User’s Manual
P520

Card Printer Solutions

Part Number:980312-001

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FOREWORD

This manual contains installation and operation information for the P520 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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TRADEMARKS

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PRODUCT WARRANTY STATEMENT

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 caused 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 becomes void if the item is modified, improperly installed or used, or damaged by accident or neglect.
DECLARATIONS OF CONFORMITY

<table>
<thead>
<tr>
<th>European Council Directive</th>
<th>Compliance to Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Model: P520 conforms to the following specification:
FCC Part 15, Subpart A, Section 15.107(a) and Section 15.109(a)
Class A digital device

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 harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.
INTRODUCTION

Thank you for choosing the Zebra P520 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 identification, access control, visitor, membership, badges and tags.

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

P520 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 P520 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:

- **Smart Card:**
  - O = No
  - E = Yes

- **Magnetic Encoder:**
  - O = No
  - M = Yes

- **Magnetic Encoder Options:**
  - 1 = Stripe down HICO
  - 2 = Stripe Down LOCO
  - 3 = Stripe Up HICO
  - 4 = Stripe Up LOCO

- **Memory:**
  - O = Standard

- **Interface:**
  - P = Parallel (Centronics 36 pins)

- **Software:**
  - O = WindCard Cd only
  - F = Windows driver only
  - B = WindCard & drivers

- **Language:**
  - O = No manual
  - A = English & Spanish
  - B = French & German
  - I = Italian
  - P = Brazilian Portugese
  - C = Chinese
  - J = Japanese

- **Power Cord:**
  - O = None
  - A = 120 VAC
  - E = 220 VAC
  - U = UK
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.**
# TABLE OF CONTENTS

1

## GETTING STARTED ................................................................. 1

1•1 Unpacking your ................................................................. 1
1•2 Indicators and control ......................................................... 3
1•3 Printer installation ............................................................. 4

2

## OPERATION ............................................................................. 5

2•1 Printer Features ................................................................. 5
2•2 Loading Printing Ribbons ................................................... 6
2•3 Loading Lamination Patch .................................................. 8
2•4 Loading cards ................................................................. 9
   A- Card Feeder ............................................................. 9
   B- Card Cleaning Cartridge ............................................. 10
   C- Card Thickness Control Lever .................................... 11
   D- Card Output Hopper .................................................. 11
2•5 Reject Card Box ............................................................... 12
2•6 Feeding one card at a time ................................................ 14
2•7 Printing a test card .......................................................... 15
2•8 Printer menu information .................................................. 16

3

## PRINTING A SAMPLE CARD .................................................... 21

3•1 Install Driver on windows 95/98 ........................................ 22
3•2 Install Driver on windows 2000 & NT4.0 ........................... 23
3•3 Set Printer Driver Option .................................................. 23
3•4 printing a sample card ..................................................... 24

4

## CLEANING .............................................................................. 25

4•1 Cleaning system ............................................................... 26
4•2 Cleaning the print head .................................................... 27
4•3 Cleaning the Laminator rollers ......................................... 28
4•4 Card Cleaning cartridge ................................................ 29

5

## TROUBLESHOOTING .............................................................. 31

5•1 Interpreting LCD Display messages ................................. 31
   A- About the Printing Station ..................................... 31
   B- About the Laminator Station .................................. 34
5•2 Print Quality Issues .......................................................... 35

6

## TECHNICAL SPECIFICATIONS .................................................. 39
<table>
<thead>
<tr>
<th>APPENDIX A</th>
<th>Introduction</th>
<th>Media Loading orientation</th>
<th>Magnetic Encoder Cleaning</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>43</td>
<td>44</td>
<td>45</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>APPENDIX B</th>
<th>Introduction</th>
<th>Media Loading orientation</th>
<th>Smart Card Contact Station Interface</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>46</td>
<td>47</td>
<td>47</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>APPENDIX C</th>
<th>Ribbons</th>
<th>Cards &amp; Patches</th>
<th>Accessories</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>48</td>
</tr>
<tr>
<td></td>
<td></td>
<td>50</td>
<td>51</td>
</tr>
</tbody>
</table>
1. Unpacking your card printer

Your P210 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 occurred during shipping. Please ensure that you have a clean and nearly dust free environment for proper operation and storage of the printer.
In addition to user documentation, make sure the following items are included with your P210 printer:

- CLEANING KIT
- CARD HOPPER
- POWER CABLE
- CLEANING CARTRIDGE
- PRINTER DRIVER DISK (floppy or/and CD)
- CENTRONICS CABLE

If any items are missing, please contact your dealer. To reorder, please refer to Appendix C of this manual.
Your P520 printer has an LCD Display, two LED’s and two Panel Buttons.

**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.
The following will guide you through the installation of your P520 printer.

