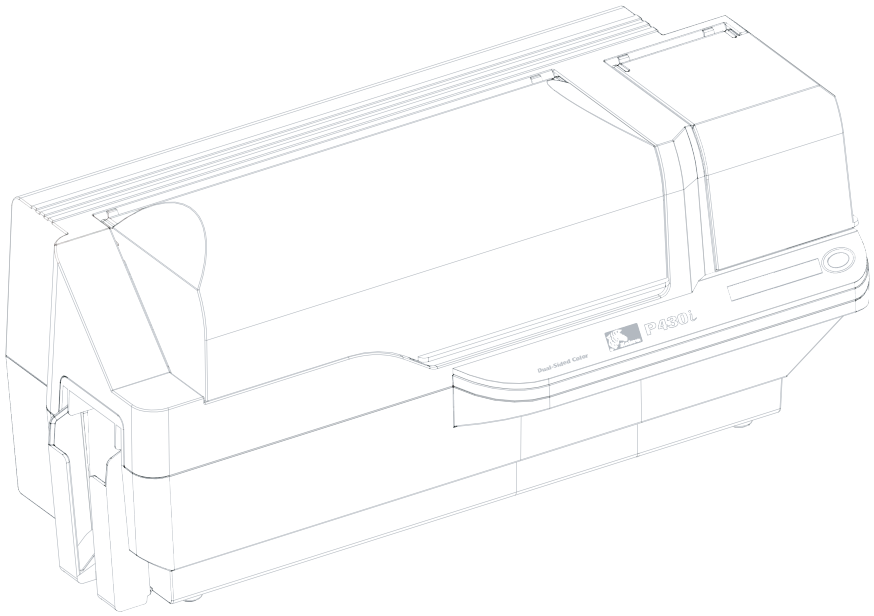
Zebra® P430*i*
Card Printer

User's Manual

980470-001 Rev. A

Card
Printer
Solutions


P430i
Dual-Sided Color

Foreword

This manual contains installation and operation information for the Zebra P430i Card Printers manufactured by Zebra Technologies Corporation, Camarillo, California.

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, Latin America, and Asia / Pacific:
  Zebra Technologies Corporation
  Zebra Card Printer Solutions
  1001 Flynn Road
  Camarillo, CA. 93012-8706.USA
  Phone: +1 (805) 578-5001
  FAX: +1 (805) 579-1808

- For Europe and Middle East:
  Zebra Technologies Corporation
  Zebra Card Printer Solutions
  Pittman Way, Fulwood
  Preston, PR2 9ZD
  Lancashire, U.K.
  Phone: +44 - 1 - 772 - 797555
  FAX: +44 - 1 - 772 - 693000

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Trademarks

P430*i* is a trademark and Zebra is a registered trademark of Zebra Technologies Corporation. Windows and MS.DOS are registered trademarks of Microsoft Corp. All other trademarks or registered trademarks are marks of their respective holders.

Product Disposal

Product Disposal Information • Do not dispose of this product in unsorted municipal waste. This product is recyclable, and should be recycled according to your local standards. For more information, please see our web site at: http://www.zebra.com/environment

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

FI: “Laite on liitettävä suojamaadoitus koskettimilla varustettuun pistorasiaan”

SE: “Apparaten skall anslutas till jordat uttag”

NO: “Apparatet må tilkoples jordet stikkontakt”

FCC Regulations

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

—Reorient or relocate the receiving antenna.

—Increase the separation between the equipment and receiver.

—Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

—Consult the dealer or an experienced radio/TV technician for help.

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

FCC Radiation Exposure Statement (applicable to 15.247 device only)

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

Industry Canada Notice

This device complies with Industry Canada ICES-003 requirements.

Cet equipement est conforme a l’ICES-003 de la norm Industrielle Canadian.

P430*i* Printer Model

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.

