# ZEBRA ZXP SERIES 7

# User's Manual

# Contents

# 1

# Introduction

## Description

This Manual provides detailed information on the installation and operation of Zebra ZXP Series 7 Card Printers manufactured by Zebra Technologies Corporation.

The ZXP Series 7 offers the choice of single- or dual-sided direct to card printers with a range of options that can be installed in the factory or added later so the printer can be scaled as business needs grow or demands change.

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. A variety of Laminating Films are available for specific uses; for details, go to http://www.zebra.com/supplies.

References to "the printer" in this document apply to either the single-sided or the dual-sided Printer.; similarly, references to "the laminator" apply to either the single-sided or the dual- sided Laminator.

# Printer Components

## Printer only



Print Cover Release Button

Options Cover

Feeder Cartridge

Operator Control Panel

Output Hopper

Manual Feed Slot

Reject Bin

Ribbon Drawer

## Printer with Laminator



Laminator Cover Release Button

Print Cover Release Button

Options Cover

Feeder Cartridge

Operator Control Panel

Output Hopper

Manual Feed Slot

Laminator Bottom Cover

Reject Bin

Ribbon Drawer

# 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 •** Warns you of the potential for electrostatic discharge damage to parts and assemblies.

**Electric Shock •** 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.

ZXP Series 7 printers are designed to work only with Zebra True Colours® Ribbons and Zebra True Secure™ Laminates.

# 2

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# 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

## Printer <u>without</u> 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.

**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:
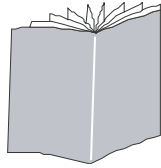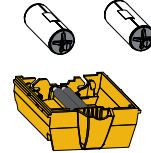


Quick Start Guide     CD-ROM with InstallWizard     Dual Cleaning Cartridge
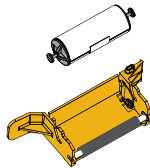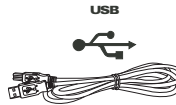


Manual Feed
Cleaning Cassette     USB Cable     Power Cable
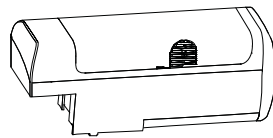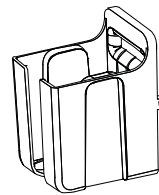


Feeder Cartridge     Output Hopper

If any items are missing, please contact your supplier.

⚠️ **Caution •** The Printer weighs approximately 12.2 kg (26.9 lbs). Use two people to lift it out of the shipping carton.

**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:

ℹ️ **Important •** When moving the printer from storage (23º F/-5º C to 158º F/70º C) to the operating area (59º F/15º C to 95º F/35º C), allow time to acclimate prior to operation.

- A reasonably dust-free and dirt-free environment.
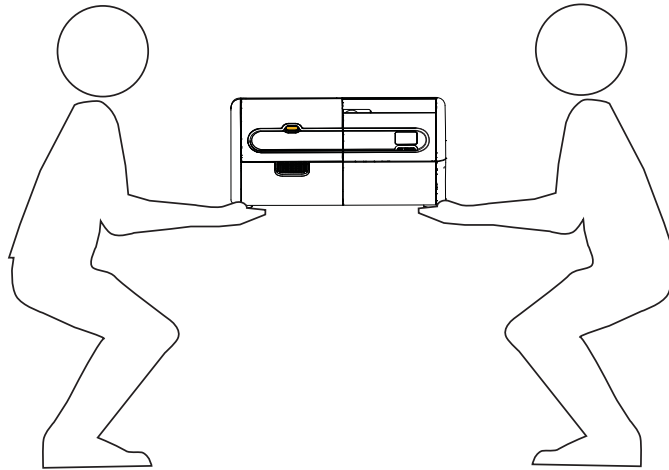
- Flat surface at least 30 in (762 mm) x 12 in (305 mm) that can support the weight of the Printer; additional space preferred. Allow a 4-inch clearance, minimum, on all sides.

- 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.

- Auto-switching single-phase AC Power, 90V~264V AC, 47-63Hz (50-60Hz nominal); see *Electrical specifications* on page 145 for power consumption.

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

## Printer <u>with</u> 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.

**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 | Dual Cleaning Cartridge |
| Single Sided & Dual Sided / Dual Sided only — Laminate Cassette(s) | Feeder Cartridge | Output Hopper |
| Manual Feed Cleaning Cassette | USB Cable | Power Cable |
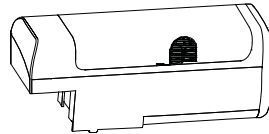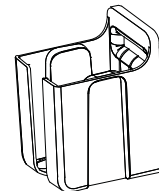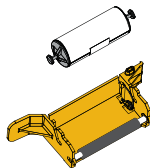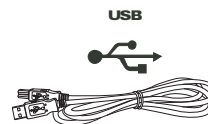
If any items are missing, please contact your supplier.

> ⚠️ **Caution •** The Printer with Laminator weighs approximately 17.9 kg (39.5 lbs). Use two people to lift it out of the shipping carton.

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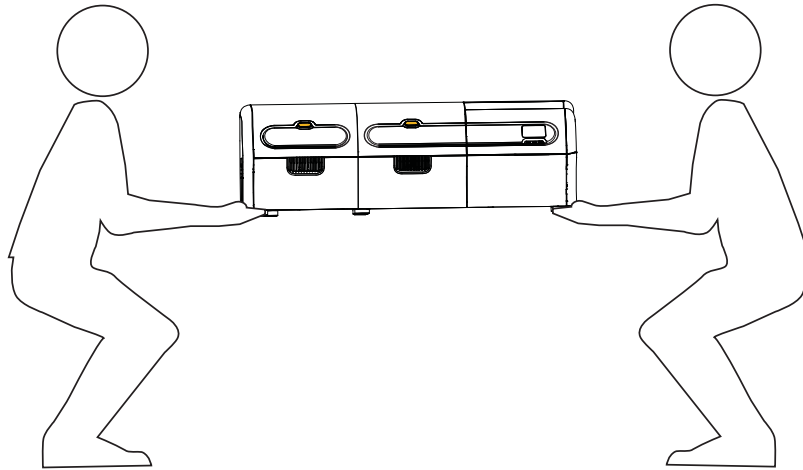


**Step 6.** Place the Printer in a location that meets the following requirements:

> ℹ️ **Important •** When moving the printer from storage (23º F/-5º C to 158º F/70º C) to the operating area (59º F/15º C to 95º F/35º C), allow time to acclimate prior to operation.

- A reasonably dust-free and dirt-free environment.
- Flat surface at least 40 in (1016 mm) x 12 in (305 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.
- Auto-switching single-phase AC Power, 90V~264V AC, 47-63Hz (50-60Hz nominal); see *Electrical specifications* on page 145 for power consumption.

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

# 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 stack.

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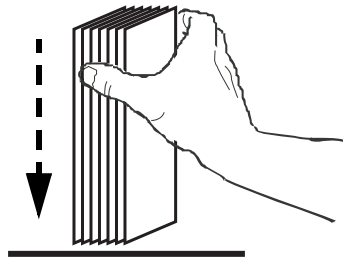


**Step 3.** Push the stack back and forth to an angle of about 45° from vertical, so as to separate all of the cards.
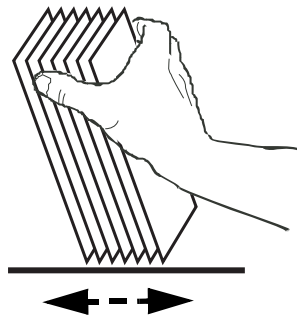


> **Note •** Static charges and edge burrs from the card die-cutting process can render individual cards stuck together with significant adhesion force. These cards *must be* physically separated from each other before inserting into the feeder; if not separated, feeding or printing problems may occur.

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

**Step 5.** Open the Feeder Cartridge Door, and slide the Card Stack Pusher all the way to the right, until it locks in place.
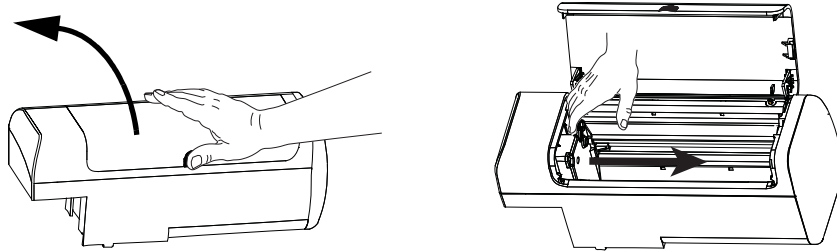
**Step 6.** Place the card stack in the Feeder Cartridge in the correct orientation shown below.
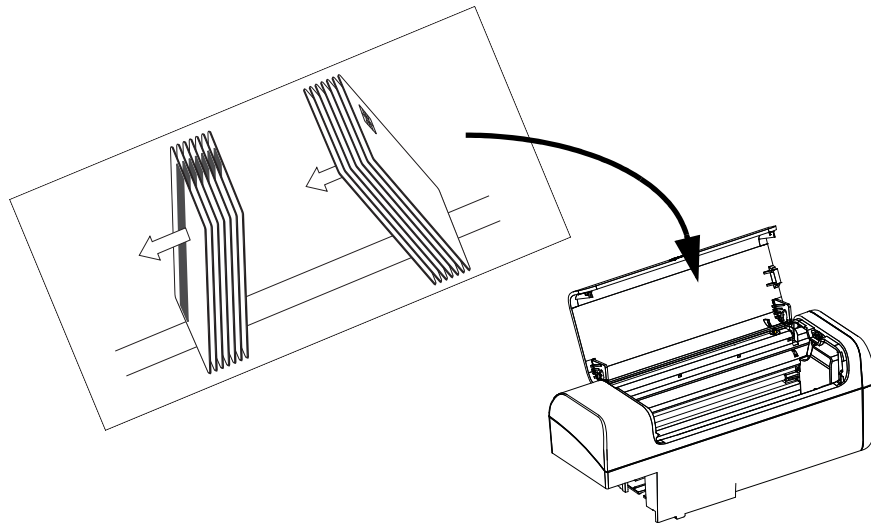
**Step 7.** For optimum performance, ensure that the cards are fully seated; then close the Feeder Cartridge Door.
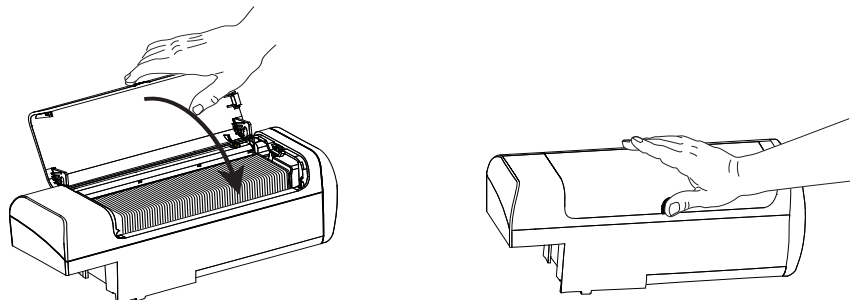
# Installing the Feeder Cartridge and Output Hopper

## Feeder Cartridge

The Feeder Cartridge is positioned on the right side of the Printer and holds the cards to be printed. Note that once in place, you can add cards as needed to the Feeder Cartridge without removing it.

**Step 1.** Install the Feeder Cartridge by sliding it down and to the left into the receptacle. You will need to apply enough pressure for it to "snap" into place.
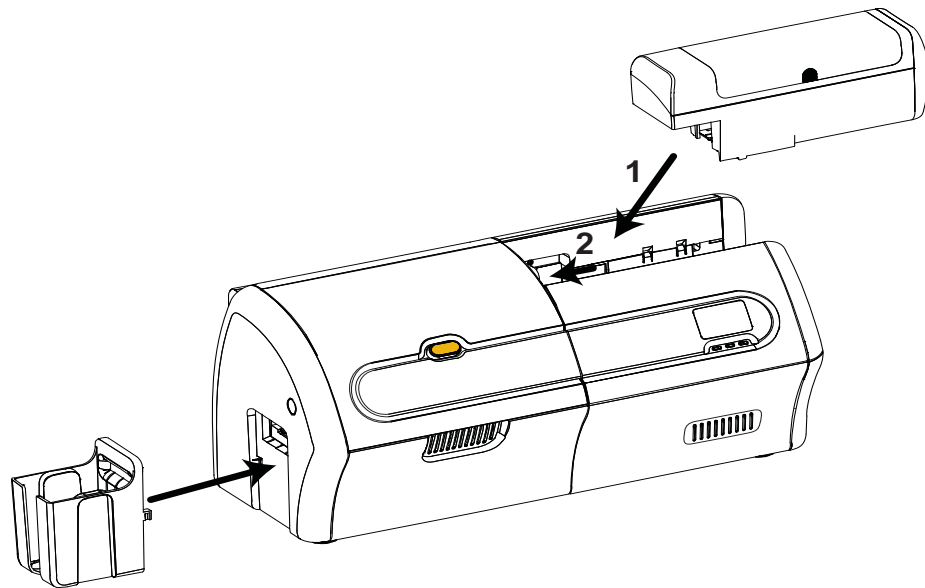


**Step 2.** Ensure that the Feeder Cartridge locks securely in place.

## Output Hopper

The Output Hopper is positioned on the left side of the Printer and receives the printed cards.

**Step 1.** Install the Output Hopper by inserting the two tabs on the right side of the hopper into the two slots on the left side of the Printer.

**Step 2.** Ensure that the Output Hopper locks securely in place.

# Installing the Dual Cleaning Cartridge

The Dual Cleaning Cartridge cleans the cards entering the Printer from the Feeder Cartridge. The cartridge consists of a cartridge frame and two adhesive rollers.

**Step 1.** Locate the cartridge frame and the two adhesive rollers.

**Step 2.** Insert the adhesive rollers into the cartridge frame.
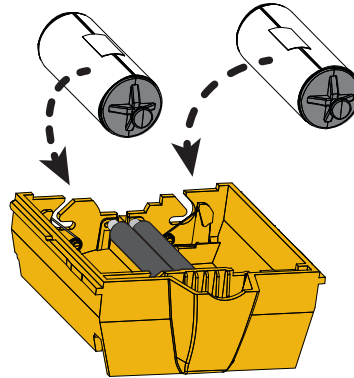


**Step 3.** Peel the protective wrapper from the adhesive rollers to expose the sticky surface. Do not touch the sticky surface.
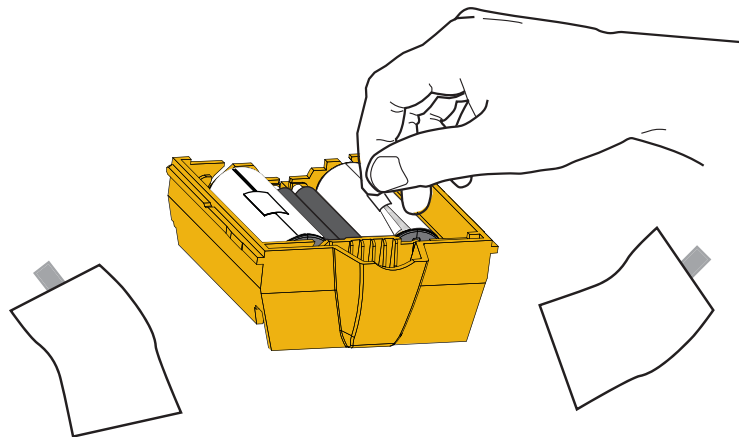


**Step 4.** The Dual Cleaning Cartridge is ready to use.

**Step 5.** Open the Options Cover.
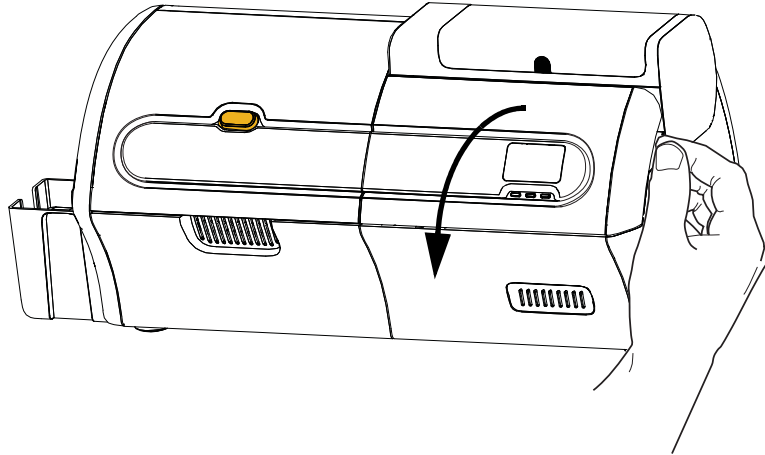
**Step 6.** Locate the area where the Dual Cleaning Cartridge will be installed.
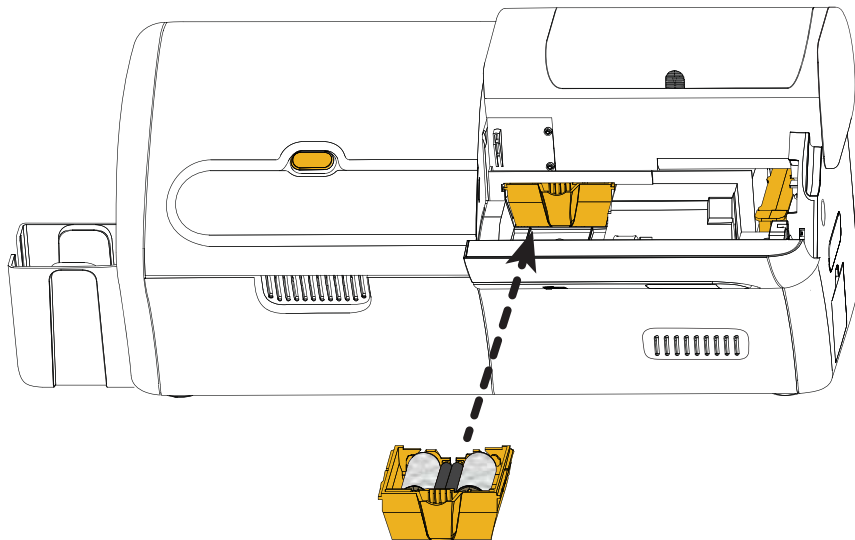
**Step 7.** Hold the cartridge by the extended handle.

**Step 8.** Insert the lip of the cartridge into the slot, and then push forward until it snaps into place.

**Step 9.** If you are also installing the Manual Feed Cleaning Cassette, continue to the next page; otherwise, close the Options Cover.

# Installing the Manual Feed Cleaning Cassette

The Manual Feed Cleaning Cassette cleans the cards entering the Printer from the Manual Feed Slot. The cassette consists of a frame and an adhesive roller.

**Step 1.** Locate the cassette frame and adhesive roller.

**Step 2.** Insert the adhesive roller into the cassette frame.
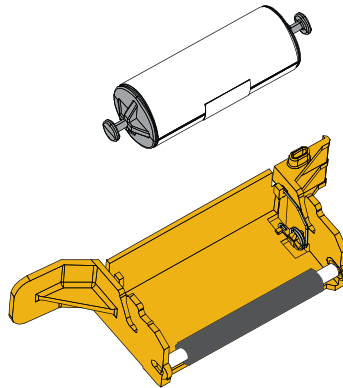


**Step 3.** Peel the protective wrapper from the adhesive roller to expose the sticky surface. Do not touch the sticky surface.
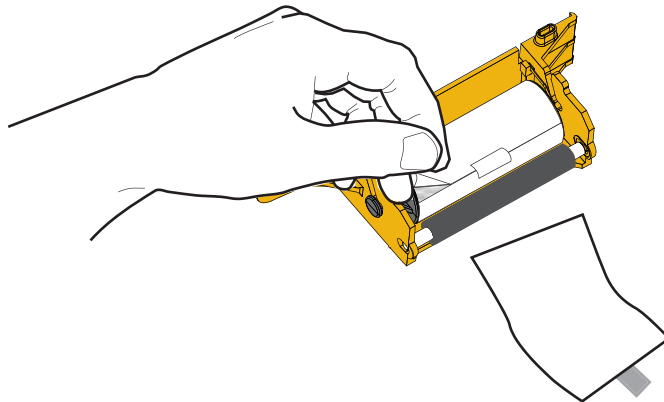


**Step 4.** The Manual Feed Cleaning Cassette is ready to use.
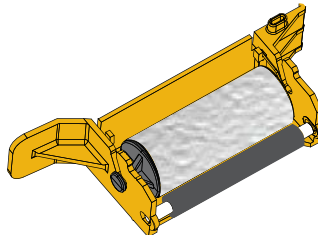
**Step 5.**   If not already done, open the Options Cover.
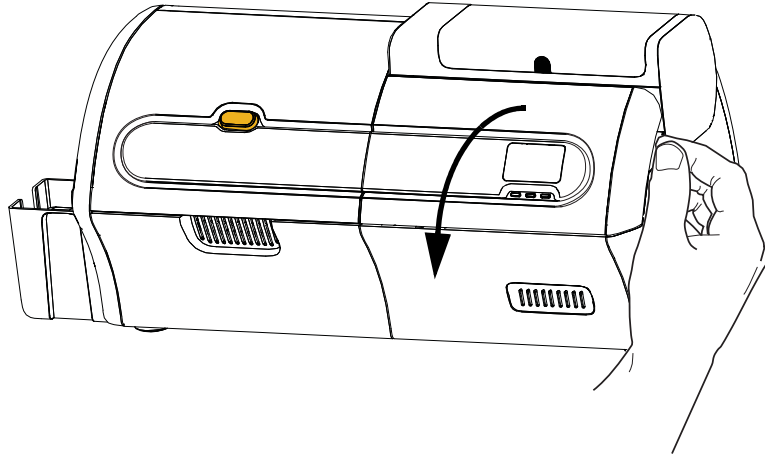
**Step 6.**   Locate the area where the Manual Feed Cleaning Cassette will be installed.
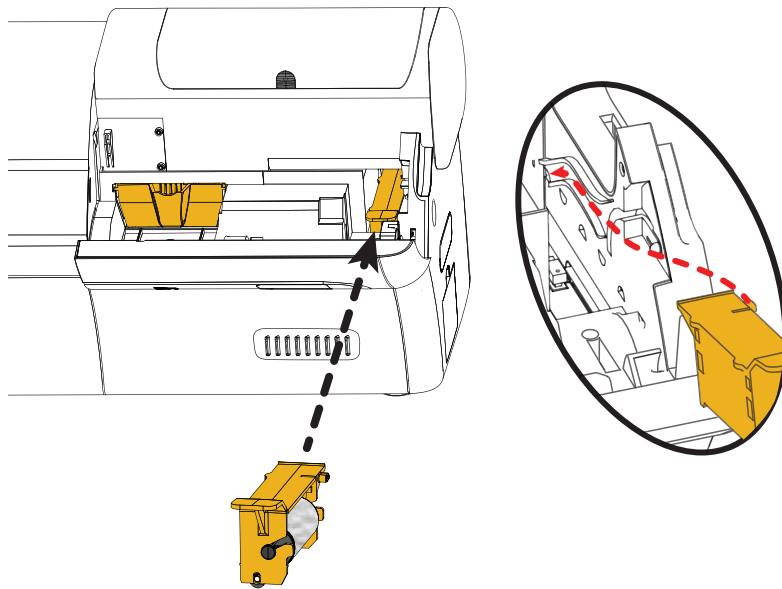
**Step 7.**   Hold the cassette by the extended handle.

**Step 8.**   Slide the cassette into place.

**Step 9.**   Insert the lip of the cassette into the slot in the back panel.

**Step 10.** Press the cassette down until it seats and latches.

**Step 11.** Close the Options Cover.

# Loading a Print Ribbon

The ZXP Series 7 Printer is designed to work only with Zebra True Colours® Ribbons in order to achieve rich, vibrant image production over the full-color spectrum.

**Step 1.** Press the Print Cover Release Button.
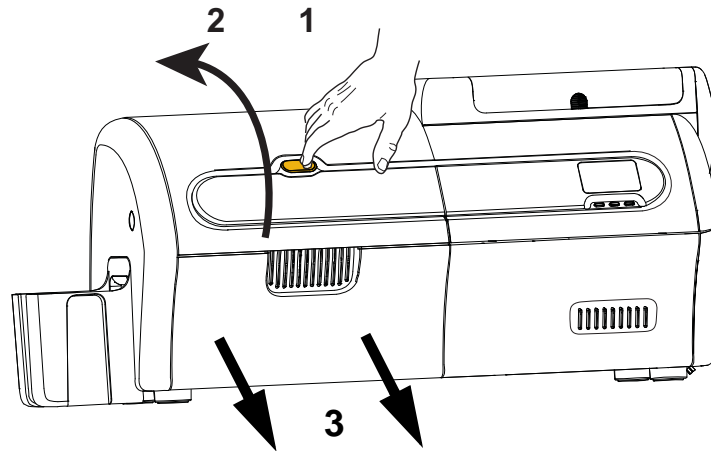
**Step 2.** Open the Print Cover.

**Step 3.** Slide out the Ribbon Drawer until it stops. It is not necessary to remove it.
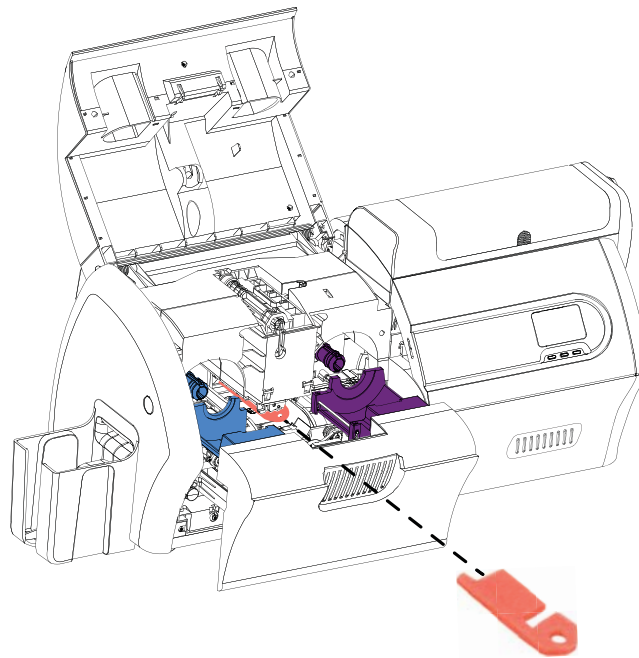
**Step 4.** Remove the printhead protective foam, if present.

**Step 5.** Take the print ribbon out of the box.

**Step 6.** Carefully unroll the print ribbon. Note that there is a clear leader with a sticky surface holding the print ribbon in place. This leader needs to be pulled free and rolled onto the take-up spool.

**Step 7.** Make sure the print ribbon comes off the bottom of the supply spool and feeds to the bottom of the take-up spool.

**Step 8.** Set the print ribbon supply spool (**PURPLE**) into the supply carrier (**PURPLE**).
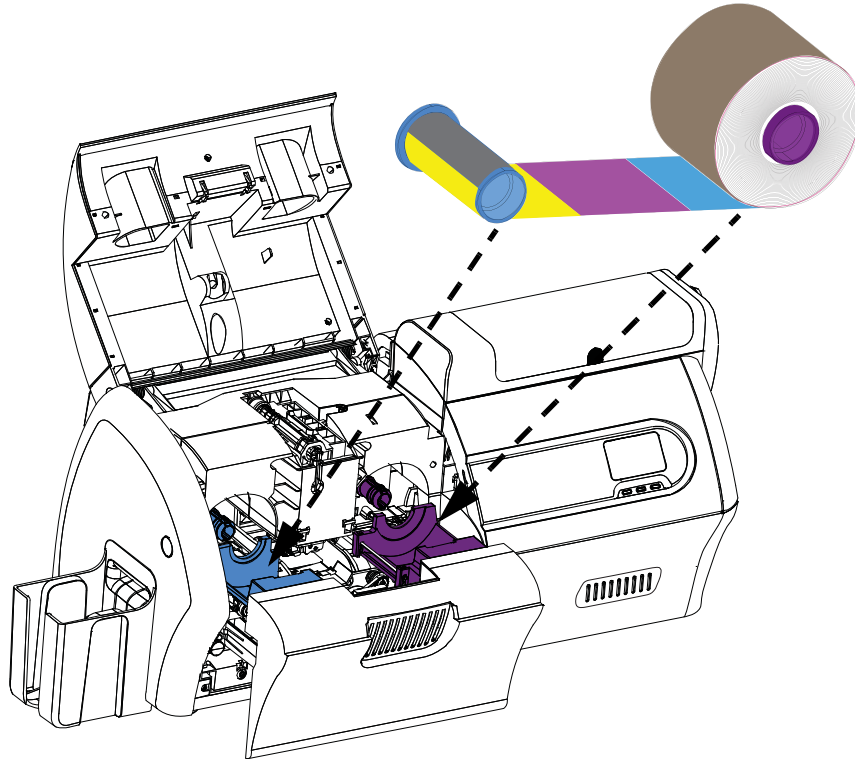


**Step 9.** Set the empty take-up spool (**BLUE**) into the take-up carrier (**BLUE**).
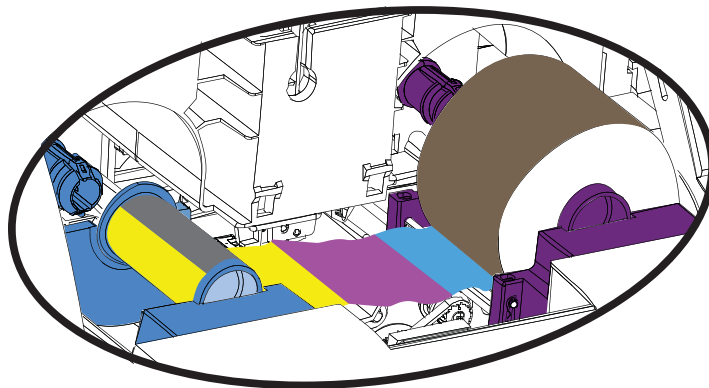


**Step 10.** Rotate the spools as required to take up excess slack in the ribbon.

**Step 11.** Close the Ribbon Drawer.
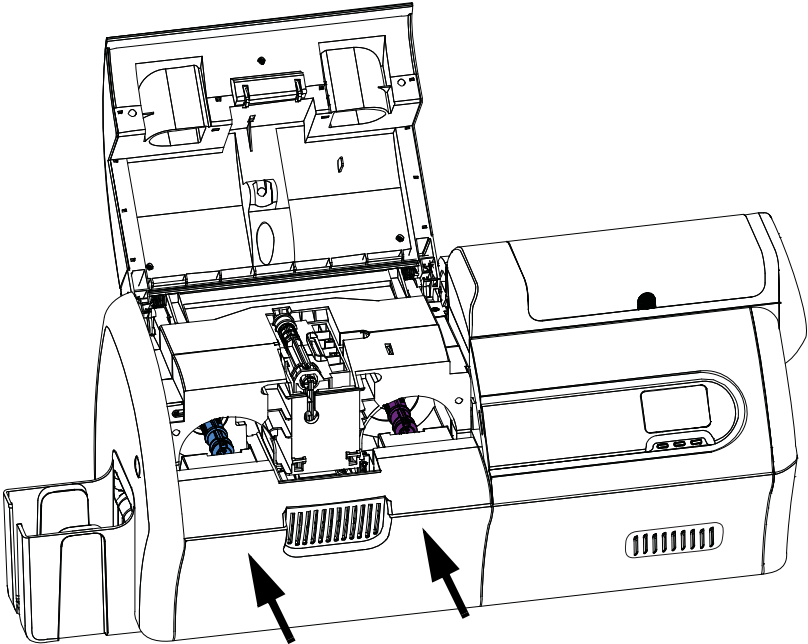


**Step 12.** Close the Print Cover, and press down until it latches securely.
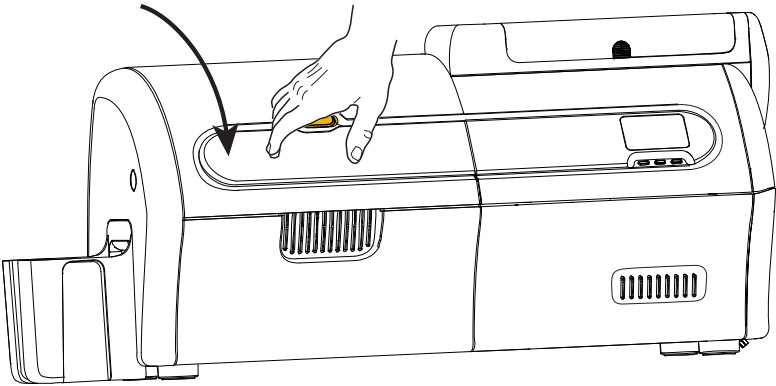
# Loading the Laminate

## Opening the Laminator

**Note •** The Lower Laminate Cassette is only present on the dual-sided laminator.

**Step 1.** Press the Laminator Cover Release Button, and lift the cover to its upright position. It will remain in that position.
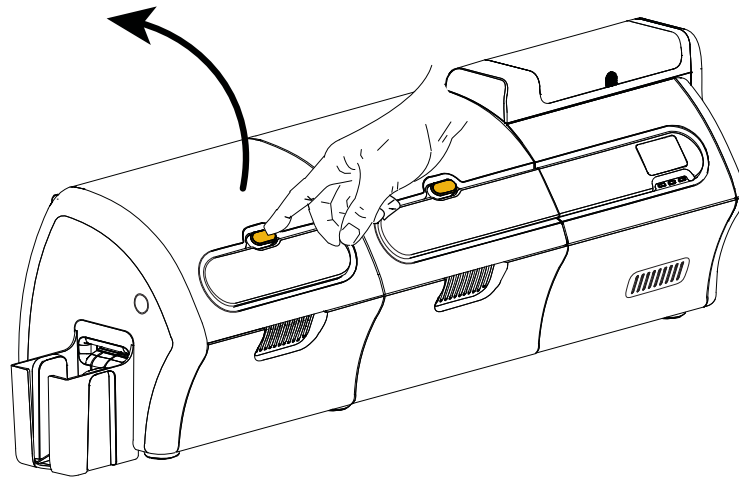


**Step 2.** Lower the Laminator Bottom Cover.
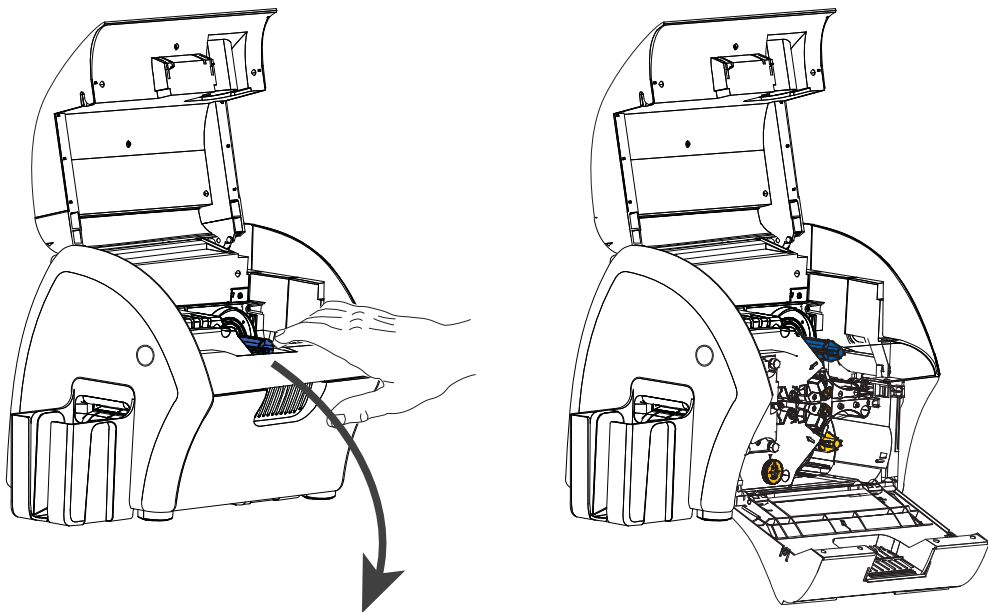
## Removing the Laminate Cassette(s)