**CAUTION:** Limit AC power supplied to the P520 Printer to 110 - 230 V AC, 60 - 50 Hz for an associated 1,40A - 0,80A. 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. 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.
2 • 1 Printer Features

The following shows the features found on your P520 Printer:

**Standard Features:**
1. Print Head Unlock Lever
2. Print Head
3. Card Thickness Control Lever
4. Card Feeder
5. LCD Display and two panel Buttons
6. Card Cleaning Cartridge
7. Laminator
8. Laminator Unlock Lever
9. Card Output Hopper
10. Rejected Card Box
11. Cleaning Roller

**Optional Features:**
A. Smart Card Contact Station
B. Magnetic Encoder Station
**2 • 2 Loading Printing Ribbons**

The P520 Printer requires approved ribbons (see Appendix C). The Resin Thermal Transfer and Dye Sublimation ribbons and Lamination are specifically designed for your P520 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.

---

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

Please note that the ribbon automatically synchronises 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.
**2 • 3 Loading Lamination Patch**

The P520 Printer requires approved patches (see Appendix C). Clear patches, hologram patches or Overlay varnishes are specifically designed for your P520 Printer. For optimum performance and printer life (Laminator), always use approved patches.

1 • Remove patch from packaging.

2 • With printer power ON and printer Ready status, open cover.

3 • Press down on the Laminator Unlock Lever to open the laminator bracket. The laminator bracket will pop open.

4 • Load patch onto the supply spindle “1” (under laminator bracket) and align the notch of the empty core with the spindle screw (with tape attached) onto the take-up spindle “2”. Make sure the patch comes off the top of the supply spindle and feeds to the top of the take-up spindle.

5 • Push down on the Laminator Lock Lever until an audible “click” signals the locked-down position.

6 • Close Cover

*Please note that the ribbon automatically synchronises whenever the laminator head lock down occurs.*
To help you load, print, and collect cards, the P520 has the following items:

**A - CARD FEEDER**
This item 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.
B - INSTALL CARD CLEANING CARTRIDGE
This item is used to clean the cards entering the printer. It must be installed before using the printer.

1 • Remove Card Cleaning Cartridge from plastic bag and peel off protective wrapper from adhesive cleaning roller.

2 • Open printer cover and remove the yellow reminder tape from the location for the Cleaning Cartridge.

3 • 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.
C - 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 - 60mil (1.524mm) to 50mil (1.27mm)
B - 40mil (1.016mm)
C - 30mil (0.762mm)
D - 20mil (0.508mm)
E* - Less than 20mil (0.508mm)
*Start at lowest position and move lever up to match card thickness.

For other card thickness, start lever at lowest position and move up until cards feed.

Note: For Lamination cards should only be 30 mil cards, and composite PVC is preferred

D - 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.
The P520 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 P520 Printer counts the number of cards which go into the Reject Card Box. After 20 cards the printer stops, the Amber LED Flashes and a LCD Message is displayed indicating the need to empty the reject box.

**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.
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.
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.
2 • 7 Printing a Test Card

With ribbon and cards loaded, your P520 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 MENU PRINTER, then the “Select” button (right) to PRINTER INFO.

2 • Press twice the “Next” button to SELF TEST MENU and then “Select” to TEST PATTERN.

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.

Front Side: Printer Operation

Back Side: Laminator Operation
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.

PRINTING STATION:
• PRINTER INFO
• CLEANING MENU
• SELF TEST MENU
• PRINTER DEFAULTS

LAMINATOR STATION:
• LAMINATOR INFO
• SELF TEST MENU
• LAM DEFAULTS

See next page:
P520 LCD Menu Tree: Printing Station
*If the printer is equipped with a Magnetic Stripe Encoder
**Menu Printer**

- **READY**
  - **S**
  - **N**

**Menu Lamination**

(See Page N°19)

- **Printer info**
  - **S**
  - **N**

  - **Printer Model number**
  - **Printer Firmware**
  - **Number of Impressions**

  - **Reject Box status**
    - To show the number of cards remaining in the reject box

**Cleaning Menu**

- **Clean Print Head**
  - To Clean the Thermal Print Head and card transport system

- **Clean Mag. Head**
  - To Clean the magnetic Encoder Head

- **Go to main Menu**

**Self Test Menu**

- **Test Patern**
  - To print a printer test card

- **Print Parameters**
  - To print a test card showing the operating parameter settings of the printer

- **Mag. Parameters**
  - To print a test card showing the operating parameter settings of magnetic encoder.

- **Go to main Menu**

**Printer Defaults**

(follow next page)
Menu Tree: Printing station (continuation)

Printer Defaults

Ribbon Type
To show the type of ribbon installed. It may not match the ribbon physically installed until the installed ribbon has been selected through the driver.

