

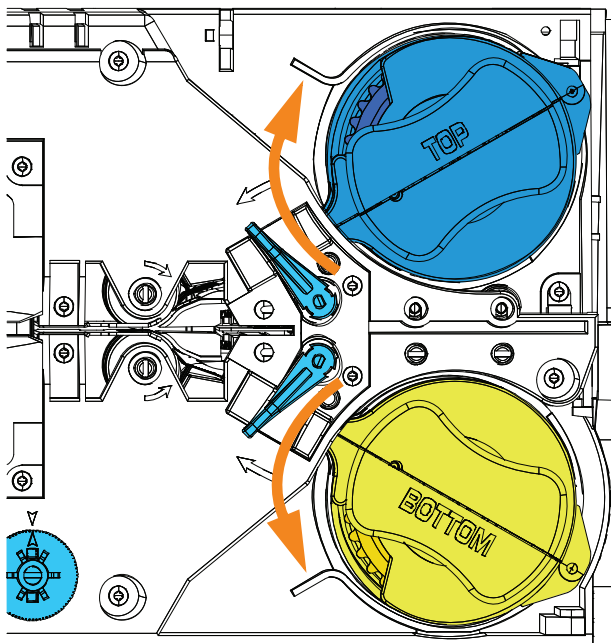


Removing the Laminate Cassette(s)

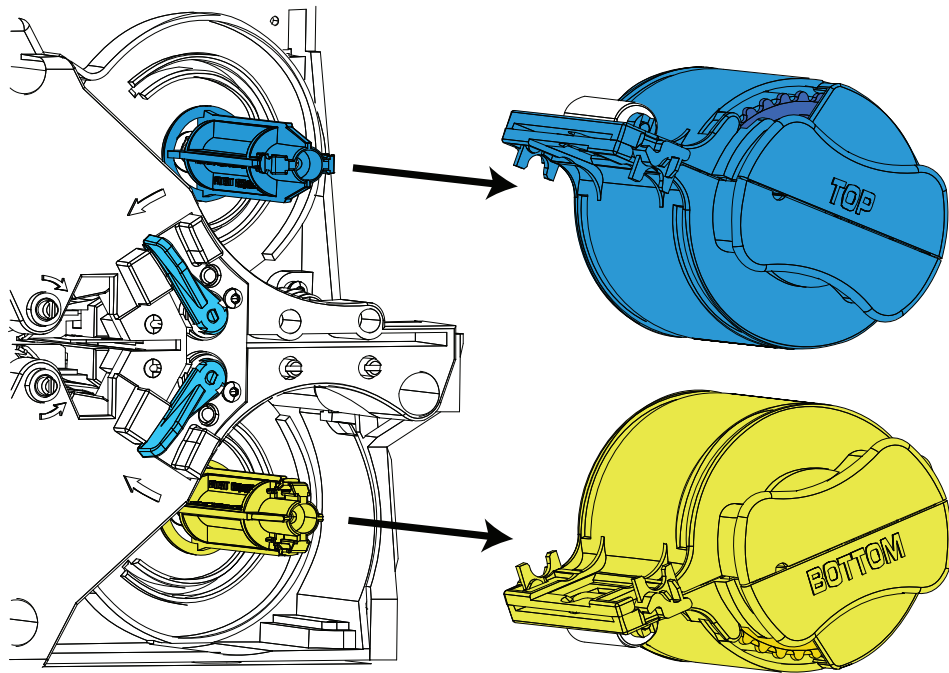
Step 1. Rotate the locking lever maximum in the direction indicated in the figure below.



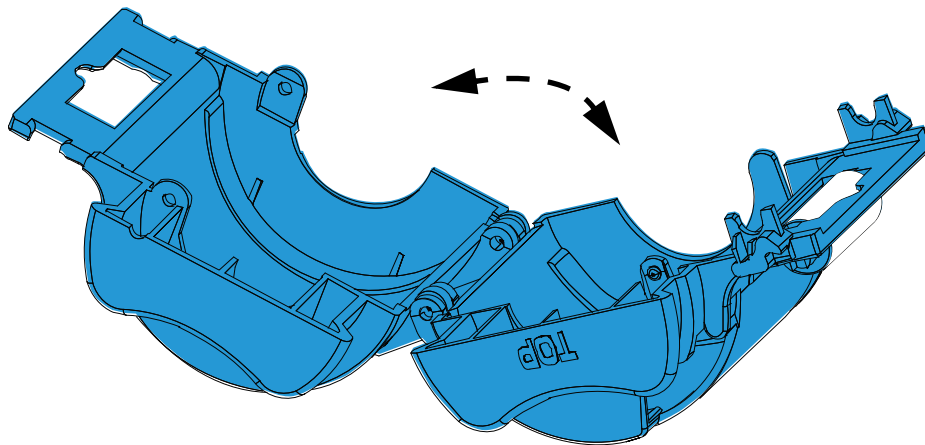
Step 2. Rotate the cassette to the mechanical stop in the direction indicated below.



Step 3. Remove the cassette(s) by pulling each cassette straight out from its spindle.



Step 4. Open the cassette(s), like a clam shell, by separating its two halves. Grasp the two halves firmly with your fingers, then pull it apart. **Do NOT use tools.** (Upper Laminate Cassette shown.)



Step 5. If there is an empty laminate core in the cassette, remove it.

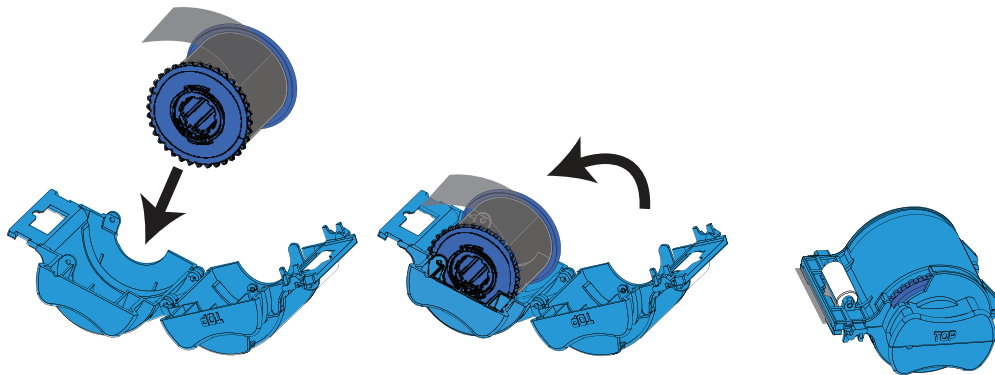
Loading the Laminate Cassette(s)

Step 1. Remove a new roll of laminate from its packaging. There are two different laminate rolls, one for the Upper Cassette (**Blue**) and one for the Lower Cassette (**Yellow**).



Important • The geared flange on the laminate spool is removable, but **do not** remove it. If it does come off, snap it back onto the end of the spool.

Step 2. Place the roll of laminate in the **Upper Laminate Cassette** (present on both the single-sided laminator and dual-sided laminator). Note the orientation of the laminate spool with respect to the laminate cassette as shown in the figure below.

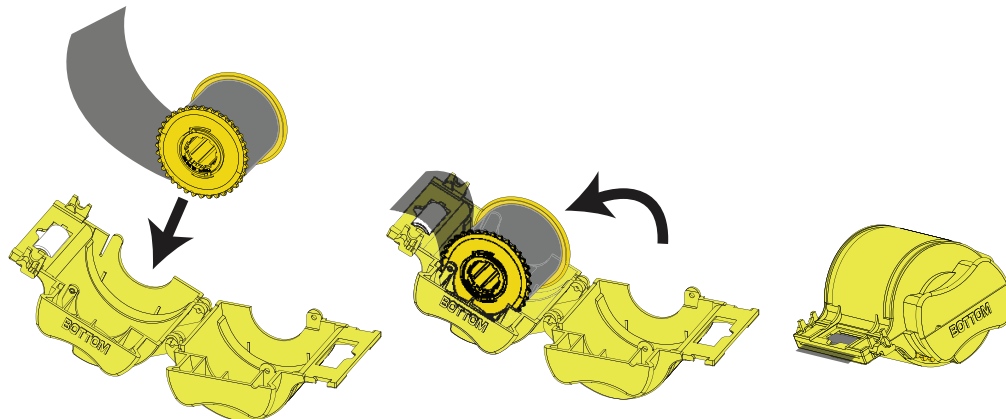


Step 3. Pull out an inch or two of laminate past the lip of the cassette.

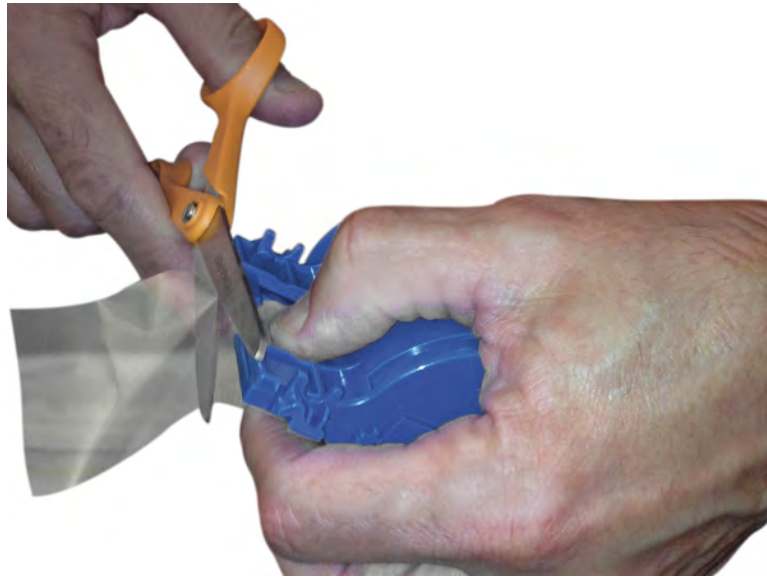
Step 4. Close the cassette by firmly pressing the “clamshell” together. You will hear a click and feel a detent when the halves of the cassette seat together.

Step 5. Remove a second new roll of laminate from its packaging (for dual-sided laminator only).

Step 6. Place the roll of laminate in the **Lower Laminate Cassette** (present on the dual-sided laminator only). Note the orientation of the laminate spool with respect to the laminate cassette as shown in the figure below.



- Step 7.** Pull out an inch or two of laminate past the lip of the cassette.
- Step 8.** Close the cassette by firmly pressing the “clamshell” together. You will hear a click and feel a detent when the halves of the cassette seat together.
- Step 9.** Cut the laminate square (as close to perpendicular as possible) with scissors. Hold the scissors in one hand. Hold the cassette with the other hand. Press the laminate firmly against the white roller thereby keeping the laminate from moving while cutting.



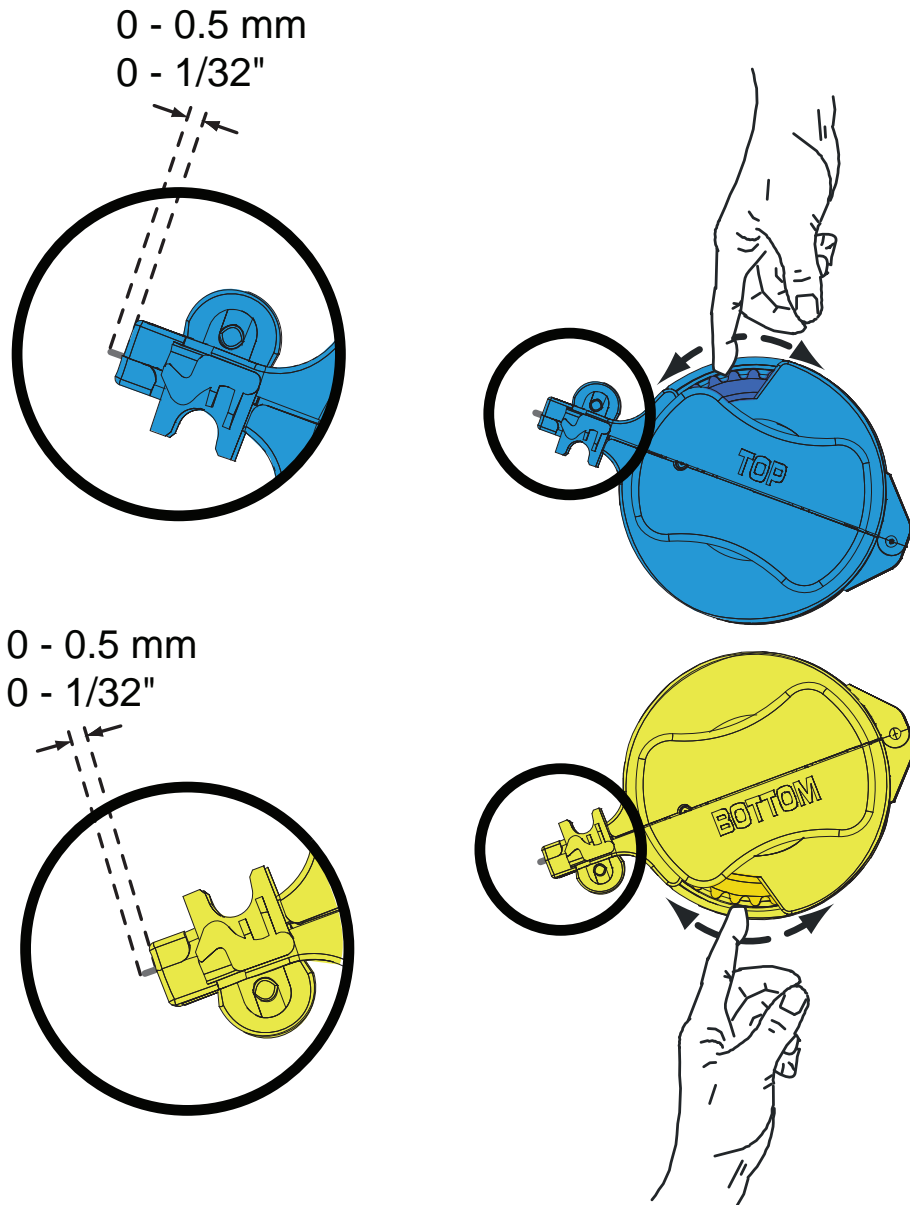
2: Installation and Setup

Loading the Laminate

Step 10. Rotate the core to adjust the laminate overhang. Stop when the end of the laminate is just beyond the lip of the cassette, as shown below.

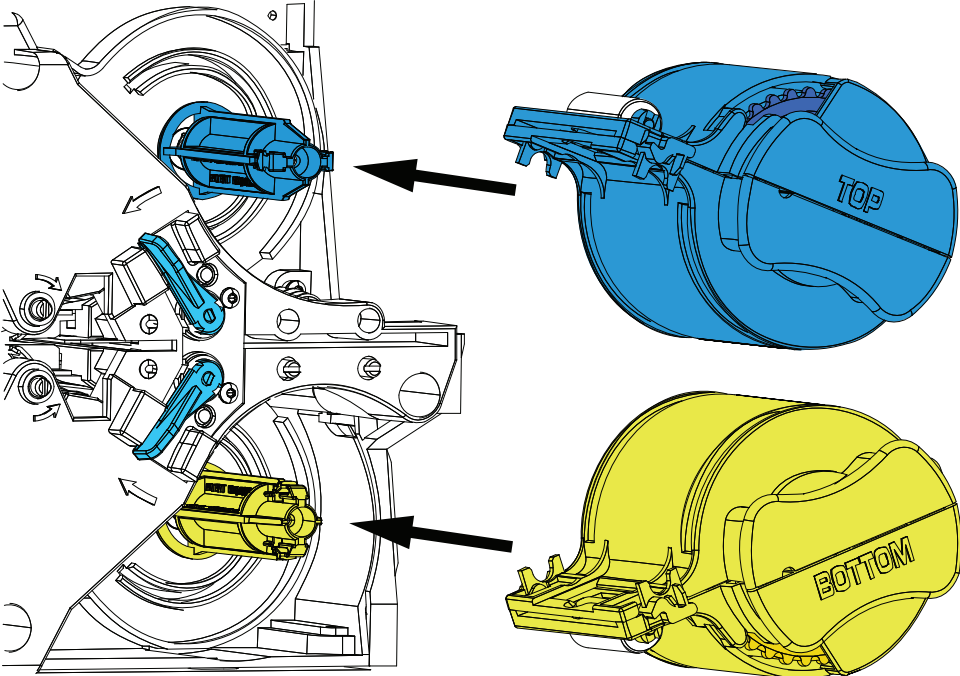


Important • Check for laminate overhang any time the locking lever is pressed or the cassette is removed.

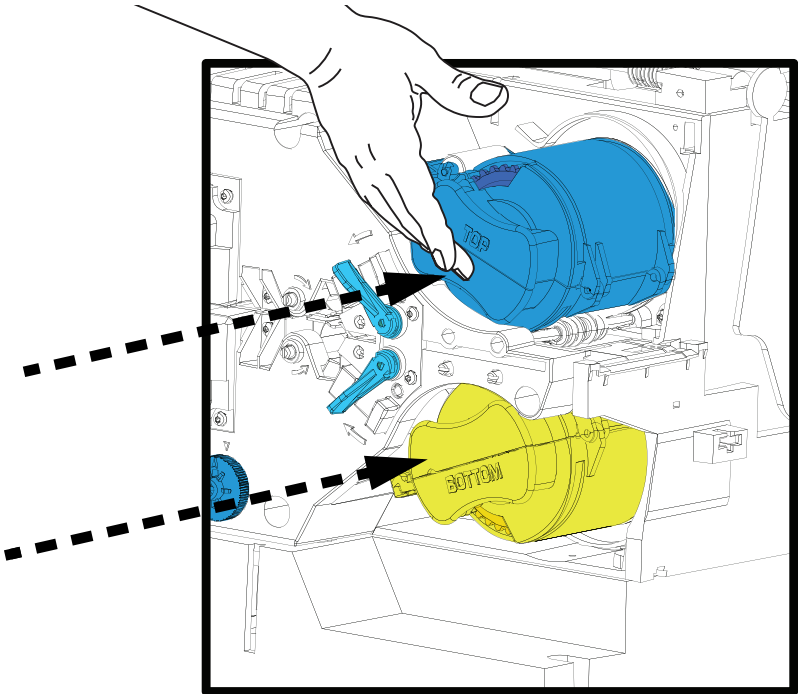


Installing the Laminate Cassette(s)

Step 1. Slide the cassette onto the spindle.



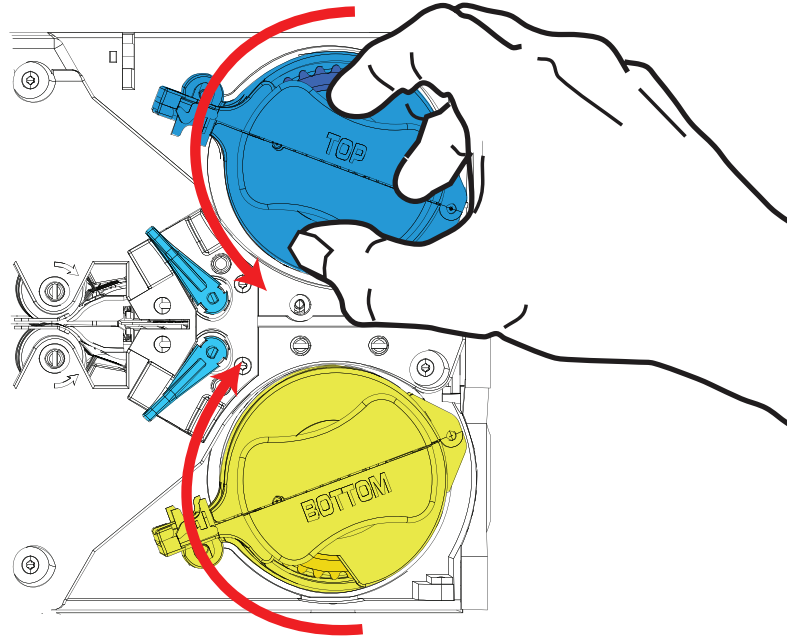
Step 2. Ensure the cassette is fully seated on the spindle. Gently press the cassette until it is flush against the laminator frame.



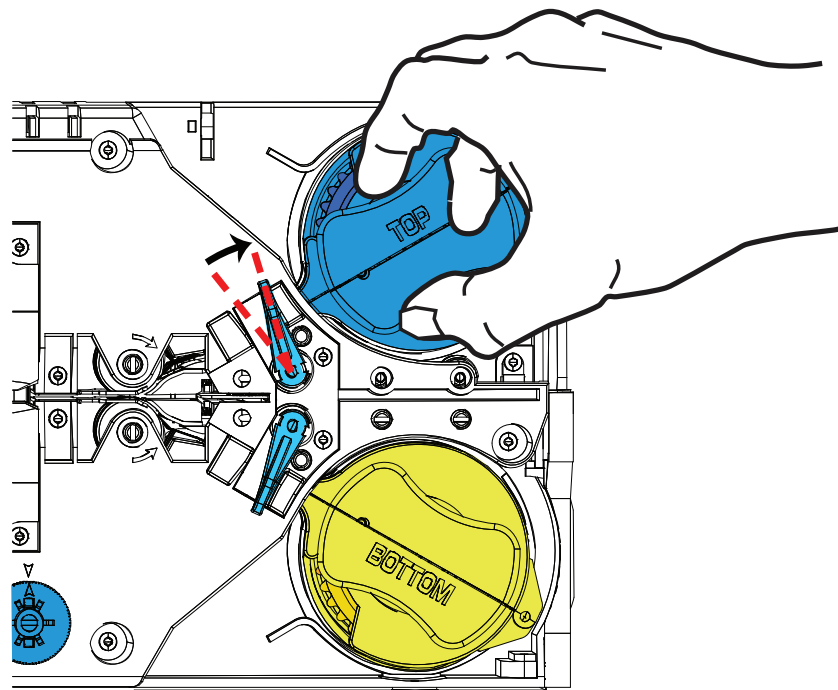
2: Installation and Setup

Loading the Laminate

Step 3. Rotate each cassette (in the direction indicated in the figure below) until it stops.

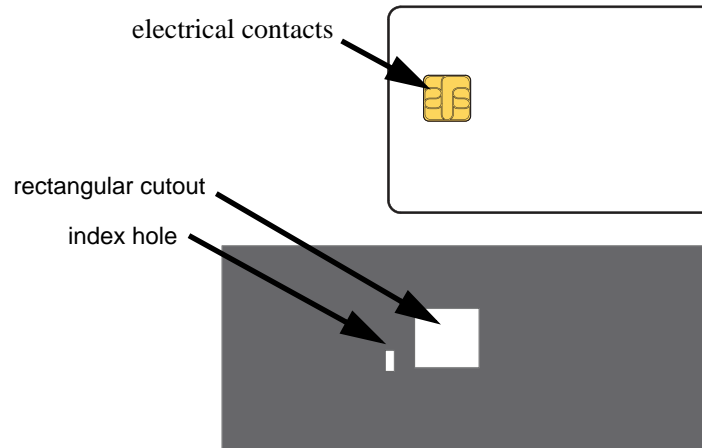


Step 4. Observe the locking lever snap into place.

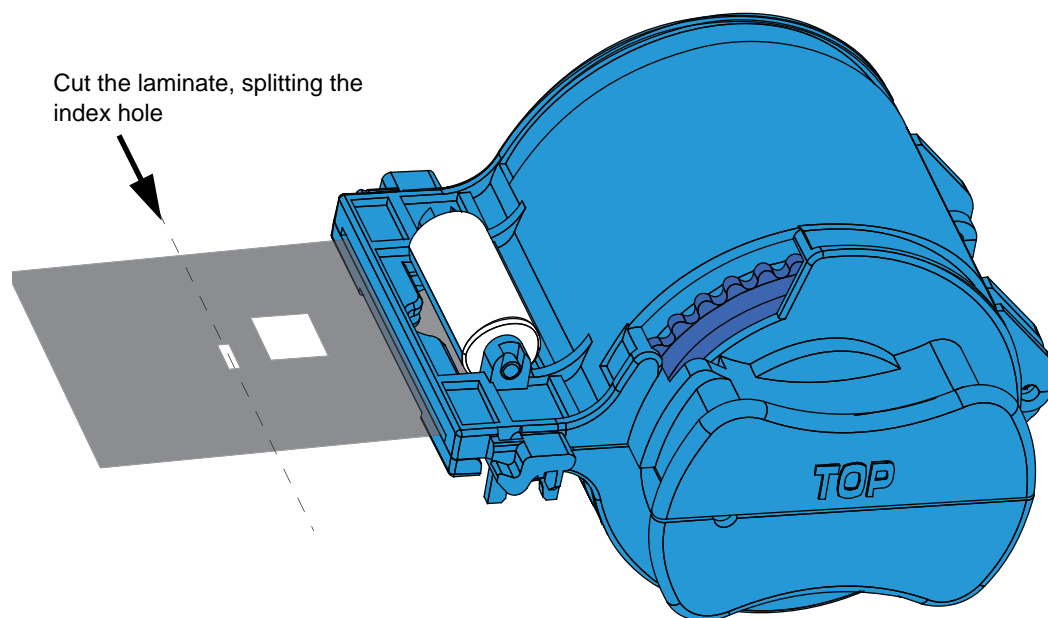


Laminating Contact Smart Cards

The laminate for the top surface of a contact smart card has a repeating pattern of an index hole and a rectangular cutout to expose the card's electrical contacts.



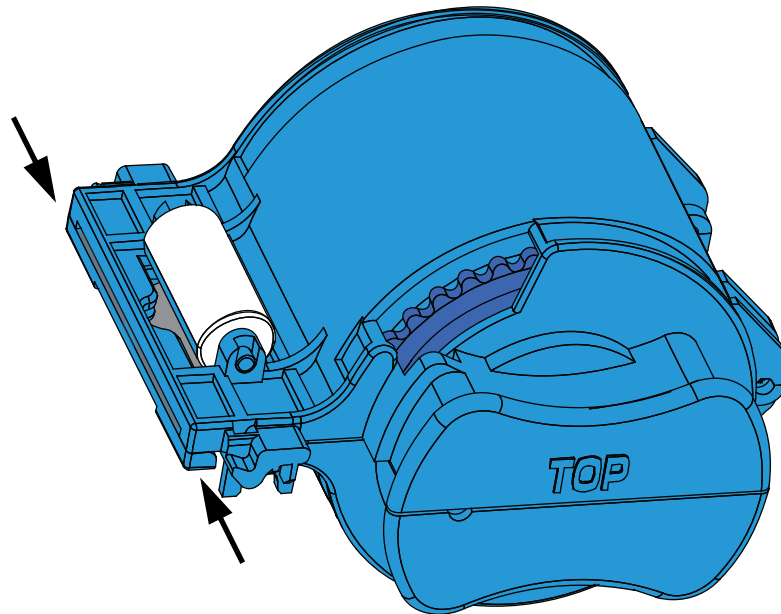
- Step 1.** Remove the Upper Laminate Cassette; see [Page 22](#).
- Step 2.** Open the cassette, and remove the laminate if present.
- Step 3.** Load the smart card laminate into the cassette; see [Page 24](#).
- Step 4.** Cut the laminate, splitting the index hole as shown.



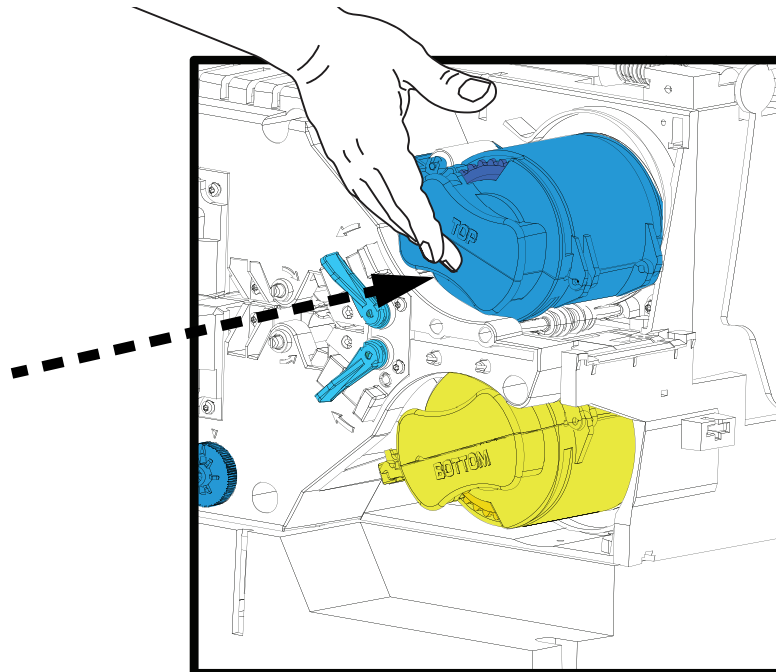
2: Installation and Setup

Loading the Laminate

Step 5. Rotate the core to adjust the laminate overhang. Stop when the end of the laminate (not the edge of the index hole) is even with the edge of the lips of the cassette.



Step 6. Install the cassette.



Using Partial-Width Laminate



Note • Since partial-width laminates are only used for the back (i.e., lower) surface of the card, this section only applies to the dual-sided laminator.

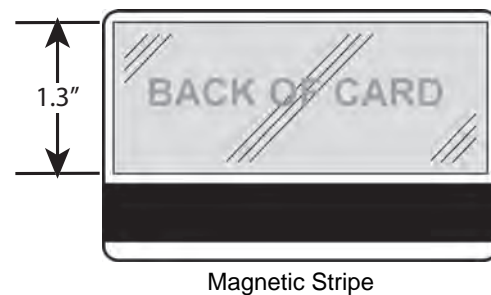
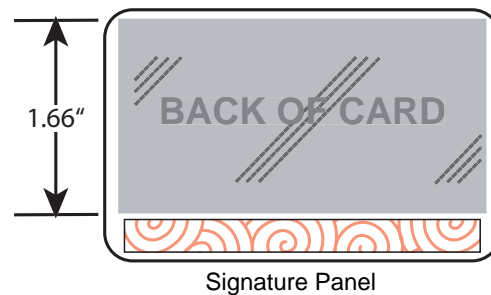
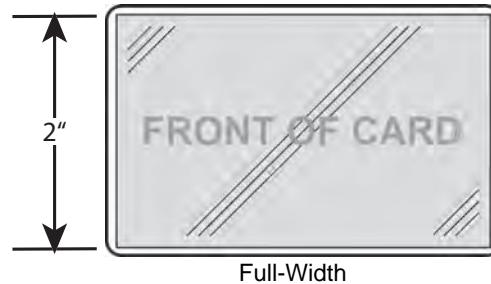
Laminates come in three widths:

“Full-Width” laminate is 2 in (51 mm) wide. The full-width laminate is used on the front (i.e., upper) or back (i.e., lower) surface of the card.

“Partial-Width” laminate is available in two widths:

- 1.66 in (42 mm) wide laminate is used for cards with a writable signature panel
- 1.33 in (33 mm) wide laminate is used for cards with a magnetic stripe

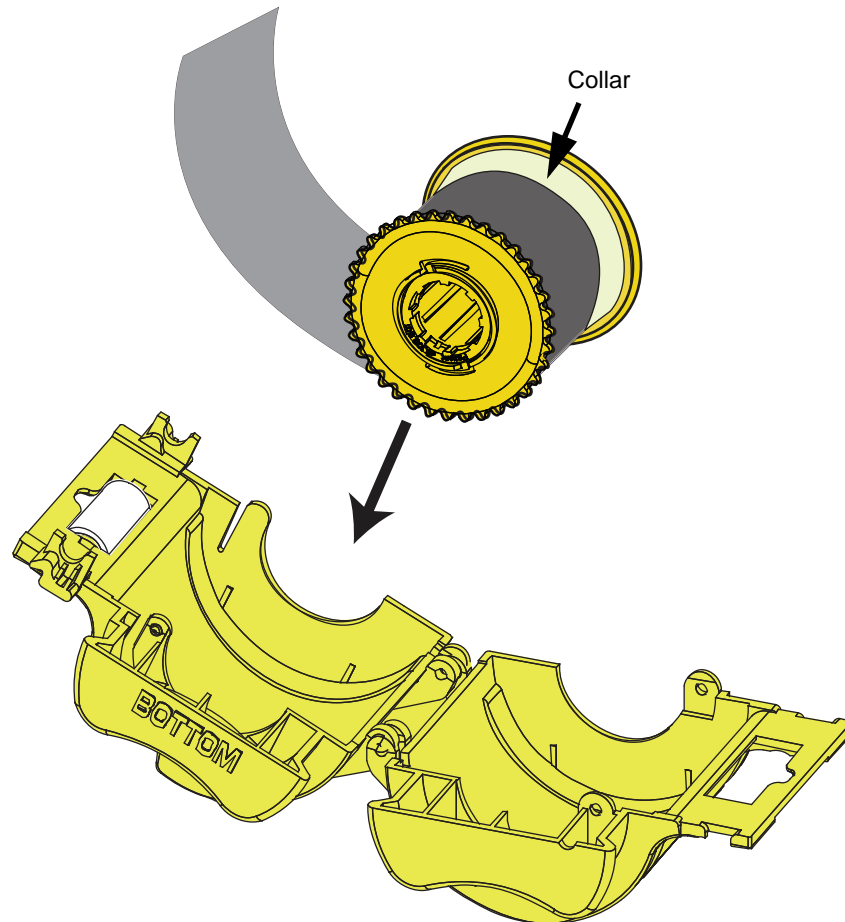
For either partial-width laminate, a collar on the spool keeps the laminate positioned correctly.



2: Installation and Setup

Loading the Laminate

- Step 1.** Remove the Lower Laminate Cassette; see [Page 22](#).
- Step 2.** Open the cassette, and remove the laminate if present.
- Step 3.** Load the partial-width laminate into the cassette. Note that the collar on the laminate spool is on the end *opposite* the geared flange.



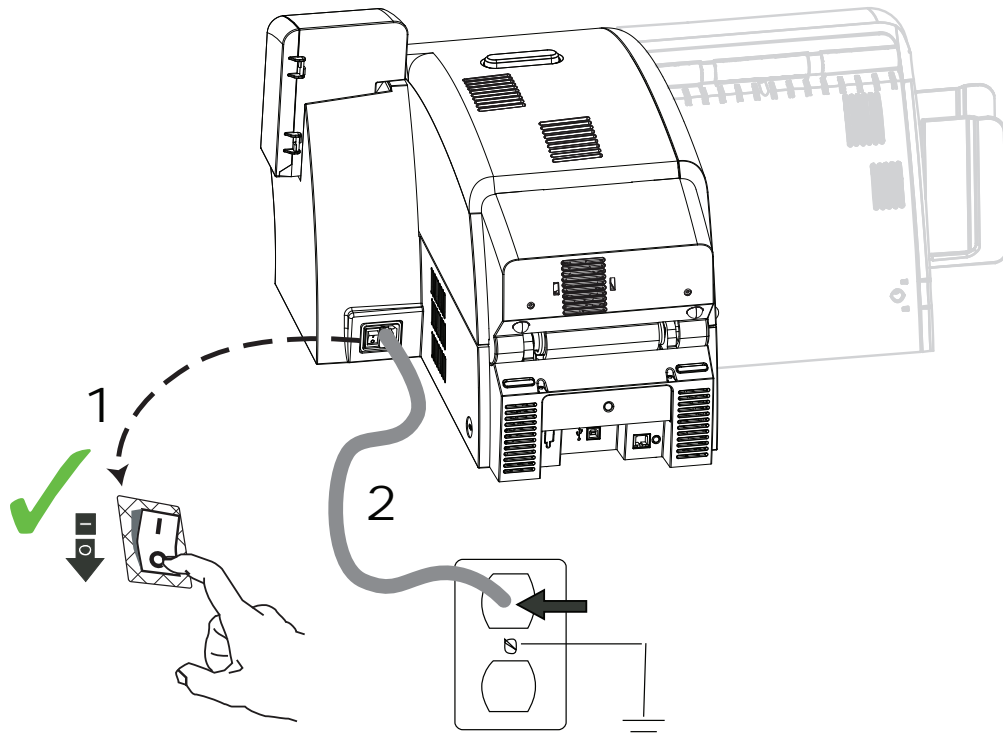
- Step 4.** Trim the partial-width laminate.
- Step 5.** Rotate the core to adjust the laminate overhang. Stop when the end of the laminate is even with the edge of the lips of the cassette.
- Step 6.** Install the cassette; see [Page 27](#).

Connecting Power



Electric Shock Caution • Limit AC power supplied to the Printer to 100 – 230 volts, 60 ~ 50 Hertz. Limit excess current draw to 16 amps or less, using an associated circuit breaker or other such device. Never operate the Printer in a location where operator, computer, or printer can get wet. Personal injury could result. The Printer must be connected to an earthed electrical power source and properly protected against electrical surges and grounding faults; the electrical reliability of the Printer is based on the reliability of the mains power source and with the earth connection.

The Printer's power supply is an internal unit that can only be serviced or replaced by trained and authorized personnel.



Step 1. Place the Printer's power switch in the OFF (○) position.

Step 2. Depending on your local AC voltage, plug the appropriate power cord into the Printer's power connector and a grounded AC power source connection.

DO NOT SWITCH THE PRINTER ON.

Connecting the Printer to your Computer

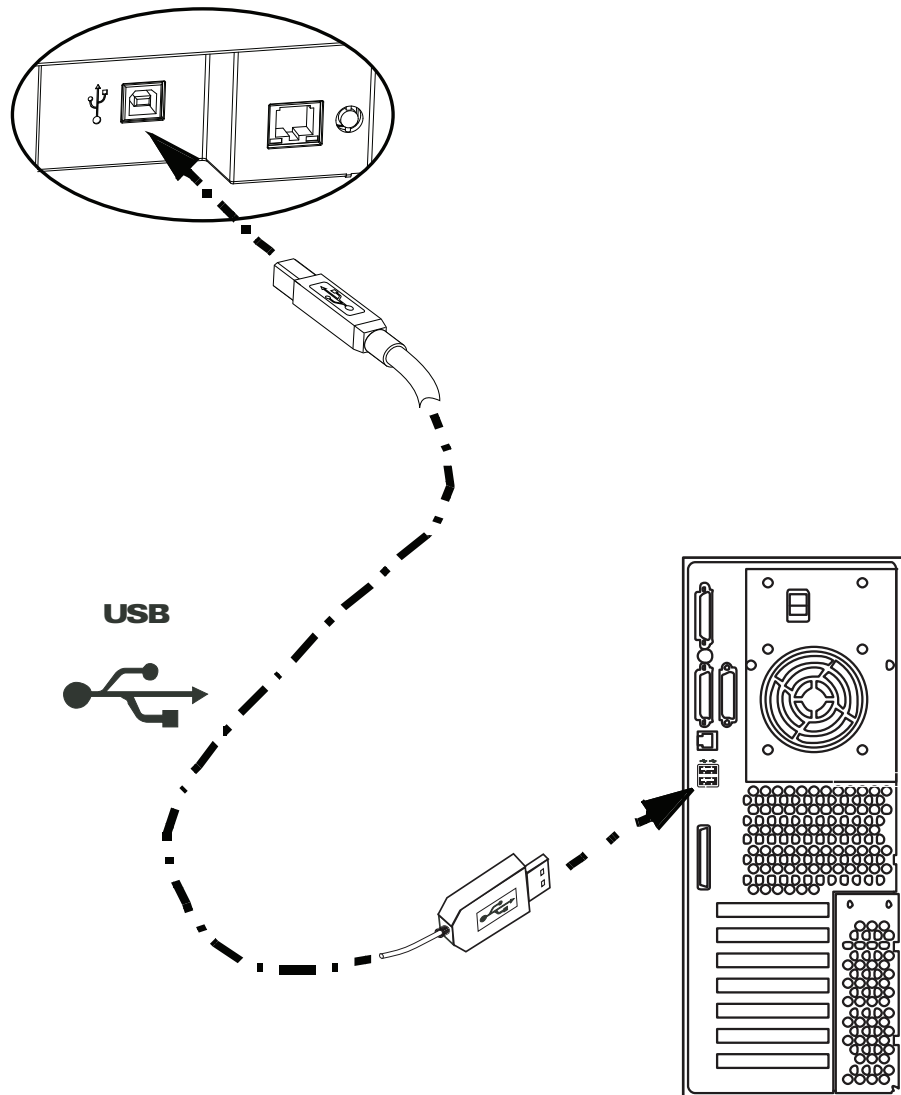


Important • Use either the USB connection or the Ethernet connection but not both at the same time.

USB Connection

Step 1. Connect the USB cable to the printer and the computer.

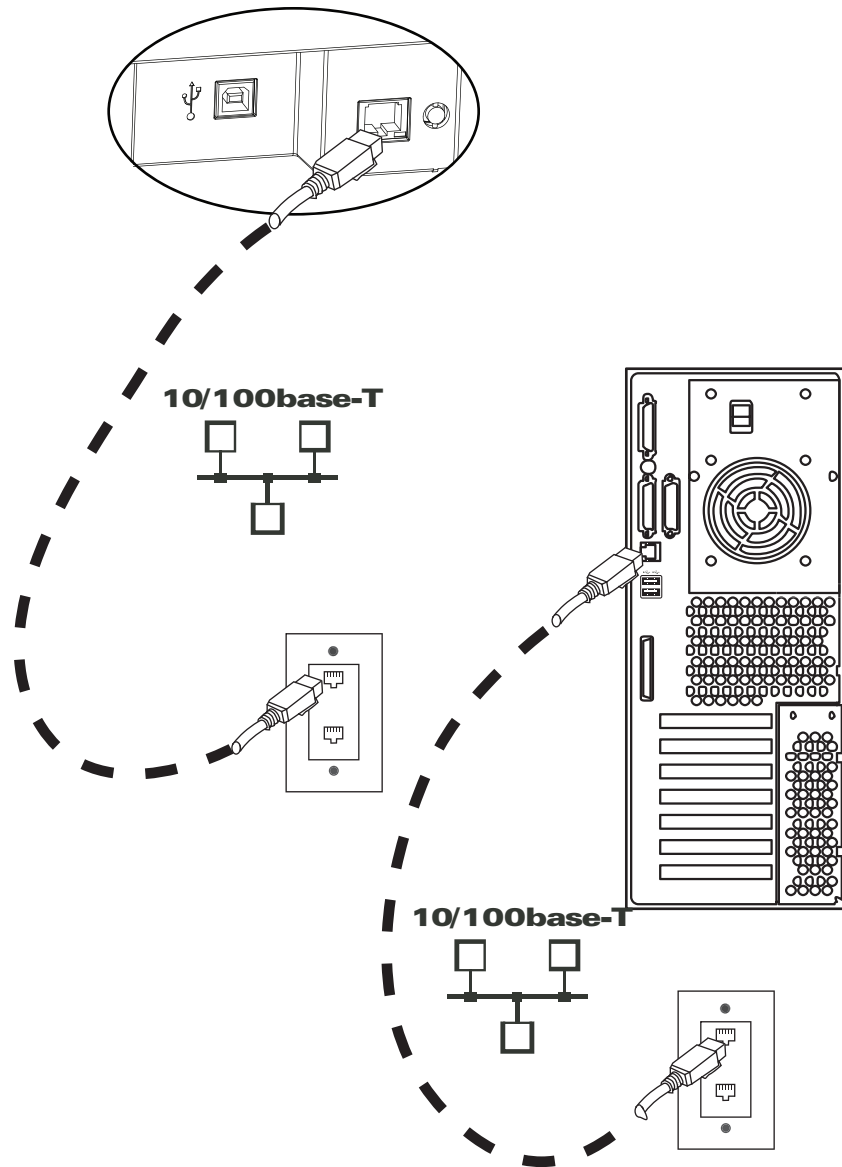
Step 2. Ensure that the printer's power switch in the OFF (○) position.



Ethernet Connection

Step 1. Connect the Ethernet Port on the rear of the printer to an Ethernet Network Port.

Step 2. Turn the printer's power switch to the ON (|) position.



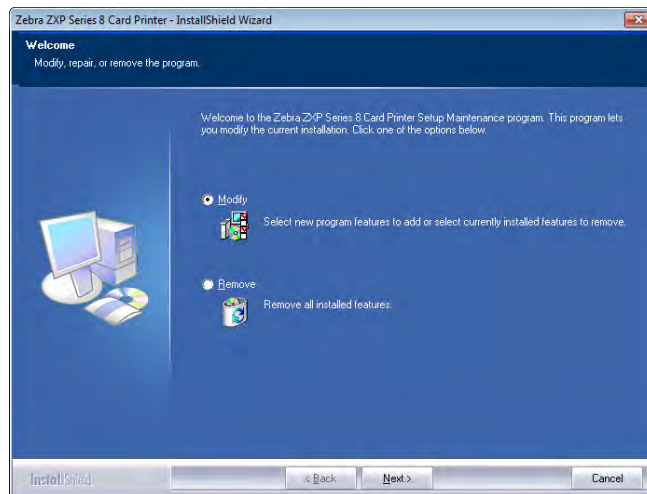
Installing the Windows Printer Driver

Installing the USB Printer Driver



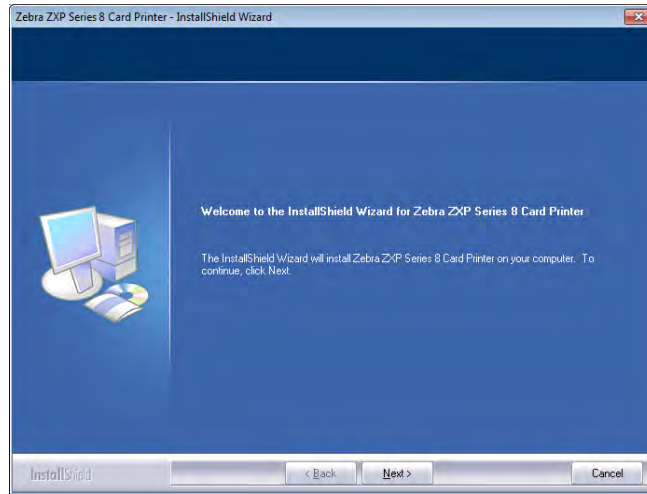
Note • To install the Ethernet driver, see [Page 42](#).

- Step 1.** If not already done, connect power to the printer. Turn power OFF (O).
- Step 2.** Connect the USB port on the rear of the printer to the computer's USB port.
- Step 3.** Ensure that the Printer's power switch is in the OFF (O) position.
- Step 4.** Insert the **User Documentation and Drivers CD** into the CD drive of the host computer. The **Main Menu** will open.
- Step 5.** From the **Main Menu**, click **Install Zebra Printer Driver**.
- Step 6.** If an older Printer and Driver is installed on your computer, the **Welcome** window will be displayed; otherwise go to [Step 8](#).

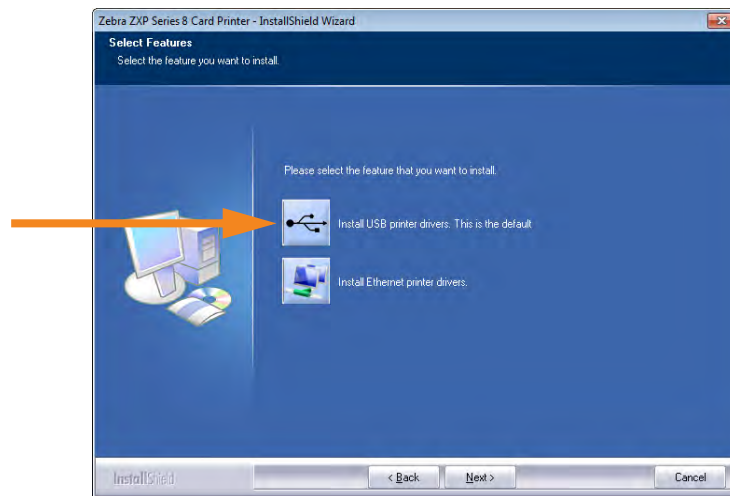


- Step 7.** In the **Welcome** window, choose the maintenance operation to be performed:
 - a.** Select **Modify** to upgrade the older printer driver, click the **Next** button, and follow the screen prompts. When the **Maintenance Complete** window appears, click the **Finish** button. The upgrade is complete.
 - b.** Select **Remove** to remove the older printer driver, click the **Next** button, and follow the screen prompts. At the end of the uninstall process, you will be asked to re-boot your computer. Re-boot, and start over with [Step 5](#).