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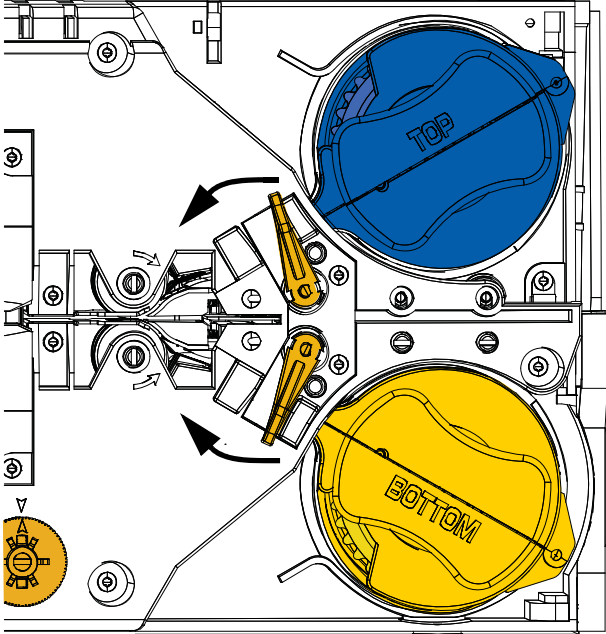


**Step 2.** Rotate the cassette to the mechanical stop in the direction indicated below.
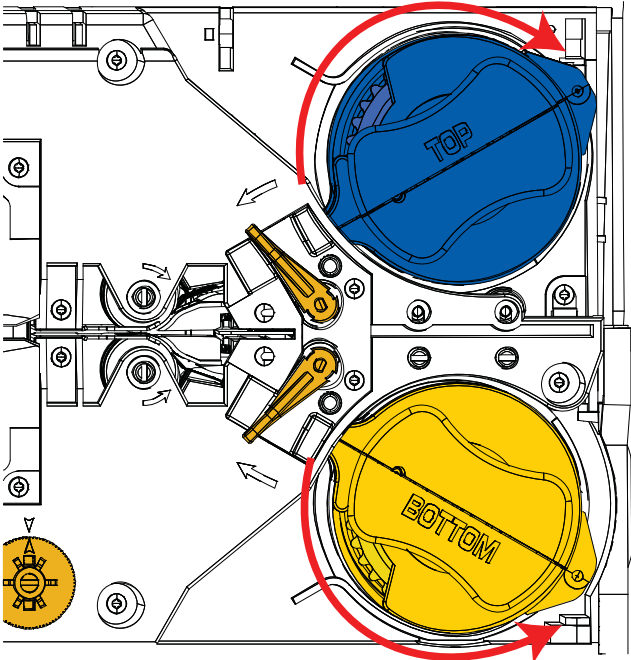
**Step 3.** Remove the cassette(s) by pulling each cassette straight out from its spindle.
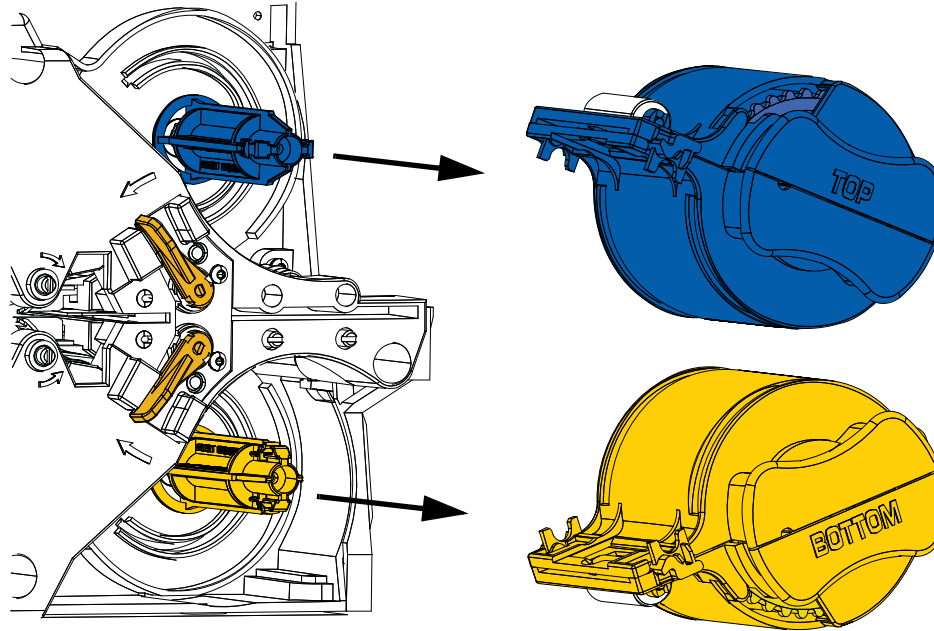
**Step 4.** Open the cassette(s), like a clam shell, by separating its two halves. Grasp the two halves firmly with your fingers, then pull it apart. *Do NOT use tools*. (Upper Laminate Cassette shown.)
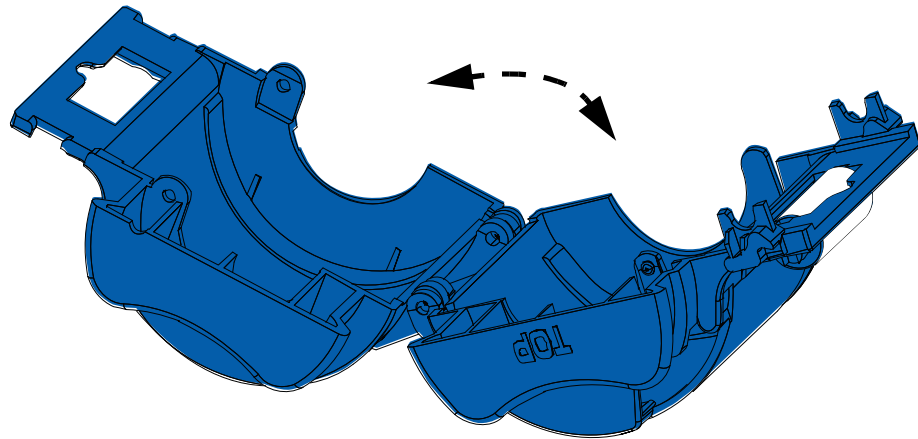
**Step 5.** If there is an empty laminate core in the cassette, remove it.

## 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.
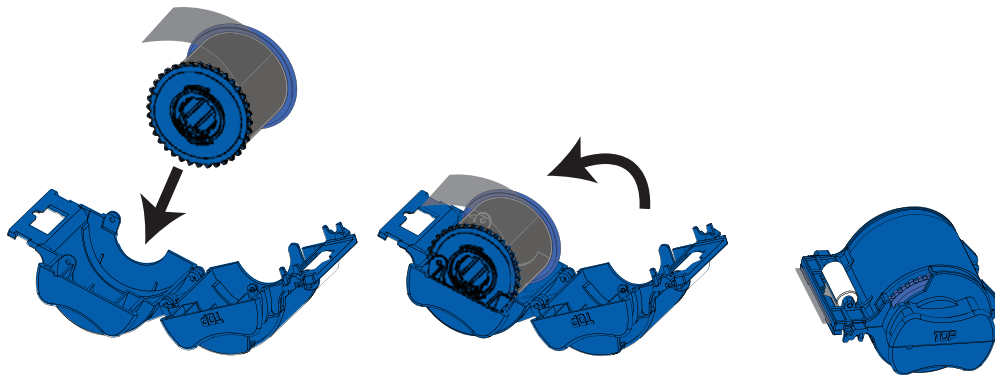


**Step 3.** Pull out an inch or two of laminate past the lip of the cassette.

**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.
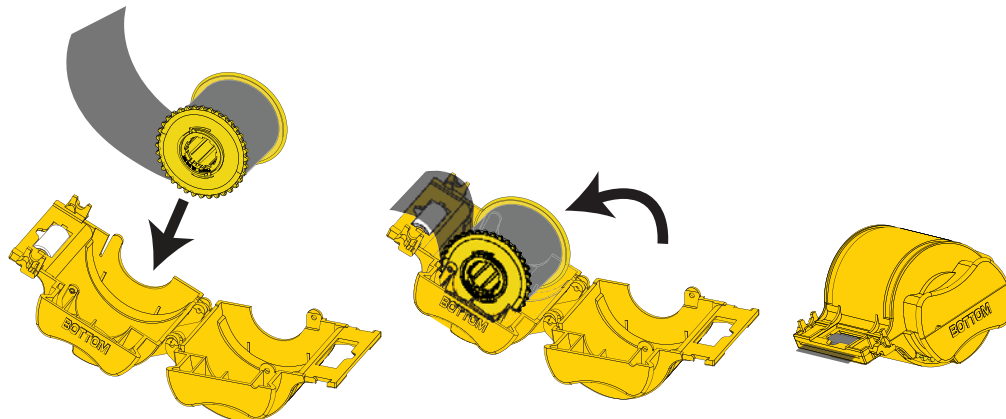
**Step 7.** Pull out an inch or two of laminate past the lip of the cassette.

**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.

**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.

0 - 0.5 mm
0 - 1/32"

0 - 0.5 mm
0 - 1/32"
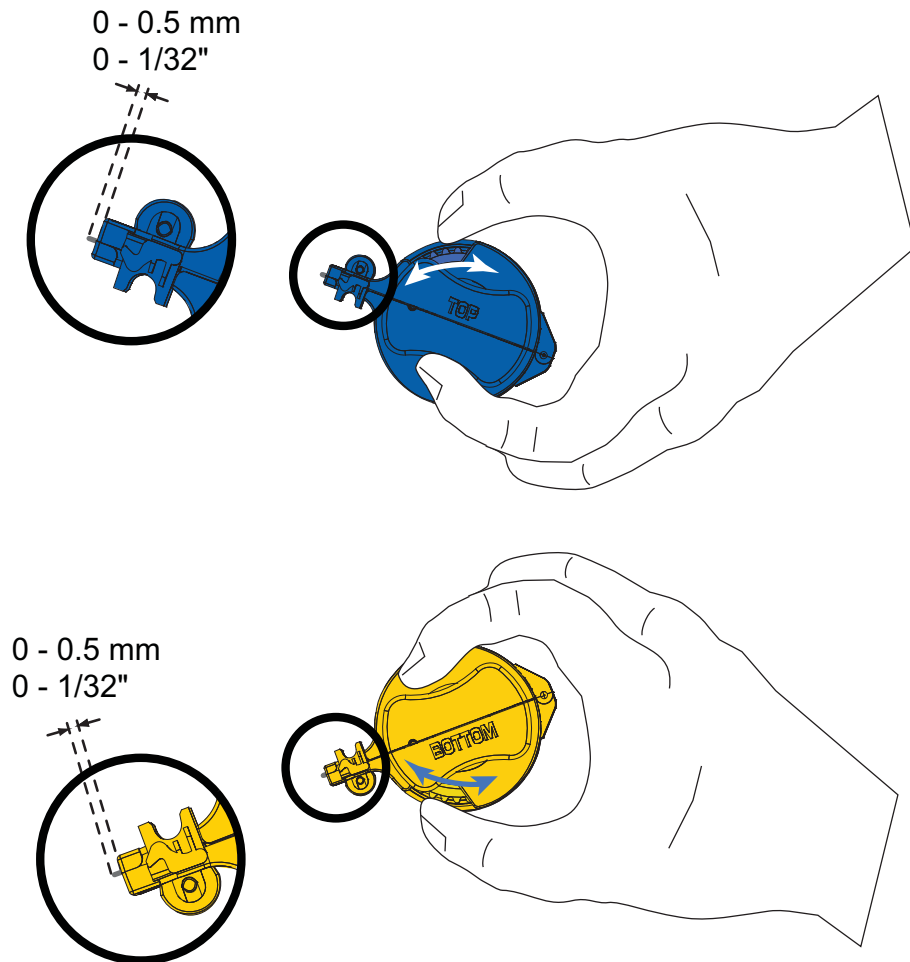
# Installing the Laminate Cassette(s)

**Step 1.** If the laminate cassettes are not already removed, remove the cassettes.
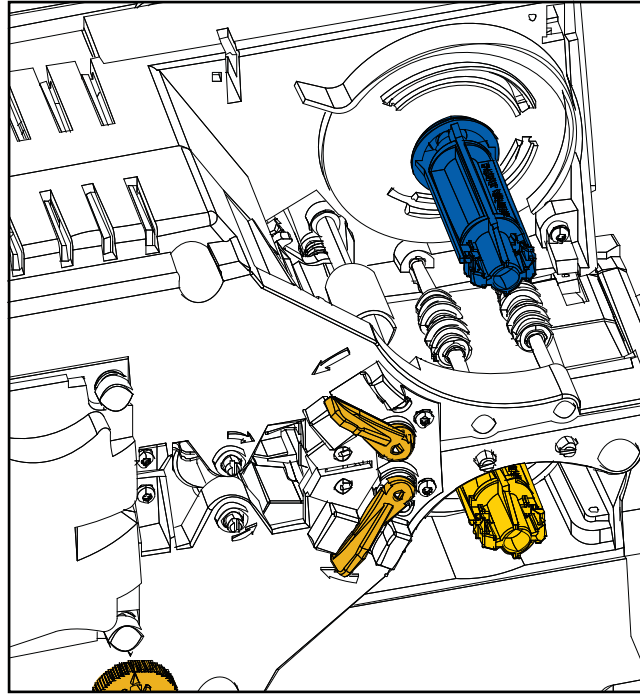


**Step 2.** Slide the cassette onto the spindle.
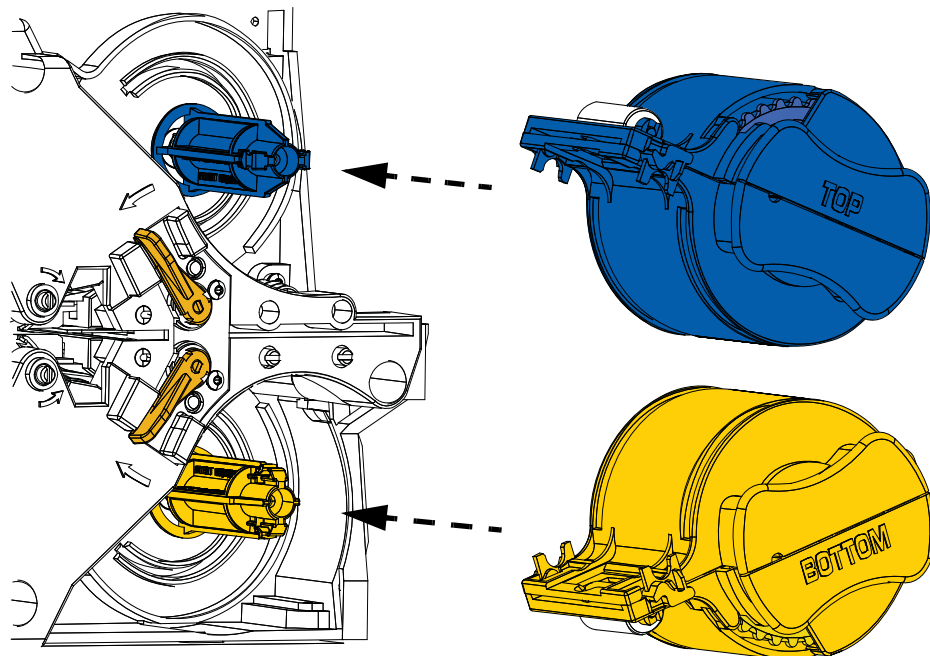
**Step 3.** Ensure the cassette is fully seated on the spindle. Gently press the cassette until it is flush against the laminator frame.
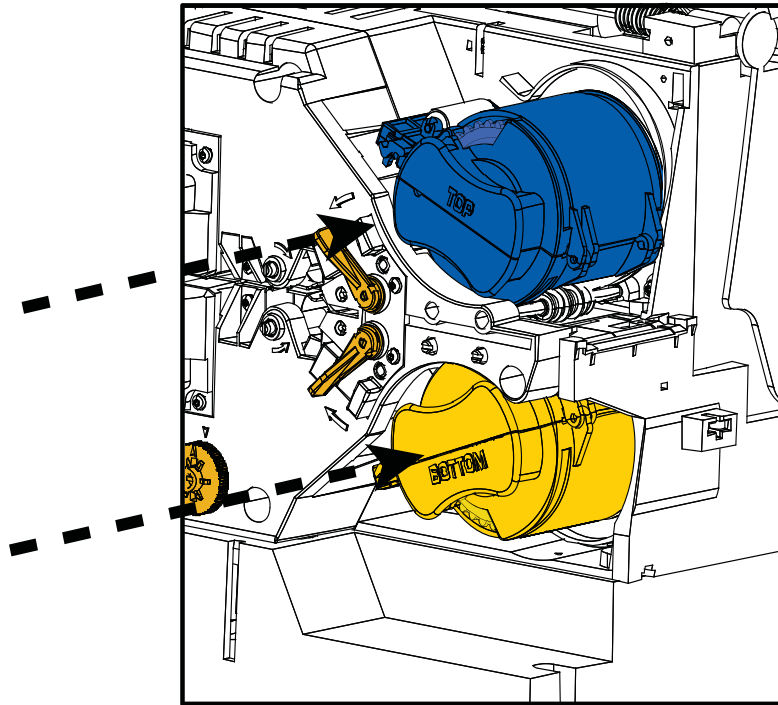


**Step 4.** Rotate each cassette (in the direction indicated in the figure below) until it stops.
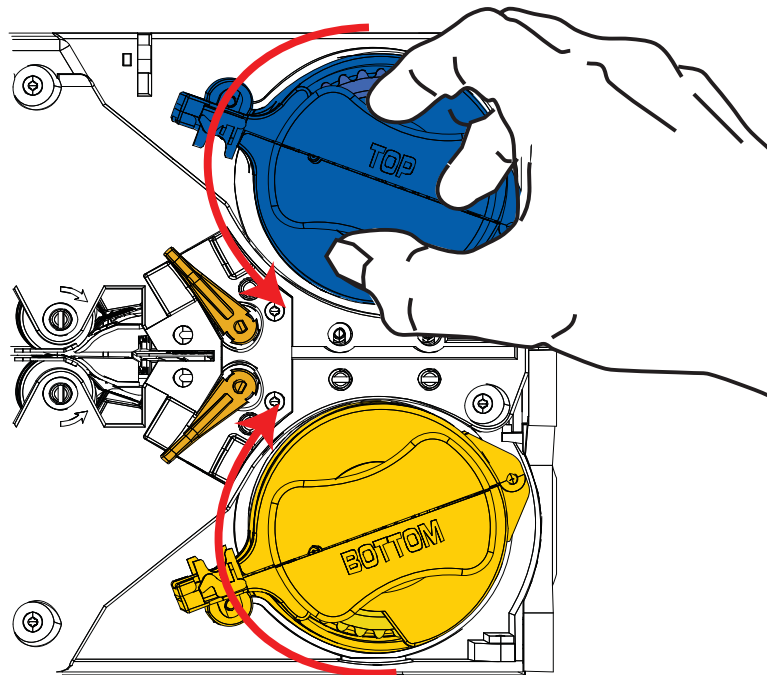
**Step 5.** Apply increasing rotational pressure, and listen for the audible click when the locking lever snaps into place.
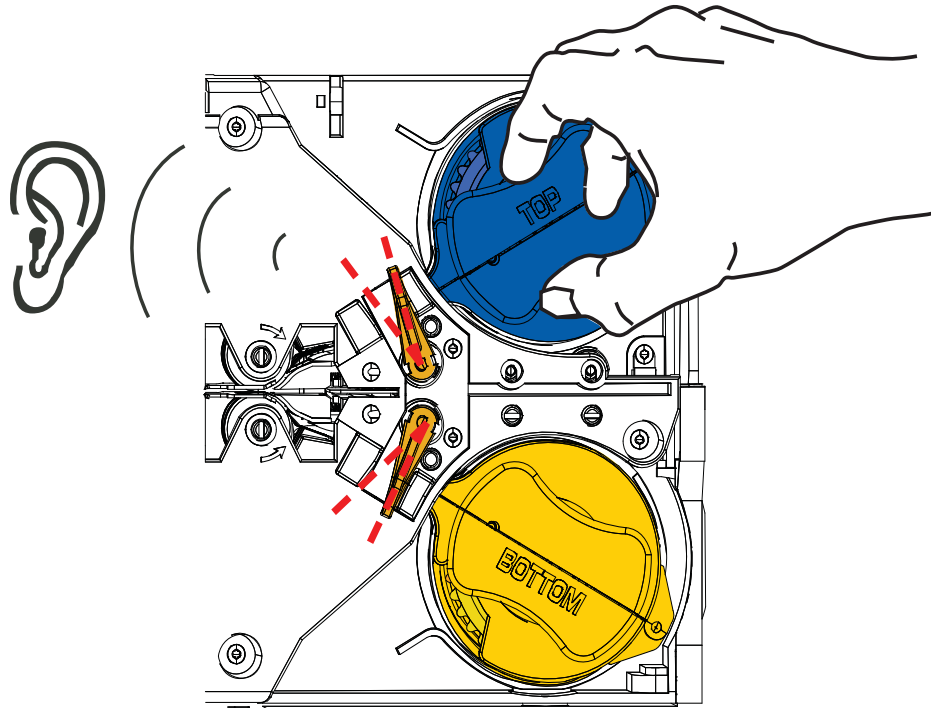


**Step 6.** The laminate is installed
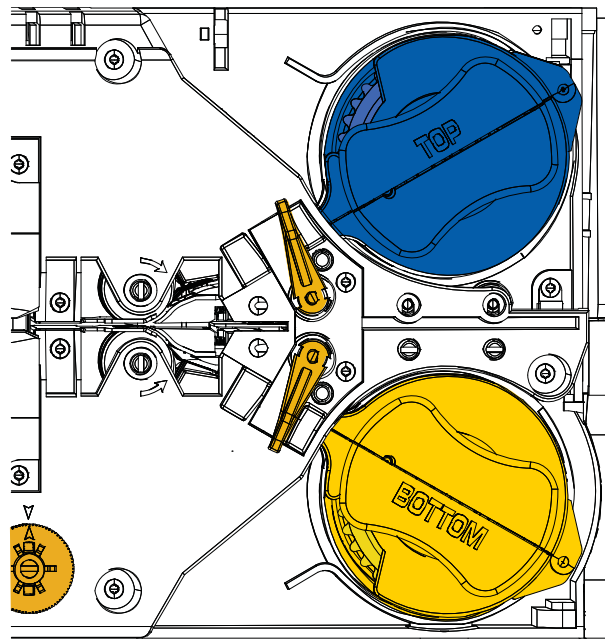
## Laminating Contact Smart Cards

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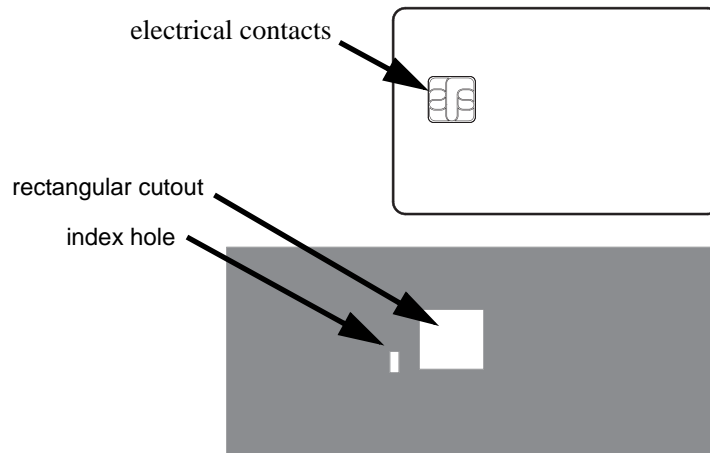


**Step 1.** Remove the Upper Laminate Cassette; see Page 21.

**Step 2.** Open the cassette, and remove the laminate if present.

**Step 3.** Load the smart card laminate into the cassette; see Page 23.

**Step 4.** Cut the laminate, splitting the index hole as shown.
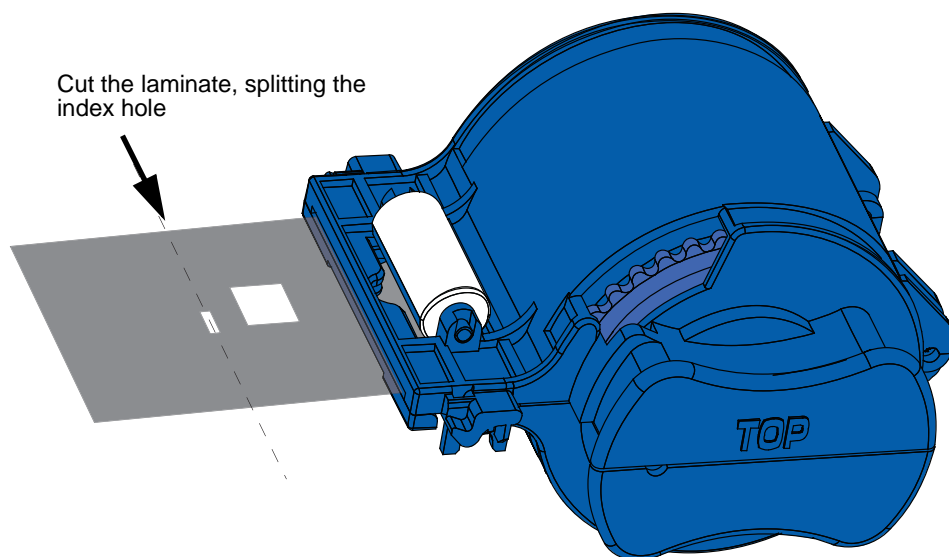
**Step 5.** Rotate the core to adjust the laminate overhang. Stop when the end of the laminate (not the edge of the index hole) is just beyond the lip of the cassette, as shown on Page 24.
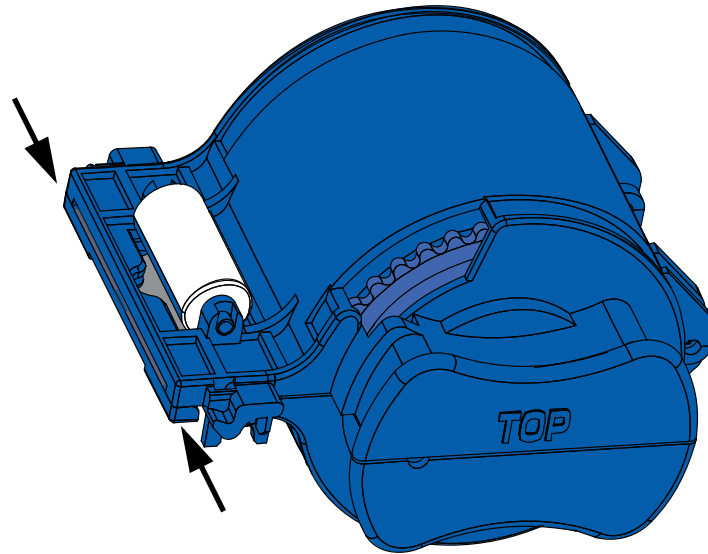
**Step 6.** Install the cassette; see Page 26 for details.
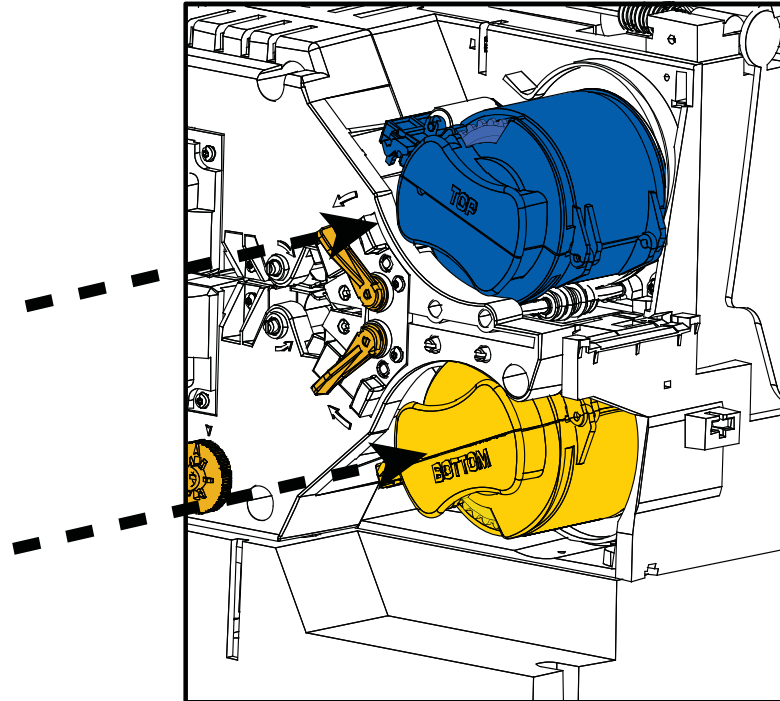
## Using Partial-Width Laminate

**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 (42mm) 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.



Full-Width



Signature Panel



Magnetic Stripe
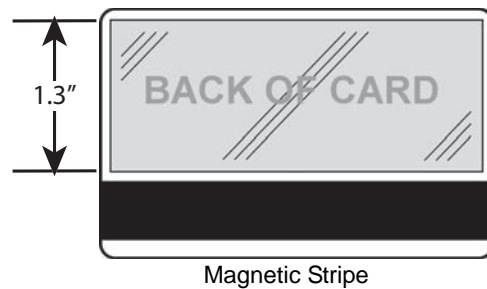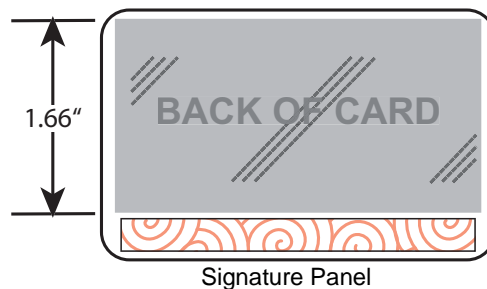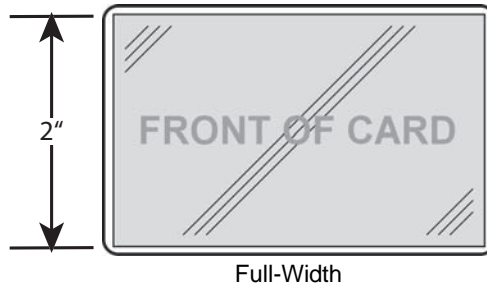
## Using Partial-Width Laminate (continued)

**Step 1.** Remove the Lower Laminate Cassette; see Page 21.

**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.

Collar
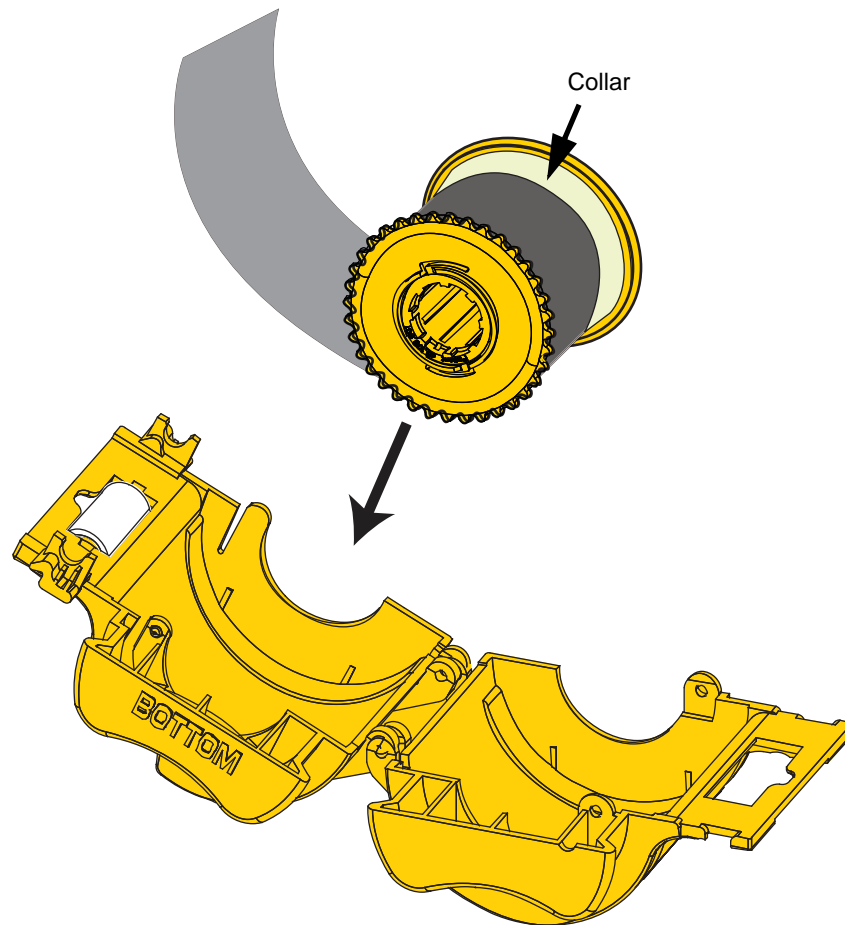
**Step 4.** Trim the partial-width laminate; see Page 24.

**Step 5.** Rotate the core to adjust the laminate overhang; see Page 25.

**Step 6.** Install the cassette; see Page 26.

# Connecting Power

**Electric Shock •** Limit AC power supplied to the Printer to 90V~264V, 47-63Hz (50-60Hz nominal). 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 main power source and the earth connection.