Offset X: aa-Y:bb
To show the X print location offset value in pixels (aa)
To show the Y print location offset value in pixels (bb)

Mag. Option: cccc
To show the setting of the magnetic encoder as (cccc), which can be:
- HICO (high coercivity)
- LOCO (low coercivity)
- NONE (no encoder present)

Color Parameters
To show the intensity values of yellow (Y), Magenta (M) and Cyan (C) panels and contrast value of black Resin (K) panel.

Go to main Menu

(back to) Menu Printer
Menu Tree: Lamination station

N: NEXT
S: SELECT

READY

Menu Printer

Menu Lamination

Laminator Info

Printer info see page N°17

Temp: 170°C (U)
Shows current setting for laminator temperature

Speed: 08.84 (D)
Speed setting

Patch Clear 0.6
Ribbon setting

Firmware: V1.00

Go to main Menu

LAM CYCLE
Causes a single cycle of the lamination operation i.e produces a single sided lamination on a blank (unprinted) card.

Selt test menu

Go to main menu

Lam Defaults

Off. 1st: +100
offset value

Off. syn.: +140

Peel off: 90

Go to main Menu

READY
Printing with the P520 Printer requires the Windows Printer Driver, your card design/issuing software or printer command level programming through the printer interface.

The P520 Card Printer can be used with any Windows 95/98 or Windows NT 4.0 software application program, using the drivers provided with the printer.

This section contains information on the printing of a dual-sided card in color (using the 6-Panel color ribbon YMCKOK) and the Windows Printer Driver.

BEFORE installing updated printer driver versions, always delete the existing printer driver version from your computer.
3 • 1 To install the P520 Printer Driver in windows 95/98, use the following steps:

**IMPORTANT NOTE:** Ensure that your PC printer port is set to standard mode and also ensure that you have deleted any previous versions of this printer driver. If you have any doubts please contact your IT department.

This installation uses floppy drive “A” or from CD Rom as the installation drive with the printer used as stand alone.

- Start your computer and then Windows.
- Insert your “Zebra Software” diskette into the drive “A” or CD drive.
- Under windows click the **Start** button, select **Settings**, then **Printers**.
- Double click on the **Add Printer icon** and also Next.
- Ensure **Local Printer** is selected and click on Next.
- Click on **Have disk** and then type in “A:\win95” if using the floppy disc or “D:\win95” if using the CD and click OK.
- P520 CARD PRINTER should be displayed after which click on Next.
- Choose **LPT1: Standard Printer Port**, click on **Next**, select **Yes** to set as **Default Printer** and click on **Finish** to install.

The Printer wizard will copy the necessary files to the PC for you and the P520 printer driver installation will be completed.
3 • 2 To install the P520 Printer Driver in windows 2000/NT4.0:

Ensure that you have administrative privileges to perform this installation or contact your IT department.

Set printer as Not Shared for stand alone use.

Use the steps provided for windows 95/98 installation with the exception of step 6. Where you must type in “A:\nt40” for NT4.0, “A:\winNT4” for Windows 2000 if using the floppy disc, or “D:\nt40”, “D:\winNT4” if using the CD, instead and click OK.

Once the printer driver has been successfully installed, you will need to configure it for your printer. This driver provides control of several printer features when printing from Windows applications. These features are accessed through the P520 Plastic Card Printer Properties. To access these properties select the P520 Card Printer icon in Printers. Then click File Menu and select Properties.

3 • 3 Set Printer Driver Options:

The P520 Printer screen appears. Change the options as follows:

- On the Printer tab configure the magnetic encoder feature. If your Printer is equipped with a Magnetic Encoder option, select With Magnetic Encoder option.

- On the Card tab select card orientation: Landscape or portrait - Select “Landscape”.

- On the Ribbon tab, select the Ribbon Type. Select YMCKOK for the standard 6-panel ribbon.

- In the same tab, go to Black Panel area and select Text Only. this option allows the text printing using the Black Resin Panel from the Color Ribbon.

- Close the Eltron P520 Printer Properties screen.

Now that you have loaded media and set up the printer driver, the P520 Printer is ready to print.
3 • 4 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 P520 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:

Front Side:

SAMPLE CARD
M. CHRIS JONES
Sales Director
Build the World with us!
Http://airworld.com

If found return to:
Http://artworld.com

Back Side:

☐ 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.
PROTECT YOUR FACTORY WARRANTY!
The recommended maintenance procedures must be performed to maintain your factory warranty. Other than the recommended cleaning procedures described in this manual, allow only Zebra authorised technicians to service the P520 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.
Your P520 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.

