

**Dual-sided Lamination** 

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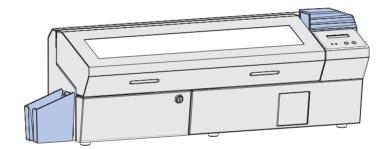
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# Welcome to your new ZEBRA P720 User's Manual



Part Number: 980367-001

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Rev.C



# P720 Plastic Card Printer Dual-sided Lamination

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#### **FOREWORD**

This manual contains installation and operation information for the Zebra P720 Series card printers manufactured by Zebra Technologies Corporation.

#### RETURN MATERIALS AUTHORIZATION

Before returning any equipment to Zebra Technologies Corporation for in-warranty or out-of-warranty repair, contact Repair Administration 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:

For USA and Latin America: Zebra Technologies Corporation Card Imaging Division 1001 Flynn Road Camarillo, CA. 93021-8706.USA Phone: +1 (805) 579-1800 FAX: +1 (805) 579-1808

For Europe, Asia and Pacific: Zebra Technologies Inc. France Card Imaging Division Zone Industrielle, Rue d'Amsterdam 44370 Varades, France Phone: + 33 (0) 240 097 070 FAX: + 33 (0) 240 834 745

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# P720 Plastic Card Printer Dual-sided Lamination

#### WARRANTY INFORMATION

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#### **Printers:**

All Zebra Card Printers are warranted against defects in material or workmanship for twelve (12) months from the purchase date.

Proof of purchase or shipment date is required to validate the warranty period. The warranty becomes void if the equipment is modified, improperly installed or used, damaged by accident or neglect, or if any parts are improperly installed or replaced by the user.

Note: Products returned must be packaged in the original or comparable packing and shipping container. In the event equipment is not so packaged, or if shipping damage is evident, it will not be accepted for service under warranty. Surface transportation charges for return to customers in the continental United States is paid by Zebra. Otherwise, Zebra pays CPT (carriage paid to) nearest airport, customer pays customers, duties, taxes, and freight from airport to destination. If Zebra determines that the product returned for warranty service or replacement is not defective as herein defined, the customer will pay all handling and transportation costs.

#### Printheads:

Since printhead wear is part of normal operation, the original printhead is covered by a twelve (12) month warranty. Warranty period begins on purchase date.

To qualify for this warranty, the printhead must be returned to the factory or to an authorized service center. Customers are not required to purchase Zebra supplies (media and/or ribbons) for warranty qualification. However, if it is determined that the use of other manufacturer supplies has caused any defect in the printhead for which a warranty claim is made, the user is responsible for Zebra's labor and material charges required to repair the defect. The warranty becomes void if the printhead is physically worn or damaged; also if it is determined that failure to follow the preventive maintenance schedule listed in the User's Guide has causes defect in the thermal printhead for which a warranty claim is made.

#### **Spare Parts:**

All parts, maintenance kits, options kits, and accessories are warranted to be free of defects in material and workmanship for 90 days (except where otherwise denoted) from date of purchase. This warranty become void if the item is modified, improperly installed or used, or damaged by accident or neglect.



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#### DECLARATIONS OF CONFORMITY



European Cou	ıncil Directive	Compliance to Standards							
89/336/EEC modified by	EMC Directive	EN 55022-B	Emissions control						
92/31/EEC and 93/68/EEC	EMC Directive	EN 500082-1,1992	Immunity to Electromagnetic Disturbances						
73/23/EEC modified by 93/68/EEC	Low voltage Directive	EN 60950	Product safety						



Model: P720 conforms to the following specification: FCC Part 15, Subpart A, Section 15.107(a) and Section 15.109(a) Class A digital device

## Troubleshooting

#### Supplemental Information:

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 harmfull 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.



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#### INTRODUCTION

Thank you for choosing the Zebra P720 Plastic Card Printer.

Zebra's P series card printers offer a low cost, high quality solution to those requiring computer-controlled printing and encoding of credit card style plastic cards, Card applications include personalized high security identification, access control, visitor, membership, badges and tags.

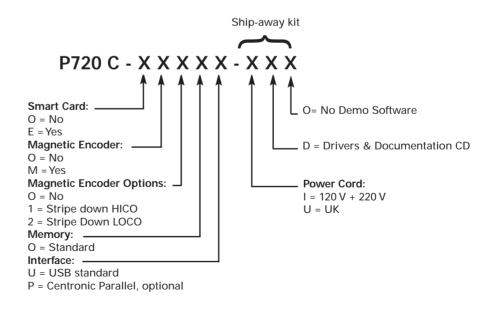
This manual guides you to efficient start up and operation of your new Card Printer.

#### **P720 PRINTER MODELS**

The Zebra Product Number tells a story:

Here is a quick review of the Zebra Card Printer Series numbering and lettering system to help you.

The P720 Plastic Card Printer employs Dye Sublimation and Resin Thermal Transfer technologies. Model numbers include identifiers that specify options are shown using the following lettering conventions:







#### **Dual-sided Lamination**

#### **ICONS**

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



Important general information.



Mechanical hazard, such as one associated with moving parts, capable of resulting in equipment damage or personal injury.



Electrical hazard, such as an exposed voltage point, capable of causing electrical shock and personal injury.



An area where electrostatic discharge (ESD) can cause component damage. Use a grounding wrist band.



Elevated temperature hazard, capable of producing a burn.



Keep Card Printer clean by minimizing cover open time.

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Introducti	on ••••																	
A- Med	ia Loadin	a orient	ation															
B- Sma	rt Card C	ontact S	tation	Inter	face	• • •	• • •	•••	• • •	• • •	• • •	•••	••	• • •	• •	• •	• •	• •
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## 1 • 1 Unpacking your card printer

Your P720 printer ships in a carton and protective anti-static bag. Keep all packaging material in case you need to move or re-ship the printer. While unpacking, inspect the carton to ensure that no damage occured during shipping. Please ensure that you have a clean and nearly dust free environment for proper operation and storage of the printer.



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In addition to user documentation on CD, make sure the following items are included with your P710 printer:

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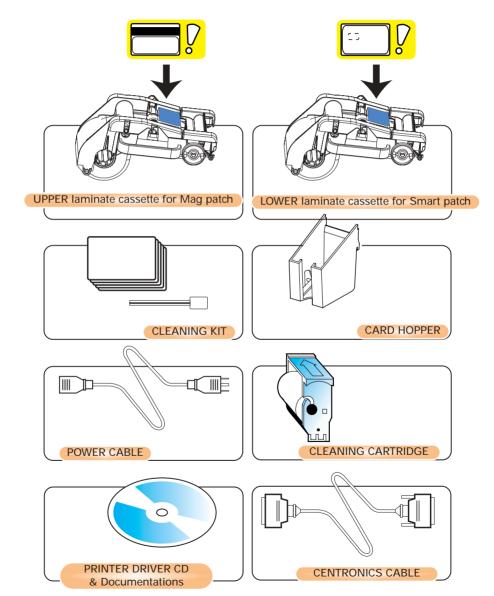
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If any items are missing, please contact your dealer. To reorder, please refer to Appendix C of this manual.