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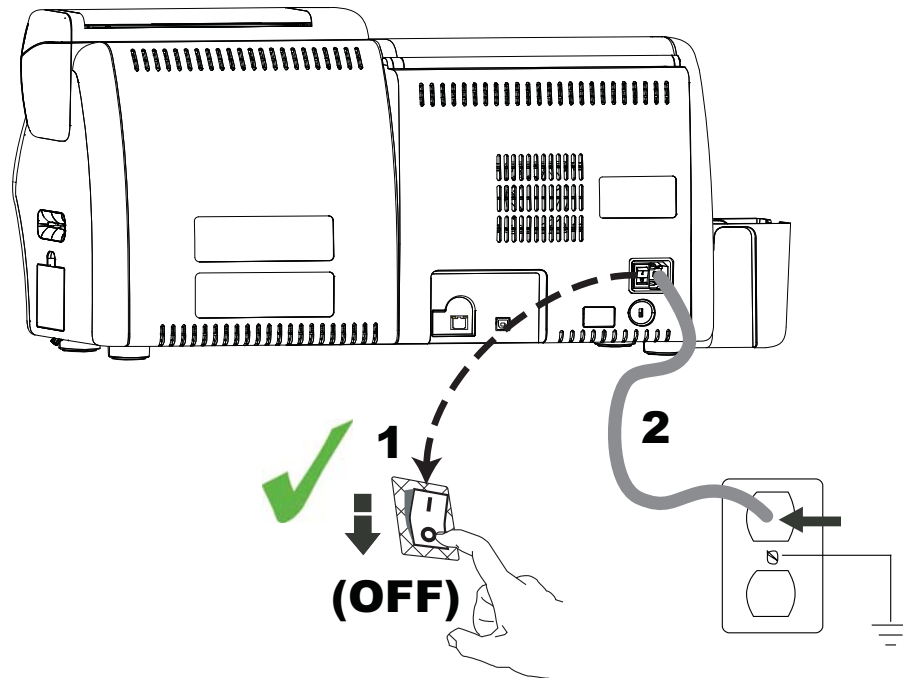


**Step 1.** Place the Printer's power switch in the OFF ( ◯ )position.

**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.

**Important •** DO NOT switch the printer on.

# Connecting the Printer to your Computer

## Interface Connector Locations



**10/100base-T**

**USB**

See Page 36 for details.

See Page 35 for details.

## 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.
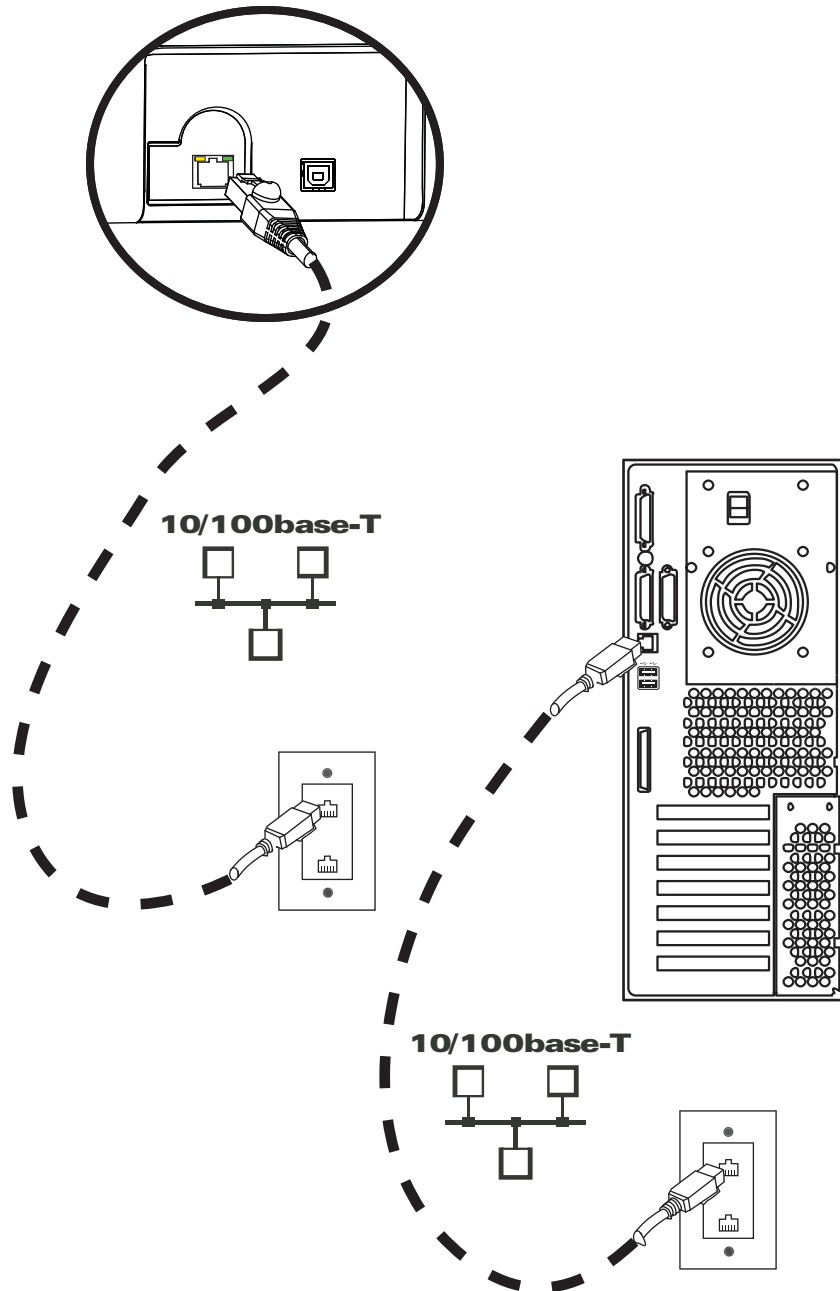
# Installing the Windows Printer Driver

## Installing the USB Printer Driver

**Note •** To install the Ethernet driver, see Page 43.

**Step 1.** If not already done, connect power to the printer. Turn power OFF.

**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 a Printer and Driver is already installed on your computer, one of the following **Welcome** windows will be displayed; otherwise go to Step 8.



**Step 7.** Choose the maintenance operation to be performed:

    **a.** If you are installing a newer version of the driver, select **Upgrade** to install the new driver.

    **b.** If you are installing the same version driver, select **Modify** to install additional Ethernet or USB printer drivers.

    **c.** Select **Remove** to remove the current printer driver. When asked about removing the smart card readers drivers, click **Yes** to remove them; click **No** to leave them installed. At the end of the un-install process, you will be asked to re-boot your computer.

**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.
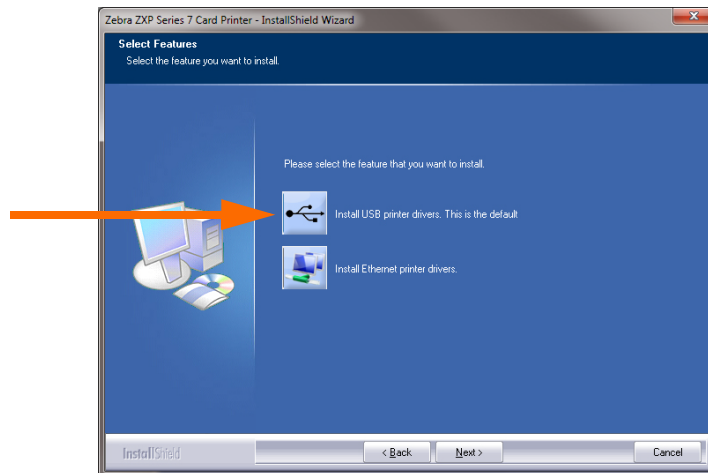


**Step 10.** Ensure that the printer's power switch is in the OFF ( ◯ ) position, and then click the **OK** button. After installation of the driver, you will be prompted to turn on the printer.

**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.** 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 -
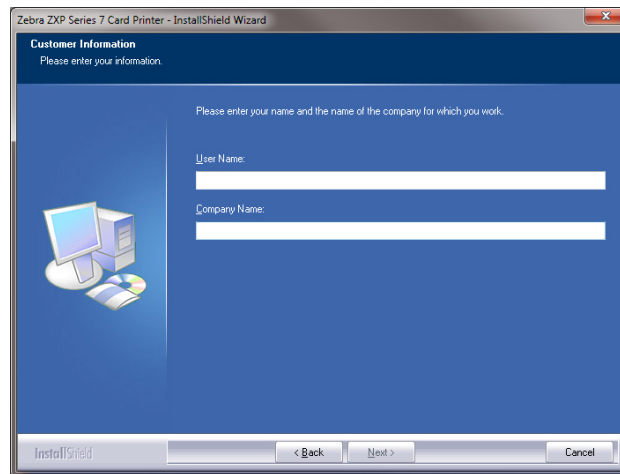
- Click the **Change** button, select a folder where setup will install the files, and then click the **Next** button.
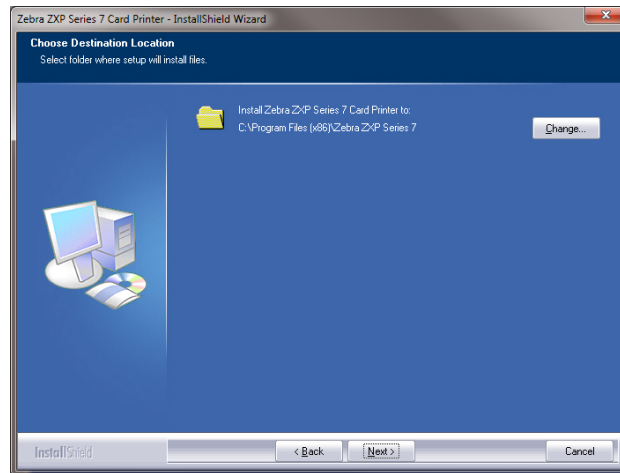


**Step 14.** This will bring up the **Ready to Install the Program** window. To continue, click the **Install** button.
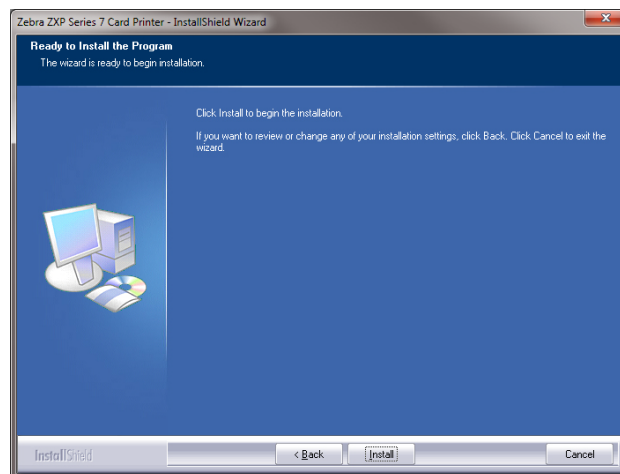
**Step 15.** Observe the driver installation via **Setup Status** window.
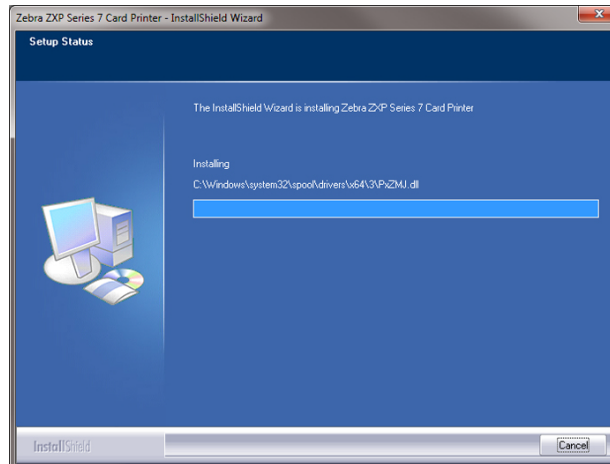


**Step 16.** The **Congratulations** window will appear. Turn on the USB printer. Read the instructions carefully, and then click the **Next** button.
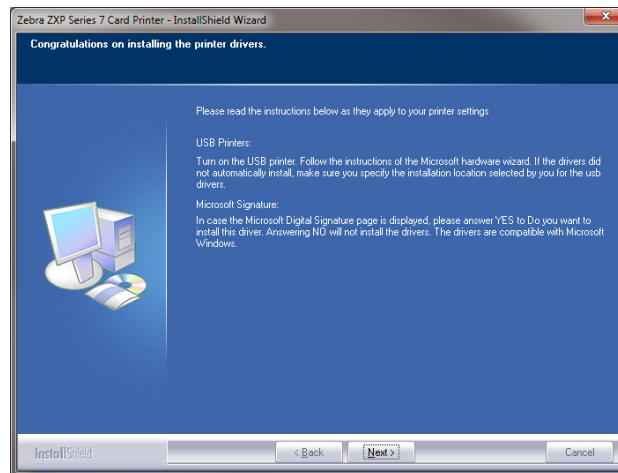
**Step 17.** When the **InstallShield Wizard Complete** window appears, click the **Finish** button.
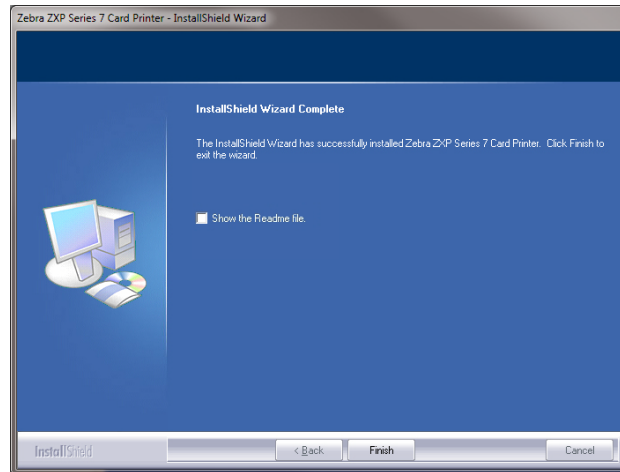


**Step 18.** This completes USB driver installation.

**Note •** For optimum performance, you may need to change the card setup (card type, orientation, etc.), encoding, and/or black panel settings via the Printer Driver; see *Printing Preferences* on page 76.

## Installing the Ethernet Printer Driver

**Note •** To install the USB driver, see Page 37.

**Important •** The Ethernet printer need not be in the same subnet as the host. It can be in different subnet as long as it is reachable from the host.

**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 a Printer and Driver is already installed on your computer, one of the following **Welcome** windows will be displayed; otherwise go to, Step 8.



**Step 7.** Choose the maintenance operation to be performed:

   **a.** If you are installing a newer version of the driver, select **Upgrade** to install the new driver.

   **b.** If you are installing the same version driver, select **Modify** to install additional Ethernet or USB printer drivers.

   **c.** Select **Remove** to remove the current printer driver. When asked about removing the smart card readers drivers, click **Yes** to remove them; click **No** to leave them installed. At the end of the un-install process, you will be asked to re-boot your computer.

**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.
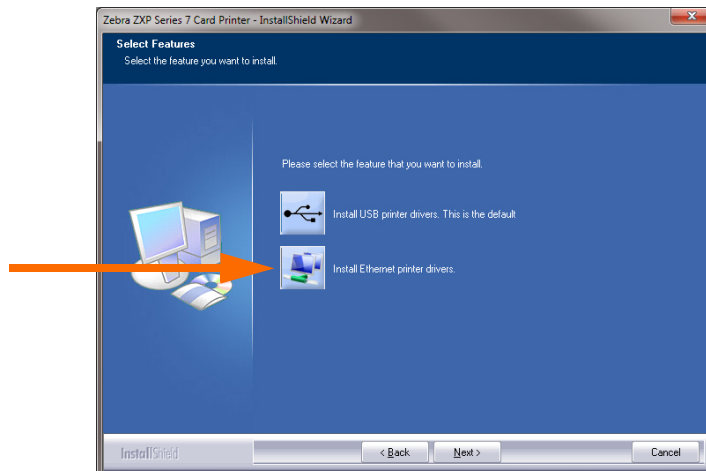


**Step 10.** Ensure that the Printer's power switch in the ON ( | ) position, and then click the **OK** button.
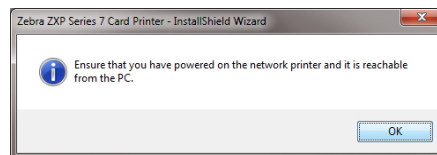
**Step 11.** This will bring up the **License Agreement** window. To proceed with the installation, select the *I accept the terms of the license agreement* option, and then click the **Next** button.
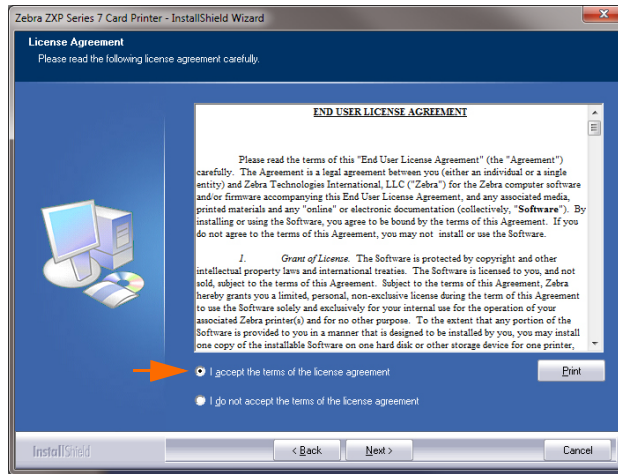


**Step 12.** This will bring up the **Customer Information** window. Enter your name and the name of the company for which you work, and then click the **Next** button.
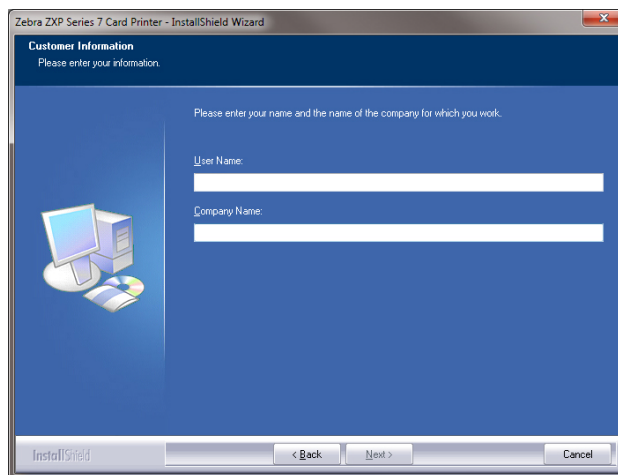
**Step 13.** This will bring up the **Search Ethernet Printers** window.:

> 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 -
>
> If Ethernet printer is in a different subnet and is not discovered by the host, you can manually enter the Printer IP Address directly (circled below); and click the **Next** button. Note that you can get the IP Address via the OCP by pressing the **Info** button and selecting Network Settings.
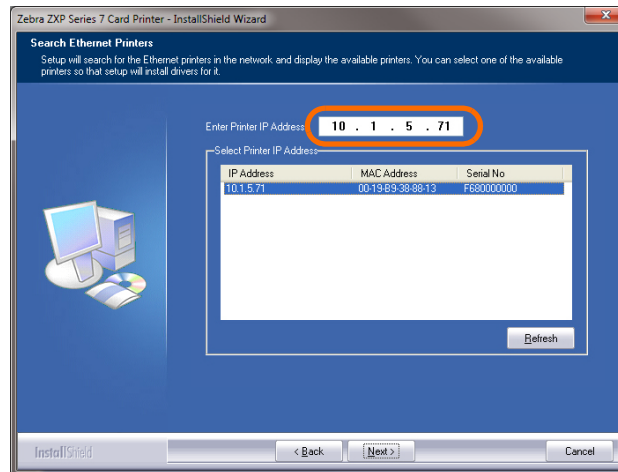
**Step 14.** Enter the *Location* of the printer and any *Comments* regarding the printer, and then click the **Next** button.
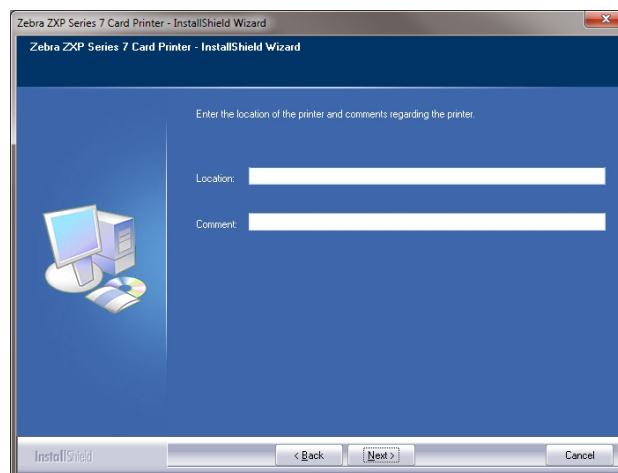
**Step 15.** This will bring up the **Choose Destination Location** window.

   • 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.
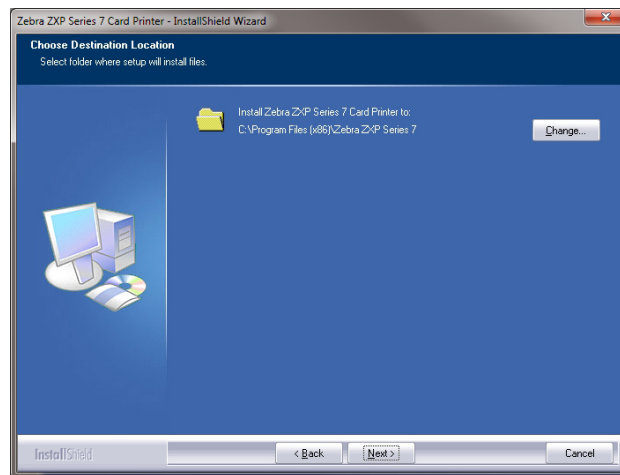


**Step 16.** This will bring up the **Ready to Install the Program** window. To continue, click the **Install** button.
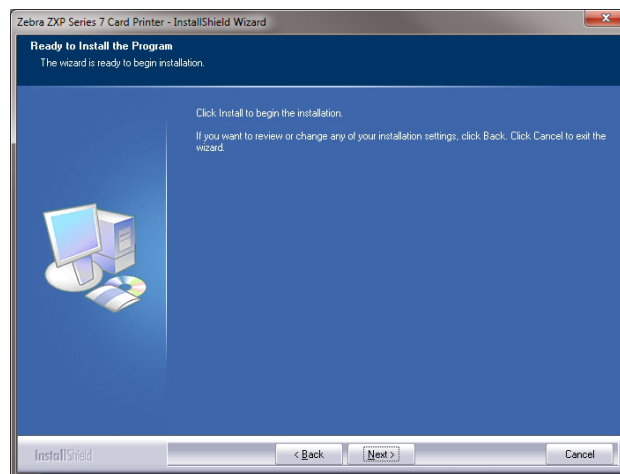
**Step 17.** Observe the **Setup Status** window.
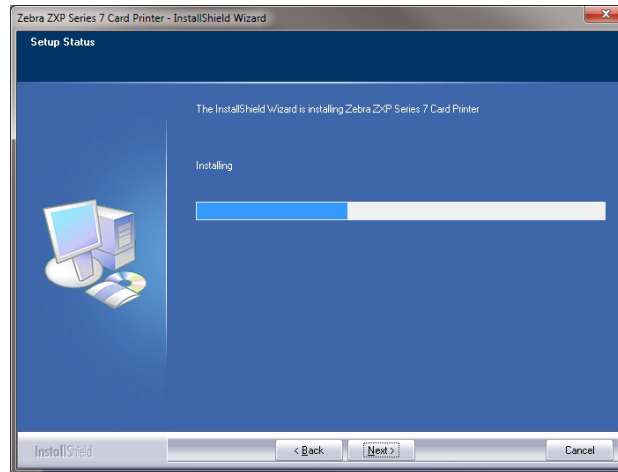


**Step 18.** When the **InstallShield Wizard Complete** window appears, click the **Finish** button.
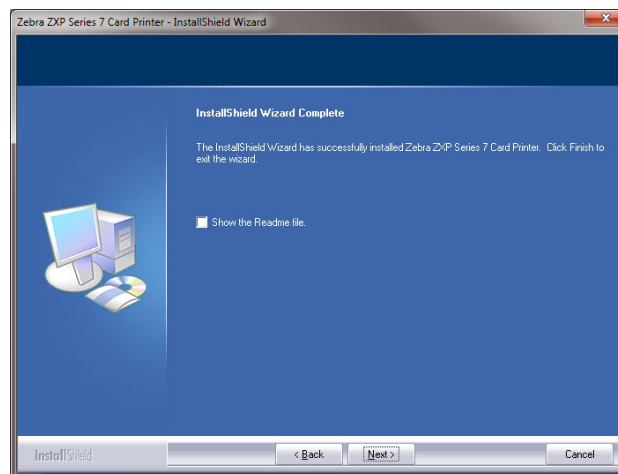


**Step 19.** This completes Ethernet driver installation.

**Note •** For optimum performance, you may need to change the card setup (card type, orientation, etc.), encoding, and/or black panel settings via the Printer Driver; see *Printing Preferences* on page 76.

# 3

# Operation

## Introduction

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

- Install the Printer Driver Software (Section 2, Installing the Windows Printer Driver).

- Connect the Printer to a power source and a computer (Section 2, Connecting Power).

- Select the Printer via either the Operating System or an appropriate application software program.

- Set the Printer Properties and Printing Preferences (default values will be appropriate for most applications).

- Print a Test Card (you can print via a Microsoft Certified Windows driver or a custom application using the ZMotif SDK development tools).

# Printing a Test Card

To print a test card:

1. Access the Card Setup Tab: Select *Start > Devices and Printers*. Then right click on the *Zebra ZXP Series 7 Card Printer* listing, and select *Printing Preferences > Card Setup*.
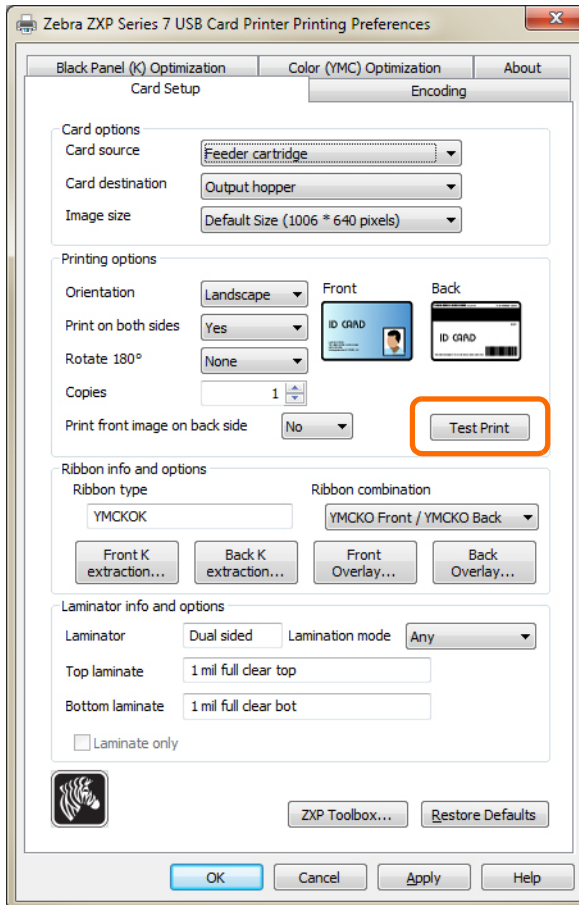


2. Ensure that cards are in the Feeder Cartridge.

3. Click of the **Test Print** button (circled above).

4. The printer will feed in a card and start printing.

5. Once the printing job is finished, the card is ejected from the printer into the Output Hopper.

# Manual Card Feed

A Manual Feed Slot is available for feeding single cards.

1. Access the Card Setup Tab: Select *Start > Devices and Printers*. Then right click on the *Zebra ZXP Series 7 Card Printer* listing, and select *Printing Preferences > Card Setup.*
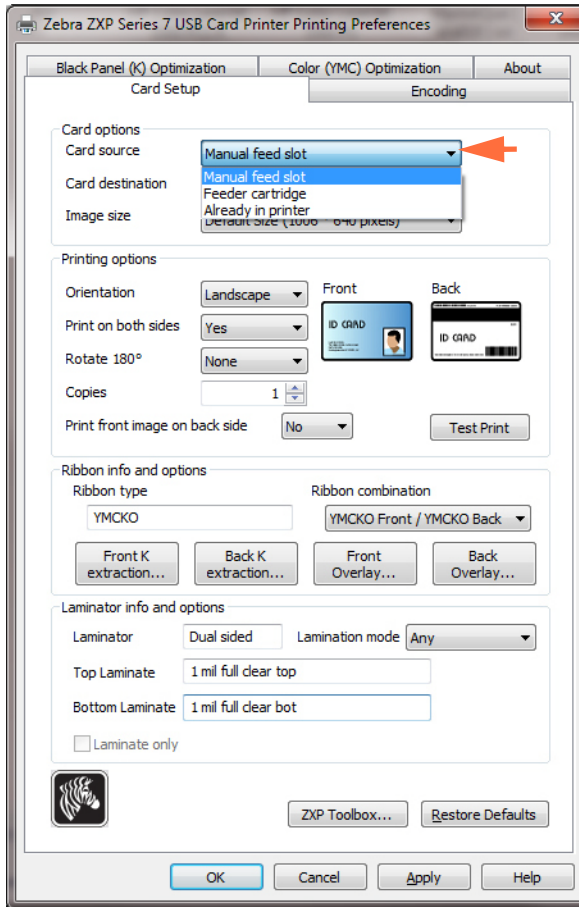


2. In the Card Setup tab, select the *Manual feed slot* from the dropdown menu (arrow above).

3. Click on the **Apply** button.

4. Click on the **OK** button.

**5.** Hold the cards by the edges only. Do not touch the printing surface as this can reduce print quality. The surface of the cards must remain clean and dust free.
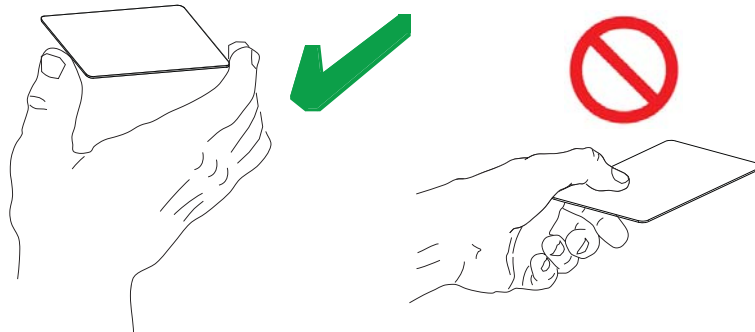


**6.** Insert a card into the Manual Feed Slot in the correct orientation:

- For Standard Cards, any orientation is acceptable.

- For Magnetic Cards, the stripe is DOWN and to the REAR.

- For Contact Smart Cards, the chip is UP and to the LEFT.
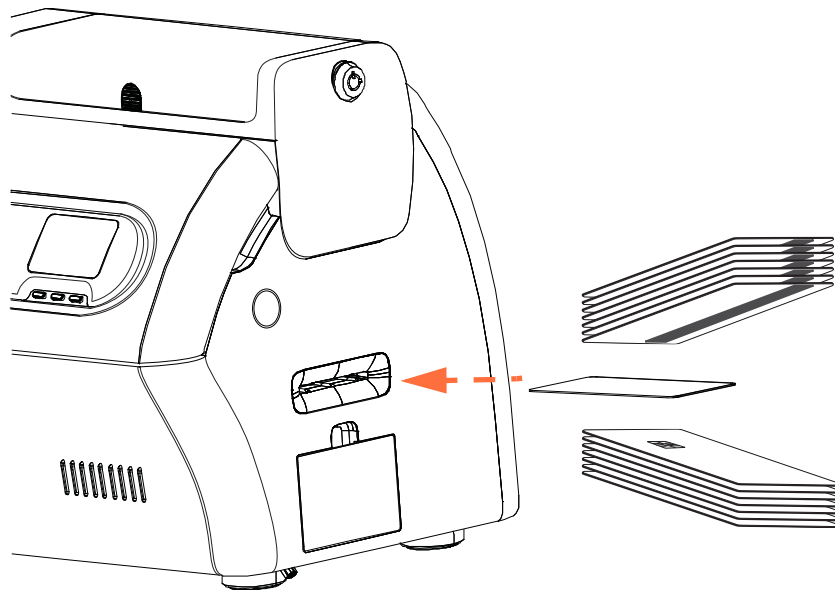


**7.** Continue to insert the card until you feel a slight resistance when the printer "grabs" it.

**8.** The card will automatically be drawn into the printer when the print job is sent.

# Operator Control Panel (OCP)

The printer is equipped with an OCP Display and three "soft" OCP Buttons which give access to the printer menus. The menus can be accessed when the printer status shows READY.



- Press the **MENU** button, to access the Main Menu.
- Press the **INFO** button, to access and view the Printer Settings Menu.

## Messages

The OCP Display provides printer status information. The messages displayed fall into three categories:

- Operational, see .
- Warning, see .
- Error, see .

### Operational

| 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. |
| CONFIGURATION 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 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 | Waiting for manual card feed (this function is set via the *Card Setup Tab*; see Page 51or Page 77. |
| OFFLINE | Status toggled (offline/online) via the OCP Advanced Settings Menu. |
| PAUSING | The Pause button was pressed. |
| 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 WAITING TO LAMINATE | Ready to accept a print job, laminator warming; e.g., when switching from 1-sided laminating to 2-sided laminating, or when the printer has just powered up and the laminator is warming. |
| WARMING PRINTHEAD TEMPERATURE | Warming printhead to temperature. |
| WARNING | Indicates that additional OCP instructions need to be performed; e.g., 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 both Laminate cassettes (Top and Bottom) are low; see *Loading the Laminate* on page 20. |
| BOTTOM LAMINATE LOW | Indicates that the Bottom Laminate cassette is low; see *Loading the Laminate* on page 20. |
| CLEAN FEEDER | Indicates that the Feeder needs cleaning; see *Cleaning the Printer* on page 118, |
| CLEAN CARD PATH | Indicates that the Card Path needs cleaning; see *Cleaning the Printer* on page 118, |
| CLEAN LAM CARD PATH | Indicates that the Laminator Card Path needs cleaning; see *Cleaning the Laminator* on page 122, |
| CLEAN LAM ROLLERS | Indicates that the Laminator Rollers need cleaning; see *Cleaning the Laminator* on page 122 |
| CLEAN LAM OVEN | Indicates that the Laminator Heated Rollers need cleaning; see *Cleaning the Laminator* on page 122 |
| RIBBON LOW | Indicates that the Ribbon spool is low; see *Loading a Print Ribbon* on page 17. |
| TOP LAMINATE LOW | Indicates that the Top Laminate cassette is low; see *Loading the Laminate* on page 20. |

## Error Messages

Refer to Section 7, Troubleshooting, for a list of the error messages, possible causes, and possible solutions.

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.

# Printer Menu Information

The OCP Display and three OCP Buttons give access to the printer menus.