Model numbers include identifiers that specify options using the following lettering conventions:

Part Number	Description
P 4 3 0 *i* - _ _ _ _ _ - _ _ _	**Base Printer** P430*i* Color Card Printer
_ _ _ _ _ - 0 _ _ _ _ - _ _ _ _ _ _ _ _ - B _ _ _ _ - _ _ _ _ _ _ _ _ - C _ _ _ _ - _ _ _ _ _ _ _ _ - D _ _ _ _ - _ _ _ _ _ _ _ _ - E _ _ _ _ - _ _ _ _ _ _ _ _ - F _ _ _ _ - _ _ _ _ _ _ _ _ - H _ _ _ _ - _ _ _	**Smart Card Options** None Contact Encoder Contact encoder & HID *i*CLASS Contact encoder & MIFARE contactless Contact station HID *i*CLASS MIFARE contactless
_ _ _ _ _ - _ 0 _ _ _ - _ _ _ _ _ _ _ _ - _ M _ _ _ - _ _ _	**Magnetic Encoder** None Yes (select defaults below)
_ _ _ _ _ - _ _ 0 _ _ - _ _ _ _ _ _ _ _ - _ _ 1 _ _ - _ _ _ _ _ _ _ _ - _ _ 3 _ _ - _ _ _	**Magnetic Encoder Defaults** None Stripe Down, HiCo Stripe Up, HiCo
_ _ _ _ _ - _ _ _ 0 _ - _ _ _	**Memory Expansion** None
_ _ _ _ _ - _ _ _ _ A - _ _ _ _ _ _ _ _ - _ _ _ _ C - _ _ _	**Interface** USB Only USB and Ethernet
_ _ _ _ _ - _ _ _ _ _ - I _ _ _ _ _ _ _ - _ _ _ _ _ - U _ _	**Power Cords** U. S. and Europe U. K. and Australia
_ _ _ _ _ - _ _ _ _ _ - _ D 0	**Windows Drivers and User Documentation / Training CD** Windows Drivers and User Documentation / Training included on one CD (Software & Documentation Package) which contains Multi-language documentation

Icons

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

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

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

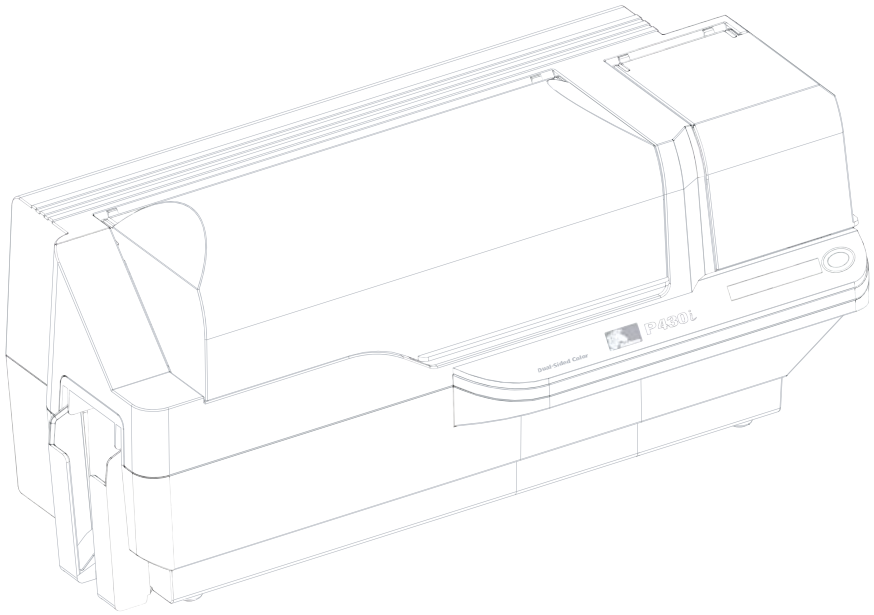
Provides an example or scenario to demonstrate or clarify a section of text.