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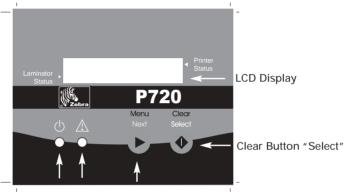
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## 1 • 2 Indicators and Control

Your P720 printer has an LCD Display, two LED's and two Panel Buttons.



Power LED Alert LED Menu Button "Next"

LCD Display:





The 16 character LCD Display is used for:

- Showing the printer's current status
- Providing operator and service messages (chapter 5)

The two LEDs are used for:

- · Green: Power LED
- · Amber: Alert LED (with Beeper)

The Menu Button (left) is a push button used for:

- Bringing printer into Menu Mode when pressed with the printer showing READY on the LCD Display.
- · Using in Menu Mode to scroll through Menu Options.

The Clear Button (right) is a push button used for:

- · Clearing an error status (when LCD Display shows an error and Alert LED is on).
- Invoking automatic retry of the operation which gave the error.

· Selecting a Menu Option when in Menu Mode.

Note: The buttons beep when pressed.



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#### 1 • 3 Printer Installation

The following will guide you through the installation of your P720 printer.



CAUTION: Limit AC power supplied to the P720 Printer to 110 - 230 V AC, 60 - 50 Hz for an associated 1,7A - 0,75A. 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 supply and properly protected against electrical surges and grounding faults.

- 1 Place the printer in a location that allows easy access to all sides. There should be a minimum of 2"(5cm) from the back of the printer to a wall. The printer should never be operated while resting on its side or upside down.
- 2 Place the printer's power switch in the OFF (O) position.
- 3 Insert the power cable to the printer power socket and attach to grounded electrical socket of the proper voltage and type.
- 4 Attach interface cable to printer and computer and then secure.
- 5 Switch power on.

CAUTION: Intermittent or unpredictable operation may occur from unsecured connectors. If damaged, the power cable must be replaced by an exact equivalent. Use only Parallel Cable under 3 Meters in length.



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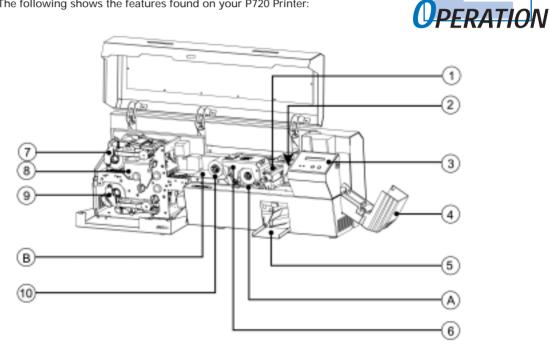
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## 2 • 1 Printer Features

The following shows the features found on your P720 Printer:



#### **Standard Features:**

- 1 Card Cleaning Cartridge
- 2 · Card Thickness Control Lever
- 3 · LCD Display and two panel Buttons
- 4 · Card Feeder
- 5 Rejected Card Box
- 6 Print Head
- 7 · Upper Laminate Cassette
- 8 · Laminator Station
- 9 · Lower Laminate Cassette
- 10 Printing Ribbon

#### **Optional Features:**

- A · Smart Card Contact Station
- **B** Magnetic Encoder Station





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## P720 Plastic Card Printer

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## 2 • 2 Loading Printing Ribbons

The P720 Printer requires approved ribbons (see Appendix C). The Resin Thermal Transfer and Dye Sublimation ribbons and Lamination are specifically designed for your P720 Printer. For optimum performance and printer life (Print Head), always use approved ribbons.



**DO NOT TOUCH** the print head or the electronic components on the print head carriage. Discharges of electrostatic charge from the human body or other surfaces can damage the print head or other electronic components used in this device.

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- 1 Remove ribbon from packaging.
- 2 With printer power ON and Printer Ready status, open cover and press down on the Print Head Unlock Lever to open the print head carriage. The print head carriage will pop open.
- 3 Load ribbon onto the supply spindle "1" (under print head carriage) and empty core ( with tape attached) onto the take-up spindle "2".

Make sure the ribbon comes off the top of the supply spindle and feeds to the top of the take-up spindle.

- 4 Push down on the Print Head Lock Lever until an audible "click" signals the locked-down position.
- 5 · Close Cover.



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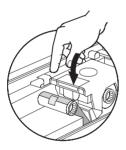
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Please note that the ribbon automatically synchronizes whenever the print head lock down occurs.

The card flipper will not operate and an error will be indicated if you try to flip a card when the cover is open.





Printer will not print if cover is open.

down occurs.

The card flipper will not operate and an error will be indicated if you try to flip a card when the cover is open.

Please note that the ribbon automatically synchronises whenever the print head lock



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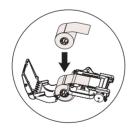
## 2 • 3 Loading Laminate Ribbons

The P720 Printer requires approved liner-less patches (see Appendix C). Clear patches, hologram patches are specifically designed for your P720 Printer. For optimum performance and printer life (Laminator), always use approved ribbons.

Your printer is equipped with two Laminate cassettes located at the upper and lower of the lamination station. To load the laminates into the cassette and place the cassette into the printer, plese consider the following instructions.



- 1 Remove patch from packaging.
- 2 With printer power ON and printer Ready status, open both cover doors.
- 3 Get the Upper cassette out of the printer by pulling the handle towards yourself.



- 4 Open the cassette by pulling up the blue lock, place new laminate ribbon into the adapted location , pull the equivalent lengh of one patch and stretch it out on the tray.
- 5 Close the cassette and make sure an audible "click" confirm the lock position.



6 • Insert the Upper cassette gently back into the lamination station holding the handle. Contol that the pin situated on the right of the cassette fits into the according slot in the printer.

To load patch in the lower cassette proceed the exact same manner.

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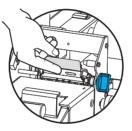
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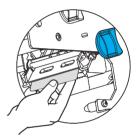
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Each time you remove either the upper or lower cassette, make sure you also remove the patch currently loaded into the upper or lower laminator.



**Upper Patch** 



Lower Patch



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## P720 Plastic Card Printer

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## 2 • 4 Loading Cards

To help you load, print, and collect cards, the P720 has the following items:

#### A - CARD FEEDER

This items is used for loading cards.



1 • Open Card Feeder Cover by putting your fingers on both sides and rotating the cover in a clockwise direction to the open position.



2 · Install cards into Feeder\* as shown.



3 · Close Card Feeder Cover.





**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. If cards stick together, carefully shuffle them.

\* See Chapter 6, Technical Specifications, for card requirements and capacities.



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#### **B** - CARD THICKNESS CONTROL LEVER

This items is operated by the user to prevent more than one card feeding into the printer at the same time and causing a jam.



