5

Printer Operation

Printing requires the Windows printer driver and your card design/issuing software or printer command-level programming through the printer interface.

P630*i* & P640*i* Printers can be used with any Windows 2000 or Windows XP software application program, using the drivers provided on CD with the printer. Refer to Section 3 for instructions on installing the Printer Driver.

i Series Printers require the use of *i* Series ribbons for full color printing. These Resin Thermal Transfer and Dye Sublimation ribbons are specifically designed for the *i* Series Printers

Creating a Sample Card

Before you begin a new printing session, print a sample card to ensure that the cards will be printed correctly. Follow the steps below to create your first card:

1. Open a new Microsoft Word document.

2. If the Card Printer was not selected as the default printer, go to File > Print; and choose Zebra Card Printer from the printer names list; e.g., Zebra P640i.

3. Click the Close button.

4. Go to File > Page Setup.
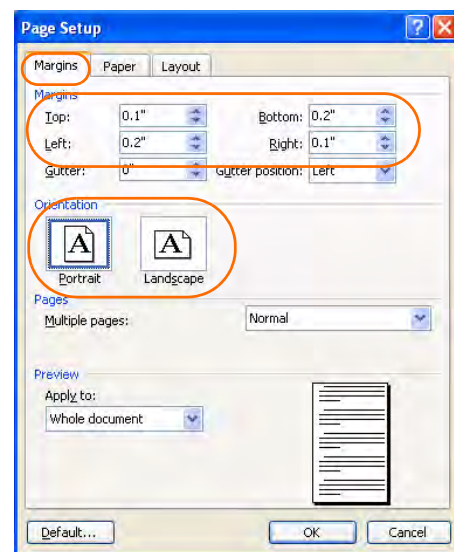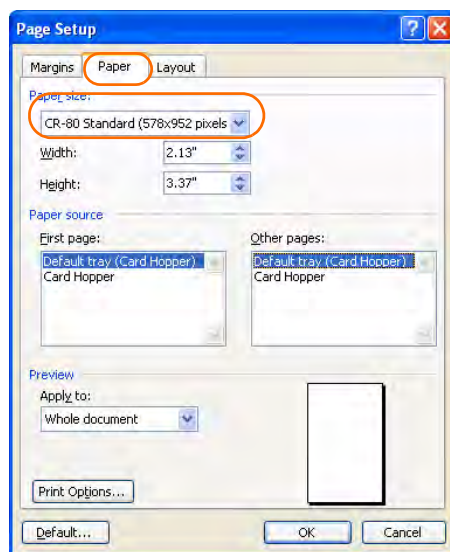
5. Select the Paper Tab (above left); and under Paper Size, choose CR-80 Standard.

6. Select the Margins Tab (above right); and under Margins, set Top = 0.1", Bottom = 0.2", Left = 0.2", and Right = 0.1".

7. Under Orientation, select Landscape or Portrait.

8. Click on OK.

9. View the blank Microsoft Word document (2.13" x 3.37").

10. Design a card with both black and colored text and with colored pictures.

Printing a Sample Card

Once you have completed creating your sample card, you are ready to print. Ensure your printer has a Ribbon Cartridge installed. Refer to Section 2 for instructions on installing the ribbon and loading the cards.

Print your sample card as follows:

1. Select File > Print to open the Print dialogue box.
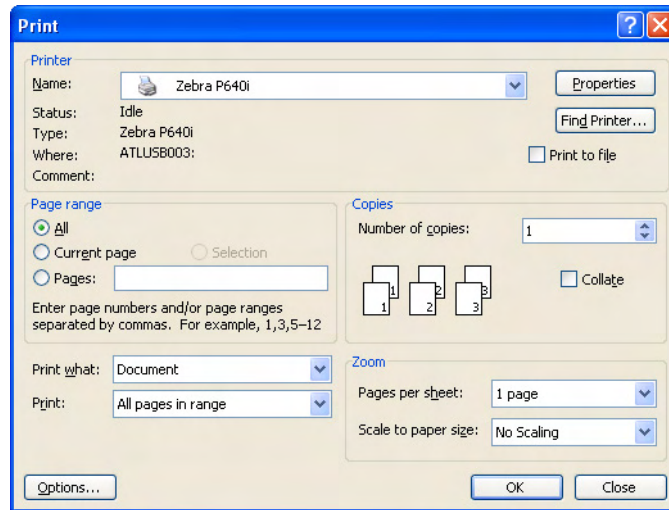
2. Ensure the following settings in the Print dialogue box:

- Name: Zebra Card Printer; e.g., Zebra P640i
- Print to file: Unchecked
- Page Range: All
- Number of Copies: 1
- Collate: Unchecked
- Print what: Document
- Print: All pages in range
- Pages per sheet: 1 page
- Scale to paper size: No Scaling

3. Click the OK button.

4. Observe the printing process. The data download time will vary depending on the complexity of the card design and the processing speed of the computer.

5. Once the printing is completed, the card is ejected from the printer.

6. Check the card for any discrepancies. If the sample card is correct, your Card Printer is ready to produce more cards. For print quality issues, refer to Section 7.

6

Cleaning

Cleaning the System

Caution • PROTECT YOUR FACTORY WARRANTY!

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

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

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

This section will guide you through the recommended cleaning processes to be performed on your Printer:

Preventive Maintenance

There is almost no preventive maintenance to be performed. Dust and debris should be vacuumed out every 12 months, or more frequently in adverse environments.

Card Cleaning

Your Printer includes a simple cleaning system using a Cleaning Cassette.
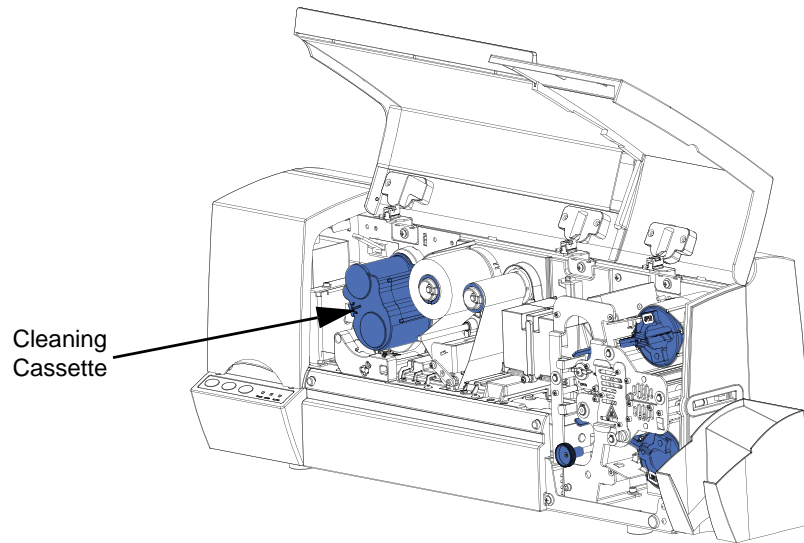
Cleaning
Cassette

Before being printed, each surface of the card is cleaned by a soft tacky roller that is itself cleaned periodically by adhesive tape in the Cleaning Cassette. By default, the roller is cleaned every 10 cards. The printer driver software allows the card count to be modified.