**WHEN TO CLEAN**
When the LCD screen reports messages.

**HOW TO CLEAN**
1 • Leave power on.  
Open Cover and release Print Head Bracket to remove ribbon.  
Close Print Head Bracket  
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”. Press the right Panel button to select and one more time again to run the cleaning process (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.
4 • 2 Cleaning the Print Head

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 • 3 Cleaning the Laminator Rollers

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.

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. Make sure the Laminator rollers cool down.

2 • Press down on the unlock lever to open the Laminator braquet.

3 • Clean the two Laminator rollers and the two transport rollers gently with a swab. (The above transport roller “1” can be temporary removed for an easy clean)

4 • Make sure the rollers are dry before Pushing down the braquet and switching on your printer.
Your P520 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.

**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.
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.

5 • 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 continue to operate.
This section offers solutions to potential problems you may experience with your P520 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. 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

<table>
<thead>
<tr>
<th>SCREEN MESSAGE</th>
<th>MEANING</th>
<th>ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>INITIALIZING</td>
<td>The printer is performing an internal test before use</td>
<td>Wait for the ready message</td>
</tr>
<tr>
<td>READY</td>
<td>Ready for use</td>
<td></td>
</tr>
<tr>
<td>WAIT TEMPERATURE</td>
<td>Print Head cool down mode</td>
<td></td>
</tr>
<tr>
<td>SELF TEST</td>
<td>Self test card printing</td>
<td>Wait for card printing to start</td>
</tr>
<tr>
<td>DOWNLOADING DATA</td>
<td>The card data is being transmitted</td>
<td></td>
</tr>
<tr>
<td>PRINTING YELLOW</td>
<td>The yellow panel is being printed</td>
<td></td>
</tr>
<tr>
<td>PRINTING MAGENTA</td>
<td>The magenta panel is being printed</td>
<td></td>
</tr>
<tr>
<td>PRINTING CYAN</td>
<td>The cyan panel is being printed</td>
<td></td>
</tr>
<tr>
<td>SCREEN MESSAGE</td>
<td>MEANING</td>
<td>ACTION</td>
</tr>
<tr>
<td>------------------------</td>
<td>--------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------</td>
</tr>
<tr>
<td>PRINTING BLACK</td>
<td>A monochrome panel is being printed</td>
<td></td>
</tr>
<tr>
<td>PRINTING VARNISH</td>
<td>The overlay is printing</td>
<td></td>
</tr>
<tr>
<td>PRINT HOLOGRAM</td>
<td>A hologram overlay is printing</td>
<td></td>
</tr>
<tr>
<td>CLEAN PRINTER</td>
<td>The printer is prompting operator maintenance</td>
<td>Carry out the cleaning procedure as detailed in section 4 of this manual</td>
</tr>
<tr>
<td>CLEAN MAG HEAD</td>
<td>The printer is prompting operator</td>
<td>Carry out the cleaning procedure as detailed in Appendix A of this manual</td>
</tr>
<tr>
<td>CLEANING</td>
<td>The printer is performing an internal cleaning routine</td>
<td></td>
</tr>
<tr>
<td>REMOVE RIBBON</td>
<td>The ribbon has not been removed while the cleaning operation is in progress</td>
<td>Remove ribbon</td>
</tr>
<tr>
<td>OUT OF RIBBON</td>
<td>The printer ribbon has run out</td>
<td>Replace printer ribbon</td>
</tr>
<tr>
<td>MECHANICAL ERROR</td>
<td>The printer has an error moving the card internally</td>
<td>Remove the jammed card. Ensure the card is not out of specification</td>
</tr>
<tr>
<td>OUT OF CARD</td>
<td>The card feeder is empty</td>
<td>Add more cards or adjust the card feeder to accept the cards</td>
</tr>
<tr>
<td>ROTATION ERROR</td>
<td>The printer has an error moving the card in the flip</td>
<td>Remove card</td>
</tr>
<tr>
<td>COVER OPEN</td>
<td>The cover is open</td>
<td>Close the cover</td>
</tr>
<tr>
<td>HEAD OPEN</td>
<td>The print head is not locked into position</td>
<td>Lock the print head in its lower position</td>
</tr>
<tr>
<td>COMMAND ERROR</td>
<td>The data being sent from the host is not recognised</td>
<td>Check that the data is suitable for printing. Try reprinting a card from known “good” data</td>
</tr>
<tr>
<td>PARAMETERS ERROR</td>
<td>The features of the card are not recognised</td>
<td>Check the windows driver options and printer type</td>
</tr>
<tr>
<td>ENCODING ERROR</td>
<td>Data cannot be written or read from the card’s magnetic stripe</td>
<td>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</td>
</tr>
</tbody>
</table>
**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).