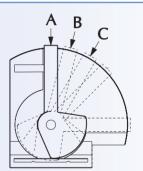
Open cover, and adjust lever to the correct position for the card thickness you are using. Repeat for different card thickness. (Factory setting is for 30 mil (0,762 mm) card thickness). See diagram below:

#### Card thickness:

A - 50mil (1.27mm)

B - 40mil (1.016mm)

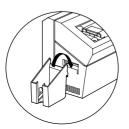
C - 30mil (0.762mm)



Note: When laminating cards, always use 30 mil PVC Composite Cards.

#### **C** - CARD OUTPUT HOPPER

This items is used for printing cards.



Install card Output hopper onto printer by hooking over bottom edge of card exit aperture.



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## 2 • 5 Rejected Card Box

The P720 Printer is equipped with a Rejected card Box. When an encoding can not be completed, the card is ejected into the Rejected Card Box. The P720 Printer counts the number of cards which go into the Reject Card Box. After 10 cards the printer stops, the Amber LED Flashes and a LCD Message is displayed indicating the need to empty the reject box.

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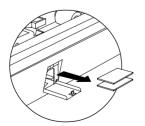
#### WHEN TO MAINTAIN

When the LCD screen reports message



#### HOW TO MAINTAIN

1 • Press the top of the Rejected Card Box Door as shown. Allow the door to swing down and open.



2 • Remove all cards from the Rejected Card Box.



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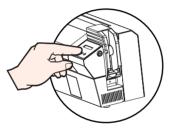
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3 • Swing the Rejected Card Box Door and press the top. An audible "click" signals the locked position.



4 • Press the Clear Button on the front panel to re-start the current printer job and to clear the rejected cards counter.



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## 2 • 6 Feeding one card at a time

A Manual Feed Slot is available on the side of the Card Feeder cover for feeding single cards. Cleaning Cards are fed manually through this slot.

The Feeder must be empty for manual card feeding to work properly.



For one-at-a-time printing, feed cards through slot on side of Feeder.

Do not feed more than one card at a time.

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## 2 • 7 Printing a Test Card

With printing ribbon, patch ribbon cassette and cards loaded, your P720 printer is ready to print. To check the operation of the printer and the laminator you should print a test card.

1 • When the printer displays READY, press the "Next" button (left) on your Control Panel to "SELFTEST CARD MENU", then the "Select" button (right).

2 • Press "Next" to the SELF TEST CARD Print parameters, and then "Select".



3 • A test card will print after a few seconds. LCD display will show printing status. Test Card is printed on both sides of the card.

This is an example of the test card.

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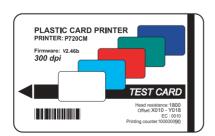
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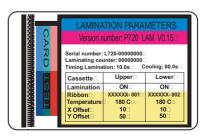
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**Appendix C** 

Front Side: Printer Operation



Back Side: Laminator Operation







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#### 2 • 8 Printer Menu Information

The printer is equipped with an LCD Display and two key buttons which gives access to printer menus. When the printer status shows READY, press the Menu button to enter the Menu Mode



Menu Button "NEXT" (left)



Clear Button "SELECT" (right)

When you are in Menu Mode the top line display shows menu information and the second line of display clarifies the function of the two "NEXT" and "SELECT" key buttons relative to the current menu item.

The printer will return to READY Mode if either of the two key Buttons is not pressed within ten seconds of entering Menu mode.

In the printer Module menu and Laminator Menu, press "Select" to hold the parameters or information on the display.

P720 LCD Menu Tree: Next pages

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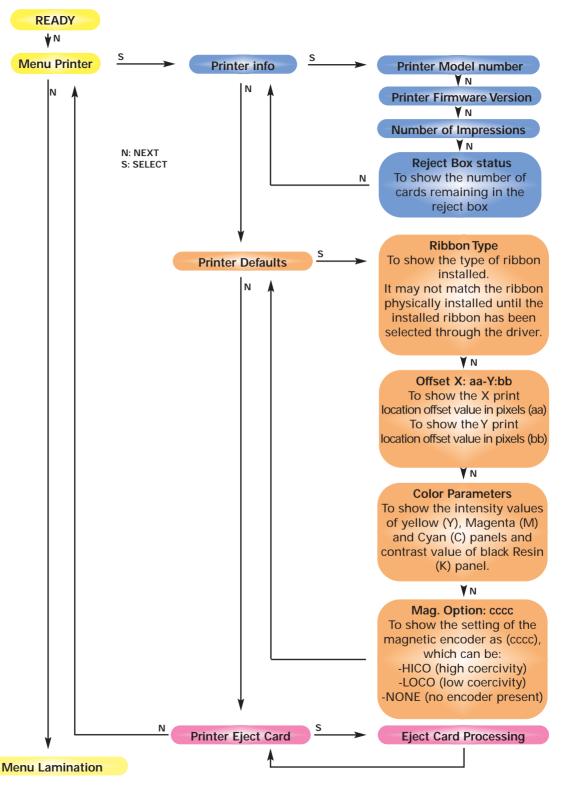
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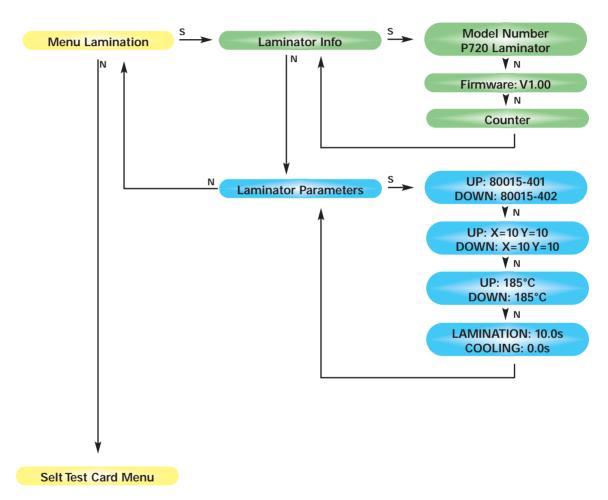
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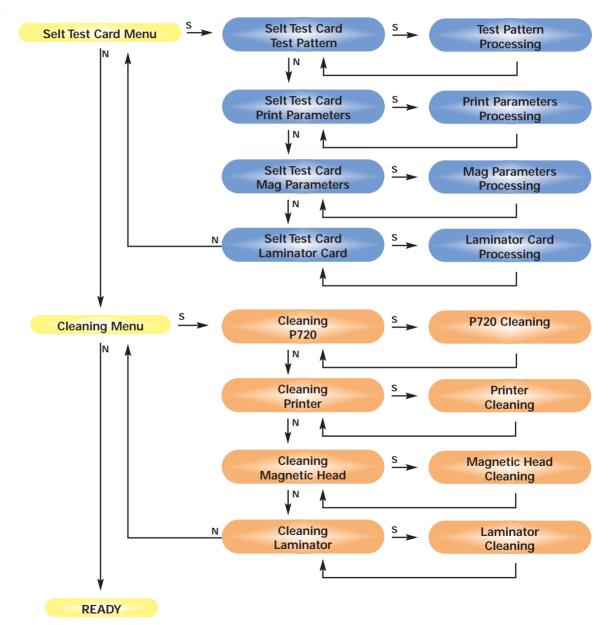
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## 2 • 9 Understand the printing process

The process of encoding, printing and applying overlaminates on both sides of the card in dual sided P720 series is made of the following steps, once the printer is powered, the driver is correctly set up, all eventual errors are recovered, all media are installed, and a printing command has been sent to the printer:

When installing cards in the feeder, the magnetic stripe of the card must be down, and the smart chip must be up. The cards are drawn from the feeder to the flip over by a roller at the bottom of the feeder. The automatical weight on the top of the card stack allows a good contact between this roller and the card. When exiting the feeder, an adjustable gauge hampers any multi card feeding.