By cleaning the roller every 10 cards, the Cleaning Cassette contains sufficient tape for 3,000 cards.

Printhead Cleaning

The card cleaning system using the Cleaning Cassette will normally do an adequate job of cleaning the cards. However, a separate Printhead cleaning, using swabs, can remove more stubborn deposits when print anomalies persist.

Caution • Only use foam-tipped swabs. Never use a sharp object to scrape deposits from the print head. Permanent damage to the print head will result.

Step 1. Place the printer power switch in the ON (|) position.

Step 2. Open the printer Main Cover. The Printhead will raise for easy access.

Step 3. Remove the Ribbon.

Step 4. Clean the Printhead by moving an alcohol-moistened swab tip side-to-side across the Printhead elements. Only use moderate force.

Step 5. Allow two to three minutes for the Printhead to dry.

Step 6. Re-install the Ribbon.

Step 7. Close the printer Main Cover.

To reorder swabs, reference the Printer Media List.

Platen Care and Cleaning

> **!** **Important •** Regular cleaning of the Platen helps maintain performance.

The Platen plays an important part in the printing process, providing a rigid supporting surface for the card as it passes under the Printhead.

Because *flatness* is important, the Platen is surface ground to close tolerances. Any irregularities in the surface due to abrasion, dings, or even seemingly unimportant particles of debris can noticeably degrade printing performance.

Step 1. Remove the Platen.

Step 2. Clean its surface with soapy water.

Step 3. Dry it with a lint-free cloth.

Step 4. Return the Platen to the Truck, pin and spring facing to the left, taking care not to dislodge the spring.
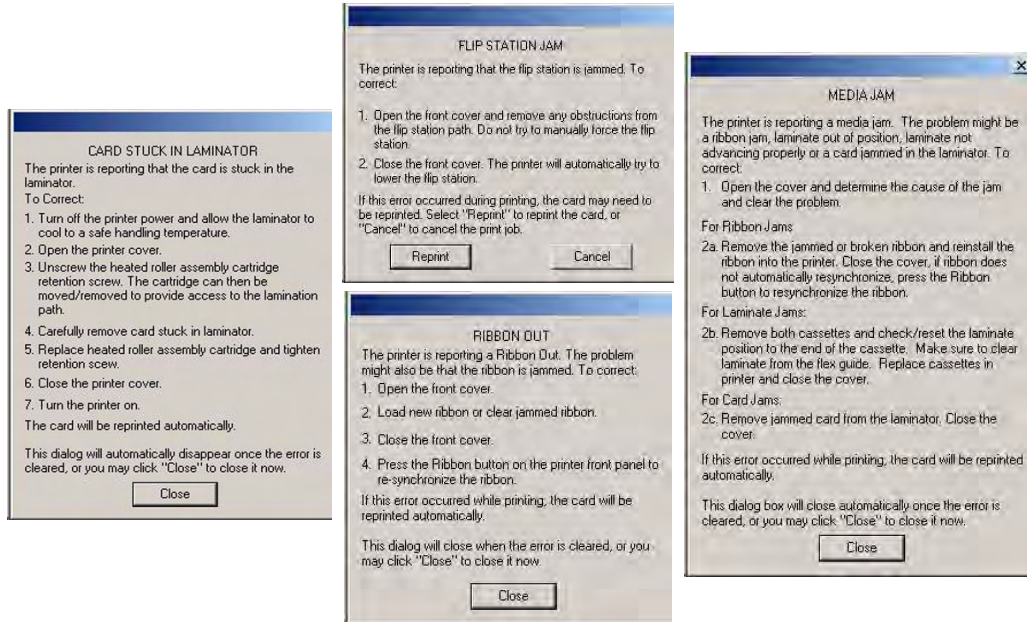
7

Troubleshooting

Most of the problems described in the following pages are correctable by the user, but please note there is the potential for unexpected results if the procedures are not followed carefully. If in doubt, call Zebra Technical Support.

Before calling for technical support, do the following:
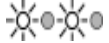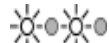
- Check all cable connections, including power.
- Check that the power switch is ON.
- Unless you hear noises suggesting a card jam condition, try power cycling: switch OFF, wait 15 seconds, then switch ON.
- Open the main cover, then look for obvious problems, such as a card where it should not be, media outages or misfeeds (color ribbon, laminate, cleaning cassette).

Error Messages

Most error conditions are identified by the printer itself, and are reported by the computer as error messages, with corrective actions listed. The following are typical computer-reported error messages.

CARD STUCK IN LAMINATOR

The printer is reporting that the card is stuck in the laminator.
To Correct:

1. Turn off the printer power and allow the laminator to cool to a safe handling temperature.
2. Open the printer cover.
3. Unscrew the heated roller assembly cartridge retention screw. The cartridge can then be moved/removed to provide access to the lamination path.
4. Carefully remove card stuck in laminator.
5. Replace heated roller assembly cartridge and tighten retention scew.
6. Close the printer cover.
7. Turn the printer on.

The card will be reprinted automatically.

This dialog will automatically disappear once the error is cleared, or you may click "Close" to close it now.

[Close]

FLIP STATION JAM

The printer is reporting that the flip station is jammed. To correct:

1. Open the front cover and remove any obstructions from the flip station path. Do not try to manually force the flip station.
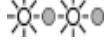2. Close the front cover. The printer will automatically try to lower the flip station.

If this error occurred during printing, the card may need to be reprinted. Select "Reprint" to reprint the card, or "Cancel" to cancel the print job.

[Reprint]   [Cancel]

RIBBON OUT

The printer is reporting a Ribbon Out. The problem might also be that the ribbon is jammed. To correct:

1. Open the front cover.
2. Load new ribbon or clear jammed ribbon.
3. Close the front cover.
4. Press the Ribbon button on the printer front panel to re-synchronize the ribbon.

If this error occured while printing, the card will be reprinted automatically.

This dialog will close when the error is cleared, or you may click "Close" to close it now

[Close]

MEDIA JAM

The printer is reporting a media jam. The problem might be a ribbon jam, laminate out of position, laminate not advancing properly or a card jammed in the laminator. To correct:

1. Open the cover and determine the cause of the jam and clear the problem.

For Ribbon Jams:

2a. Remove the jammed or broken ribbon and reinstall the ribbon into the printer. Close the cover, if ribbon does not automatically resynchronize, press the Ribbon button to resynchronize the ribbon.

For Laminate Jams:

2b. Remove both cassettes and check/reset the laminate position to the end of the cassette. Make sure to clear laminate from the flex guide. Replace cassettes in printer and close the cover.

For Card Jams:

2c. Remove jammed card from the laminator. Close the cover.

If this error occurred while printing, the card will be reprinted automatically.

This dialog box will close automatically once the error is cleared, or you may click "Close" to close it now.