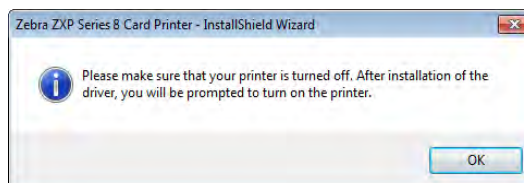
Step 8. The **InstallShield Wizard** window will open. To proceed with the installation, click the **Next** button.



Step 9. Select **Install USB printer drivers**, and click the **Next** button.



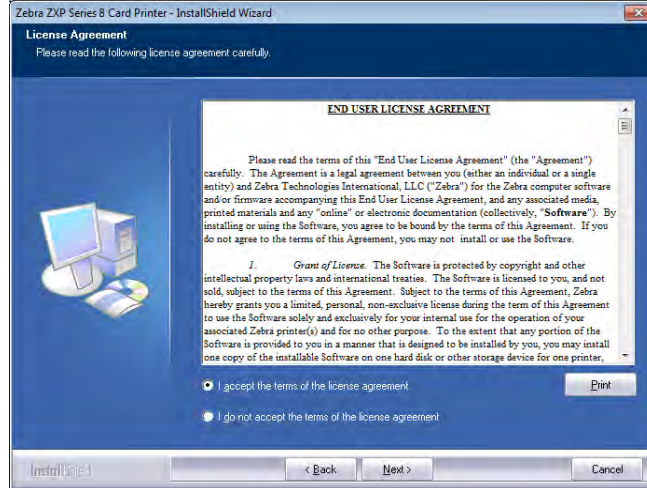
Step 10. Ensure that the Printer's power switch in the OFF () position; and then click the **OK** button.



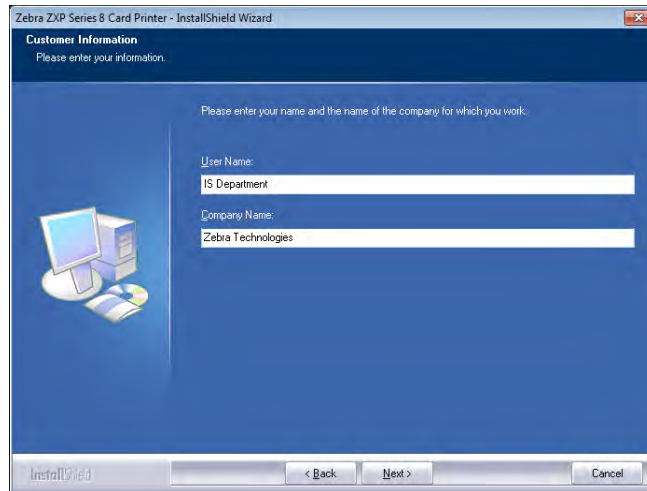
2: Installation and Setup

Installing the Windows Printer Driver

Step 11. This will bring up the **License Agreement** window. To proceed with the installation, select the *I accept the terms of the license agreement* option, and then click the **Next** button.

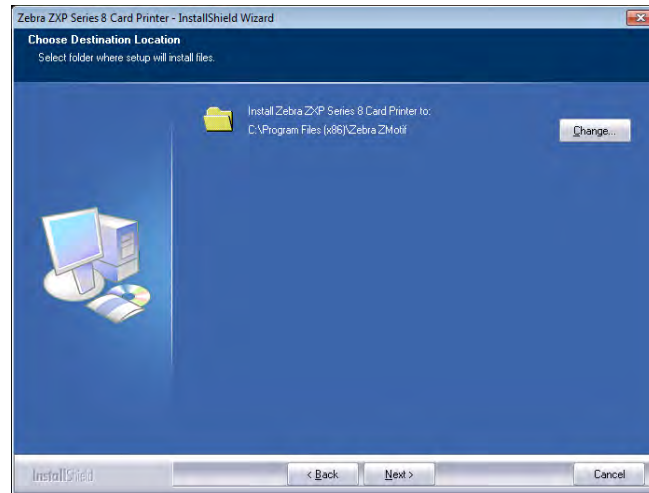


Step 12. This will bring up the **Customer Information** window. Enter User Name and Company Name; and then click the **Next** button.

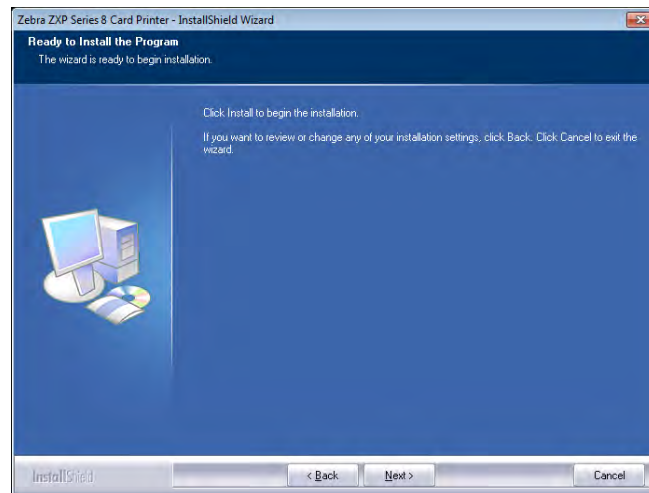


Step 13. This will bring up the **Choose Destination Location** window.

- To accept the default destination location where setup will install the files, click the **Next** button.
- or -
- Select a folder where setup will install the files, and click the **Next** button.



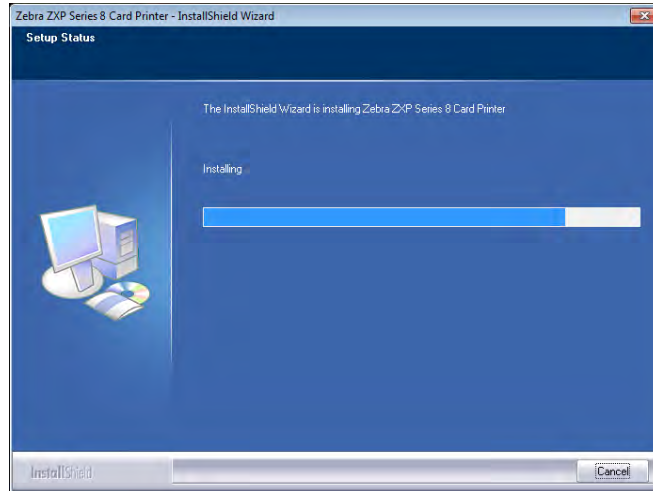
Step 14. This will bring up the **Ready to Install the Program** window. To continue, click the **Install** button.



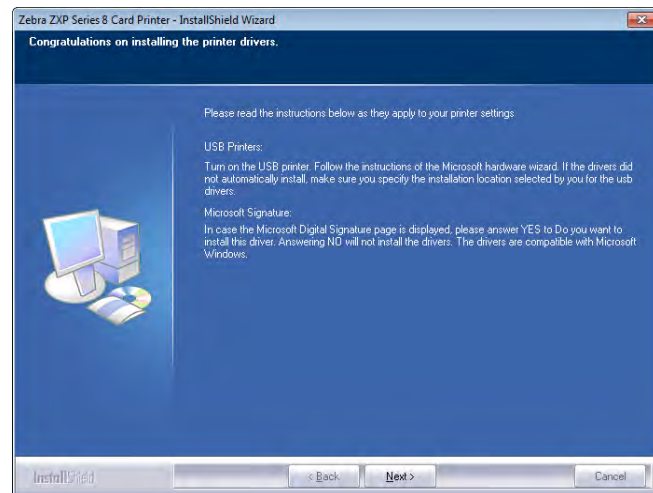
2: Installation and Setup

Installing the Windows Printer Driver

Step 15. Observe the **Setup Status** window.

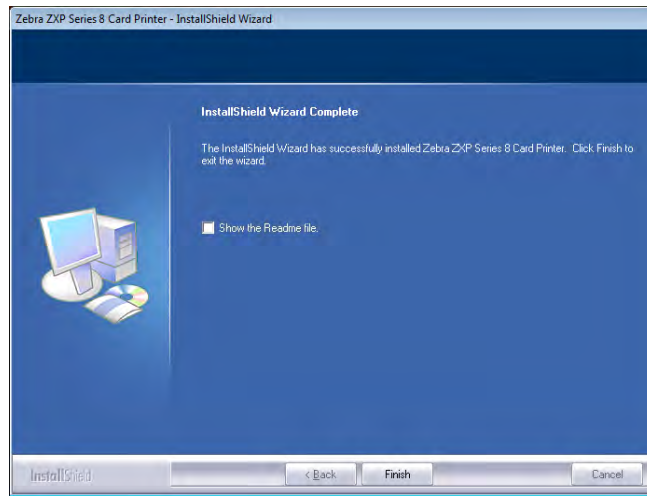


Step 16. The **Congratulations** window will appear.



Step 17. At this point, **turn on your printer**; and then click the **Next** button. The *Windows New Hardware Found* wizard will find the printer.

Step 18. When the **InstallShield Wizard Complete** window appears, select the *Yes, I want to restart my computer now* radio button; and click the **Finish** button.



Step 19. This completes USB driver installation.

Step 20. To use the Printer, you would select it just like you would any other printer connected to a Windows system.



Note • You may need to change the card setup (card type, orientation, etc.), encoding, and/or black panel settings via the Printer Driver; *Printing Preferences* on page 78.

Installing the Ethernet (Wired and Wireless) Printer Driver

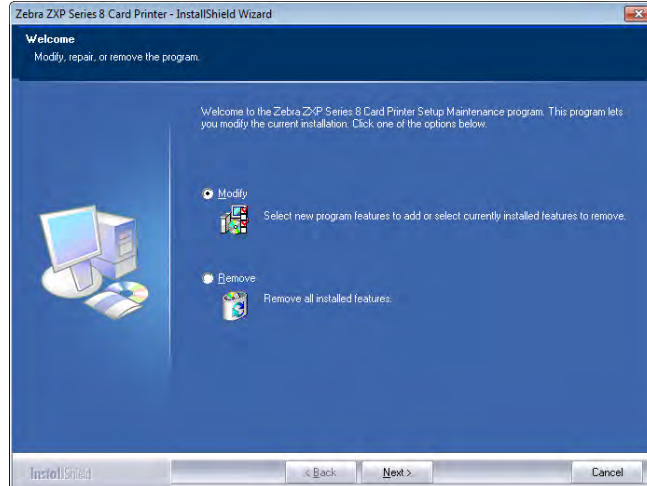


Note • To install the USB driver, see [Page 36](#).



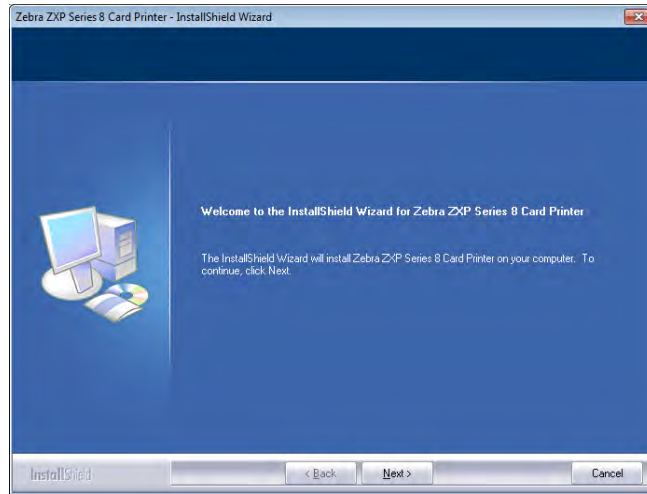
Important • The Ethernet Network must be configured correctly, with the Printer and the host computer on the same subnet. If you are not sure how to verify this or change the configuration, consult someone knowledgeable on Ethernet Networks.

- Step 1.** If not already done, connect power to the printer. Turn power ON (|).
- Step 2.** Connect the Ethernet port on the rear of the printer to the Ethernet network connection or directly to the computer's Ethernet port.
- Step 3.** Ensure that the Printer's power switch in the ON (|) position.
- Step 4.** Insert the **User Documentation and Drivers CD** into the CD drive of the host computer. The **Main Menu** will open.
- Step 5.** From the **Main Menu**, click **Install Printer Driver**.
- Step 6.** If an older Printer and Driver is installed on your computer, the **Welcome** window will be displayed; otherwise go to [Step 8](#).

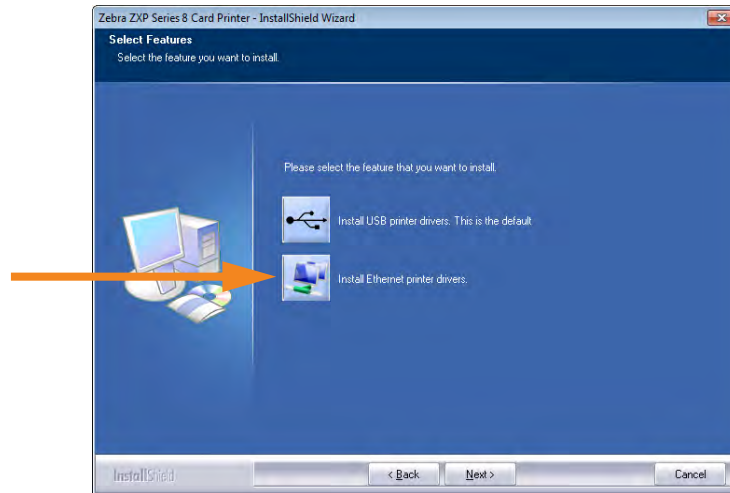


- Step 7.** In the **Welcome** window, choose the maintenance operation to be performed:
 - a.** Select **Modify** to upgrade the older printer driver, click the **Next** button, and follow the screen prompts. When the **Maintenance Complete** window appears, click the **Finish** button. The upgrade is complete.
 - b.** Select **Remove** to remove the older printer driver, click the **Next** button, and follow the screen prompts. At the end of the uninstall process, you will be asked to re-boot your computer. Re-boot, and start over with [Step 5](#).

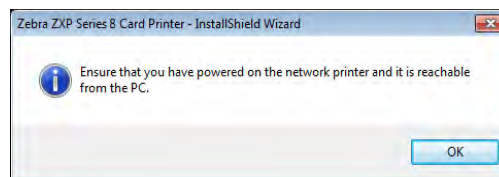
Step 8. The **InstallShield Wizard** window will open. To proceed with the installation, click the **Next** button.



Step 9. Select **Install Ethernet printer drivers**, and click the **Next** button.



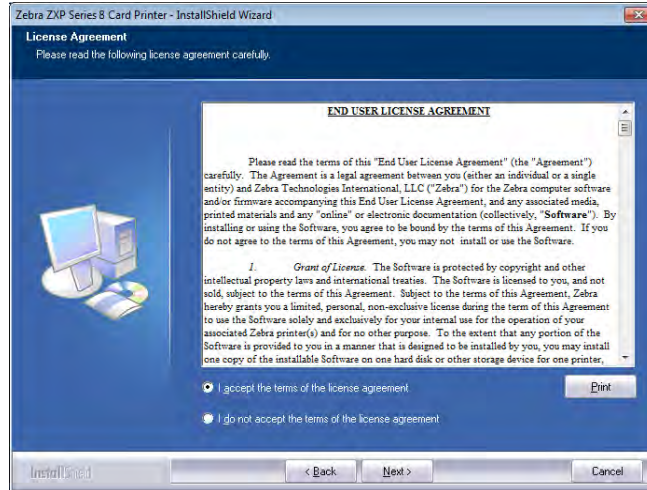
Step 10. Ensure that you have powered ON (|) the network printer and it is reachable from the PC; and then click the **OK** button.



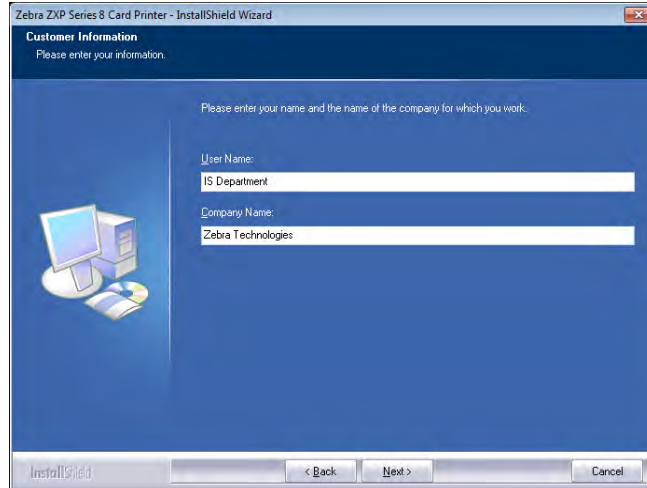
2: Installation and Setup

Installing the Windows Printer Driver

Step 11. This will bring up the **License Agreement** window. To proceed with the installation, select the *I accept the terms of the license agreement* option, and then click the **Next** button.

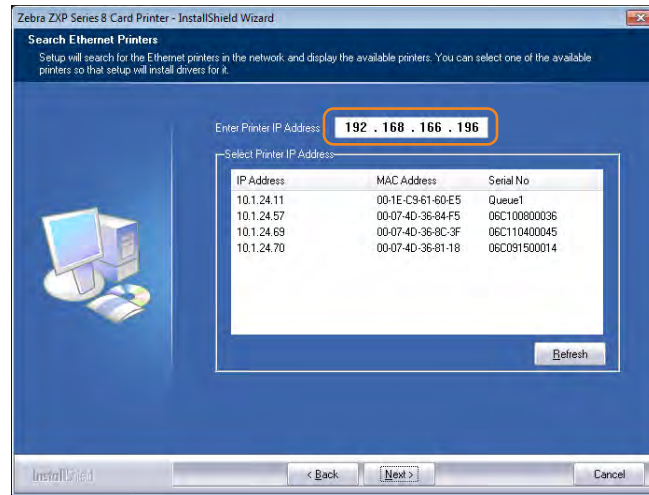


Step 12. This will bring up the **Customer Information** window. Enter your name and the name of the company for which you work; and then click the **Next** button.

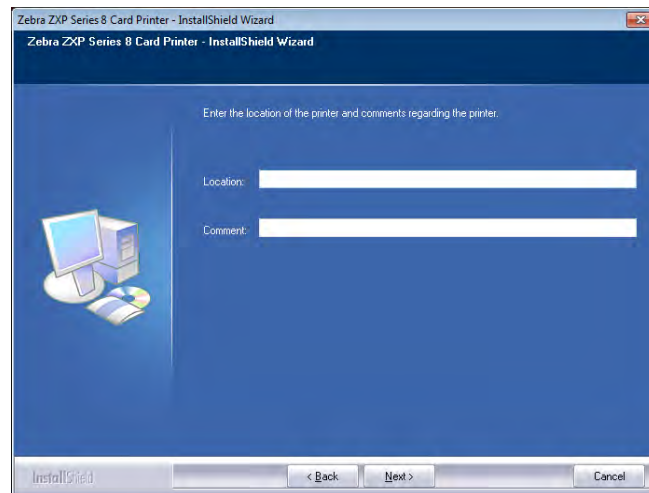


Step 13. Identify the printer:

- Setup will search for the Ethernet printers in the network and display the available printers. Select the desired printer, and then click the **Next** button.
- or -
- Enter the Printer IP Address directly (example circled below), and click the **Next** button.



Step 14. Enter the location of the printer, and add any applicable comments; and then click the **Next** button.

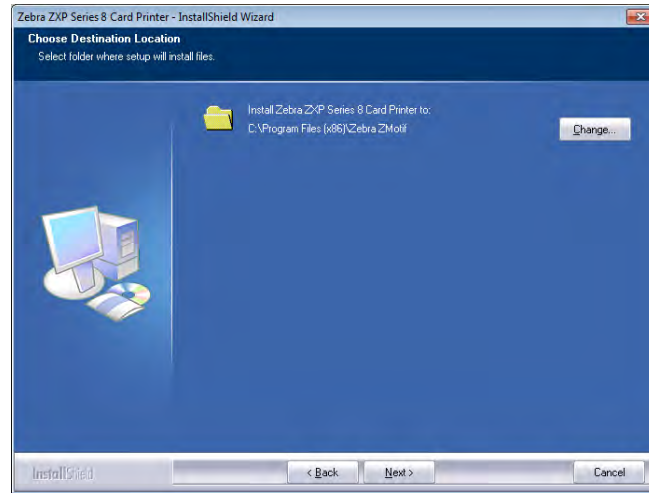


2: Installation and Setup

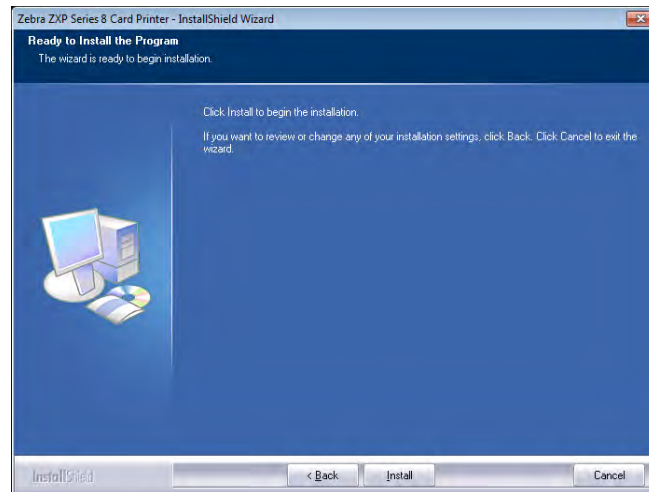
Installing the Windows Printer Driver

Step 15. This will bring up the **Choose Destination Location** window.

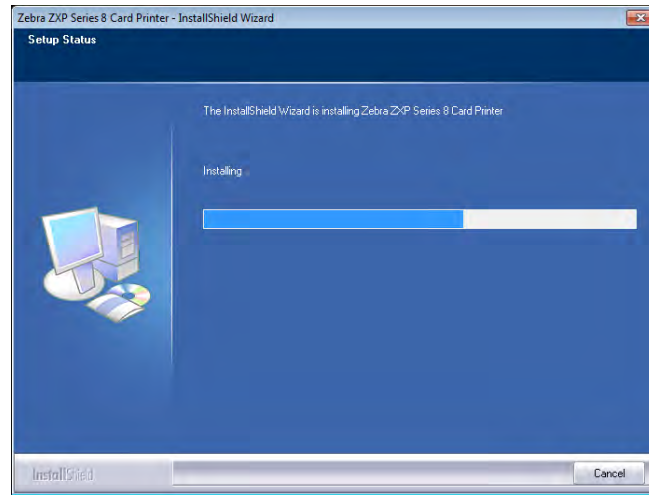
- To accept the default destination location where setup will install the files, click the **Next** button.
- or -
- Click the **Change** button, select a folder where setup will install the files, and click the **Next** button.



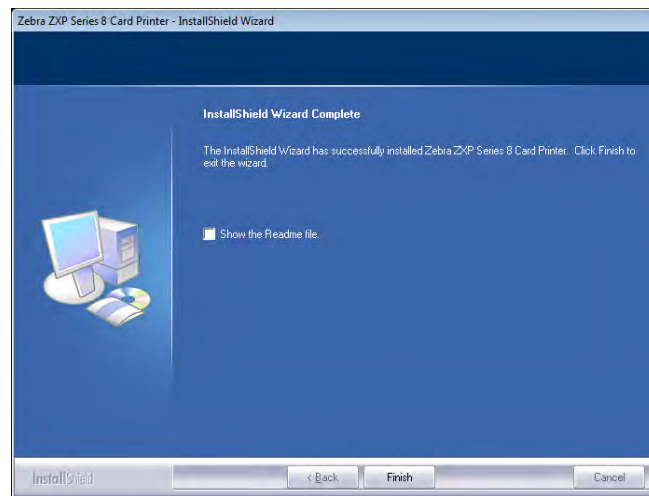
Step 16. This will bring up the **Ready to Install the Program** window. To continue, click the **Install** button.



Step 17. Observe the **Setup Status** window.



Step 18. When the **InstallShield Wizard Complete** window appears, click the **Finish** button.



Step 19. This completes Ethernet driver installation.

Step 20. To use the Printer, you would select it just like you would any other printer connected to the Ethernet.



Note • You may need to change the card setup (card type, orientation, etc.), encoding, and/or black panel settings via the Printer Driver; *Printing Preferences* on page 78.





Operation

Introduction

Printing with the Card Printer is similar to printing with any other printer in a Windows environment.

- The Printer Driver Software is installed on your computer (see [Section 2](#)).
- The Printer is connected to the power source and the computer (see [Section 2](#)).
- The Printer is selected by either the Operating System or the appropriate application software program.
- Printer Properties are set (the factory default values will be appropriate for many applications).
- Set the Card Type.
- Print a Test Card.
- Card printing is directed by the appropriate application software program.

Card Type Selection

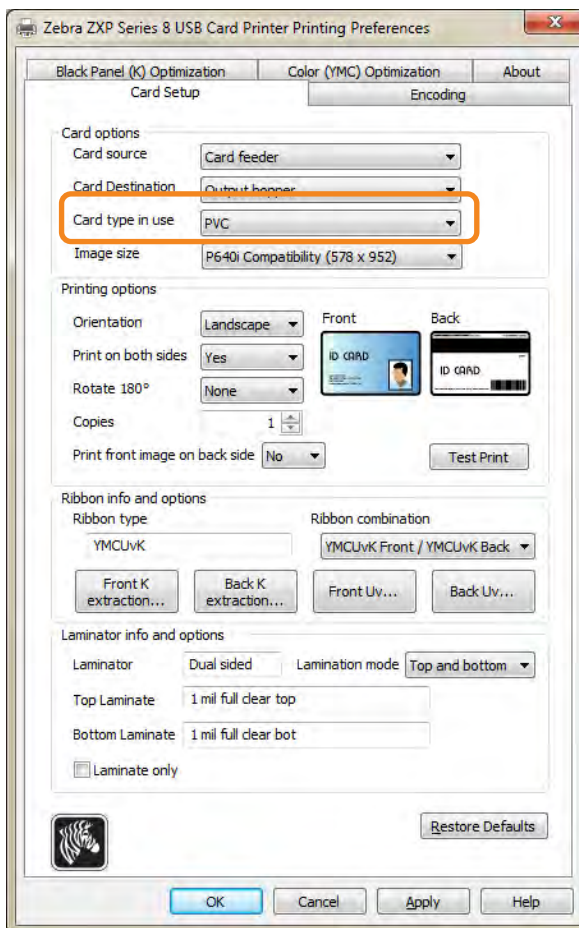
The **Card Setup** tab allows you to specify the card type in use. Based on your selection, the printer automatically adjusts various printer properties for optimum print quality.

1. To access the Card Setup Tab, select *Start > Devices and Printers*. Right click on the *Zebra ZXP Series 8 Card Printer* listing; and select *Printing Preferences > Card Setup*.

If your card type is not listed in the drop-down menu, select *Custom*; and fill out the Card Specifications pop-up screen; see [Card Setup Tab](#) on page 79 and [Appendix B](#) for details. For help setting the custom card specifications for your card type, contact the **Zebra Card Testing Service** at:



Phone: 866-569-9086 (Toll Free)
Email: cardtestingservice@zebra.com

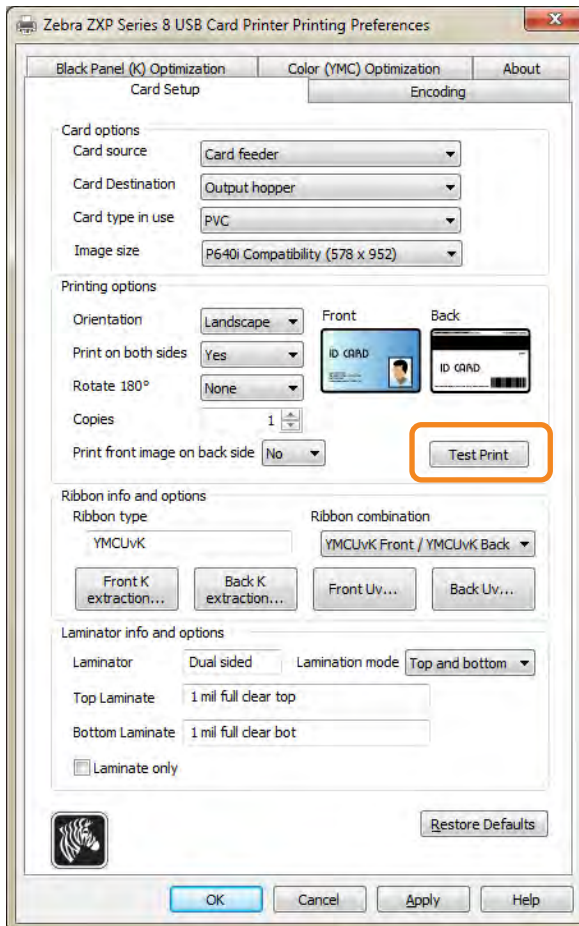


2. Make the appropriate Card Type selection from the dropdown menu (circled above).
3. Click on the **Apply** button, and then click on the **OK** button.

Printing a Test Card

To print a test card:

1. Select *Start > Devices and Printers*. Right click on the *Zebra ZXP Series 8 Card Printer* listing; and select *Printing Preferences > Card Setup*.



2. Click on the **Test Print** button (circled above) to print the test card; see sample test below. The printer may need to warm up to operating temperature before printing.

Test Card - Front



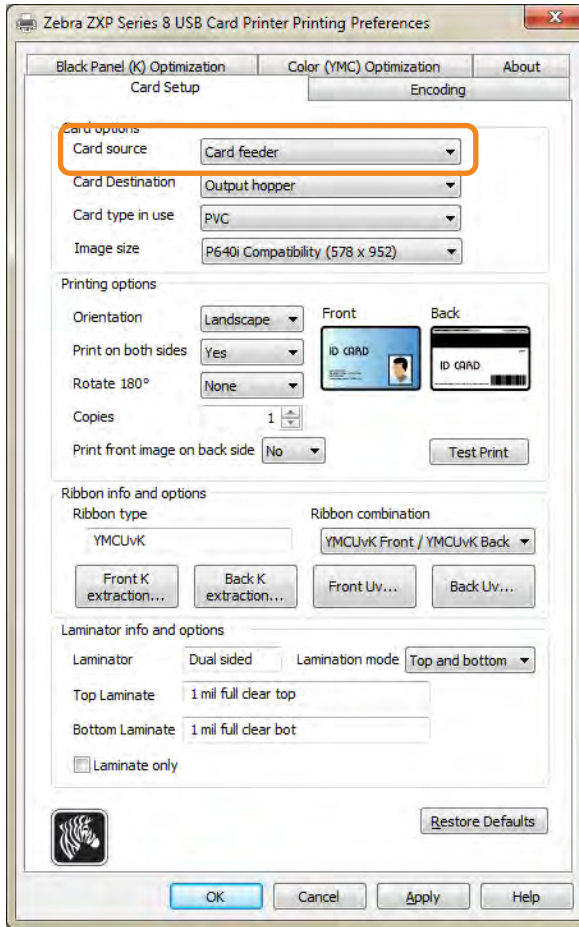
Test Card - Back



Manual Card Feed

A Manual Feed Slot is available for feeding single cards. Note that this option works with cards in the Input Hopper.

Access the Card Setup Tab: Select *Start > Devices and Printers*. Right click on the *Zebra ZXP Series 8 Card Printer* listing; and select *Printing Preferences > Card Setup*.

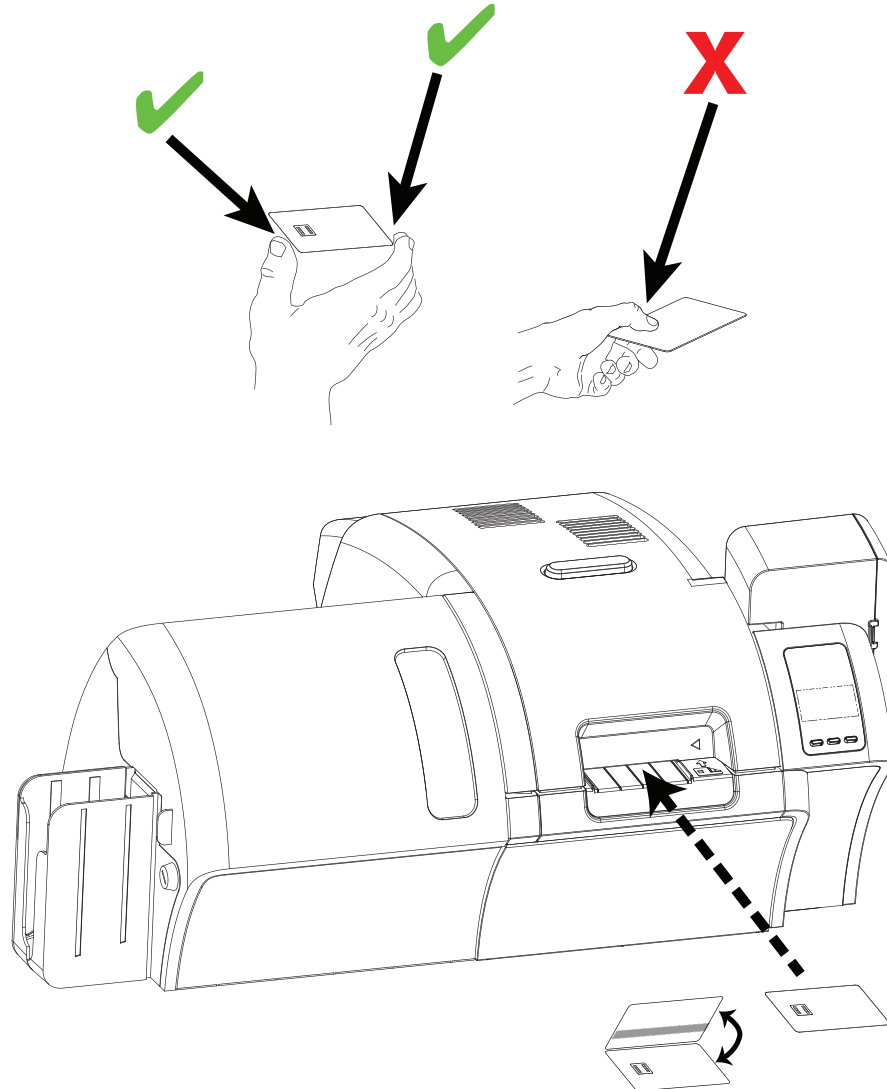


1. From the Card source dropdown menu, select *Single card feed slot* (circled above).
2. Click on the **Apply** button, and then click on the **OK** button.
3. For demonstration purposes, click on the **Test Print** button. Note that the Printer may need to warm up to operating temperature before printing.

4. Insert a single card into the slot in the correct orientation. Do not feed more than one card at a time.



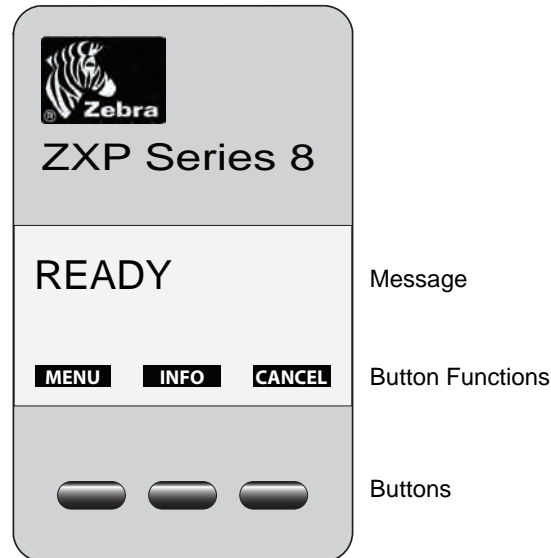
Caution • DO NOT bend cards or touch print surfaces as this can reduce print quality. The surface of the cards must remain clean and dust free. Always store cards in an enclosed container. Ideally, use cards as soon as possible.



5. The printer will feed in the card and start printing.
6. Once the printing job is complete, the card is ejected from the printer into the Output Hopper.

Operator Control Panel (OCP)

The printer is equipped with an OCP Display and three OCP Buttons which give access to the printer menus.



- Press the **MENU** button, to access the Main Menu.
- Press the **INFO** button, to access and view the Printer Settings Menu.
- Press the **CANCEL** button, to cancel the current print job in the printer.

Messages

Your printer is equipped with an OCP Display to provide printer status information. The readout is controlled by three OCP Buttons directly below the OCP Display. The messages displayed fall into three categories:

- Operational, see [Page 55](#).
- Warning, see [Page 56](#).
- Error, see [Page 56](#).

Operational

Operational Messages are displayed during the Printer's normal operation.

MESSAGE	DESCRIPTION
ALARM	An error message needs to be cleared before normal operations can resume.
CANCELING	The Cancel button was pressed, and the current operation is being terminated.
CONFIG DATA	Configuration data is being transferred from the computer to the printer.
CONTACT OPERATION	Contact Smart Card is being encoded; i.e., the card is in position and data is being transferred.
CONTACTLESS OPERATION	Contactless Smart Card is being encoded; i.e., the card is in position and data is being transferred.
COOLING	Ready to accept a print job, rollers cooling; e.g., when switching from 2-sided printing to 1-sided printing.
COOLING PRINT JOB WAITING	Print job received, cooling rollers to temperature.
COOLING PRINthead TEMPERATURE	Cooling printhead to temperature.
COOLING WAITING TO LAMINATE	Ready to accept a print job, laminator cooling; e.g., when switching from 2-sided laminating to 1-sided laminating.
DIAGNOSTIC	Diagnostic testing in progress.
JOB DATA	Data is being transferred from the computer to the printer.
LAMINATING	Print job received, laminating in process.
MAG OPERATION	A Magnetic Stripe Card is being encoded; i.e., card is in position and data is being transferred.
MANUALLY INSERT CARD FROM FRONT	Waiting for manual card feed (this function is set via the Card Setup Tab on page 79).
OFFLINE	Status toggled (offline/online) via the OCP Advanced Settings Menu.
PRINTING	Print job received, printing in process.
READY	Ready and at temperature.
STANDBY	Printer is in "sleep" mode; i.e., power save mode.
WAIT INITIALIZING	Performing a self test on startup.
WARMING	Ready to accept a print job, rollers heating; e.g., at startup or when switching from 1-sided printing to 2-sided printing.
WARMING PRINT JOB WAITING	Print job received, warming rollers to temperature.
WARMING WAITING TO LAMINATE	Ready to accept a print job, laminator warming; e.g., when switching from 1-sided laminating to 2-sided laminating.
WARMING PRINthead TEMPERATURE	Warming printhead to temperature.
WARNING	Indicates that additional OCP instructions need to be performed; e.g., PRINT RIBBON LOW, etc.

Warning Messages

Warnings alert the operator to action that should be taken; the printer will generally continue operation.

WARNING (Printer will still operate)	DESCRIPTION
BOTH LAMINATES LOW	Indicates that the Top Laminate cassette <u>and</u> the Bottom Laminate cassette are low.
BOTTOM LAMINATE LOW	Indicates that the Bottom Laminate cassette is low; see Loading the Laminate, Section 2 .
CLEAN FEEDER	Indicates that the Feeder needs cleaning.
CLEAN FRONT CARD PATH	Indicates that the Front Card Path (Y-Drive Rollers) needs cleaning; see Cleaning the Printer, Section 6 .
CLEAN LAM CARD PATH	Indicates that the Laminator Card Path needs cleaning; see Cleaning the Laminator, Section 6 .
CLEAN LAM MED ROLLERS	Indicates that the Laminator Media Feed Rollers need cleaning; see Cleaning the Laminator, Section 6 .
CLEAN LAM OVEN	Indicates that the Laminator Transfer Path (Heated Rollers) needs cleaning; see Cleaning the Laminator, Section 6 .
CLEAN SIDE CARD PATH	Indicates that the Side Card Path (X-Drive Rollers) needs cleaning; see Cleaning the Printer, Section 6 .
CLEAN TRANSFER PATH	Indicates that the Transfer Path (Heated Rollers) needs cleaning; see Cleaning the Printer, Section 6 .
PRINT RIBBON LOW	Indicates that the Print Ribbon spool is low; see Loading a Print Ribbon, Section 2 .
TOP LAMINATE LOW	Indicates that the Top Laminate cassette is low; see Loading the Laminate, Section 2 .
TRANSFER FILM LOW	Indicates that the Transfer Film spool is low; see Loading the Transfer Film, Section 2 .

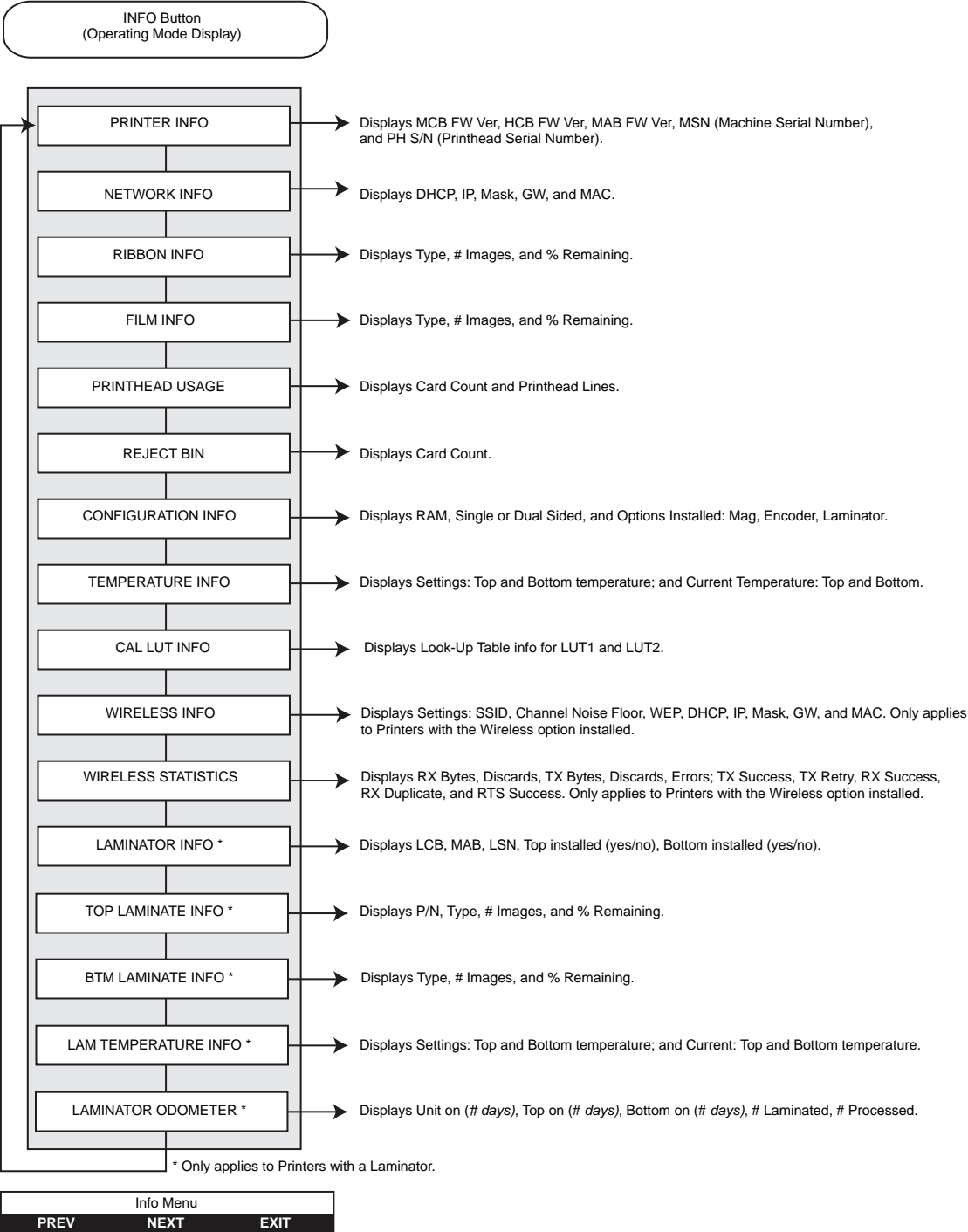
Error Messages

Errors are displayed when a situation causes the printer to stop operating. Depending on the cause of the error message, restarting the printer or clearing the displayed error may return the printer to operational status; or the printer may require troubleshooting and repair.

Refer to [Section 7, Troubleshooting](#), for a list of the error messages, possible causes, and possible solutions.