---

### 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** | | |

**NO ACCESS** | | Contact your dealer for further information.

**Meaning:**
- 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 the card orientation
- Contact your dealer for further information.
## B • About the Laminator Station

<table>
<thead>
<tr>
<th>SCREEN MESSAGE</th>
<th>MEANING</th>
<th>ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>INITIALISING</td>
<td>The printer is performing an internal test before use</td>
<td>Wait for the ready message</td>
</tr>
<tr>
<td>READY</td>
<td>Ready for use</td>
<td></td>
</tr>
<tr>
<td>COVER OPEN</td>
<td>The cover is open</td>
<td>Close cover</td>
</tr>
<tr>
<td>ROTATION ERROR</td>
<td>The printer has an error moving the card in the flip</td>
<td>Remove card</td>
</tr>
<tr>
<td>LAMINATING</td>
<td>The printer is processing a lamination</td>
<td>Wait for the laminated card</td>
</tr>
<tr>
<td>OUT OF RIBBON</td>
<td>The printer ribbon has run out</td>
<td>Load a new ribbon</td>
</tr>
<tr>
<td>MECHANICAL ERR</td>
<td>The printer has an error moving the card internally</td>
<td>Remove the jammed card. Ensure the card is not out of specification.</td>
</tr>
<tr>
<td>TEMPERATURE ERR</td>
<td>The printer has detected a temperature error</td>
<td>Proceed an initialization by switching Off and On.</td>
</tr>
<tr>
<td>WARMING UP</td>
<td>A lamination command has been sent and the temperature has not reached +/- 7°C of the recommended temp.</td>
<td>Wait until the printer has reached the recommended temperature</td>
</tr>
<tr>
<td>RIBBON FAILURE</td>
<td>The film is glued to the card during the cool down period.</td>
<td>Open laminator bracket. Remove card. Close laminator bracket.</td>
</tr>
<tr>
<td>STANDBY MODE</td>
<td>Laminator power reduced.</td>
<td></td>
</tr>
</tbody>
</table>
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).
  B2 • 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.
  C • 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.
• 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).
• 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.
TECHNICAL SPECIFICATIONS

General
- High speed printing & laminating
  - YMCK & 1.0 mil lamination 110 cards per hour
  - YMCK & 0.6 mil lamination 120 cards per hour
  - YMCK-K & 1.0 mil lamination 95 cards per hour
  - YMCK-K & 0.6 mil lamination 105 cards per hour
- Small footprint
- Windows Drivers for 95/98/2000 and NT 4.0
- One year printer warranty
- One year print head warranty

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 Wincard Classic utility tool (option)

Fonts
- Internal: Normal 100 point, Bold 100 point
- 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: 10mil (0.25mm) to 50mil (1.25mm) for printing only and 0.8mm for printing and lamination.
- Card Feeder capacity: up to 300 cards (10mil), up to 100 cards (30mil)
- Card Output Hopper capacity: 300 cards (10mil), up to 100 cards (30mil)
**ISO STANDARD DIMENSIONS FOR PLAIN CARD**

- **Width**: 3.375 ± 0.010in (85.72 ± 0.25mm)
- **Height**: 2.125 ± 0.002in (53.98 ± 0.050mm)
- **Radius**: 0.125in (3.18mm)
- **thickness range**: 0.009 – 0.034in (0.23 – 0.84mm)

**CHIP POSITION FOR SMART CARD**

- **Minimum gap between chip and edge**: 0.403 in (10.25mm) Max.
- **Minimum chip height**: 0.782 in (19.87mm) Min.
- **Minimum chip width**: 0.623 in (15.82mm) Min.
- **Maximum chip width**: 0.631 in (15.74mm) Max.
- **Minimum chip gap**: 0.210 in (5.34mm) Min.
- **Maximum chip gap**: 0.221 in (5.62mm) Max.
- **Minimum chip height**: 0.210 in (5.34mm) Min.
- **Maximum chip height**: 0.221 in (5.62mm) Max.
Ribbons
- Monochrome: 1500 cards/roll
- Monochrome colors: back, red, blue, green, yellow, silver, gold, white.
- K-resin + O: 800 cards/roll
- K-dye + O: 800 cards/roll
- YMC: 300 cards/roll
- YMCK: 250 cards/roll
- YMCK-K: 200 cards/roll
- YMCKO: 350 cards/roll
- YMCKOK: 250 cards/roll

Patches
- Clear Patch 1 or 0.6 mil
- Clear Patch for mag. stripe 1 or 0.6 mil
- Clear Patch for smart card 1 or 0.6 mil
- Hologram Pcard Patch 1 or 0.6 mil
- Advantage seal Pcard image Patch 1 mil
- Hologram Pcard full overlay
- Varnish full overlay

Overlay Varnish
- Thermal transfer
- 4 microns thick
- Clear and holographic options:
  - Clear
  - Genuine/Secure Hologram
  - Custom Hologram

Interfaces
- Centronics Parallel Standard
- USB port (Optional)

Mechanical
- Width: 31.69” (805mm*)
- Depth: 9.25” (235mm*)
- Height: 10.43” (265mm*)
- Weight: 47.28 lbs (21.45 kg)

Electrical
- 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.