[Close]

Indicator Light Status

READY		MEDIA	ALARM	PRINTER STATUS
GREEN	**YELLOW**	**ORANGE**	**RED**	
☼				Ready to print.
☼●☼●				Printer busy.
	☼			Laminator(s) in sleep mode. When not in use, the heaters cool at 1° F per minute.
	☼●☼●			Laminator(s) heating up, but not yet at operating temperature.
		✔		Normal.
		☼		No cards in hopper, color ribbon out, cleaning tape out, laminator cassette(s) out.
		☼●☼●		Mag encoding write failure.
			✔	Normal.
			☼	Serious error conditions, including: Main Cover open, Laminator too hot, Card Transport stalled, card not seated properly, mag encoding verification error, head-lift failure, ribbon jam, card jam (any location), card missing (any location), no gap between laminator patches.
			☼●☼●	Printhead temperature error, or internal firmware problem.

✔ = LIGHT OFF

☼ = LIGHT ON

☼●☼● = LIGHT FLASHING

Print Quality Problems

> **!** **Important •** Operator should contact Zebra Card Printer Solutions Customer Service before changing any factory settings within the printer.

This section will help you resolve print quality problems. The print quality is dependent on several factors. The two most important factors that will increase your print quality are cleanliness and card stock. To diagnose and fix print quality problems, follow the troubleshooting procedures below:

Example • Small spots appear on the printed card with a non-printed area or a different color.
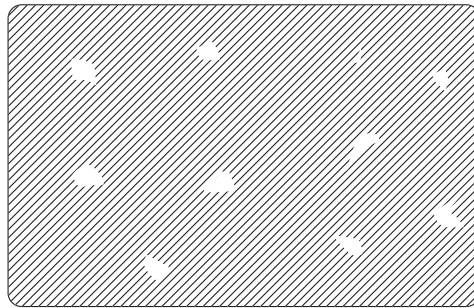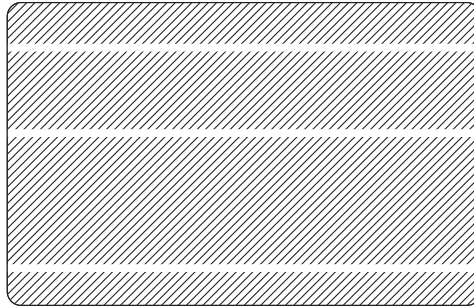

• Possible Cause:

Contamination on the card surface.

Solution:

Check that cards are stored in a dust free environment.

Use a different supply of cards.

Clean the printer; see "Cleaning the System" on page 79.

Example • There are non-printing horizontal lines (white) on the card surfaces.

- Possible Cause:

    Ribbon is not correctly positioned.

    Solution:

    Ensure that the ribbon is properly rolled onto the ribbon cores and that there are no wrinkles in the ribbon.

    Replace ribbon; see "Installing the Ribbon" on page 15

- Possible Cause:

    Printhead is dirty.

    Solution:

    Clean the printhead; see "Printhead Cleaning" on page 81.
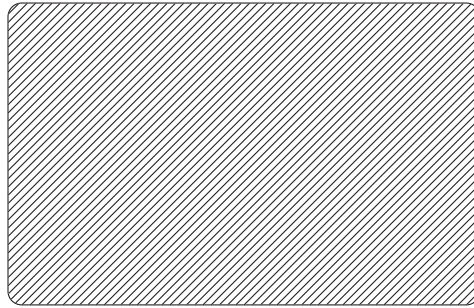
- Possible Cause:

    Printhead elements are damaged (e.g., scratched or burnt).

    Solutions:

    Replace the printhead; contact Zebra Customer Service.

Example • Printing shows very pale or inconsistent results.

- Possible Cause:

    Ribbon has been stored improperly or is damaged.

    Solution:

    Change the ribbon and print again; see "Installing the Ribbon" on page 15.

- Possible Cause:

    Cards may not meet specifications.

    Solution:

    Use a different supply of cards.

- Possible Cause:

    Brightness and/or contrast may be set to values which are too high.

    Solution:

    Adjust brightness and/or contrast values in software; see "Image Adjustment Tab" on page 64.

- Possible Cause:

    Dust or embedded contamination on elements of the printhead.

    Solution:

    Clean the printhead; see "Printhead Cleaning" on page 81.

Example • Printing shows blurry printed image.

- Possible Cause:

    Ribbon may not be correctly positioned.

    Solution:

    Check that the ribbon is properly rolled onto the ribbon cores, with no wrinkles.

    Replace ribbon, making sure it locks in place, and print again; see "Installing the Ribbon" on page 15.

- Possible Cause:

    Ribbon may not be synchronized on the correct color panel position.

    Solution:

    Open lid, then close lid to synchronize ribbon.

- Possible Cause:

    Cards may not meet specifications.

    Solution:

    Use a different supply of cards.

- Possible Cause:

    Dust or embedded contamination inside the printer.

    Solution:

    Clean the printer; see "Cleaning the System" on page 79.

Example • No printing on the card.

- Possible Cause:

    Ribbon may not be installed in the printer.

    Solution:

    Check for ribbon in the printer.

- Possible Cause:

    Cards may not meet specifications.

    Solution:

    Use a different supply of cards.
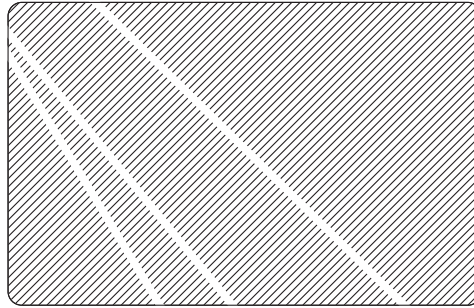

- Possible Cause:

    Cable on printhead may be disconnected.

    Printhead elements may be scratched or burnt.

    Solution:

    Contact Zebra Customer Service for printhead repair or replacement information.

Example • Irregular white lines in the print, like the ribbon is wrinkling -- Ribbon Wrinkle.

- Possible Cause:

    Ribbon may not be correctly positioned.

    Solution:

    Check to make sure that the ribbon is loaded correctly.

- Possible Cause:

    Cards may not meet specifications.

    Solution:

    Use a different supply of cards.

- Possible Cause:

    Dirty printhead and/or print path.

    Solution:

    Clean the printhead; see "Printhead Cleaning" on page 81.

    Clean the print path.

- Possible Cause:

    Worn or uneven platen roller surface.

    Solution:

    Replace the platen roller; contact Zebra Customer Service.

Poor color registration

- Minor mis-registration of Y, M and C color passes may be due to printhead angle adjust screw not in firm contact with printhead frame; contact Zebra Customer Service.

- For gross mis-registration of Y, M and C, suspect that the card not firmly positioned against left hand pick edge of truck on one or more passes. Spring at left end of platen may be missing or bound up. Contact Zebra Customer Service.

- Check printed card for damage on corners or edges. Example: the card may be scraping along the underside of the hopper base molding. Contact Zebra Customer Service.

- Printhead pressure too light; contact Zebra Customer Service.

- Printhead may be running hot. Will occur if head resistance incorrectly entered in driver software. Contact Zebra Customer Service.

- Toothed transport belt pulley may be slipping on drive shaft. Tighten set screws (make sure the screws bear on flats on the shafts). Contact Zebra Customer Service.