In the flip over module, one roller is driving the card, and optical sensors control its position. If needed, the card is flipped by the rotation of the cage. Some sensors detect the final angular position of the cage.

Then the card is drawn into the printer station. Five rollers drive the card through the printer station. All rollers are positioned such that the card is always in contact with at least two of the rollers during the printing and shuttling processes.

Two optical sensors locate the card during printing and encoding processes.

The first process in the printing station is the card cleaning: the first driving roller in the printer station is creating a contact between the card and a tacky cleaning roller. This cleaning roller is part of a removable cleaning cartridge, and removes dust and debris from the top surface of the card.

The second process in the printing station is the electrical encoding when the smart card contact option is installed. Smart card programming is handled by the customer supplied programming module.

The third step in the printing station can be the encoding of the magnetic stripe (Warning: no reverse encoding option is available on P720) or the driving back to the flip over (when the electrical encoding failed, so that the card is rejected).

The fourth step in the printing station can be the driving back to the flip over (when the first side to be printed is not the encoded card side, or when the encoding failed), or the printing of the top side of the card by the thermal print head. Printing a color image requires three printing passes minimum. A ribbon is driven and detected by the module in order that it is well positioned between the print head and the card. The colors are yellow, magenta, and cyan (YMC). A resin black panel is available in the 4 and 5 panel ribbon to print bar-code and text with higher contrast.

Warning: this overlay is not compatible with the adhesive of the laminates. Some monochrome ribbons are available, which require one pass only.

Warning: holographic overlays are not compatible with the adhesive of the laminates.

The fifth step in the printing station is the driving of the card back to the flip over in order to process to the cleaning and the printing of the second card side.

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## 2 • 10 Understand the Lamination process

Five roller systems drive the card through the laminator station. The rollers are positioned so that the card is always in contact with at least two rollers during the laminating and cooling processes. Two optical sensors locate the card during laminating and cooling processes.

The first process in the laminating station is the synchronization of the card. The first roller and the first optical sensor synchronize the position of the front edge of the card.

The second step of the process is the separation and the synchronization of the patches. Two rollers drive the patches in each cassette and separate them. Then the patches are driven and synchronized in X and then in Y by two stacking rollers thanks to four optical sensors which detect the edge of the patches.

The third step of the process is the application of the patches on the top and the bottom of the card by the stacking rollers.

The fourth step in the process is the simultaneous heating of the card & patches assembly by the two hot rollers at the same time. These rollers are independently temperature controlled.

The fifth step of the process is the cooling. The card enters the fourth roller, and the cooling cycle starts. Then the card is exited by the laminator station and drops into the output hopper



Do Not Touch the Sensors.



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Printing with the P720 Printer requires the Windows Printer Driver, your card design/issuing software or printer command level programming through the printer interface.

The P720 Card Printer can be used with any Windows 95/98, 2000, ME or Windows NT 4.0 software application program, using the drivers provided with the printer.

This section contains information on the printing and lamination of a dual-sided card in color (using the 5-Panel color ribbon YMCKK) and the Windows Printer Driver.



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# 3 • 1 To install the P720 Printer Driver Automatically on all Operating Systems, Use the Zebra Install Wizard

To ensure the accuracy of driver installation, it is recommended that you use the Zebra Install Wizard that is provided with your documentation CD.

#### The Wizard will:

- a · Check to see which operating system you are using
- b Delete previous version of the driver and clean up any necessary Registry entries
- c Install the new driver files and Registry entries to their correct location

from the main menu of your documentation CD, select your disired language and then select "DRIVERS" from the subsequent menu. The Install Wizard will walk you through the appropriate steps.



On NT systems, ensure that you have administrative privileges to perform this installation or contact your IT department.



For USB driver applications be sure to follow steps in install wizard. Do not connect your USB cable to the printer until prompted during driver installation.



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## 3 • 2 Set Printer Driver Options:

The P720 Printer screen appears. Change the options as follows:

- On the **P720** tab configure the magnetic encoder feature. If your Printer is equipped with a Magnetic Encoder option, select **Magnetic Encoder** option.
- On the **Card** Design tab select "Advanced Options" for card orientation: Landscape or portrait Select "**Landscape**".
- On the printer tab, select the Ribbon Type. Select YMCKK for the standard 5-panel ribbon.
- In the card design tab, select YMC+K at the front and K at the back.
- Close the Zebra P720 Printer Properties screen.

Now that you have loaded media and set up the printer driver, the P720 Printer is ready to print.



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## 3 • 3 Printing a sample card:

Follow the steps to print your first card

- Go to the Microsoft Word Software.
- If the printer was not selected as the default printer, go to the **file** menu and Select **Printer** and choose **Zebra P720 Card Printer** in the printer names list. Then Close the print dialog box.
- Come back to file menu and choose Page Setup.
- Select Paper Size tab and in Paper Size choose Card. Then select the orientation: "landscape".
- Go to Margins tab, Set the Top, Bottom, left and right margins to O (zero) values.
- Press **OK** to close Page Setup window.
- -The card appears on the screen.
- Design a card with 2 sides as follow:
- Once you are ready to print, go to File and point Print
- The printer will feed in a card and start printing (the data download time will vary depending on the complexity of the card design and the processing speed of the computer).
- Once the printing job is achieved the card is ejected from the printer.

Front Side:





If found return to: Http:/artworld.com







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#### PROTECT YOUR FACTORY WARRANTY!

The recommended maintenance procedures must be performed to maintain your factory warranty. Other than the recommanded cleaning procedures described in this manual, allow only Zebra authorised technicians to service the P720 Printer.

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

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



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#### PRINTER AND LAMINATOR CLEANING CYCLES

Routine printer and laminator cleaning is recommended to maintain high print quality, ensure proper magnetic encoding, and maintain reliability of laminator. The printer is equipped to automatically notify user to when to clean printer or user can manually select to clean printer (more frequent cleaning is preferred when printer is used in a environment exposed to high amounts of dust and debris).

#### Automatic Cleaning:

The printer will automatically notify you when the cleaning counter reaches the manufacturer's selected limit (panels printed counter over 4000, 1,000 cards using YMCK), the READY message will be replaced by a cleaning message to prompt you to clean printer.