*Measured without card output hopper.

Options
- USB port
- Smart card Contact Station (0.76mm cards only)
- Magnetic Encoder (0.76mm cards only)
- Cleaning supplies
The above drawing shows the required connections to use the printer centronic interface.

<table>
<thead>
<tr>
<th>Printer Pin</th>
<th>Lign Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>-STROBE</td>
</tr>
<tr>
<td>2</td>
<td>DO</td>
</tr>
<tr>
<td>3</td>
<td>D1</td>
</tr>
<tr>
<td>4</td>
<td>D2</td>
</tr>
<tr>
<td>5</td>
<td>D3</td>
</tr>
<tr>
<td>6</td>
<td>D4</td>
</tr>
<tr>
<td>7</td>
<td>D5</td>
</tr>
<tr>
<td>8</td>
<td>D6</td>
</tr>
<tr>
<td>9</td>
<td>D7</td>
</tr>
<tr>
<td>10</td>
<td>-ACK</td>
</tr>
<tr>
<td>11</td>
<td>-BUSY</td>
</tr>
<tr>
<td>12</td>
<td>PE</td>
</tr>
<tr>
<td>13</td>
<td>SLCT</td>
</tr>
<tr>
<td>14</td>
<td>-AUTO FEED</td>
</tr>
<tr>
<td>32</td>
<td>-ERROR</td>
</tr>
<tr>
<td>31</td>
<td>-INIT</td>
</tr>
<tr>
<td>36</td>
<td>SLCT IN</td>
</tr>
<tr>
<td>19-30-33</td>
<td>GND</td>
</tr>
</tbody>
</table>

Note: The printer pins number 15, 16, 18, 30, 34, 35 are not connected.
Magnetic Card Stripe Encoder

This section contains information on the additional operations of the P520 Printers with Magnetic Card Stripe Encoder. (See Chapter 2 for location.)

INTRODUCTION

Operation and maintenance requirements for the P520 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.
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 Cartridge, please ensure that the magnetic stripe is facing down and closest to the rear. Also available are Printer models with the Magnetic Read/Write head positioned above the card path, with HICO encoding or LOCO encoding.

When loading cards, please ensure that the magnetic stripe is facing up and closest to the rear.

Note:

M1 = Stripe Down HICO     M3 = Stripe up HICO
M2 = Stripe Down LOCO     M4 = Stripe up 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.
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 Cartridge.
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

<table>
<thead>
<tr>
<th>Track #</th>
<th>Field Separator</th>
<th>Track density</th>
<th>Valid Characters</th>
<th># of characters</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>^</td>
<td>210BPI*</td>
<td>Alphanumeric (ASCII 20 - 95**)</td>
<td>79***</td>
</tr>
<tr>
<td>2</td>
<td>=</td>
<td>75BPI*</td>
<td>Numeric (ASCII 48 - 62)</td>
<td>40***</td>
</tr>
<tr>
<td>3</td>
<td>=</td>
<td>210BPI*</td>
<td>Numeric (ASCII 48 - 62)</td>
<td>107***</td>
</tr>
</tbody>
</table>

* 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.
**Smart Card Contact Station**

This section contains information on the additional operations of the P520 Printers with Smart Card Contact Stations. (See Chapter 2 for location.)

**INTRODUCTION**

Your P520 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 P520 model.
A • MEDIA LOADING ORIENTATION

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.

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

Refer to the Card printer programmer’s Manual for complete programming information.

DO NOT position printing over the Smart Card Chip.
Accessories & Supplies

Please contact your Zebra authorised 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.

RIBBONS FOR PRINTING ONLY:

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Cards/roll</th>
</tr>
</thead>
<tbody>
<tr>
<td>800015-101 to 109</td>
<td>Monochrome Ribbon</td>
<td>1000</td>
</tr>
<tr>
<td>800015-120 to 122</td>
<td>Hologram or varnish</td>
<td>350</td>
</tr>
<tr>
<td>800015-140</td>
<td>YMCKO</td>
<td>200</td>
</tr>
<tr>
<td>800015-148</td>
<td>YMCKOK</td>
<td>170</td>
</tr>
<tr>
<td>800015-150</td>
<td>Kdye-0</td>
<td>500</td>
</tr>
<tr>
<td>800015-160</td>
<td>KO</td>
<td>600</td>
</tr>
<tr>
<td>800015-301 to 309</td>
<td>Monochrome Ribbon</td>
<td>1500</td>
</tr>
<tr>
<td>800015-340</td>
<td>YMCKO</td>
<td>350</td>
</tr>
<tr>
<td>800015-348</td>
<td>YMCKOK</td>
<td>250</td>
</tr>
<tr>
<td>800015-350</td>
<td>Kdye-0</td>
<td>800</td>
</tr>
<tr>
<td>800015-360</td>
<td>Ko</td>
<td>800</td>
</tr>
</tbody>
</table>
**RIBBONS FOR PRINTING AND LAMINATION:**