- Check platen spring -- spring height should be the same as the pin height. Contact Zebra Customer Service.

Poor color rendering

> **Important •** Changes in contrast settings will not take effect until power is cycled.

- Possible source issues - poor quality photos or graphics, card layout application settings. Isolate the problem by printing a known image.

- Vary brightness and contrast controls; see "Image Adjustment Tab" on page 64

- Fine tune if necessary using Contrast Adjust; see "Color Calibration" on page 69.

Faint, non-uniform image

- Printhead pressure too low; contact Zebra Customer Service.

- Printhead not pivoting freely; contact Zebra Customer Service.

Gaps in image at edges and corners

- Possible de-lamination/wear of platen's rubber surface. Try cleaning platen; see "Platen Care and Cleaning" on page 82. If unsuccessful, replace platen; contact Zebra Customer Service.

- Possible non-uniformity of card thickness, or card surface defects.

Continuous white or black stripes on card's longer dimension

- Before doing anything else, clean the printing edge of the printhead with alcohol; see "Printhead Cleaning" on page 81.

- White stripe means blown pixel (non-functioning heating element). One or two blown pixels in isolation may be acceptable to some. Otherwise replace printhead; contact Zebra Customer Service.

- Black stripe means non-functioning circuit(s) on printhead. If so, replace printhead, but first check that it is not the result of an image size change not followed by power cycling the printer; contact Zebra Customer Service.

Unusual Noises/Unreported Events

Color ribbon runs for longer than 2 or 3 seconds when cover is closed (MEDIA light stays on)

- Color ribbon not in Color Sensor.

- Both ribbon cores not fully engaged on Spindles.

- Ribbon not secured to Take-up Core.

ALARM light stays ON after error condition is cleared

Note • There is a delay after closing the cover before the ALARM light goes out.

- Some alarms require recycling power in order to clear.

- Main cover interlock switch may not have actuated when cover closed.

- Alarm condition not corrected.

Card has both front and back images printed on same side

- Check selections made in Card Setup; see "Card Setup Tab" on page 63.

- Card failed to flip. Run Flip Test to check flip action; see "Flip Station Routines" on page 71.

MEDIA light ON steady, but no obvious visual problem

- Color ribbon not in Color Sensor.

- Color ribbon supply and/or take-up cores not engaging properly on spindles.

- Cleaning cassette not engaging properly on the take-up drive.

- End of patch.

- Laminate misfeed.

YMC color panels stick to card

- Printhead running too hot. Can happen after head replacement if head resistance incorrectly entered through printer driver. Contact Zebra Customer Service.

- Color gain and offset too high. Contact Zebra Customer Service.

- Check ribbon take-up and supply torques. Contact Zebra Customer Service.

K (Black) panel sticks to card

- Printhead running too hot. Can happen after head replacement if head resistance incorrectly entered through printer driver. Contact Zebra Customer Service.

- Black panel density and/or preheat set too high. Contact Zebra Customer Service.

- Check ribbon take-up and supply torques. Contact Zebra Customer Service.

- Color image printing with K (black) panel. Check selections made in Printing Preferences; see "K (Black) Panel Tab" on page 67.

Loud rattling/screeching from card transport

- Card has fallen onto truck drive belt, and is jammed at some point. Open cover, remove all cards from hopper. Remove jammed card if accessible. Look for card in the transport bed. Using card transport knob, hand-crank truck to push card into one of two areas for easy removal - under hopper, or under flip station (lift carrier for access, then push it down again).

Rattling noise every 10 cards

- Cleaning cassette not firmly engaged.

- Cleaning cassette broken or cassette halves separated.

- Cleaning cassette cannot rotate upward to disengage from the cleaning roller.

Completely unexpected print results

- Color ribbon out, or nearly out. Replace ribbon; "Installing the Ribbon" on page 15.

- Main cover opened during a print job. Open and close main cover, then press RIBBON to re-sync ribbon. Reprint last job.

- Color ribbon panels out of sync, see previous action.

- Color ribbon not advancing consistently. Color ribbon supply and/or take-up cores not engaging properly on spindles.

- Front (color side) of card printed with black. Open and close main cover, then press RIBBON to re-sync ribbon.

- Inconsistent color, very faint printing. Printhead not pressing on ribbon. Contact Zebra Customer Service.

- Color ribbon torn, or jamming intermittently. Clear jam. Pull out more from supply roll and reattach to take-up roll.

Unusual events

In any of the following cases, and all other unusual events, try power cycling first, then investigate specific issues:

- Printhead descends before card arrives. Contact Zebra Customer Service.

- Printhead stays down after card has gone away. Contact Zebra Customer Service.

- Laminate cutter fails to operate. Contact Zebra Customer Service.

- Unusual media light indications. Contact Zebra Customer Service.

Laminator spot check

Note • Remember, the P640*i* Printer includes upper and lower laminators; the P630*i* Printer has the upper laminator only.

- Make sure the Transfer Toggle is in the RUN (horizontal) position.

- Upper or lower laminate feed problems: remove, then replace transfer guides, discarding laminate patches on transfer rollers. Check for laminate where it should not be. Remove both laminate cassettes. If out, or nearly out, load fresh laminate. Wind laminate back in to eliminate overhang. Reinstall cassettes, latching securely. Visually check path from cassette(s) through feed roller, cutter and transfer guide.

- Check for mis-feeding of laminate due to poor engagement of white plastic idler on cassette with drive roller. Mark the upper core to check that it rotates (no need to mark the lower core - watch the notches on the laminate core). Feed laminate by pressing the LAMINATE button.

- Laminate patch may be wrapped around the heated roller, causing card feed problems and/or poor lamination. Turn printer OFF, **remove the laminate patch immediately**. Do *not* use a metal knife or any tool that might damage the heated rollers.

- Check upper and lower laminate sensor readings, with and without laminate present (< 20 if present, > 180 if absent - numbers valid only if transfer guides installed).

Printhead Failures

White line across length of the card

- The white line is a sign of a blown pixel.

- The adjacent black stripe is a printhead driver problem (i.e., components on the head itself).

- These are independent problems, not necessarily co-located, that may require replacement of the printhead; contact Zebra Customer Service.

Random occurrences of white (unprinted) spots

- Possible card quality problem. Run IDPrint Lite with graytone.bmp on cards from a different batch. Check platen surface for specks of debris.

Image not centered on card

- *S*ee "Printer Adjustment" on page 58.

Image missing at top or bottom of card

- Ribbon folded over at edge. Slacken ribbon by pulling more out of supply roll, unfold edge then press RIBBON button to re-sync.

- Bottom edge and/or right hand edge of image missing could be card layout application sending wrong image size (should be 952 x 578 pixels). Select appropriate image size (if available) in Preferences, or modify layout application.

Image loss at top of card (on either edge)

- Almost certainly due to ribbon fold-over.

- Could be a head non-pivoting problem; contact Zebra Customer Service.

- Could be an image size problem.

Consistent image defects, card after card

- Debris on platen. Clean platen; see "Platen Care and Cleaning" on page 82.