Printer Menu Information

Info Menu

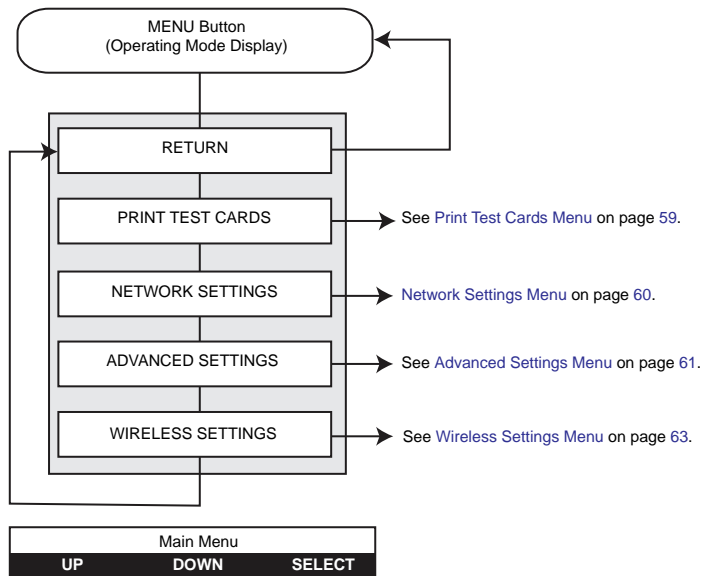


- Press the **PREV** button to move up the menu list
- Press the **NEXT** button to move down the menu list
- Press the **EXIT** button to return to the Operating Mode Display

3: Operation

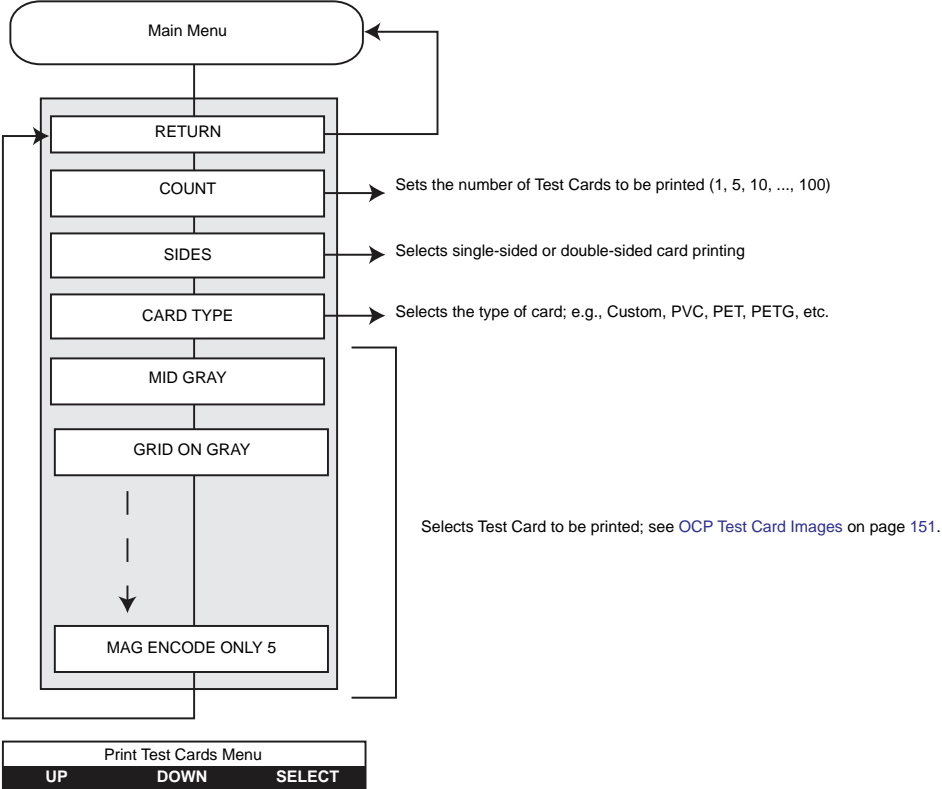
Operator Control Panel (OCP)

Main Menu



- Press the **UP** button to move up the menu list
- Press the **DOWN** button to move down the menu list
- Press the **SELECT** button to select the item from the list

Print Test Cards Menu

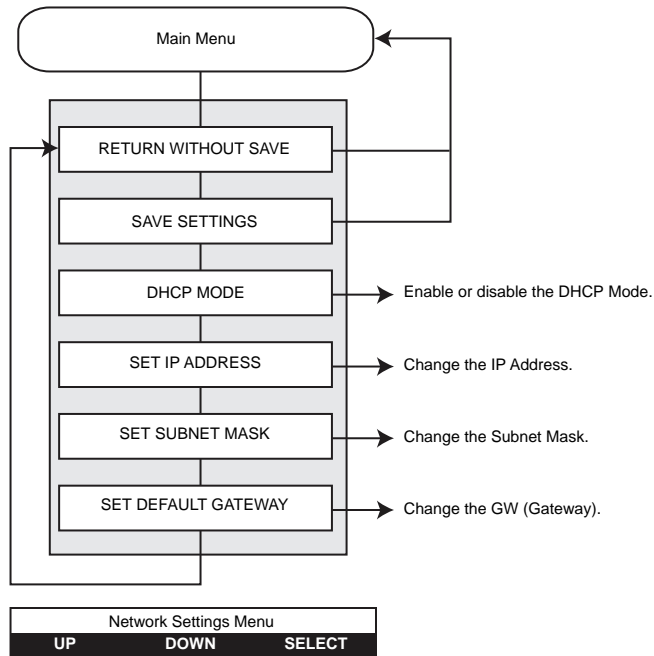


- Press the **UP** button to move up the menu list
- Press the **DOWN** button to move down the menu list
- Press the **SELECT** button to select the item from the list

3: Operation

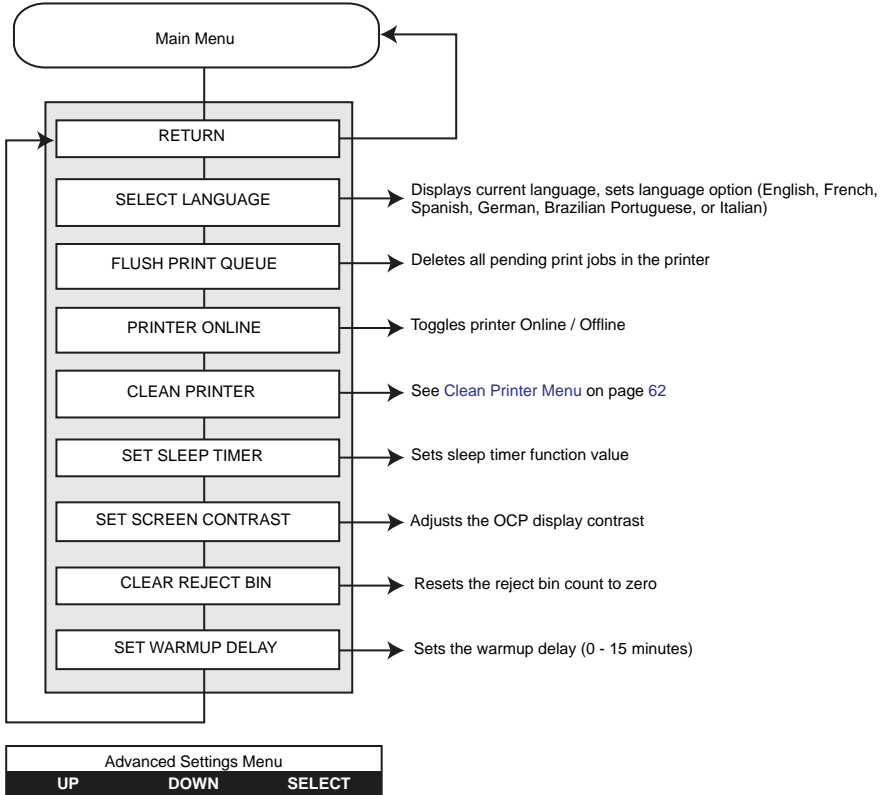
Operator Control Panel (OCP)

Network Settings Menu



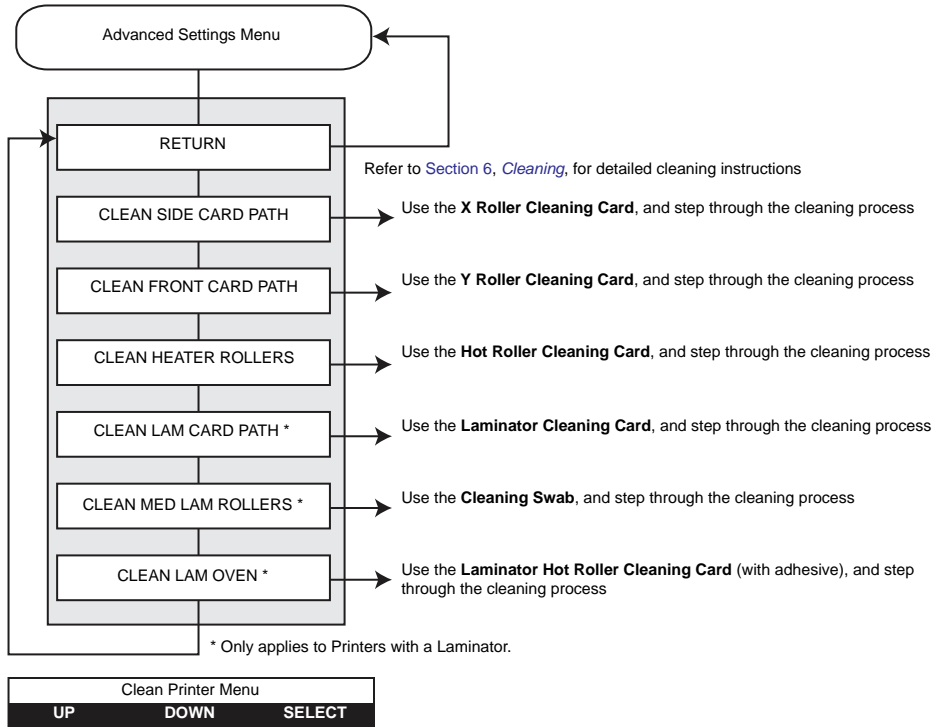
- Press the **UP** button to move up the menu list
- Press the **DOWN** button to move down the menu list
- Press the **SELECT** button to select the item from the list

Advanced Settings Menu



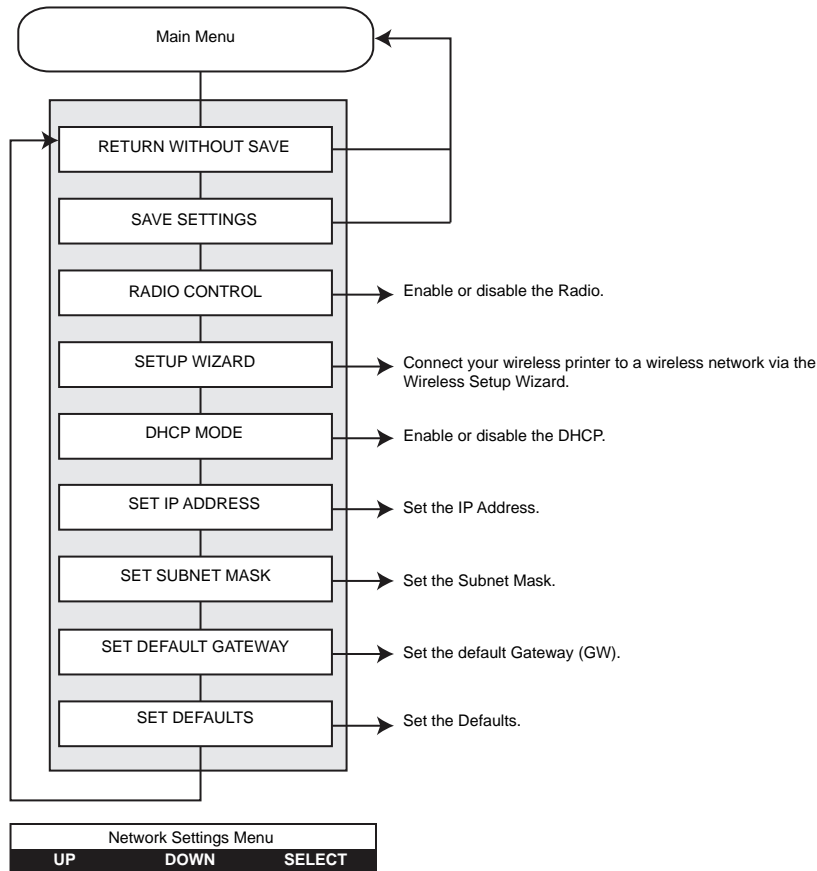
- Press the **UP** button to move up the menu list
- Press the **DOWN** button to move down the menu list
- Press the **SELECT** button to select the item from the list

Clean Printer Menu



- Press the **UP** button to move up the menu list
- Press the **DOWN** button to move down the menu list
- Press the **SELECT** button to select the item from the list

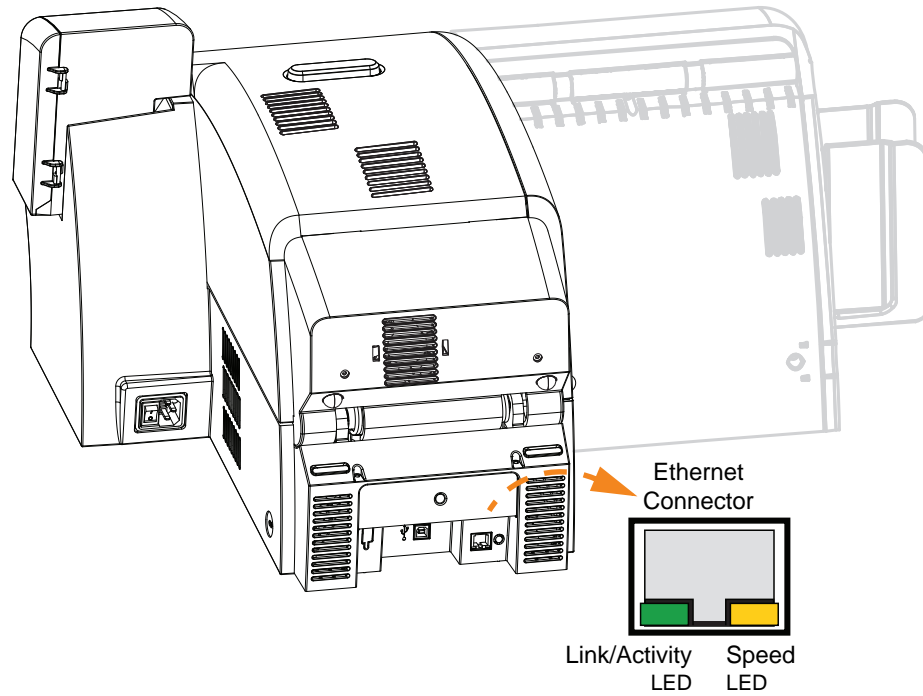
Wireless Settings Menu



- Press the **UP** button to move up the menu list
- Press the **DOWN** button to move down the menu list
- Press the **SELECT** button to select the item from the list

To configure the printer for wireless printing, refer to the *Zebra ZXP Series 8 Card Printer Wireless Reference Manual, P/N P1035089-001* or *Zebra ZXP Series 8 Card Printer Service Manual, P/N 1013376*.

Ethernet Indicators -- Detail



Link/Activity Indicator (Green)

Off	No link (disconnected)
On	Network link has been established
Blinking	Network activity has been detected

Speed Indicator (Orange)

Off	No link (disconnected)
1 Blink	The LED blinks once (one blink, pause, one blink, etc.) when a 10Base link has been established.
2 Blinks	The LED blinks twice (two blinks, pause, two blinks, etc.) when a 100Base link has been established.



Printer Settings and Adjustments

Introduction

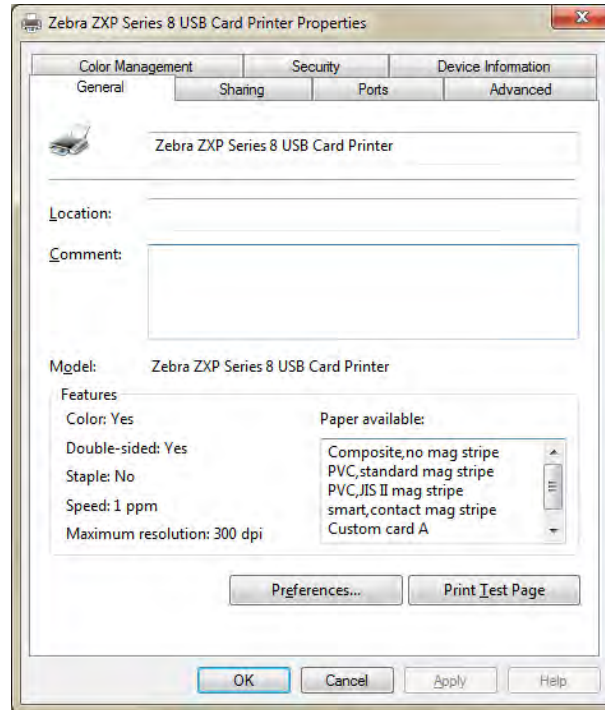
This section describes settings and adjustments that can be made to your Windows ZXP Series 8 Printer Driver. This consists of two major topics:

- [Printer Properties](#) 66
- [Printing Preferences](#) 78

Printer Properties

Printer Properties can be used to view the printer firmware/driver/hardware configuration and installed media, to access advanced settings via the ZXP Toolbox, and to set features such as security, ports, and color management.

To access the Card Printer Properties, select *Start > Devices and Printers*. Right click on the *Zebra ZXP Series 8 Card Printer* listing, then select *Properties*.



- [General Tab](#)67
- [Sharing Tab](#)68
- [Ports Tab](#)69
- [Advanced Tab](#)70
- [Color Management Tab](#)71
- [Security Tab](#)75
- [Device Information Tab](#)76

The **OK** button applies and saves the settings.

The **Cancel** button exits Printing Properties. Changes made are abandoned.

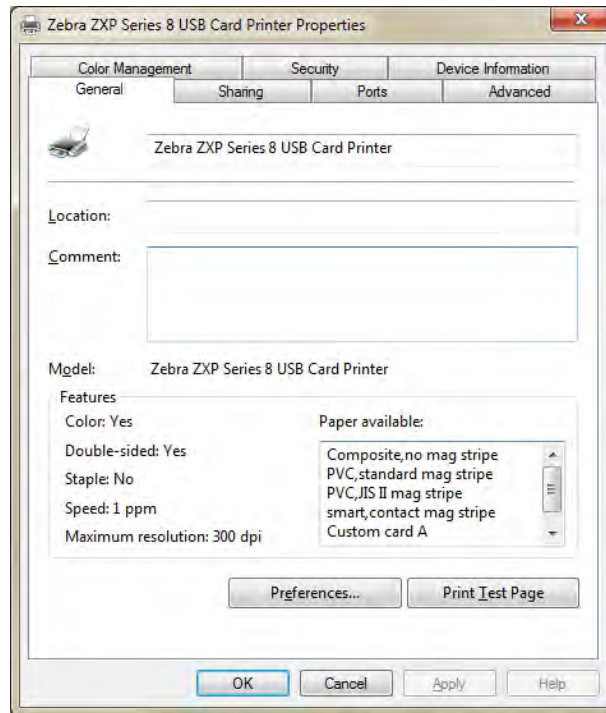
The **Apply** button applies, but does not save, the settings.

The **Help** button enables you to view a corresponding page of help information.

General Tab

The General tab shows the selected printer and lists the features of the printer.

To access the General tab, select *Start > Devices and Printers*. Right click on the *Zebra ZXP Series 8 Card Printer* listing. Select *Properties > General*.



- **Location** - Lets you specify where the printer is located.
- **Comment** - Lets you specify general information about the printer, such as the type of print device and who is responsible for it. Once set, these fields can be displayed by applications.
- **Model** - Specifies the name of the printer driver installed.
 - **Features** - Specifies whether various options are available on the printer.

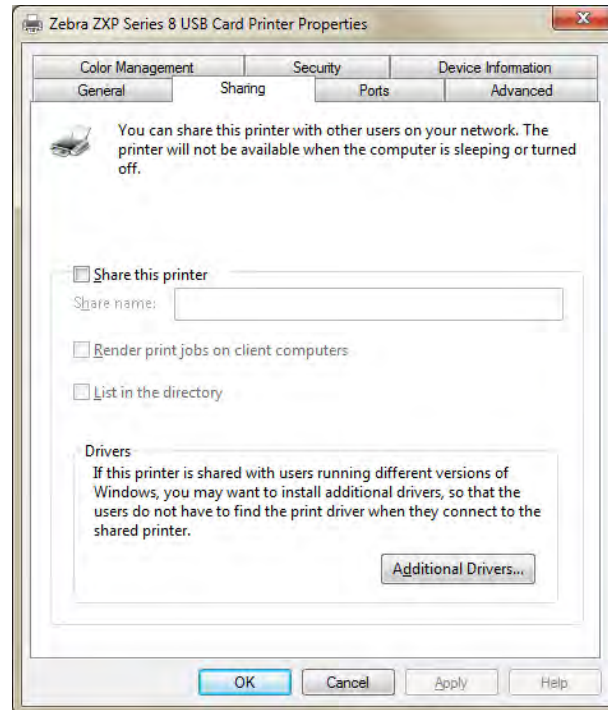
The **Printing Preferences** button takes you to Printing Preferences used to set selected configuration parameters; see [Printing Preferences](#) on page 78.

The **Print Test Page** button sends the standard Windows test page to the printer.

Sharing Tab

On the Sharing tab (Sharing Property Page), you can choose to share the printer over the network and install additional drivers to accommodate different operating systems.

To access the Sharing tab, select *Start > Devices and Printers*. Right click on the *Zebra ZXP Series 8 Card Printer* listing. Select *Properties > Sharing*. Click on the **Change Sharing Options** button to enable this tab.



Printer sharing tasks that you can perform include:

- To share a printer, select the *Share this printer* radio button; and specify a name for the shared resource. Click OK when you are finished.
- To change the shared name, simply enter a new name in the *Share name* field; and click OK.
- To quit sharing a printer, deselect the *Share this printer* radio button. Click OK when you are finished.

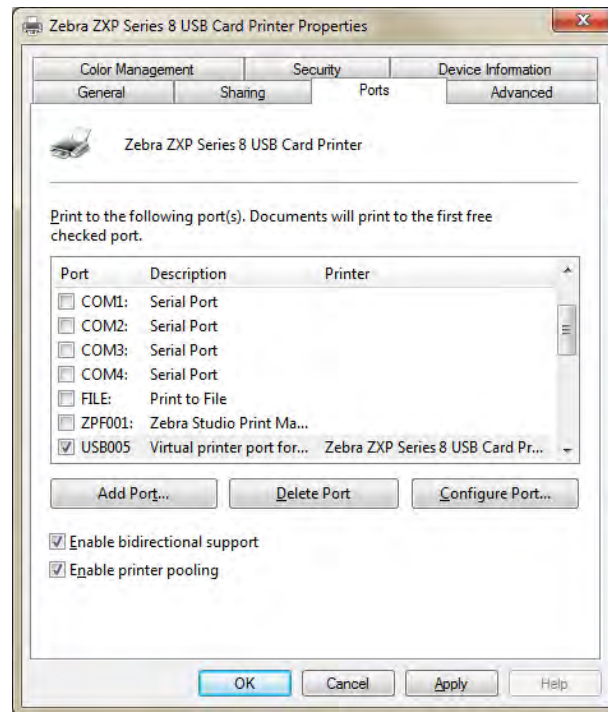
Drivers: If this printer is shared with users running different versions of Windows, you may want to install additional drivers, so that the users do not have to find the print driver when they connect to the shared printer. Click on the **Additional Drivers** button.

For *Printer Sharing Configurations* and *Advanced Sharing Settings*, refer to [Appendix C](#) for details.

Ports Tab

Use the Ports tab to specify the computer port to which the printer is connected. This will have been established at the initial installation of the printer.

To access the Ports tab, select *Start > Devices and Printers*. Right click on the *Zebra ZXP Series 8 Card Printer* listing. Select *Properties > Ports*.



An exception to this is if you wish to use *printer pooling*, the ability to distribute print jobs to multiple printers.

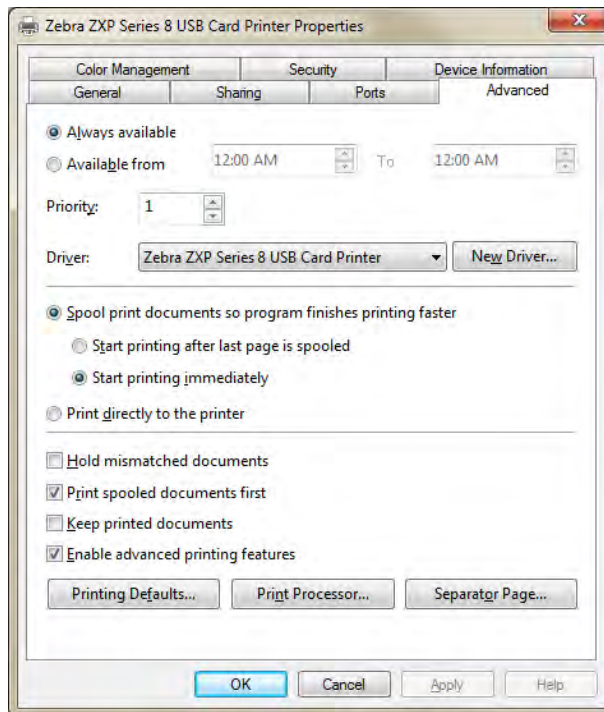
To enable printer pooling, select the *Enable printer pooling* checkbox, then check the additional ports boxes. Each port should have a single Zebra printer installed on it. All the pooled printers must be identical models with the same configuration (e.g., all with YMC front, K back); and each must have its own printer driver installed.

Now, when you print to the “main printer” (that is, whichever printer you right-clicked in *Devices and Printers* to get to this screen), this printer will get print jobs until it has buffered as many jobs as it can take. The remaining jobs will then “spill over” to other printers until all printers in the pool are busy.

Advanced Tab

The Advanced tab determines the spooling (queuing) of print jobs and determines how spooled jobs are handled relative to the most recent job.

To access the Advanced tab, select *Start > Devices and Printers*. Right click on the *Zebra ZXP Series 8 Card Printer* listing. Select *Properties > Advanced*.



You can make the printer always available by selecting the *Always available* radio button, or you can limit availability by selecting the *Available from* radio button and specifying the “Available from” and “To” times. Click the **Apply** button, and then the **OK** button.

To enable spooling: Select the radio button labeled *Spool print documents so program finishes printing faster*.

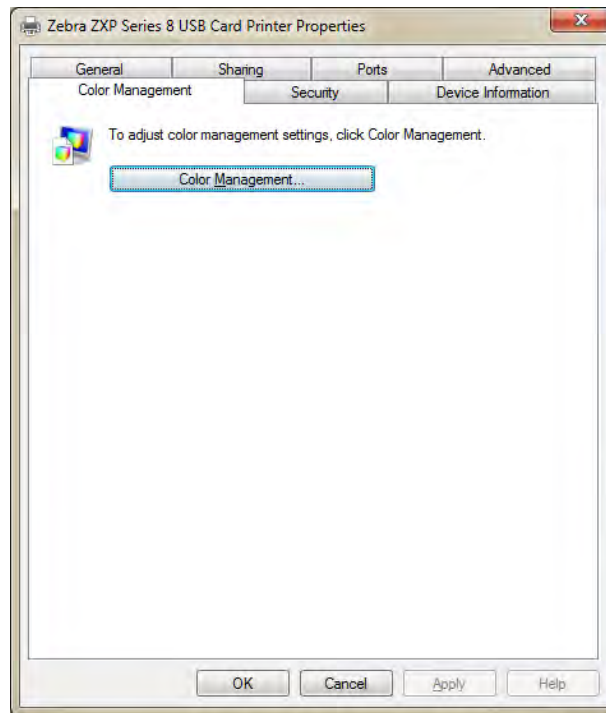
- Select *Start printing after last page is spooled* if you want the entire document to be spooled before printing begins. This option ensures that the entire document is sent to the print queue before printing. If for some reason printing is canceled or not completed, the job will not be printed.
- Select *Start printing immediately* if you want printing to begin immediately when the print device is not already in use. This option is preferable when you want print jobs to be completed faster or when you want to ensure that the application returns control to users as soon as possible.

To disable spooling: Select the radio button labeled *Print directly to the printer*.

Color Management Tab

You should not have to change your color management settings. Change these settings only if you have specific color management requirements that are not being met by your current color settings.

To access the Color Management tab, select *Start > Devices and Printers*. Right click on the *Zebra ZXP Series 8 Card Printer* listing, and select *Printer properties > Color Management*. Click on the **Color Management** button to enable this tab.



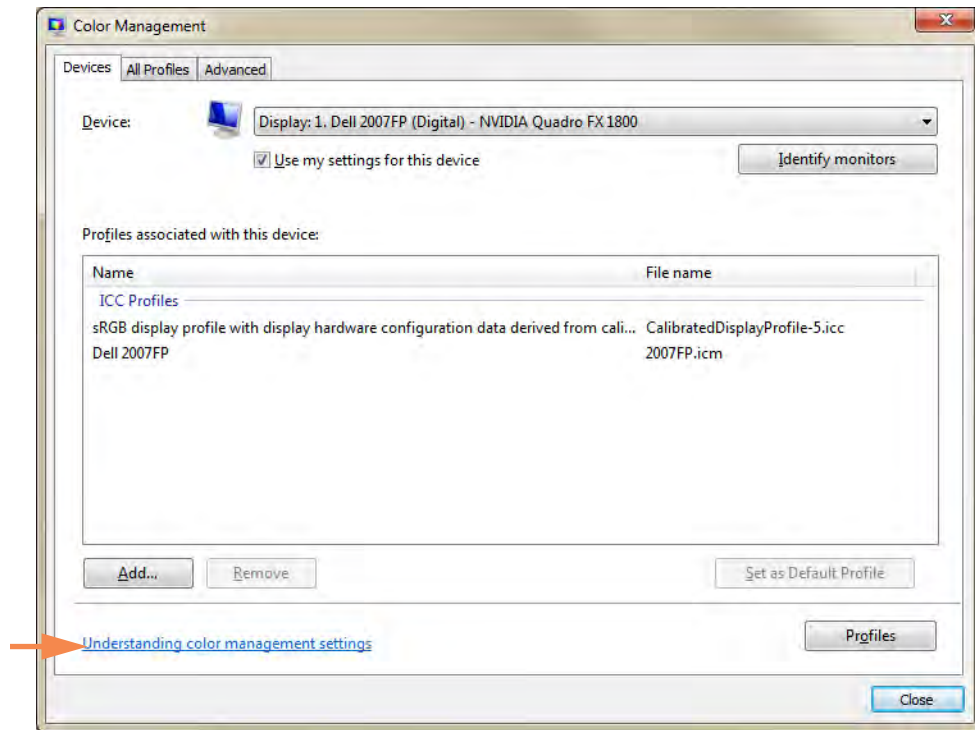
When you click on the **Color Management** button, you will see the following three tabs:

- [Devices Tab](#) 72
- [All Profiles Tab](#) 73
- [Advanced Tab](#) 74

For details on color management, click on the *Understanding color management settings* link on the Color Management Devices tab.

Devices Tab

Use the Devices tab to select your printer and to view, add, and select profiles and behaviors to use with your printer.



The *Use my settings for this device* checkbox must be selected to enable the following button functions:

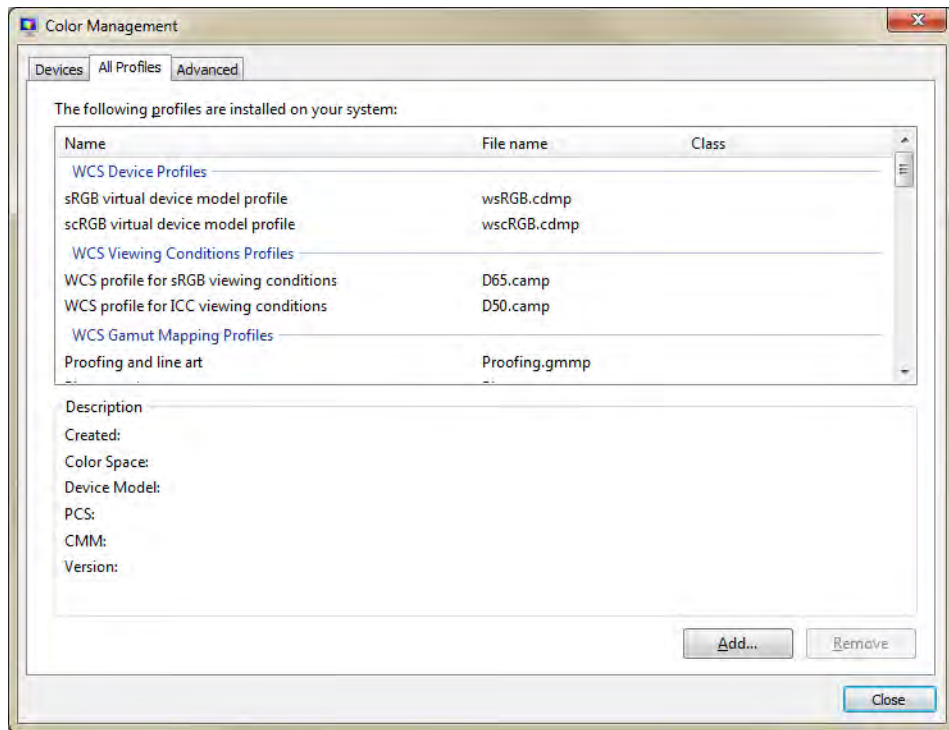
- The **Add** button allows you to add additional profiles to the color profile list.
- The **Remove** button allows you to remove profiles from the color profile list.

The **Set As Default** button allows you to set the selected profile as the default profile.

For details on color management, click on the *Understanding color management settings* link (arrow above).

All Profiles Tab

Use the All Profiles tab to view and manage the profiles that are in your system. Note that color profiles are usually added automatically during the installation of new devices.



If you need to install a new profile, follow these steps:

Step 1. Click on the **Add** button.

Step 2. Observe the Install Profile browse window.

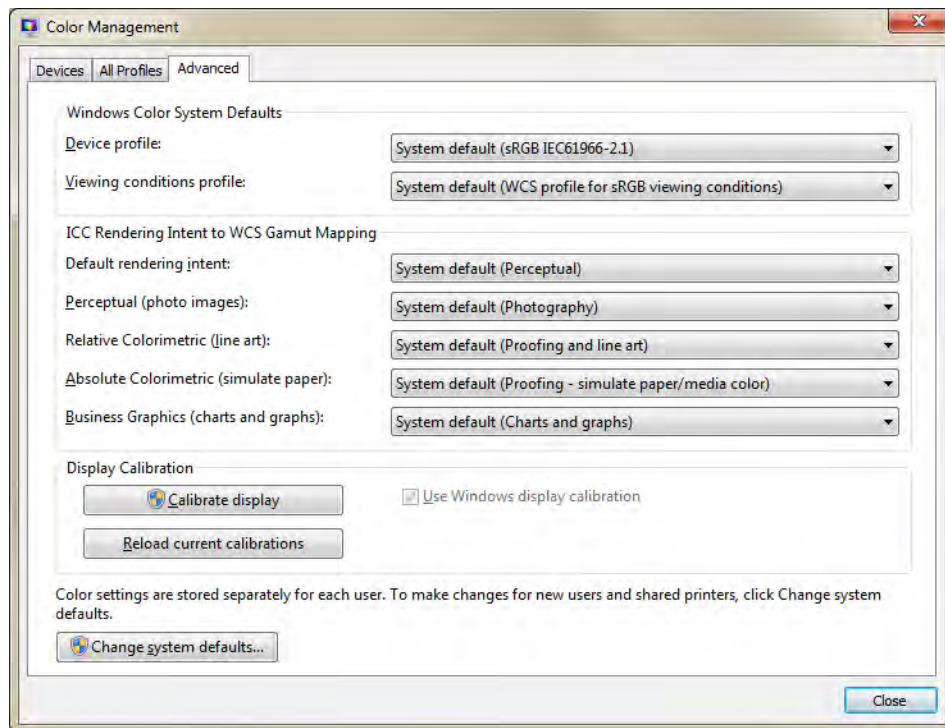
Step 3. Locate the desired color profile.

Step 4. Click on the **Add** button (in the Install Profile browse window).

Advanced Tab

Use the Advanced tab to check your Windows Color System Defaults settings, verify ICC Rendering to WCS Gamut Mapping, and calibrate your display (Display Calibration).

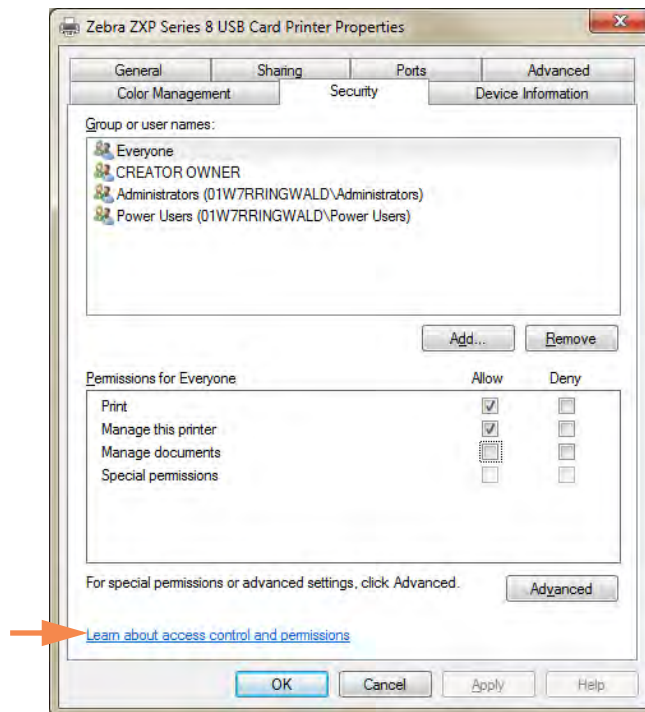
This tab allows you to configure advanced color management settings to ensure accurate display and printing of color information.



Security Tab

This is the standard Windows security screen, showing user access to various printer control options.

To access the Security tab, select *Start > Devices and Printers*. Right click on the *Zebra ZXP Series 8 Card Printer* listing. Select *Properties > Security*.



The Security tab allows you to assign the actual permissions that apply to the print queue. You can apply permissions to both users and to groups. It is usually considered a better practice to only apply security to groups.

Both “Print” and “Manage this printer” *Allow* checkboxes must be selected to ensure full functionality of the printer.

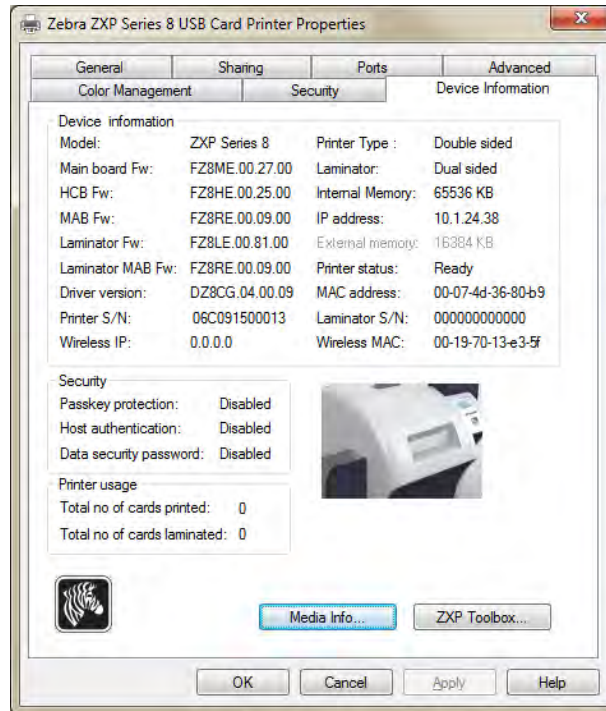
The Advanced Security Settings properties sheet allows you to assign a more comprehensive set of permissions than the basic Security tab found on the printer’s properties sheet does.

For details on security settings, click on the *Learn about access control and permissions* link (arrow above).

Device Information Tab

The Device Information tab provides device information, security status, and printer usage. Access to Media Info and ZXP ToolBox is included.

To access the Device Settings tab, select *Start > Devices and Printers*. Right click on the *Zebra ZXP Series 8 Card Printer* listing. Select *Properties > Device Information*.

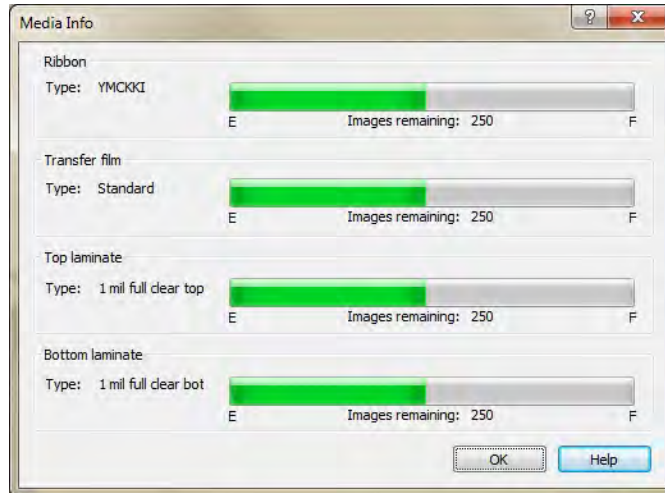


- The **Media Info** button takes you to the Media Info screen; see next page.
- The **ZXP Toolbox** button takes you to the ZXP Toolbox which provides advanced configuration capabilities and tools to manage the operation of your printer; see [Section 5](#) for details.

Note that the ZXP Toolbox is a separate application that works independently from the printer driver.

Media Info

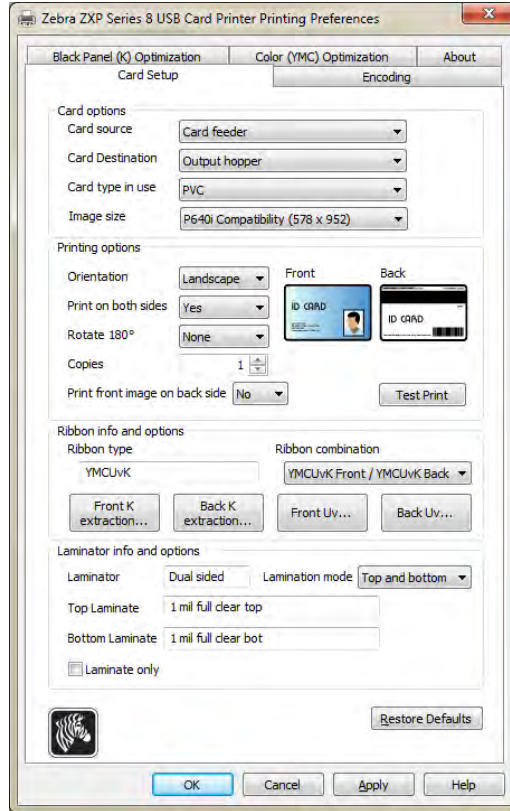
The Media Info screen shows ribbon status, transfer film status, top laminate status, and bottom laminate status.



- **Ribbon:** Shows the ribbon type installed and the number of images remaining.
- **Transfer film:** Shows the transfer film type installed and the number of images remaining.
- **Top laminate:** Shows the top laminate type and the number of images remaining.
- **Bottom laminate:** Shows the bottom laminate type and the number of images remaining.

Printing Preferences

To access the Card Printer Printing Preferences, select *Start > Devices and Printers*. Right click on the *Zebra ZXP Series 8 Card Printer* listing; and select *Printing Preferences*.



- Card Setup Tab 79
- Encoding Tab 95
- Black Panel (K) Optimization Tab 96
- Color (YMC) Optimization Tab 99
- About Tab 100

The **Restore Defaults** button restores the tab’s default setting values.

The **OK** button saves any changes that have been made and closes the page.

The **Cancel** button cancels any changes that have been made and closes the page.

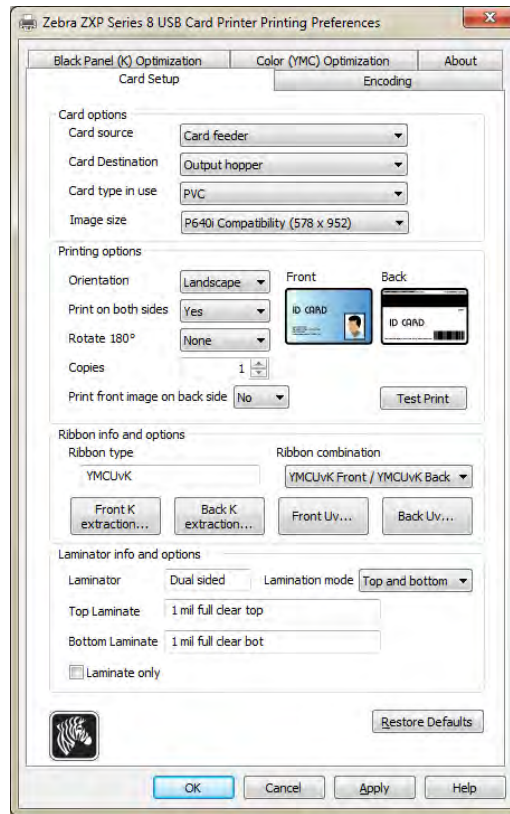
The **Apply** button applies your settings.

The **Help** button will enable you to view a corresponding page of help information.

Card Setup Tab

Card Setup tab allows the user to adjust selected card and print job parameters.

To access the Card Setup Tab, select *Start > Devices and Printers*. Right click on the *Zebra ZXP Series 8 Card Printer* listing; and select *Printing Preferences > Card Setup*.



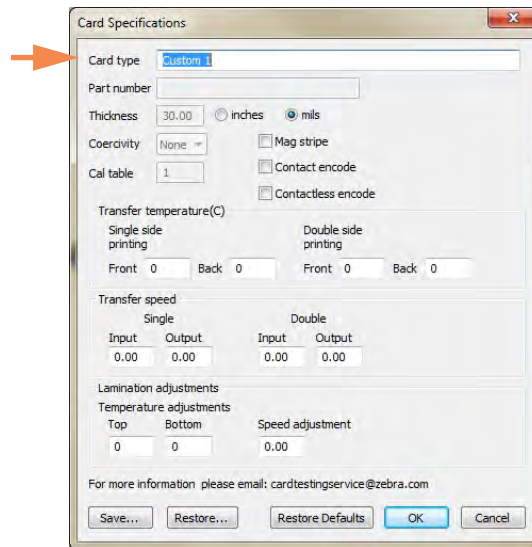
- **Card options** allows the user to select the card source, card destination, card type in use, and image size.
 - **Card source**
 - Single card feed slot
 - Card feeder (default)
 - Already in printer (for third-party applications that use this feature)
 - **Card Destination**
 - Output hopper (default)
 - Reject tray
 - Leave in printer (for third-party applications that use this feature)

4: Printer Settings and Adjustments

Printing Preferences

- **Card type in use** allows the user to specify the type of card being used. Based on the selection, the printer automatically adjusts the transfer roller temperature and input and output transfer speed for optimum print quality.

If none of the provided card types matches the actual user card type, or you are unable to achieve desired results using any of the provided card types, then you may specify your own parameters using the Custom 1 (arrow below) and Custom 2 selections; see [Appendix B, Setting Custom Card Specifications](#), for details.



For help setting the specifications for your card type, contact the **Zebra Card Testing Service** at:

Phone: 866-569-9086 (Toll Free)
Email: cardtestingservice@zebra.com

Note that the you can rename Custom 1 and Custom 2 and then save the renamed card type for future use. The card name must be less than 21 characters (printable ASCII characters only). This change is persistent; i.e., on hardware host reboot or printer initialization, the card type list will always display the user-defined name. Also, any driver or firmware update will not overwrite user-defined Custom 1 or Custom 2 card settings.

- In the case of multiple hosts to one printer, all driver hosts will see the new card type list with the customer-specific name change(s).
 - In the case of multiple printers the user will be responsible for editing and managing consistent custom card name(s) across multiple printers.
- **Image size** is either Edge to edge (648 x 1024) or CR-80 Standard (578 x 952). Note that the printing size is specified in pixels.

- **Printing options** allows the user to select the card orientation (portrait or landscape), to print on both sides of the card, to rotate the card 180 degrees, and to specify the number of copies to print. If you modify any of these settings, click the **Apply** button before printing a test card. The **Test Print** button prints a test card; see [Printing a Test Card](#) on page 51.
- **Ribbon info and options:**
 - **Ribbon type** shows the type of ribbon (color or monochrome) installed in the printer.
 - **Ribbon combination** allows you to select the combination of panels to be printed on each side.
 - Depending on the ribbon type installed, the **Front** and **Back** buttons let you set options for:
 - [Black Panel Options](#) 82
 - [Uv Panel Option](#) 88
 - [Inhibit Option](#) 93
- **Laminator info and options** shows the user if the Laminator option is installed (and if so whether it is Single or Dual sided), whether Top Laminate and/or Bottom Laminate is installed (and if so what type it is), and allows the user to change the Lamination mode on a per-job basis.

The Lamination modes are as follows:

- **Default:** Operates as configured. Card Destination must be set to Output Hopper.
- **Top:** Set if both the top and bottom laminates are installed, and you only want to laminate the top.
- **Bottom:** Set if both the top and bottom laminates are installed, and you only want to laminate the bottom.
- **Top and Bottom:** Set if both the top and bottom laminates are to be used.
- **Pass-through:** Allows a card to pass through the laminator without having laminate applied. Note that the laminate must be removed from the laminator for this option to work.
- **Any:** Set if the laminate, currently installed in the printer (top only, bottom only, top and bottom, or none), is to be used.
- **Laminate only** can be used to laminate pre-printed cards. This is a special-purpose function that is enabled when the *Lamination mode* is set to Top, Bottom, or Top and bottom and the *Card destination* is set to Output hopper. When this option is selected, the card is passed from the input hopper, through the printer without being printed, to the laminator for lamination, then to the output hopper.

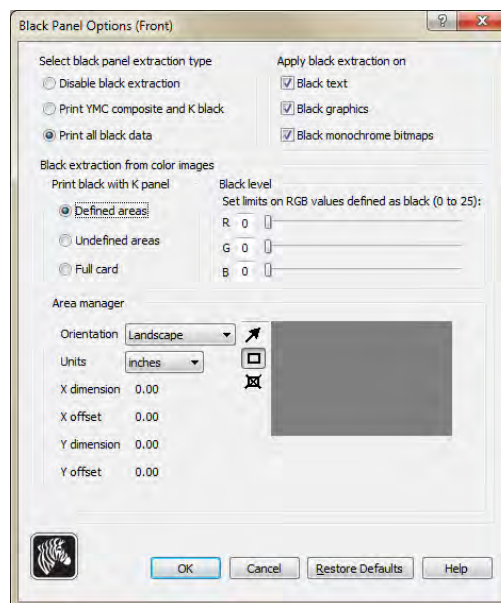
If the laminate installed does not match the Lamination mode, then a Lamination Mode Mismatch error will occur. To resolve the error, either the laminate will need to be installed/removed; or the Lamination mode will need to be changed.

Black Panel Options

The Black Panel Options pop-up window allows you to manage and configure the use of the Black Panel (K panel) when the selected Ribbon Combination shows the K panel on the same side as the Y, M, and C panels (e.g. YMCK Front / K Back).

To access the Advanced Black Panel Options pop-up window, select *Start > Devices and Printers*. Right click on the *Zebra ZXP Series 8 Card Printer* listing, and select *Printing preferences > Card Setup*.

From the *Card Setup* tab, select a **Ribbon Combination** that has YMC and K all on the same side. The *Front K Extraction...* and/or *Back K Extraction...* buttons will become active. Press the appropriate button to open up the pop-up window. The figure below shows settings for the front side of the card; settings for the back side of the card are identical.



To extract black areas from color images (use the K panel instead of the Y, M, and C panels), several selections must be made:

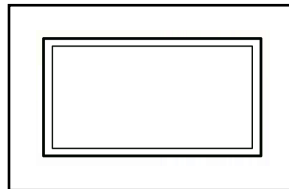
- Select black panel extraction type:
 - **Disable black extraction** does not use the K panel for any part of the image. This selection will have the effect of rendering all black images as YMC composite.
 - **Print YMC composite and K black** uses both the K panel and the Y, M, and C panels to print the portions of the image that are identified as black. This selection will result in a dark, black image; but the edges will be smooth (due to YMC printed under the K), not the sharp edges typically desired for a barcode.
 - **Print all black data** uses only the K panel to print the portions of the image that are identified as being black. Note that the areas that are identified as black are based on the threshold selections made in the black level area in the black extraction from color images area; see [Page 84](#).