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Patch 1 mil -012 to -017</th>
<th>Patch 0.6 mil -135 to -138</th>
<th>Full Overlay -125 &amp; -131</th>
</tr>
</thead>
<tbody>
<tr>
<td>800015-101 to 109</td>
<td>Monochrome Ribbon</td>
<td>no</td>
<td>yes</td>
<td>yes ‡</td>
</tr>
<tr>
<td>800015-140</td>
<td>YMCKO</td>
<td>no*</td>
<td>no*</td>
<td>yes</td>
</tr>
<tr>
<td>800015-145</td>
<td>YMCK</td>
<td>yes</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>800015-148</td>
<td>YMCKOK</td>
<td>no*</td>
<td>no*</td>
<td>yes</td>
</tr>
<tr>
<td>800015-150</td>
<td>Kdye-0</td>
<td>no*</td>
<td>no*</td>
<td>yes</td>
</tr>
<tr>
<td>800015-160</td>
<td>KO</td>
<td>no*</td>
<td>no*</td>
<td>yes</td>
</tr>
<tr>
<td>800015-170</td>
<td>YMC</td>
<td>yes</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>800015-180</td>
<td>YMCKK</td>
<td>yes</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>800015-301 to 309</td>
<td>Monochrome Ribbon</td>
<td>no</td>
<td>yes</td>
<td>yes ‡</td>
</tr>
<tr>
<td>800015-340</td>
<td>YMCKO</td>
<td>no*</td>
<td>no*</td>
<td>yes</td>
</tr>
<tr>
<td>800015-345</td>
<td>YMCK</td>
<td>yes</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>800015-348</td>
<td>YMCKOK</td>
<td>no</td>
<td>no</td>
<td>yes</td>
</tr>
<tr>
<td>800015-350</td>
<td>Kdye-0</td>
<td>no*</td>
<td>no*</td>
<td>yes</td>
</tr>
<tr>
<td>800015-360</td>
<td>KO</td>
<td>no*</td>
<td>no*</td>
<td>yes</td>
</tr>
</tbody>
</table>

**NOTE:** * These ribbons can possibly be used without using the “O”-Panel.
‡ These ribbons can only be used with the full overlay Part Number 800015-125 and not with the 800015-131.

---

Only 30 mil cards should be used when the card is to be laminated.
Use 30 mil **composite** cards whenever possible to ensure compliance of the finished card to ISO flatness guidelines.
CARDS FOR PRINTING AND LAMINATION:

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Card/pack</th>
<th>thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>104523-111</td>
<td>premier grade PVC</td>
<td>100</td>
<td>30mil</td>
</tr>
<tr>
<td>104523-112</td>
<td>premier grade PVC LoCo</td>
<td>100</td>
<td>30mil</td>
</tr>
<tr>
<td>104523-113</td>
<td>premier grade PVC HiCo</td>
<td>100</td>
<td>30mil</td>
</tr>
<tr>
<td>104524-101</td>
<td>premier plus grade composite</td>
<td>100</td>
<td>30mil</td>
</tr>
<tr>
<td>104524-102</td>
<td>premier plus grade composite LoCo</td>
<td>100</td>
<td>30mil</td>
</tr>
<tr>
<td>104524-103</td>
<td>premier plus grade composite HiCo</td>
<td>100</td>
<td>30mil</td>
</tr>
</tbody>
</table>

CARDS FOR PRINTING ONLY:

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Card/pack</th>
<th>thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>104523-114</td>
<td>premier grade PVC</td>
<td>100</td>
<td>10mil</td>
</tr>
<tr>
<td>104523-110</td>
<td>premier grade PVC adhesive back</td>
<td>100</td>
<td>10mil</td>
</tr>
<tr>
<td>104523-111</td>
<td>premier grade PVC</td>
<td>100</td>
<td>30mil</td>
</tr>
<tr>
<td>104523-112</td>
<td>premier grade PVC LoCo</td>
<td>100</td>
<td>30mil</td>
</tr>
<tr>
<td>104523-113</td>
<td>premier grade PVC HiCo</td>
<td>100</td>
<td>30mil</td>
</tr>
<tr>
<td>104524-101</td>
<td>premier plus grade composite</td>
<td>100</td>
<td>30mil</td>
</tr>
<tr>
<td>104524-102</td>
<td>premier plus grade composite LoCo</td>
<td>100</td>
<td>30mil</td>
</tr>
<tr>
<td>104524-103</td>
<td>premier plus grade composite HiCo</td>
<td>100</td>
<td>30mil</td>
</tr>
</tbody>
</table>