- Platen surface not flat. Clean platen; see "Platen Care and Cleaning" on page 82. Replace if necessary.

Debris on platen

- Clean platen; see "Platen Care and Cleaning" on page 82.

Random colored patterns on image

- Ribbon wrinkling. Reduce take-up torque. Check printhead pressure. Contact Zebra Customer Service.

- Too much heat being applied to YMC panels. Try reducing gain, offset and preheat separately for each color in the driver *Device Settings > Color Calibration*; "Color Calibration" on page 59. Typically, the set of values should be the same for each color.

- Printhead running too hot. Can happen after head replacement if head resistance incorrectly entered through printer driver. Contact Zebra Customer Service.

Random colored lines

- Probably resulting from excessive take-up torque. Contact Zebra Customer Service.

Scratches/dings on long edges of card

- Look for a narrow band of abrasion up to about 0.1" (2.5 mm) in from either or both of the long edges. Contact Zebra Customer Service.

- Card hopper base set too low. Contact Zebra Customer Service.

Laminate Problems

Laminate not centered on card

- Vertical offset adjust (mechanical adjustment).

- Horizontal offset: *Properties > Device Settings > Printer Adjustment > Laminate Station Adjust;* see "Laminator Station Adjustments" on page 72.

Laminate not parallel with card edges

- Skew adjust (mechanical adjustment).

- If using partial width laminate, edge guide not properly installed (one of two positions).

- Transfer guide not properly installed.

- Laminate patch wrapped around heated roller.

Laminate wrinkling

- Can occur at end of roll. Remove cassette. If nearly out, discard. Install fresh roll.

- If not end-of-roll problem, suspect obstructions in laminate feed path.

Laminate bunches up outside the cutter assembly

This can happen to either upper or lower laminates.

- Failing to latch the cassette. Unlatch the cassette, gently wiggle the cassette out of its pocket, then latch the cassette.

- Out-of-square scissor cut on the leading edge of the laminate. You can make this easier by cutting the laminate above the latch. Remove all laminate scraps.

- Leading edge of laminate not reeled in even with the lips of the cassette. Cut the leading edge of the fresh laminate as square as you can with scissors, then reel it in, re-install, and latch the cassette.
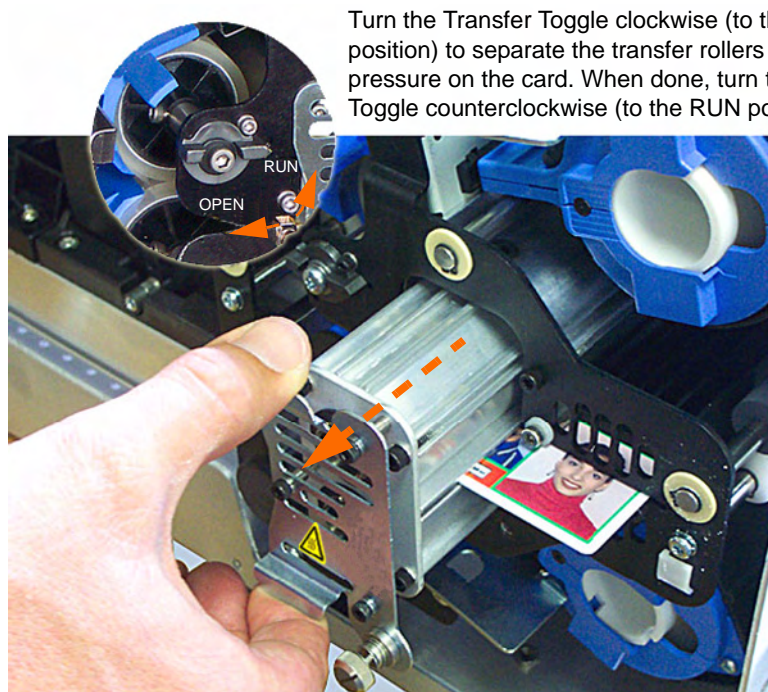
Note • Any time you unlatch a cassette, you must check that the laminate is even with the lips of the cassette before re-latching.

Card jammed in laminator

- Dings or rough edges on the card (depending on vendor, card quality can vary, even from batch to batch).

- Either of the cutters fails to cut, so the card is stopped dead by a "tail" of laminate, now firmly held by the laminate feed roller, which can *not* be rotated by tugging on the laminate.

- Heated Rollers, Infeed Rollers, or Outfeed Rollers not rotating.

Corrective Action:

Step 1. Turn off the printer; allow it to cool for about 10 minutes.

Turn the Transfer Toggle clockwise (to the OPEN position) to separate the transfer rollers and relieve pressure on the card. When done, turn the Transfer Toggle counterclockwise (to the RUN position).

⚠️ **Hot Surface •** Even after allowing cooling time, the assembly will be HOT, so hold it only by its outer cover.

Step 2. Unscrew the heater assembly fastener, then partially withdraw the assembly with the card.

Step 3. Pull the card out of the heater, inspect the rollers for laminate scraps and foreign matter, then re-install the assembly. Do *not* use metal tools to clean the rollers.

System Related Issues

Printer self-test takes more than a few minutes to complete.

READY indicator LED is not lit on the panel.

A communications problem exists.

Invalid IP address

- A valid static unique IP address must be assigned to the printer. The default setting has DHCP disabled. If you do not specify either, the printer may incur an extended latency while being identified in your network. Refer to your operating system networking configuration instructions to set up a unique static or DHCP selected IP address for your Ethernet-enabled printer.

DHCP is enabled but the printer is not connected to your network

- Verify that the Ethernet cable is properly connected to the printer and to the Ethernet port on your computer or the network.

Valid host name has not been assigned to the printer

- If your client uses Windows 2000, a valid host name must be assigned to the printer. Failing to do so may cause DHCP to register the IP address as the printer name in DDNS for clients that do not support dynamic updates.

Color differences may be attributable to the Windows operating system installed

- In a multi-printer installation, the colors printed on one unit do not match the colors from another, even though the printer color settings are the same.

- To ensure color consistency, it is recommended that the identical operating system and settings be used on all computers generating print jobs.

8

Technical Specifications
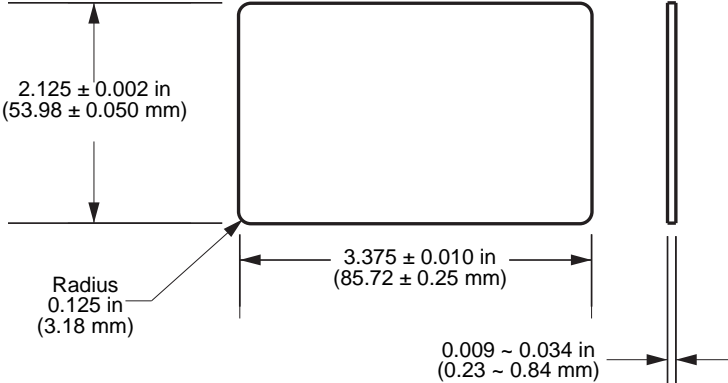
Specifications -- P630*i* / P640

Card size:	Dimensions: 54 mm x 86 mm (2.125" x 3.375") nominal
	Thickness: .75 mm (.03 in) ± 10%, frequently referred to as "30 mil cards"
Card hopper:	150 cards
Throughput:	120 cards per hour dual-sided printing (YMC on front, K on back) and laminating
Print system:	Single printhead, with flip station for front and back printing. Dye sublimation for YMC colors, and thermal mass transfer for K and Uv panels (K = opaque black resin, Uv = clear ultraviolet-visible resin).
Printhead resolution:	300 dpi
Image size (user selectable)	952 pixels x 578 pixels, Standard
	952 pixels x 600 pixels, Oversize 1
	968 pixels x 610 pixels, Oversize 2
Magnetic stripe encoder (option):	Hi-Co type. 3-track, ISO and AAMVA compatible.
Cleaning system:	Both card faces cleaned by high-tack roller. Roller is refreshed automatically by transfer tape at selectable intervals (default 10 cards, user-selectable 1 - 20 cards).