## Main Menu
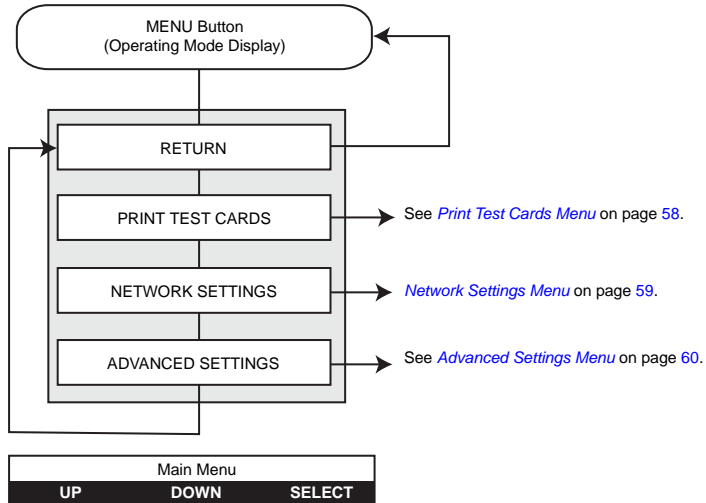
```
        ┌──────────────────────────┐
        │      MENU Button         │◄──────────────┐
        │ (Operating Mode Display) │               │
        └──────────────────────────┘               │
                    │                               │
        ┌───────────┼───────────────┐              │
        │  ┌────────────────────┐   │──────────────┘
    ┌──►│  │      RETURN        │   │
    │   │  └────────────────────┘   │
    │   │  ┌────────────────────┐   │      See *Print Test Cards Menu* on page 58.
    │   │  │  PRINT TEST CARDS  │   │────►
    │   │  └────────────────────┘   │
    │   │  ┌────────────────────┐   │      *Network Settings Menu* on page 59.
    │   │  │  NETWORK SETTINGS  │   │────►
    │   │  └────────────────────┘   │
    │   │  ┌────────────────────┐   │      See *Advanced Settings Menu* on page 60.
    │   │  │ ADVANCED SETTINGS  │   │────►
    │   │  └────────────────────┘   │
    │   └───────────────────────────┘
    │               │
    └───────────────┘
```

```
┌───────────────────────────────────┐
│            Main Menu               │
├───────────────────────────────────┤
│   UP        DOWN        SELECT     │
└───────────────────────────────────┘
```

- 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

## Info Menu

INFO Button
(Operating Mode Display)

| | |
|---|---|
| PRINTER INFO | → Displays MCB FW Ver, MAB FW Ver, MSN (Machine Serial Number), PH S/N (Printhead Serial Number). |
| NETWORK INFO | → Displays DHCP, IP, Mask, GW, and MAC. |
| RIBBON INFO | → Displays Type, # Images, and % Remaining. |
| PRINTHEAD USAGE | → Displays Card Count and Printhead Lines. |
| REJECT BIN | → Displays number of cards in Reject Bin (Card Count = n). |
| CONFIGURATION INFO | → Lists RAM, Single or Dual Sided, and Options Installed: Mag, Encoder, Laminator. |
| LAMINATOR INFO * | → Displays LCB, MAB, Serial Number, Top installed (yes/no), Bottom installed (yes/no). |
| TOP LAMINATE INFO * | → Displays P/N, Type, # Images, and % Remaining. |
| BOTTOM LAMINATE INFO * | → Displays P/N, Type, # Images, and % Remaining. |
| LAMINATOR TEMPERATURE * | → Displays Settings: Top and Bottom temperature; and Current: Top and Bottom temperature. |
| LAMINATOR ODOMETER * | → Unit on (# *days*), Top on (# *days*), Bottom on (# *days*), # Laminated, # Processed. |
| CAL LUT INFO | → Displays info for LUT 1 (Look-Up Table 1), LUT 2 (Look-Up Table 2), and Color Collaboration. |
| CLEANING DUE | → Displays # Cards since last cleaning of Card Path, Feeder Path, Printhead, Laminator Path*, and Laminator Oven*. |

\* Only applies to Printers with a Laminator.

| Info Menu | | |
|---|---|---|
| PREV | NEXT | EXIT |

- 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
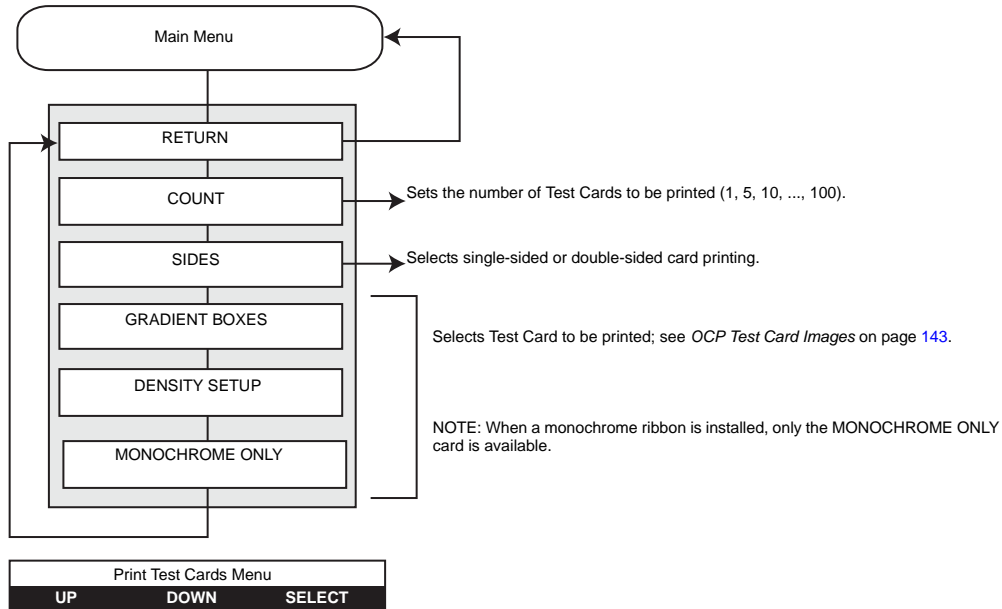
### Print Test Cards Menu

```
            ┌─────────────────────────┐
            │        Main Menu        │◄──────────┐
            └─────────────────────────┘           │
                        │                          │
         ┌──────────────┼──────────────┐          │
         │   ┌─────────────────────┐    │          │
         │   │       RETURN        │────┼──────────┘
         │   └─────────────────────┘    │
         │   ┌─────────────────────┐    │
         │   │       COUNT         │    │───►  Sets the number of Test Cards to be printed (1, 5, 10, ..., 100).
         │   └─────────────────────┘    │
         │   ┌─────────────────────┐    │
         │   │       SIDES         │    │───►  Selects single-sided or double-sided card printing.
         │   └─────────────────────┘    │
         │   ┌─────────────────────┐    │
         │   │   GRADIENT BOXES    │    │
         │   └─────────────────────┘    │      Selects Test Card to be printed; see OCP Test Card Images on page 143.
         │   ┌─────────────────────┐    │
         │   │   DENSITY SETUP     │    │
         │   └─────────────────────┘    │      NOTE: When a monochrome ribbon is installed, only the MONOCHROME ONLY
         │   ┌─────────────────────┐    │      card is available.
         └───│   MONOCHROME ONLY   │    │
             └─────────────────────┘    │
```

```
┌─────────────────────────────────────┐
│        Print Test Cards Menu         │
├──────────┬──────────┬───────────────┤
│   UP     │   DOWN   │    SELECT      │
└──────────┴──────────┴───────────────┘
```

- 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

**Network Settings Menu**

```
        ┌──────────────────────┐
        │      Main Menu       │◄──────────┐
        └──────────────────────┘           │
                   │                        │
   ┌───────────────────────────────┐       │
   │ ┌──────────────────────────┐  │       │
┌─►│ │  RETURN WITHOUT SAVE     │──┼───────┤
│  │ └──────────────────────────┘  │       │
│  │ ┌──────────────────────────┐  │       │
│  │ │   SAVE SETTINGS          │──┼───────┘
│  │ └──────────────────────────┘  │
│  │ ┌──────────────────────────┐  │
│  │ │   DHCP MODE              │──┼──────►  Enable or disable the DHCP Mode.
│  │ └──────────────────────────┘  │
│  │ ┌──────────────────────────┐  │
│  │ │   SET IP ADDRESS         │──┼──────►  Change the IP Address.
│  │ └──────────────────────────┘  │
│  │ ┌──────────────────────────┐  │
│  │ │   SET SUBNET MASK        │──┼──────►  Change the Subnet Mask.
│  │ └──────────────────────────┘  │
│  │ ┌──────────────────────────┐  │
│  │ │   SET DEFAULT GATEWAY    │──┼──────►  Change the GW (Gateway).
│  │ └──────────────────────────┘  │
│  └───────────────────────────────┘
└──────────┘
```

```
┌────────────────────────────────────┐
│        Network Settings Menu        │
├──────────┬────────────┬────────────┤
│   UP     │    DOWN    │   SELECT    │
└──────────┴────────────┴────────────┘
```

- 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

```
                    ┌─────────────────────┐
                    │     Main Menu        │ ◄──────┐
                    └─────────────────────┘        │
                              │                      │
        ┌─────────────────────────────────────┐    │
    ┌──►│           RETURN                    │────┘
    │   ├─────────────────────────────────────┤
    │   │       SELECT LANGUAGE               │──► Displays current language, sets language option (English, French,
    │   ├─────────────────────────────────────┤     Spanish, German, Brazilian Portuguese, or Italian).
    │   │       FLUSH PRINT QUEUE             │──► Deletes all pending print jobs in the printer.
    │   ├─────────────────────────────────────┤
    │   │       PRINTER ONLINE                │──► Toggles printer Online / Offline.
    │   ├─────────────────────────────────────┤
    │   │       CLEAN PRINTER                 │──► See Clean Printer Menu on page 61.
    │   ├─────────────────────────────────────┤
    │   │       SET SLEEP TIMER               │──► Sets sleep timer function value (never, 30 minutes, 60 minutes,
    │   ├─────────────────────────────────────┤     120 minutes, or 480 minutes).
    │   │       SET SCREEN CONTRAST           │──► Adjusts the OCP display contrast (20 min, 50 max, default 35).
    │   ├─────────────────────────────────────┤
    │   │       CLEAR REJECT BIN              │──► Resets reject bin card count to 0.
    │   ├─────────────────────────────────────┤
    │   │       POLISH PRINTHEAD              │──► Printhead polishing is an advanced function. Use is password
    │   └─────────────────────────────────────┘     protected and limited to Zebra-authorized service personnel.
    │                         │
    └─────────────────────────┘

                    ┌─────────────────────────────────┐
                    │    Advanced Settings Menu        │
                    │  UP        DOWN       SELECT      │
                    └─────────────────────────────────┘
```

- 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

```
        ┌──────────────────────────┐
        │  Advanced Settings Menu   │◄──────────┐
        └──────────────────────────┘           │
                    │                           │
        ┌──────────────────────────┐           │
    ┌──►│         RETURN            │───────────┘
    │   └──────────────────────────┘
    │                                 Refer to Section 6, Cleaning, for detailed cleaning instructions.
    │   ┌──────────────────────────┐
    │   │     CLEAN CARD PATH       │──────►  Use the **Print Path Cleaning Card**, and step through the cleaning process.
    │   └──────────────────────────┘
    │   ┌──────────────────────────┐
    │   │      CLEAN FEEDER         │──────►  Use the **Feeder Cleaning Card**, and step through the cleaning process.
    │   └──────────────────────────┘
    │   ┌──────────────────────────┐
    │   │   CLEAN LAM CARD PATH *   │──────►  Use the **Laminator Cleaning Card**, and step through the cleaning process.
    │   └──────────────────────────┘
    │   ┌──────────────────────────┐
    │   │    CLEAN LAM ROLLERS *    │──────►  Use a **Cleaning Swab**, and step through the cleaning process.
    │   └──────────────────────────┘
    │   ┌──────────────────────────┐
    │   │     CLEAN LAM OVEN *      │──────►  Use the **Laminator Hot Roller Cleaning Card** (with adhesive), and step
    │   └──────────────────────────┘          through the cleaning process.
    └───────────────────────────────
                                      * Only applies to Printers with a Laminator.
```

| Clean Printer Menu | | |
|---|---|---|
| UP | DOWN | SELECT |

- 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

# 4

## Printer Settings and Adjustments

## Introduction

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

# Printer Properties

To access Printing Properties, select *Start > Devices and Printers*. Right click on the *Zebra ZXP Series 7 Card Printer* listing, and select *Printer properties*.

The **OK** button applies and saves the settings, and then closes the Printer Properties.

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

The **Apply** button applies and saves the settings. Printer Properties remains open.

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

# General Tab

The General tab lists the name, location, model number, and features of the printer.

To access the General tab, select *Start > Devices and Printers*. Right click on the *Zebra ZXP Series 7 Card Printer* listing, and select *Printer properties > General*.
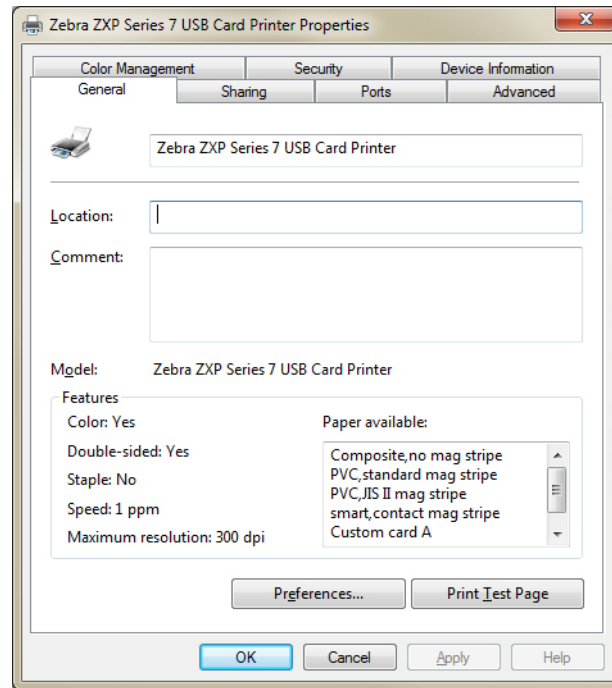


- **Location -** Lets you specify where the printer is physically located.

- **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 printer model number.

  - **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 76.

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

## Sharing Tab

The Sharing tab lets you share the printer over the network and install additional drivers to accommodate different operating systems.

Note that for Windows Vista and above, the *Render print jobs on client computers* checkbox should be disabled.

To access the Sharing tab, select *Start > Devices and Printers*. Right click on the *Zebra ZXP Series 7 Card Printer* listing, and select *Printer properties > Sharing*. Click on the **Change Sharing Options** button to enable this tab.
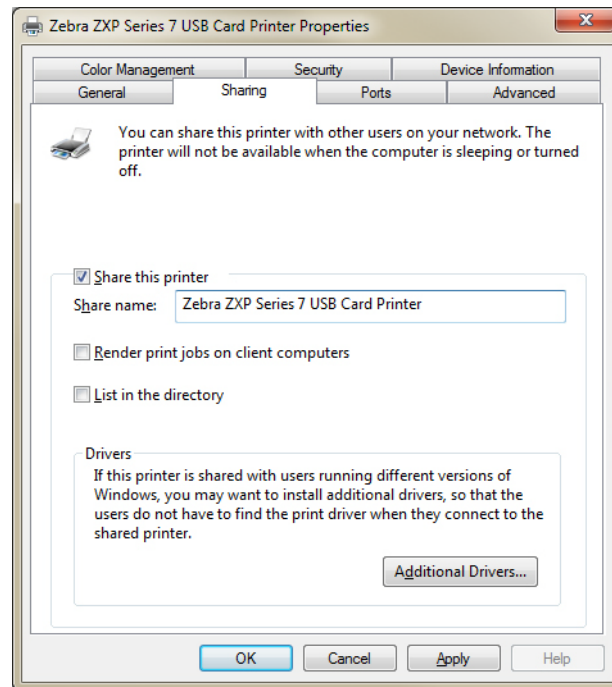


For details, see Windows-provided help for standard property pages.

## Ports Tab

> ⚠ **Important •** Do not un-check the **Enable bi-directional support** option. If you modify this, you will lose the communication to the printer.

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 and will not normally require attention.

To access the Ports tab, select *Start > Devices and Printers*. Right click on the *Zebra ZXP Series 7 Card Printer* listing, and select *Printer properties > Ports*.
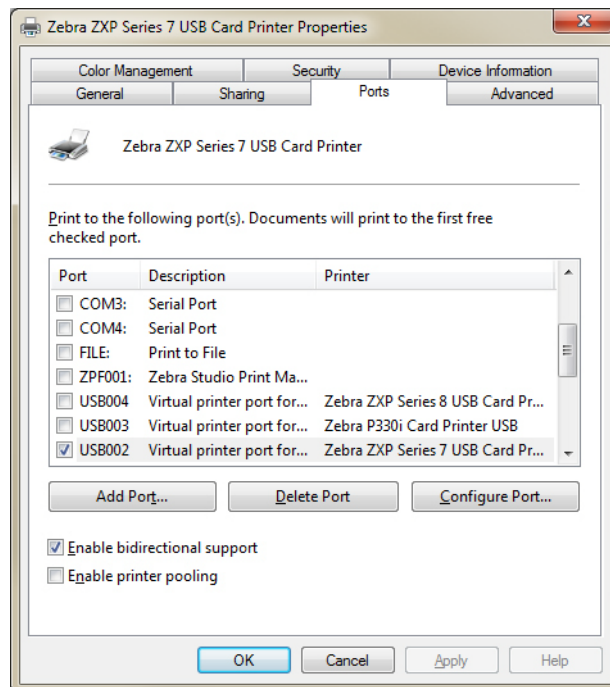


For details, see Windows-provided help for standard property pages.

## 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 7 Card Printer* listing, and select *Printer properties > Advanced.*
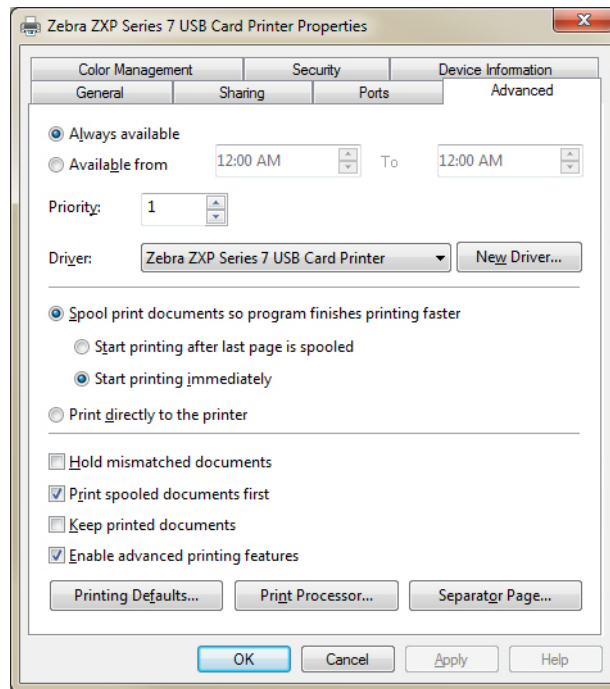
For details, see Windows-provided help for standard property pages.

## Color Management Tab

The Zebra-provided color profile was designed to maximize color accuracy across the entire color gamut of the printer.

User-created custom profiles can alter very specific colors or groups of colors to any other color the user desires. For example: If the customer had a particular shade of red in the digital image that was not coming out as desired, then a custom profile could alter just that shade of red but leave all the other colors in the image the same.

A custom profile can also be used to perform more basic image transformations such as converting full color image to shades of a single color (like sepia), changing brightness or contrast, adjusting saturation or hue, etc.

To access the Color Management tab, select *Start > Devices and Printers*. Right click on the *Zebra ZXP Series 7 Card Printer* listing, and select *Printer properties > Color Management.* Click on the **Color Management** button to enable this tab.
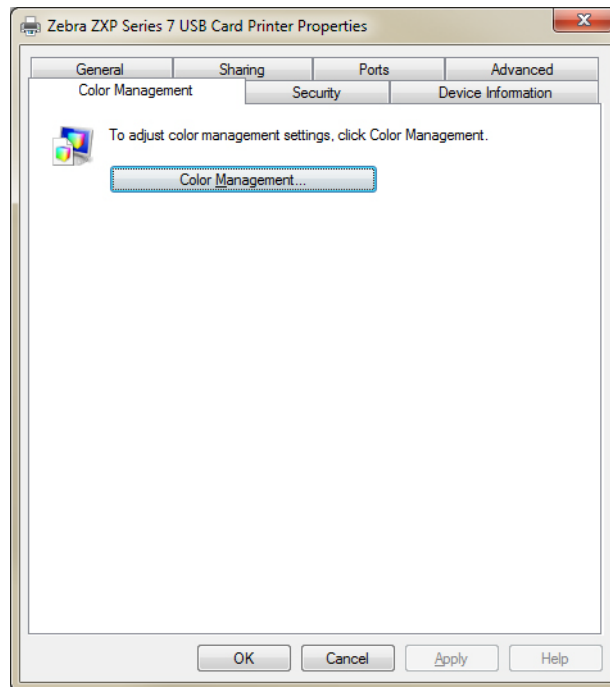
When you click on the **Color Management** button, you will see the following three tabs:

## Devices Tab

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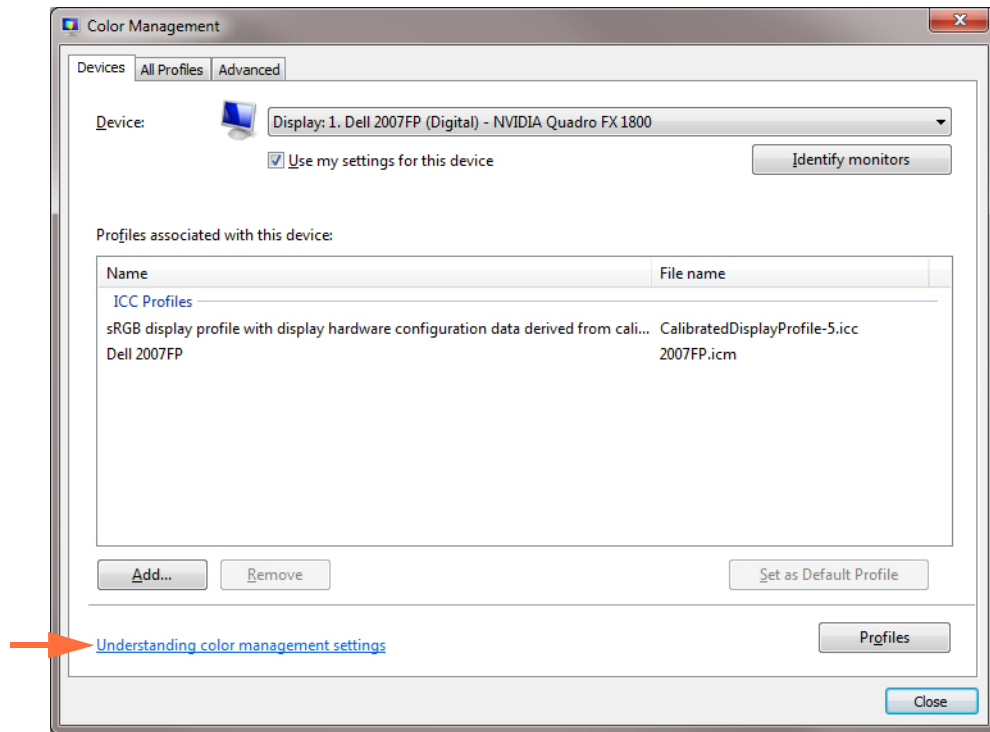


The *Use my settings for this device* checkbox must be selected to enable the following button functions:

- 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.
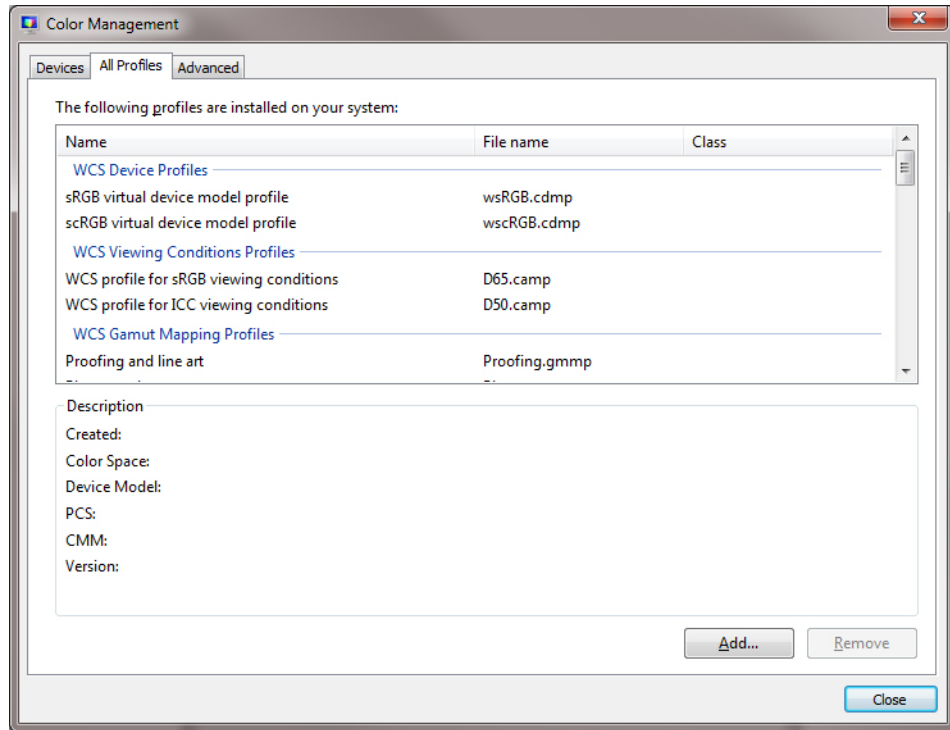


If you need to install a new profile, follow these steps:

**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.
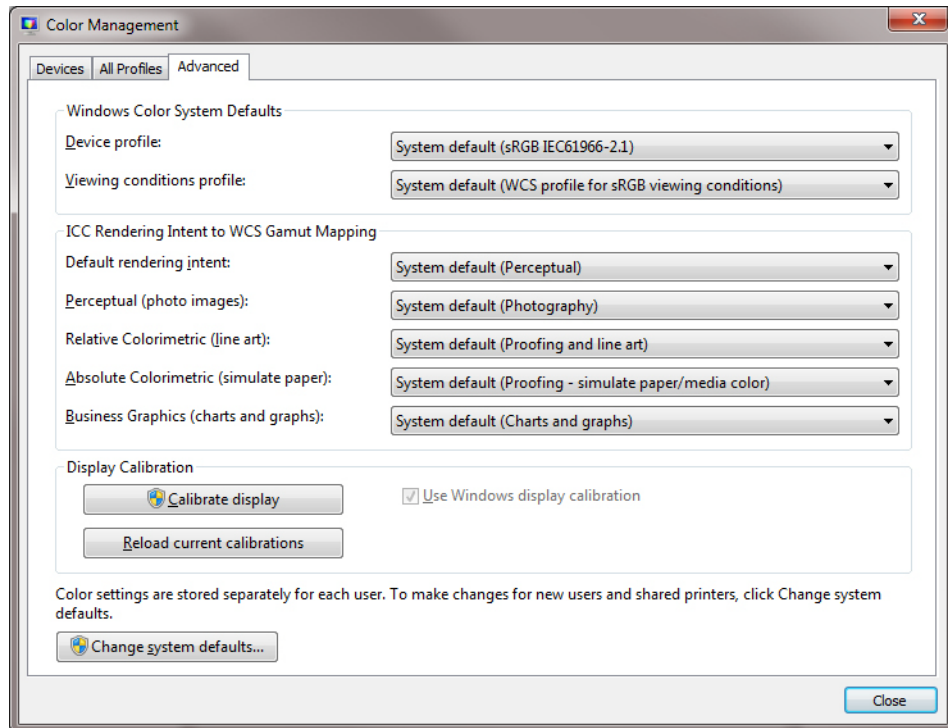
## Security Tab

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 7 Card Printer* listing, and select *Printer properties > Security.*
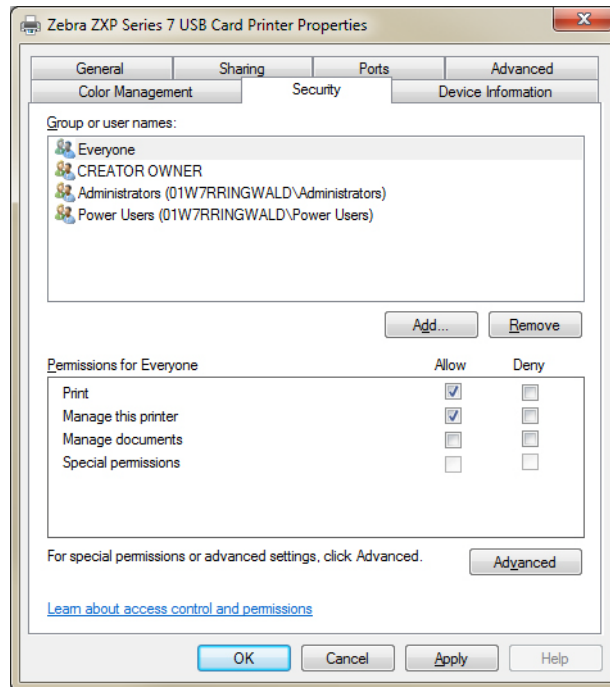


For details, see Windows-provided help for standard property pages.

# Device Information Tab

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

To access the Device Information tab, select *Start > Devices and Printers*. Right click on the *Zebra ZXP Series 7 Card Printer* listing, and select *Printer properties > Device Information*.
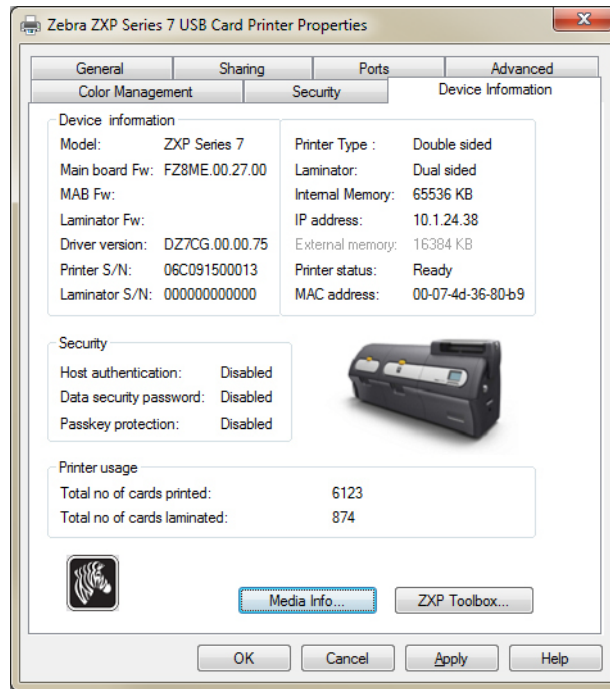


- The **Media Info** button takes you to the Media Info screen; see next page.

- 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*, *ZXP Series Toolbox*, for details.

  Note that the ZXP Toolbox relies on the Windows driver to communicate with the printer.

## Media Info

Media Info screen shows ribbon status and top and bottom laminate status.
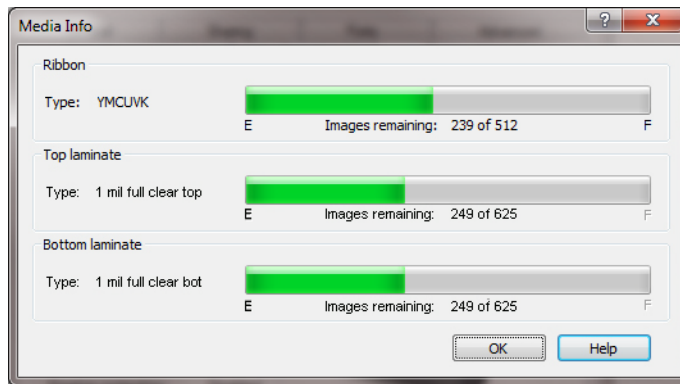
- **Ribbon**: Shows the ribbon type installed and the number of ribbon sets remaining.

- **Top Laminate**: Shows the top laminate type and the number of laminate panels remaining.

- **Bottom Laminate**: Shows the bottom laminate type and the number of laminate panels remaining.

# Printing Preferences

To access Printing Preferences, select *Start > Devices and Printers*. Right click on the *Zebra ZXP Series 7 Card Printer* listing, and select *Printing preferences*.
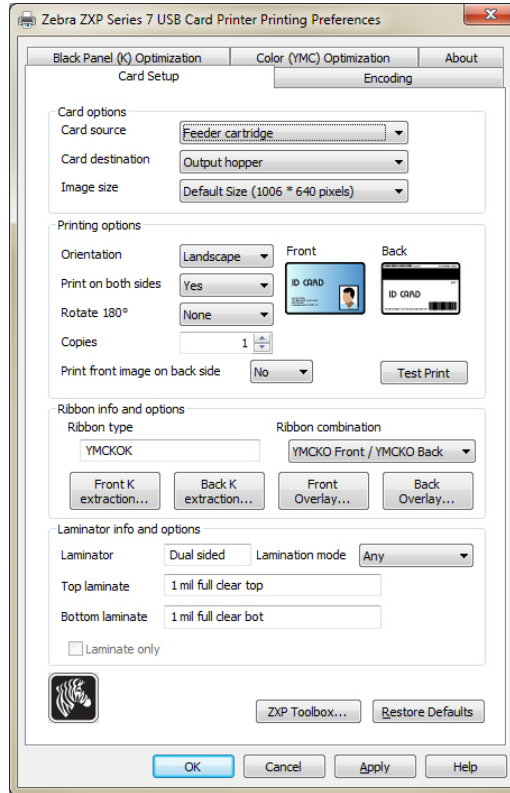
The **Toolbox** button launches the ZXP Toolbox; see *Section 5* for details.

The **Restore Defaults** button restores the default values for the page.

The **OK** button applies and saves the settings, and then closes the Printing Preferences.

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

The **Apply** button applies and saves the settings. Printing Preferences remains open.

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

## Card Setup Tab

To access the Card Setup Tab, select *Start > Devices and Printers*. Right click on the *Zebra ZXP Series 7 Card Printer* listing, and select *Printing preferences > Card Setup.*
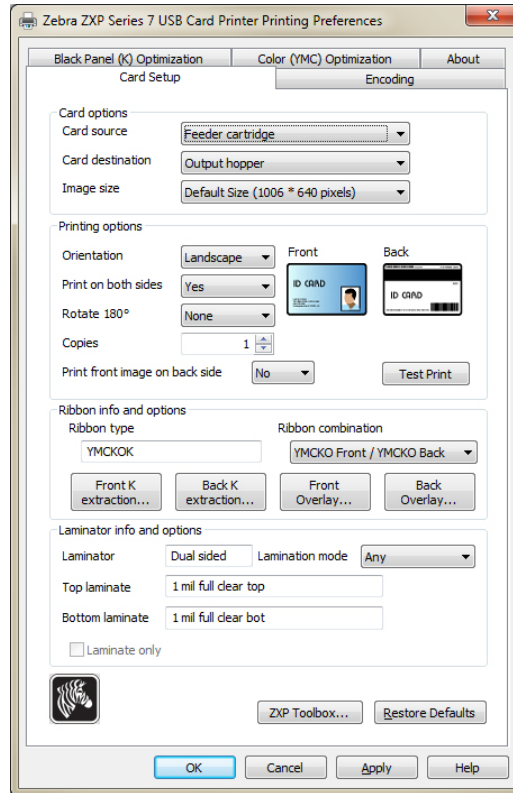


- **Card options** allows the user to select the Card Source and Card Destination.