- **Apply black extraction on:**

Option 1. **Black text** applies black extraction to areas of the image identified as text; e.g., company name, address.



Option 2. **Black graphics** applies black extraction to areas of the image identified as graphics primitives; e.g., lines, circles, rectangles, area fills, etc.



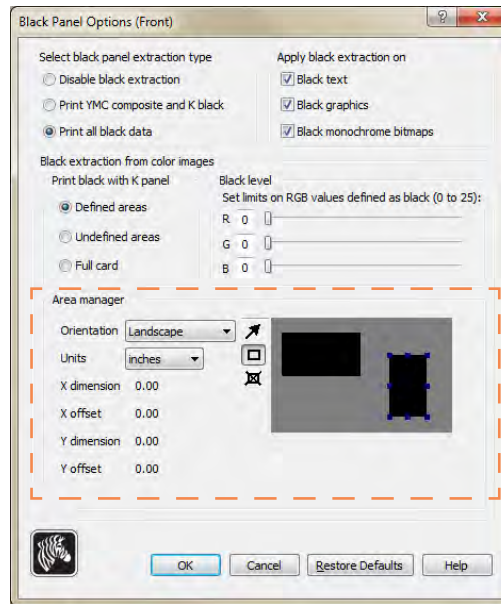
Option 3. **Black monochrome bitmaps** applies black extraction to areas of the image identified as monochrome data in a bitmap; e.g., logos.



4: Printer Settings and Adjustments

Printing Preferences

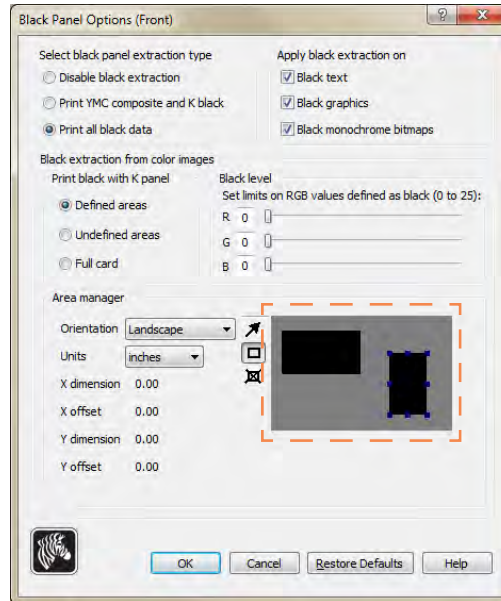
- **Black extraction from color images:**




- **Print black with K panel:**
 - **Defined areas** applies black extraction to areas of the image inside of the zones specified in the Area manager.
 - **Undefined areas** applies black extraction to areas of the image outside of the zones specified in the Area manager.
 - **Full card** applies black extraction to the entire image.
- **Black level:** Every dot of a printed image has an RGB color value that ranges from 0, 0, 0 (pure black) to 255, 255, 255 (pure white). The black level setting allows the user to specify the threshold value for any given dot to be treated as black. The maximum setting is 25, 25, 25.


Area manager:


This option is enabled when either the Defined areas (extract inside the zone) or the Undefined areas (extract outside the zone) radio button is selected.



- **Orientation:** The Orientation selection sets the image orientation to either Portrait or Landscape.
- **Units:** The Units selection sets the units to either inches or mm (millimeters). The X-dimension, X-offset, Y-dimension, and Y-offset reflect these units.

To create a zone: Select the rectangle icon , click on an area of the image to establish the first corner of the zone, drag the cursor until the zone is the desired size and shape, then release the mouse button. Note that multiple zones can be defined.

To select, move, or resize a zone: Select the arrow icon , click on a zone to select it, then drag it to move it, or drag on the edges to resize it.

To delete a zone: Select the rectangle icon with an "X" through it , then click on the zone that you want to delete.

Reasons and Behavior for Black Panel Extraction

This section covers special handling of black data specified on the “Black Panel (K)” tab and applies only to surfaces of the card on which both YMC (color) and K (black) are to be printed.



To print black during the print process, equal amounts of process colors Y, M, and C (printer ribbon panels) are delivered, with maximum intensity, to create a near-black image.

- However, this “composite” image appears as a dark shade of gray and not machine readable. For example, a visually-black barcode printed with Y, M and C will not be detectable by most barcode readers and is not a true Visible Black color.
- The remedy for this is to “extract the black.” In other words, print the same text, graphics, or barcode, using the K (black) panel, on top of the YMC barcode. (You can also choose to print only in K, omitting YMC from that region.)

Depending on the application used to design the card layout, different elements of the card image may be identified in different ways to the printer driver. The printer driver needs to recognize four types of basic elements:

1. Black text
2. Black (monochrome) graphics -- lines, circles, rectangles, and area fills
3. Black monochrome bitmap images

These elements may not always be sent to the driver as expected. For example, a barcode may be sent as black text, a series of black area fills, or a black monochrome bitmap. Results will depend on the application used to create the card design. Another variable, again controlled by the card design application, is the precedence (stacking order) of the various element types in the event that one or more of them overlap.

If the printer is set up to print both YMC and K on the same side, text, lines and pixels, area fills and monochrome bitmaps, if (and only if) designated black by the application, can be directed to the K panel. For this to happen, the graphic type in question has to be selected on the “Black Panel (K)” tab. For text, lines and pixels, area fills and monochrome bitmaps the designation “black” is set at RGB values of 0,0,0. This threshold can be adjusted up to 25,25,25, with the Black level slider adjustment. Near-black doesn’t qualify.

In the Black Panel (K) tab, the “element selection” portion is straightforward – simply designate any or all of the four graphic types to be printed in K, either K alone, or over process black (YMC).

In the Black Panel (K) tab, the “element selection” portion is straightforward – simply designate any or all of the four graphic types to be printed in K, either K alone, or over process black (YMC).

Black extraction is quite different. It applies only to the fourth graphic type – the color bitmap image. To perform black extraction, the driver generates a K image by looking for black features (pixels) in the color bitmap, that is, instances where all three YMC values are at, or close to, the maximum (full intensity). Each such true-black or near-black instance generates a corresponding cluster of black pixels in the extracted image, which will be printed with the K (black) panel either on top of the YMC image, or replacing it entirely – your choice.

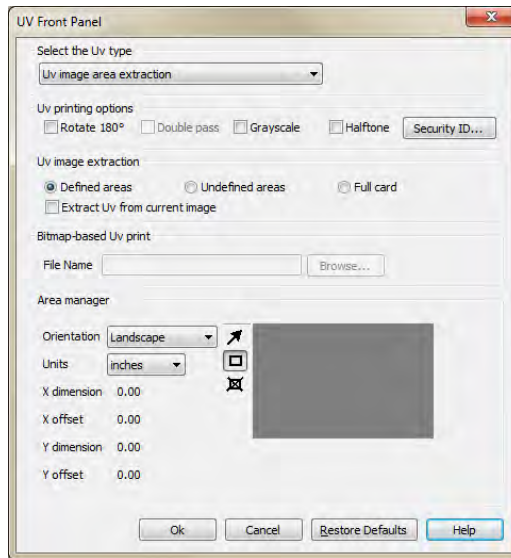
A problem that can arise when K is extracted from an entire card image is over-emphasis of every black cluster; e.g., dark hair in a portrait photo or scenic background. K overprinting in such areas can be displeasing. To deal with this, set up exclusion zones within which no extraction is performed. Six such areas are provided for on each side of the card, independently. In the default state, all areas are null (0,0 offsets, and zero size).

There is a choice of black extraction within the defined areas or outside the defined areas; see [Print black with K panel: 84](#) for details.

Uv Panel Option

A Uv Panel is used to print invisible images (text or graphics) that will glow in the visible spectrum when exposed to a Uv Light. The Uv Panel pop-up window allows you to manage and configure printing with a Uv Panel. This window is only available when using Uv ribbons (e.g., YMCUvK).

To access the Uv Panel pop-up window, select *Start > Devices and Printers*. Right click on the *Zebra ZXP Series 8 Card Printer* listing, and select *Printing Preferences > Card Setup*. Select *Ribbon info ... > Front Uv ...* or *Back Uv ...*

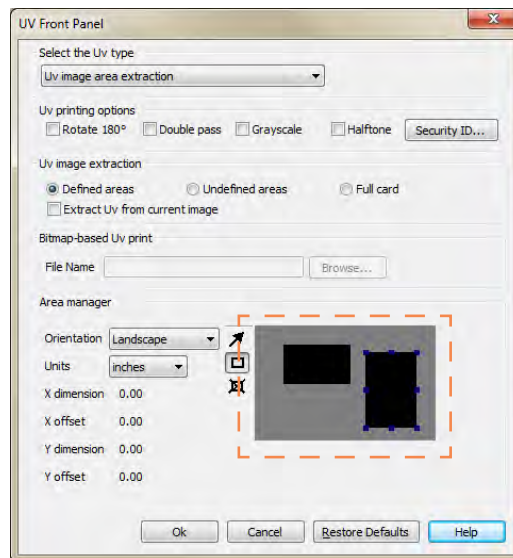


- **Select the Uv type:**
 - [Disable Uv](#) 90
 - [Bitmap based Uv Print](#) 90
 - [Uv image area extraction](#) 91


- **Uv printing options:**
 - **Rotate 180°** rotates the bitmap image 180°.
 - **Double pass** prints the Uv image on a second transfer film panel and applies it to the card, over the first transferred image. This option increases the visibility of the Uv image but uses twice the transfer film.
 - **Grayscale** prints the bitmap image as a grayscale image, which is composed of shades of gray, varying from black to white.
 - **Halftone** prints the bitmap image as a halftone image, which simulates continuous tone imagery through the use of dots, varying either in size or in spacing.


Security ID automatically prints a unique text value in fixed locations on a card using the UV panel; see [Page 92](#) for details.


- **Uv image extraction:** This section is enabled when *Uv image area extraction* is selected from the **Select the Uv type** dropdown menu. Options include Defined areas, Undefined areas, Full card, and Extract Uv from current image.
- **Bitmap-based Uv Print:** This section is enabled when *Bitmap based Uv Print* is selected from the **Select the Uv type** dropdown menu. To locate the bitmap (1-bit monochrome bitmap), click on the **Browse** button to bring up a dialog for choosing the file.
- **Area manager:** This section is enabled when *Uv image area extraction* is selected from the **Select the Uv type** dropdown menu.



- The **Orientation** selection sets the image orientation to either Portrait or Landscape.
- The **Units** selection sets the units to either inches or mm (millimeters). The X dimension, X offset, Y dimension, and Y offset reflect these units.

To create a zone: Select the rectangle icon , click on an area of the image to establish the first corner of the zone, drag the cursor until the zone is the desired size and shape, then release the mouse button. Note that multiple zones can be defined.

To select, move, or resize a zone: Select the arrow icon , click on a zone to select it, then drag it to move it or drag on the edges to resize it.

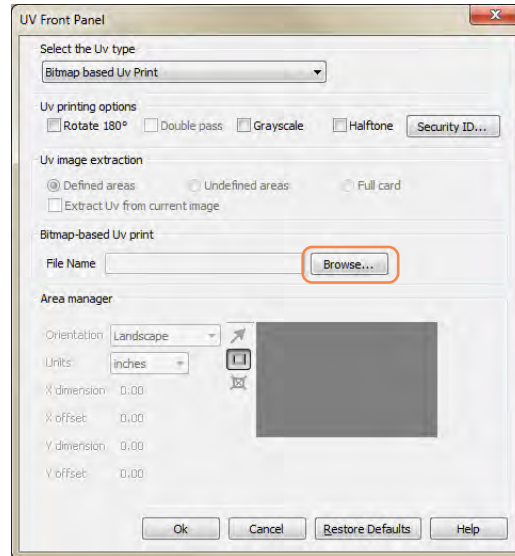
To delete a zone: Select the rectangle icon with an “X” through it , then click on the zone that you want to delete.

Disable Uv

Disable Uv is the default. Uv printing is disabled when this option is selected.

Bitmap based Uv Print

Bitmap based Uv Print allows you to import a bitmap image to print on the Uv panel; e.g., import a security seal.

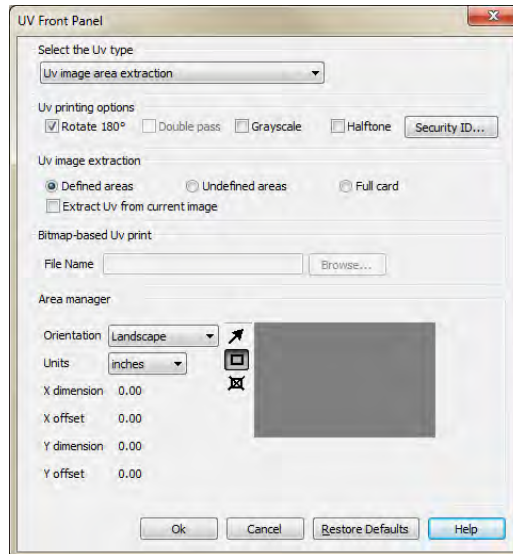


1. Select *Bitmap based Uv Print* from the **Select the Uv type** dropdown menu.
2. Click on the **Browse** button (circled above) to bring up a dialog box for choosing the file.
3. Locate and select the file (a specific .bmp file on local drive).
4. Select **Uv printing options** (Rotate 180, Double Pass, Grayscale, or Haftone), as required.
5. Click on the **OK** button.
6. The Driver applies this .bmp as full Uv print on all print jobs sent to printer.

Uv image area extraction

Uv image area extraction prints a specified image with the Uv panel in zones specified in the Area Manager.

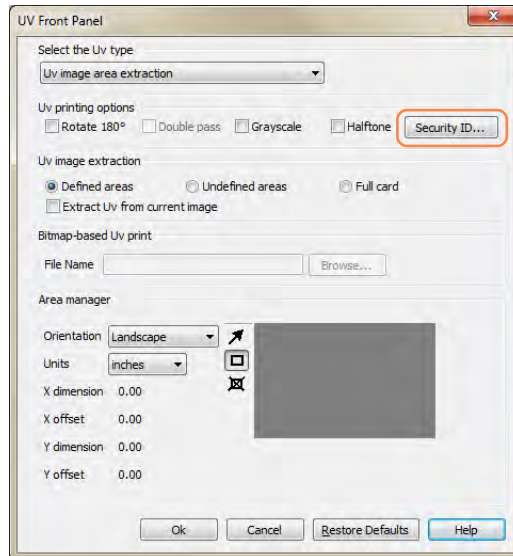
Unless you select the *Extract Uv from current image* checkbox, you must provide two images, the second of which is the Uv image, as part of the print job.



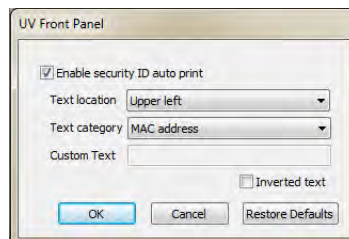
1. Select *Uv image area extraction* from the **Select the Uv type** dropdown menu.
2. Select the desired *Uv image extraction*:
 - **Defined areas** prints with the Uv panel inside the zones specified in the Area Manager.
 - **Undefined areas** prints with the Uv panel outside of the zones specified in the Area Manager.
 - **Full card** prints with the Uv panel anywhere on the card that the image is placed.
3. Define the area using the “tools” in the *Area manager* section.
4. Select *Uv printing options* (Rotate 180, Double Pass, Grayscale, Haftone), as required.
5. Click on the **OK** button.

Security ID

The **Security ID** option automatically prints a unique text value in a fixed location on a card using the UV panel.



1. Click on the **Security ID** button (circled above) to activate this option.
2. Observe the UV Panel popup.



3. Select the *Enable security ID auto print* checkbox.
4. Specify the *Text location*. Select the location from four pre-defined areas of a card (upper left, upper right, lower left, lower right).
5. Specify the *Text category* (MAC address, Printer serial number, or Custom text). If Custom text is specified, enter the text in the Custom text field, 32 characters maximum.
6. To enable the Inverted text option, select the Inverted text checkbox.
7. Click on the **OK** button.

Inhibit Option

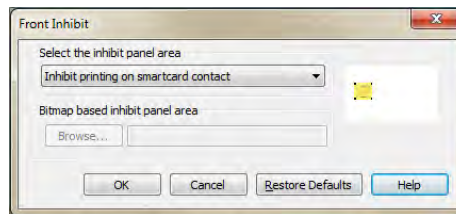


Note • The quality of magnetic stripes on cards varies from manufacturer to manufacturer which can result in remnants of the transfer film remaining on the magnetic stripe and may affect the readability of the magnetic stripe on some cards. The remnants will eventually rub off the stripe with a few swipes through a reader, but the transfer film can be virtually eliminated with the use of the YMCKI ribbon.

The Inhibit pop-up window allows you to specify areas on a card where you do not want transfer film to be placed (magnetic stripe, smart card chip, signature panel, or other non-printing areas of a card). This window is available only when using ribbons with an inhibitor panel; e.g., YMCKI.

To access the Inhibit pop-up window, select *Start > Devices and Printers*. Right click on the *Zebra ZXP Series 8 Card Printer* listing, and select *Printing Preferences > Card Setup*. Select *Ribbon info > Front Inhibit...* or *Back Inhibit...*

The figure below shows settings for the front side of the card; settings for the back side of the card are identical.



- **Select the inhibit panel area:**
 - *Disable Inhibit:* Default.
 - *Inhibit printing on magnetic stripe:* Places a no-print zone around the magnetic stripe area.
 - *Inhibit printing on smartcard contact:* Places a no-print zone around the smart card chip area.
 - *Custom file based inhibit area:* See below.

- **Bitmap based inhibit panel area:** This option is enabled when *Custom file based inhibit area* is selected from the dropdown menu. To locate the bitmap, click on the **Browse** button to bring up a dialog for choosing the file.

To create a bitmap-based inhibit panel area; see next page.

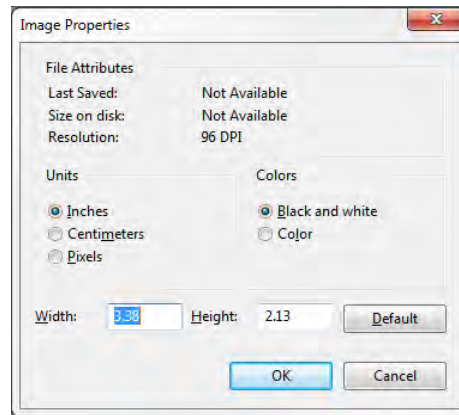
4: Printer Settings and Adjustments

Printing Preferences

To create a bitmap-based inhibit panel area:

Step 1. Open a new image file in a drawing program; e.g., Microsoft Paint.

Step 2. In the **Paint** menu, select **Properties**.



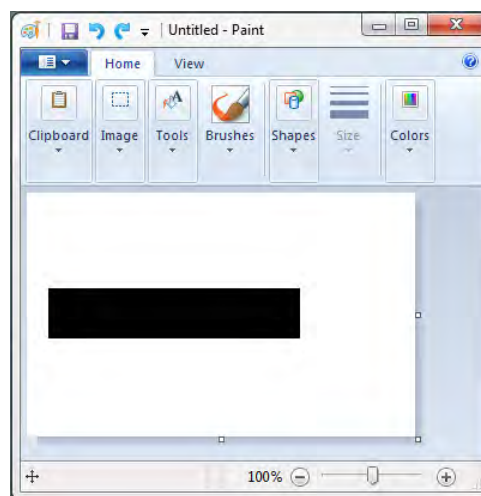
Step 3. Under **Units**, click the unit of measurement you want to use for the width and height; e.g. inches.

Step 4. Type the measurements of the card in **Width** and **Height**; e.g., 3.370” by 2.125”.

Step 5. Under **Colors**, select the Black and White radio button.

Step 6. Click the **OK** button.

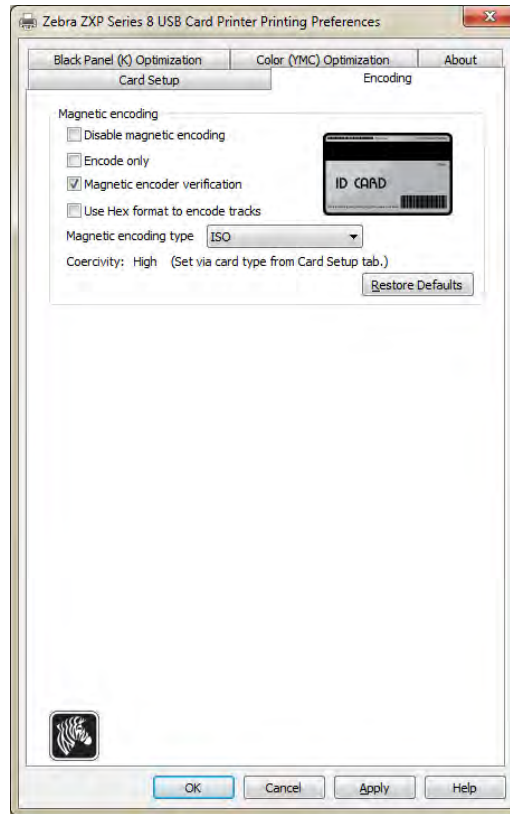
Step 7. With the drawing tool, draw and fill with black the area on the card where you do not want transfer film to be placed; in the example below, the signature panel.



Step 8. Save the image file as a 1-bit monochrome bitmap; e.g., < filename >.bmp.

Encoding Tab

To access the Encoding Tab, select *Start > Devices and Printers*. Right click on the *Zebra ZXP Series 8 Card Printer* listing; and select *Printing Preferences > Encoding*.



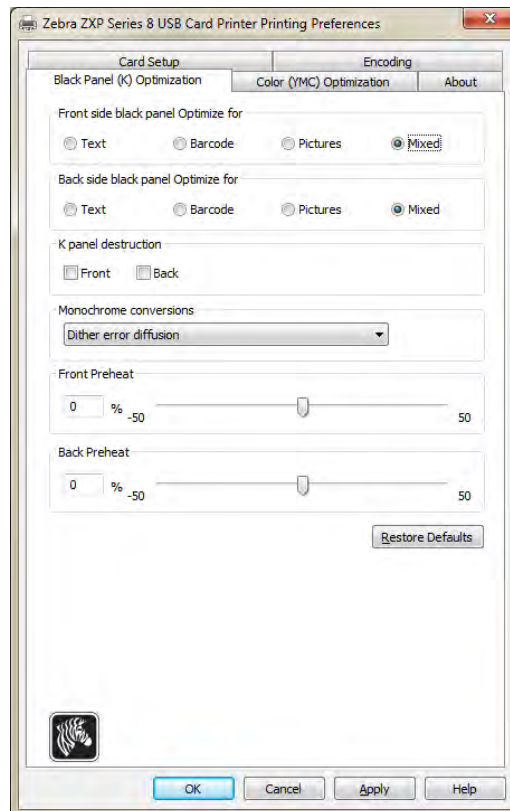
- **Magnetic encoding:** The Coercivity option is set automatically by the Card Type In Use selection made on the Card Setup tab. All other options are user-selectable.
 - **Disable magnetic encoding:** Prevents the printer from encoding a card, whether the job has magnetic encoding data in it or not.
 - **Encode only:** Disables printing, whether the job has an image to be printed or not.
 - **Magnetic encoder verification:** Verifies the data that is written to the card before declaring the encoding action to be successful.
 - **Use Hex format to encode tracks:** When selected, allows the entry of data in hexadecimal values.
 - **Magnetic encoding type:** Selections are ISO, AAMVA (American Association of Motor Vehicle Administrators), CUSTOM, BINARY, and JIS-II (Japanese Industrial Standard). The default will be whatever mag encoder is installed in the printer; i.e., ISO or JIS II. Custom and Binary settings are adjusted using the ZXP Toolbox; see [Magnetic Encoding](#) on page 123.
 - **Coercivity:** Set when the card type is selected via the [Card Setup Tab](#) on page 79.

Black Panel (K) Optimization Tab

The Black Panel (K) Optimization tab displays available options to optimize black panel printing for the type of image being printed.

To access the Black Panel (K) Optimization Tab, select *Start > Devices and Printers*. Right click on the *Zebra ZXP Series 8 Card Printer* listing; and select *Printing Preferences > Black Panel (K) Optimization*.

There is a separate optimization for the front and back side of the card.



- **Optimize for:** There is a separate optimization for Text, Barcode, Pictures, and Mixed for the front and back side of the card.
- **K panel destruction:** Renders the used K-panel unreadable.
- **Monochrome conversions:** This section is used to control multi-tone printing when using one color ribbon. The available options are Dither error diffusion (default), Dither 6x6 halftoning, Dither 8x8 halftoning, Dither pure black on white, and Send as grayscale; see next page for details.
- **Front and Back Preheat:** This function controls the intensity of the black panel image. The higher the value, the darker the image and vice versa. Values range from -50 to 50, default = 0.

Monochrome Conversion

The monochrome panels in the ribbon can only print binary (pure on or off) images. Monochrome conversion is used to convert continuous tone 8-bit-per-pixel RGB or gray image content into binary 1-bit-per-pixel content.

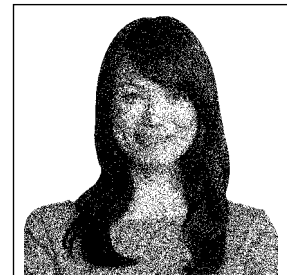
- **Color Image**

The sample image to the right is the original color image used to make the following monochrome conversions.



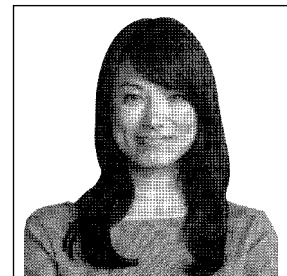
- **Dither error diffusion (default)**

Error diffusion is used primarily where you have a full color (RGB image with 8 bits per pixel) or full gray (single color but still 8 bits per pixel) that you need to print with binary printing (can only print full-on or full-off; i.e., 1 bit per pixel). Typically preferred over halftoning for most images.



- **Dither 6x6 halftoning and Dither 8x8 halftoning**

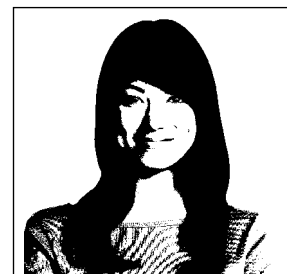
To simulate gray in graphics, halftones are printed. Halftones are arrays of dots arranged in a grid (e.g., 6x6 or 8x8) to represent each image pixel as a shade of gray. For dark gray, more grid dots are black. For light gray, more grid dots are white. As the grid size goes up so does the number of possible output levels, 6x6 cell has 36 possible output levels while 8x8 has 64. But as cell size increases, there is a corresponding decrease in resolution.



- **Dither pure black on white**

This is the simplest method for converting from 8 bits per pixel to 1 bit per pixel.

For example, the input pixel can be a value from 0 to 255. If the threshold is 128, any pixel over 128 becomes full on (1); and any pixel that is less than 128 becomes full off (0). This mode works best for text, barcodes, line art, logos -- everything except continuous-tone pictures.



- **Send as grayscale**

This mode can be used when you have black anti-aliased text. Black anti-aliased text is typically black in the center; but on the edges, it has shades of gray that get lighter as you move out from the center of the text. This anti-aliased text will have a softer looking edge that is less sharp than non anti-aliased text.

For electronic displays and printers that print continuous tones, anti-aliased text looks and prints better. For K-printing, the driver usually performs monochrome conversion to convert the image to binary; but then the printer has to convert it back to gray so it can be run through the imaging path.

With the “send as grayscale” mode enabled, converting the K-panel to binary is skipped so the extra information contained with anti-aliased text is retained; and it prints K with a slightly smoother edge. If the input K text is not anti-aliased, the text will look the same with this mode as it would with the dither pure black and white mode.



SUMMARY

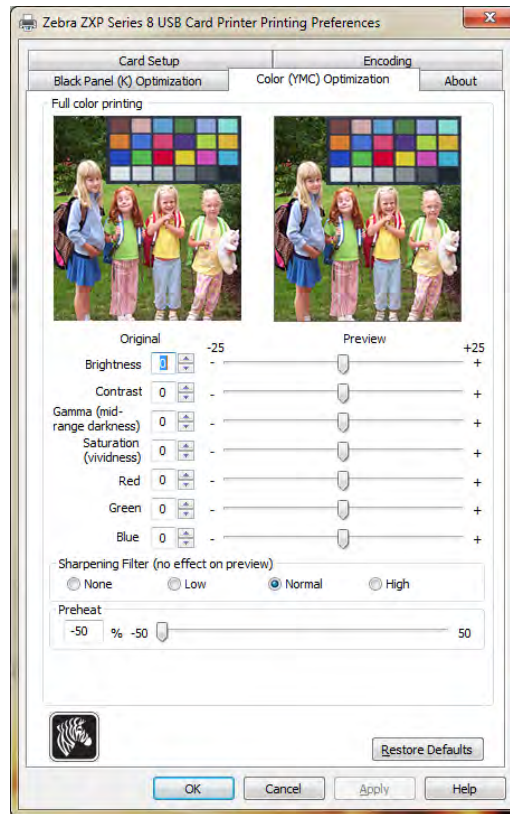
Error diffusion/halftoning: Use on pictures. Image content dictates if error diffusion or halftoning would look best. For the majority of time, error diffusion is better.

Dither pure black and white: Use on text, barcodes, line art, and simple graphics.

Send as grayscale: Use with black anti-aliased text.

Color (YMC) Optimization Tab

To access the Color (YMC) Optimization Tab, select *Start > Devices and Printers*. Right click on the *Zebra ZXP Series 8 Card Printer* listing, and select *Printing preferences > Color (YMC) Optimization*.



These color adjustments modify only how the pictures *print*. These adjustments do not affect the image files. (That type of adjustment would be made in an image processing application program.)

- **Full color printing:** Adjustments (-25 to +25 range) include Brightness, Contrast, Gamma, Saturation, Red, Green, and Blue. Adjustments are reflected in the preview.
- **Sharpening filter:** Options are None, Low, Normal (default), and High. By default, the image file is automatically sharpened; i.e., edges are enhanced within the image. If sharpening has already been done, this function can be turned off (None). The Low and High options are available if additional sharpening adjustment is required. Adjustments are *not* reflected in the preview.
- **Preheat:** Adjustment ranges from -50 to 50, default = 0. Increasing the preheat value affects the entire image and will darken up edges of fonts, fine lines, and color edges that are against a white or very near white background. In some cases, increasing the preheat value too much can cause the white or near white images to print with as light color cast. Increasing the preheat might also improve color-to-color mis-registration that may occur for certain images.

About Tab

The About Tab shows the copyright and the driver version for the *Zebra ZXP Series 8 Card Printer*.

To access the About Tab, select *Start > Devices and Printers*. Right click on the *Zebra ZXP Series 8 Card Printer* listing; and select *Printing Preferences > About*.



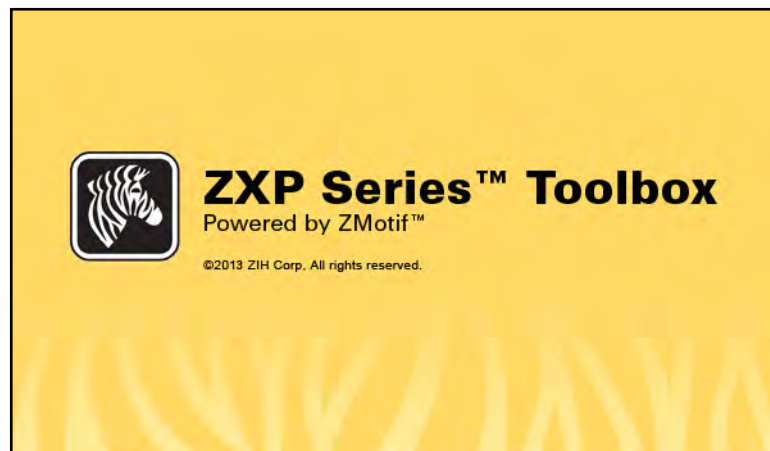
ZXP Series Toolbox

Introduction



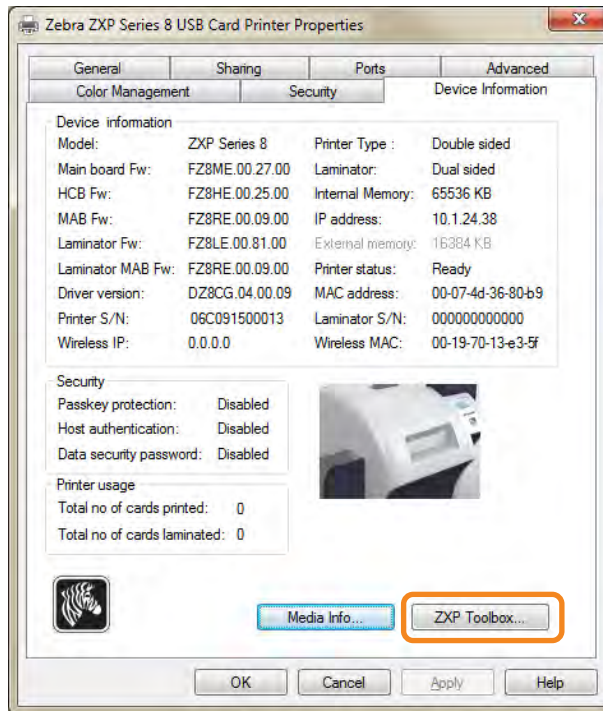
Important • Use of the ZXP Series Toolbox is intended only for advanced users and system administrators.

The ZXP Series Toolbox provides advanced configuration capabilities and tools to manage the operation of your printer. Note that the ZXP Series Toolbox is a separate application that works independently from the printer driver.



ZXP Series Toolbox Access

To access the ZXP Series Toolbox from the printer driver, select *Start > Devices and Printers*. Right-click on the *Zebra ZXP Series 8 Card Printer* listing, and select *Printer properties > Device Information > ZXP ToolBox*.



The ZXP Toolbox can also be accessed via *Start > All Programs > Zebra ZXP Series 8 Card Printer > ZXP ToolBox*.



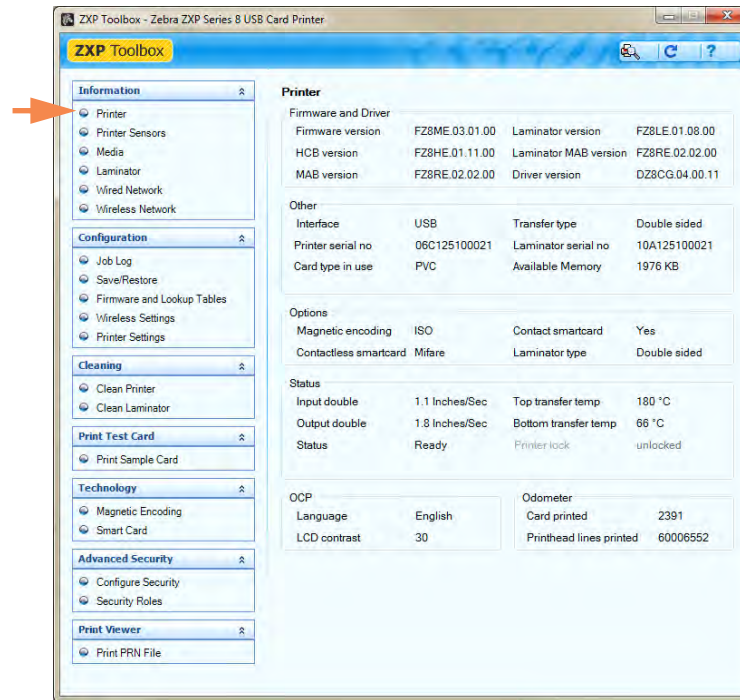
Important • If you have **Administrator Privileges**, and the ZXP Toolbox **Security Roles** tab is not visible, you will need to access the ZXP Toolbox as follows:

Select *Start > All Programs > Zebra ZXP Series 8 Card Printer*. Right click on *ZXP Toolbox*; and from the pop-up menu, select *Run as administrator*.

Information

Printer

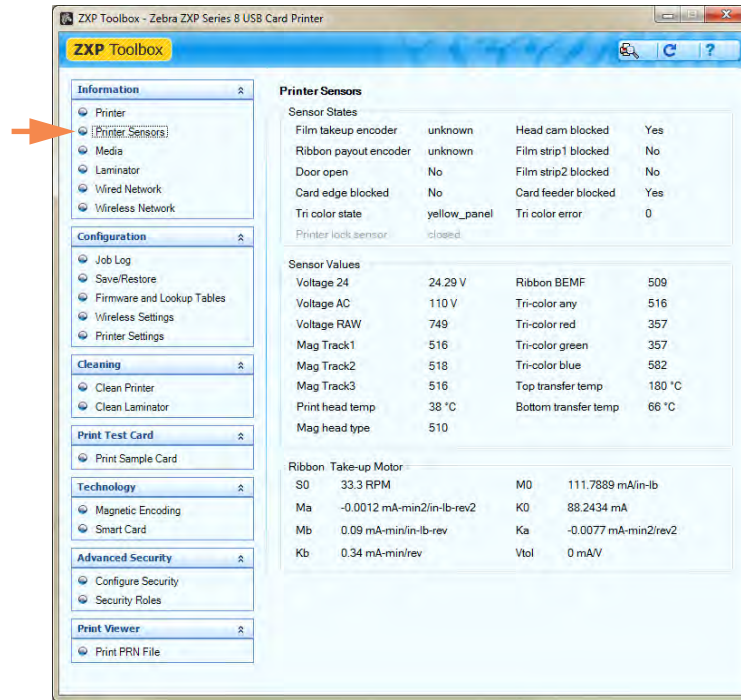
This information cannot be edited or changed by the user; however, this information may be useful for Zebra trained and certified personnel in diagnosing or evaluating printer status.



- **Firmware and Driver** lists the versions (Firmware, HCB, MAB, Laminator, Laminator MAB, and Driver).
- **Other** shows the Interface, the Transfer type, and the Card type in use, RAM, Printer serial number, and Laminator serial number.
- **Options** shows the options installed -- Magnetic encoding, Contact smartcard, Contactless smartcard, and Laminator type.
- **Status** displays Warnings, Faults, and Status; Input and Output speeds (single and double); Top and Bottom transfer temperatures.
- **OCP** shows the Language displayed in the Operator Control Panel and the LCD contrast level selected.
- **Odometer** shows the number of Cards printed and the number of Printhead lines printed.

Printer Sensors

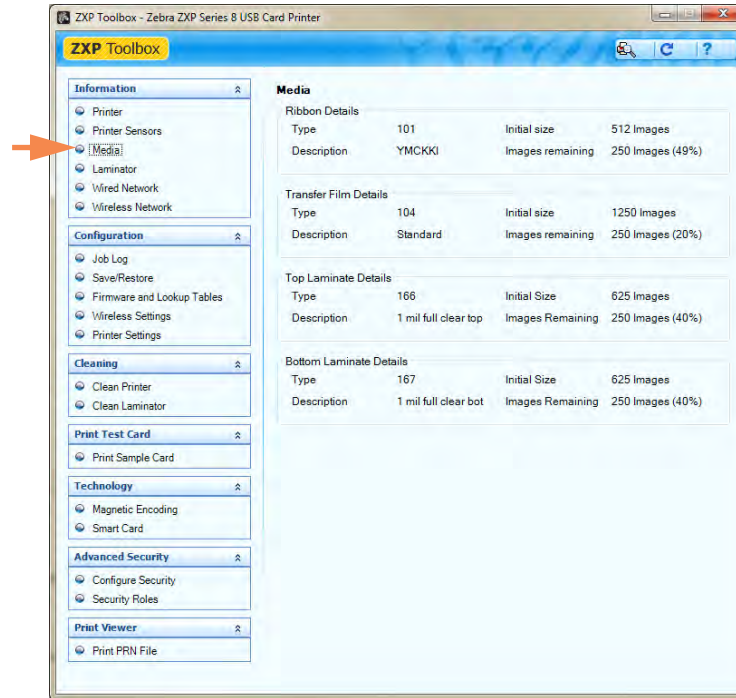
These characteristics cannot be edited or changed by the user; however, this information may be useful for Zebra trained and certified personnel in diagnosing or evaluating printer sensors status.



- **Sensor States** details the state of each printer sensor.
- **Sensor Values** details the value of each printer sensor.
- **Ribbon Take-up Motor** lists various electrical characteristics of the motor.

Media

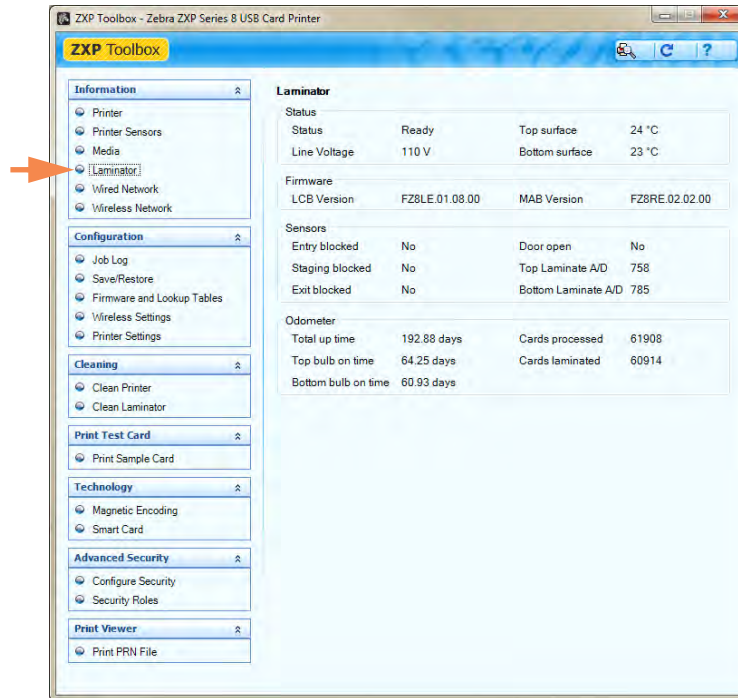
This screen displays ribbon, transfer film, and laminate details. This data is automatically read and updated from the installed media in the printer.



- **Ribbon Details** include Type, Description, Initial size, and Images remaining.
- **Transfer Film Details** include Type, Description, Initial size, Images remaining.
- **Top Laminate Details** include Type, Description, Initial size, Images remaining.
- **Bottom Laminate Details** include Type, Description, Initial size, Images remaining.

Laminator

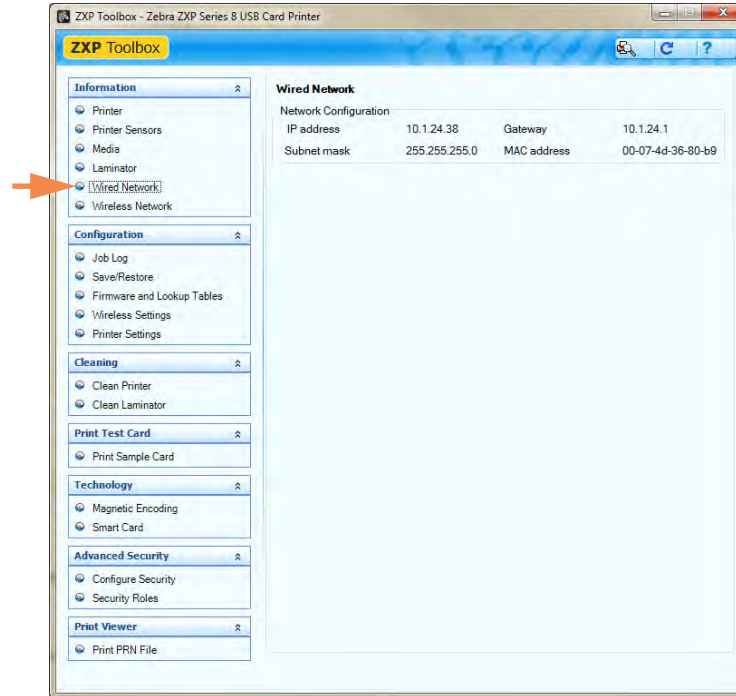
This information cannot be edited or changed by the user; however, this information may be useful for Zebra trained and certified personnel in diagnosing or evaluating laminator status.



- **Status** information includes Status, Top surface and Bottom surface temperatures, and Line Voltage.
- **Firmware** lists the version of the Firmware (LCB and MAB).
- **Sensors** shows the state of each laminator sensor.
- **Odometer** shows Total up time, Top bulb on time, Bottom bulb on time, the number of Cards processed, and the number of Cards laminated.

Wired Network

This information cannot be edited or changed by the user; however, this information may be useful for network administrators in diagnosing or evaluating wired network status.



- **Network Configuration**

- **IP address** (Internet Protocol) - Each computer that connects to a network or the Internet, must have a unique address. IP address numbers are in the form x.x.x.x; e.g., 169.254.100.2. Most networks use DHCP or AutoIP to dynamically assign IP addresses; however, a device can be manually assigned a static IP address.
- **Gateway** - A dedicated device (router or computer) that connects two different networks. For example, a computer on an Ethernet network may act as a gateway between the network and the Internet.
- **Subnet mask** - A number that identifies the IP addresses that belong to a subnet.
- **MAC address** (Media Access Control) - A hardware address that uniquely identifies each device on a network. You can usually find the MAC address printed on the device.

Wireless Network

This information cannot be edited or changed by the user; however, this information may be useful for network administrators in diagnosing or evaluating wireless network status.

For details on the functionality of this screen, refer to the *Wireless Reference Manual*, P/N P1035089-001.



The **Save** button saves your wireless settings as XML files. The XML files are stored in the following default location: *C:\ProgramData\ZXP Series 8\Config*.

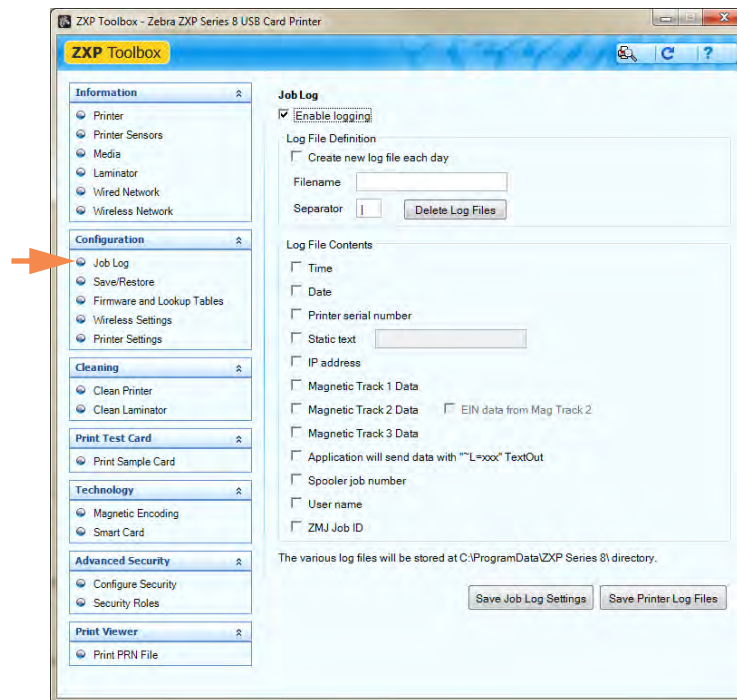
Configuration

Job Log



Note • Access to this feature is controlled via Advanced Security > Security Roles.

The Job Log is a utility that builds a text file with separators. The only data that is logged is what is selected from the list in the contents area. The data set can be uploaded at any time to a central archive, thus providing a means for security officers to validate a card by comparing it with tamper-proof *real data*.



- **Enable logging** - If this box is checked, the logging feature is enabled.
- **Log File Definition** - Choose one of the following options:
 - If the “Create new log file each day” box is unchecked, the data is saved to a log file of your choice (Filename).
 - If the box is checked, the data is saved to log file with the day’s date; e.g., *ZXPLog_2013_4_15*.
 - In addition to the Filename, you may wish to enter a special field Separator Character. The default field Separator Character is “!”.

- **Log File Contents** - The Log File Contents group selects the data to be logged in the file you specified above. The data will be logged in the order displayed on the screen, each field being separated by the character specified in the Logfile Definition, Separator.