Laminating system: P640i: Separate laminators for front and back surfaces of card.

P630i: Single laminator for front surface of card.

Waste-free design with built-in cutters. Continuous 1 mil (0.025 mm) thick polyester film in re-loadable cassettes.

Controls: Print, Ribbon advance, Laminate advance

Indicators: Ready to print, Media outage, Alarm

Data interface: USB, 10/100 Mbps Ethernet (option)

Windows drivers: Plug-and-Play 2000, XP

Security features: ID/Key (option), an ID/Code, and a printer-to-PC password lockout

Compliances: FCC Class A, UL/IEC/EN 60950-1

Voltage & frequency: 110 - 220 VAC, 50/60Hz

Power requirements: Printing + Laminating:

200 Watts Typical (after warm-up)

340 Watts Maximum

Environment: Operating: 50° to 95^oF (10° to 35^oC), 20 to 80% RH non-condensing.

Storage: -4° to 158^oF (-20° to 70^oC), 5 to 90% RH non-condensing

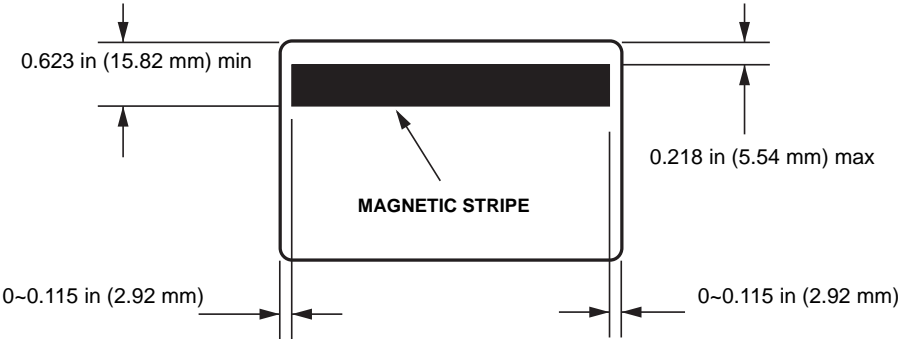**Net weight:**   35 lb. (15.9 kg) net. Shipping weight 43 lb. (19.5 kg).

Dimensions:

Card Dimensions

ISO standard dimensions for plain card

2.125 ± 0.002 in
(53.98 ± 0.050 mm)

Radius
0.125 in
(3.18 mm)

3.375 ± 0.010 in
(85.72 ± 0.25 mm)

0.009 ~ 0.034 in
(0.23 ~ 0.84 mm)

ISO standard dimensions for magnetic stripe card

0.623 in (15.82 mm) min

0.218 in (5.54 mm) max

MAGNETIC STRIPE

0~0.115 in (2.92 mm)

0~0.115 in (2.92 mm)

Declarations of Conformity

$C\epsilon$

cause interference, and (2) this device must accept any interference, i

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

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

FI: "Laite on liitettävä suojamaadoitus koskettimilla varustettuun pistorasiaan"

SE: "Apparaten skall anslutas till jordat uttag"

NO: "Apparatet må tilkoples jordet stikkontakt"

FCC Regulations

Models P630*i* & P640*i* have been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. Oprreration is subject to the following two conditions:

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

Caution: Any changes or modifications to this device not explicitly approved by the manufacturer could void your authority to operate this equipment.

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 colocated or operating in conjunction with any other antenna or transmitter unless authorized to do so by the FCC.

FCC Radiation Exposure Statement (applicable to 15.247 device only)

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

Industry Canada Notice

Operation is subject to the following two conditions: (1) this device may not interference, and (2) this device must accept any interference

including interference that may cause undesired operation of the device.

Appendix A

Magnetic Encoder

Media Loading Orientation

⚠️ **Caution •** ONLY USE cards that comply with ISO 7810 & 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.

When loading cards with magnetic stripes into the card feeder, please ensure that the magnetic stripe is face up, facing the front of the printer.
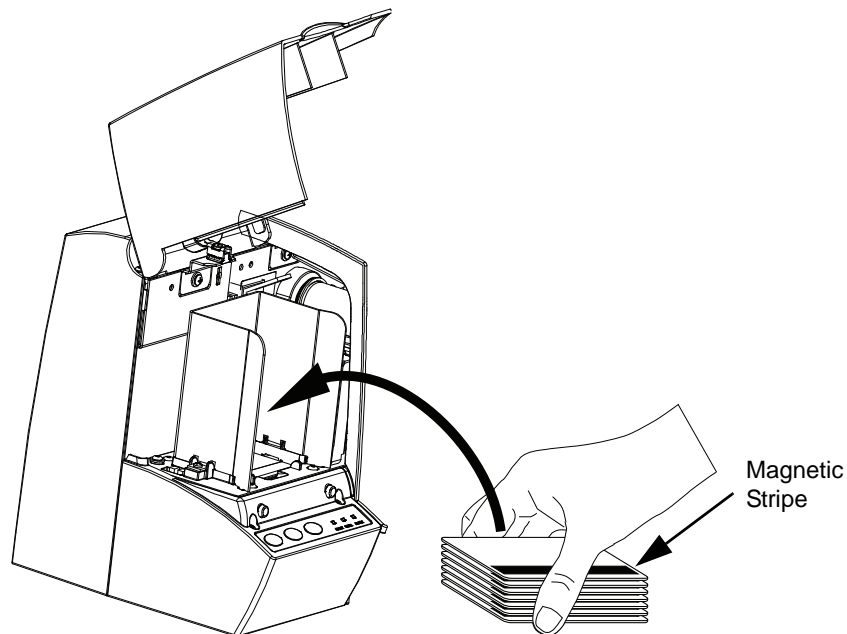
Magnetic
Stripe

Magnetic Card Stripe Encoding

This section contains information on the additional operations of the P630*i* or P640*i* Printer with Magnetic Card Stripe Encoder.The magnetic encoder uses high coercivity.

ISO Standard Encoding

Track #	Field Separator	Track Density	Valid Characters	# of characters
1	^	210 BPI*	Alphanumeric (ASCII 20~95†)	79‡
2	=	75 BPI*	Numeric (ASCII 48~62)	40‡
3	=	210 BPI*	Numeric (ASCII 48~62)	107‡

*   Bits per inch

†   Except the "?" character

‡   Including three characters: Start, Stop, and LRC. Note that these three characters are automatically managed by the magnetic encoder according to the ISO Standard Norms.