#### Manually Selected Cleaning:

You can also manually select to clean printer by pressing the Left Panel button until LCD screen shows "Cleaning Menu." Press the Right Panel button to select option. Press button again to begin cleaning process. Cleaning cycles can also be done through the Escape command.

Four types of cleaning cycles are available to clean your P720.

- 4.1 Cleaning the Printhead
- 4.2 Clean the Magnetic Encoder Only (optional item)
- 4.3 Clean the Laminator Only
- 4.4 Clean Complete P720 (all steps)
- 4.5 Card Cleaning Cratridge

NOTE: In the event of a patch or card jam in the laminator hot roller area, the lamination rollers stop and the laminator temperature is automatically shut off. An error message will appear on the LCD. You will have to remove the upper cassette, remove the top roller bracket, then remove the melted card or bad patch. It is better to remove these types of errors when the laminator rollers are still warm. Be careful when touching hot surface of laminator. Remove any debris that still remains.

## 4 • 1 Cleaning Printhead only

Your P720 Printer includes a simple cleaning system using the Pre-Satured Cleaning Cards provided. The regular use of these cards will clean and maintain important parts of your printer that cannot be reached: including the Print Head, the Lamination station and Transport Rollers.

#### WHENTO CLEAN

When the LCD screen reports messages: "Cleaning Printer".

#### **HOWTO CLEAN**

· Leave power on.

Open Cover and release Print Head Bracket to remove ribbon. Close Print Head Bracket

Close Cover. Remove cards from Card Feeder.

- Insert one Pre-Saturated Cleaning Card (provided) through slot on the side of the Card feeder Cover.
- Press the right panel button for a few seconds. The card will feed into printer and carry out the cleaning process.
   repeat the process with a new Cleaning card if necessary.





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A cleaning using the cleaning system with cards usually suffices. However, a separate Print head cleaning using swabs can remove more stubborn deposits when print anomalies persist. To avoid deposits, only use foam-tipped swabs.



1 • Switch power Off, open cover, raise Print Head and remove the Ribbon.

2 • Clean Print Head by moving alcohol-moistened swab tip side-to-side across Print Head elements. Only use moderate force. Make sure the elements are dry before switching on. (To reorder swabs see Appendix C).



Never use a sharp object to scrape deposits from the print head. Permanent damage will result.

## 4 • 2 Cleaning Magnetic Encoder only

#### WHEN TO CLEAN

When the LCD screen reports messages: "Cleaning Magnetic Endoder"

#### **HOW TO CLEAN**

· Leave power on.

Open Cover and release Print Head Bracket to remove ribbon.

Close Print Head Bracket

Close Cover. Remove cards from Card Feeder.



- Insert one abrasive Pre-Saturated Cleaning Card (provided) through slot on the side of the Card feeder Cover.
- Press the right panel button for a few seconds. The card will feed into printer and carry out the cleaning process. repeat the process with a new Cleaning card if necessary.



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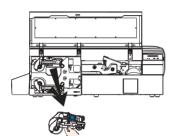
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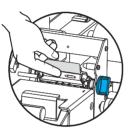
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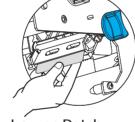
# 4 • 3 Clean the laminator only

Warning: This cleaning cycle must be performed prior to daily operation or when laminator has been in "stand-by" mode due to high temperature within the laminator hot rollers.

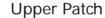


Remove upper and lower laminate cassette.





Remove upper and lower laminate patches already engaged.



Lower Patch





Insert one Pre-Saturated Cleaning Card through slot on the side of the Card feeder Cover.

In the Cleaning Menu select "Cleaning Laminator". The card will feed into printer and carry out the laminator cleaning process, repeat the process with a new Cleaning card if necessary.

Note: In the event of a patch or card jam in the laminator hot roller area, the lamination rollers stop and the laminator temperature is automatically shut off. An error message will appear on the LCD.

You will have to remove the upper cassette, remove the top roller bracket, then remove the melted card or bad patch. It is better to remove these types of errors when the laminator rollers are still warm. Be careful when touching hot surface of laminator. Remove any debris that still remains.



### **Dual-sided Lamination**

A cleaning using the Cleaning System with cards usually suffices, moreover your printer is equipped with two cleaning rollers situated before the card enter the Laminator.

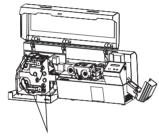
The upper roller has a coating that collects any loose particles on the surface of cards. However, a separate Laminator Station cleaning can remove more stubborn deposits.



To avoid deposits, only use foam-tipped swabs.

Never touch the rollers with fingers.

It is recommended to perform this cleaning function prior to daily operation or when laminator has been in "stand-by" mode due to high temperatures.



#### WHEN TO MAINTAIN

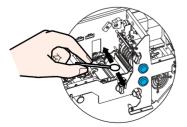
Cleaning frequency varies with different environments. Clean when lamination anomalies persist.

#### HOW TO MAINTAIN

1 • Switch OFF your printer and open cover.



- 2 Unplug the two connectors "1".
- 3 Turn knob "2" in the appropriate direction until you release the Top laminator bracket.



- 4 Pull the Top laminator bracket and access the laminator rollers for cleaning withfoam-tipped swabs.
- 5 Make sure the rollers are dry before Pushing down the braquet and switching on your printer.

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# 4 • 4 Clean the complete P720

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#### WHEN TO CLEAN

When the LCD screen reports messages: "P720 Cleaning"

#### **HOW TO CLEAN**

1 · Leave power on.

Open Cover and release Print Head Bracket to remove ribbon.

Close Print Head Bracket.

Turn the two knobs on the laminator station in the appropriate direction.

Close Cover, Remove cards from Card Feeder.



- 2 Insert one Pre-Saturated Cleaning Card (provided) through slot on the side of the Card feeder Cover.
- 3 Press the right panel button for a few seconds. The card will feed into printer and carry out the cleaning process. repeat the process with a new Cleaning card if necessary.

Note: For a printer cleaning prior to the WHEN TO CLEAN signal, press the Left Panel button until the LCD screen shows "CLEANING MENU".

(Repeat first steps 1 & 2 above).



Although the CLEAN PRINTER message is displayed until the cleaning process has been performed, the printer will continue to operate.



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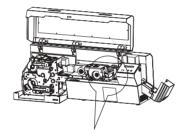
# 4 • 5 Card Cleaning Cartridge

Your P720 Printer also has a Card Cleaning Cartridge. This item cleans the cards entering the printer. To ensure print quality, the cleaning roller requires periodic replacements.

CLEAN PRINTER

WHEN TO MAINTAIN

When LCD screen reports message. Run a printer cleaning first. (see 4.1 Cleaning System for more instructions).



HOW TO MAINTAIN

1 • Open Cover and locate Cleaning Cartridge



2 • Gently remove Cleaning Cartridge by rotating up and away from printer.

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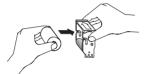
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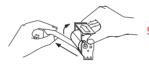
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3 • Remove Cleaning Roller from Cartridge and discard.



4 • Install new Cleaning Roller into Cartridge\*. To avoid contamination, always hold the Cleaning Roller assembly by the ends.