Log File Contents selections include:

- **Time:** Logs the time a which the card was sent to the printer in the HH:MM:SS format. The 24-hour clock is used, so 13:00:00 = 1:00 pm, and 05:00:00 = 5:00 am.
- **Date:** Logs the date the card was sent to the printer in the MM/DD/YYYY format.
- **Printer serial number:** Logs the serial number of the printer that printed the card.
- **Static text:** Adds the text in the text box (16 characters maximum) to the record.
- **IP address:** Logs the IP address of the PC that sent the card to the printer.
- **Magnetic Track 1, 2, 3 Data:** Logs the data sent to the printer to be encoded on the card's magnetic stripe.
- **EIN data from Mag Track 2:** Logs the EIN (Embedded Inventory Number) pre-encoded on Track 2.
- **Application will send data with “~L=xxx” TextOut:** Allows third-party applications to send data to be logged in much the same way as they would send magnetic data.
- **Spooler job number:** Logs the number which the card print job was assigned in the Windows print spooler.
- **User name:** Logs the name of the person who is logged onto the computer sending the print job.
- **ZML Job ID:** Logs the UUID; or, in a Windows environment, the GUID.

The **Save Job Log Settings** button saves the Job Log settings.

The **Save Printer Log Files** button creates the following XML Log Files:

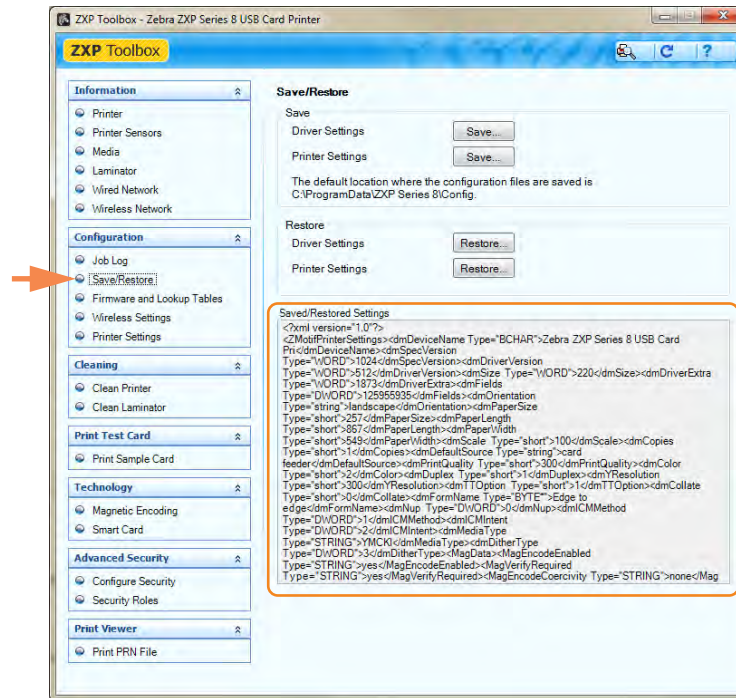
- GetLogCleanHistory.xml
- GetLogErrors.xml
- GetLogEventHistory.xml
- GetLogServiceHistory.xml

Save/Restore



Note • Access to this feature is controlled via Advanced Security > Security Roles.

When you set up a printer, you can save the printer and driver configuration settings; then, if you need to you restore the printer, you can use the saved configuration settings to ensure configuration consistency.



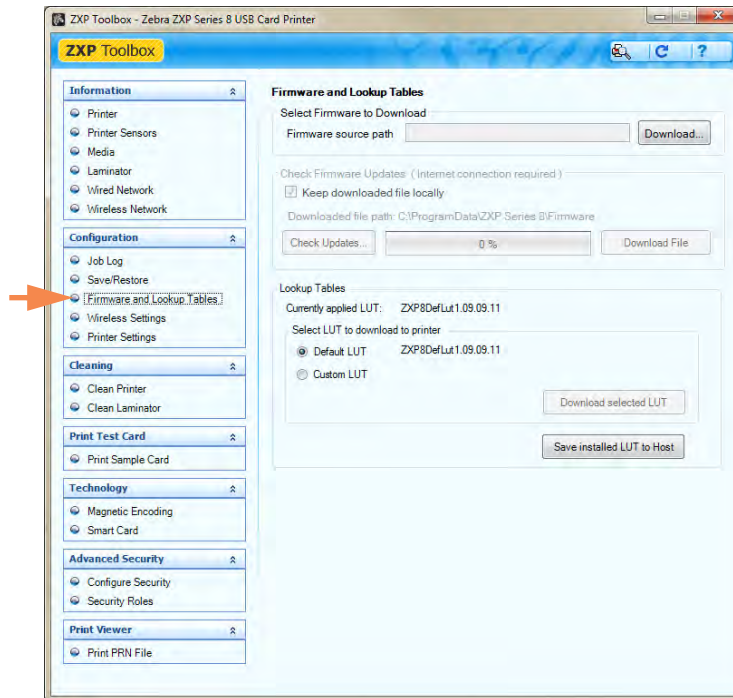
- The **Save** buttons save the Driver Settings and/or Printer Settings in an XML file format.
 1. Click the **Save** button, and observe the browser window.
 2. Enter the <filename>, and click the **Save** button
 3. The Printer and Driver configuration settings will be stored as P_<filename> and D_<filename> respectively.
- The **Restore** buttons restore the Driver Settings and/or Printer Settings saved in the XML file format above.
 1. Click the **Restore** button, and observe the list of files in the browser window.
 2. Select the desired file, and click the **Open** button.
 3. The configuration settings will be restored and displayed.

Firmware and Lookup Tables



Note • Access to this feature is controlled via Advanced Security > Security Roles.

The Firmware and Lookup Tables screen allows you to install firmware. This screen also allows you to save, restore, and install Lookup Tables (LUT).



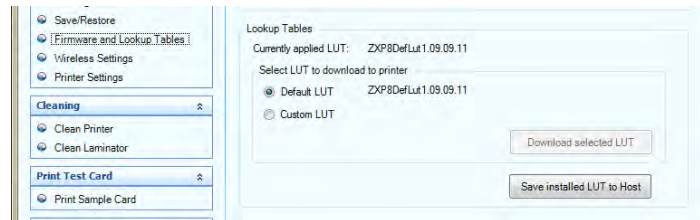
- **Firmware and Settings**



Caution • Do not turn power OFF while the printer is downloading and/or updating the new firmware.

- **Select Firmware to Download:** Use this option to install the firmware downloaded from the Zebra web site at <http://zebra.com> under *Drivers & Downloads*.
 1. Click the **Download** button.
 2. From the Browse window, locate the downloaded firmware (BIN file type); and click the **Open** button.
 3. Read the *ZXP Toolbox* caution message. If you are satisfied with the download, click the **OK** button to install the firmware; otherwise, click the **Cancel** button to abandon the firmware installation.
- **Check Firmware Updates:** Not implemented.

- **Lookup Tables**



A Look-Up Table (LUT) is used to transform a range of input colors into a range of output colors. Use this toolbox option to save and install LUTs, either Default or Custom.

- To save the current LUT, either Default or Custom:
 1. Click the **Save Installed LUT to Host** button.
 2. From the Browse window, name the LUT, and specify the desired saved-file location e.g., *C:\ProgramData\ZXP Series 8\LUTs*.
 3. Click the **Save** button.

- To install/reinstall the Default LUT:
 1. Click the **Default LUT** radio button.
 2. Click the **Download selected LUT** button.
 3. Click the **OK** button when the *LUT installed successfully* pop-up appears.

- To install a Custom LUT:
 1. Click the **Custom LUT** radio button.
 2. Click the **Download selected LUT** button.
 3. From the Browse window, locate and select the Custom LUT; e.g., *C:\ProgramData\ZXP Series 8\LUTs\ <filename >*.
 4. Click the **Open** button.
 5. Click the **OK** button when the *LUT installed successfully* pop-up appears.

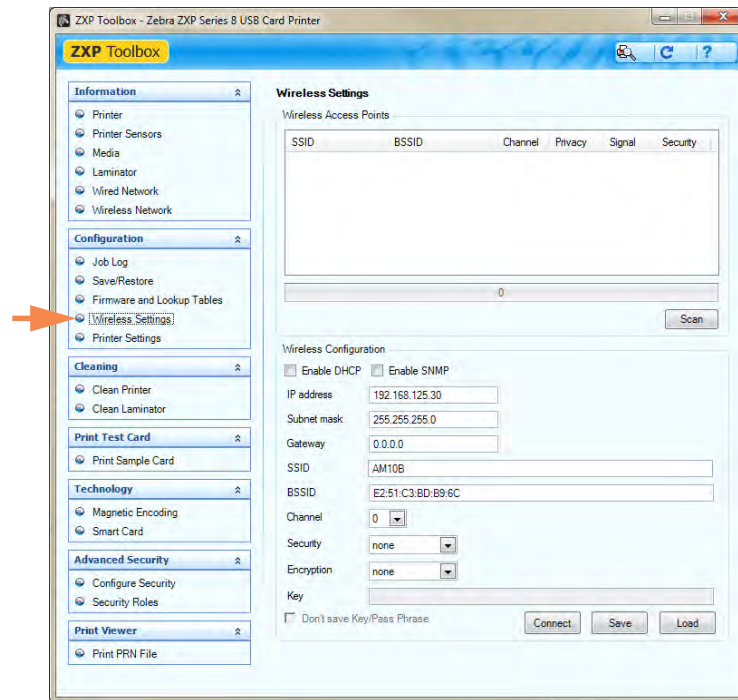
Wireless Settings



Note • Access to this feature is controlled via Advanced Security > Security Roles.

The Wireless Settings screen allows you to connect a printer to a wireless network, or change the printer or network settings after you have installed the printer.

For details on the functionality of this screen, refer to the *Wireless Reference Manual*, P/N P1035089-001.

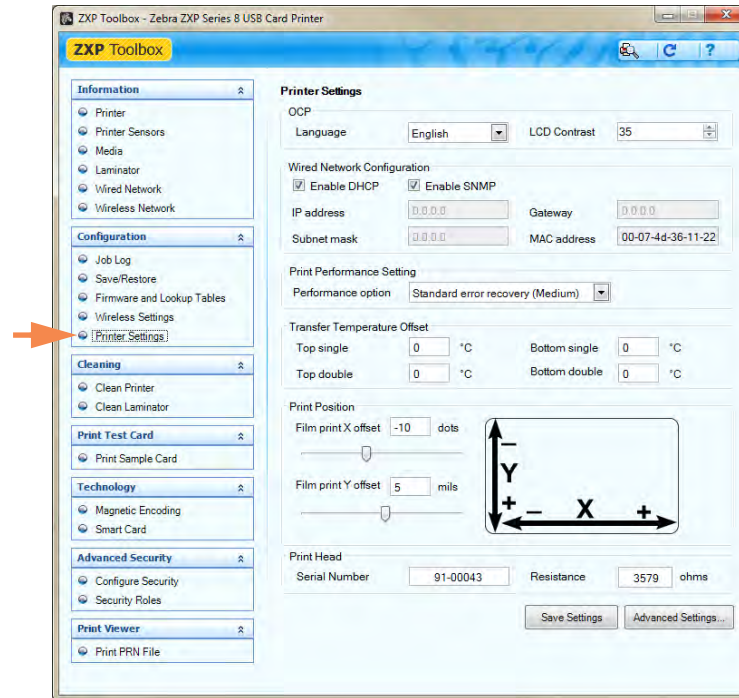


There are two approaches that can be used to configure the printer's wireless settings:

- If all the necessary information is known (SSID, BSSID, Channel, Security, Encryption and Key), enter these parameters directly into the Wireless Configuration.
- The alternate approach is to request that the printer scan for wireless access points and select one. This automatically fills in most of the Wireless Configuration parameters.

Printer Settings

The Printer Settings screen allows you to change the Operator Control Panel (OCP) settings, set the network configuration parameters, make print performance settings, adjust the print offset, and change the printhead serial number and resistance.



- **OCP:** This section allows you to change the Language displayed in the Operator Control Panel (English, French, Spanish, German, Portuguese, or Italian) and adjust the LCD Contrast level selected (the level ranges from 20 to 50).
- **Wired Network Configuration:** This section allows you to change the various network configuration parameters (DHCP, SNMP, IP address, Gateway, Subnet mask, and MAC address).

- **Print Performance Setting:** Performance options from the dropdown menu include:
 - **No error recovery (None):** The printer provides high throughput with a hands-off error recovery policy. This allows the host to have full control over how jobs are retried, if at all. In this mode, there can be more than one job in the system at any time. If there is any job in the system (i.e., printer or laminator) and an error occurs, the job will not be automatically retried by the system after the error is cleared. In addition, jobs already in the printer that were sent after the job that had the error are aborted. Jobs ahead of the one with the error are not affected and are allowed to proceed to completion if possible. This mode would be used in applications requiring, for example, uniquely-serialized cards and having no automated means of validating the mating of a job to a card.
 - **Standard error recovery (Medium):** The printer provides high throughput with a reasonable-effort error recovery policy. In this mode, there can be more than one job in the system at any time. If a job suffers an error it will be automatically retried after the error is cleared. Card jams, for example, are handled this way – after the printer is opened, the jammed card removed, and the printer closed and re-initialized, a fresh card is fed and the job reprocesses without host intervention. Jobs ahead of the job that had the error are not affected and are allowed to proceed to completion if possible. Jobs behind the one with the error are paused until the error is cleared, and then they also proceed to completion.
 - **Full error recovery (High):** The printer provides reduced throughput so that it can recover any job automatically. In this mode, only one job is allowed into the system at a time; and if a job errors anywhere in the system, the job will automatically be retried by the system after the error is cleared.
 -
- **Transfer Temperature Offset:**

Transfer Temperature Offset is provided to globally change the temperature of the heated rollers.

If you have a single card type and you want to change the roller temperatures, you would use custom card type; see *Card Setup Tab* on page 79.

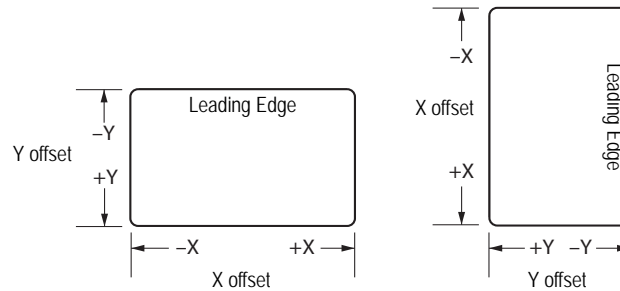
If the printer seems to be running too cold or too hot for every card type, you would use this adjustment to raise or lower the heated roller temperature for all cards. While you will not see a change in card parameters for a given card type when using the *Transfer Temperature Offsets*, you will see the change in the OCP Info screen that shows the temperature set-points and current temperatures.

The adjustment range is: Minimum -10, Maximum 10.



- **Print Position:**

Film print X offset (dots): This is the number of dots (300 dpi / ~3 mils/dot) to shift the image along the *long axis* to align it on the card; see figure below. This parameter can be used to center the image on the card, or to align it with an edge. The adjustment range is: Minimum -50, Maximum 50.



Film print Y offset (mils): This is the number of mils to shift the image along the *short axis* to align it on the card; see figure above. This parameter can be used to center the image on the card, or to align it with an edge. The adjustment range is: Minimum -100, Maximum 100.

- **Print Head:** Access to this feature is controlled via Advanced Security > Security Roles.
 - **Serial Number:** When you replace the printhead, change this field to match the serial number of the replacement printhead.
 - **Resistance** (Minimum: 3150 ohms, Maximum: 3850 ohms): When you replace the printhead, change this value to match the resistance of the replacement printhead. Note that the values must be the same for the algorithms to work properly. This value is located on a sticker on the printhead; e.g., R = 3380. The printhead resistance is also written on the inspection report shipped with each printer.

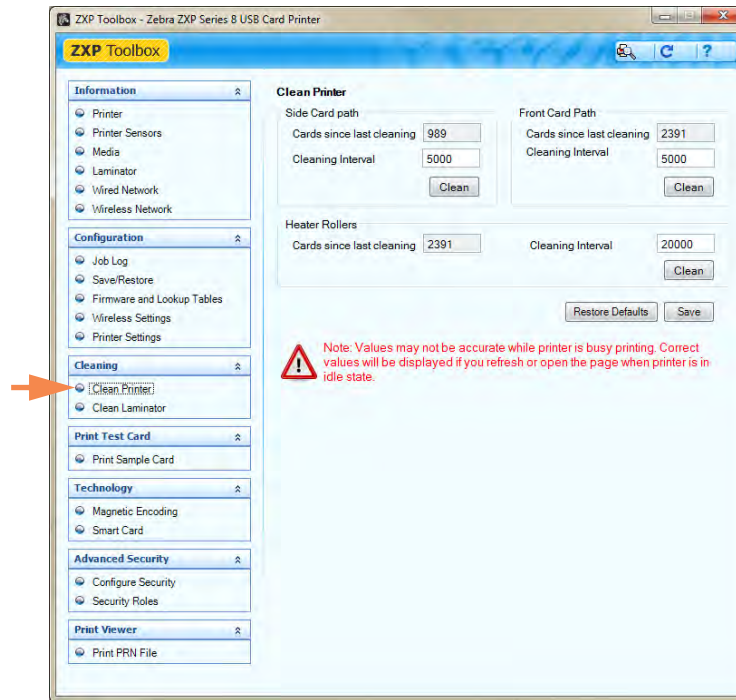
The **Save Settings** button saves any changes you have made to this screen.

The **Advanced Setting** button provides access to service-related tests and adjustments. Use is password protected and limited to Zebra-authorized service personnel.

Cleaning

Clean Printer

The Clean Printer screen gives you the option to clean the printer via the Toolbox; refer to [Section 6](#), for cleaning via the OCP.



- **Side Card Path**

When you click the **Clean** button, instructions will appear in the following sequence:

1. Remove the card hopper, and click the **Next** button.
2. Insert X Roller Cleaning Card in the side slot where the card hopper was located, and click the **Clean** button.
3. Wait until the cleaning process completes. The card will be ejected through the side slot.
4. Flip the cleaning card. Insert the card through the side slot. Click the **Clean** button.
5. Wait until the cleaning process completes. The card will be ejected through the side slot.
6. Observe the message, *Side card path cleaning has been completed successfully*.
7. Replace the card hopper, and click the **Close** button to conclude the side card path cleaning process.

- **Front Card Path**

When you Click the **Clean** button, instructions will appear in the following sequence:

1. Insert a Y Roller Cleaning Card in the front feed slot, and click the **Clean** button.
2. Wait until the cleaning process completes. The card will eject through the front feed slot.
3. Flip the cleaning card. Insert the card through front feed slot, and click the **Clean** button.
4. Wait until the cleaning process completes. The card will eject through the front feed slot.
5. Observe the message, *Front card path cleaning has been completed successfully.*
6. Click the **Close** button to conclude the front card path cleaning process.

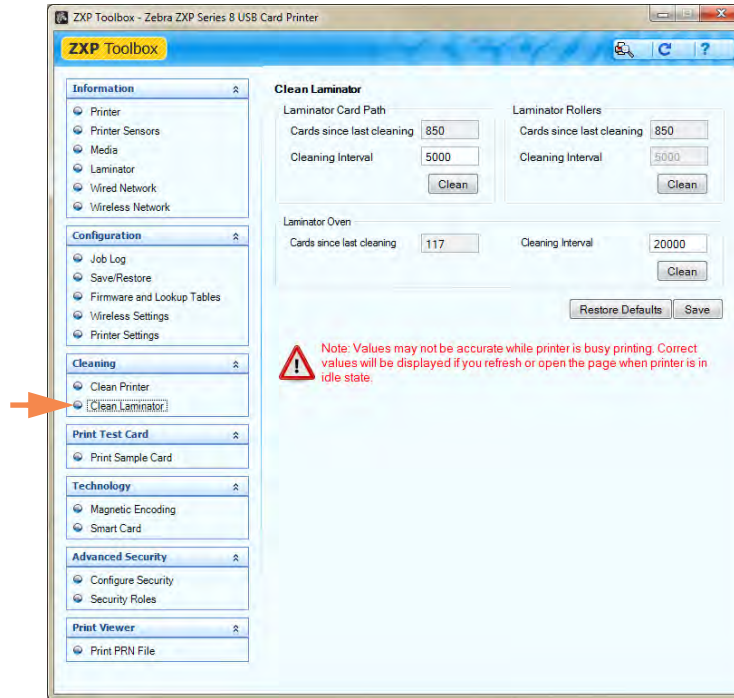
- **Heater Rollers**

When you Click the **Clean** button, instructions will appear in the following sequence:

1. Open the printer cover, remove the transfer film, and close the cover. Then, click the **Next** button.
2. Wait until the transfer temperature falls below 70° C.
3. Remove the backing from the Hot Roller Cleaning Card. Insert the card in the front feed slot, and click the **Clean** button.
4. Wait until the cleaning process is completed. The card will be ejected through the front feed slot.
5. Flip the cleaning card. Insert card in the front feed slot, and click the **Clean** button.
6. Wait until cleaning process is completed. The card will be ejected through the front feed slot.
7. Remove the cleaning card. Open the printer cover, and install the transfer film. Close the printer cover, and click the **Close** button to complete the cleaning cycle.

Clean Laminator

The Clean Laminator screen gives you the option to clean the laminator via the Toolbox; refer to [Section 6](#), for cleaning via the OCP.



- **Laminator Card Path** (see *Cleaning: Laminator* on page 135).

When you click the **Clean** button, instructions will appear in the following sequence:

1. Wait until the transfer temperature falls below 60°C.
2. Open the laminator cover, remove the laminates (top and bottom cassettes), and close the cover; then, click on the **OK** button.
3. Remove the card hopper, and click on the **OK** button.
4. Insert the Laminator Cleaning Card in the side slot where the card hopper was located. Click on the **OK** button after inserting the cleaning card.
5. Wait until the cleaning process completes. The card will eject through the side slot.
6. Observe the message, *Laminator cleaning has been completed successfully*.
7. Open the laminator cover, install the laminates, and close the cover.
8. Click the **Close** button to conclude the card transport roller cleaning process.

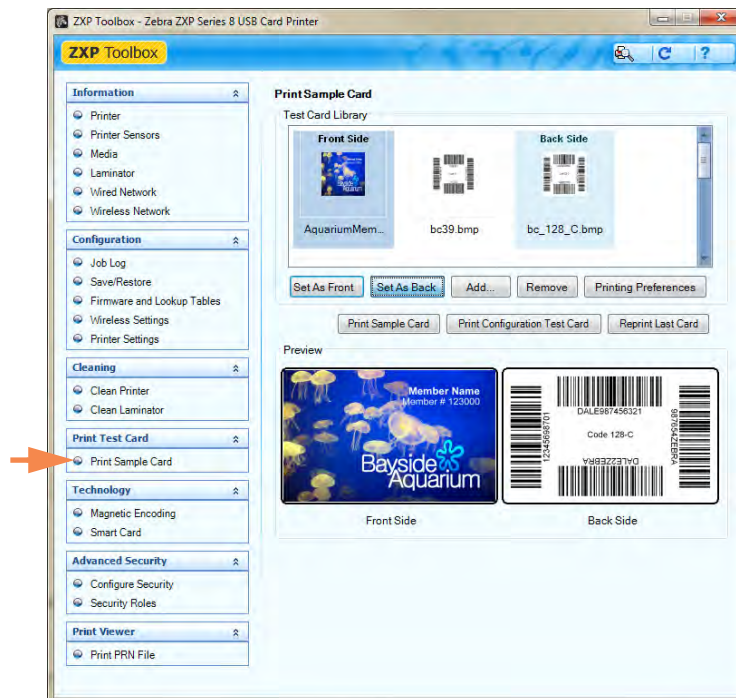
- **Laminator Rollers** (see *Cleaning: Laminator Media Feed Rollers* on page 136).
 1. Open the laminator cover, remove both laminates, prepare an alcohol swab, and click the **Next** button.
 2. Click the **Top** button, and clean the top feed roller (with the alcohol swab) until it stops turning.
 3. Click the **Bottom** button, and clean the bottom feed roller (with the alcohol swab) until it stops turning.
 4. When completed, install both laminates; and click the **Close** button to conclude the laminator rollers cleaning process.

- **Laminator Oven** (see *Cleaning: Heater Assembly Rollers* on page 138).
 1. Wait until the transfer temperature falls below 60°C.
 2. Open the laminator cover, remove the oven assembly, and click the **Next** button.
 3. Clean both rollers with the adhesive card, and click the **Next** button when completed.
 4. Install the oven assembly, and click the **Close** button to conclude laminator oven cleaning process.

Print Test Card

Print Sample Card

1. View the **Test Card Library**. Use the scrollbar to view all the selections. Note that the sample cards in the Test Card Library are .bmp images stored in the following default location: *C:\ProgramData\ZXP Series 8\Library*.
- or -
Click on the **Add** button, then browse to and select an image of your own to add to the Test Card Library.



2. Set the front side:
 - a. Select (click on) a “front side” card from the Test Card Library.
 - b. Click the **Set As Front** button.
 - c. View the selected card in the Preview. Note that to remove the selected card from the Preview, click the **Set As Front** button.
 - d. To change your selection, repeat Steps [Step a](#) through [Step c](#).
3. Set the back side: same as [Step 2](#), except click the **Set As Back** button.
4. When satisfied with your selection, click the **Print Sample Card** button to print the sample card.

The **Printing Preferences** button takes you to the Printer Preferences, Card Setup Tab.

The **Print Configuration Test Card** button provides printer configuration data on a card.

The **Reprint Last Card** button sends a command to the printer to print the last card.

Technology

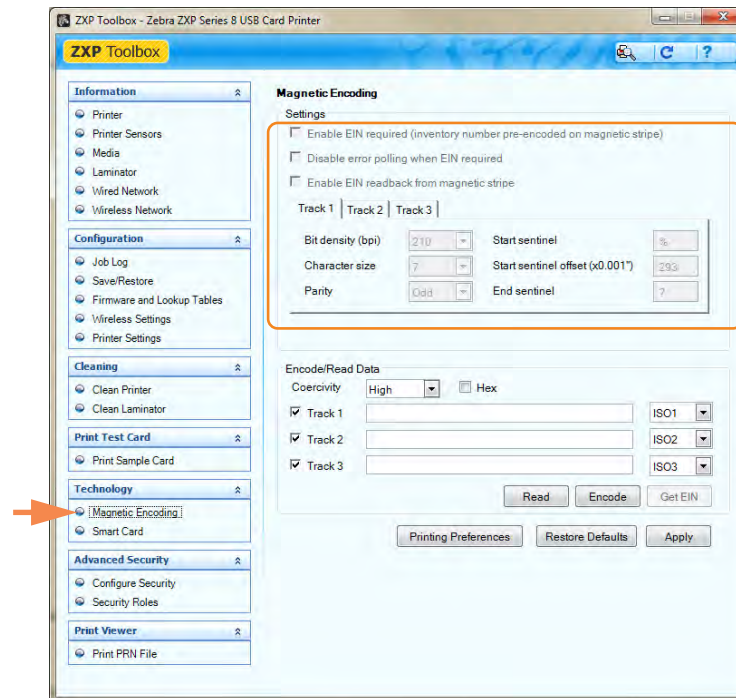
Magnetic Encoding



Note • Access to this feature is controlled via Advanced Security > Security Roles.

The Magnetic Encoding screen allows the user to test various magnetic encoding options. For more information on magnetic encoding, refer to [Appendix E](#).

- **Settings**

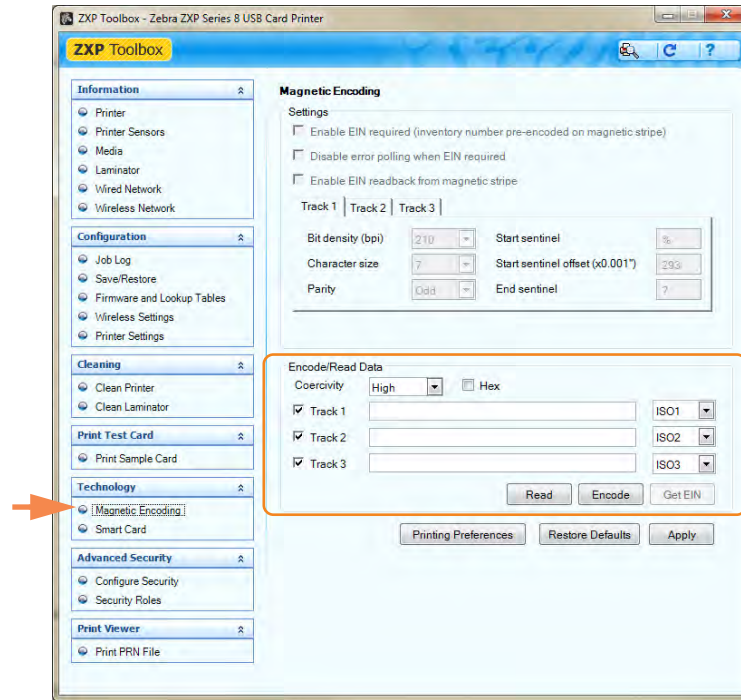


Before using this screen, set the following magnetic encoding properties:

1. Select the card type; see [Card Setup Tab](#) on page 79.
2. Select the magnetic encoding type; see [Encoding Tab](#) on page 95. Encoding types supported are ISO, AAMVA, CUSTOM, BINARY, and JIS-II.

The screen above will reflect the choices made in [Step 1](#) and [Step 2](#).

- **Encode/Read Data**



Coercivity: Select either *High* or *Low*.

Track selection:

- Read: Click the checkboxes to select *Track 1*, *Track 2*, and/or *Track 3*; select the desired ISO format (ISO1, ISO2, or ISO3) for each track from the associated ISO dropdown menus; click the **Read** button, and validate the data read.
- Encode: Click the checkboxes to select *Track 1*, *Track 2*, and/or *Track 3*; select the desired ISO format (ISO1, ISO2, or ISO3) for each track from the associated ISO dropdown menus; enter the data to be written; and click the **Encode** button.
- Get EIN: Click on the **Get EIN** button to read the EIN encoded on the magnetic stripe. The EIN is read and displayed.

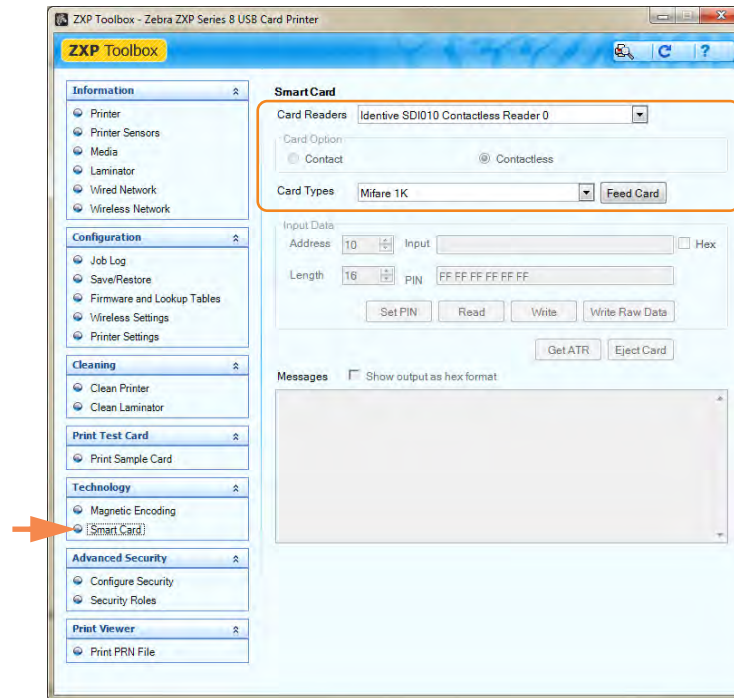
The **Printing Preferences** button takes you to Printing Preferences used to set selected configuration parameters; see [Printing Preferences](#) on page 78.

The **Restore Defaults** button restores the magnetic encoding default values.

The **Apply** button saves the magnetic encoding values.

Smart Card

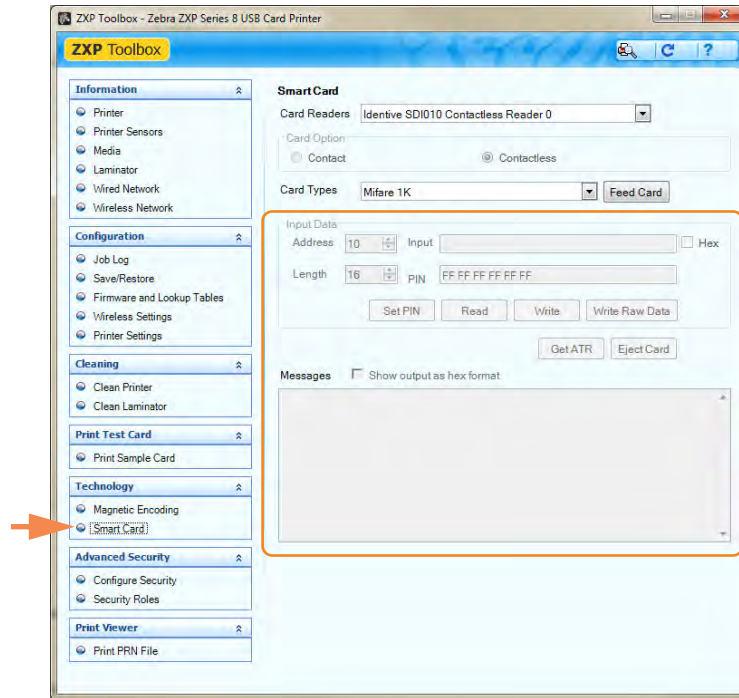
The Smart Card screen allows the user to test various smart card encoding options. For more information on smart card encoding, refer to [Appendix F](#).



- Card Readers:
 - Select the card reader from the drop-down menu.
 - Card Option: Select either Contact or Contactless.

- Card Types:
 - Select the card type from the drop-down menu.
 - Place a card in the feeder, and click **Feed Card** button.

- Card Types (continued):



- **Input Data:** Includes address, length, input, and PIN.
 - **Writing Data:** Set the address, set the length, enter data in *Input* field, and click the **Write** button.
 - **Reading Data:** After writing data (above), click the **Read** button. “Read successful” and the value read from the smart card will be displayed in the Messages section.
 - Click the **Set PIN** button to set the security code for the card.
 - Click the **Write Raw Data** button to write “raw data” to a card.

The **Get ATR** button returns the ATR (Answer To Reset) result from the card reader. This is useful to identifying the type of smart card inserted into the printer.

The **Eject Card** button ejects the card.

- Click the **Messages** checkbox to show the output in hex format.

Advanced Security

Configure Security



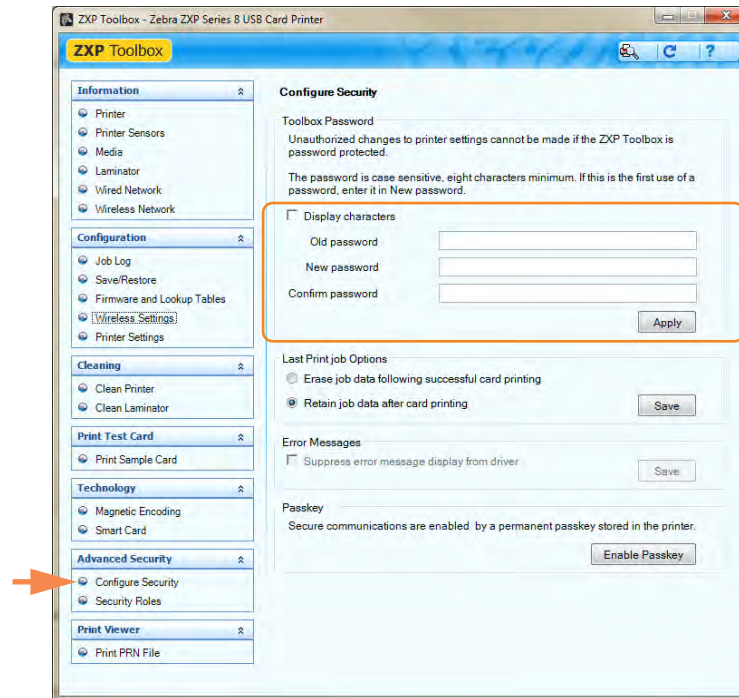
Important • To manage this section, you are required to be the administrator of the local computer or have administrative privileges.

- **Toolbox Password**

Enabling driver password protection prevents unauthorized persons from changing the printer configuration settings. Access to various printer screens can be selectively disabled based on the Windows User Login.

- To enter a new password:

1. Enter the new password on the *New password* field. The password is case sensitive, eight characters minimum.



2. Repeat the password in the *Confirm password* field.
3. Click the **Apply** button.

- **Toolbox Password** (continued)
 - To change the Password:
 1. Enter your password in the *Old password* field.
 2. Enter the new password in the *New password* and the *Confirm password* fields.
 3. Click the **Apply** button.

 - To deactivate password protection:
 1. Enter your password in the *Old password* field.
 2. Leave the *New password* and the *Confirm password* fields blank.
 3. Click the **Apply** button.

- **Last Print Job Options**
 - The *Erase job data following successful card printing* option erases the print job after successful card printing.
 - The *Retain job data after card printing* option allows the print job to remain in memory for multiple prints via the OCP.

The **Save** button saves the selection.

- **Error Messages**

Select the checkbox to suppress error message display from the driver.

- **Passkey**

The **Enable Passkey** button provides access to advanced security settings; i.e., Host Authentication, Data Encryption, and Printer Lock Key.

Security Roles



Important • To manage this section, you are required to be the administrator of the local computer or have administrative privileges.



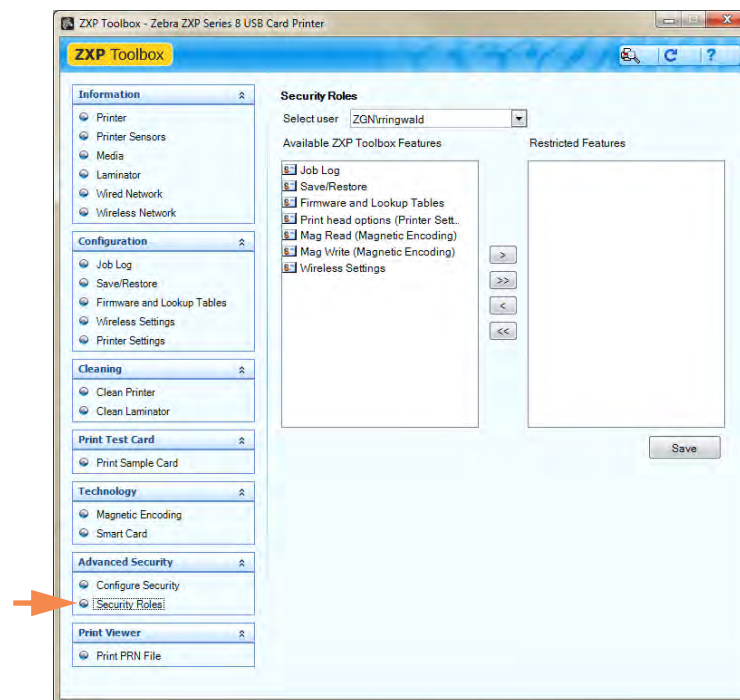
Important • If you have **Administrator Privileges**, and the ZXP Toolbox **Security Roles** tab is not visible, you will need to access the ZXP Toolbox as follows:

Select *Start > All Programs > Zebra ZXP Series 8 Card Printer*. Right click on *ZXP Toolbox*; and from the pop-up menu, select *Run as administrator*.

Use this section used to establish security roles; i.e., grant and restrict access to various ZXP Series Toolbox screens. The list of users in the drop-down menu (e.g., Guest, HelpAssistant, Local User, localfix, etc.) is derived from the list of users o the system.

- **To set security access roles:**

1. Select a user from the drop-down menu.



2. Use the arrow buttons (>, >>, <<, and <) to make specific ZXP Toolbox Features available to or restrict specific features from the selected user.
3. When satisfied with the selection, click the **Save** button.

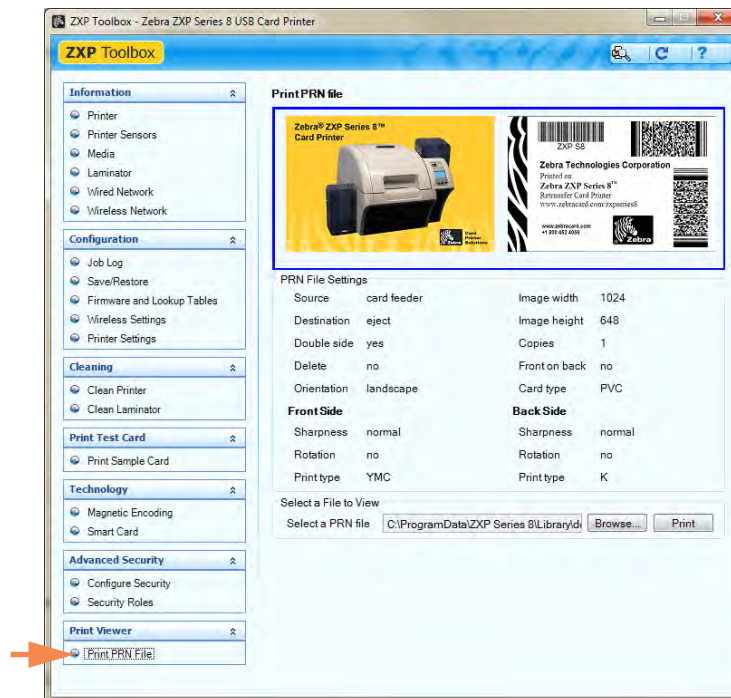
At the next login, the user will only see or have access to the features previously granted.

Print Viewer

When you print a PRN file, you print directly to the printer, bypassing computer applications and associated printer drivers. This utility can be used to ensure that your printer is working properly by isolating it from driver-related and communication-related issues.

Print PRN file

- To send a PRN file to the printer:
 1. Click the **Browse** button.



2. From the Browse window, locate and select a PRN file.
3. Click the **Open** button.
4. View the PRN file.
5. If satisfied with the selection, click the **Print** button.

Successfully printing the PRN file indicates that the printer and data communications to the printer are set up and configured properly.



Cleaning

Caution • PROTECT YOUR FACTORY WARRANTY!

The recommended maintenance procedures must be performed to maintain the factory warranty. Other than the recommended cleaning procedures described in this manual, allow only Zebra authorized technicians to service the Printer.

NEVER loosen, tighten, adjust, or bend, etc., a part or cable inside the printer.

NEVER use a high-pressure air compressor to remove particles from the printer.

Cleaning the Printer

Clean your Printer using the Cleaning Cards provided. The regular use of these cards will clean and maintain important parts of your printer that cannot be reached, including the Printhead, Transport Rollers, and optional Magnetic Encoder Station.

Printer usage (total number of cards printed and total number of cards laminated) can be found on the printer's Properties, Device Information tab. To access the Device Information tab, select *Start > Devices and Printers*. Then right-click on the *Zebra ZXP Series 8 Card Printer* listing, and select *Properties > Device Information*.

When to Clean

- X-Roller and Y-Roller cleaning should occur every 5,000 cards.
- Heated Roller cleaning should occur every 20,000 cards. Note that a Heated Roller Cleaning Card is not supplied with the printer; order Zebra Cleaning Card Kit P/N 105999-801.

Cleaning the Rollers



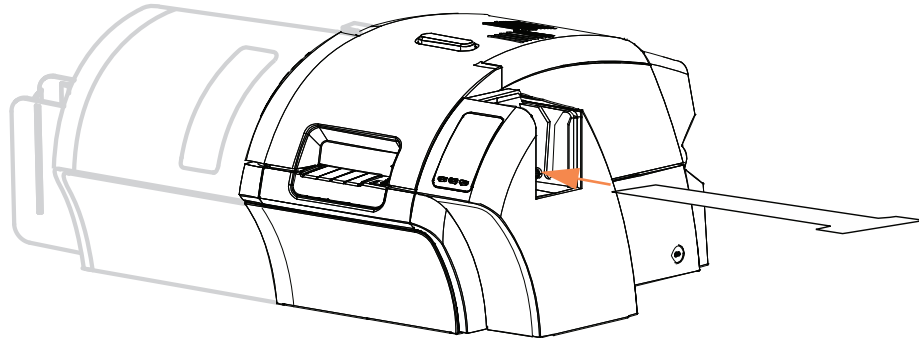
Note • Do not use previously used cleaning cards.

Step 1. To initiate the cleaning process.

- a. Press the MENU button on the Operator Control Panel (OCP). The OCP will display the Main Menu.
- b. Scroll through the Main Menu, and select Advanced Settings. The OCP will display the Advanced Settings Menu.
- c. Scroll through the Advanced Settings Menu, and select Clean Printer. The OCP will display the Clean Printer Menu.

Step 2. To clean the X-Drive Rollers.

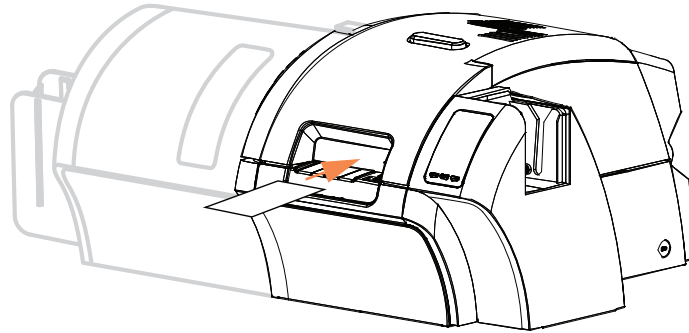
- a. Select *Clean Side Card Path* to run the X-Roller Cleaning Routine.
- b. Use the X-Roller Cleaning Card.
- c. Follow the OCP instructions.



- d. When complete, the OCP will return to the Clean Printer Menu.

Step 3. To clean the Y-Drive Rollers.

- a. Select *Clean Front Card Path* to run the Y-Roller Cleaning Routine.
- b. Use the Y-Roller Cleaning Card.
- c. Follow the OCP instructions.



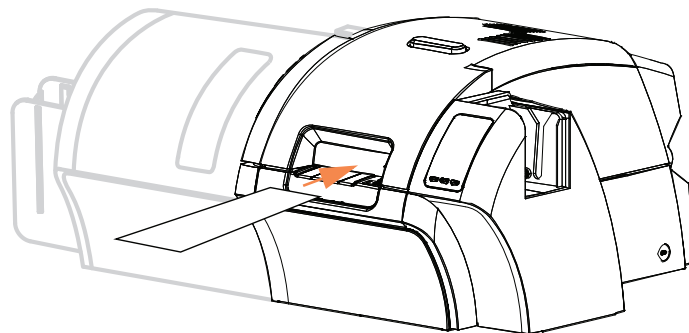
- d. When complete, the OCP will return to the Clean Printer Menu.

Step 4. To clean the Heated Rollers.



NOTE • To avoid a long wait while the Heated Rollers cool to 70°C, perform cleaning before the rollers heat; i.e., when first turned on and the rollers are still cold.

- a. Select *Clean Transfer Path* to run the Heated Roller Cleaning Routine.
- b. Use the Hot Roller Cleaning Card.
- c. Follow the OCP instructions.



- d. When complete, the OCP will return to the Clean Printer Menu.
- e. Then use the Hot Roller Cleaning Card to clean the Platen; see [Page 134](#).