Note • Refer to the Card Printer Programmer's Manual for complete programming information.

AAMVA Standard Encoding

Track #	Field Separator	Track Density	Valid Characters	# of Characters
1	%	210 BPI*	Alphanumeric	82‡
2	:	75 BPI*	Numeric	40‡
3	%	210 BPI*	Alphanumeric	82‡

*   Bits per inch

‡   Including three characters: Start, Stop, and LRC. Note that these three characters are automatically managed by the magnetic encoder according to the ISO Standard Norms.

Appendix B

Smart Card Contactless Encoder

Introduction

Smart cards can have a built-in microprocessor and/or memory chip. The printer may be equipped with an optional contactless station for programming Smart Cards. Smart card contactless encoders utilize a short-range radio signal. Use of the encoder is entirely under control of the third-party application program -- no operator action is required. All other printer operations remain the same as the standard model.

This section contains information on the additional operations of a P630*i* or P640*i* Printer equipped with the optional Smart Card Contactless Station.

Media Loading Orientation

For contactless smart-cards, orientation is not a consideration (unless the card will be printed on; see below).

Printing Contactless Smart Cards

When designing material to be printed on Contactless Smart Cards, be sure the printing will not be on the smart chip area (i.e., the printing on **either side of the card** must not be on top of or underneath the smart chip area).

By looking at an un-printed card very carefully, it is possible to see the chip location (as in the figure on the left below). If you print in that area, results will be unsatisfactory (in the figure on the right, the "star" should have been a single solid color).

Smart Chip Location
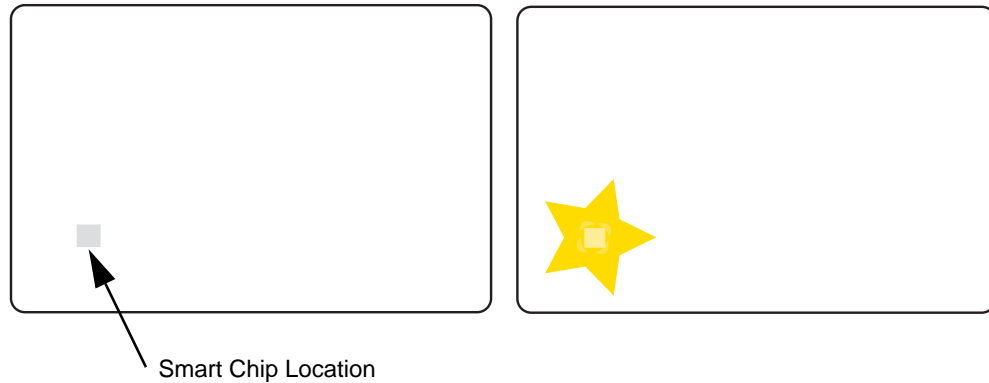
# *Appendix C*

Smart Card Contact Station

Introduction

Smart Cards have a built-in microcomputer and/or memory chip, which is used to store fingerprints, voice recognition patterns, medical records, or other types of data. The printer may be equipped with an optional contact station for programming Smart Cards (ISO 7816). This printer model responds to commands that position the card at the contact station, where the printer connects to the contacts on the Smart Card. All other printer operations remain the same as the standard model.

This section contains information on the additional operations of a P630*i* or P640*i* Printer equipped with the optional Smart Card Contact Station.

Media Loading Orientation

Orient the cards with the gold-plated Smart Card contacts at the bottom surface of the card and facing to the right.

Contacts on Bottom
Surface of Card
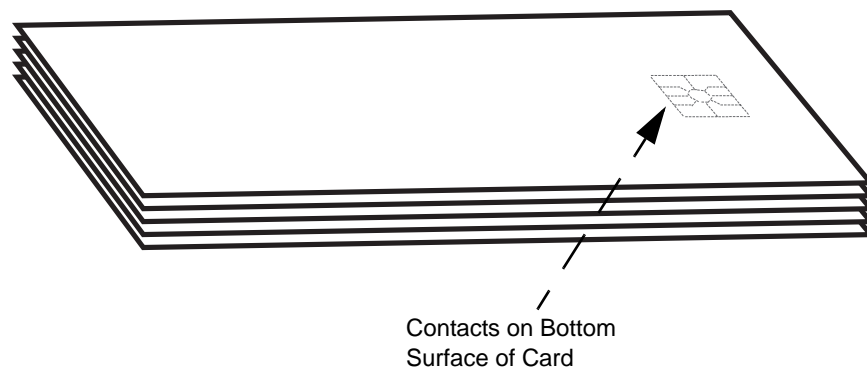
Laminating Contact Smart Cards

The laminating patch on the top surface of a smart card has a rectangular aperture to expose the card's electrical contacts. In all other respects the laminating process for smart cards is the same as for ordinary cards.

The special laminate for the top cassette is punched with a repeated pattern. Loading procedure for smart card laminate is exactly the same as for standard laminate as shown in Chapter 2.
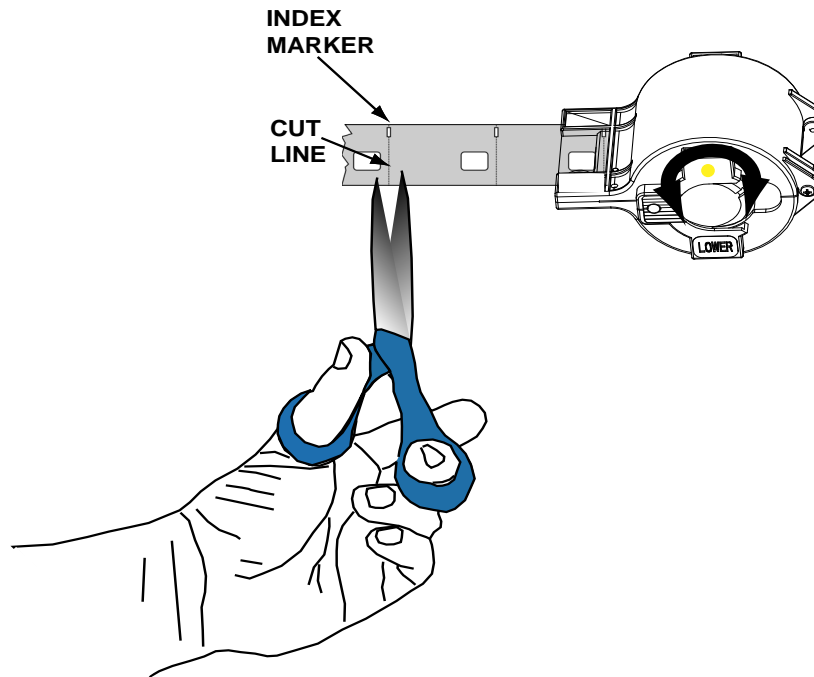
The smaller hole is an index marker that tells the printer where to cut the laminate, *exactly* splitting the index hole (the printer driver allows adjustment of the cut location). After loading the Smart Card laminate in the upper cassette, trim the laminate along the cut line as shown.
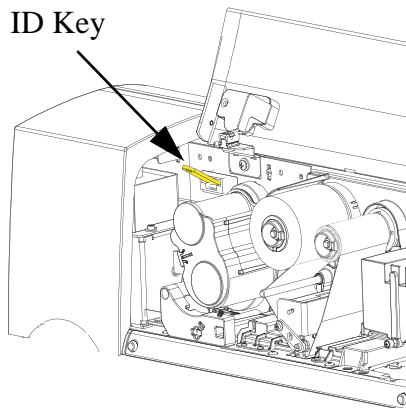
Note • When using smart card or registered laminates, the laminate length value in the driver may need to be adjusted; see Laminator Station Adjustments on page 72.