  - Card source

    - Manual feed slot
    - Feeder cartridge -- default
    - Already in printer (for applications that use this feature)

  - Card destination

    - Output hopper -- default
    - Reject bin
    - Leave in printer (for applications that use this feature)

  - Image size

    - Default Size (1006 * 640 pixels): Note that this setting should always been used unless you are printing images that were specifically designed for other Zebra printer models.
    - CR-80 (952 * 578 pixels): For Zebra P640i Card Printer compatibility.
    - Bordered (968 * 610 pixels): For Zebra P640i Card Printer compatibility.

- **Printing options**:

  If you modify any of these settings, click the **Apply** button before printing a test card.

  The **Test Print** button prints a test card.


- **Ribbon info and options**:
  - **Ribbon type** shows the type of ribbon (e.g., YMCKOK) installed in the printer. Note that this is automatically detected from the ribbon.
  - **Ribbon combination** allows you to select the combination of panels to be printed on each side (e.g., YMCKO Front/YMCKO Back).
  - Depending on the ribbon type installed, the **Front** and **Back** buttons let you set options for:
    - Black Panel Options on page 79
    - Overlay Varnish Options on page 82
    - UV Panel Options on page 83


- **Laminator info and options**:

  These options apply only to printers with laminator. This section automatically shows the presence of the laminator and laminate. You can select the **Lamination mode** (Any, Top, Bottom, Top and bottom, or Pass through) via the dropdown menu.

  *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.
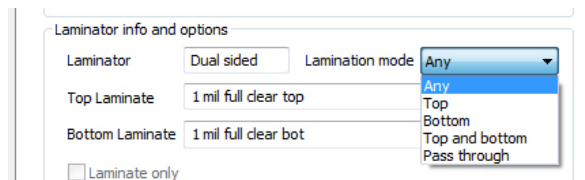


  **Laminate only** can be used to laminate pre-printed cards. This is a special-purpose function that is enabled when the *Lamination mode* is set to Top, Bottom, or Top and bottom and the *Card destination* is set to Output hopper. When this option is selected, the card is passed from the input hopper, through the printer without being printed, to the laminator for lamination, then to the output hopper.

## Black Panel Options

The Black Panel Options pop-up window allows you to manage and configure the use of the Black Panel (K panel) extraction 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 Black Panel Options pop-up window, select *Start > Devices and Printers*. Right click on the *Zebra ZXP Series 7 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.
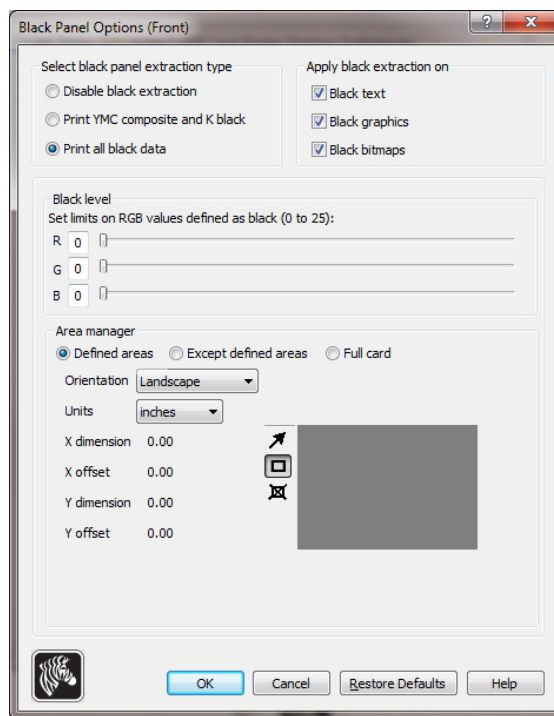


This feature ensures that black text or black bitmaps will be printed with the Black Panel (K panel). Without this option, black may be printed in composite (YMC) creating a dark gray image instead of true black.

To extract black areas from color images, several selections can 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 the continuous tone nature of the YMC dyes), not the sharp edges typically desired for a barcode.

  - **Print all black data** (default) uses only the K panel to print the portions of the image that are identified as being black.

- **Apply black extraction on:** Note that this function is dependent on the image having areas defined as text, graphics (lines, rectangles, and other non-text graphic objects), and bitmaps (color images, photos, pictures, etc). If the image is flattened, then this function does not apply.

  - **Black text** applies black extraction to areas of the image identified as text.

  - **Black graphics** applies black extraction to areas of the image identified as graphics.

  - **Black bitmaps** applies black extraction to areas of the image identified as bitmaps. Black bitmaps will extract only black out of monochrome bitmaps not from color bitmaps. For extracting from color bitmaps, Area manager settings are used; see Defined areas, Except defined areas, and Full card on Page 81.

- **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 pixel 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 *Except defined areas* (extract outside the zone) radio button is selected.
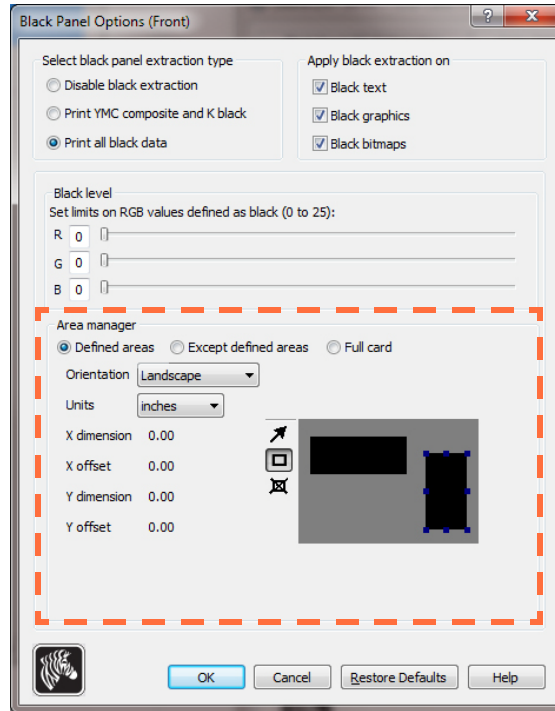


- **Defined areas** applies black extraction to areas of the image inside of the zones specified in the Area manager.

- **Except defined 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.

- **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.

## Overlay Varnish Options

Overlay varnish is a durable layer of film applied to printed cards that reduces fading by protecting the image from UV exposure.

The Overlay Varnish pop-up allows you to manage and configure the use of the Overlay when the selected Ribbon Combination shows the O panel (e.g. YMCKO).

To access the Overlay Varnish pop-up window, select *Start > Devices and Printers*. Right click on the *Zebra ZXP Series 7 Card Printer* listing, and select *Printing preferences > Card Setup*. Select *Ribbon info ... > Front Overlay ...* or *Back Overlay ...*
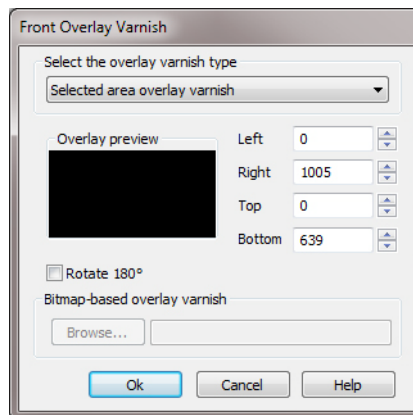


**Select the overlay varnish type** - Option selection for applying overlay varnish ribbon to a card. Default setting is *Full overlay varnish*.

There are various varnish options. A preview pane is shown for each selection.

- Disable overlay - Disables the overlay option; i.e., does not apply any overlay.

- Full overlay varnish (default) - Applies an edge-to-edge overlay.

- Selected area blank - Applies overlay only outside the area selected by user.

- Selected area overlay varnish - Applies overlay only in the area selected by user.

- Bitmap based overlay varnish - Applies a user-defined 1-bit monochrome bitmap as an overlay.

- Smartcard ISO - Does not apply overlay on the area of the smartcard chip.

- Smartcard AFNOR - Does not apply overlay on the area of the smartcard chip.

- Magnetic Stripe - Does not apply overlay on the area of the magnetic stripe.

## UV Panel Options

A UV Panel is used to print images (text or graphics) that will glow in the visible spectrum when exposed to a UV Light. The UV Panel pop-up 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 7 Card Printer* listing, and select *Printing preferences > Card Setup*. Select *Ribbon info ... > Front UV ...* or *Back UV ...*
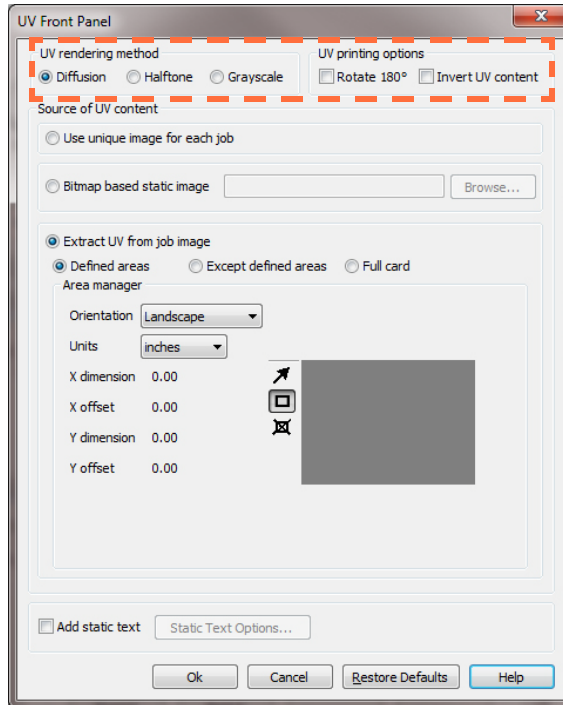


### UV rendering method:

- **Diffusion:** This mode will render the UV content using error diffusion.

- **Halftone:** This mode will render the UV content using half-toning.

- **Grayscale** prints the bitmap image as a grayscale image, which is composed of shades of gray, varying from black to white.

### UV printing options:

- **Rotate 180°** rotates the provided bitmap image 180°.

- **Invert UV content** inverts the bitmap image if not inverted in the application.

## Source of UV content

- **Use unique image for each job:** Each print job will send a unique UV image along with the YMCK content.
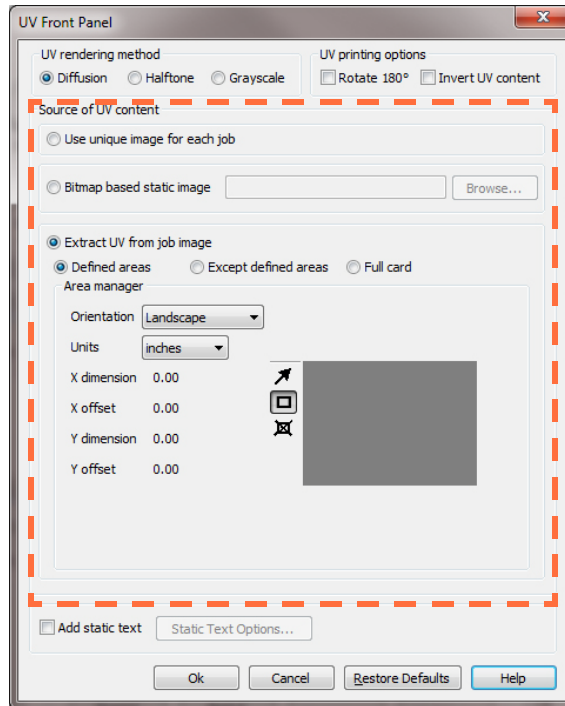


- **Bitmap based static image**: Imports the bitmap image to print on the UV panel; e.g., import a security seal. The UV image that is selected will be the same for all jobs.

  1. Select the *Bitmap based static image* radio button.

  2. Click on the **Browse** button to bring up a dialog box for choosing the file.

  3. Locate and select the file (a specific .bmp file on local drive). Note that the UV image can be any standard .bmp image supported by windows applications like *Paint* or *Fax Viewer*. (24-bit, 1-bit etc.).

  4. Select the **UV rendering method**; see Page 83.

  5. Select the **UV printing options**; see Page 83.

  6. Click the **OK** button to close the UV Panel pop-up.

  7. The Driver applies this .bmp image as full UV print on all print jobs sent to printer.

- **Extract UV from job image**

Similar to K extraction, this mode allows you to print a selected portion of the YMC image using the UV panel. Options include *Defined areas*, *Except defined areas*, and *Full card*. These options are selected via their associated radio buttons.

*Defined areas* allows you to specify what areas will be also printed with YMC and UV. *Undefined areas* will print YMC with UV in all areas except those that are indicated. *Full card* will print the entire image with YMC and UV.

- **Area manager**: This section is enabled when either *Defined areas* or *Undefined areas* is selected.

  - 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.

### Add static text:

When the *Add static text* checkbox is selected (checked), the **Static Text Options** button is enabled. This option automatically prints a unique text value in a fixed location on a card using the UV panel.

1. Click on the **Static Text Options** button to activate this option.

2. Observe the UV Panel popup.
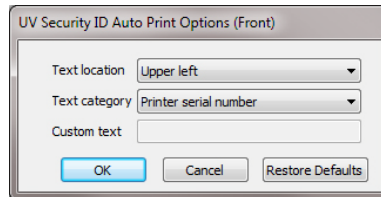


3. Specify the *Text location*. Select the location from four pre-defined areas of a card (Upper left, Upper right, Lower left, Lower right).

4. 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, up to 32 characters.

5. Click the **OK** button to close the UV Panel pop-up.

# Black Panel (K) Optimization Tab

The Black Panel (K) Optimization tab displays two identical adjustment sections (Front and Back) 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 7 Card Printer* listing, and select *Printing preferences > Black Panel (K).* The front side and back side options are enabled based on the availability of K panel in the ribbon combination.
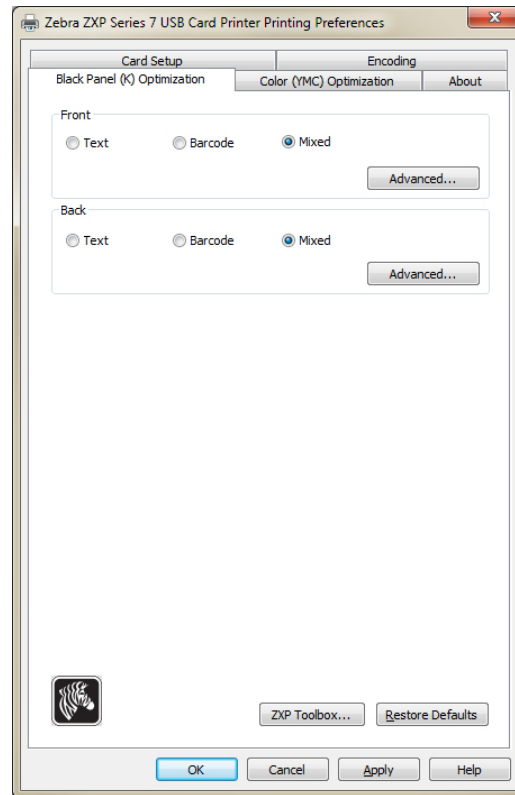


- **Optimize for:** Black panel printing can be optimized to improve the quality of individual elements that comprise the image. There are separate optimization settings for Text, Barcodes, and Mixed content.

  - **Text** sharpens the edges of fonts. This setting will make barcodes appear darker.

  - **Barcode** sharpens fine lines to improve barcodes for scanning. This setting will make text and graphics appear lighter.

  - **Mixed** (default) combines the optimum settings for text, barcode, and graphics printing in most applications.

Click on the **Advanced** button for additional black (K) panel optimization options to further fine tune black (K) panel printing; see next page.

## Advanced Black Panel (K) Optimization

The Advanced Black Panel (K) Optimization tab optimizes black panel printing for the type of image being printed; i.e., text, barcode, or mixed.
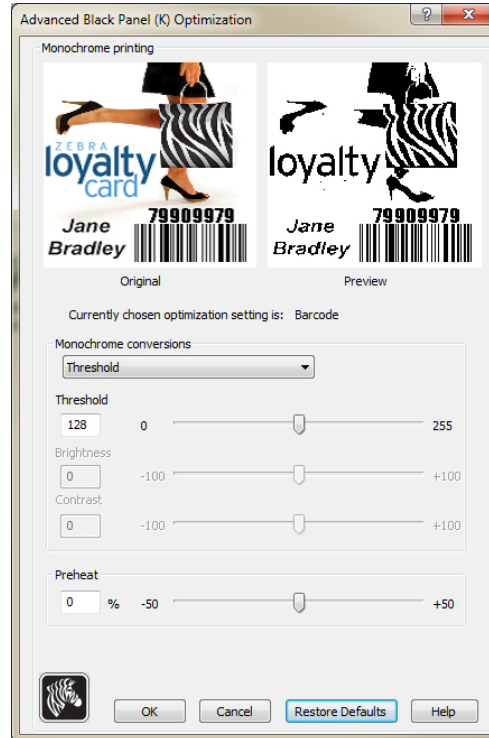


- **Monochrome conversions**: This section is used to control multi-tone printing when using a monochrome ribbon. The available options are *Dither error diffusion* (default), *Dither 6x6 halftoning*, and *Threshold* (also known as *Dither pure black on white*); see next page for details.

- **Controls:**

  - **Threshold** sets the transition point between black (0) and white (255); i.e., pixel values less than the threshold value would be black, and pixel values greater than the threshold value would be white.

  - **Brightness** controls overall the brightness of the image. Move the slider to the right to lighten the image or to the left to darken the image.

  - **Contrast** controls the difference between the light and dark areas of the image. Move the slider to the right to increase the contrast and vice versa.

  - **Preheat** controls the intensity of the image. Increase the value to enhance edges. Reduce the value if bleeding is present. Note that the Preheat setting does not affect the preview image but is applied to the image during the printing process.

## 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 binary1-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 a dithering technique to convert full color or gray images into a binary image that when printed simulates having a continuous tone response. The error diffusion technique is usually preferred on pictorial images since it produces a sharper and more detailed image.

- **Dither 6x6 halftoning**

  Halftoning is a dithering technique to convert full color or gray images into a binary image that when printed simulates having a continuous tone response. The halftoning technique is coarser looking than error diffusion but does not have the inherent image structure seen with error diffusion.
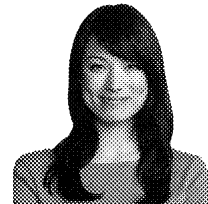
- **Threshold**

  Threshold (also know as *Dither pure black on white*) converts full color or gray images into a binary image by a threshold comparison. If a gray pixel value is above the threshold, it converted to a white pixel; and if its below the threshold, its converted to a black pixel.This method will not simulate shades like error diffusion or halftoning does and is thus not recommend to be used with pictorial content. However, it will accurately preserve straight edges on graphics, barcodes, and text and is the preferred conversion for those types of images.

### 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.

**Threshold:** Use on text, barcodes, line art, and simple graphics.

# Color (YMC) Optimization Tab

To access the Color (YMC) Optimization Tab, select *Start > Devices and Printers*. Right click on the *Zebra ZXP Series 7 Card Printer* listing, and select *Printing preferences > Color (YMC) Optimization*. Not available for monochrome/KdO/KrO ribbons.
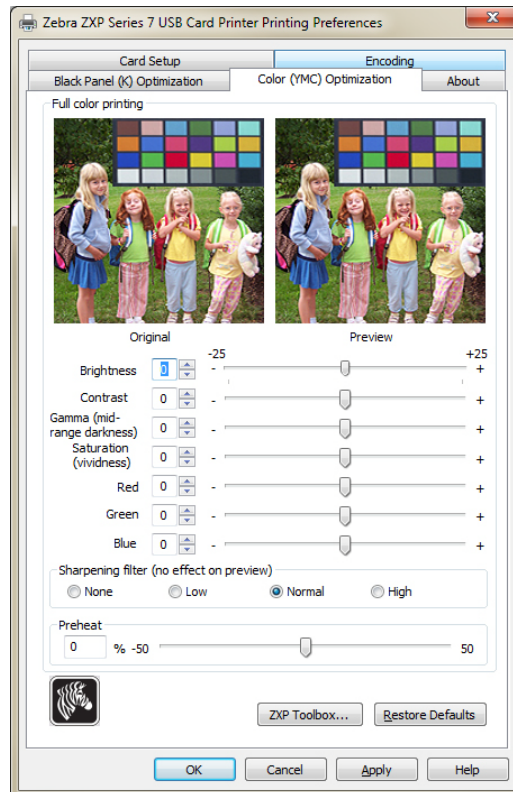


These color adjustments modify only how the pictures *print*. These adjustments do not affect the image files. (That type of adjustment would be made in an image processing application program.)

- **Full color printing** adjustments (-25 to +25 range) include Brightness, Contrast, Gamma, Saturation, Red, Green, and Blue. Adjustments are reflected in the preview image.

  - **Sharpening filter** options are None, Low, Normal (default), and High. Adjustments are not reflected in the preview image. 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.

  - **Preheat** adjustment ranges from -50 to 50, default = 0. Increasing the preheat value 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.

# Encoding Tab

The Encoding tab lets you to manage the various magnetic and smart card encoding options.

To access the Encoding Tab, select *Start > Devices and Printers*. Right click on the *Zebra ZXP Series 7 Card Printer* listing, and select *Printing preferences > Encoding*.
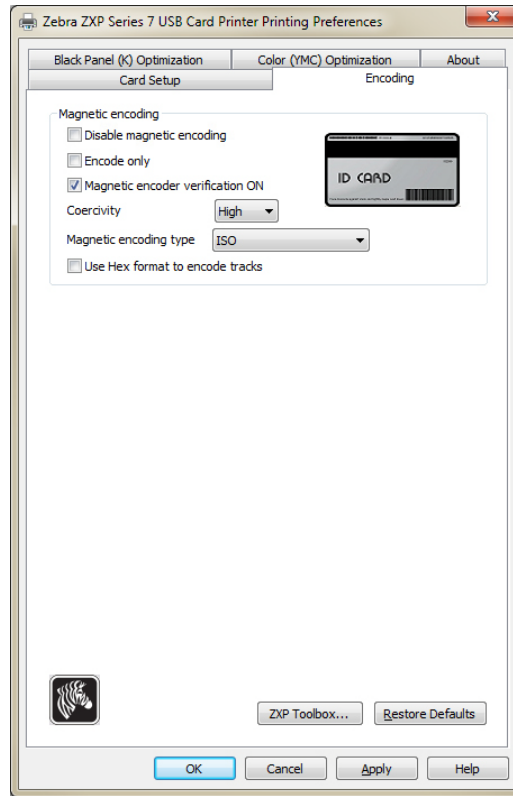


- **Magnetic encoding**:

    - **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 ON**: Verifies the data that is written to the card before declaring the encoding action to be successful.

    - **Coercivity**: Selections are High and Low.

    - **Magnetic encoding type**: Selections are ISO, AAMVA, CUSTOM, and BINARY. ISO is the default. Custom settings are adjusted using the ZXP Toolbox; see Magnetic Encoding on page 109. BINARY is not currently supported.

## About Tab

The About Tab shows the copyright and the driver version for the *Zebra ZXP Series 7 Card Printer.*

To access the About Tab, select *Start > Devices and Printers.* Right click on the *Zebra ZXP Series 7 Card Printer* listing, and select *Printing preferences > About.*

**5**

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# 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 the printer. Note that the ZXP Series Toolbox works in conjunction with the printer driver.

# ZXP Series Toolbox Access

To access the ZXP Series Toolbox from the printer driver, select *Start > Devices and Printers*. Then right-click on the *Zebra ZXP Series 7 Card Printer* listing, and select *Properties > Device Information.* Click on the **ZXP Toolbox** button (circled below).
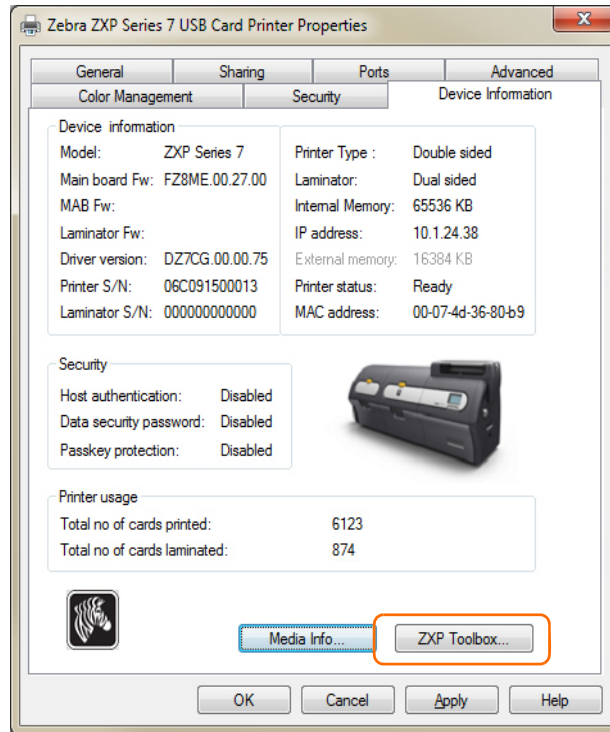


The ZXP Series Toolbox can also be accessed via *Start > All Programs > Zebra ZXP Series 7 Card Printer > ZXP ToolBox.*

# Information

## Printer

Printer 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.

- **Status** shows the current operational state of the Printer; e.g., Ready, Offline, etc.
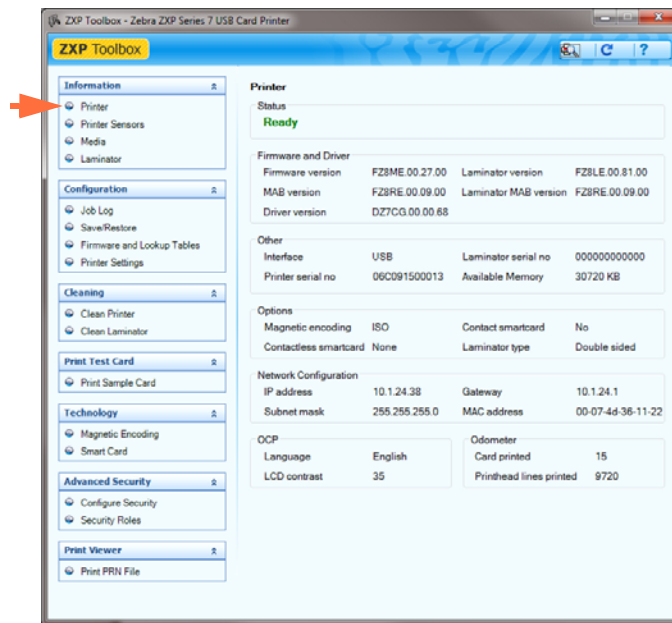


- **Firmware and Driver** lists the versions of the Firmware, Laminator, MAB, and Laminator MAB and the version of the Driver.

- **Other** shows the Interface, the Laminator serial number, the Printer serial number, and Available Memory.

- **Options** shows the options installed -- Magnetic encoding, Contact smartcard, Contactless smartcard, and Laminator type.

- **Network Configuration** information includes the IP address, Gateway, Subnet mask, and MAC address.

- **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

Printer Sensors 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 sensor status.

- **Sensor States** displays "live" sensor states.
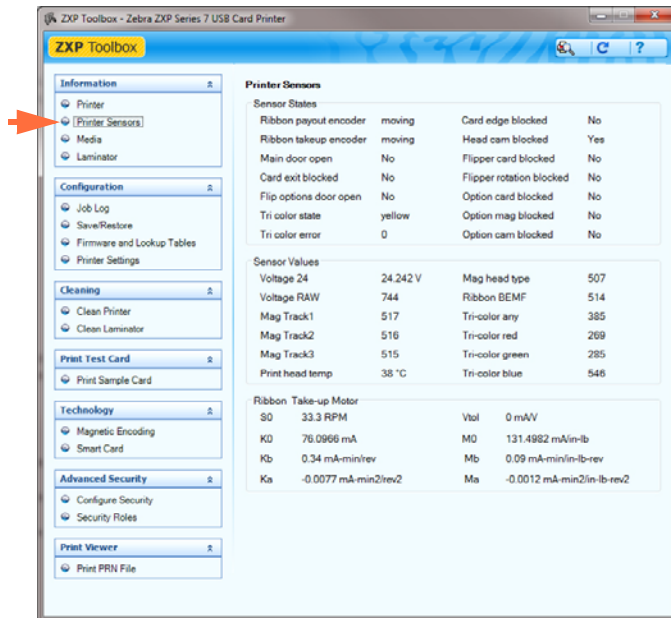


- **Sensor Values** displays "live" sensor values.

- **Ribbon Take-up Motor** lists various electrical characteristics of the motor.

# Media

Media 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 media status.

- **Ribbon Details** include Type, Initial size, Description, and Images remaining.
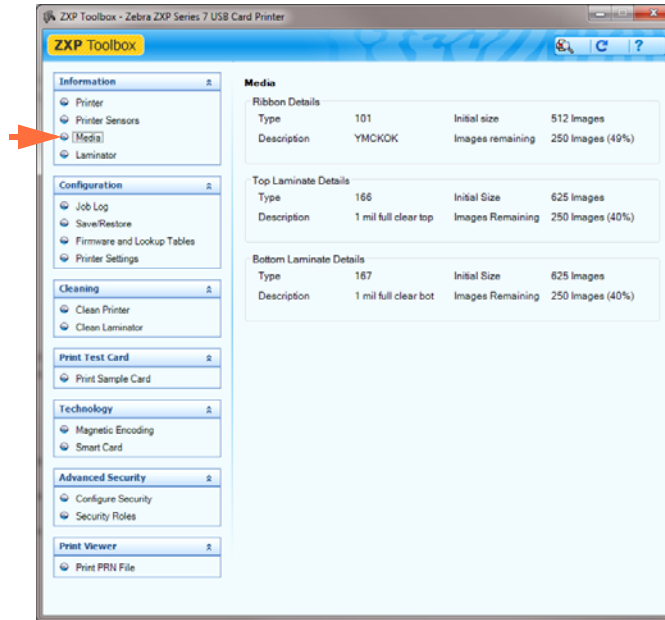


- **Top Laminate Details** include Type, Initial size, Description, and Patches remaining.

- **Bottom Laminate Details** include Type, Initial size, Description, and Patches remaining.

# Laminator

Laminator 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, Warnings, and Faults; Top surface and Bottom surface temperatures; and Line Voltage.
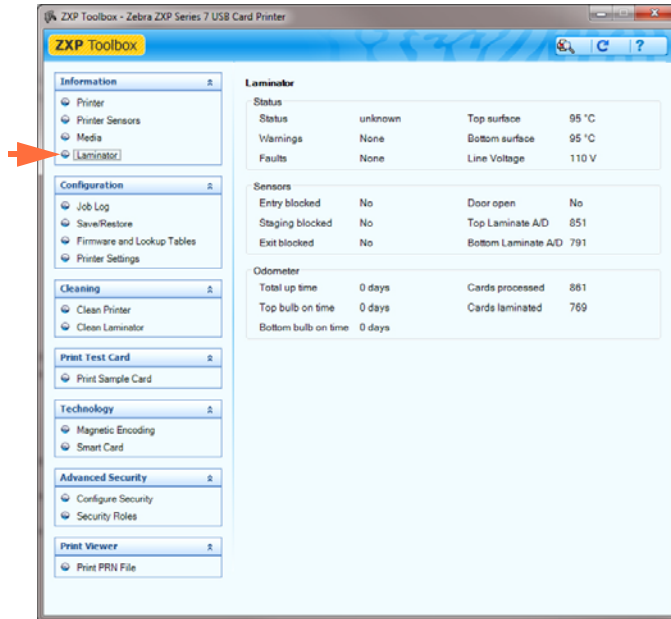


- **Sensors** shows the state of each laminator sensor.

- **Odometer** shows Total up time, Top bulb on time, Bottom bulb on time, the number of Cards processed, and the number of Cards laminated.

# Configuration

## Job Log

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

The Job Log is a utility that builds a database of card transactions in the printer's host computer. The Job Log records the data encoded on the card's magnetic stripe, together with date, time, and the printer's serial number.

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*.
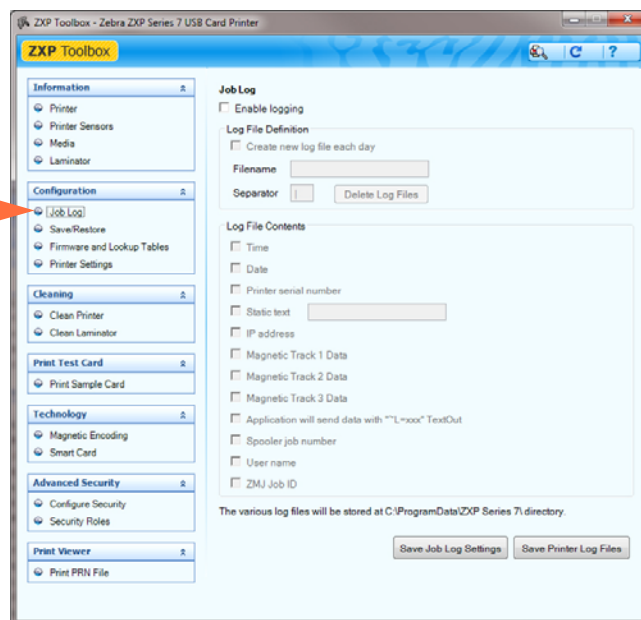


- **Enable logging** - If this box is checked, the logging feature is enabled.

- **Log File Definition -** Choose one of the following options:

    - If the "Create new log file each day" box is **not checked**, the data is saved to a log file of your choice (Filename).

    - If the "Create new log file each day" box is **checked**, the data is saved to log file *ZXPLog* with the day's date; e.g., *ZXPLog_2012_11_6.*

    In addition to the Filename, you may wish to enter a special field Separator Character. The default field Separator Character is the "|" character.

• **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 YY:MM:DD format.

- **Printer serial number**: Logs the serial number of the printer that printed the card.

- **Static text**: Adds to the record text in the box at right, 16 characters maximum.

- **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.

- **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 username of the person submitting the card 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 should save the printer and driver configuration settings; then, when you restore or add additional printers, you can use the saved configuration to ensure configuration consistency.

Note that the Saved/Restored Settings (circled below) are for the Printer.



• The **Save** button saves the Driver Settings and/or Printer Settings in an XML file format.

   - The printer configuration settings are stored as P_<filename>

   - The driver configuration settings are stored as D_<filename>

• The **Restore** button restores the Driver Settings and/or Printer Settings.

# 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 and check for firmware updates. This screen also allows you to download and select custom Lookup Tables.

**Caution •** **Do not turn power OFF** while the printer is downloading and configuring the new firmware.
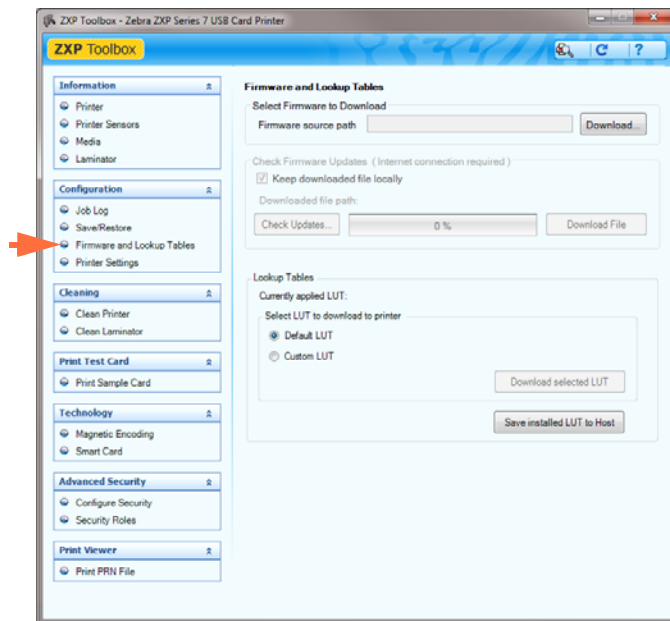


- **Select Firmware to Download**: Use this option to install the firmware downloaded from the Zebra web site at http://zebra.com under *Support & Downloads*.