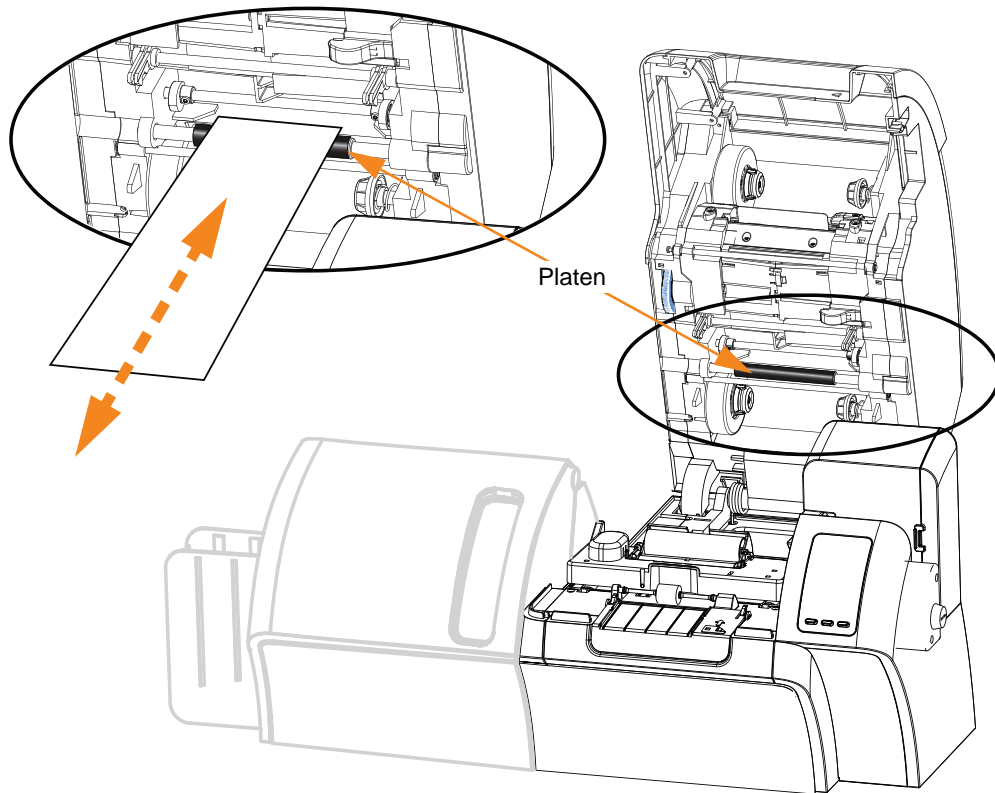
Exit the Printer Menus by selecting RETURN at each menu level (Clean Printer Menu, Advanced Settings Menu, and Main Menu).

Cleaning the Platen

Step 1. Open the printer Door.

Step 2. Remove the Transfer Film.

Step 3. Manually run the Hot Roller Cleaning Card over the Platen.



Step 4. Re-install the Transfer Film.

Step 5. Close the printer Door.

Cleaning the Laminator



Note • To order a **Laminator Cleaning Kit**, see the *Media List* on the **User Documentation and Drivers CD** supplied with this printer.

Initiate the cleaning process:



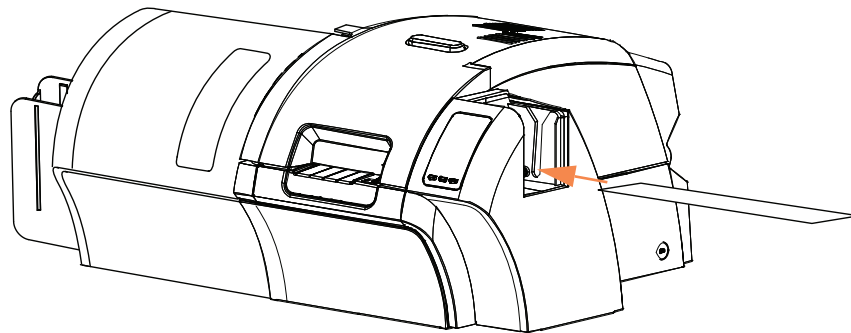
NOTE • To avoid a long wait while the Card Transport Rollers cool to 60°C, perform cleaning before the rollers heat; i.e., when first turned on and the rollers are still cold.

- Step 1.** Press the MENU button on the Operator Control Panel (OCP). The OCP will display the Main Menu.
- Step 2.** Scroll through the Main Menu, and select Advanced Settings. The OCP will display the Advanced Settings Menu.
- Step 3.** Scroll through the Advanced Settings Menu, and select Clean Printer. The OCP will display the Clean Printer Menu.

Cleaning: Laminator

The default cleaning interval is once every 5000 cards.

- Step 1.** Select *Clean Lam Card Path* to run the Laminator Cleaning Routine.
- Step 2.** Use the Laminator Cleaning Card in the Laminator Cleaning Kit.
- Step 3.** Follow the OCP instructions.

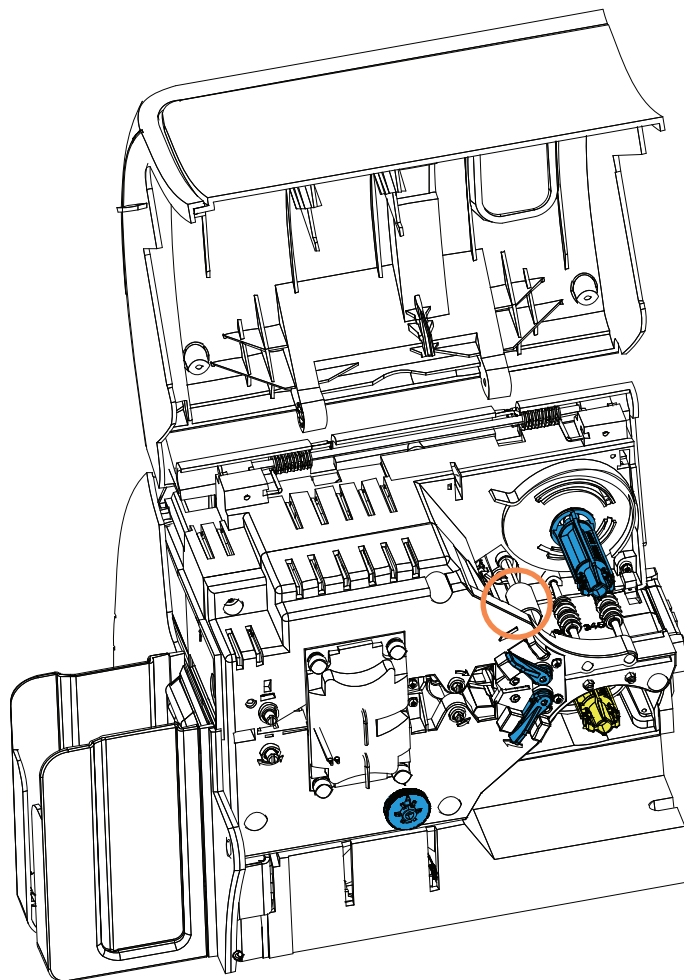


- Step 4.** When complete, the OCP will return to the Clean Printer Menu.

Cleaning: Laminator Media Feed Rollers

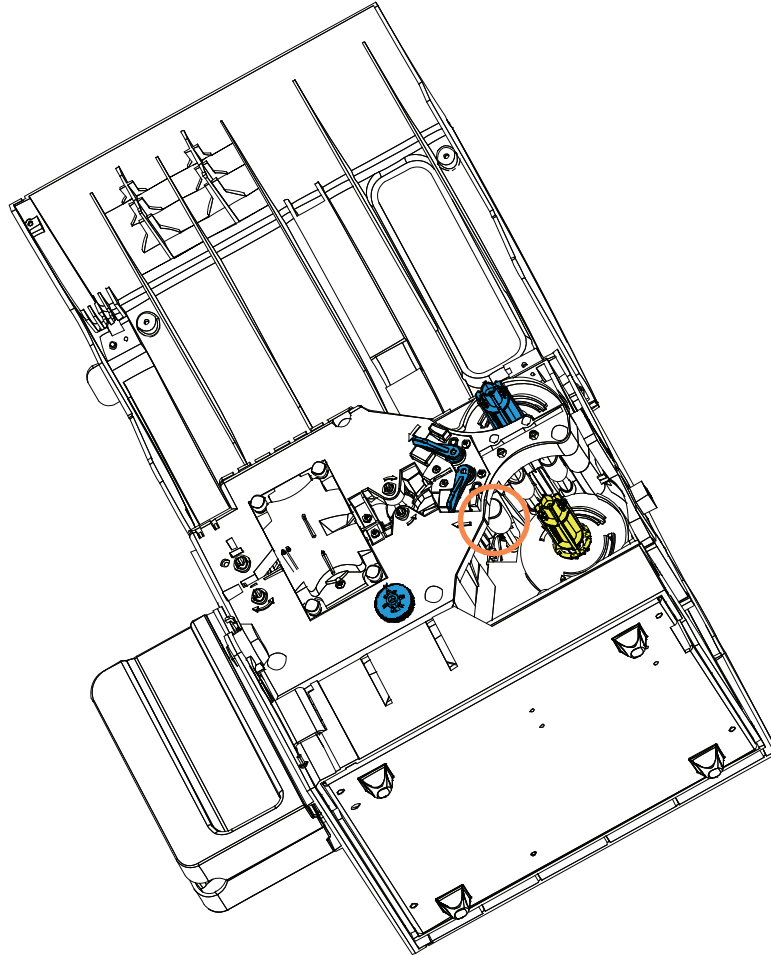
The default cleaning interval is once every 5000 cards.

- Step 1.** Select *Clean Lam Med Rollers* to run the Laminator Media Roller Cleaning Routine.
- Step 2.** Lift the Laminator Door to its upright position.
- Step 3.** Remove the Laminate Cassette(s).
- Step 4.** Leave the Laminator Door open
- Step 5.** Use the Cleaning Swab in the Laminator Cleaning Kit. Bend the swab to release the cleaning fluid.
- Step 6.** Press *Next* when ready, then press *Top*.
- Step 7.** Clean the top media roller (circled below) by moving swab tip side-to-side as it turns five full revolutions. Only use moderate force.



Step 8. For the dual-sided laminator only:

- a. Locate the roller (circled below) for the lower cassette.



- b. Use a second Cleaning Swab in the Laminator Cleaning Kit. Bend the swab to release the cleaning fluid.
- c. Press *Bottom*.
- d. Clean the bottom media roller by moving swab tip side-to-side as it turns five full revolutions. Only use moderate force.
- e. When the operation is complete, press *Exit*.

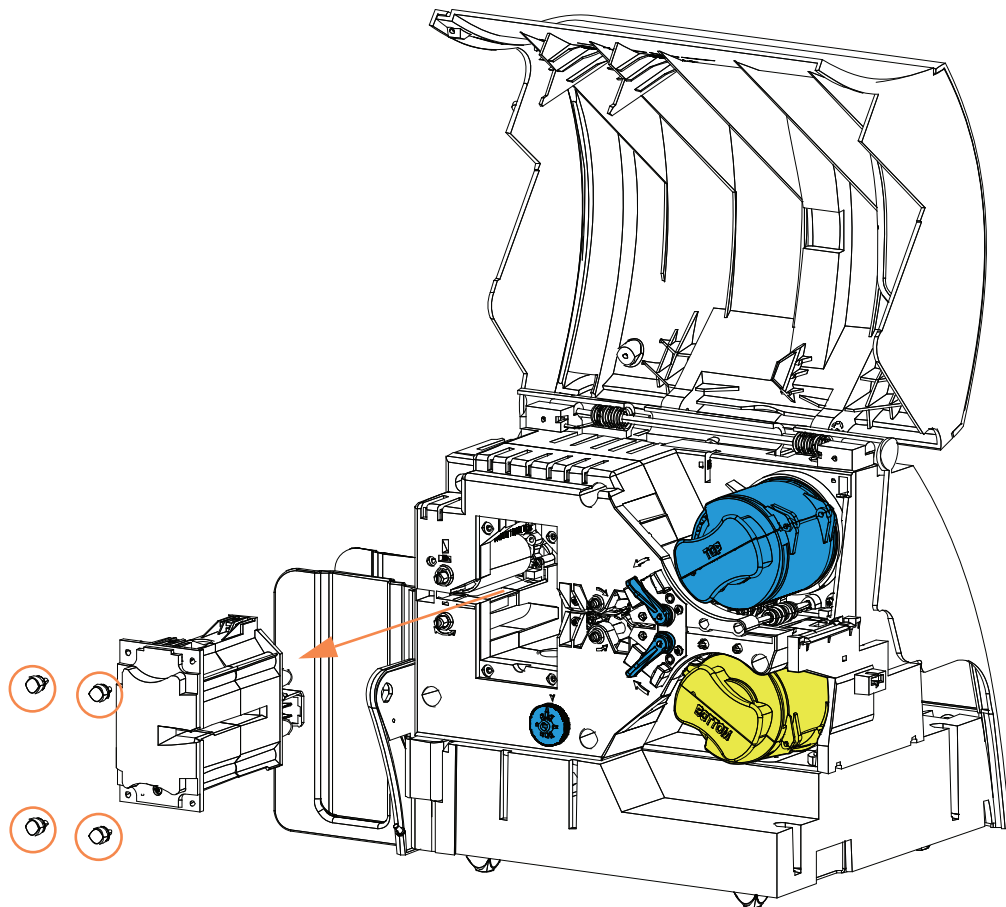
Step 9. Reinstall the Laminate Cassette(s).

Step 10. Close the Laminator Door.

Cleaning: Heater Assembly Rollers

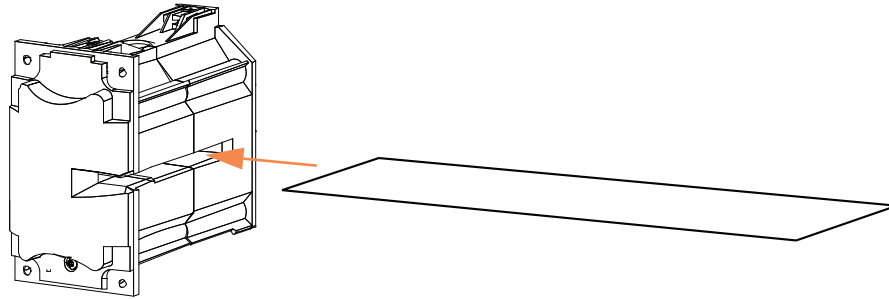
The default cleaning interval is once every 20,000 cards.

- Step 1.** Select *Clean Lam Oven* to run the Laminator Oven Cleaning Routine.
- Step 2.** Observe the OCP, and wait until the laminator temperature goes below 60°.
- Step 3.** Lift the Laminator Door to its upright position.
- Step 4.** Remove the four thumb screws (circled below) holding the Heater Assembly in place.

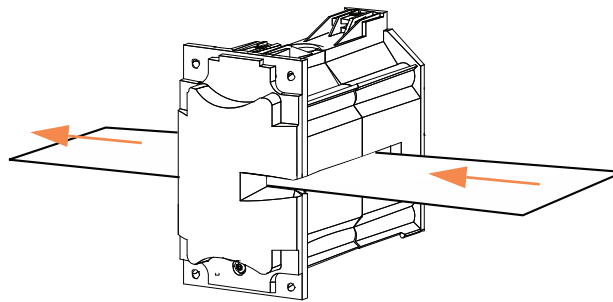


- Step 5.** Slide the Heater Assembly out of the Laminator (arrow above).
- Step 6.** Use the Laminator Hot Roller Cleaning Card (with adhesive) in the Laminator Cleaning Kit.
- Step 7.** Prepare the card for use.

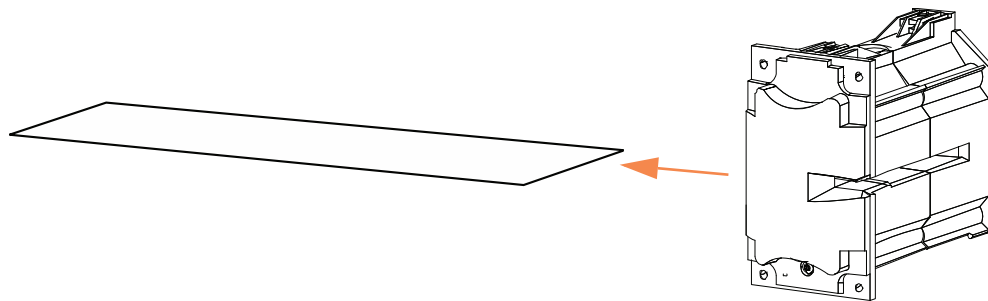
Step 8. Insert the card into the slot (arrow below), adhesive side down.



Step 9. Pull the card all the way through the Heater Assembly thereby cleaning the heater rollers.



Step 10. Remove the card from the Heater Assembly.



Step 11. Turn the card over, adhesive side up; and repeat [Step 8](#), [Step 9](#), and [Step 10](#).

Step 12. Reinstall the Heater Assembly.

Step 13. Close the Laminator Door.

Step 14. Press *Exit* on the OCP when done.

Cleaning the Printhead

Printhead cleaning removes deposits when print anomalies persist. To avoid deposits, only use foam-tipped swabs or pens.



Caution • Never use a sharp object or any abrasive to scrape deposits from the Printhead. Permanent damage to the Printhead will result.



Caution • Do not touch the Printhead if the printer has been in service in the last 10 minutes. It could be very hot and cause a burn.

- Step 1.** Place the printer power switch in the OFF () position.
- Step 2.** Open the Door, and remove the print ribbon.
- Step 3.** Bend the Cleaning Swab to release the cleaning fluid.
- Step 4.** Clean Printhead by moving Cleaning Swab tip side-to-side across the Printhead elements. Only use moderate force. To re-order Cleaning Swabs, see the *Media List* on the **User Documentation and Drivers CD** supplied with this printer.
- Step 5.** Reinstall the print ribbon, and close the Door.
- Step 6.** Place the printer power switch in the ON () position.

Card Cleaning Cartridge

The Card Cleaning Cartridge cleans the cards entering the printer through the card feeder. To ensure print quality, the card cleaning roller requires periodic replacement. New card cleaning rollers are included with each print ribbon or may be purchased separately. (To reorder, refer to the *Media List* on the **User Documentation and Drivers CD** supplied with this printer.)

Installation of the Card Cleaning Cartridge is described in [Section 2](#) and is not repeated in detail here.



Note • Before replacing the Card Cleaning Cartridge or its adhesive roller, clean the Printer using the Cleaning Cards as described earlier in this chapter.

Cleaning Roller

The Card Cleaning Roller cleans the cards entering and exiting the Transfer Station. To ensure print quality, the card cleaning roller requires periodic replacement. A new card cleaning roller is included with each print ribbon or may be purchased separately. (To reorder, refer to the *Media List* on the **User Documentation and Drivers CD** supplied with this printer.)

Installation of the Card Cleaning Roller is described in [Section 2](#) and is not repeated in detail here.

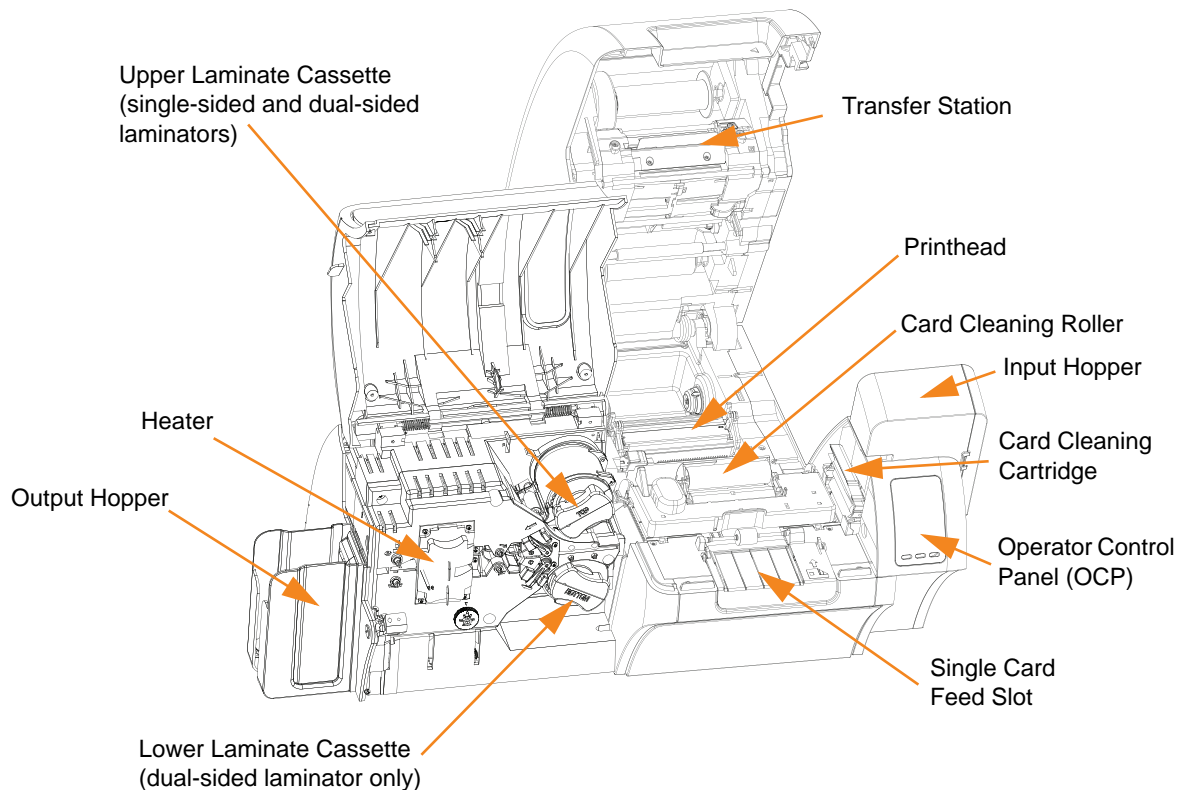


Troubleshooting



The table on the next page offers causes and solutions to symptoms related to improper operation. Check the table when experiencing any loss of operation or print quality.

Use the following figure of a Printer with a Laminator in conjunction with the table to help locate the possible cause and effect a solution.



OCP Error Messages

CODE	MESSAGE	POSSIBLE CAUSE	POSSIBLE SOLUTION
1	SYSTEM NOT READY	A problem was detected during printer start-up.	Power cycle the printer, and retry.
2 - 4	SYSTEM ERROR	Internal logic error.	Power cycle the printer, and retry.
5	FW UPGRADE ERROR	Firmware upgrade incompatibility.	Verify the version, and retry installing the firmware.
6	DIAGNOSTIC ERROR	Error encountered in Diagnostic Mode.	Power cycle the printer, and retry.
7	FW UPGRADE ERROR	Firmware upgrade failed.	Verify the version, and retry installing the firmware.
8	CRITICAL ERROR SHUTTING DOWN	Major malfunction encountered.	Contact Zebra Technical Support.
3001	PRINTER OFFLINE	Status toggled (offline/online) via the OCP Advanced Settings Menu.	Change status to online via the OCP Advanced Settings Menu.
4001	OUT OF CARDS	<ul style="list-style-type: none"> The Feeder Cartridge is empty. Card is stuck in Feeder Cartridge. 	<ol style="list-style-type: none"> Load cards in the Feeder Cartridge. Re-seat the Feeder Cartridge.
4002	INVALID CARD TYPE	Encoding error.	<ol style="list-style-type: none"> Ensure that you are using the correct card type. In the Encoding tab of the driver Printing Preferences, check that the settings are correct for the cards you are using. Ensure that the data conforms to ISO Specifications. Retry writing and reading.
4003	CARD JAM	Card is jammed in the Printer	Clear the card path.
4010	OUT OF FILM	The transfer film has run out.	Load new roll of transfer film.
4011	INVALID FILM	Transfer film does not match the printer.	<ol style="list-style-type: none"> Verify the part number of the transfer film is correct on OCP. Power cycle the printer.
4012	FILM JAM	The transfer film is jammed.	<ol style="list-style-type: none"> Check the transfer film. Reinstall the transfer film. Repair the break in the transfer film and reinstall.
4013	FILM MOTION ERROR	Transfer film not correctly responding to motion commands.	<ol style="list-style-type: none"> Check the transfer film. Reinstall the transfer film. Power cycle the printer.
4014	CARD FEED ERROR	Card is jammed in Feeder Cartridge.	<ol style="list-style-type: none"> Clear card jam in Feeder Cartridge, and re-seat Feeder Cartridge. Ensure that cards are not stuck together and that they are the correct thickness (10 to 50 mil).
4015	CARD NOT INSERTED	Card was not fed into the Single Card Feed Slot within 30-second period.	Retry and feed card into the Single Card Feed Slot, or cancel the operation.
4016	OUT OF CARDS	<ul style="list-style-type: none"> The Feeder Cartridge is empty. Card is stuck in Feeder Cartridge. 	<ol style="list-style-type: none"> Load cards in the Feeder Cartridge. Re-seat the Feeder Cartridge.
4017	INVALID FILM	Transfer film does not match the printer.	<ol style="list-style-type: none"> Verify the part number of the transfer film is correct on OCP. Power cycle the printer.
5001	OUT OF RIBBON	Print ribbon has run out.	Load a new roll of print ribbon.

CODE	MESSAGE	POSSIBLE CAUSE	POSSIBLE SOLUTION
5002	INVALID RIBBON	Print ribbon does not match the printer.	Verify the part number of the print ribbon is correct on OCP.
5003	RIBBON JAM	Print ribbon is jammed.	a. Check the print ribbon. b. Reinstall the print ribbon. c. Repair the break in the print ribbon and reinstall.
5004	RIBBON MOTION ERROR	Print ribbon not correctly responding to motion commands.	a. Check the print ribbon. b. Reinstall the print ribbon. c. Repair the break in the print ribbon and reinstall.
5005	RIBBON ADC ERROR	Possible hardware issue.	Contact Zebra Technical Support.
5006	RIBBON BEMF ERROR	Problem with the Back EMF (BEMF) of the ribbon motors.	Contact Zebra Technical Support.
5007	RIB COLOR DETECT ERR	Print ribbon is not installed correctly.	Reinstall the print ribbon.
5008	INVALID RIBBON	Print ribbon does not match the printer.	a. Verify that the part number of the print ribbon is correct on OCP. b. Power cycle the printer, and retry.
6001 - 6008	GENERAL MEMORY ERROR	There is a problem when accessing general memory.	Power cycle the printer, and retry.
6009	FLASH ERASE ERROR	There is a problem when accessing flash memory.	Power cycle the printer, and retry.
6010	FLASH ERASE VERIF ERR	There is a problem when accessing flash memory.	Power cycle the printer, and retry.
6011	FLASH PROGRAM ERROR	There is a problem when accessing flash memory.	Power cycle the printer, and retry.
6012	FLASH PROG VERIFY ERR	There is a problem when accessing flash memory.	Power cycle the printer, and retry.
6013	INVALID FW SRECORD	There is a problem when accessing flash memory.	Power cycle the printer, and retry.
6015 - 6025	GENERAL MEMORY ERROR	There is a problem when accessing general memory.	Power cycle the printer, and retry.
7001	CARD FEED ERROR	Card is jammed in Feeder Cartridge.	a. Clear the card jam in the Feeder Cartridge, and re-seat the Feeder Cartridge. b. Ensure that cards are not stuck together and that they are the correct thickness (10 to 50 mil).
7002	CARD CLEAN ERROR	Faulty Card Cleaning Roller (if an error occurs during single card feed) or Card Cleaning Cartridge (if cards fed from Feeder Cartridge).	Replace the Card Cleaning Roller or Card Cleaning Cartridge (rollers), as appropriate.
7003	PRINthead CABLE ERROR	Printhead cable loose or disconnected.	Check printhead cable connection, reconnect if loose or disconnected.
7004	CARD EJECT ERROR	Card from previous job is stuck in the exit area.	Remove the card from the exit area.
7005	PRINthead TOO HOT	Printhead temperature out of proper range (HOT).	Contact Zebra Technical Support.
7006	PRINthead TOO COLD	Printhead temperature out of proper range (COLD).	Contact Zebra Technical Support.
7008	COVER OPEN	This warning will be displayed if the cover protecting the Printer Module is opened.	This warning will be cleared when the printer cover is closed.
7010	PRINthead MOTION ERR	Printhead did not move to proper position during initialization.	Power cycle the printer, and retry.

7: Troubleshooting

OCP Error Messages

CODE	MESSAGE	POSSIBLE CAUSE	POSSIBLE SOLUTION
7011	ROLLERS OVER TEMP	Heated Rollers (used to transfer the image from the transfer film to the Card) are too hot for proper operation.	Turn off power, and contact Zebra Technical Support.
7012	ROLLERS UNDER TEMP	Heated Rollers (used to transfer the image from transfer film to Card) are not hot enough for proper operation.	Turn off power, and contact Zebra Technical Support.
7013	MOTOR VOLTAGE ERROR	Incorrect voltage detected at one or several motors in the unit.	Power cycle the printer, and retry.
7014	SCRIPT PROCESSING ERROR	Internal logic error.	Power cycle the printer, and retry.
7015	MAG MOTION ERROR	Printhead did not move to proper position during initialization.	Power cycle the printer, and retry.
7016	TRANSFER ERROR		
7017	REJECT ERROR	A problem during the reject process.	Contact Zebra Technical Support.
7018	SMARTCARD ERROR	<ul style="list-style-type: none"> Encoding error. Faulty card. 	<ol style="list-style-type: none"> Ensure that you are using the correct card type. Check that the cards are loaded in the correct orientation. Ensure that the data conforms to ISO Specifications. Retry writing and reading.
7019	SCRIPT CONTENT ERROR	Internal logic error.	Power cycle the printer, and retry.
7020	SCRIPT SEND ERROR	Internal logic error.	Power cycle the printer, and retry.
7034	REJECT BIN FULL REMOVE CARDS	The Reject Bin is full.	Remove the cards from the bin, and reset the reject bin card count to 0 via the OCP (Main Menu > Advanced Settings > Clear Reject Bin).
7036 - 7039	PRINT CARD JAM	Card is jammed in Printer Module.	Clear the card path.
9001	MAG READ ERROR	<ul style="list-style-type: none"> Encoding error. Defective magnetic stripe. 	<ol style="list-style-type: none"> Ensure that you are using the correct card type. Check that the cards are loaded with the magnetic stripe in the correct orientation. Ensure that the cards are set-up correctly in the printer driver (coercivity setting). Ensure that the data conforms to ISO Specifications. Retry reading.
9002	MAG WRITE ERROR	<ul style="list-style-type: none"> Encoding error. Defective magnetic stripe. 	<ol style="list-style-type: none"> Ensure that you are using the correct card type. Check that the cards are loaded with the magnetic stripe in the correct orientation. Ensure that the cards are set-up correctly in the printer driver (coercivity setting). Ensure that the data conforms to ISO Specifications. Retry writing.

CODE	MESSAGE	POSSIBLE CAUSE	POSSIBLE SOLUTION
9004	NO MAG STRIPE	Magnetic stripe not detected.	<ul style="list-style-type: none"> a. Ensure that you are using the correct card type. b. Check that the cards are loaded with the magnetic stripe in the correct orientation.
10001	CONTACT READ ERROR	<ul style="list-style-type: none"> • Faulty card. • Incorrect card orientation. • Incorrect Mode or Protocol setting. • Faulty reader. 	<ul style="list-style-type: none"> • Try another card. • Try another card (check orientation). • Correct the Mode or Protocol setting. • Contact Zebra Technical Support.
10002	CONTACT WRITE ERROR	<ul style="list-style-type: none"> • Faulty card. • Incorrect card orientation. • Incorrect Mode or Protocol setting. • Faulty writer. 	<ul style="list-style-type: none"> • Try another card. • Try another card (check orientation). • Correct the Mode or Protocol setting. • Contact Zebra Technical Support.
11001	CONTACTLESS READ ERROR	<ul style="list-style-type: none"> • Faulty card. • Incorrect Mode or Protocol setting. • Faulty reader. 	<ul style="list-style-type: none"> • Try another card. • Correct the Mode or Protocol setting. • Contact Zebra Technical Support.
11002	CONTACTLESS WRITE ERROR	<ul style="list-style-type: none"> • Faulty card. • Incorrect Mode or Protocol setting. • Faulty writer. 	<ul style="list-style-type: none"> • Try another card. • Correct the Mode or Protocol setting. • Contact Zebra Technical Support.
14001	MISSING HCB	The Halogen Controller Board (HCB) is missing.	Contact Zebra Technical Support.
14002	HCB BULB ERROR	The Halogen Controller Board (HCB) is unable to pulse the upper and lower heaters to bring the upper and lower rollers to the proper temperature.	Contact Zebra Technical Support.
14003	HCB SENSOR ERROR	The Halogen Controller Board (HCB) is unable to detect temperature of the upper or lower rollers.	Contact Zebra Technical Support.
14004	HCB FIRMWARE MISSING	The Halogen Controller Board (HCB) firmware is missing.	Contact Zebra Technical Support.
15001	MISSING MAB	An error occurred when reading the RFID Tag by the MAB (Media Authentication Board).	<ul style="list-style-type: none"> a. Check print ribbon orientation. b. Verify part number of the print ribbon. c. Power cycle the printer, and retry.
15002	MAB FIRMWARE MISSING	MAB (Media Authentication Board) Firmware is missing.	Install the firmware.
17001	LAMINATOR MISSING	Laminator data cable loose or disconnected.	Contact Zebra Technical Support.
17002	LAMINATOR FAILED INITIALIZATION	Laminator was detected by the printer, but was unable to communicate to it.	Contact Zebra Technical Support.
17003	LAMINATOR UNKNOWN ERROR	An unknown error has occurred – this is an indication of a FW problem and should not occur.	Press RETRY on the OCP.
17004	MISSING LAMINATOR MAB	An error occurred when reading the RFID Tag by trying to communicate to the Laminator MAB (Media Authentication Board).	<ul style="list-style-type: none"> a. Check laminate orientation. b. Power cycle the printer, and retry.
17005	TOP LAMINATE FEED FAIL	<ul style="list-style-type: none"> • Top laminate cartridge is not installed properly. • Cartridge is not removed when that side of the card is not being laminated. • A mis-cut piece of laminate (rare) is obscuring the media sensor. 	<ul style="list-style-type: none"> • Remove, reposition, and re-install the top laminate cartridge. • Remove the top laminate cartridge. • Remove the mis-cut piece of laminate.
17006	BOTTOM LAMINATE FEED FAIL	<ul style="list-style-type: none"> • Bottom laminate cartridge is not installed properly. • Cartridge is not removed when that side of the card is not being laminated. 	<ul style="list-style-type: none"> • Remove, reposition, and re-install the bottom laminate cartridge. • Remove the bottom laminate cartridge.

7: Troubleshooting

OCP Error Messages

CODE	MESSAGE	POSSIBLE CAUSE	POSSIBLE SOLUTION
17007	TOP LAMINATE REGISTRATION ERROR	<ul style="list-style-type: none"> Improperly prepared registered laminate. Media misfeed. Patch length improperly set. Unexpected end of laminate roll detected. 	Remove and recut laminate in the center of the index notch, re-install, and retry.
17008	LAMINATOR CARD FEED FAIL	Printer has not fed the card far enough into laminator mechanism for infeed rollers to grab it.	Open the Laminator and printer doors to check for jammed/stuck cards.
17009	LAMINATOR EARLY CARD JAM	Card did not make it to the staging rollers.	Remove the card and/or laminate that is stuck in the laminator staging/cutting area.
17010	LAMINATOR MIDDLE CARD JAM	Card and laminate have jammed inside heater assembly, often due to mis-positioned laminate patch sticking to heated rollers.	Remove the oven, and inspect for stuck cards.
17011	LAMINATOR LATE CARD JAM	Card did not unblock the exit sensor in the specified time.	<ol style="list-style-type: none"> Check for card jam in the exit area. Assure that the sliding exit door is not partially blocking the exit path.
17012	LAMINATOR POLL TIMEOUT	The laminator expects the printer to periodically send commands to it within a specified time period. If it fails to do so, it assumes that something is wrong with the communication link or that the printer is down. This error may occur if the printer-to-laminator communications is having intermittent problems.	Power cycle the printer, and retry.
17013	LAMINATOR TOP HEATER FAIL	Top heater did not turn on after being instructed to do so. When the heater is enabled, the controller will wait a certain specified amount of time for it to attain the set target temperature. If the heater fails to reach the target in the specified time, the TopHeaterFail fault will be set.	Replace the top halogen bulb.
17014	LAMINATOR BOTTOM HEATER FAIL	Bottom heater did not turn on after being instructed to do so. When the heater is enabled, the controller will wait a certain specified amount of time for it to attain the set target temperature. If the heater fails to reach the target in the specified time, the BotHeaterFail fault will be set.	Replace the bottom halogen bulb.
17015	LAMINATOR TOP TEMPERATURE HIGH	If the top roller temperature ever exceeds a fixed temperature threshold, the over temp error occurs.	Power cycle the printer, and retry.
17016	LAMINATOR BOTTOM TEMPERATURE HIGH	If the bottom roller temperature ever exceeds a fixed temperature threshold, the over temp error occurs.	Power cycle the printer, and retry.
17017	LAMINATOR TOP CUTTER STALL	Top cutter blade is obstructed, or top cutter mechanism is damaged.	Contact Zebra Technical Support.
17118	LAMINATOR BOTTOM CUTTER STALL	Bottom cutter blade is obstructed, or bottom cutter mechanism is damaged.	Contact Zebra Technical Support.
17019	LAMINATOR TOP CUTTER FAIL	Top cutter has failed.	Contact Zebra Technical Support.
17020	LAMINATOR BOTTOM CUTTER FAIL	Bottom cutter has failed.	Contact Zebra Technical Support.
17021	LAMINATOR TOP TEMP SENSOR FAIL	The top temperature (thermopile) sensor has failed.	Contact Zebra Technical Support.
17022	LAMINATOR BOTTOM TEMP SENSOR FAIL	The bottom temperature (thermopile) sensor has failed.	Contact Zebra Technical Support.

CODE	MESSAGE	POSSIBLE CAUSE	POSSIBLE SOLUTION
17023	LAMINATOR FAN FAIL	This should only happen if one or both cooling fans fail or the cooling vents near the heated roller assembly are blocked or the fan(s) have failed.	Check for blocked vents.
17024	LAMINATOR EEPROM DEFAULT	The parameters stored in EEPROM have been reset to their default values. This will not normally happen, but could be seen with certain FW upgrades when new parameters have been added by Engineering. It could also indicate a problem with the Laminator's EEPROM.	a. Press RETRY on the OCP when this error occurs. b. Power cycle the printer, and retry.
17025	LAMINATOR TOP TEMPERATURE LOW	If the top roller temperature does not reach a fixed temperature threshold, the under temp error occurs.	Power cycle the printer, and retry.
17026	TOP AND BOTTOM LAMINATES OUT	The top and bottom laminates have run out.	Load new rolls of laminate.
17027	TOP LAMINATE OUT	The top laminate has run out.	Load new roll of laminate.
17028	BOTTOM LAMINATE OUT	The bottom laminate has run out.	Load new roll of laminate.
17029	INVALID TOP LAMINATE	Laminate does not match the type allowed in the laminator or top and/or bottom has been swapped.	a. Verify that the top and bottom laminate cassettes are installed in the correct locations. b. Verify the part number of the laminate is correct on OCP. c. Power cycle the printer, and retry.
17030	INVALID BOTTOM LAMINATE	Laminate does not match the type allowed in the laminator or top and/or bottom has been swapped.	a. Verify that the top and bottom laminate cassettes are installed in the correct locations. b. Verify the part number of the laminate is correct on OCP. c. Power cycle the printer, and retry.
17031	BOTTOM LAMINATE REGISTRATION ERROR	<ul style="list-style-type: none"> Improperly prepared registered laminate. Media misfeed. Patch length improperly set. Unexpected end of laminate roll detected. 	Remove and recut laminate in the center of the index notch, re-install, and retry.
17038	LAMINATOR COVER OPEN	This warning will be displayed if the cover protecting the laminator is opened.	This warning will be cleared when the laminator cover is closed.
17040	LAMINATOR INITIALIZING	This warning will be displayed after the laminator door is closed and laminate spools are re-read/detected.	No action needed
17041	LAMINATOR FIRMWARE MISSING	LCB (Laminator Controller Board) Firmware is missing.	Install the firmware.
17042	LAMINATOR MAB FIRMWARE MISSING	Laminator MAB (Media Authentication Board) Firmware is missing.	Install the firmware.
18001	ETHERNET COMM ERROR	Ethernet communication problem.	a. Disconnect and reconnect the network cable. b. Power cycle the printer, and retry.
19001	WIFI COMM ERROR	Wireless Ethernet communication problem.	a. Power cycle the printer. b. Re-run the set-up wizard to re-establish the wireless settings. c. Contact Zebra Technical Support.
19002	WIFI ACCESS POINT MISSING	Access point, specified by printer wireless settings, not found during initial printer scan after power up.	Verify access point, specified by the printer wireless settings, is properly connected to the network and turned on.

7: Troubleshooting

OCP Error Messages







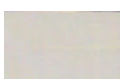



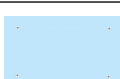
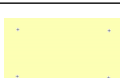

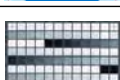



CODE	MESSAGE	POSSIBLE CAUSE	POSSIBLE SOLUTION
19003	WIFI LINK LOST	<ul style="list-style-type: none"> • Connection to the access point was lost. • Poor signal quality or low signal strength. • Interference. • Access point power has been lost. 	<ol style="list-style-type: none"> a. Verify access point is properly connected to the network and powered ON. b. Put the printer antenna in a similar orientation than access point's antenna, and re-run the set-up wizard to re-establish the wireless settings.
19004	WIFI INCOMPATIBLE NETWORK	<ul style="list-style-type: none"> • Printer, after power up, found the access point specified by the wireless settings, but found the access point settings incompatible. • Access point configuration has been modified. 	Re-run the set-up wizard to establish the new wireless settings.
19005	WIFI ASSOCIATION FAILED	<ul style="list-style-type: none"> • During association with an access point, the association failed. • Poor signal quality. • Low signal strength. 	Put the printer antenna in a similar orientation as the access point's antenna, and re-run the set-up wizard to re-establish the wireless settings.
19006	WIFI CONNECTION FAILED	<ul style="list-style-type: none"> • They key handshake following the association failed. • WEP Key or WPA passphrase is incorrect. 	Ensure that you have the correct key/passphrase, then re-run the set-up wizard to establish new wireless settings.

OCP Test Card Images

See Test Card descriptions on the following page.

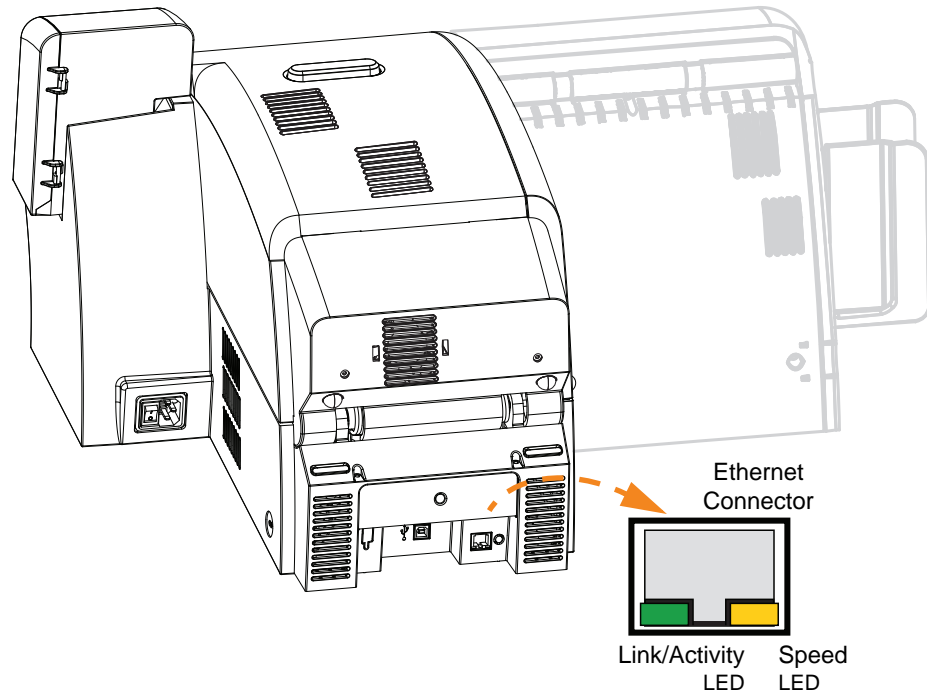
		
MID GRAY	GRID ON GRAY	CYAN STRIPES
		
2 PIXEL GRID	DARK CYAN	MAX GRAY
		
OFFSET DOTS	SMEAR	MIN MAGENTA
		
MID MAGENTA	MID CYAN	MID YELLOW
		
MOTION & REGISTRATION	GRADIENT BOXES	MONOCHROME ONLY
		Encode Only No Image
DENSITY SETUP	GRID ON GRAY 2	MAG ENCODE ONLY 1 - 5

Test Card Descriptions

Image	Title	Description	Print artifacts to look for with this image
	MID GRAY	Flat uniform gray	Motion artifacts, banding, platen defects, transfer artifacts, dirt, overall density level
	GRID ON GRAY	Solid black on top, gray grid underneath	Colored ribbon wrinkles in the black area, or clear/white transfer film wrinkles in the gray area
	CYAN STRIPES	Horizontal stripes next to lighter vertical stripe	Non-uniformity or horizontal banding within cyan box on right of card
	2 PIXEL GRID	2 pixel wide grid lines on white	Mis-registration between color planes
	DARK CYAN	Maximum cyan only density image	Motion artifacts, transfer artifacts, scratches, dirt
	MAX GRAY	Maximum CMY (black) density image	Wrinkles, snapping noise during printing, ribbon / transfer-film tears or breaks, flash, card positioning
	OFFSET DOTS	Individual C, M, & Y dots spaced at regular intervals	Motion artifacts on specific color planes, mis-registration
	SMEAR	Gray with full density YMCK blocks near top	Color smear artifacts
	MIN MAGENTA	Flat uniform low-density magenta	Motion artifacts, banding, platen defects, density level, uniformity, bead position
	MID MAGENTA	Flat uniform mid-density magenta	Motion artifacts, banding, platen defects, density level, uniformity
	MID CYAN	Flat uniform mid-density cyan	Motion artifacts, banding, platen defects, density level, uniformity
	MID YELLOW	Flat uniform mid-density yellow	Motion artifacts, banding, platen defects, density level, uniformity
	MOTION & REGISTRATION	Uniform cyan with registration marks on sides	Banding, mis-registrations, motion artifacts
	GRADIENT BOXES	3 sets of light-to-dark grayscale ramps	Used to create color calibration look-up table
	MONOCHROME ONLY	Barcode and text	Edge contrast, pattern damage, non-uniformity
	DENSITY SETUP	Used to measure mid and max densities	Density level of mid-gray and black
	GRID ON GRAY 2	Less stressful version of the grid-on-gray target	Colored ribbon wrinkles in the black area, or clear/white transfer film wrinkles in the gray area

Ethernet Issues

If both LEDs are off, the printer has not detected the presence of a network cable. To solve the problem:



- Verify that the network cable is appropriate and has an RJ-45 connector.
- Remove the network cable from the printer. Plug the network cable back in until you hear a positive click. Check the other end of the cable in the same manner. If the printer still does not detect a cable, then continue.
- Connect the printer to a known good network. If the printer is still unable to detect the network cable, contact Technical Support for assistance.