• Carefully peel off wrapper from new Cleaning Roller while in Cartridge.



6 • Replace Cartridge into printer. Make sure the arrow on top of the assembly is facing towards the rear of the printer. Hook assembly into slot on printer and rotate down. Ensure the assembly locks in place.

DO NOT touch the roller surface that contacts the cards.

7 · Close Cover

See Appendix C for replacement Cleaning Rollers.



Although the CLEANING PRINTER message is displayed until maintenance has been performed, the printer will cotinue to operate.



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This section offers solutions to potential problems you may experience with your P720 printer. The table below lists the screen messages that will be displayed on the printer's LCD, both during normal operation and to alert operator of any error conditions. Note that a beeper will sound in case of a mechanical error or consumable error: OUT OF CARD, OUT OF RIBBON, ROTATION ERROR, HEAD OPEN, COVER OPEN, TEMPERATURE ERROR, MECHANICAL ERROR, MAGNETIC ERROR, READING ERROR.

There is also some additional information dealing with quality issues concerning printing onto cards.

# 5 • 1 Interpreting LCD Display messages

### A • About the Printing Station

SCREEN MESSAGE	MEANING	ACTION
INITIALIZING	The printer is performing an internal test before use	Wait for the ready message
READY	Ready for use	
WAIT TEMPERATURE	Print Head cool down mode	
SELF TEST	Self test card printing	Wait for card printing to start
DOWNLOADING DATA	The card data is being transmitted	
PRINTING YELLOW	The yellow panel is being printed	
PRINTING MAGENTA	The magenta panel is being printed	
PRINTING CYAN	The cyan panel is being printed	



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SCREEN MESSAGE	MEANING	ACTION
PRINTING BLACK	A monochrome panel is being printed	
PRINTING VARNISH	The overlay is printing	
CLEAN PRINTER	The printer is prompting operator maintenance	Carry out the cleaning procedure as detailed in section 4 of this manual
CLEAN MAG HEAD	The printer is prompting operator	Carry out the cleaning procedure as detailed in Appendix A of this manual
CLEANING	The printer is performing an internal cleaning routine	
REMOVE RIBBON	The ribbon has not been removed while the cleaning operation is in progress	Remove ribbon
OUT OF RIBBON	The printer ribbon has run out	Replace printer ribbon
MECHANICAL ERROR	The printer has an error moving the card internally	Remove the jamed card. Ensure the card is not out of specification
OUT OF CARD	The card feeder is empty	Add more cards or adjust the card feeder to accept the cards
ROTATION ERROR	The printer has an error moving the card in the flip	Remove card
COVER OPEN	The cover is open	Close the cover
HEAD OPEN	The print head is not locked into position	Lock the print head in its lower position
COMMAND ERROR	The data being sent from the host is not recognised	Check that the data is suitable for printing. Try reprinting a card from known "good" data
PARAMETERS ERROR	The features of the card are not recognised	Check the windows driver options and printer type
ENCODING ERROR	Data cannot be written or read from the card's magnetic stripe Data cannot be read from the card's magnetic stripe The reject box is full The printer cannot detect a magnetic stripe on the card	Check that the cards are loaded with the magnetic stripe in the correct orientation. Check whether high or low coercivity cards have been specified. Check that the data conforms to ISO specifications. See Appendix A of this manual for further information.



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SCREEN MESSAGE	MEANING	ACTION
READING ERROR	Data cannot be read from the card's magnetic stripe	Check that the cards are loaded with the magnetic stripe in the correct orientation. Check whether high or low coercivity cards have been specified. Check that the data conforms to ISO specifications. See Appendix A of this manual for further information.
REJECT BOX FULL	The reject box is full	Empty the reject card box and press the right panel button
MAGNETIC ERROR	The printer cannot detect a magnetic stripe on the card	Check the card orientation
FLASH ERROR		Contact your dealer for
NO ACCESS		technical support

Ribbon Errors: Check that the print ribbon has not "run out". Lock and then unlock the print head assembly; this resynchronises the ribbon automatically. When using a color ribbon, it should advance automatically so that the leading edge of the yellow panel is beneath the print head. Ensure that the correct ribbon type has been specified in the Windows driver.

Card Feed & Mechanical Errors: Ensure that the card thickness adjustment has been set-up correctly to allow one card to feed.

Magnetic Encoding Errors: Check that the cards are inserted correctly in the printer. Ensure that the cards are low or high coercivity as required, and are set-up correctly in the printer driver.

Cleaning Alert: The printer has counted the number of cards printed and has automatically flagged that a cleaning routine needs to be carried out. (See Chapter 4).



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ľ	B • About the Laminator Station			
n	SCREEN MESSAGE	MEANING	ACTION	
	READY	Laminator is ready	You can send a command	
Ī	BAD UPR PATCH	The upper patch is bad	remove upper patch	
ĺ	BAD LWR PATCH	The lower patch is bad	remove lower patch	
	WRONG UPR PATCH	The upper laminate ribbon is wrong	Check the laminate ribbon	
Ī	WRONG LWR PATCH	The lower laminate ribbon is wrong	Check the laminate ribbon	
Ī	REMOVE UPR PATCH	The upper patch has to be removed	Remove upper patch	
	REMOVE LWR PATCH	The lower patch has to be removed	Remove lower patch	
	REMOVE UPR LAM	The upper laminate ribbon has to be removed	Remove upper laminate ribbon	
	REMOVE LWR LAM	The lowerr laminate ribbon has to be removed	Remove upper laminate ribbon	
	NO UPR LAMINATE	No upper laminate ribbon loaded in the upper cassette	Load upper laminate ribbon	
	NO LWR LAMINATE	No lower laminate ribbon loaded in the lower cassette	Remove lower laminate ribbon	
	NO UPR PATCH	No patch recognized while feeding the upper cassette	Reload laminate	
	NO LWR PATCH	No patch recognized while feeding the lower cassette	Reload laminate	
	UPR PATCH JAM	The patch is misfed under the sensor while feeding it from the upper cassette	Refer to section "B" of your clean/jam Label	
	LWR PATCH JAM	The patch is misfed under the sensor while feeding it from the lower cassette	Refer to section "B" of your clean/jam Label	
	LAMINATING	The card is in the hot roller areas		
	COOLING	The card is in the cooling area		
	WARMING UP	The laminator is warming up	Wait for correct lamination temp	
	CARD JAM	The card is misfed in the entry sensor or is not seen by the sensor after lamination or is misfed under the exit sensor		
	ERROR NO CARD	No card has been recognized in feeding into the entry mechanism	Reload cards	
	TEMPERATURE ERR	A temperature error has occured	Check where it comes from	
- 1				

The printer/laminator is in Stand by mode

STAND BY MODE



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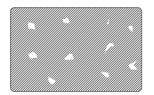
### P720 Plastic Card Printer

### **Dual-sided Lamination**

# 5 • 2 Print Quality Issues

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 procedure below:

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



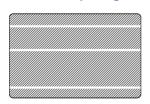
#### **Possible Cause**

- A Contamination on the card surface.
- B Dust inside the printer and/or dirty Cleaning Roller.