  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:** To use this option, you must have an internet connection.

    1.  Click the **Check Updates** button; then enter the Server name, User name, and Password in the *Ftp Login* pop-up; and click the **OK** button.

    2.  Observe the firmware update file(s) displayed in the Filename listing; then select the desired update file from the list; and click the **Download File** button.

    3.  As the file is downloaded, observe the % complete bar.

    4.  Click the **OK** button when the *Download completed* pop-up appears.

    5.  Read the *ZXP Toolbox* caution message. If you are satisfied with the download, click on the **OK** button to install the firmware; otherwise, click the **Cancel** button to abandon the firmware installation.


- **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 on 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 7\LUTs.*

    3.  Click on the **Save** button.


    To install a Custom LUT:

    1.  Click on the **Custom LUT** radio button.

    2.  Click on the **Download selected LUT** button.

    3.  From the Browse window, locate and select the Custom LUT; e.g., *C:\ProgramData\ZXP Series 7\LUTs\ <filename >.*

    4.  Click on the **Open** button.

    5.  Click the **OK** button when the *LUT installed successfully* pop-up appears.


    To install/reinstall the Default LUT:

    1.  Click on the **Default LUT** radio button.

    2.  Click on the **Download selected LUT** button.

    3.  Click the **OK** button when the *LUT installed successfully* pop-up appears.

# Printer Settings

The Printer Settings screen allows you to change the OCP settings, set the network configuration parameters, change print performance settings, adjust the print offset and image fill, and change the printhead serial number and resistance.

**Note •** Access to Print Adjustment and Print Head options is controlled via Advanced Security > Security Roles.
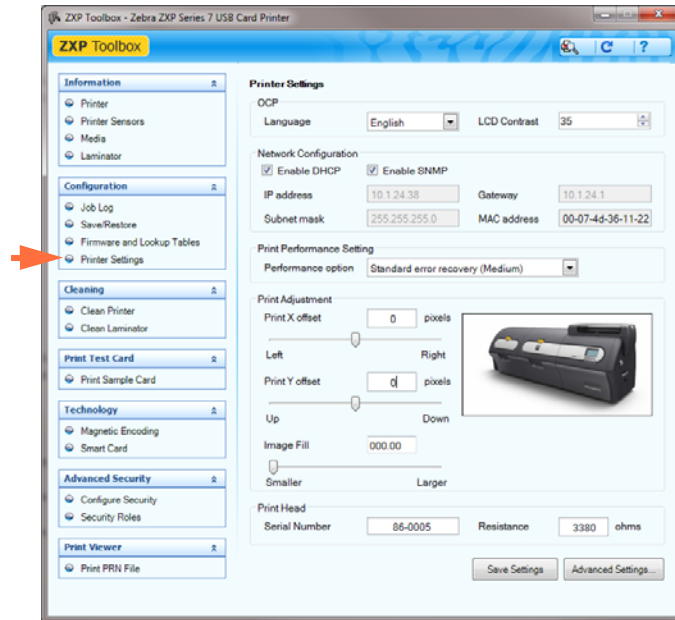


- **OCP**: This section allows you to change the Language displayed in the Operator Control Panel (English, French, Spanish, German, Portuguese, or Italian) and adjust the LCD Contrast level selected (the level ranges from 20 to 50).

- **Network Configuration**: This section allows you to change the various network configuration parameters (DHCP, SNMP, IP address, Gateway, and Subnet mask). Note that the MAC address cannot be changed.

- **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 failed 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.


- **Print Adjustment**

    Adjust the **Print X offset** and **Print Y offset** sliders to position the image on the card. The Print X offset slider values range from -150 to +150. The Print Y offset slider values range from -16 to +16. Note that changing the offset can cause the printer to print off the edge of the card and cause ribbon ripping.

    **Image Fill** is used to resize the image (smaller or larger) to best fit the card.

- **Print Head** (Access is controlled via Security Roles)

    - **Serial Number**: When you replace the printhead, change this field to match the serial number of the replacement printhead.

    - **Resistance** (Minimum: 2200 ohms, Maximum: 3300 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 = 3000.

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.
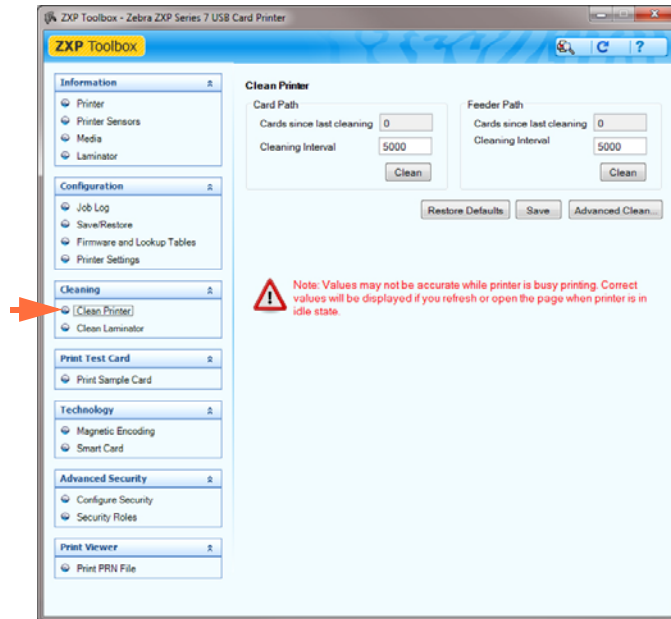


- **Card Path:** The Card Path cleaning interval can be adjusted depending on the printer operation environment. The default cleaning interval is every 5,000 cards. A running card count is displayed indicating the number of cards printed since last cleaning. Click on the **Clean** button so start the cleaning process. For details, see Clean the Card Path on page 119.

- **Feeder Path:** The Feeder Path cleaning interval can be adjusted depending on the printer operation environment. The default cleaning interval is every 5,000 cards. A running card count is displayed indicating the number of cards printed since last cleaning. Click on the **Clean** button so start the cleaning process. For details, see Clean the Feeder Path on page 120.

The **Restore Defaults** button resets the cleaning interval settings to the factory defaults.

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

The **Advanced Clean...** button provides access to printhead polishing function. Use is password protected and limited to Zebra-authorized service personnel.

# 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.
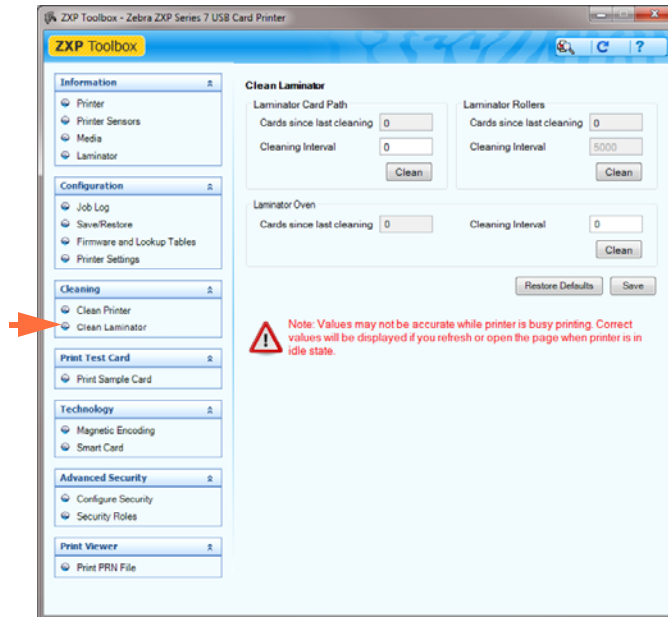


- **Laminator Card Path** cleaning interval can be adjusted depending on the printer operation environment. The default cleaning interval is every 5,000 cards. A running card count is displayed indicating the number of cards printed since last cleaning. Click on the **Clean** button so start the cleaning process. For details, see Clean the Laminator Card Path on page 123.

- **Laminator Roller** cleaning interval can be adjusted depending on the printer operation environment. The default cleaning interval is every 5,000 cards. A running card count is displayed indicating the number of cards printed since last cleaning. Click on the **Clean** button so start the cleaning process. For details, see Clean the Laminator Media Rollers on page 124.

- **Laminator Oven** (Heater Rollers) cleaning interval can be adjusted depending on the printer operation environment. The default cleaning interval is every 20,000 cards. A running card count is displayed indicating the number of cards printed since last cleaning. Click on the **Clean** button so start the cleaning process. For details, see Clean the Laminator Oven (Heater Rollers) on page 126.

The **Restore Defaults** button resets the cleaning interval settings to the factory defaults.

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

# Print Test Card

- The **Print Sample Card** button prints the default sample card or a sample card of your choice.

    1.  View the **Test Card Library**. Use the scrollbar to view all the selections.
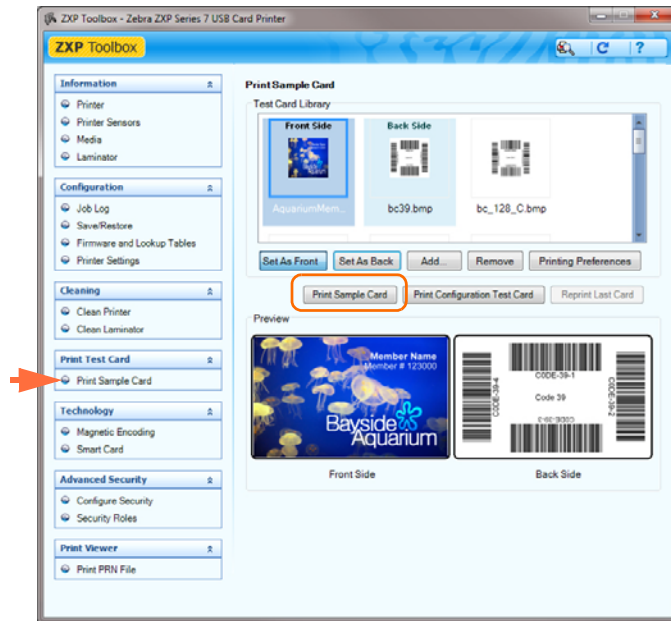


    2.  Set the front side:

        **a.**  Select (click on) a 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 the selection, repeat 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 on the **Print Sample Card** button (circled above) to print the sample card.

- 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

The Magnetic Encoding screen allows the user to set various magnetic encoding options. For more information on magnetic encoding, refer to Appendix D.

- **Settings**
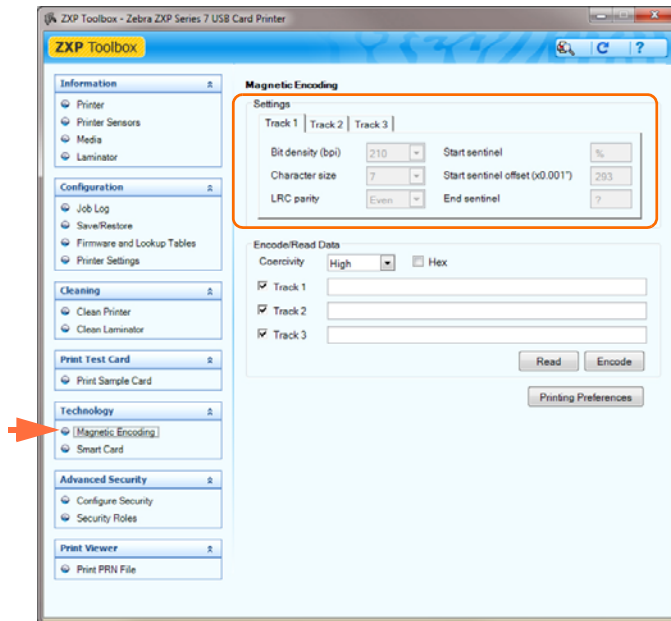


Track 1, Track 2 and Track 3 settings will be enabled only for **Custom** mag encoding format.

- **Encode/Read Data**

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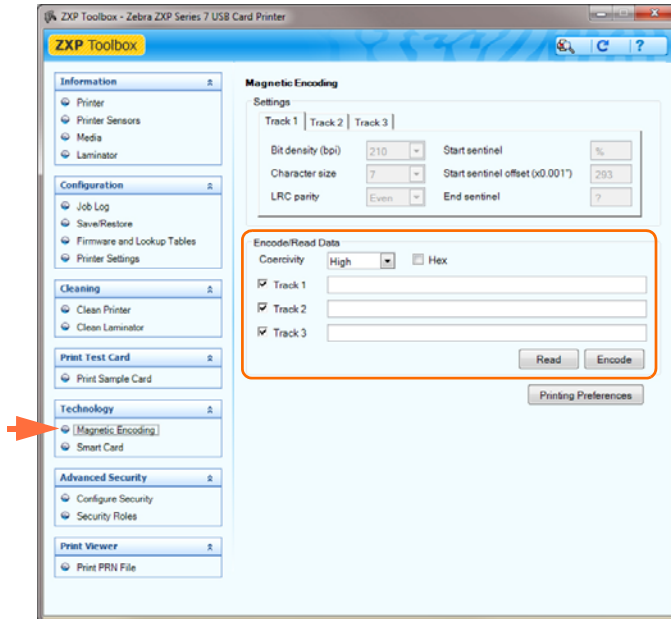


Coercivity: Select either *High* or *Low.*

Hex checkbox: This is used to encode mag data in hex instead of ASCII text.

Track selection:

- For reading: Click the checkboxes to select *Track 1*, *Track 2*, and/or *Track 3*; click the **Read** button, and validate the data read.

- For encoding: Click the checkboxes to select *Track 1*, *Track 2*, and/or *Track 3*; enter the data to be written; and click the **Encode** button.

The **Printing Preferences** button **t**akes you to Printing Preferences used to set selected driver configuration parameters; see Printing Preferences on page 76 for details.

## 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 E.
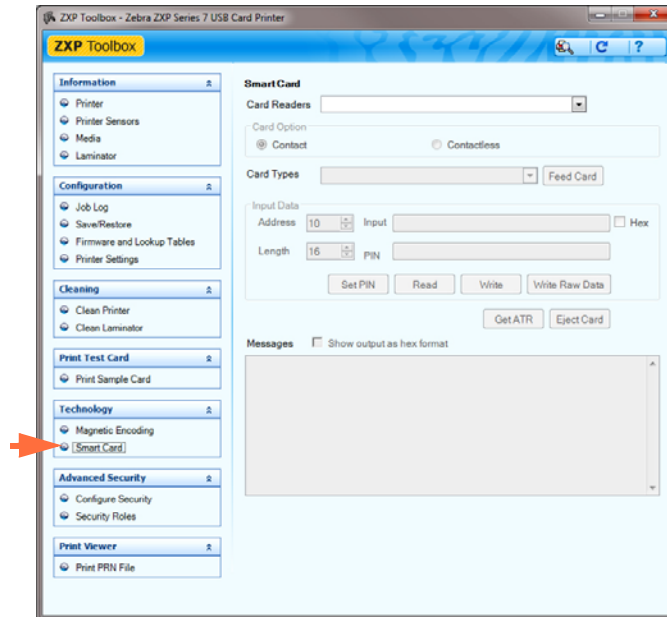


- Card Readers:

    - Select the card reader from the drop-down menu.

    - Card Option: Select either Contact or Contactless.

- Card Types:

    - Select the appropriate card type from the drop-down menu.

    - Place a card in the Feeder Cartridge, and click **Feed Card** button.

• Card Types (continued):
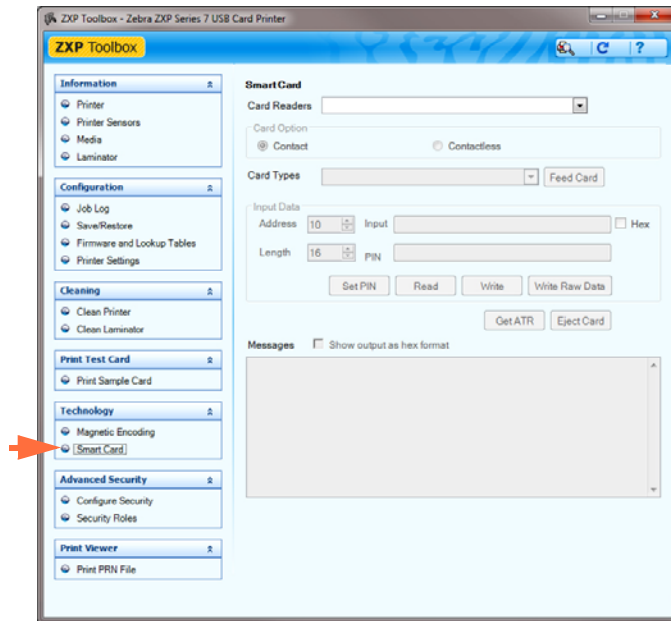


- Input Data includes address, length, input, and PIN.

  • 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 for identifying the type of smart card inserted into the printer.

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

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

# Advanced Security

## Configure Security

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

- **Toolbox Password**

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

    The user will be prompted with this password when the Toolbox is launched.

    - To enter a new password:

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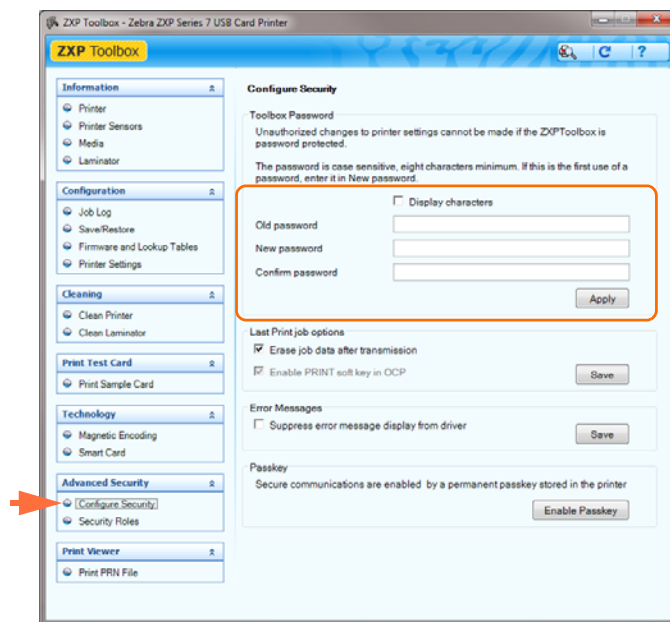


        2. Repeat the password in the *Confirm password* field.
        3. Click the **Apply** button.

- **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 after transmission* option erases the job data after it has been transmitted to the printer.

  - The *Enable PRINT soft key in OCP* option allows the last print job to remain in memory for multiple reprints 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 Advanced Security section, you are required to be the administrator of the computer or have administrative privileges.

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

- **To set security access roles:**

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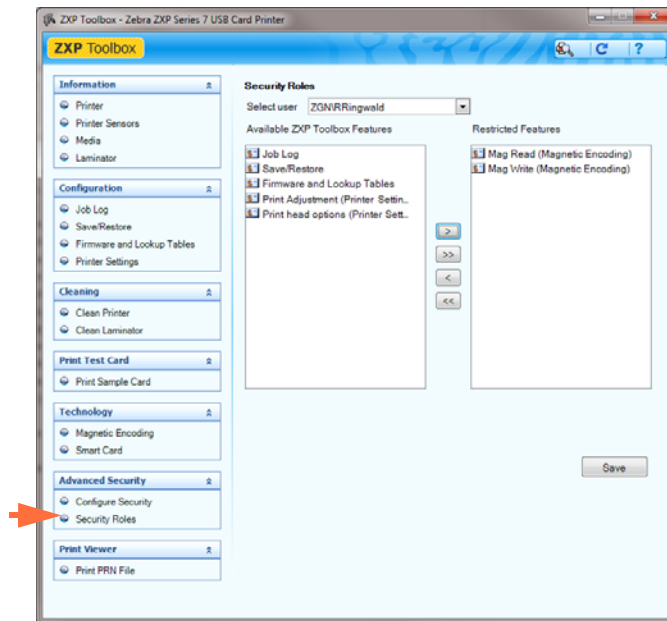


    2. Use the arrow buttons (>, >>, <, and <<) to make specific features available to or restrict specific features from the selected user role.

    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 a PRN file is printed, printer drivers are bypassed; but the print spooler is still required since communication to the printer is via the print spooler. This diagnostic utility can be used to ensure that your printer is working properly by isolating it from driver-related and issues.

## Print PRN file

- **To send a PRN file to the printer:**

  1. Click the Print button to print the default PRN file.

     - or -

     Click the **Browse** button to select and print a PRN file of your choice.
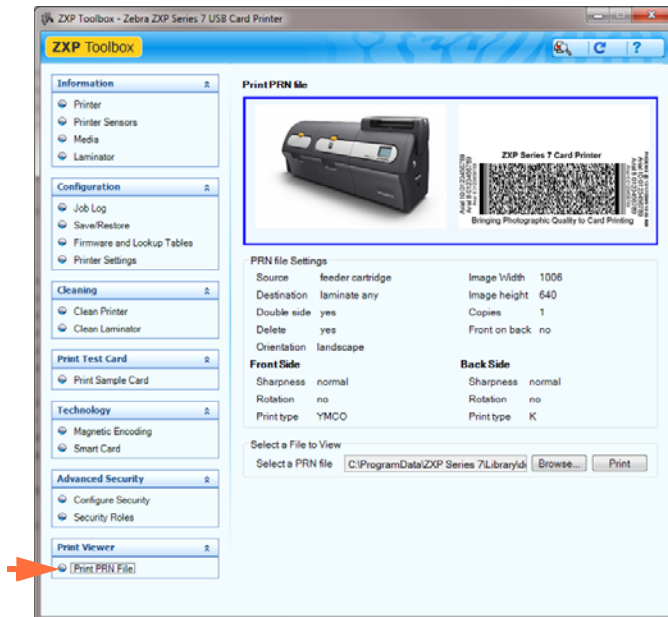


  2. From the Browse window, locate and select the PRN file.

  3. Click the **Open** button.

  4. View the PRN file.

  5. 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.

# 6

# Cleaning

**Caution •** **PROTECT YOUR FACTORY WARRANTY**!

**The recommended cleaning procedures must be performed to maintain your factory warranty. Allow only Zebra authorized technicians to service the Printer for all tasks other than the recommended cleaning procedures described in this manual.**

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

**NEVER use a high pressure air compressor to remove particles in the printer.**

## 6.1  Introduction

**NOTE •** To order a **Printer Cleaning Kit**, go to http://www.zebra.com/supplies.

Clean the Printer using the Cleaning Cards provided in the Printer Cleaning Kit specified in the Note above. The regular use of these cards will clean and maintain important parts of the printer, 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*. Right click on the *Zebra ZXP Series 7 Card Printer* listing, and select *Printer properties > Device Information.*

# Cleaning the Printer

**NOTE •** To order a **Printer Cleaning Kit**, go to http://www.zebra.com/supplies.

## When to Clean

Cleaning requirements vary according to the environment. For a typical office environment, the recommended cleaning cycle is:

• Card Path cleaning should occur every 5,000 cards.

• Feeder Path cleaning should occur every 5,000 cards.

### Initiate the Cleaning Process

**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.

## Clean the Card Path

**NOTE •** Do not use previously used cleaning cards.

**Step 1.** From the Clean Printer Menu, select *CLEAN CARD PATH*.

**Step 2.** Use the Printer Cleaning Card, and follow the OCP instructions.

**Step 3.** Open print cover, open ribbon drawer, remove ribbon, and then press *Next*.

**Step 4.** Close ribbon drawer, close print cover, and then press *Next*.

**Step 5.** Insert long cleaning card in Manual Feed Slot, and then press *Clean*.
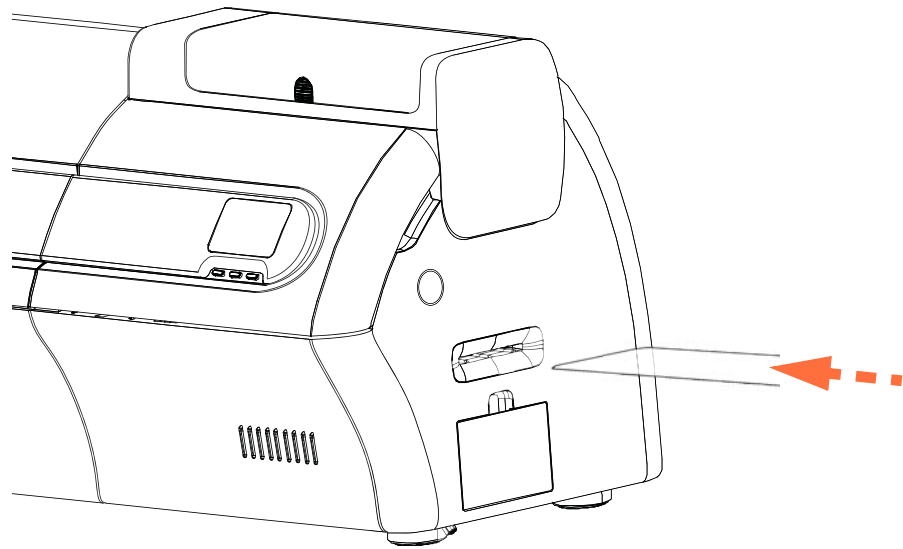
**Step 6.** Wait while cleaning process completes. The card will eject through same slot.

**Step 7.** Flip the cleaning card, reinsert it in the Manual Feed Slot, and then press *Clean*.

**Step 8.** Wait while cleaning process completes. The card will eject through same slot.

**Step 9.** Replace the ribbon, and press *Next*.

**Step 10.** The OCP will return to the Clean Printer Menu.

### Clean the Feeder Path

**NOTE •** Do not use previously used cleaning cards.

**Step 1.** From the Clean Printer Menu, select *CLEAN FEEDER*.

**Step 2.** Use the Feeder Cleaning Card, and follow the OCP instructions.

**Step 3.** Remove all cards from feeder cartridge, and then press *Next*.

**Step 4.** Insert short cleaning card in top slot, then press *Clean*.

**Step 5.** Press yellow button in feeder cartridge to release pusher plate, and then press *Next*.
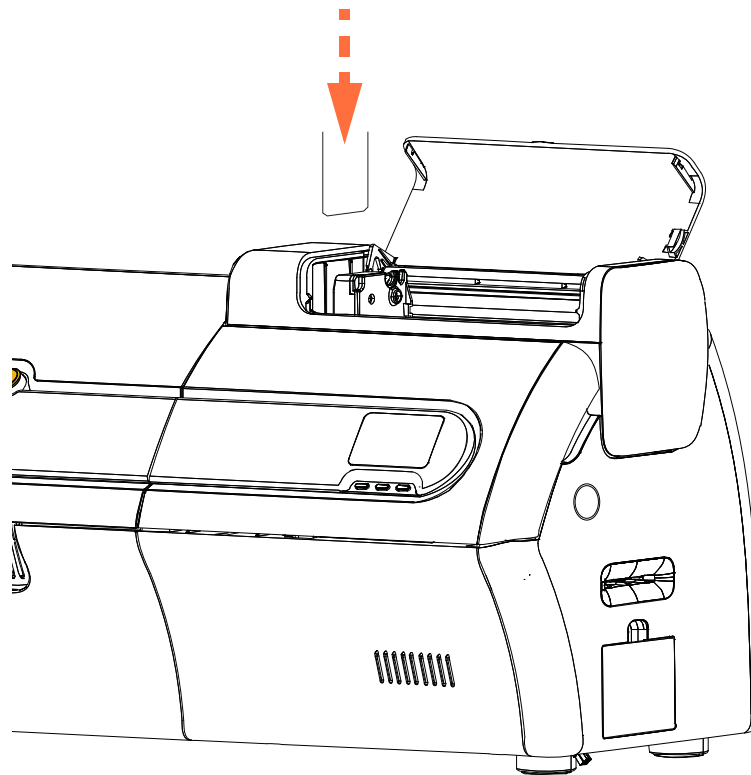
**Step 6.** Wait while cleaning process completes. The card will eject through same slot.

**Step 7.** Flip the cleaning card, reinsert it in top slot, and then press *Clean*.

**Step 8.** Wait while cleaning process completes. The card will eject through same slot.

**Step 9.** The OCP will return to the Clean Printer Menu.

**Step 10.** Load the cards back into the feeder cartridge.

## Polish the Printhead

**NOTE •** Use is password protected and limited to Zebra-authorized service personnel.

The **Advanced Cleaning** button in the Clean Printer section of the ZXP Toolbox provides access to printhead polishing. When printhead polishing is enabled in the ZXP Toolbox, printhead polishing can be done via the OCP.

**Step 1.** Enable printhead polishing in the ZXP Toolbox

**Step 2.** Press the MENU button on the Operator Control Panel (OCP). The OCP will display the Main Menu.

**Step 3.** Scroll through the Main Menu, and select Advanced Settings. The OCP will display the Advanced Settings Menu.

**Step 4.** Scroll through the Advanced Settings Menu, and select Clean Printer. From the Clean Printer Menu, select *POLISH PRINTHEAD*.

**Step 5.** Open the printer cover and ribbon drawer, remove the ribbon, and press *Next*.

**Step 6.** Close the ribbon drawer and printer cover, and press *Next*.

**Step 7.** Insert a Polishing Card (grit up) in the Manual Feed Slot, and press *Clean*.
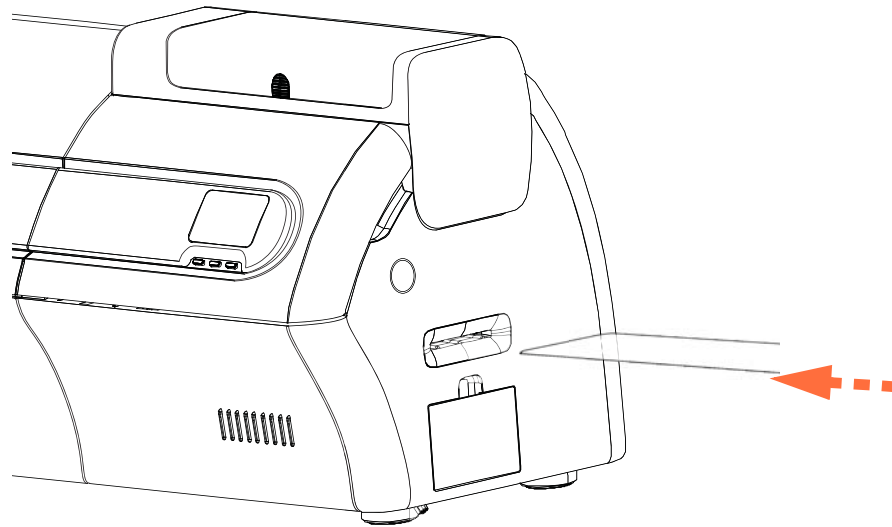


**Step 8.** Wait until the cleaning process completes. The card will be ejected through the same slot.

**Step 9.** Replace the ribbon, and press *Next* to return to the Advanced Settings Menu.

**NOTE •** Card Path Cleaning (Page 119) is recommended after printhead polishing to remove any loose debris from the printer.

# Cleaning the Laminator

> **NOTE •** To order a **Laminator Cleaning Kit**, go to http://www.zebra.com/supplies.

## When to Clean

Cleaning requirements vary according to the environment. For a typical office environment, the recommended cleaning cycle is:

- Laminator Card Path cleaning should occur every 5,000 cards.

- Laminator Roller cleaning should occur every 5,000 cards.

- Laminator Oven (Heater Rollers) cleaning should occur every 20,000 cards.

### Initiate the cleaning process:

> **NOTE •** To avoid a long wait while the heated rollers cool to 60$^o$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**.

## Clean the Laminator Card Path

**Step 1.** From the Clean Printer Menu, select *CLEAN LAM CARD PATH* to run the Laminator Cleaning Routine; and follow the OCP instructions.

**Step 2.** Wait until the oven temperature falls below 60$^o$C.

**Step 3.** If you have laminate installed, open the laminator covers, remove the laminate (top and bottom cassettes), and close the covers.

**Step 4.** Open the print cover (to raise the printhead), then press *Next*.

**Step 5.** Insert the Laminator Cleaning Card into the Manual Feed Slot, then press *Clean*.
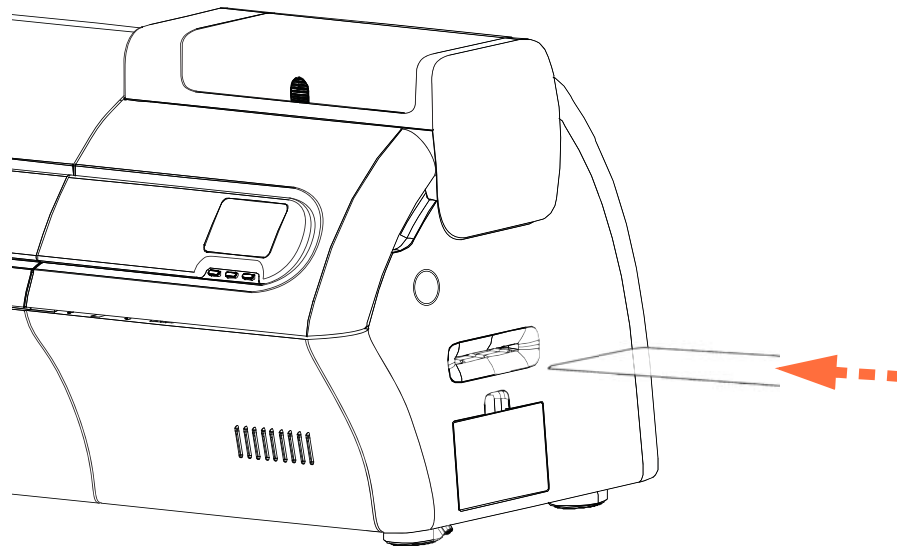


**Step 6.** Wait while the cleaning process completes.

**Step 7.** The card will be ejected into the output hopper.

**Step 8.** The OCP will return to the Clean Printer Menu.

**Step 9.** If you want to clean the Laminator Media Rollers at this time, see *Clean the Laminator Media Rollers* on page 124; otherwise, go to Step 10.

**Step 10.** Open the laminator covers, install the laminate (top and bottom spools), and close the covers.

**Step 11.** Close the print cover.

## Clean the Laminator Media Rollers

**Step 1.** From the Clean Printer Menu, select *CLEAN LAM ROLLERS* to run the Laminator Media Roller Cleaning Routine; and follow the OCP instructions.