Technical Specifications

Standard Features

- Thermal transfer and dye diffusion to transfer film
- Full color or monochrome reverse transfer printing
- Single-sided and dual-sided printing
- Maximum print speed (batch mode; i.e., the same image repeatedly)
 - Single-sided (Front Only)

YMC	190 cph
YMCK	160 cph
 - Dual-sided (Front and Back)

YMCK (YMC Front, K Back)	170 cph
YMCKK (YMCK Front, K Back)	150 cph
- Photo quality image
- Over-the-edge printing on standard CR80 media
- Microsoft Windows Certified drivers
- Single-card feed capability
- 150 card capacity feeder (30 mil)
- 15 card reject hopper (30 mil)
- 100 card output hopper (30 mil)
- i Series™ intelligent media technology
- Auto calibration of media
- 21-character soft menu LCD text operator display
- 304 dpi (12.0 dots/mm) print resolution
- 64MB memory standard
- 2-year unlimited warranty on printer, lifetime limited warranty on printhead with Genuine Zebra Supplies

Specifications

Encoding Options

- Smart card contact encoder – ISO 7816, PC/SC Compliant
- Magnetic stripe encoder – ISO 7811 and JIS-II (new and re-encoded; tracks 1, 2, and 3; high and low coercivity; stripe down; 30 - 40 mil card thickness)
- Contact smart card encoder – EMV level 1 certified
- ISO 14443 MIFARE (13.56 MHz) and ISO 7816 contact encoder combo
- FeliCa contactless smart card RFID encoder

Communications Interfaces

- USB V2.0 / 1.1 protocol
- USB supports plug-n-play printer identification
- USB and internal 10/100 Ethernet (Standard)

Software

Microsoft Windows Certified Printer Drivers Supported

- Windows XP*, Windows Vista*, Windows 7*, Windows Server 2003*
- *32-bit and 64-bit certified

Driver Features

- Graphical card orientation setting to visualize card printing setup and configuration
- Card type setting eliminates unnecessary setup and configuration settings
- Complete graphical control over area and element selection of black extraction parameters insures true black and color printing exactly where you want it on the card
- Auto sensing of print ribbon type

ZXP Toolbox

- Printer configuration tools and utilities for complete control over all printer functions and features
- Optional password protection setting to prevent accidental or unauthorized printer configuration changes
- User role-based features enables true security printer operations
- Complete technology card management enables setup and testing of all printer and encoder features and functionality
- Printer test cards and diagnostics utilities ensure error free printing and fast troubleshooting capabilities

Card Compatibility

- Card Thickness: 30 – 40 mil
- Card Size: ISO 7810 format, Type ID-1, CR-80
- Card Material: ABS; PVC, Composite; TESLIN, Composite; PET; PETG; Polycarbonate; PVC

Agency Approvals

Zebra ZXP Series 8 Card Printer complies with following applicable directives and standards for the ITE: Residential, Commercial & Light Industry environments

- For US/Canada/Mexico/Australia&NZ
 - FCC Class A, cfr47, Part 15 Subpart B
 - Part15 Subpart C
 - Canadian STD RSS-210
 - NOM-ETL (Mexico)
 - IEC 60950-1:2005/A1:2009
EN 60950-1:2006/A11:2009/A12:2011/A1:2010/AC:2011
UL 60950-1:2007 R12.11
CAN/CSA-C22.2 N0.60950-1-07/A1:2011
 - EN60950: EN60950-1 Safety Standard (TUV & NRTL)
 - C-Tick (Australia)
- For Europe:
 - Applicable Directives and Supporting Standards:
 - 2004/108/EC EMC Directive, CISPR22:2009, EN 55022:2010,
Class A CISPR24:2010, EN 55024:2010
EN 61000-3-2:2006/A2:2009, EN 61000-3-3:2008
2006/95/EC LVD Directive, EN60950-1, CB Scheme
 - WLAN Enabled
 - Applicable Directives and Supporting Standards:
 - 99/5/EC R&TTE Directive, EN 301 489-17 V1.2.1,
EN 300 328 V1.7.1
 - RFID Enabled
 - Applicable Directives and Supporting Standards:
 - 99/5/EC R&TTE Directive, EN 301 489-3 V1.4.1,
EN 300 220-2 V2.1.2

Electrical

- Single-phase AC power
- Auto-switching Power Supply
- 90V~264V AC RMS and 47-63 HZ (50-60 Hz nominal)

- **Power Consumption, Printer only:**

Idle	100 W
Printing	150 W
Initializing / Warm-up	300 W
Sleep	20 W

- **Power Consumption, Printer + Laminator:**



Note • Osprey printer setup temperature for composite card top @ 175C & bottom @ 180C, then laminator setup for both sides lamination @ 140C. Power with 120VAC 60HZ.

Idle	160 W
Printing	340 W
Initializing / Warm-up	570 W
Sleep	20 W

Physical

- Printer only

Height (with card hoppers)	13.2" (334 mm)
Width (with card hoppers)	18.75" (476 mm)
Depth	20.4" (519 mm)
Weight (printer only)	27.5 lbs (12.5 kg)

- Printer with Laminator

Height (with card hoppers)	13.2" (334 mm)
Width (with card hoppers)	30.75" (781 mm)
Depth	20.4" (519 mm)
Weight	44 lbs (20 kg)

Environmental

- Operating Temperature 59° to 95°F (15° to 35°C)
- Storage Temperature 23° to 131°F (-5° to 55°C)
- Operating Humidity 20% to 80% non-condensing
- Storage Humidity 10% to 90% non-condensing
- Shipping Temperature -40° to 140°F (-40° to 60°C)
- Shipping Humidity 10 to 90% non-condensing

Declarations of Conformity



ZEBRA TECHNOLOGIES CORPORATION

Declares that the following Information Technology Equipment

Zebra ZXP Series 8 Card Printer

complies with following applicable directives and standards for the
ITE: Residential, Commercial & Light Industry environments

Applicable Directives and Supporting Standards:

2004/108/EC EMC Directive, EN55022: Class A,
EN55024, 61000-3-2, EN61000-3-3,
2006/95/EC LVD Directive, EN60950-1, CB Scheme

RLAN & RFID (if equipped)

Applicable Directives and Supporting Standards:
99/5/EC R&TTE Directive, EN 301 489-3 V1.4.1, EN 300 220-2 V2.1.2
EN 300 328 V1.7.1, EN 301 489-17 V1.2.1

For a formal certificate, please contact the Compliance Office at Zebra's Camarillo facility.

EUROPE: Norway Only: This product is also designed for IT power system with phase to phase voltage 230V. Earth grounding is via the polarized, 3-wire power cord.

FI: "Laite on liitettävä suojamaadoitus koskettimilla varustettuun pistorasiaan"

SE: "Apparaten skall anslutas till jordat uttag"

NO: "Apparatet må tilkoples jordet stikkontakt"

FCC Regulations

The Zebra ZXP Series 8 Card Printer has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and operated in accordance with the Zebra ZXP Series 8 Card Printer User's Manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Pursuant to Part 15.21 of the FCC Rules, any changes or modifications to this equipment not expressly approved by Zebra may cause harmful interference and void the FCC authorization to operate this equipment.

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.

FCC Radiation Exposure Statement (applicable to 15.247 device only)

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum 20 cm between the radiator and your body. This transmitter must not be collocated or operating in conjunction with any other antenna or transmitter unless authorized to do so by the FCC.

Industry Canada Notice

This device complies with Industry Canada ICES-003 class A requirements.
Cet équipement est conforme à l'ICES-003 classe A de la Norme Industrielle Canadienne.

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and | (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Japanese Notification

日本：総務省(MIC) 認証マーク

本製品は MIC の認証を受けています。

RFID 認証番号は No. FC-10003 です。

この機器は、無線周波数エネルギーを生成および使用し、それらを放射する可能性があります。したがって、ユーザー・マニュアルに従って設置および使用しなかった場合、無線通信あるいはペースメーカーなどの医療機器に有害な干渉を引き起こすことがあります。

Chinese Notification

經型式認證合格之低功率射頻電機，非經許可，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。低功率射頻電機之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。前項合法通信，指依電信法規定作業之無線電通信。低功率射頻電機須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。

8.02.11b/g Wireless Compliance Information

This information applies to printers that have the 8.02.11b/g wireless option installed.

Proprietary Statements

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 A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment under FCC rules.

WARNING: Exposure to Radio Frequency radiation. To conform to FCC RF exposure requirements this device shall be used in accordance with the operating conditions and instructions listed in this manual.

NOTE: This unit was tested with shielded cables on the peripheral devices. Shielded cables must be used with the unit to insure compliance. Changes or modifications to this unit not expressly approved by Zebra Technologies Corporation could void the user's authority to operate this equipment.

Canadian Compliance Statement

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

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

"IC:" before the equipment certification number signifies that the Industry Canada technical specifications were met. It does not guarantee that the certified product will operate to the user's satisfaction. This device complies with Industry Canada license-exempt RSS standard(s). Operation

is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

NCC (Taiwan) Compliance Statement

“經型式認證合格之低功率射頻電機，非經許可，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。低功率射頻電機之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。前項合法通信，指依電信法規定作業之無線電通信。低功率射頻電機須忍受合法通信或工業、科學、醫療用電波輻射性電機設備之干擾。”

" According to "Administrative Regulations on Low Power Radio Waves Radiated Devices" Without permission granted by the DGT, any company, enterprise, or user is not allowed to change frequency, enhance transmitting power or alter original characteristic as well as performance to a approved low power radio-frequency devices. The low power radio-frequency devices shall not influence aircraft security and interfere legal communications; If found, the user shall cease operating immediately until no interference is achieved. The said legal communications means radio communications is operated in compliance with the Telecommunications Act.

The low power radio-frequency devices must be susceptible with the interference from legal communications or ISM radio wave radiated devices."

Japan: Ministry of Internal Affairs and Communications (MIC) Certification

日本：総務省 (MIC) 認証マーク

本製品は MIC の認証を受けています。

RFID 認証番号は No. FC-10003 です。

WiFi 認証番号は 208WWW110007 および 208GZ110008 です。

この機器は、無線周波数エネルギーを生成および使用し、それらを放射する可能性があります。したがって、ユーザー・マニュアルに従って設置および使用しなかった場合、無線通信あるいはペースメーカーなどの医療機器に有害な干渉を引き起こすことがあります。

Contain FCC ID & IC Numbers

1. Zebra WiFi Radio 802.11b/g

FCC ID : I28-W2WLAN11G

IC ID : 3798B-W2WLAN11G

Radio Regulatory Information

European Regulatory Information for this Radio

This device is intended for use in all EU and EFTA member states.

Europe – EU Declaration of Conformity

This device complies with the essential requirements of the R&TTE Directive 1999/5/EC. The following test methods have been applied in order to prove presumption of compliance with the R&TTE Directive 1999/5/EC:

Applicable Directives and Supporting Standards:

2004/108/EC EMC Directive, EN55022 Class A, EN55024
EN61000-3-2, EN61000-3-3
2006/95/EC LVD Directive, EN60950-1, CB Scheme

RLAN & RFID (if equipped)

Applicable Directives and Supporting Standards:

99/5/EC R&TTE Directive, EN 301 489-3, EN 300 330-2
EN 301 489-17, EN 300 328

EMC requirements for spread-spectrum radio equipment.

This device is a 2.4 GHz wireless LAN transceiver, intended for indoor home and office use in all EU and EFTA member states.

WLAN Module Using 802.11b/g Radio

Other than conditions specified elsewhere in this manual, only one of the radio options can be installed in the printer at one time and the antenna used for these transmitters must not be co-located or must not operate in conjunction with any other antenna.

European Regulatory Information for these Radios

AT	BE	CY	CZ	DK
EE	FI	FR	DE	GR
HU	IE	IT	LV	LT
LU	MT	NL	PL	PT
SK	SI	ES	SE	GB

Note: -Member states in the EU with restrictive use for this device are crossed out! This device is also authorized for use in all EFTA member states (**CH, IS, LI, NO**)

The use of this frequency band in France is subject to restrictions. You may only use channels 10 and 11 (2457 and 2462 MHz) on French territory, except in those French departments as listed in the table below where channels 1-13 (2412-2472 MHz) may be used. For more information, see:

<http://www.anfr.fr/> and/or <http://www.art-telecom.fr>.

01	Ain	36	Indre	69	Rhone
02	Aisne	37	Indre et Loire	70	Haute Saone
03	Allier	39	Jura	71	Saone et Loire
05	Hautes Alpes	41	Loir et Cher	72	Sarthe
08	Ardennes	42	Loire	75	Paris
09	Ariege	45	Loiret	77	Seine et Marne
10	Aube	50	Manche	78	Yvelines
11	Aude	54	Meurthe et Moselle	79	Deux Sievres
12	Aveyron	55	Meuse	82	Tarn et Garonne
16	Charente	57	Moselle	84	Vaucluse
19	Correze	58	Nievre	86	Vienne
2A	Corse Sud	59	Nord	88	Vosges
2B	Haute Corse	60	Oise	89	Yonne
21	Cote d'Or	61	Orne	90	Territoire de Belfort
24	Dordogne	63	Puy de Dome	91	Essonne
25	Doubs	64	Pyrenees Atlantique	92	Hauts de Seine
26	Drome	65	Hautes Pyrenees	93	Seine St Denis
27	Eure	66	Pyrenees Orientales	94	Val de Marne
32	Gers	67	Bas Rhin		
35	Ille et Vilaine	68	Haute Rhin		



APPENDIX A

Printer Configurations



Introduction

The Part Number of a particular printer is shown on a label affixed to the bottom of the printer; that Part Number identifies the specific configuration for that printer.

The chart on the following page shows the configurations that are available.

Part Numbers

PART NUMBER	DESCRIPTION
Z 8 _	Base Unit
_ _ 1 - _ _ 2 - _ _ 3 - _ _ 4 -	Single-sided printing Dual-sided printing Dual-sided printing with single-sided lamination Dual-sided printing with dual-sided lamination
_ _ _ 0 - _ _ _ A - _ _ _ E - _ _ _ F -	Smart Card Options None Contact Encoder + Contactless MIFARE Contact Station Contact Encoder + Contactless FeliCa
_ _ _ 0 - _ _ _ M - _ _ _ J -	Mag Encoders None ISO HiCo/LoCo Mag S/W Selectable JIS II Compliant Mag
_ _ _ 0 - _ _ _ A -	Security Options None Enclosure Lock
_ _ _ C _ _ _ 0 0 _ _ _ _ _ W _ _ _ E M _ _ _ _ _ W _ _ _ J P _ _ _ _ _ W _ _ _ U S _ _	Interface USB + 10/100 Ethernet USB + 10/100 Ethernet + Wireless LAN -- EMEA USB + 10/100 Ethernet + Wireless LAN -- Japan USB + 10/100 Ethernet + Wireless LAN -- United States
_ _ _ 0 - _ _ _ D -	Software/Kit None Media Starter Kit (includes: 1 YMCK ribbon kit, 1 roll of InTM, 200 PVC cards)
_ _ _ _ 0 0 0 _ _ _	Miscellaneous None
_ _ _ _ 0 0 _ _ _ _ _ _ A P _ _ _ _ _ _ A U _ _ _ _ _ _ B R _ _ _ _ _ _ C N _ _ _ _ _ _ E M _ _ _ _ _ _ J P _ _ _ _ _ _ P H _ _ _ _ _ _ T H _ _ _ _ _ _ T W _ _ _ _ _ _ U S _ _	Country Code None Asia/Pacific Australia Brazil China EMEA (Europe/Middle East/Africa) Japan Philippines Thailand Taiwan United States
_ _ _ _ _ _ _ _ 0 0	Custom Code Reserved for future options

Appendix B



Setting Custom Card Specifications

B.1 Introduction

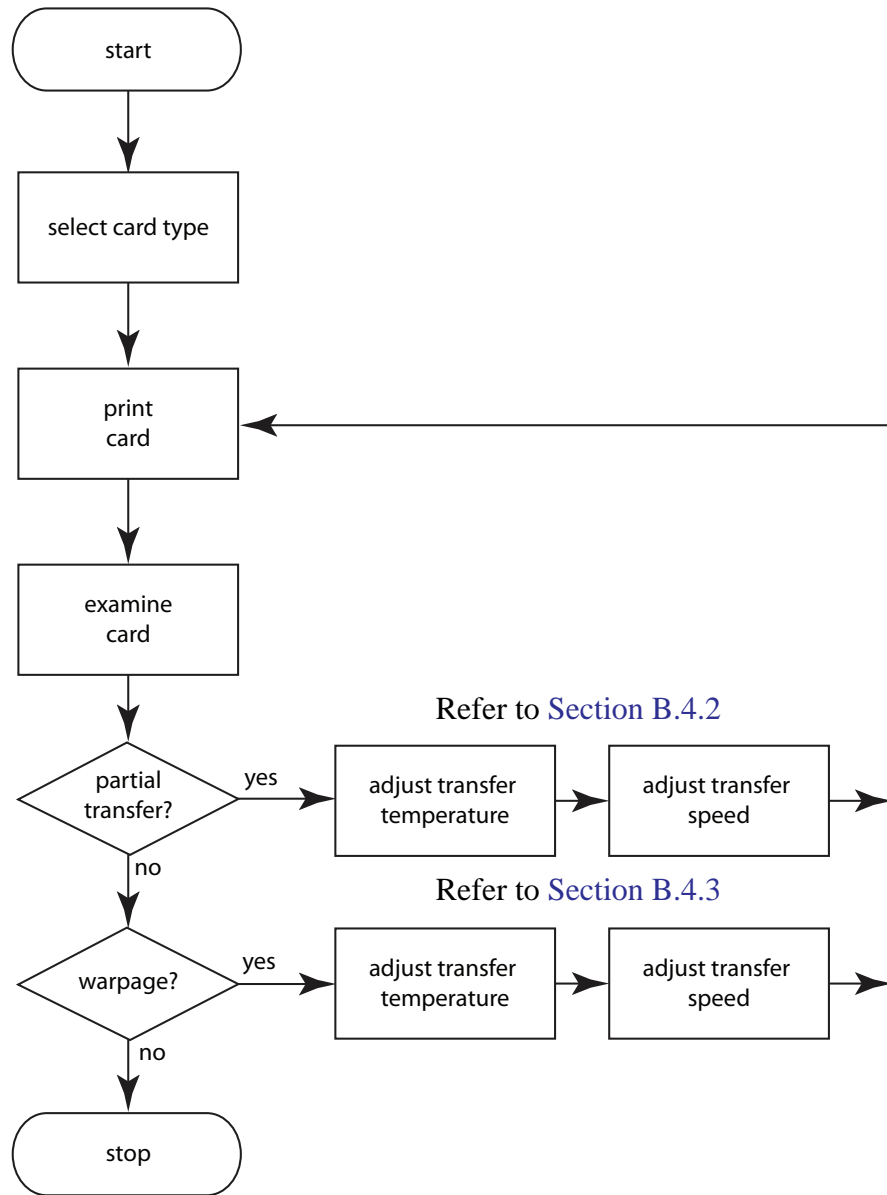
This document is to be used for setting the specifications for cards not listed in the **Card type in use** dropdown menu; arrow below. Setting the specifications for a non-listed card type is a three-step process that uses the Card Setup Tab.

If you need help setting the specifications for your card type, contact the **Zebra Card Testing Service** at:

Phone: 1-866-569-9086 (Toll Free)

Email: cardtestingservice@zebra.com

B.2 Process Flowchart



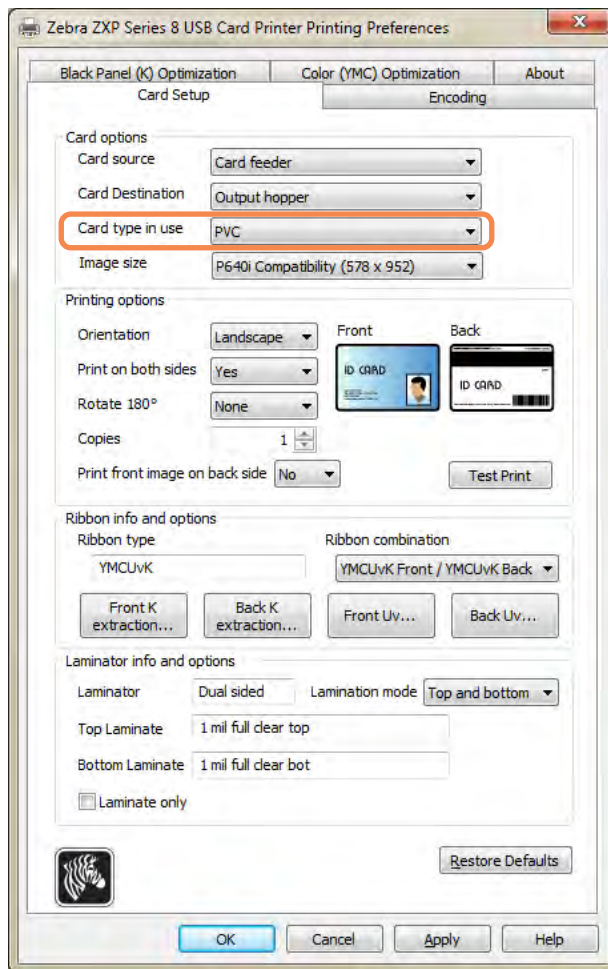
B.3 3-Step Process



Note • To access the Card Setup Tab, select *Start > Devices and Printers*. Right click on the *Zebra ZXP Series 8 Card Printer* listing; and select *Printing Preferences > Card Setup*.

Step 1: Select the Card Type

From the **Card type in use** dropdown menu, select *Custom 1* or *Custom 2*; and click OK. Note that *Custom 1* or *Custom 2* have adjustable transfer temperature and transfer speed tables; the other card types do not.



Step 2: Make adjustments



Note • Before making any adjustments, print and examine a test card (Step 3:). The quality of the test card will determine whether or not to continue the process.

After selecting *Custom 1* or *Custom 2*, the Card Specifications window will appear. Make the recommended transfer temperature and/or transfer speed adjustment (Section B.4), and click the **OK** button.

Card Specifications

Card type: Custom 1

Part number: []

Thickness: 30.00 inches mils

Coercivity: None Mag stripe

Cal table: 1 Contact encode

Contactless encode

Transfer temperature(C)

Single side printing		Double side printing	
Front	Back	Front	Back
0	0	0	0

Transfer speed

Single		Double	
Input	Output	Input	Output
0.00	0.00	0.00	0.00

Lamination adjustments

Temperature adjustments		Speed adjustment
Top	Bottom	
0	0	0.00

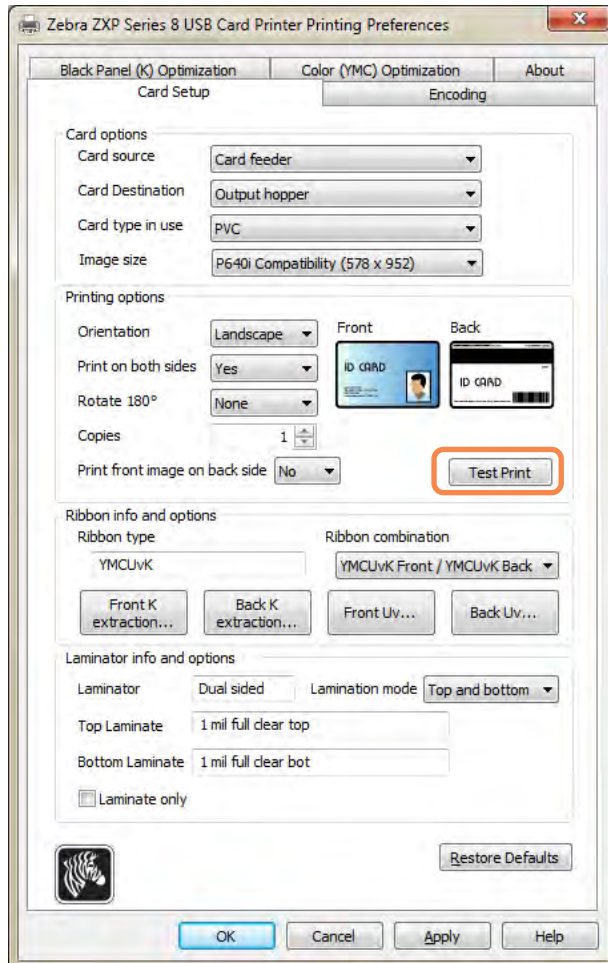
For more information please email: cardtestingservice@zebra.com

Save... Restore... Restore Defaults OK Cancel

The Card Specifications window will close.

Step 3: Print and examine Test Card

From the Card Setup tab, print (click on the **Test Print** button circled below) and examine a test card.



The quality of the test card will determine whether or not to continue the process.

B.4 Adjustments

Topics addressed in this section include:

B.4.1 Adjustment Overview	173
B.4.2 Partial Transfer	175
Front of card	175
Back of card	178
B.4.3 Warpage	181
Edges curled down	181
Edges curled up	184
Irregular Warpage	187

B.4.1 Adjustment Overview

When making adjustments, be aware that interdependencies exist between parameters; e.g., parameter changes which reduce warp could induce partial transfer.

There are four basic parameters to control, and these parameters differ for single-sided printing and dual-sided printing for each card type:

- Input transfer speed (speed in)
- Output transfer speed (speed out)
- Front transfer temperature (upper roller temperature)
- Back transfer temperature (lower roller temperature)

Speeds are in *inches per second* (ips), and temperatures are in *degrees Celsius* (C).

It is very helpful to think about the **energy** being put into the card as opposed to just temperature. Speed parameters are the “big knobs” for adjusting energy, while temperature parameters are the “fine tuning knobs.” Slowing down only 0.1 ips has almost twice the energy-increasing effect as raising the temperature 5°C. In terms of energy:

- Far too little energy = no transfer at all
- Not enough energy = partial transfer
- Too much energy = card warp
- Far too much energy = card jams caused by severe warp

With respect to **speeds**, going slower in can help guarantee good transfer, while going faster out can prevent the already-transferred card from remaining hot long enough to soften, weaken, warp, and possibly even jam. Usually, the most reliable and stable speed settings range between 1.2 ips and 2.6 ips, with lower generally being better for most card types.

With respect to **temperatures**, a top temperature which is slightly higher than the corresponding bottom temperature normally works well for dual-sided transfer. For single-sided transfer, there will be significantly lower temperatures for the back side of the card to avoid accidental transfer. In general, a lower temperature difference between the front and back sides will induce fewer warming/cooling cycles in the printer.

B: Setting Custom Card Specifications

To compensate for interdependency issues, try adjusting the parameters in the following order:

- Step 1.** Start by correcting any partial transfer issues by using the procedure outlined in [Section B.4.2](#).
- Step 2.** Then attempt to improve warpage by using the procedure outlined in [Section B.4.3](#). Start with acceptable settings from Step 1. While adjusting parameters, ensure that the transfer quality remains acceptable. Do not continue reducing temperatures or increasing speeds if the transfer quality becomes unacceptable.

Additional considerations and information:

The thermal conductivity of the card fundamentally influences retransfer performance. Card characteristics affecting retransfer include:

- **Single-layer vs. multi-layer construction** (homogeneous vs. composite materials) – for homogeneous cards, warp is often lowest when equal energy is put into each side of the card, while such is not usually true for non-homogeneous cards made of a mix of metals and plastics due to the widely different thermal properties of the materials,
- **Surface** finish – glossy vs. matte,
- Whether the card has a **magnetic stripe** – more prone to warp, especially low-coercivity (LoCo) cards identifiable by a brown stripe instead of the common high-coercivity black stripe, and
- Whether the card is a **smart card** – often containing asymmetrically-distributed, thermally conductive, dissimilar components which can make warp reduction more challenging.

Even cards sold as ‘typical’ PVC may not all be similar in terms of retransfer behavior, given their exact binders, fillers, pigmentations, and other materials ratios. While many competitive retransfer printers tend to disavow PVC because it can be difficult to use in their retransfer printers, a prime ZXP Series 8 advantage is the ability to successfully retransfer to economical PVC cards.

B.4.2 Partial Transfer



Light or missing transfer on the sides



Spotty transfer anywhere on the card



Light transfer on entire card

Front of card

Partial transfer is usually caused by lack of energy being transferred to the card, i.e. the temperatures are too low or the speeds are too fast.

Step 1. Increase Front Transfer Temperature:

- a. From the Card Specifications window, make a note of the default front transfer temperature settings; see [Section B.3](#).
- b. Increase the appropriate (single or double side) front transfer temperature by 5.
- c. Click on the **OK** button.

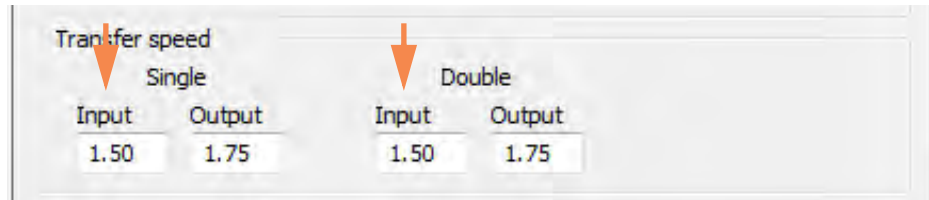


- d. Print a test card; see [Section B.3](#).
- e. Examine the test card.
 - If there is noticeable improvement, continue increasing the front transfer temperature by 5, printing a test card, and examining the resulting card. Stop when the problem is corrected or there is no more improvement. If the problem is corrected, no more adjustment is required; otherwise go to [Step 2](#).
 - If there is no noticeable improvement, return the temperature to its default setting; and go to [Step 2](#).

B: Setting Custom Card Specifications

Step 2. Decrease Transfer Input Speed

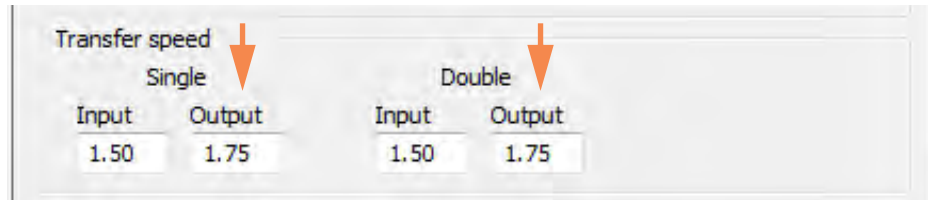
- a. From the Card Specifications window, make a note of the default transfer input speed settings.
- b. Decrease the appropriate (single or double) transfer input speed by 0.1.
- c. Click on the **OK** button.



- d. Print a test card.
- e. Examine the test card.
 - If there is noticeable improvement, continue decreasing the transfer input speed by 0.1, printing a test card, and examining the resulting card. Stop when the problem is corrected or there is no more improvement. If the problem is corrected, no more adjustment is required; otherwise go to [Step](#) .
 - If there is no noticeable improvement, return the speed to its default setting; and go to [Step](#) .

Step 3. Decrease Transfer Output Speed

- a. From the Card Specifications window, make a note of the default transfer output speed settings.
- b. Decrease the appropriate (single or double) transfer output speed by 0.1.
- c. Click on the **OK** button.



- d. Print a test card.
- e. Examine the test card.
 - If there is noticeable improvement, continue decreasing the transfer output speed by 0.1, printing a test card, and examining the resulting card. Stop when the problem is corrected or there is no more improvement. If the problem is corrected, no more adjustment is required. If the problem persists, contact Zebra Technical Support.
 - If there is no noticeable improvement, return the transfer output speed to its default setting; and contact Zebra Technical Support.

Back of card

Partial transfer is usually caused by lack of energy being transferred to the card, i.e. the temperatures are too low or the speeds are too fast.

Step 1. Increase Back Transfer Temperature:

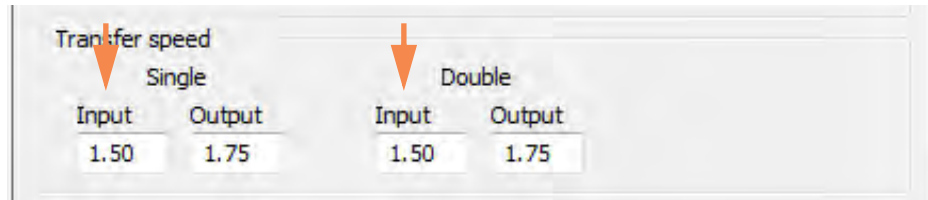
- a. From the Card Specifications window, make a note of the default back transfer temperature settings; see [Section B.3](#).
- b. Increase the appropriate (single or double side) back transfer temperature by 5.
- c. Click on the **OK** button.



- d. Print a test card; see [Section B.3](#).
- e. Examine the test card.
 - If there is noticeable improvement, continue increasing the back transfer temperature by 5, printing a test card, and examining the resulting card. Stop when the problem is corrected or there is no more improvement. If the problem is corrected, no more adjustment is required; otherwise go to [Step 2](#).
 - If there is no noticeable improvement, return the temperature to its default setting; and go to [Step 2](#).

Step 2. Decrease Transfer Input Speed

- a. From the Card Specifications window, make a note of the default transfer input speed settings.
- b. Decrease the appropriate (single or double) transfer input speed by 0.1.
- c. Click on the **OK** button.

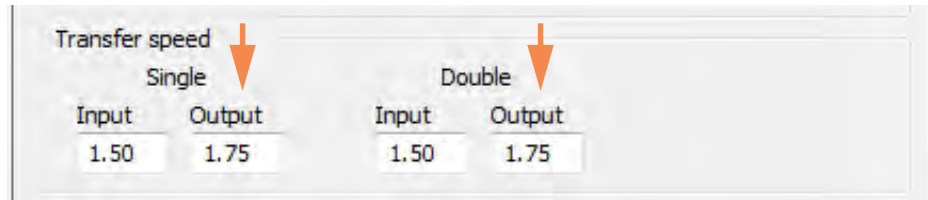


- d. Print a test card.
- e. Examine the test card.
 - If there is noticeable improvement, continue decreasing the transfer input speed by 0.1, printing a test card, and examining the resulting card. Stop when the problem is corrected or there is no more improvement. If the problem is corrected, no more adjustment is required; otherwise go to [Step 3](#).
 - If there is no noticeable improvement, return the speed to its default setting; and go to [Step 3](#).

B: Setting Custom Card Specifications

Step 3. Decrease Transfer Output Speed

- a. From the Card Specifications window, make a note of the default transfer output speed settings.
- b. Decrease the appropriate (single or double) transfer output speed by 0.1.
- c. Click on the **OK** button.

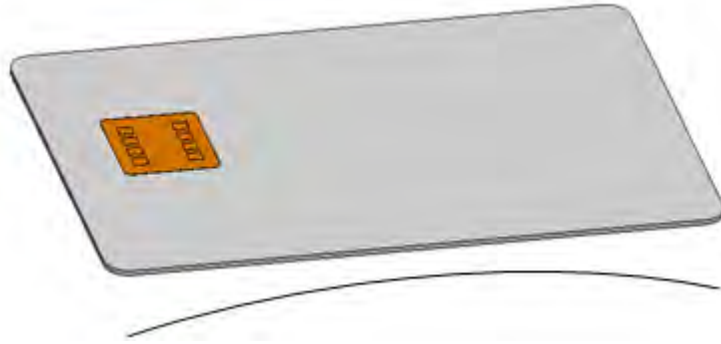


- d. Print a test card.
- e. Examine the test card.
 - If there is noticeable improvement, continue decreasing the transfer output speed by 0.1, printing a test card, and examining the resulting card. Stop when the problem is corrected or there is no more improvement. If the problem is corrected, no more adjustment is required. If the problem persists, contact Zebra Technical Support.
 - If there is no noticeable improvement, return the transfer output speed to its default setting; and contact Zebra Technical Support.

B.4.3 Warpage

Edges curled down

Warpage is usually caused by too much energy being transferred to the card; i.e., the temperatures are too hot or the speeds are too slow.



Step 1. Decrease Back Transfer Temperature:

- a. Go to the Card Specifications window; see [Section B.3](#).
- b. Make a note of the default back transfer temperature settings.
- c. Decrease the appropriate (single or double side) back transfer temperature by 5.
- d. Click on the **OK** button.



- e. Print a test card; see [Section B.3](#).
- f. Examine the test card.
 - If there is noticeable improvement, continue decreasing the back transfer temperature by 5, printing a test card, and examining the resulting card. Stop when the problem is corrected or there is no more improvement. If the problem is corrected, no more adjustment is required; otherwise go to [Step 2](#).
 - If there is no noticeable improvement, return the temperature to its default setting; and go to [Step 2](#).

B: Setting Custom Card Specifications

Step 2. Increase Front Transfer Temperature:

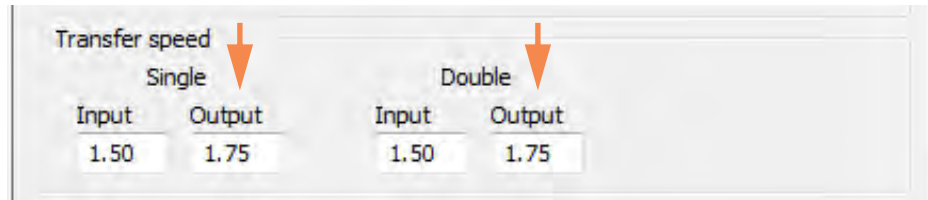
- a. From the Card Specifications window, make a note of the default front transfer temperature settings.
- b. Increase the appropriate (single or double side) front transfer temperature by 5.
- c. Click on the **OK** button.



- d. Print a test card.
- e. Examine the test card.
 - If there is noticeable improvement, continue increasing the front transfer temperature by 5, printing a test card, and examining the resulting card. Stop when the problem is corrected or there is no more improvement. If the problem is corrected, no more adjustment is required; otherwise go to [Step 3](#).
 - If there is no noticeable improvement, return the temperature to its default setting; and go to [Step 3](#).

Step 3. Increase Transfer Output Speed

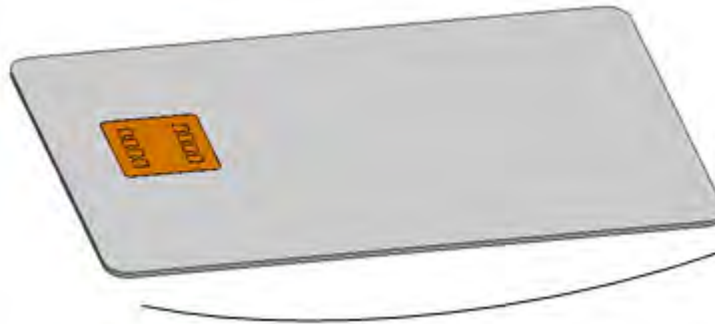
- a. From the Card Specifications window, make a note of the default transfer output speed settings.
- b. Increase the appropriate (single or double) transfer output speed by 0.1.
- c. Click on the **OK** button.



- d. Print a test card.
- e. Examine the test card.
 - If there is noticeable improvement, continue increasing the transfer output speed by 0.1, printing a test card, and examining the resulting card. Stop when the problem is corrected or there is no more improvement. If the problem is corrected, no more adjustment is required. If the problem persists, contact Zebra Technical Support.
 - If there is no noticeable improvement, return the transfer output speed to its default setting; and contact Zebra Technical Support.

Edges curled up

Warpage is usually caused by too much energy being transferred to the card, i.e. the temperatures are too hot or the speeds are too slow.



Step 1. Decrease Front Transfer Temperature:

- a. Go to the Card Specifications window; see [Section B.3](#).
- b. Make a note of the default front transfer temperature settings.
- c. Decrease the appropriate (single or double side) front transfer temperature by 5.
- d. Click on the **OK** button.



- e. Print a test card; see [Section B.3](#).
- f. Examine the test card.
 - If there is noticeable improvement, continue decreasing the front transfer temperature by 5, printing a test card, and examining the resulting card. Stop when the problem is corrected or there is no more improvement. If the problem is corrected, no more adjustment is required; otherwise go to [Step 2](#).
 - If there is no noticeable improvement, return the temperature to its default setting; and go to [Step 2](#).

Step 2. Increase Back Transfer Temperature:

- a. From the Card Specifications window, make a note of the default back transfer temperature settings.
- b. Increase the appropriate (single or double side) back transfer temperature by 5.
- c. Click on the **OK** button.

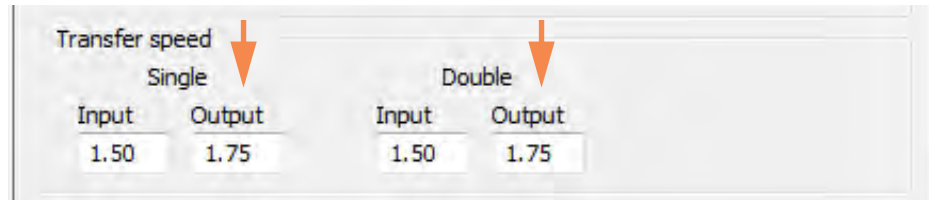


- d. Print a test card.
- e. Examine the test card.
 - If there is noticeable improvement, continue increasing the back transfer temperature by 5, printing a test card, and examining the resulting card. Stop when the problem is corrected or there is no more improvement. If the problem is corrected, no more adjustment is required; otherwise go to [Step 3](#).
 - If there is no noticeable improvement, return the temperature to its default setting; and go to [Step 3](#).

B: Setting Custom Card Specifications

Step 3. Increase Transfer Output Speed

- a. From the Card Specifications window, make a note of the default transfer output speed settings.
- b. Increase the appropriate (single or double) transfer output speed by 0.1.
- c. Click on the **OK** button.



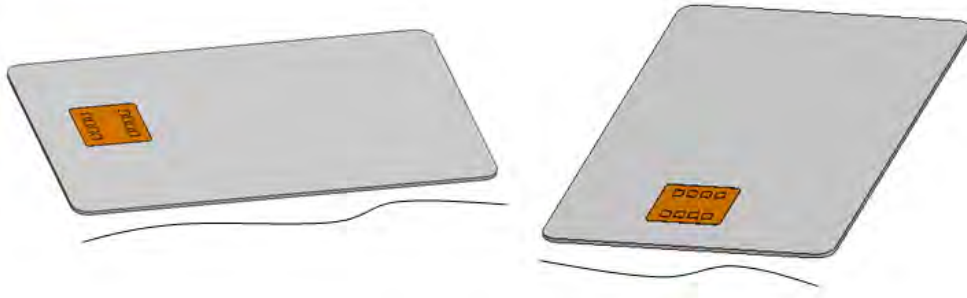
- d. Print a test card.
- e. Examine the test card.
 - If there is noticeable improvement, continue increasing the transfer output speed by 0.1, printing a test card, and examining the resulting card. Stop when the problem is corrected or there is no more improvement. If the problem is corrected, no more adjustment is required. If the problem persists, contact Zebra Technical Support.
 - If there is no noticeable improvement, return the transfer output speed to its default setting; and contact Zebra Technical Support.

Irregular Warpage



Note • Irregular warpage is more common with Smart Cards.

Warpage is usually caused by too much energy being transferred to the card, i.e. the temperatures are too hot or the speeds are too slow.



Step 1. Decrease Front Transfer Temperature:

- a. Go to the Card Specifications window; see [Section B.3](#).
- b. Make a note of the default front transfer temperature settings.
- c. Decrease the appropriate (single or double side) front transfer temperature by 5.
- d. Click on the **OK** button.

Transfer temperature(C)			
Single side printing	↓	Double side printing	↓
Front 170	Back 75	Front 170	Back 160

- e. Print a test card; see [Section B.3](#).
- f. Examine the test card.
 - If there is noticeable improvement, continue decreasing the front transfer temperature by 5, printing a test card, and examining the resulting card. Stop when the problem is corrected or there is no more improvement. If the problem is corrected, no more adjustment is required; otherwise go to [Step 2](#).
 - If there is no noticeable improvement, return the temperature to its default setting; and go to [Step 2](#).

B: Setting Custom Card Specifications

Step 2. Decrease Back Transfer Temperature:

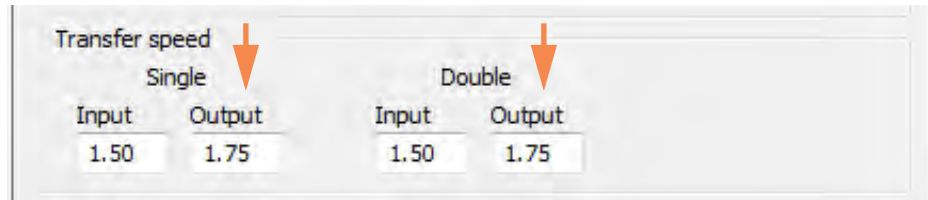
- a. Go to the Card Specifications window.
- b. Make a note of the default back transfer temperature settings.
- c. Decrease the appropriate (single or double side) back transfer temperature by 5.
- d. Click on the **OK** button.



- e. Print a test card.
- f. Examine the test card.
 - If there is noticeable improvement, continue decreasing the back transfer temperature by 5, printing a test card, and examining the resulting card. Stop when the problem is corrected or there is no more improvement. If the problem is corrected, no more adjustment is required; otherwise go to [Step 3](#).
 - If there is no noticeable improvement, return the temperature to its default setting; and go to [Step 3](#).

Step 3. Increase Transfer Output Speed

- a. From the Card Specifications window, make a note of the default transfer output speed settings.
- b. Increase the appropriate (single or double) transfer output speed by 0.1.
- c. Click on the **OK** button.

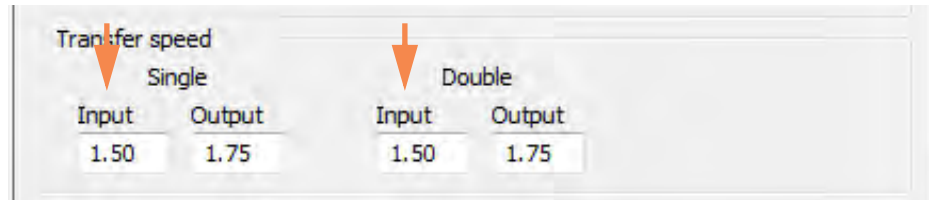


- d. Print a test card.
- e. Examine the test card.
 - If there is noticeable improvement, continue increasing the transfer output speed by 0.1, printing a test card, and examining the resulting card. Stop when the problem is corrected or there is no more improvement. If the problem is corrected, no more adjustment is required; otherwise go to [Step 4](#).
 - If there is no noticeable improvement, return the transfer output speed to its default setting; and go to [Step 4](#).

B: Setting Custom Card Specifications

Step 4. Increase Transfer Input Speed

- a. From the Card Specifications window, make a note of the default transfer input speed settings.
- b. Increase the appropriate (single or double) transfer input speed by 0.1.
- c. Click on the **OK** button.



- d. Print a test card.
- e. Examine the test card.
 - If there is noticeable improvement, continue increasing the transfer input speed by 0.1, printing a test card, and examining the resulting card. Stop when the problem is corrected or there is no more improvement. If the problem is corrected, no more adjustment is required. If the problem persists, contact Zebra Technical Support.
 - If there is no noticeable improvement, return the transfer input speed to its default setting; and contact Zebra Technical Support.

Appendix C

Network Operations



This section covers:

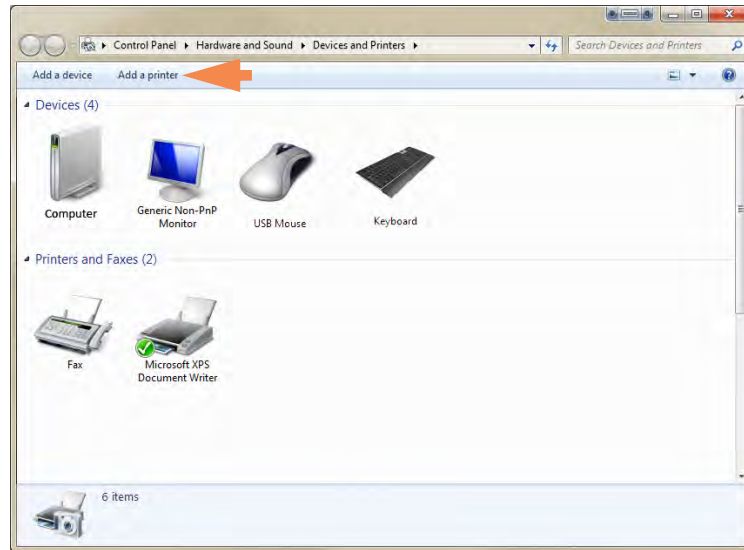
Adding a Network Printer	192
Printer Pooling	196
Printer Sharing	198

Adding a Network Printer

Use this procedure if you have already installed an ethernet printer on your system (refer to [Section 2](#)), and you want to install a second ethernet printer on the network via the Microsoft **Add Printer Wizard**.

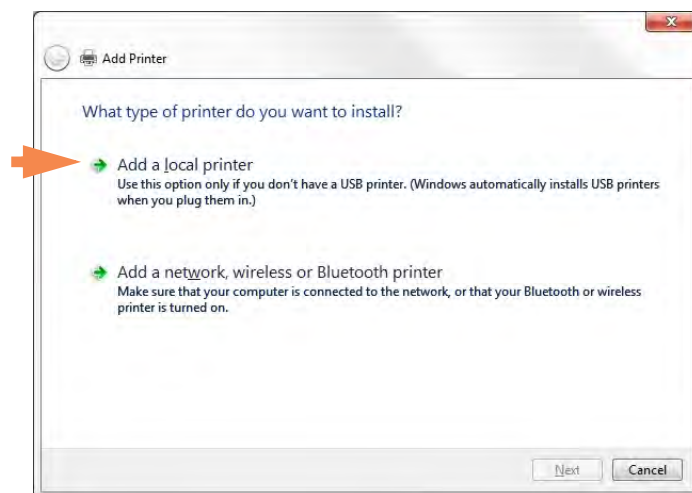
Step 1. Click on the **Start** button, then select *Devices and Printers*.

Step 2. Observe the **Devices and Printers** window.



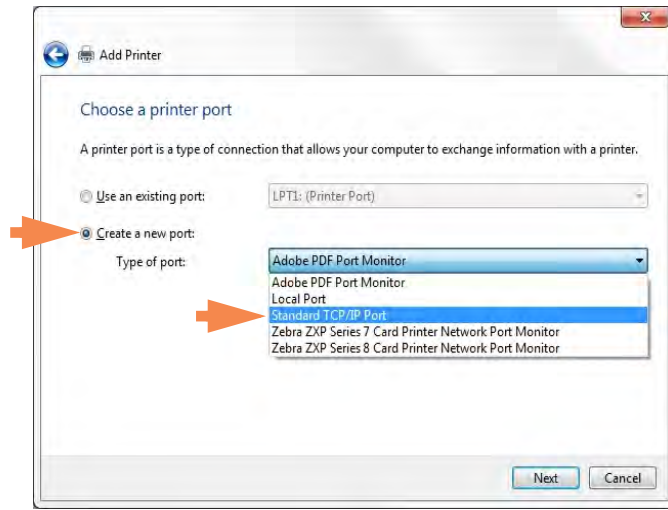
Step 3. Click on the *Add a printer* option in the Taskbar (arrow above).