#### >> Solution

- A1 Check that cards are stored in a dust free environment
- A2 Use a different supply of cards.
- B1 Perform a Cleaning of the printer (see Cleaning section).
- B 2 Replace Cleaning Roller (see Cleaning section)

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



#### **Possible Cause**

- A · Ribbon is not correctly positioned.
- B Print Head may be dirty.
- Print Head elements may have been damaged (e.g. scratched or burnt).

#### >> Solution

- A1 Open cover and press down the Print Head Unlock Lever to open the Print Head carriage. The Print Head will move up.
- A2 Check that the ribbon is properly rolled onto the ribbon cores and there are no wrinkles in the ribbon.
- A3 Push down on the Lock Lever until an audible "click" signals the locked-down position.
- A4 Ribbon will automatically synchronize.
- A5 Print again.
- B1 Perform a Cleaning of the Print Head (see 4 2 Cleaning the Print Head).
- C1 Call service for Print Head replacement information.





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### P720 Plastic Card Printer

### **Dual-sided Lamination**

• Printing shows very pale or inconsistent results.



#### **Possible Cause**

- A Ribbon have been stored improperly or is damaged.
- B · Cards may not meet specifications.
- C Contrast and/or Intensity may be set to values which are too high.
- D Dust or embedded contamination on elements of the Print Head.

#### >> Solution

- A1 Change ribbon and print again.
- B1 Use a different supply of cards.
- C1 Adjust Contrast and/or Intensity values in software.
- D1 Perform a Cleaning of the Print Head (see 4 2 Cleaning the Print Head
- Printing shows blurry printed image.



#### **Possible Cause**

- A · Ribbon may not be correctly positioned.
- B Ribbon may not synchronized on the correct color panel position.
- C Cards may not meet specifications.
- D Dust inside the printer and/or dirty Cleaning Roller.

#### >> Solution

- A1 Open cover and press down the Print Head Unlock Lever to open the Print Head carriage. The Print Head will move up.
- A2 Check that the ribbon is properly rolled onto the ribbon cores.
- A3 Push down on the Print Head Lock Lever until an audible "click" signals the locked-down position.
- A4 Ribbon will automatically synchronize.
- A5 Print again.
- **B1** Open cover and press down the Print Head Unlock Lever to open the Print Head carriage. The Print Head will move up.
- B2 Push down on the Print Head Lock Lever until an audible "click" signals the locked-down position.
- B3 Ribbon will automatically synchronize.
- **B4** •Print again.
- C1 Use a different supply of cards.
- D1 Perform a cleaning of the Print Head (See 4 2 Cleaning the Print Head).
- D2 Replace Cleaning Roller (See 4 3 Cleaning Cartridge).





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No printing on the card.



#### **Possible Cause**

- A Ribbon may not be installed in the printer.
- B · Cards may not meet specifications.
- C · Cable on Print Head may be disconnected.
- D Print Head elements may be scratched or burnt.

#### >> Solution

- A1 Check for ribbon in the printer.
- B1 Use a different supply of cards.
- C1 Power off the printer and check the Print Head cable connections.
- D1 Call Service for Print Head replacement information.



For optimum print quality, always keep cover of the printer closed except during ribbon loading and card thickness control procedures.

The card flipper will not operate and an error will be indicated if you try to flip a card with the cover open.



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General

- · High speed printing
- YMCK & 1.0 mil lamination on both sides of card, 120 cards per hour 25 seconds per card (5 panel printing on single side edge to edge)
- · Small footprint
- · Windows Drivers for 95/98/2000/ME and NT 4.0
- One year printer warranty
- · One year print head warranty(unlimited passes)`

**Color Printing** 

- · Color dye sublimation or monochrome thermal transfer printing
- · 300 dpi (11.8 dots/mm) print resolution
- · Edge to edge printing standard

**Bar Code** 

- Code 39
- · Code 128 B & C with & without check digit
- · 2 of 5 & 2 of 5 industrial
- UPCA
- EAN8 & EAN13
- PDF 417 2D bar code and other symbologies available via customer selected software.

**Fonts** 

True Type fonts available via Windows Driver

Cards

- Types PVC, Composite
- Card width/length: ISO CR-80 ISO 7810, 2.125" (54mm) by 3.375" (86mm)
- Option: Magnetic Stripe ISO 7811
- · Option: Smart Card ISO 7816-2
- · Card thickness: 30mil (0,76mm) to 50mil (1,27mm)
- · Card Feeder capacity: up to 200 cards (30mil)
- · Card Output Hopper capacity: 100 cards (30mil)



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Ribbons • Monochrome: 1000+1500 cards/roll

• Monochrome colors: back, red, blue, green, silver, gold, white.

K-resin + O: 500 cards/roll
K-dye + O: 500 cards/roll
YMC: 300 cards/roll
YMCK: 250+400 cards/roll
YMCK-K: 200 cards/roll
YMCKO: 200+350 cards/roll
YMCKOK: 170 cards/roll

• 1.0 mil thick Linerless Laminate Patches 800 patches/roll

Clear Patch

Clear Patch for mag. stripeClear Patch for smart cardSignature panel PatchesHologram PatchCustom Holograms

Interfaces • Centronics Parallel Standard

· USB port

Mechanical • Width: 37,2" (947mm)

**Patches** 

Depth: 10,9" (258mm)Height: 12,4" (228mm)Weight: 61 lbs (28 kg)

• 110 ~ 230 Volts AC, 60 ~ 50 Hz

· FCC Class A, CE, UL, and CUL approved

**Environmental** • Operating Temperature: 60 to 86°F (15 to 30°C)

Operating Humidity: 20 to 65% non condensing
Storage Temperature: -23 to 158°F (-5 to 70°C)
Storage Humidity: 20 to 70% non condensing

· Ventilation: Free air

Dye sublimation printing requires dye sublimation ribbons, with either black or cyan, magenta, and yellow (plus black resin) panels.

Options • Smart card Contact Station (0.76mm cards only)

Magnetic Encoder (0.76mm cards only)

Cleaning supplies



**Dual-sided Lamination** 

### **CARD DIMENSIONS**

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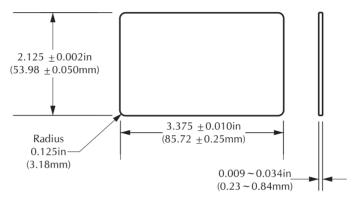
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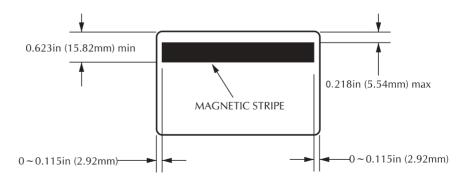
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ISO STANDARD DIMENSIONS FOR PLAIN CARD



ISO STANDARD DIMENSIONS FOR MAGNETIC STRIPE CARD





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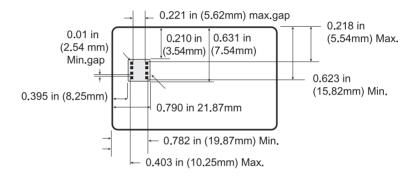
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CHIP POSITION FOR SMART CARD





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# Magnetic Card Stripe Encoder

This section contains information on the additional operations of the P720 Printers with Magnetic Card Stripe Encoder.