Appendix D

Printer Security

ID/Key

ID Key

The optional ID/Key is a physical security key that is programmed for each specific P630*i* or P640*i* printer. It is intended to prevent unauthorized use of that printer.

The ID/Key has a non-alterable memory containing a unique 64-bit serial number that is compared prior to each print job with a serial number stored in the printer's Non-Volatile Random Access Memory (NVRAM). If the serial numbers fail to match, or if no ID/Key is detected, the printer is disabled. The ID/Key is carried in a 2" x ¾" plastic fob that plugs into a receptacle to the right of the card hopper.

Typically, at the end of each work session the ID/Key is removed from the printer and stored in a secure location such as a key safe.

Replacing a Lost ID/Key

! **Important •** If the ID/Key is removed during a card printing session, the printer will cease to operate after the current batch of cards is printed.

The recovery procedure requires a special computer file obtainable only from Zebra product support. This file is downloaded to the printer, following which the replacement ID/Key is inserted. The printer is then power cycled, off then on, at which point the key's serial number is recorded in NVRAM.

Printer Parameters in the Driver

ID/Code
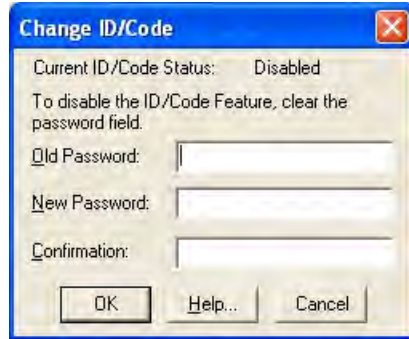
The ID/Code, or password, synchronizes the driver with the printer. This prevents use of the printer with a PC not having the same ID/Code.

The initial ID/Code is assigned at the factory during manufacture. The factory assigned code is located on a sticker on the underside of the ID/Key.

To change this code, select *Start > Printers (or Printers and Faxes).* Right click *Zebra P630i*, or *Zebra P640i*, then select *Properties > Device Settings > Control > Advanced Utilities.*

In the Change ID/Code window, enter the old password from the underside of the ID/Key in the Old Password field. Enter a new password in the New Password field, and enter the same password in the Confirmation field.

To disable the ID/Code function, leave the New Password and Confirmation fields blank. When completed, click the OK button

Update Backup Config

Most of the parameters affecting operation of the printer are set up using the printer driver, and are then saved in the printer's flash memory as the current configuration. The original factory configuration also resides in a separate backup memory, allowing you to recover the as-shipped settings.

The **Update Backup Config** command instructs the printer to replace the factory configuration with the current configuration, but do not do this casually. Once the current configuration replaces the factory configuration, you can no longer return the printer to the factory settings.

Restoring the Backup Configuration Settings

Revert to **Backup Config** as follows:

Step 1. Turn power OFF.

Step 2. Remove the color ribbon.

Step 3. Press and hold the PRINT, RIBBON, and LAMINATE buttons at the same time as you switch on the power.

Step 4. Release the three buttons when you see activity in the printer.

Password Protection

Password protection is not the same as ID/Code. Password protection blocks access to various low level printer adjustment screens.

To enable password protection, select *Start > Printers (or Printers and Faxes).* Right click *Zebra P630i*, or *Zebra P640i*, then select *Properties > Device Settings > Control > Advanced Utilities.*

In the Password Protection section, check **Use Password; and** enter a password of your choice.
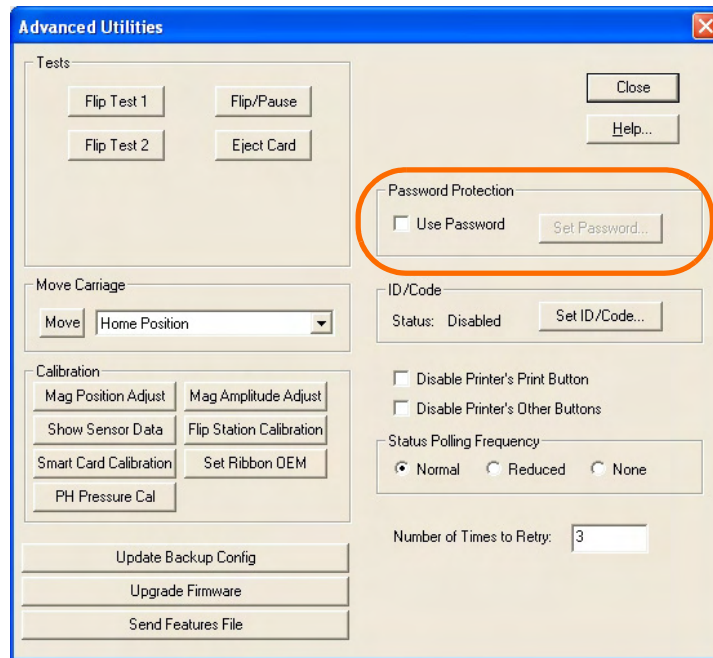
Appendix E

Worldwide Sales & Support

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

North America and Latin America - Technical Support

Zebra Technologies Card Printer Solutions
1001 Flynn Road
Camarillo, CA 93012-8706 USA

Phone: +1 800 511 9909 (when calling from within the U.S.)
            +1 805 577-7002, option 1 (when calling from Latin America)
email: techsupport@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 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 the address listed below:

Zebra Technologies Card Printer Solutions
1001 Flynn Road
Camarillo, CA 93012-8706 USA

Phone: +1 800 452 4034
            +1 805 578 1201
email: repair-ca@zebra.com

Europe, Middle East, and Africa - Technical Support

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

Phone: +44 (0) 1628 556 000
FAX: +44 (0) 1628 556 001
e-mail: 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 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 the address listed below:

Zebra Technologies Card Printer Solutions
Pittman Way
Fulwood, Preston
Lancashire PR2 9ZD, UK

Phone: + 44 (0) 177 2 69 3069
FAX: + 44 (0) 177 2 69 3046
email: ukrma@zebra.com

Asia Pacific - Technical Support and 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 the address listed below:

Zebra Technologies Card Printer Solutions
120 Robinson Road
#06-01 Parakou Building
Singapore 068913

Phone: + 65 6885 0833
e-mail: esoh@zebra.com

Website

www.zebracard.com