PATCHES FOR LAMINATION:

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Cards/roll</th>
</tr>
</thead>
<tbody>
<tr>
<td>800015-012</td>
<td>clear patch 1 mil with coverage for mag. stripe</td>
<td>100</td>
</tr>
<tr>
<td>800015-013</td>
<td>clear patch 1 mil with coverage for smart card</td>
<td>100</td>
</tr>
<tr>
<td>800015-014</td>
<td>clear patch 1 mil</td>
<td>100</td>
</tr>
<tr>
<td>800015-015</td>
<td>hologram Pcard patch 1 mil</td>
<td>100</td>
</tr>
<tr>
<td>800015-017</td>
<td>advantage Seal Pcard Image patch 1 mil</td>
<td>90</td>
</tr>
<tr>
<td></td>
<td>Full overlay ribbon</td>
<td></td>
</tr>
<tr>
<td>800015-125</td>
<td>hologram Pcard full overlay</td>
<td>350</td>
</tr>
<tr>
<td>800015-131</td>
<td>varnish full overlay</td>
<td>350</td>
</tr>
<tr>
<td></td>
<td>patch 0.6 mil</td>
<td></td>
</tr>
<tr>
<td>800015-135</td>
<td>clear patch 0.6 mil</td>
<td>175</td>
</tr>
<tr>
<td>800015-136</td>
<td>clear patch 0.6 mil with coverage for smart card</td>
<td>175</td>
</tr>
<tr>
<td>800015-137</td>
<td>clear patch 0.6 mil with coverage for mag. stripe</td>
<td>175</td>
</tr>
<tr>
<td>800015-138</td>
<td>hologram Pcard patch 0.6 mil</td>
<td>170</td>
</tr>
</tbody>
</table>
## Accessories

Accessories available for P520 printers appear below. Always refer to the part number when placing an order.

### Printer Supplies

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>300320-001</td>
<td>Centronics Parallel cable (36 pins)</td>
</tr>
<tr>
<td>206851-001</td>
<td>Additional Card Output Hopper</td>
</tr>
<tr>
<td>105909-112</td>
<td>Replacement Print Head Kit</td>
</tr>
</tbody>
</table>

### Cleaning Supplies

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>105909-169</td>
<td>Premier Cleaning Kit (25 swabs, 50 cards)</td>
</tr>
<tr>
<td>105912-003</td>
<td>Adhesive Cleaning Roller Kit (set of 5)</td>
</tr>
<tr>
<td>105912-002</td>
<td>Cleaning Cartridge, complete</td>
</tr>
<tr>
<td>105909-055</td>
<td>Cleaning Card Kit (box of 100 cards)</td>
</tr>
<tr>
<td>105909-057</td>
<td>Cleaning Swab Kit (box of 25 swabs)</td>
</tr>
</tbody>
</table>

### Documentation

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>980312-001</td>
<td>P520 User’s Manual (English &amp; Spanish)</td>
</tr>
<tr>
<td>980312-002</td>
<td>P520 User’s Manual (French &amp; German)</td>
</tr>
<tr>
<td>980312-051</td>
<td>P520 User’s Manual (Italian)</td>
</tr>
<tr>
<td>980312-061</td>
<td>P520 User’s Manual (Chinese)</td>
</tr>
<tr>
<td>980312-071</td>
<td>P520 User’s Manual (Japanese)</td>
</tr>
<tr>
<td>980312-081</td>
<td>P520 User’s Manual (Portuguese)</td>
</tr>
<tr>
<td>980081-001</td>
<td>Pseies Programmer’s Manual (English only)</td>
</tr>
<tr>
<td>980264-001</td>
<td>P520 Maintenance Manual (English only)</td>
</tr>
</tbody>
</table>

### Miscellaneous

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>105536-001</td>
<td>CD ROM (Software, Windows Drivers, Documentation)</td>
</tr>
<tr>
<td>806503-001</td>
<td>Card Punch (slots card for lapel clip)</td>
</tr>
<tr>
<td>104527-001</td>
<td>Lapel Clips (pack of 100 clips)</td>
</tr>
</tbody>
</table>
World Wide Sales and Support:

Zebra Technologies Corporation
Card Imaging Division
1001 Flynn Road
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

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Fax: +1 (305) 558-8485
e-mail: latinsales@zebracard.com

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