(See Chapter 2 for location.)

#### INTRODUCTION

Operation and maintenance requirements for the P720 Printer with the optional magnetic card stripe encoder. (See Chapter 2 for location.)

The magnetic encoder can be set for either high or low coercivity.



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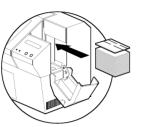
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#### A • MEDIA LOADING ORIENTATION



The magnetic encoder is a factory installed item with the read/write head positioned below the card path, available with HICO encoding or LOCO encoding.

When loading cards into the Card Feeder, please ensure that the magnetic stripe is facing down and closest to the rear.



#### Note:

M1 = Stripe Down HICO

M2 = Stripe Down LOCO

approved HICO & LOCO PVC cards are available. (See Appendix C).



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.





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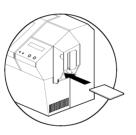
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#### **B** • MAGNETIC ENCODER CLEANING

There exists two different processes to clean the Magnetic stripe Encoder.

The first process consists of a standard cleaning of the printer. This cleans the most important parts of the printer; including the print Head, Transport Roller and Magnetic Stripe Encoder (refer to chapter 4 "Cleaning" for more instructions.)

The second process consist of a cleaning of the Magnetic Encoder using the Menu Button from the LCD Display. To access the Magnetic Cleaning Menu proceed as below:



- 1 Leave power on.
- 2 · Remove cards from the card feeder.
- **3** Insert one presaturated card (provided) through slot on the side of the Card Feeder.
- 4 Press the Menu button until the LCD screen shows CLEANING MENU.
- 5 Press the Select button to select.
- 6 Press the Menu button again until the LCD screen shows CLEAN MAG HEAD.
- 7 Run this operation by pressing the select button.

#### ISO STANDARD ENCODING

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

- \* Bit per inch
- \*\* Except the "?" character
- \*\*\* Including Start, Stop and LRC characters. Also note that these 3 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.



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### Smart Card Contact Station

This section contains information on the additional operations of the P720 Printers with Smart Card Contact Stations. (See Chapter 2 for location.)

#### INTRODUCTION

Your P720 may be equipped with an optional Smart Card contact station.

Smart Cards can store fingerprints, voice recognition patterns, medical records and other such data.

This printer model basically responds to commands that position the cards to the contact station, where the printer connects the pins to the contacts connector on the Smart cards.

An external "encoder/reader" is necessary for programming Smart Cards (ISO 7816). All other printer operations remain the same as the standard P720 model.



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#### A • MEDIA LOADING ORIENTATION

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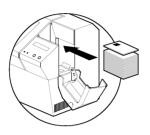
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Position the cards with the Smart Card Chip at the top of the card and towards the printer.

#### **B** • SMART CARD CONTACT STATION INTERFACE



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

An attached external Smart Card Programmer can be used to program Smart card chips

DB - 9 PINS	SMART CARD CONTACT POINTS	DB - 9 PINS	SMART CARD CONTACT POINTS
1	CI (VCC)	6	C6 (Vpp)
2	C2 (Reset)	7	C7 (I/O)
3	C3 (Clock)	8	C8 (RFU)
4	C4 (RFU)		(OND 1 11 1 1 1 1 1 1 1 1
5	C5 (GND)	9	(GND when chip is at station)



Refer to the Card printer programmer's Manual for complete programming information. DO NOT position printing over the Smart Card Chip.



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# Accessories & Supplies

Please contact your Zebra authorized dealer to place an order for accessories and supplies.



Use only Zebra-approved card, ribbon and patches media. Using non-approved card or ribbon media can void your warranty.

Refer to the Accessories section for more information about Card and Ribbon Media available from Zebra Technologies Corp.



### **Dual-sided Lamination**

#### **RIBBONS:**

PRINTING STATION		compatibility LAMINATOR STATION
Part Number	Description	Patch 1 mil
800015-101 to 109	Monochrome Ribbon	no
800015-140	YMCKO	no*
800015-145	YMCK	yes
800015-148	YMCKOK	no*
800015-150	Kdye-0	no*
800015-160	KO	no*
800015-170	YMC	yes
800015-180	YMCKK	yes
800015-301	Monochrome Ribbon	no
800015-340	YMCKO	no*

NOTE: \* These ribbons can possibly be used without using the "O"-Panel.

<sup>‡</sup>These ribbons can only be used with the full overlay Part Number 800015-125 and not with the 800015-131.



Always use 30 to 50 mil cards PVC composite whenever possible to ensure compliance of the finished card to ISO flatness guidelines.

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Part Number	Description	Card/pack	thickness
104524-102	premier plus grade composite LoCo	100	30mil
104524-103	premier plus grade composite HiCo	100	30mil

#### PATCHES FOR LAMINATION:

Part Number	Description	Cards/roll
	Linerless & Precut Clear Patch 1 mil	
800015-712	clear patch 1 mil with coverage for Mag. Stripe Cards	800
800015-713	clear patch 1 mil with coverage for Smart Cards	800
800015-714	clear patch 1 mil full coverage	800
	Linerless & Precut holographic Patch 1 mil	
800015-715	holographic Patch 1 mil full coverage (World Globe image)	800
800015-716	holographic Patch 1 mil full coverage (Genuine Secure Text)	800
800015-717	Matte Patch 1 mil full coverage	800
800015-718	Matte Patch 1 mil full Mag Stripe coverage	800
800070-xxx	Custom Holograms	800



# **Dual-sided Lamination**

# **ACCESSORIES**

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Accessories available for P720 printers appear below. Always refer to the part number when placing an order.

	Printer supplies
Part Number	Description
300320-001 206851-001 105909-112	Centronics Parallel cable (36 pins) Additional Card Output Hopper Replacement Print Head Kit

	Cleaning Supplies
Part Number	Description
105909-169 105912-003 105912-002 104531-001 105909-057	Premier Cleaning Kit (25 swabs, 50 cards) Adhesive Cleaning Roller Kit (set of 5) Cleaning Cartridge, complete Cleaning Card Kit (box of 100 cards) Cleaning Swab Kit (box of 25 swabs)

	Miscellaneous
Part Number	Description
105598-001 806503-001 104527-001	CD ROM (Drivers & Documentation) Card Punch (slots card for lapel clip) Lapel Clips (pack of 100 clips)



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### World Wide Sales and Support:

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Camarillo, CA 93021-8706.USA Phone: + 1(805) 579 1800 Fax.: + 1 (805) 579 1808

Toll Free in US: (800) 452-4056 e-mail: cards@zebracard.com

### Zebra Technologies Corporation

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e-mail: eurosales@zebracard.com

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