**Step 2.** Wait until the oven temperature falls below 60$^{\circ}$C.

**Step 3.** Open the laminator covers, remove the laminate (top and bottom cassettes), and leave both covers open.

**Step 4.** Prepare a Cleaning Swab for use.

**Step 5.** Locate the top roller (circled below) for the upper cassette.
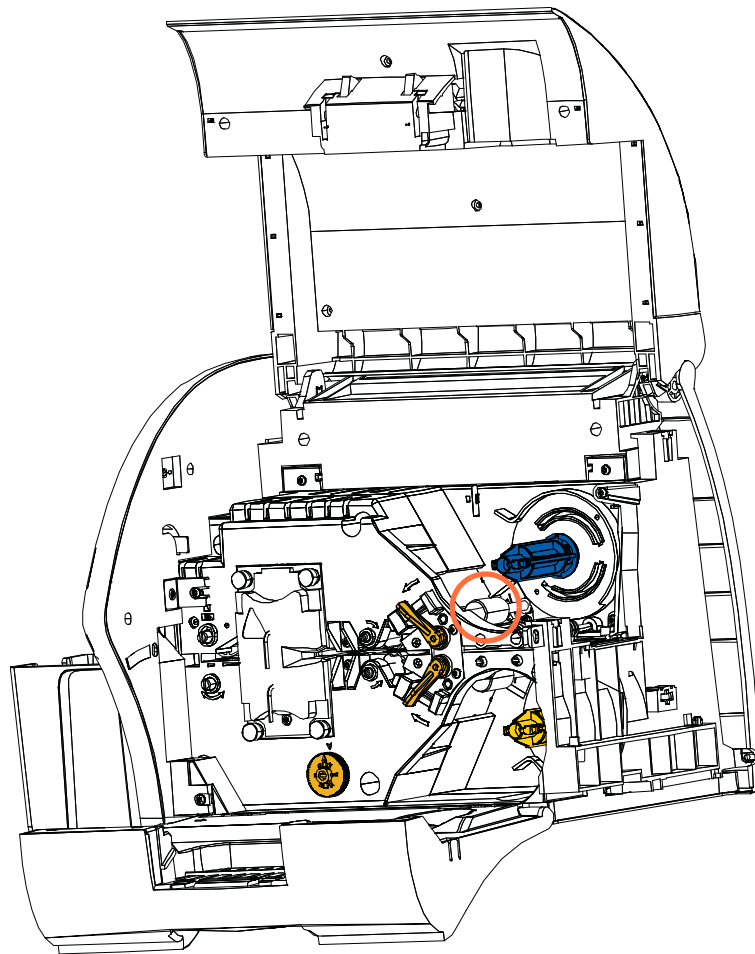


**Step 6.** When ready, press *Next*; and then press *Top*.

**Step 7.** Clean the top media roller by moving the swab tip side-to-side until roller stops turning. Only use moderate pressure.

**Step 8.** **For dual-sided laminators only**: Locate the bottom roller (circled below) for the lower cassette.

**Step 9.** Prepare a second Cleaning Swab.

**Step 10.** Locate the bottom roller (circled below) for the lower cassette.
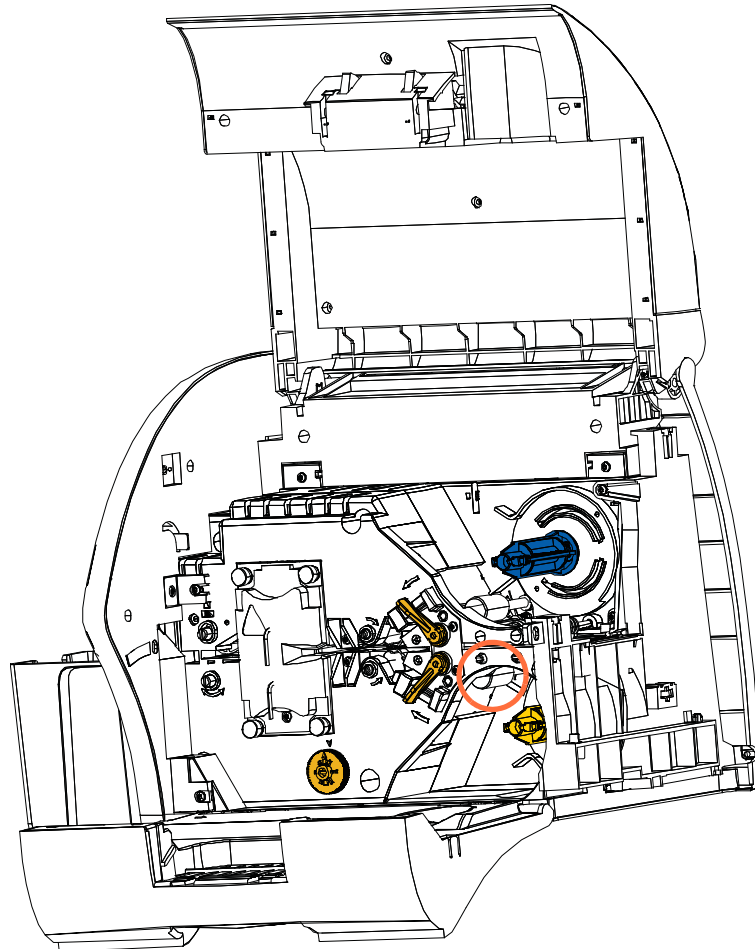


**Step 11.** When ready, press *Bottom*.

**Step 12.** Clean the bottom media roller by moving the swab tip side-to-side until the roller stops turning. Only use moderate pressure.

**Step 13.** Press *Exit* to conclude the laminator rollers cleaning process.

**Step 14.** The OCP will return to the Clean Printer Menu.

**Step 15.** Install the laminate (top and bottom spools), and close the covers.

## Clean the Laminator Oven (Heater Rollers)

**Step 1.**  From the Clean Printer Menu, select *CLEAN LAM OVEN;* and follow the OCP instructions.

**Step 2.**  Wait until the oven temperature falls below 60$^o$C.

**Step 3.**  Open the laminator covers.

**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 below).
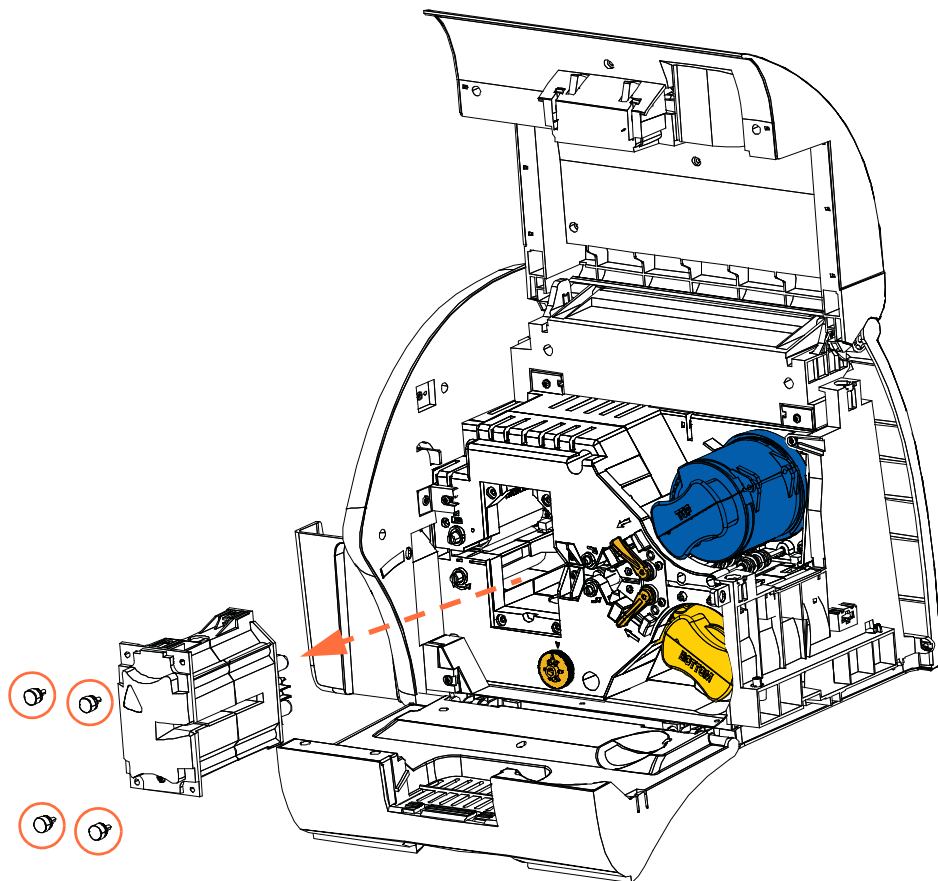


**Caution •** For the next step, you may have to wait until the Heater Assembly can be handled comfortably.

**Step 6.**  When ready, press *Next*.

**Step 7.** Prepare the Laminator Hot Roller Cleaning Card for use.

**Step 8.** Insert the cleaning card between the heater rollers (arrow below).
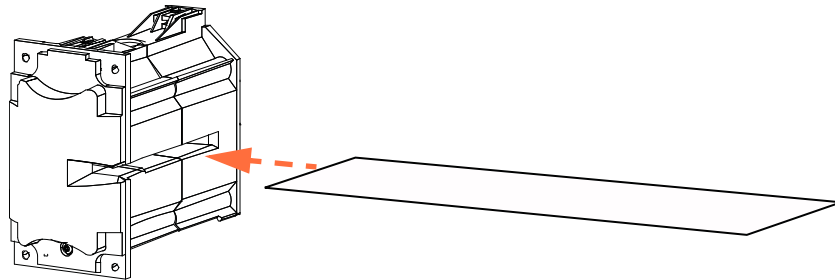


**Step 9.** Pull the card all the way through the Heater Assembly.
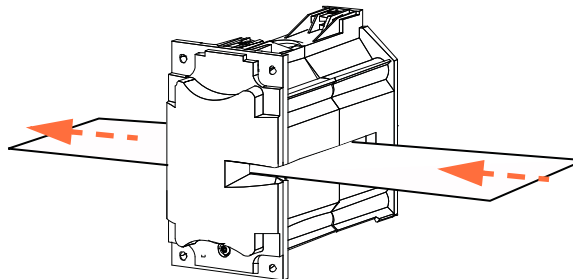


**Step 10.** Remove the card from the Heater Assembly.
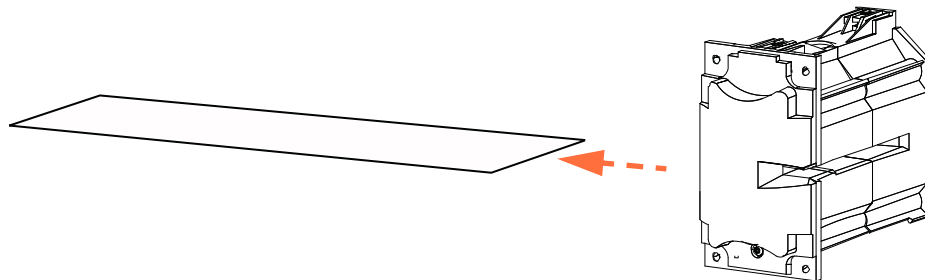


**Step 11.** Turn the card over, and repeat Step 8, Step 9, and Step 10.

**Step 12.** Press *Next* to conclude the laminator oven cleaning process.

**Step 13.** The OCP will return to the Clean Printer Menu.

**Step 14.** Reinstall the Heater Assembly.

      **a.** Remove the Thumb Drive Tool (circled below).

      **b.** While carefully sliding the Heater Assembly into place, use the Thumb Drive Tool to slowly rotate the gears counterclockwise (dashed arrow) until the gears mesh and the Heater Assembly seats properly.
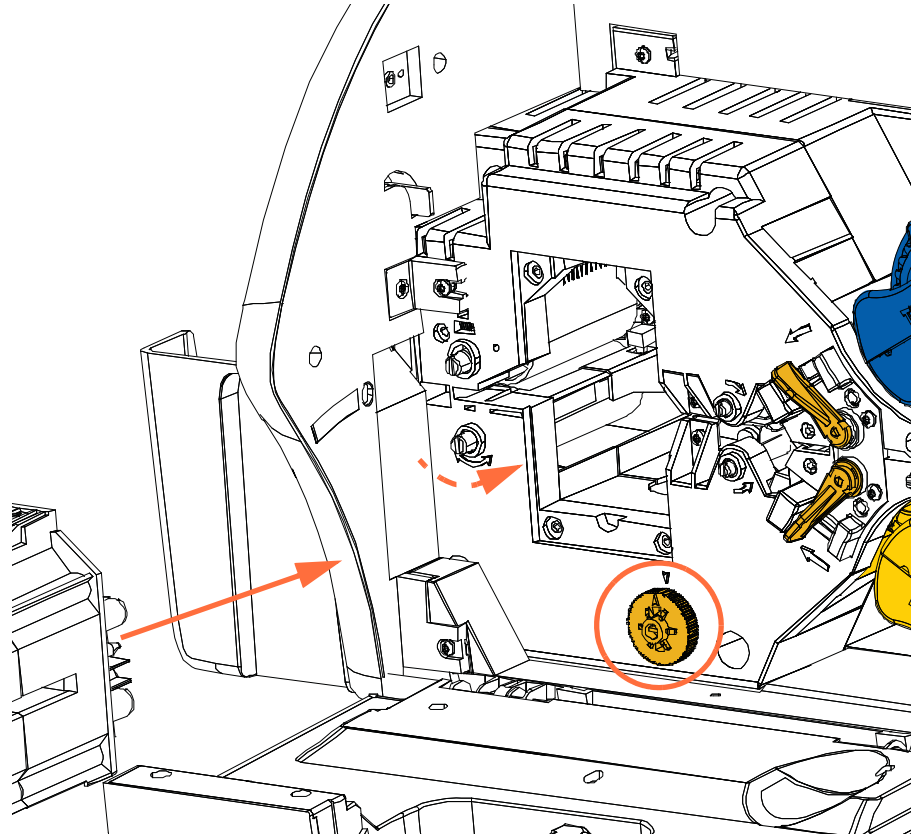


      **c.** Install and tighten the four thumb screws removed in Step 4.

**Step 15.** Close the laminator covers.

# Dual Cleaning Cartridge

The Dual Cleaning Cartridge cleans the cards entering the printer via the card feeder. To ensure print quality, the card cleaning rollers inside the cartridge require periodic replacement. Two new card cleaning rollers are included with each ribbon or may be purchased separately. To order additional rollers, go to http://www.zebra.com/supplies.

Installation of the Dual Cleaning Cartridge is described in Section 2 and is not repeated in detail here.

# Manual Feed Cleaning Cassette

The Cleaning Cassette cleans the cards entering the printer via the Manual Feed Slot. To ensure print quality, the card cleaning roller inside the cassette requires periodic replacement. Two new card cleaning rollers are included with each print ribbon or may be purchased separately. To order additional rollers, go to http://www.zebra.com/supplies.

Installation of the Cleaning Cassette is described in detail in Section 2 and is not repeated here.

**7**

# Troubleshooting

## Introduction

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

For additional information on troubleshooting and advanced operations, you can access an extensive Knowledge Base at km.zebra.com.

# OCP Error Messages

**Important •** If the **Possible Solution** does not solve your problem, contact *Zebra Technical Support*.

| CODE | MESSAGE | POSSIBLE CAUSE | POSSIBLE SOLUTION |
|------|---------|----------------|-------------------|
| 5 | FIRMWARE 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 | FIRMWARE 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. |
| 4003 | CARD JAM | Card is jammed in the Printer. | Clear the card path. |
| 4014 | CARD FEED ERROR | Card is jammed in Feeder Cartridge, <br><br> - or - <br><br> The printer is out of cards. | a. Clear card jam in Feeder Cartridge, and re-seat Feeder Cartridge. <br> b. Ensure that cards are not stuck together and that they are the correct thickness (10 to 50 mil). <br><br> a. Load cards in the Feeder Cartridge. <br> b. Re-seat the Feeder Cartridge. |
| 4015 | CARD NOT INSERTED | Card was not fed into the Manual Feed Slot within 30-second period. | Retry and feed a card into the Manual Feed Slot, or cancel the operation. |
| 5001 | OUT OF RIBBON | Print ribbon has run out. | Load a new roll of print ribbon. |
| 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. <br> b. Reinstall the print ribbon. <br> c. Repair the break in the print ribbon and reinstall. |
| 5006 | RIBBON BEMF ERROR | Problem with the Back EMF (BEMF) of the ribbon motors. | Contact Zebra Technical Support. |
| 5007 | RIBBON COLOR DETECT ERROR | Print ribbon is not installed correctly. | Reinstall the print ribbon. If reinstalling the ribbon does not solve the problem, contact Zebra Technical Support. |
| 5008 | INVALID RIBBON | Print ribbon does not match the printer. | a. Verify the part number of the print ribbon is correct on OCP. <br> b. Power cycle the printer, and retry. |
| 6009 | FLASH ERASE ERROR | There is a problem when accessing flash memory. | Power cycle the printer, and retry. |

| CODE | MESSAGE | POSSIBLE CAUSE | POSSIBLE SOLUTION |
|------|---------|----------------|-------------------|
| 6010 | FLASH ERASE VERIFY ERROR | 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 PROGRAM VERIFY ERROR | There is a problem when accessing flash memory. | Power cycle the printer, and retry. |
| 6013 | INVALID FW S-RECORD | 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,<br><br>- or -<br><br>The printer is out of cards. | a. Clear card jam in Feeder Cartridge, and re-seat Feeder Cartridge.<br>b. Ensure that cards are not stuck together and that they are the correct thickness (10 to 50 mil).<br><br>a. Load cards in the Feeder Cartridge.<br>b. Re-seat the Feeder Cartridge. |
| 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. |
| 7008 | PRINT 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 ERROR | Printhead did not move to proper position during initialization. | Power cycle the printer, and retry. |
| 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 | This is a magnetic encoding retrace error. | Power cycle the printer, and retry. |
| 7018 | SMARTCARD ERROR | • Encoding error.<br>• Faulty card. | a. Ensure that you are using the correct card type.<br>b. Check that the cards are loaded in the correct orientation.<br>c. Ensure that the data conforms to ISO Specifications.<br>d. 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. |
| 7023 | SMART CARD CAM ERROR | Mechanical positioning issue. | Power cycle the printer, and retry. |
| 7024 | OPTIONS CARD JAM | Card is jammed in the Options Module, Feeder Cartridge. | Clear the card path. |

| CODE | MESSAGE | POSSIBLE CAUSE | POSSIBLE SOLUTION |
|------|---------|----------------|-------------------|
| 7026 | FLIPPER CARD JAM | Card is jammed in the Flipper. | Clear the card path. |
| 7028 | OPTIONS COVER OPEN | This warning will be displayed if the cover protecting the Options Module is opened. | This warning will be cleared when the options cover is closed. |
| 7029 | FLIPPER ROTATION ERROR | The Flipper has failed. | Contact Zebra Technical Support. |
| 7032 | OPTIONS CARD JAM | Card is jammed in the Options Module, Single Card Feed Slot. | Clear the card path. |
| 7033 | FLIPPER BOARD ERROR | The Flipper has failed. | Contact Zebra Technical Support. |
| 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). |
| 7035 | OPTIONS CARD JAM | Card is jammed in the Options Module, Magnetic Encoder. | Clear the card path. |
| 7036 - 7039 | PRINT CARD JAM | Card is jammed in Printer Module. | Clear the card path. |
| 9001 | MAG READ ERROR | • Encoding error.<br>• Defective magnetic stripe. | a. Ensure that you are using the correct card type.<br>b. Check that the cards are loaded with the magnetic stripe in the correct orientation.<br>c. Ensure that the cards are set-up correctly in the printer driver (coercivity setting).<br>d. Ensure that the data conforms to ISO Specifications.<br>e. Retry reading. |
| 9002 | MAG WRITE ERROR | • Encoding error.<br>• Defective magnetic stripe. | a. Ensure that you are using the correct card type.<br>b. Check that the cards are loaded with the magnetic stripe in the correct orientation.<br>c. Ensure that the cards are set-up correctly in the printer driver (coercivity setting).<br>d. Ensure that the data conforms to ISO Specifications.<br>e. Retry writing. |
| 9004 | NO MAG STRIPE | Magnetic stripe not detected. | a. Ensure that you are using the correct card type.<br>b. Check that the cards are loaded with the magnetic stripe in the correct orientation. |
| 15001 | MISSING MAB | An error occurred when reading the RFID Tag by the MAB (Media Authentication Board). | a. Check print ribbon orientation.<br>b. Verify part number of the print ribbon.<br>c. Power cycle the printer, and retry. |
| 15002 | MAB FIRMWARE MISSING | MAB (Media Authentication Board) Firmware is missing. | Install the firmware. |

| CODE | MESSAGE | POSSIBLE CAUSE | POSSIBLE SOLUTION |
|------|---------|----------------|-------------------|
| 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. | a. Press RETRY on the OCP.<br>b. Contact Zebra Technical Support. |
| 17004 | MISSING LAMINATOR MAB | An error occurred when trying to communicate to the Laminator MAB (Media Authentication Board). | a. Power cycle the printer, and retry.<br>b. Contact Zebra Technical Support. |
| 17005 | TOP LAMINATE FEED FAIL | • Top laminate cartridge is not installed properly.<br>• Cartridge is not removed when that side of the card is not being laminated.<br>• A mis-cut piece of laminate (rare) is obscuring the media sensor. | • Remove, reposition, and re-install the top laminate cartridge.<br>• Remove the top laminate cartridge.<br>• Remove the mis-cut piece of laminate. |
| 17006 | BOTTOM LAMINATE FEED FAIL | • Bottom laminate cartridge is not installed properly.<br>• Cartridge is not removed when that side of the card is not being laminated. | • Remove, reposition, and re-install the bottom laminate cartridge.<br>• Remove the bottom laminate cartridge. |
| 17007 | TOP LAMINATE REGISTRATION ERROR | • Improperly prepared registered laminate.<br>• Media misfeed.<br>• Patch length improperly set.<br>• 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. | a. Check for card jam in the exit area.<br>b. 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. |

| CODE | MESSAGE | POSSIBLE CAUSE | POSSIBLE SOLUTION |
|------|---------|----------------|-------------------|
| 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. | a. Power cycle the printer, and retry.<br>b. If this error persists, contact Tech Support. |
| 17016 | LAMINATOR BOTTOM TEMPERATURE HIGH | If the bottom roller temperature ever exceeds a fixed temperature threshold, the over temp error occurs. | a. Power cycle the printer, and retry.<br>b. If this error persists, contact Tech Support. |
| 17017 | LAMINATOR TOP CUTTER STALL | Top cutter blade is obstructed, or top cutter mechanism is damaged. | If this error persists, contact Tech Support. |
| 17118 | LAMINATOR BOTTOM CUTTER STALL | Bottom cutter blade is obstructed, or bottom cutter mechanism is damaged. | If this error persists, contact Tech Support. |
| 17019 | LAMINATOR TOP CUTTER FAIL | Top cutter has failed. | If this error persists, contact Tech Support. |
| 17020 | LAMINATOR BOTTOM CUTTER FAIL | Bottom cutter has failed. | If this error persists, contact Tech Support. |
| 17021 | LAMINATOR TOP TEMP SENSOR FAIL | The top temperature (thermopile) sensor has failed. | If this error persists, contact Tech Support. |
| 17022 | LAMINATOR BOTTOM TEMP SENSOR FAIL | The bottom temperature (thermopile) sensor has failed. | If this error persists, contact Tech Support. |
| 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.<br>b. 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. |

| CODE | MESSAGE | POSSIBLE CAUSE | POSSIBLE SOLUTION |
|---|---|---|---|
| 17028 | BOTTOM LAMINATE OUT | The bottom laminate has run out. | Load new roll of laminate. |
| 17029 | INVALID TOP LAMINATE | Laminate does not match the printer. | a. Verify the part number of the laminate is correct on OCP.<br>b. 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.<br>b. Verify the part number of the laminate is correct on OCP.<br>c. Power cycle the printer, and retry. |
| 17031 | BOTTOM LAMINATE REGISTRATION ERROR | • Improperly prepared registered laminate.<br>• Media misfeed.<br>• Patch length improperly set.<br>• 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. |

# OCP Test Cards

## Test Card Images

| | | |
|:---:|:---:|:---:|
|  |  |  |
| GRADIENT BOXES | DENSITY SETUP | MONOCHROME ONLY |

## Test Card Descriptions

| Image | Title | Description | Use |
|---|---|---|---|
|  | GRADIENT BOXES | 3 sets of light-to-dark grayscale ramps | Used to create color calibration look-up table |
|  | DENSITY SETUP | Mid-gray and maximum density fields on a flat gray surface | Used to measure mid and max densities |
|  | MONOCHROME ONLY | Barcode and text | Used to verify monochrome print capability |

# Ethernet

- **Indicators -- Detail**

Link Speed       Link Activity
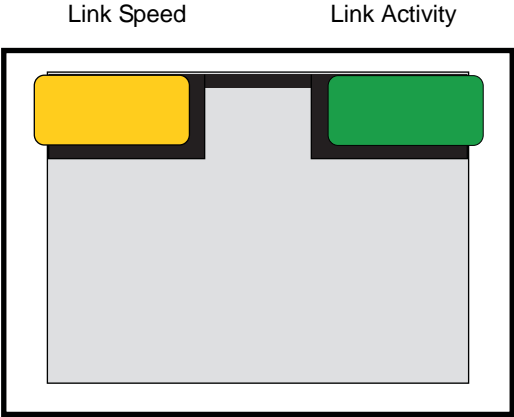
- Link Speed Indicator (Orange)

| 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. |

- Link Activity Indicator (Green)

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

- **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

- 300 dpi (11.8 dots/mm) print resolution,
- Image size 1006 * 640 pixels
- USB 2.0 and Ethernet 10/100 connectivity
- Microsoft Windows Certified drivers
- 250 card capacity feeder (30 mil)
- 15 card reject hopper (30 mil)
- 100 card output hopper (30 mil)
- Manual feed capability
- ix Series™ intelligent media technology
- 21-character x 6-line LCD operator display with configurable soft keys
- Kensington® physical lock slot

## Optional features

- FIPS 201 compliant single-sided and dual-sided laminator
- Lockable enclosures and card feeder

# Specifications

## Encoding options and specifications

- Magnetic stripe encoder – AAMVA and ISO 7811 (new and pre-encoded, tracks 1, 2, and 3, high and low coercivity)
- ISO 7816 Smart Card Contact Station for third party external contact encoders
- Combined MIFARE® ISO 14443 A & B (13.56 MHz) contactless and ISO 7816 Contact Encoder with EMV level 1 certification, and PC/SC compliance (supported over USB and Ethernet)

## Software

- ZMotif™ SDK support and sample code for application integration in various languages and development environments
- Microsoft Windows Certified printer drivers with Toolbox utility features: Windows 7, Vista, and Server 2008 (all 32 and 64 bit compatible); and Windows XP and Server 2003 (both 32 bit compatible)
- CardStudio™ card design and issuance software with direct to print support
- Virtual PrintWare™

## Printing and laminating specifications

- Color dye sublimation or monochrome thermal transfer printing
- Single-sided and dual-sided printing
- Printing throughput

| Ribbon | Front | Back | Click to Drop (s) | | Throughput (cards/hr) | |
|---|---|---|---|---|---|---|
| | | | w/o Laminator | w/Laminator | w/o Laminator | w/ Laminator |
| YMCKO | YMCKO | N/A | 18 | N/A | 300 | N/A |
| YMCKOK | YMCKO | K | 21 | N/A | 225 | N/A |
| Monochrome | K | N/A | 5 | 22 | 1375 | 265 |
| Monochrome | K | K | 10 | 26 | 555 | 260 |
| YMCK | YMCK | N/A | N/A | 28 | N/A | 270 |
| YMCKK | YMCK | K | N/A | 35 | N/A | 200 |

NOTE: Printing throughput (cards per hour) based on batch printing with USB connectivity. Times may vary depending on the computer configuration.

- Printing and mag stripe encoding throughput

| Ribbon | Front | Back | Click to Drop (s) | | Throughput (cards/hr) | |
|---|---|---|---|---|---|---|
| | | | w/o Laminator | w/Laminator | w/o Laminator | w/ Laminator |
| YMCKO | YMCKO | N/A | 20 | N/A | 295 | N/A |
| YMCKOK | YMCKO | K | 24 | N/A | 225 | N/A |
| Monochrome | K | N/A | 8 | 20 | 650 | 265 |
| Monochrome | K | K | 13 | 26 | 435 | 260 |
| YMCK | YMCK | N/A | N/A | 32 | N/A | 270 |
| YMCKK | YMCK | K | N/A | 38 | N/A | 195 |

NOTE: Printing throughput (cards per hour) based on batch printing with USB connectivity. Times may vary depending on the computer configuration.

- Near photographic print quality
- Edge-to-edge printing on standard CR-80 media
  - Image placement specification:



Dimensions are in millimeters

- Skew: ±.05mm

- Simultaneous printing, encoding, and laminating capability
- One-pass single-sided and dual-sided wasteless lamination
- Laminate placement specification:



Dimensions are in millimeters
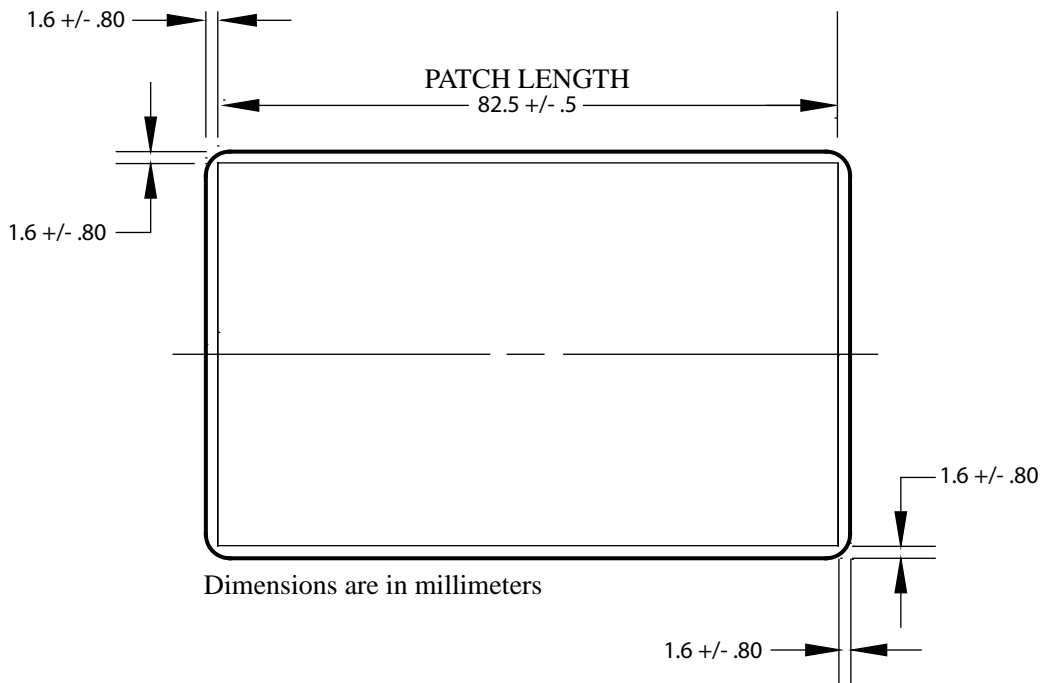
## Supplies specifications

- Zebra's intelligent technology RFID tags authenticate and automate ix Series™ ribbons and Zebra True Secure™ i Series laminates to assure the best quality possible
- Card cleaning rollers are included with each ribbon carton
- Specially designed cleaning supplies simplify preventative maintenance
- True Colours® ix Series™ ribbons
- True Secure™ i series laminates

NOTE: For optimum print quality and printer performance, use of Zebra genuine supplies is recommended.

## Card specifications/compatibility

- Card Thickness: 10 – 50 mil (0.25 – 1.27mm)
- Card Thickness for lamination: 30 mil (0.76 mm) only
- Card Size: CR-80, ISO 7810 format, Type ID-1
- Card Material: PVC and composite, PET, PET-G, PET-F, and Teslin® composite
- Technology Cards: contact and contactless smart cards
- Specialty cards: adhesive backed, transparent (IR-blocked), signature panel, and select key-tag types
  - Transparent cards / key-tag cards



Dimensions are in millimeters
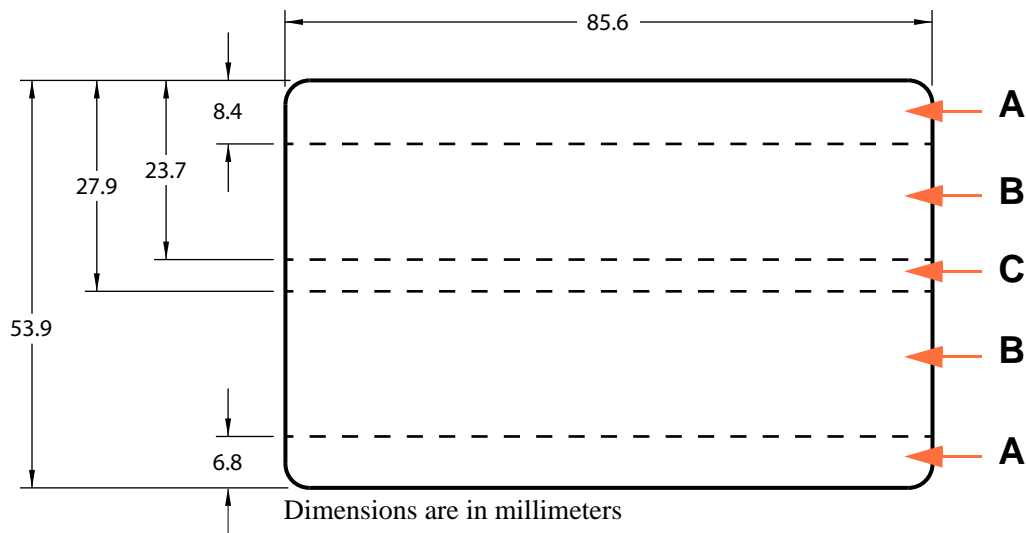
**Area A:** Translucent window allowable only if IR Blocker is used. Key-tag holes allowed only if hole is perforated and not punched through.