Step 4. Observe the **What type of printer do you want to install** window.



Step 5. Select *Add a local printer* (arrow above), and click the **Next** button.

Step 6. Observe the **Choose a printer port** window.

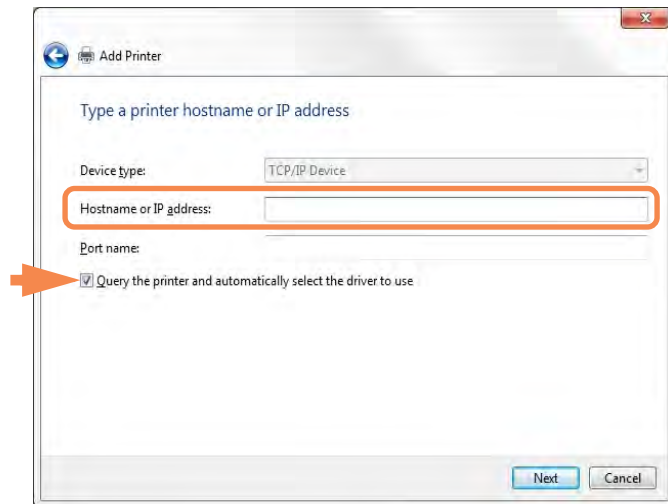


Step 7. Select the *Create a new port* radio button (1st arrow above).

Step 8. From the dropdown menu, select *Standard TCP/IP Port* (2nd arrow above).

Step 9. Click on the **Next** button.

Step 10. Observe the **Type a printer hostname or IP address** window.

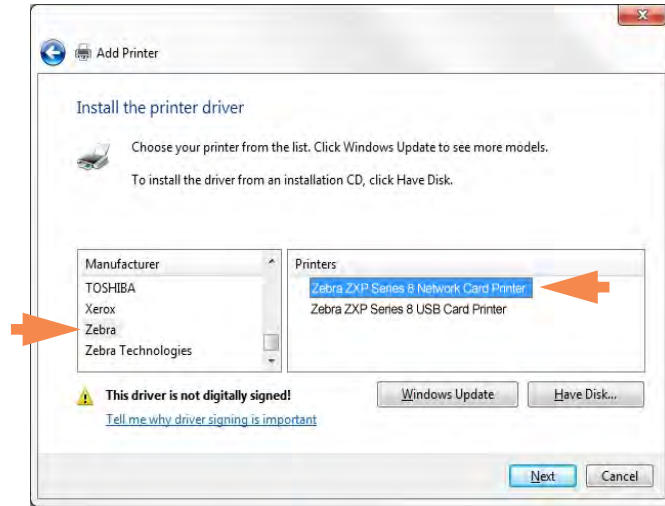


Step 11. Enter the IP address of your printer in the *Hostname or IP address* text box (circled above). Note that the Port name will automatically be filled in when you enter the IP Address. **Do not change the Port Name.**

Step 12. Ensure that the *Query the printer ...* checkbox is selected (arrow above).

Step 13. Click on the **Next** button.

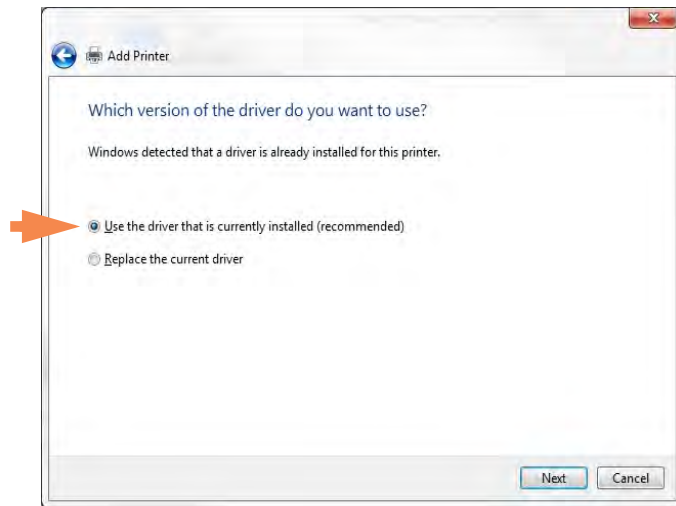
Step 14. Observe the **Install the printer driver** window.



Step 15. Select the Manufacturer and the Printer (arrows above).

Step 16. Click on the **Next** button.

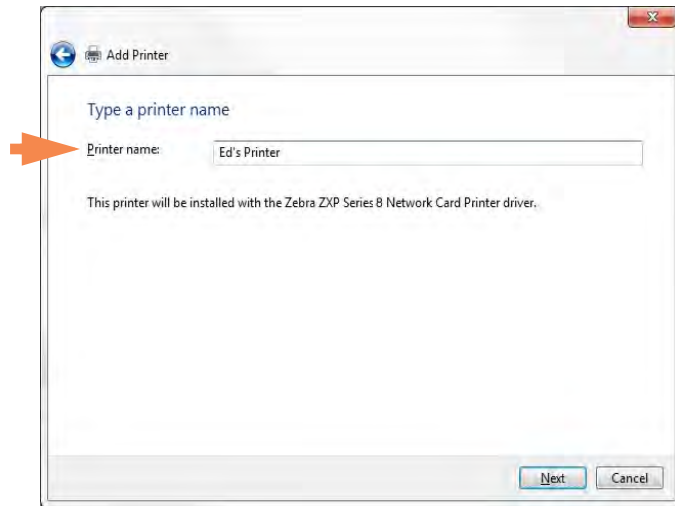
Step 17. Observe the **Which version of the driver do you want to use** window.



Step 18. Select the *Use the driver that is currently installed* radio button (arrow above).

Step 19. Click the **Next** button.

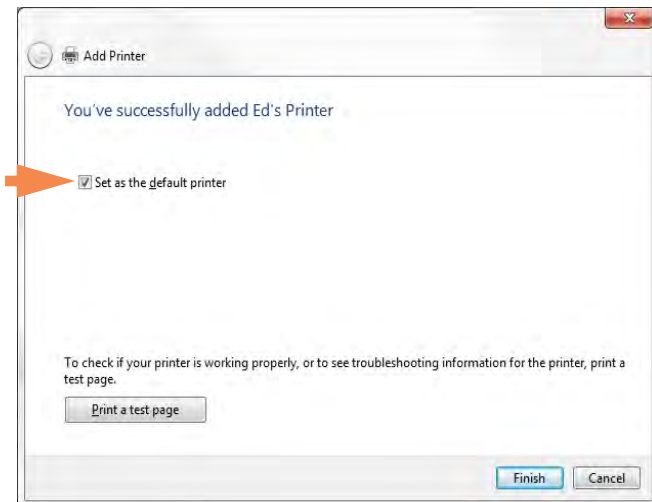
Step 20. Observe the **Type a printer name** window.



Step 21. Enter the printer name: use the default name, or add more information to indicate the printer location; e.g., Ed's Printer, Mike's Office, Room 33, etc.

Step 22. Click the **Next** button.

Step 23. Observe the **You've successfully added ...** window.



Step 24. If appropriate, select the *Set as the default printer* checkbox (arrow above).

Step 25. Click on the **Finish** button to complete the *Add Printer Wizard*.

You have successfully installed the network printer.

Printer Pooling

Setting Up Printer Pooling

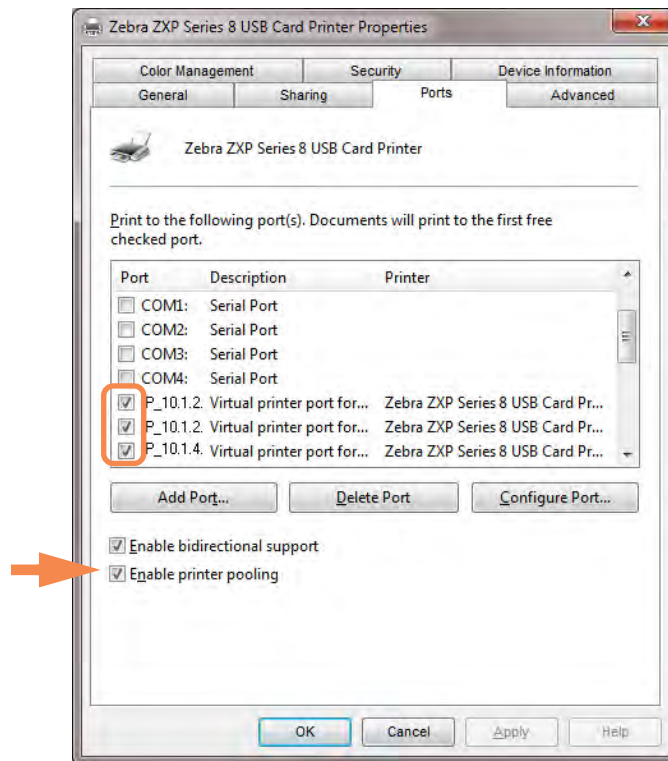
Printer Pooling is a standard feature of Windows, which lets you spread your printed output across a pool of several printers. In this example, we will install and setup the three network printers to be used for pooling.

Step 1. Before proceeding to pool the printers, test them individually, and be sure they are configured similarly. Specifically, check the following:

- Ribbon panel configuration (ribbon type, and what prints on which side of the card).
- Mag encoding configuration.
- Black extraction configuration (if applicable).

Step 2. Access the Ports Tab.

To access the Ports tab, select *Start > Devices and Printers*. Right click on the *Zebra ZXP Series 8 Card Printer* listing. Select *Properties > Ports*.



Step 3. Select the *Enable printer pooling* checkbox (arrow above).

Step 4. Select the three printers by clicking on the associated checkbox (circle above).

Using the Printer Pool



Note • Send print jobs to the printer pool, **not** to an individual printer.

When the first printer has taken as many jobs as it can handle (that being two jobs - one to be printed immediately, the other waiting), the following jobs “spill over” to the second printer, and then to the third printer.

Note that if you are only printing two jobs, they would both go to the first printer. Pooling is a spill-over methodology. It does not balance printer usage.

Once the pool has been set up, maintenance and configuration changes should be done through the menus for each individual printer, **not** through the pool (which can produce undesirable results).



Important • The effect of any maintenance and/or changes can (and should) be tested by sending print jobs **separately** to each printer, not to the pool.

Printer Sharing

In the printer sharing configurations, the following Microsoft Windows host and client combinations will be supported in USB and network (Ethernet) connectivity. Note that Printer Pooling Sharing is not supported.

Supported Windows Drivers Microsoft OS	One-to-One	One-to-Many	Many-to-One	Many-to-Many	Printer Pooling
	1 Printer - 1 Host	One Host - Many Printers	Multiple Hosts (Drivers) - 1 Printer	Multiple Hosts (Drivers) - Many Printers	
Windows 8 32-bit	Yes	Yes	Yes	Yes	Yes
Windows 8 64-bit	Yes	Yes	Yes	Yes	Yes
Win Server 2012 ¹	Yes	Yes	Yes	Yes	Yes
Server 2008 64-bit	Yes	Yes	Yes	Yes	Yes
Server 2008 32-bit	Yes	Yes	Yes	Yes	Yes
Server 2003	Yes	Yes	Yes	Yes	Yes
Windows 7 64-bit	Yes	Yes	Yes	Yes	Yes
Windows 7 32-bit	Yes	Yes	Yes	Yes	Yes
Vista 64-bit ²	Yes	No	No	No	No
Vista 32-bit ²	Yes	No	No	No	No
Windows XP	Yes	Yes	Yes	Yes	Yes

¹ No support for Windows Server 2012 Virtual Datacenter, Support for Standard, Essentials, and Foundation editions.

² Need to qualify Service Pack support

Appendix D

Wireless Network Operations



Introduction

This Appendix provides information about installing and connecting a Zebra ZXP Series 8 Card Printer (with the Wireless Option) to a wireless network.

Installing the Printer



Caution • Only use the antenna that is shipped with the printer to ensure regulatory compliance for the transmit power.

A printer with the wireless option ships with the wireless radio pre-installed in the printer. An antenna is shipped in the box with the printer. The antenna must be connected to the rear of the printer before using the wireless interface. Lightly push the antenna onto the printer antenna connector, and rotate the knurled antenna connector until finger tight.

The antenna orientation is important to maximize the wireless signal strength. Inspect the access point antenna(s), and try to put the printer antenna in a similar orientation. After connecting the printer to the wireless network, the antenna orientation can be adjusted to maximize signal strength.

As the distance between the printer and the access point increases, the signal strength decreases. If there are intervening walls, unpredictable signal strength attenuation will occur. Decreasing signal strength results in automatic data rate reduction. At the longest distance, network traffic can become very slow.

Printer location is important to ensure that adequate signal strength is achieved. Follow these suggestions:

- Position the printer as close to the access point that it will connect to as possible.
- If possible, orient the printer such that there is a clear line of sight between the printer antenna and the access point antenna.
- Locate the printer such that there are no intervening walls in the line of sight between the antennas.
- Do not put the printer in a cabinet, especially not a metal one.
- Do not locate large metal objects close to the printer antenna.
- Do not locate the printer close to devices that emit RF radiation in the 2.4 GHz range; such devices might include: microwave ovens, cordless phones, wireless surveillance cameras, baby monitors, wireless video transmitter and Bluetooth devices, etc.

Configuring the Printer

To configure the printer for wireless printing, refer to the *Zebra ZXP Series 8 Card Printer Wireless Reference Manual, P/N P1035089* or *Service Manual, P/N 1013376*.

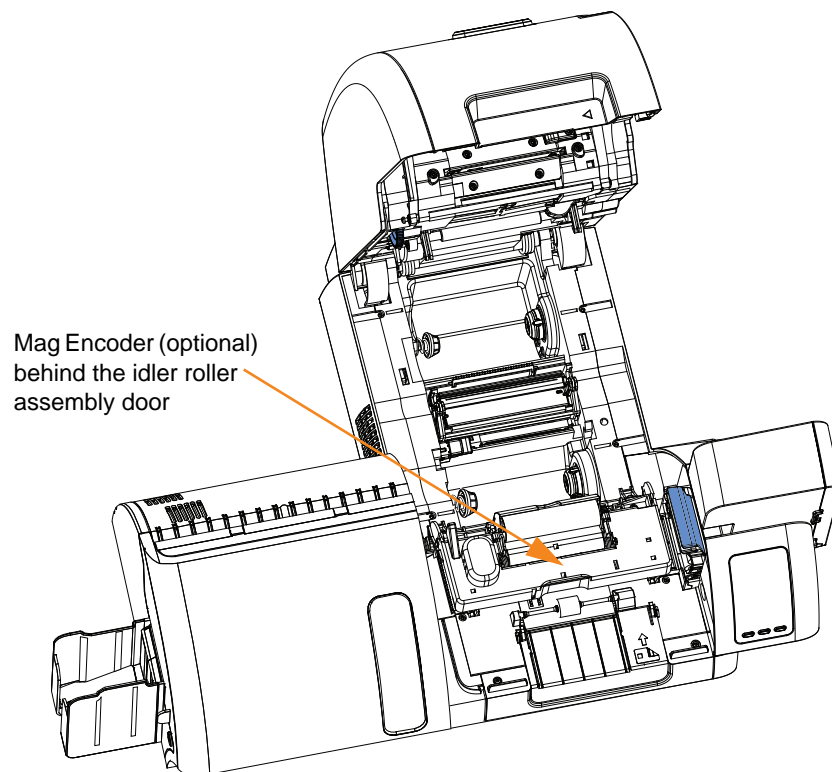
Appendix E

Magnetic Card Encoder



Introduction

This Appendix includes operation and maintenance requirements for Printers with the optional magnetic card stripe encoder.



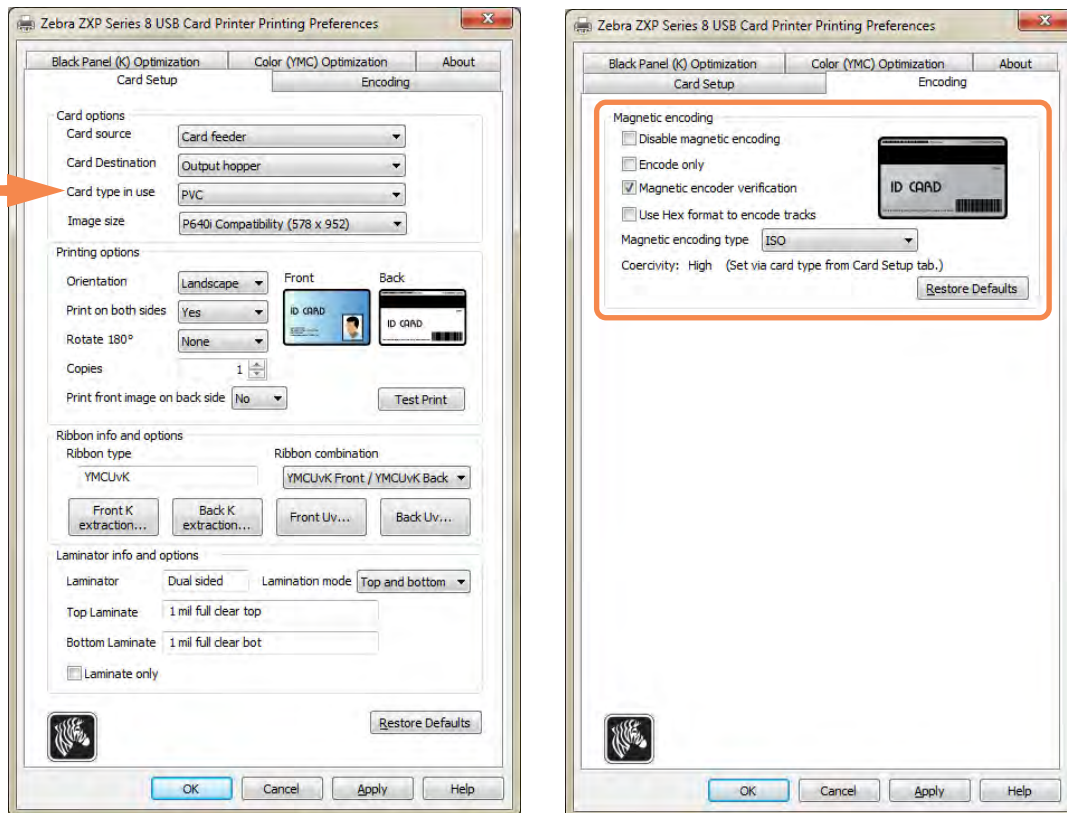
The magnetic encoder can be set for either high or low coercivity, which must match the cards being used. Use the printer driver to change the encoder setting.

Driver Setting

The **Card Setup** tab allows the user to specify the Magnetic Encoder Card Type in use. Based on your selection, the printer automatically adjusts various printer properties for optimum performance.

The **Encoding** tab allows the user to set various magnetic encoding options.

To access the Card Setup Tab or the Encoding Tab, select *Start > Devices and Printers*. Right click on the *Zebra ZXP Series 8 Card Printer* listing; and select the desired tab.



Use a YMCKI or YMCKKI ribbon. This will allow you to select an inhibit panel area for non-printing areas of your card, in this case, the mag stripe); see *Inhibit Option* on page 93 for details.

Before doing any magnetic encoding, set the following encoding properties:

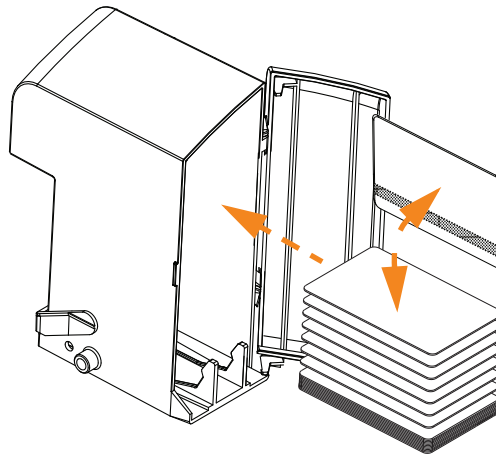
1. Select the card type (arrow above); see *Card Setup Tab* on page 79.
2. Select the magnetic encoding type (circled above); see *Encoding Tab* on page 95. Encoding types supported are ISO, AAMVA, CUSTOM, BINARY, and JIS-II.
3. Click the **Apply** button.
4. Click the **OK** button.

Media Loading Orientation



Note • ONLY USE cards that comply with ISO 7810 and 7811 standards for magnetic stripe cards. The magnetic stripe must be flush to the surface of the card to work properly. Never use cards which have taped-on magnetic stripes.

Place the cards in the Input Hopper in the correct orientation as shown (with the magnetic stripe down and facing to the rear). Ensure that the cards are seated properly the hopper.



Magnetic Encoder Cleaning

The Magnetic Encoder is cleaned as part of the printer cleaning process; see [Section 6](#). If the frequency of encoding errors increases, the head may need additional cleaning. To clean, only use foam-tipped swabs.



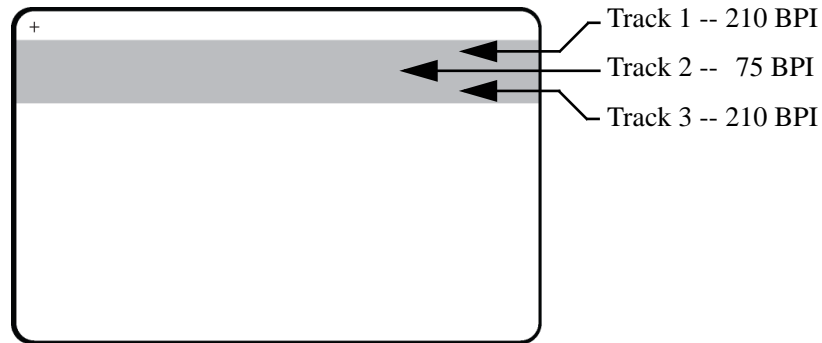
Caution • Never use a sharp object or any abrasive to scrape deposits from the Magnetic Encoder. Permanent damage to the Magnetic Head will result.

1. Open the Door.
2. Open the idler roller assembly door.
3. Bend the Cleaning Swab to release the cleaning fluid.
4. Clean the Magnetic Encoder by moving Cleaning Swab tip side-to-side across the head elements. To re-order Cleaning Swabs, see the Media List on the **User Documentation and Drivers CD** supplied with this printer.
5. Close the idler roller assembly door.
6. Close the Door.

Magnetic Encoding Type

ISO (Default)

The encoder reads and writes standard ISO track data formats in standard ISO track locations. The following shows the three standard ISO tracks.



Each track can be encoded and decoded with ASCII characters in the standard default ISO data formats:

Track	Density (bits per inch)	Bits per character	Character parity	Length (characters)	LRC parity	Start sentinel	End sentinel	Start sentinel offset inches (mm)
1	210	7	Odd	76	Even	%	?	0.293" (7.4)
2	75	5	Odd	37	Even	;	?	0.293" (7.4)
3	210	5	Odd	104	Even	;	?	0.293" (7.4)

The magnetic encoder can read or encode up to 3 tracks of digital information onto CR-80 cards incorporating a HiCo or LoCo magnetic stripe in the ISO 7811 format.

Encoding for the three tracks uses the ISO 7811 format.

- Track 1 uses 210 BPI (bits per inch) encoding in the International Air Transport Association (IATA) format of 79 alphanumeric characters, at 7 bits per character.
- Track 2 uses 75 BPI encoding to store 40 numeric characters at 5 bits per character in American Banking Association (ABA) format.
- Track 3 uses 210 BPI encoding of 107 numeric characters at 5 bits per character in THRIFT format.

The ISO data formats include a preamble (all zeros), a start character, data (7-bit or 5-bit as specified by ISO), a stop character, and a longitudinal redundancy check (LRC) character. The 7-bit data format has 6 bits of encoded data and a parity bit. The 5-bit data format has 4 bits of encoded data and a parity bit.

The ISO data formats include a data field separator (or delimiter) that allows parsing of the encoded track data. An example of separate data fields would be the ABA data format (Track 2) that includes a Primary Account Number (PAN) field and an account information field (for expiration date, country code, etc.).

AAMVA

The data stored on magnetic stripes on American driver's licenses is specified by the American Association of Motor Vehicle Administrators (AAMVA).

Alpha-numeric characters on Tracks 1 and 3, numerals only on Track 2.

Track	Density (bits per inch)	Bits per character	Character parity	Length (characters)	LRC parity	Start sentinel	End sentinel	Start sentinel offset inches (mm)
1	210	7	Odd	79	Even	%	?	0.293" (7.4)
2	75	5	Odd	37	Even	;	?	0.293" (7.4)
3	210	7	Odd	79	Even	%	?	0.293" (7.4)

CUSTOM

If a custom format is desired, the ISO standard format may be used as a starting point. The standard format can then be modified by assigning different values to any or all of the **density**, **character**, and **sentinel** attributes. (If any of these attributes is missing, its corresponding value in the standard ISO format will be substituted.)

BINARY

The binary option allows the user to specify directly the value for each bit on the mag stripe.

In this “direct binary” mode, it is the host’s responsibility to fully populate the magnetic stripe; i.e., the hex data provided by the host must include the leading zeroes, start sentinel, data, end sentinel, LRC, and trailing zeroes. Note that the magnetic stripe is encoded from the right-hand end as viewed from the “stripe” side, with the stripe uppermost. The least significant bit of the data is encoded first.

A sufficient number of leading zeroes should be prepended to offset the start sentinel by approximately 0.3" (7.5 mm) from the right-hand end, as in the ISO format. Care should be taken to ensure that the payload data does not exceed the capacity of the tracks at their specified recording densities. (In the **binary** mode, out-of-range data is not recorded, and no error condition will result.)

A CR-80 size card has a nominal capacity of 252 bits per track at 75 BPI, and 708 bits at 210 BPI. These capacities equate approximately to 31 hex bytes (248 binary bits) and 88 hex bytes respectively.

JIS-II

JIS II data format is the Japanese Industrial Standard for magnetic stripe encoding. JIS-II data format is used to encode a single track on a standard ISO magnetic stripe card.

The JIS II Data Format uses a 7-bit, 128-character set; i.e., the 7-bit ASCII Table with some entries representing Japanese characters. The JIS II track is wide, covering ISO Tracks 1 and 2.

Encoding is **210 bpi**, character size is **8**, parity is **even**, the start sentinel is **%**, the start sentinel offset (x0.001”) is **197**, and the end sentinel is **?**.

Encoder Macro Commands

With ZXP Series 8 printers, we provide support for pass-through mag encoding commands.

The application developer or user can use a preamble or Macro to indicate to the driver that the data following the Preamble or Macro is to be mag encoded.

The user can have encoding and printing data on the same card, and the driver will filter out the encoding data from the printing data. The user does not have to know job control syntax or ZMotif commands to send mag encoding commands to the printer.

Supported Macro commands are:

1. C01<Track1 Data>
C02<Track2 Data>
C03<Track3 Data>
2. \${1<Track1 data>}\$
\${2<Track2 data>}\$
\${3<Track3 data>}\$
3. ~1=<Track1 data>
~2=<Track2 data>
~3=<Track3 data>

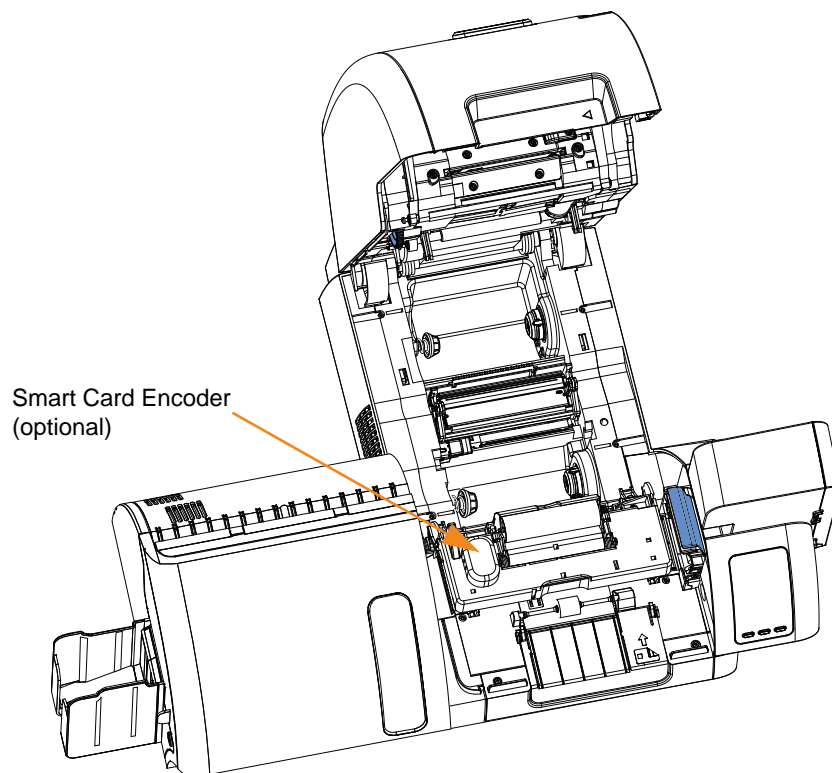
APPENDIX F

Smart Card Options



Introduction

This Appendix contains information on the additional operations of a Printer equipped with one or more of the available Smart Card options.



Smart Cards can have a built-in microcomputer and/or memory to store fingerprints, voice recognition patterns, medical records, and other such data. All other printer operations remain the same as the standard models.

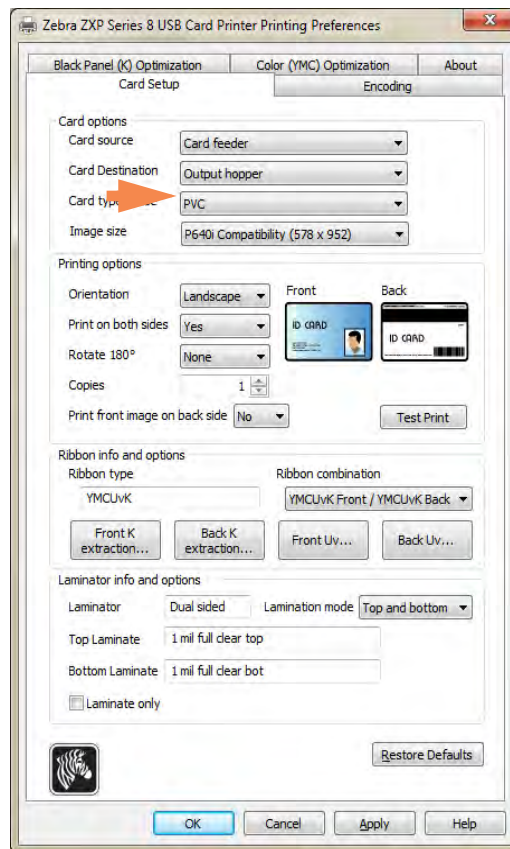
Encoding and Reading Smart Cards

Encoding data onto Smart Cards and reading the data previously encoded on them is totally under control of the application software; no operator action is required.

Driver Setting

The **Card Setup** tab allows the user to specify the Smart Card Type in use. Based on your selection, the printer automatically adjusts various printer properties for optimum printer performance.

To access the Card Setup Tab, select *Start > Devices and Printers*. Right click on the *Zebra ZXP Series 8 Card Printer* listing; and select *Printing Preferences > Card Setup*.



Before doing any smartcard encoding, set the following encoding properties:

1. From the dropdown menu, select the card type (arrow above); see *Card Setup Tab* on page 79.
2. Click the **Apply** button.
3. Click the **OK** button.

Contact Smart Cards

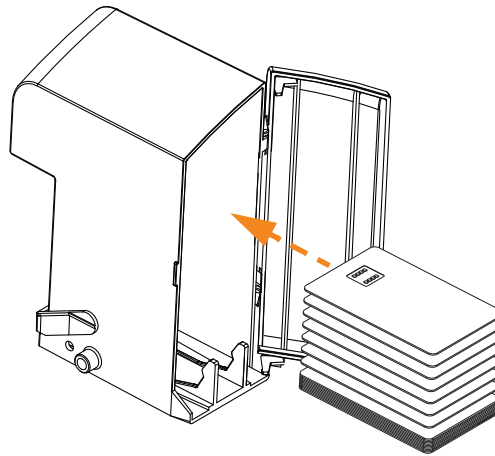
Contact Smart Cards have a pad of contacts on the surface of the card that connect to the circuitry embedded into the card.

The printer responds to commands that position the card at the contact location, where the printer connects to the contacts on the Smart Card. Data to be encoded onto the Smart Card, and data read from the Smart Card, can interface via a connector on the printer's rear panel (*Contact Station*), or encoding/decoding can be performed by logic on the printer's Main PCBA (*Contact Encoder*).

All other printer operations remain the same.

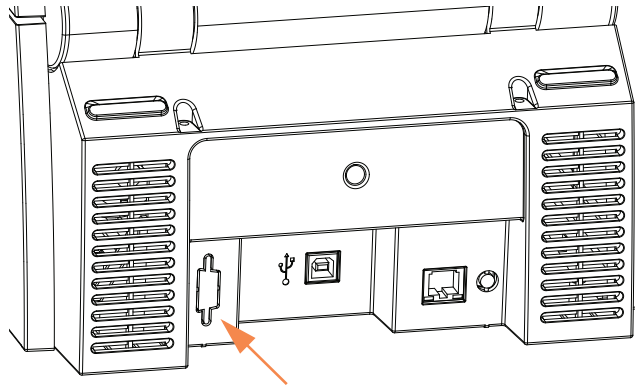
Media Loading Orientation for Contact Smart Cards

Place the cards in the Input Hopper in the correct orientation as shown (with the gold-plated Smart Card contacts at the top surface of the card and facing to the left). Ensure that the cards are seated properly the hopper.



Contact Station Smart Card Interface

When a command to the printer interface sends a card to the Smart Card Contact Station, the printer connects the Smart Card Contact Station to the female DB-9 connector on the rear of the printer.



DB-9 Connector location for Smart Card Contact Station

An attached external Smart Card Programmer can be used to program Smart Card chips. The following table shows the Smart Card Contact Points.

Pin	Smart Card Contact Points	DB-9	Smart Card Contact Points
1	C1 (VCC)	6	C6 (Vpp)
2	C2 (Reset)	7	C7 (I/O)
3	C3 (Clock)	8	C8 (RFU)
4	C4 (RFU)	9	(GND when chip is at station)
5	C5 (GND)		

Contactless Smart Cards

Rather than using a contact pad, Contactless Smart Cards use various short-range radio technologies to “connect” to the printer. The printer moves the card to an antenna location on the card path, and the encoding or decoding occurs. All other printer operations remain the same.

Media Loading Orientation for Contactless Smart Cards

For Contactless Smart Cards, orientation is not a consideration.

Printing on Contactless Smart Cards

With reverse transfer printing technology, there are no restrictions when designing material to be printed on Contactless Smart Cards.



Appendix G



Packing the Printer for Shipment

Introduction

If the printer is to be shipped, it is important to use the original packing and shipping material to prevent damage to the Printer.

If the original material is lost, a replacement Shipping Kit can be ordered from Zebra; see the Spare Part Kits listing in the Service Manual or check the *Partner Zone* on <http://zebra.com>

Procedure



Note • The specifics of the shipment and the printer's condition may influence which of the following steps are followed; common sense should prevail.

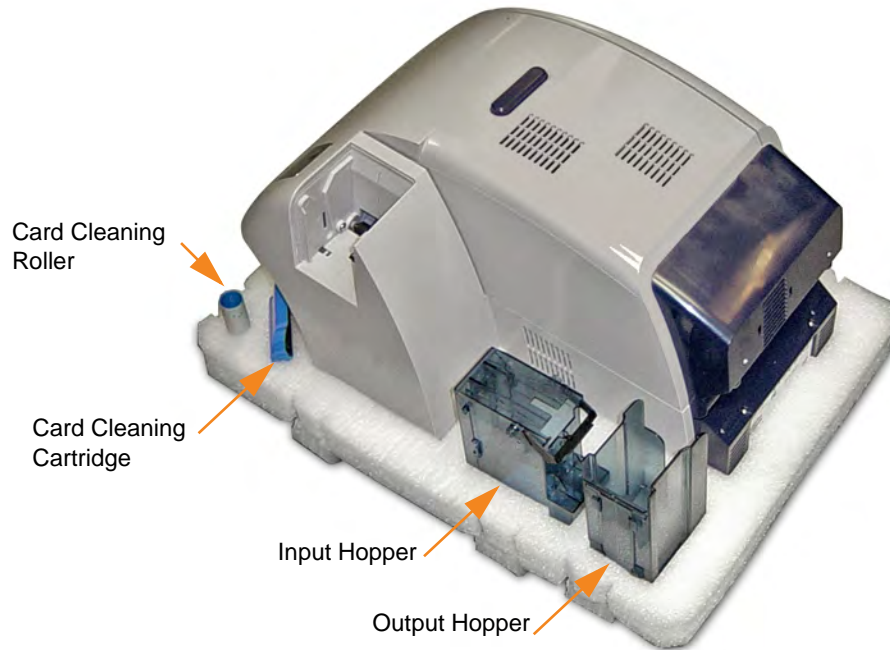
- Step 1.** Remove any cards from the Input and Output Hoppers.
- Step 2.** If the printer still has power applied and is turned on and is still connected to the host computer, set the printer's power switch (on the back of the printer) to the OFF (○) position; and disconnect the interface and power cables to the printer.
- Step 3.** Open the printer Door.
- Step 4.** Remove the Print Ribbon and Transfer Film. (If you wish to save the print ribbon and film for future use, you may want to put them in a plastic bag for storage.)
- Step 5.** Remove the Card Cleaning Cartridge and Card Cleaning Roller, and place them in the foam insert.
- Step 6.** Close the printer Door.

G: Packing the Printer for Shipment

Step 7. Remove the Input and Output Hopper, and place them in the foam insert.



Note • In the figure below, the printer and accessories are shown in the bottom foam insert, out of the shipping carton for clarity.



Step 8. Place the Printer in its protective plastic bag.

Step 9. Place the lower foam insert in the Shipping Carton.

Step 10. Use both hands to carefully place the Printer into the recess in the lower foam insert.

Step 11. Place the upper foam insert onto the Printer, and gently press it down so it makes a snug fit on the Printer -- the top of the upper foam insert should be even with the upper edge of the Shipping Carton.

Step 12. Close the Shipping Carton.

Step 13. Tape the Shipping Carton securely.

Appendix H



Packing the Printer with Laminator for Shipment

Introduction

If the printer is to be shipped, it is important to use the original packing and shipping material to prevent damage to the Printer.

If the original material is lost, a replacement Shipping Kit can be ordered from Zebra; see the Spare Part Kits listing in the Service Manual, or check the *Partner Zone* at www.zebra.com.

Procedure



Note • The specifics of the shipment and the printer's condition may influence which of the following steps are followed; common sense should prevail.

- Step 1.** Remove any cards from the Input and Output Hoppers.
- Step 2.** If the unit still has power applied and is turned on and is still connected to the host computer, set the unit's power switch (on the back of the printer part of the unit) to the OFF (○) position; and disconnect the interface and power cables.
- Step 3.** Open the printer door, and remove the print ribbon and transfer film. If you wish to save the print ribbon and transfer film for future use, we suggest you place them in sealable plastic bags for storage so they do not dry out or get dirty.
- Step 4.** Remove the cleaning cartridge and cleaning roller, and place them in the cutouts in the lower foam insert.

Step 5. Close the printer door.

Step 6. Open the laminator door.

Step 7. Remove the laminate cassette(s). You can leave unused laminate in the cassette(s).

Step 8. Close the laminator door.

Step 9. Place the lower foam insert in the carton.

Step 10. Remove the input hopper and the output hopper, and set them in the cutouts of the lower foam insert. Tape the hoppers securely in place.

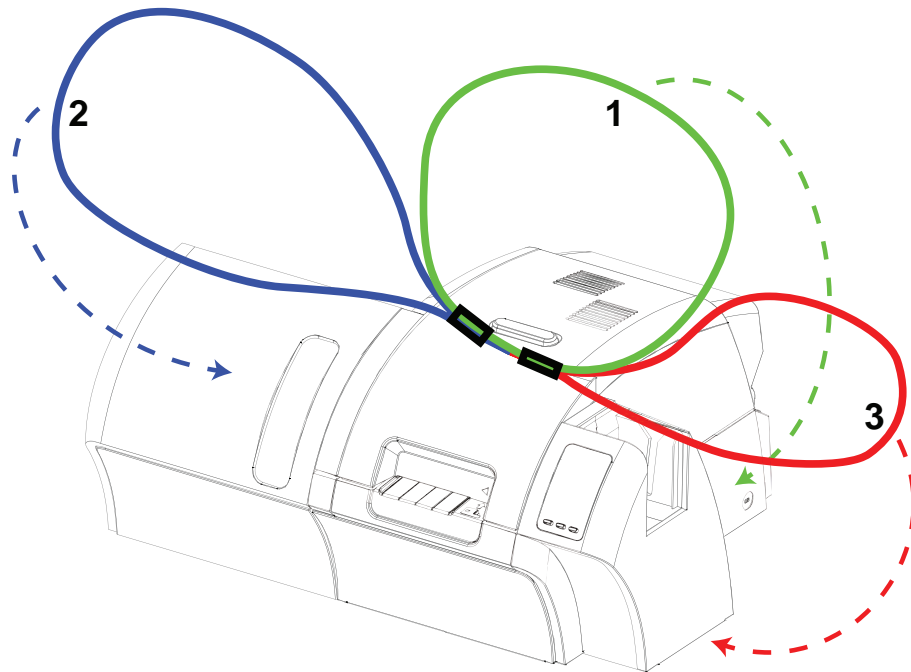
Step 11. Place the unit in its protective plastic bag.



Note • In the following two illustrations, the protective plastic bag has been omitted for clarity. Note that the strap loops have been colored (blue, green, and red) for clarity.

Step 12. Attach the carrying strap around the unit in the following order:

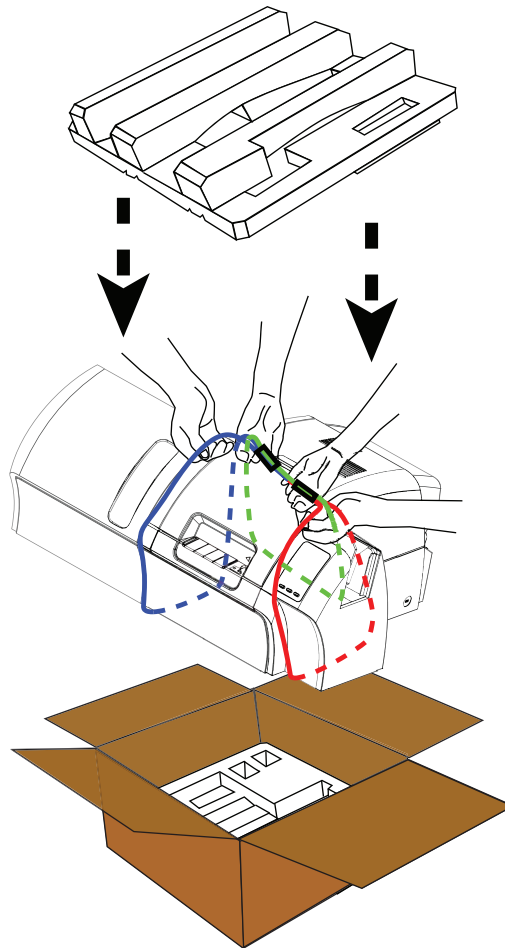
- a. Place **loop #1** around the rear of the unit.
- b. Place **loop #2** around the laminator side of the unit.
- c. Place **loop #3** around the Card Input and OCP Assembly on the printer side of the unit.





Caution • The Printer weighs approximately 44 lbs (20 kg); use two people to lower it into the shipping carton.

Step 13. With two people holding the carrying strap, carefully lift and place the unit into the recess in the lower foam insert.



Step 14. Place the two corner blocks on top of the right front and left front corners of the lower foam insert.

Step 15. Place the upper foam insert onto the unit, and gently press it down so it makes a snug fit on the unit -- the top of the upper foam insert should be even with the upper edge of the carton.

Step 16. Place the laminate cassette(s) in the cutout(s) of the upper foam insert. The interface and power cables can be placed next to a rib in the upper foam insert.

Step 17. Close the shipping carton, and tape it securely.



APPENDIX I



Worldwide Support

For Technical Support or Repair Services, contact the appropriate facility listed below.

North America and Latin America - Technical Support

T: +1 877 ASK ZEBRA (877 275 9327)
+1 847 913 2259
E: ts1@zebra.com

North America and Latin America - Repair Services

Before returning any equipment to Zebra Technologies Corporation for in-warranty or out-of-warranty repair, contact Repair Services for a Repair Order (RO) number. Mark the RO number clearly on the outside of the box. Ship the equipment, freight prepaid, to the address listed below:

Zebra Technologies Repair Services
333 Corporate Woods Parkway
Vernon Hills, IL 60061

webform: www.zebra.com/repair
T: +1 877 ASK ZEBRA (877 275 9327)
E: repair@zebra.com

Europe, Middle East, and Africa - Technical Support

Language	Phone	Email
Arabic	+971 (0)46058220	zebraCareUAE@zebra.com
Dutch	+31 (0)33 450 50 48	ZebraCareBNL@zebra.com
English (UK)	+44 (0)1628 556 225	zebraCareUK@zebra.com
(Sweden)	+46 (0)8 594 709 88	zebraCareUK@zebra.com
(South Africa)	+27 (0)11 201 7712 / 0860 393272	zebracareSA@zebra.com
French	+33 (0) 1 53 48 12 74	zebraCareFR@zebra.com
German	+49 (0) 2159 676 870	zebraCareDE@zebra.com
Hebrew	+97 236 498 140	ZebraCareIL@zebra.com
Italian	+39 0 2 575 06388	ZebraCareIT@zebra.com
Polish	+48 223 801 980	zebraCarePL@zebra.com
Russian	+7 495 739 5993	ZebraCareRU@zebra.com
Spanish	+34 (0) 917 992 896	zebraCareES@zebra.com
Turkish	+90 212 314 1010	zebraCareTR@zebra.com

For further assistance, contact:

Zebra Technologies Card Printer Solutions
 Dukess Meadow
 Millboard Road, Bourne End
 Buckinghamshire SL8 5XF, UK

T: +44 (0) 1628 556 025
 F: +44 (0) 1628 556 001
 E: cardts@zebra.com

Europe, Middle East, and Africa - Repair Services

Before returning any equipment to Zebra Technologies Corporation for in-warranty or out-of-warranty repair, contact your supplier for a Return Materials Authorization (RMA) number, or contact one of the following repair centers for support and instructions:

Type of repair and location	Phone	Email
Depot Repair in Germany, Austria, Switzerland	+49 (0) 2159 676 870	zebracareDE@zebra.com
Depot Repair in France	+33 (0) 1 53 48 12 74	zebracareFR@zebra.com
Depot and On-Site Repair in UK and Ireland	+44 (0) 1628 556 225	zebracareUK@zebra.com
Depot Repair in South Africa	+27 (0) 11 201 7777	-
Depot Repair in Middle East	+971 (0) 46058220	support_dxb@emitac.ae

For further assistance, contact:

For assistance anywhere in the EMEA, contact After Sales Customer Services at:

T: + 44 (0) 177 2 69 3069
E: ukrma@zebra.com

Asia Pacific - Technical Support

Zebra Technologies Asia Pacific Pte. Ltd.
120 Robinson Road
#06-01 Parakou Building
Singapore 068913

T: +65 6858 0722
F: +65 6885 0838
E: tsasiapacific@zebra.com

Asia Pacific - Repair Services

Before returning any equipment to Zebra Technologies Corporation for in-warranty or out-of-warranty repair, contact Repair Services for a Return Materials Authorization (RMA) number. Repack the equipment in the original packing material, and mark the RMA number clearly on the outside. Ship the equipment, freight prepaid, to either address listed below:

Zebra Technologies Asia Pacific Pte. Ltd.
No.5 Changi North Way Level 3
Singapore 498771
Agility Building

T: +65 6546 2670 ext 3203 and 3204
F: +65 6546 5328
E: APACRepair@zebra.com

Zebra Website

<http://www.zebra.com>

km.zebra.com (Knowledge Base)