**Area B:** Translucent window is always allowable.

**Area C:** If Mag stripe is present, IR Blocker is required.

## Communications interfaces

- USB V2.0
- USB supports plug-n-play printer identification
- 10/100 BaseT

## Electrical specifications

- Auto-switching single-phase AC power
- 90V~264V AC and 47–63Hz (50-60Hz nominal)
- FCC Class A
- Energy Star compliant
- Power Consumption

  | | |
  |---|---|
  | • Idle | 100 W |
  | • Initializing / Warm-up (no Laminator) | 120 W |
  | • Initializing / Warm-up (with Laminator) | 450 W |
  | • Printing (no Laminator) | 120 W |
  | • Printing and Laminating | 250 W |
  | • Sleep | 20 W |

## Physical characteristics

- Height: 306mm (12.0in)
- Width (printer only): 699mm (27.5in)
- Width (printer with laminator): 964mm (38.0in)
- Depth: 277mm (10.9in)
- Weight (printer only): 12.2 kg (26.9 lbs)
- Weight (printer with laminator): 17.9 kg (39.5 lbs)

## Environmental

- Operating Temperature: 59º F/15ºC to 95º F/35ºC

- Storage Temperature: 23º F/-5ºC to 158º F/70ºC

- Operating Humidity: 20% to 80% inclusive, non-condensing

- Storage Humidity: 10% to 90% inclusive, non-condensing

- Media should not be above 140º F/60º C for longer than 200 hours, and above 90% relative humidity at 104º F/40º C for longer than 100 hours

### Chinese Notifications

| | |
|---|---|
| ≤2000m | 仅适用于海拔 2000m 以下地区安全使用 |
| | 仅适用于在非热带气候条件下安全使用 |

# Agency Approvals

Zebra ZXP Series 7 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, CFR 47, Part 15 Subpart B
    - Part15 Subpart C
    - Canadian STD RSS-210
    - NOM-NYCE (Mexico)
    - EN60950: EN60950-1 Safety Standard (TUV & NRTL)
    - C-Tick (Australia)

- For Europe:
    - 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

# Declarations of Conformity

**ZEBRA TECHNOLOGIES CORPORATION**

Declares that the following Information Technology Equipment

**Zebra ZXP Series 7 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, EN55022:2010 Class A,

EN55024: 2010, EN61000-3-2:2006+A2:2009, EN61000-3-3:2008

2006/95/EC LVD Directive, EN60950-1:2006+A1:2010, CB Scheme

**RFID Enabled**

Applicable Directives and Supporting Standards:

99/5/EC R&TTE Directive, ETSI EN 301 489-3 V1.4.1 (2002-08), EN 300 220-2 V2.1.2 (2007-06)

$C\!\!\in$

For a formal certificate, please contact the Compliance Office at Zebra's Agoura Hills 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 Notice

### FCC Regulations

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 operated the equipment under FCC rules.

#### 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 (IC) Notice

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.

## 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。

Zebra ZXP Series 7 Card Printer User's Manual    P1036101-001

# APPENDIX A

## Printer Configurations

## Introduction

The Part Number of a particular ZXP Series 7 Printer is shown on a label affixed to the backplate (or rear enclosure) of the printer; that Part Number identifies the specific configuration for that printer.

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

# Printer Part Numbers

| PART NUMBER | | DESCRIPTION |
|---|---|---|
| Z 7 _ - _ _ _ _ _ _ _ _ _ _ _ _<br>_ _ 1 - _ _ _ _ _ _ _ _ _ _ _ _<br>_ _ 2 - _ _ _ _ _ _ _ _ _ _ _ _<br>_ _ 3 - _ _ _ _ _ _ _ _ _ _ _ _<br>_ _ 4 - _ _ _ _ _ _ _ _ _ _ _ _ | | **Base Unit**<br>Single-Sided Printer<br>Dual-Sided Printer<br>Dual-Sided Printer with Single-Sided Laminator<br>Dual-Sided Printer with Dual-Sided Laminator |
| _ _ _ - 0 _ _ _ _ _ _ _ _ _ _<br>_ _ _ - A _ _ _ _ _ _ _ _ _ _<br>_ _ _ - E _ _ _ _ _ _ _ _ _ _ | | **Smart Card Options**<br>None<br>Contact Encoder + Contactless MIFARE<br>Contact Station |
| _ _ _ - _ 0 _ _ _ _ _ _ _ _ _<br>_ _ _ - _ M _ _ _ _ _ _ _ _ _ | | **Mag Encoders**<br>None<br>ISO HiCo/LoCo Mag S/W Selectable |
| _ _ _ - _ _ 0 _ _ _ _ _ _ _ _<br>_ _ _ - _ _ A _ _ _ _ _ _ _ _ | | **Security Options**<br>None<br>Enclosure Lock |
| _ _ _ - _ _ _ C _ _ _ _ _ _ _ | | **Interface**<br>USB and 10/100 Ethernet |
| _ _ _ - _ _ _ _ 0 _ _ _ _ _ _<br>_ _ _ - _ _ _ _ D _ _ _ _ _ _ | | **Software/Kit**<br>None<br>Media Starter Kit (includes: 1 YMCKO ribbon kit, 200 PVC cards) |
| _ _ _ - _ _ _ _ _ 0 0 0 _ _ _ _<br>_ _ _ - _ _ _ _ _ 0 0 G _ _ _ _ | | **Miscellaneous**<br>None<br>TAA Compliant |
| _ _ _ - _ _ _ _ _ _ _ _ 0 0 _ _<br>_ _ _ - _ _ _ _ _ _ _ _ C N _ _<br>_ _ _ - _ _ _ _ _ _ _ _ J P _ _<br>_ _ _ - _ _ _ _ _ _ _ _ U S _ _<br>_ _ _ - _ _ _ _ _ _ _ _ E M _ _<br>_ _ _ - _ _ _ _ _ _ _ _ A U _ _<br>_ _ _ - _ _ _ _ _ _ _ _ T W _ _<br>_ _ _ - _ _ _ _ _ _ _ _ A P _ _ | | **Country Code** (others available)<br>None<br>China<br>Japan<br>Americas Regional<br>EMEA Regional<br>Australia<br>Taiwan<br>Asia/Pacific |
| _ _ _ - _ _ _ _ _ _ _ _ _ _ 0 0 | | **Custom Code**<br>Reserved |

# Appendix B

## Connecting to a Network

### Introduction

Card printers can be connected to an Ethernet network in three ways.

### Printer Sharing

In printer sharing, the printer is connected locally to the host computer and configured to be shared to other client computers. Client computers connect to the printer over the network through the host computer.
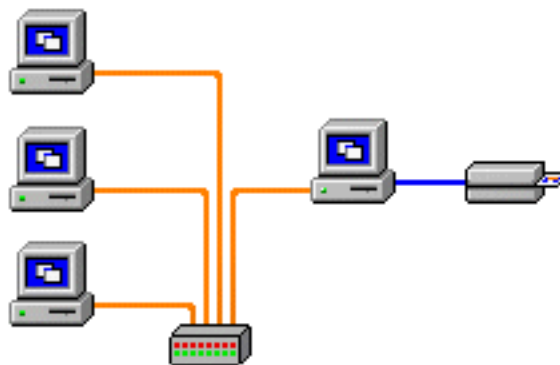
## External Print Server

A stand alone device that acts as a server on the network specifically for receiving print jobs and passing them to the printer. Client computers connect to the print server over a network.
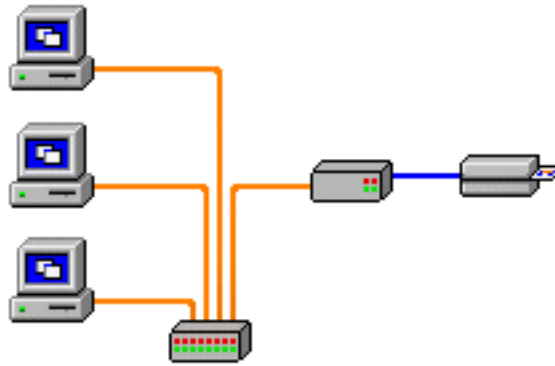
## Internal Print Server

Similar to an external print server, except the print server is integrated into the printer. This removes the need for a separate power supply and separate device drivers. This is the simplest way to network a printer.
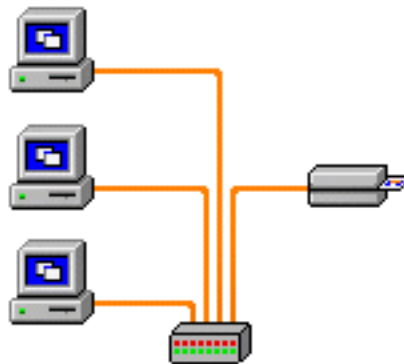
# Setting Up a Network Printer

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.
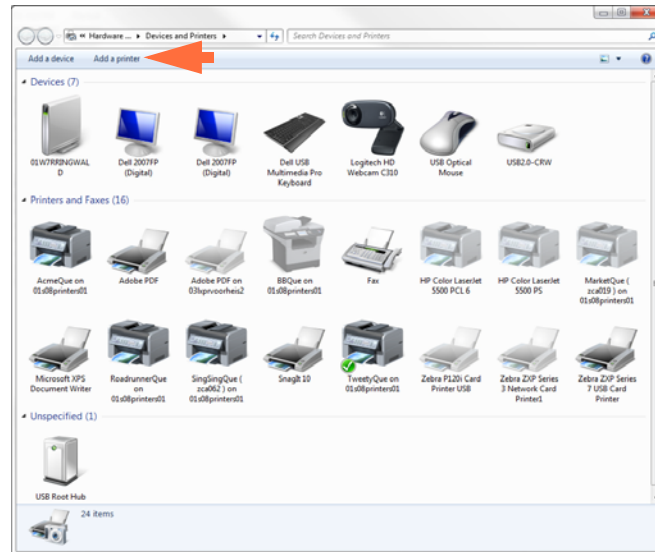


**Step 3.** Click on the *Add a printer* option (arrow above).

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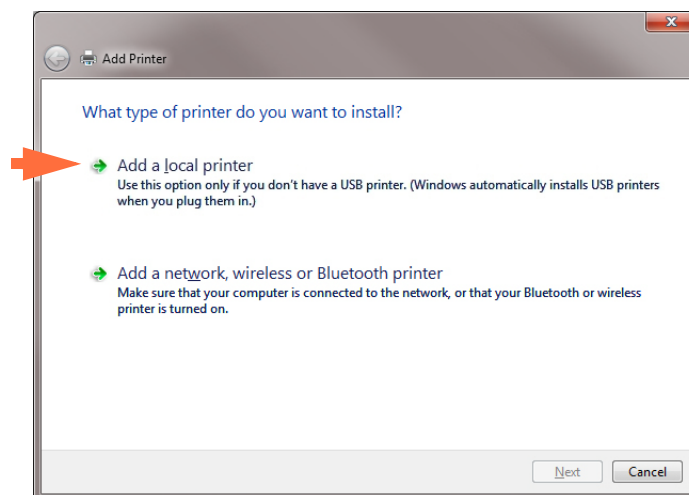


**Step 5.** Select *Add a local printer* (arrow above), and click the **Next** button.

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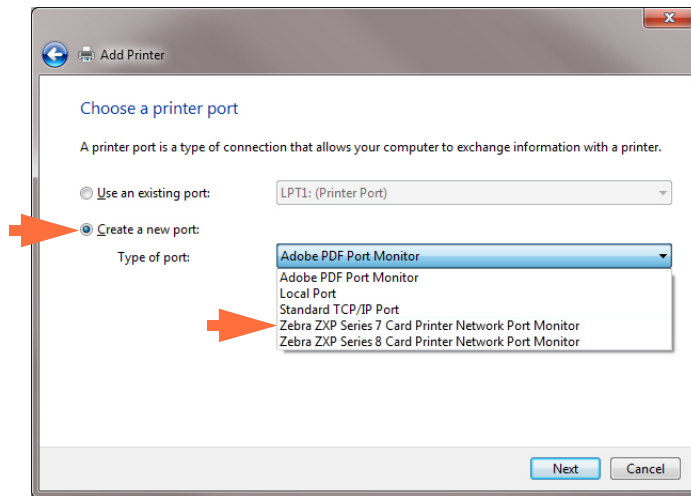


**Step 7.**    Select the *Create a new port* radio button (1st arrow above).

**Step 8.**    From the dropdown menu, select *Zebra ZXP Series 7 Card* ... (2nd arrow above).

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

**Step 10.**   Observe the **Port Name** window.
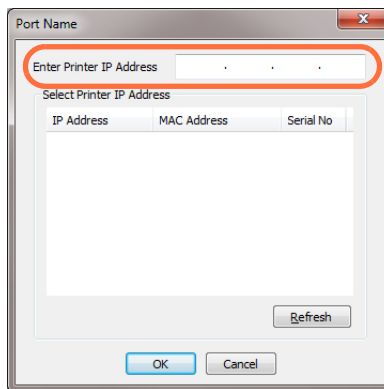


**Step 11.**   Enter the IP address of your printer in the *Enter Printer IP Address* text box (circled above).

**Step 12.**   Click on the **OK** button.

**Step 13.** Observe the **Install the printer driver** window.
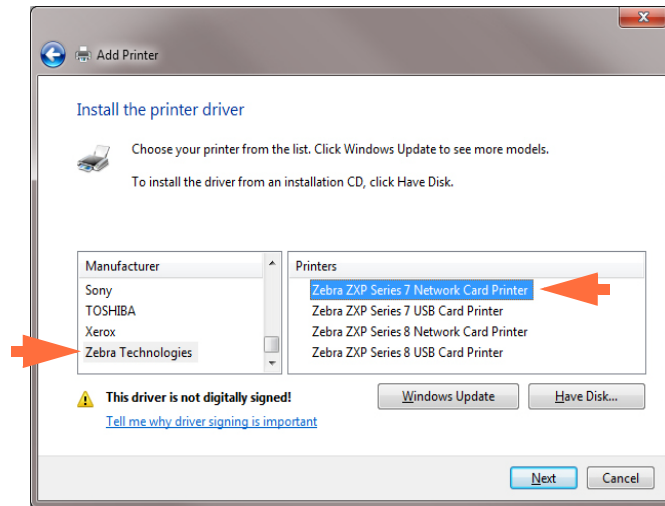


**Step 14.** Select the Manufacturer and the Printers (arrows above).

**Step 15.** Click on the **Next** button.

**Step 16.** Observe the **Which version of the driver do you want to use** window.
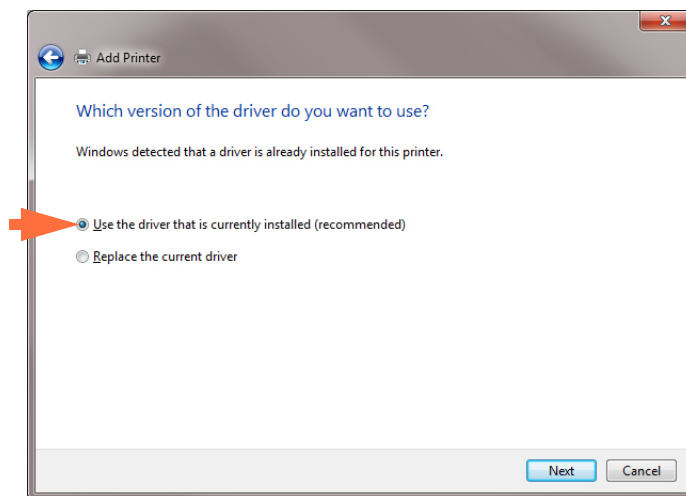


**Step 17.** Select the *Use the driver that is currently installed* radio button (arrow above).

**Step 18.** Click the **Next** button.

**Step 19.** Observe the **Type a printer name** window.
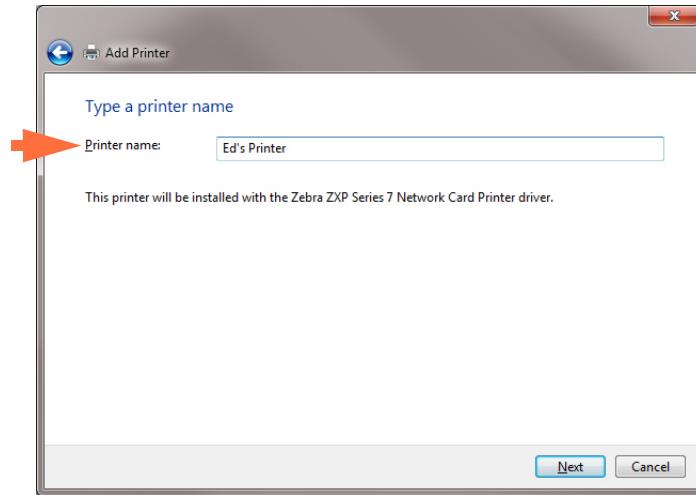


**Step 20.** Enter the printer name: use the default name, or add more information to indicate the printer location; e.g., Ed's Printer, Mike's Office, Room 33, etc.

**Step 21.** Click the **Next** button.

**Step 22.** Observe the **You've successfully added ...** window.
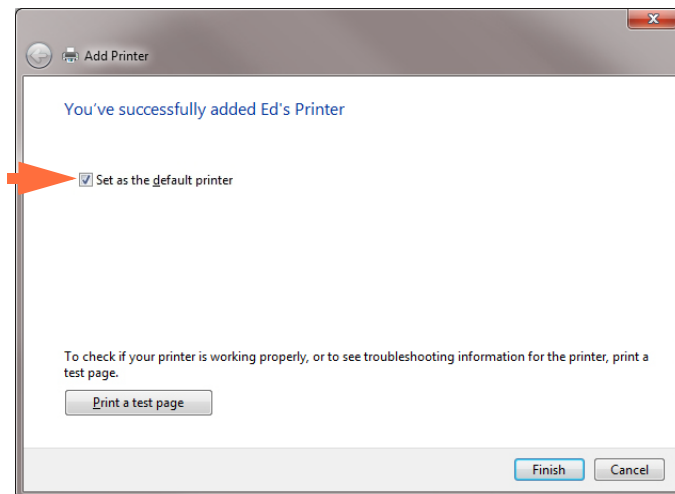


**Step 23.** If appropriate, select the *Set as the default printer* checkbox (arrow above).

**Step 24.** 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 the 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 7 USB Card Printer* listing. Select *Properties > Ports* tab.
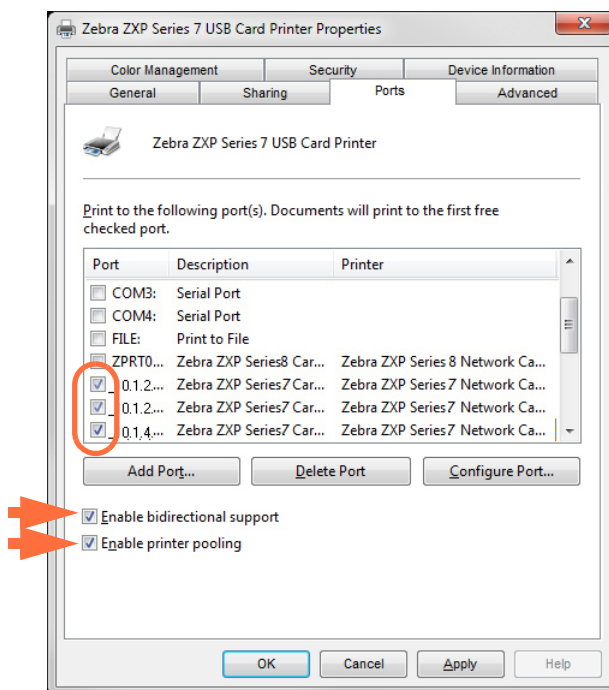


**Step 3.** Select the three network printers by selecting the associated checkbox (circle above).

**Step 4.** Ensure that *Enable printer pooling* and *Enable bidirectional support* checkboxes are selected (arrows above).

**Step 5.** Click the **Apply** button, then click the **OK** button.

## Using the Printer Pool

**Important •** 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.

# Appendix C

## Accessing a Network Printer via a Web Browser

### Introduction

If the printer is connected to a local Ethernet network, it can be accessed via a Web Browser. This section describes how to access the printer's web page using a computer connected to the network.

# Procedure

**Step 1.** Start your Web Browser.

**Step 2.** In the browser address bar, enter the IP address of the printer connected to the local Ethernet network.

**Step 3.** The printer's web page will open.
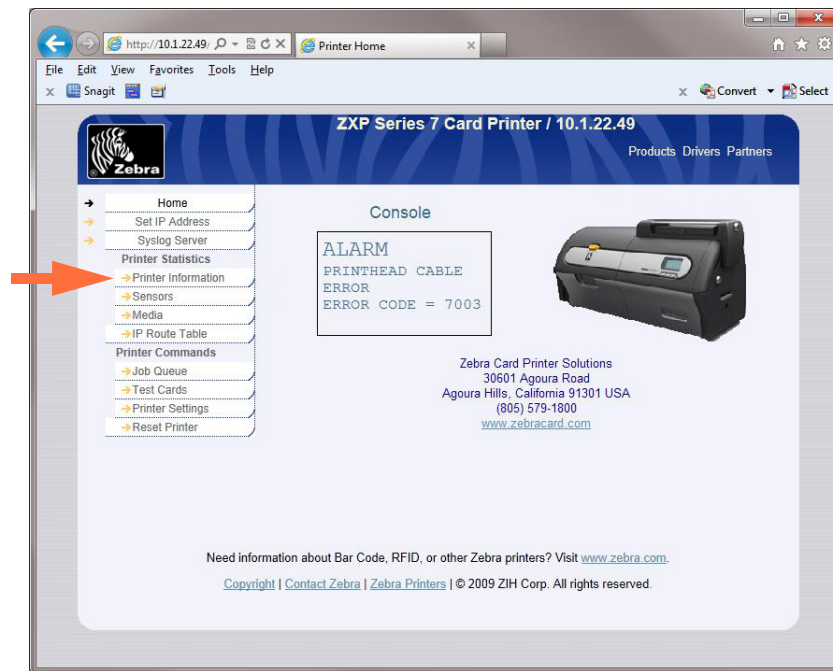


**Step 4.** Click on the desired tab; e.g., Printer Information (arrow above).

**Step 5.** In the Windows Security dialog box, type the User name (root) and Password (leave blank); and click on the **OK** button.

**Step 6.** The selected tab will be displayed; in this case, Printer Information.



**Step 7.** Continue selecting tabs as necessary.

**Step 8.** When done, close the browser (click on the red X-button in the upper-right corner of the screen).

# Appendix D

## 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 coercivity (HiCo) or low coercivity (LoCo). Use the printer driver to change the encoder setting.

HiCo vs. LoCo:

- HiCo cards are used for the majority of applications; e.g., credit cards, ID cards, access control cards, etc. HiCo magnetic stripes are usually black and are encoded with a strong magnetic field for long and durable card life.

- LoCo cards are used for short-term applications; e.g., season passes, hotel room keys, etc. LoCo magnetic stripes are usually brown in color and are encoded with a low intensity magnetic field.

# Driver Settings (Printing Preferences)

To access Printing Preferences, select *Start > Devices and Printers*. Right click on the *Zebra ZXP Series 7 Card Printer* in the listing. Select *Printing Preferences*.

## Initial Setup

**Step 1.** Select the *Encoding* tab.
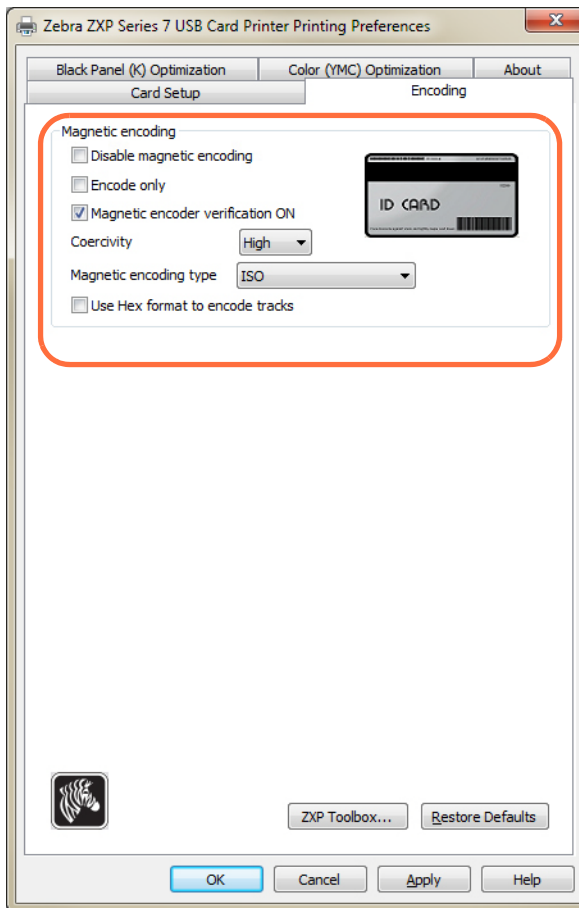


**Step 2.** Make your selection(s) for Magnetic encoding:

- **Magnetic encoder verification**: When selected, the protocol is (1) Write mag data; (2) Verify mag data; (3) If this fails, verify again; (4) If the second verify fails, rewrite and verify; (5) If this cycle fails, eject the card.

- **Coercivity**: Selections are High or Low

- **Magnetic encoding type**: Selections are ISO, AAMVA, CUSTOM, and BINARY.

**Step 3.** Click on the **Apply** button, then click the **OK** button.

# Printing Options

For printing and encoding with the mag stripe on the front of the card, use the *Print front image on back side* option; and select **Yes** from the dropdown menu (circled below).
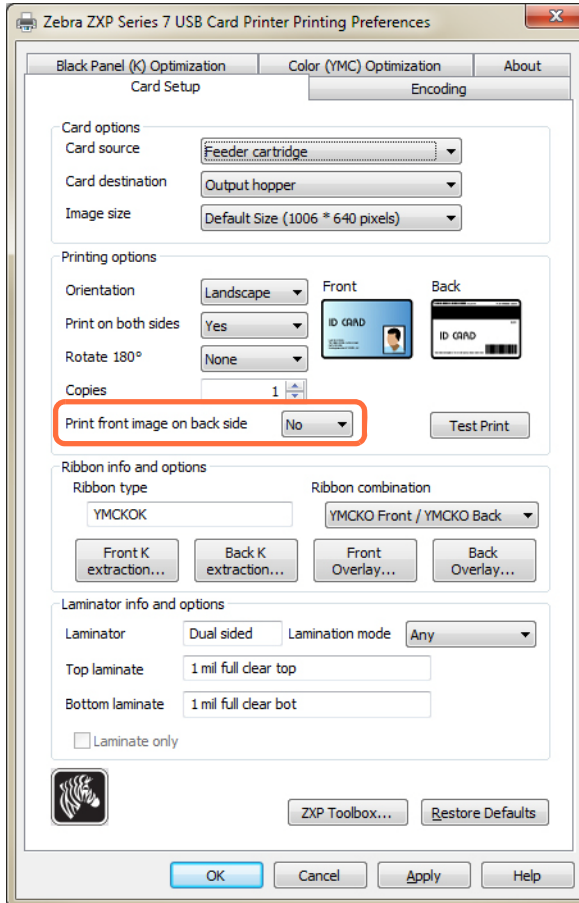
# Card Loading Orientation

**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.
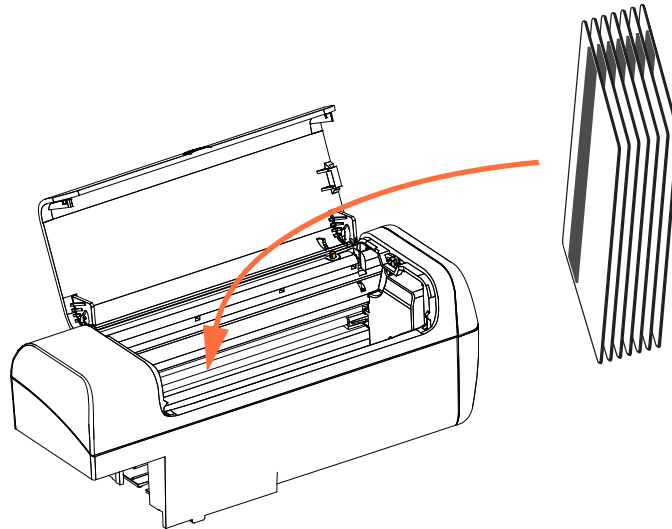
Place the cards in the Feeder Cartridge in the correct orientation as shown (with the magnetic stripe to the left and to the rear). Ensure that the cards are seated properly the hopper.

# Functional Check

To check the operation of the mag encoder, you will need the ZXP Toolbox. Select *Start >
Devices and Printers*. Then right-click on the *Zebra ZXP Series 7 Card Printer* listing, and
select *Properties > Device Information > ZXP ToolBox*.

**Step 1.** From the main *Toolbox* window, select Technology > Magnetic Encoding.
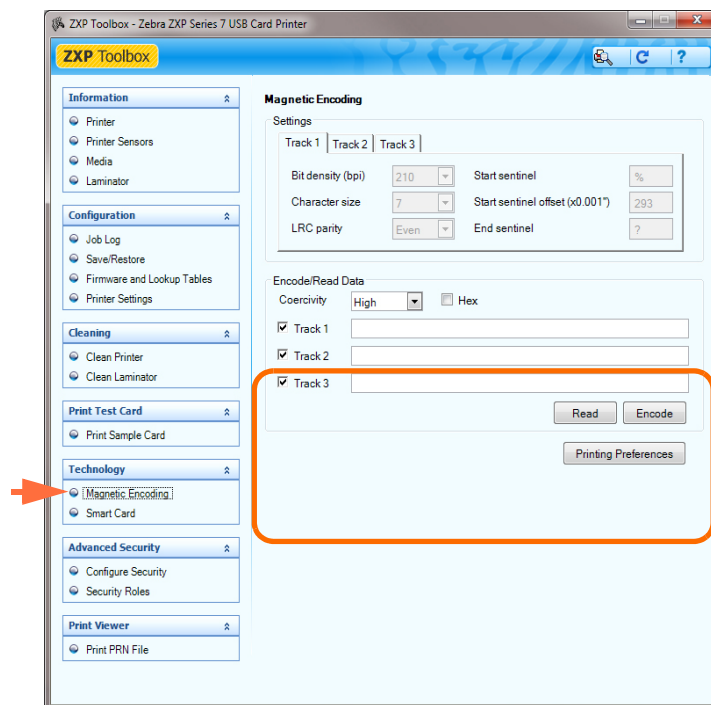


**Step 2.** Coercivity: Depending on the Card Type used, select either *High* or *Low*.

**Step 3.** For encoding: Click on the checkboxes to select *Track 1*, *Track 2*, and/or
*Track 3*; enter the data to be written; if not already done, place a magnetic stripe card
in the Feeder Cartridge; and click on the **Encode** button.

**Step 4.** When encoding is complete, the card will be ejected into the Output Hopper.

**Step 5.** Move the card from the Output Hopper to the Feeder Cartridge.

**Step 6.** For reading / validating: Click on the checkboxes to select *Track 1*, *Track 2*,
and/or *Track 3*; click on the **Read** button.

**Step 7.** When reading is complete, the card will be ejected into the Output Hopper.

**Step 8.** The data encoded will be read and displayed.

**Step 9.** Validate the data encoded in step 3.

**Step 10.** This completes the Mag Encoder Functional Check.

# 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.

Track 1 -- 210 BPI
Track 2 --  75 BPI
Track 3 -- 210 BPI

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

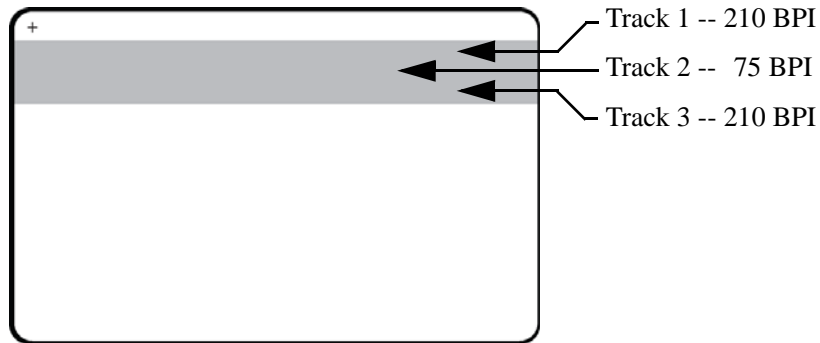| Track | Density (bpi) | Bits per character | Character parity | Length (characters) | LRC parity | Start sentinel | End sentinel | Start sentinel offset |
|-------|---------------|--------------------|------------------|---------------------|-----------|----------------|--------------|-----------------------|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

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.

# Encoder Macro Commands

With ZXP Series 7 Card Printers, we provide support for pass-through magnetic 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 E

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# 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 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.

If you experience any problems with encoding or reading data, refer to the service manual or other documentation for the application software.

# 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 (*External 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 as the standard models.

## Card Loading Orientation for Contact Smart Cards

Place the cards in the Feeder Cartridge in the correct orientation as shown (with the gold-plated Smart Card contacts at the top of the card and facing to the right). Ensure that the cards are seated properly the hopper.
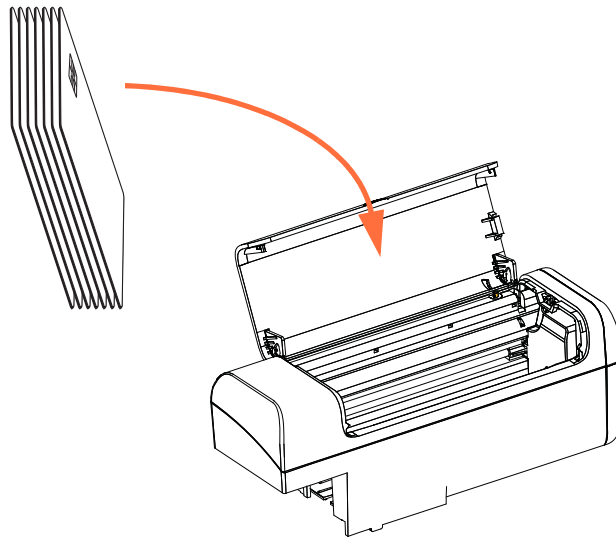
# External Contact Station Interface

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



DB-9 Connector location for
External Contact Station
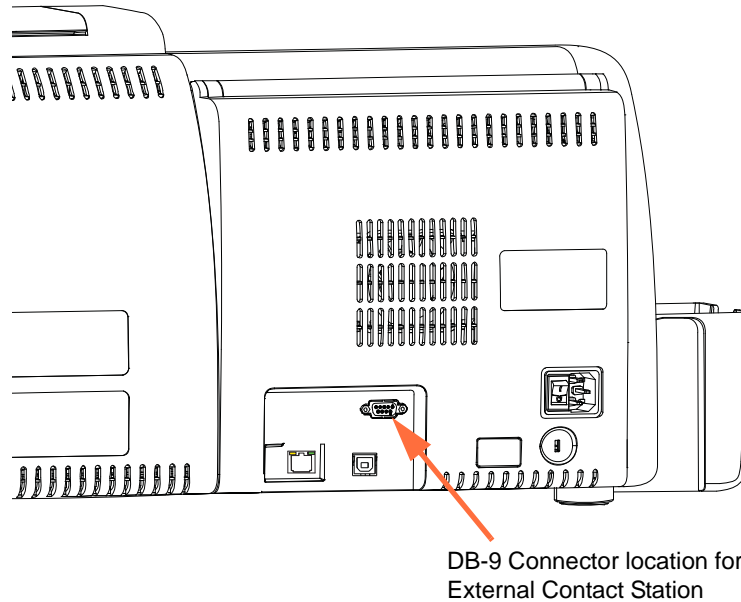
An attached external Smart Card Programmer can be used to program Smart Card chips. The following table shows the Smart Card Contact Points.

### DB-9 Pin Connections

| Pin | Smart Card Contact Points | Pin | 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.

## Card Loading Orientation for Contactless Smart Cards

For Contactless Smart Cards, orientation is not a consideration.

## Printing on Contactless Smart Cards

There are no restrictions when designing material to be printed on Contactless Smart Cards.

# APPENDIX F

## 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 |
|----------|-------|-------|
| German | +49 (0) 2159 676 870 | zebratechDE@zebra.com |
| French | +33 (0) 1 53 48 12 74 | zebratechFR@zebra.com |
| English | +44 (0) 1628 556 225 | zebratechUK@zebra.com |

### For further assistance, contact:

Zebra Technologies Card Printer Solutions
Dukes 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 ot 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 the 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)