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

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

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

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



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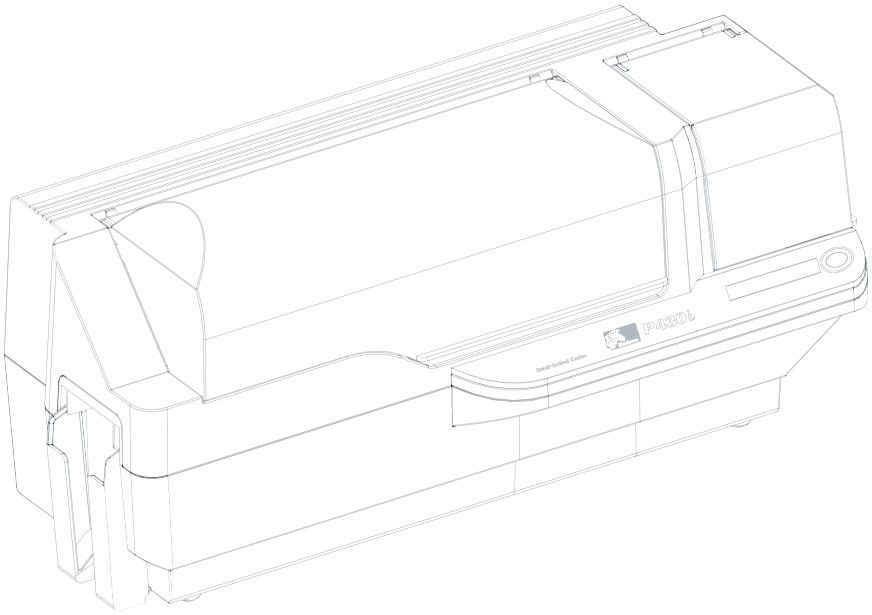
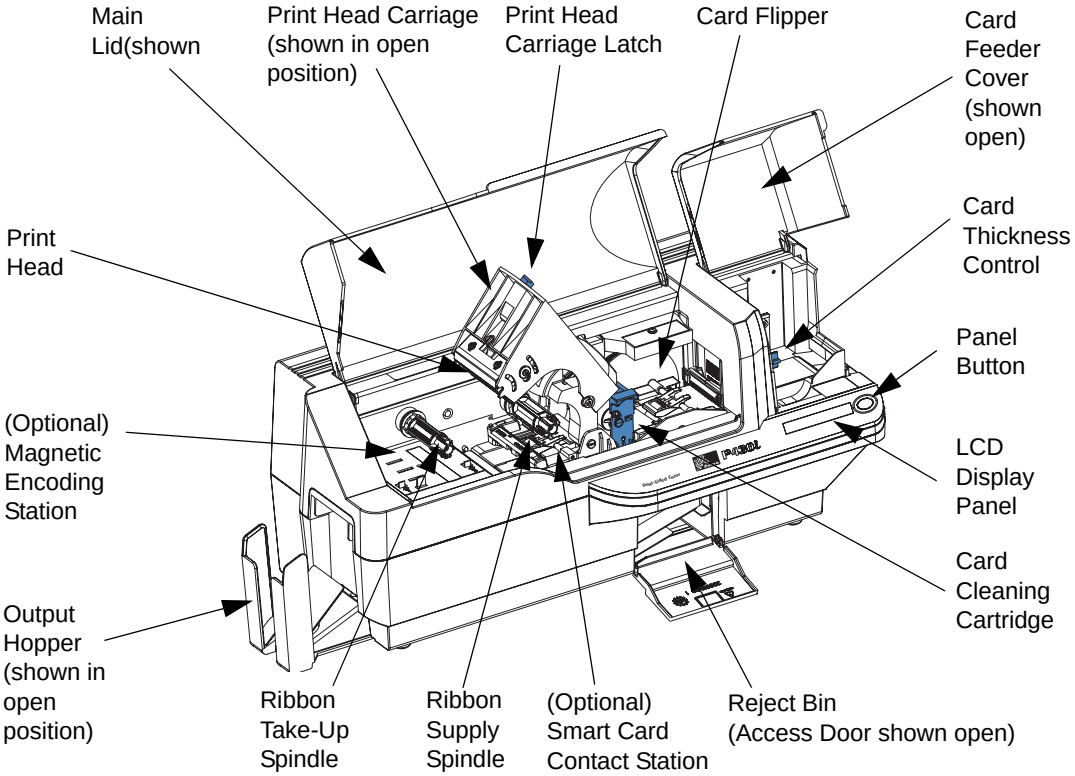


1 Introduction

Thank you for choosing the Zebra P430*i* Card Printer. This manual guides you to efficient start up and operation of your new Card Printer.

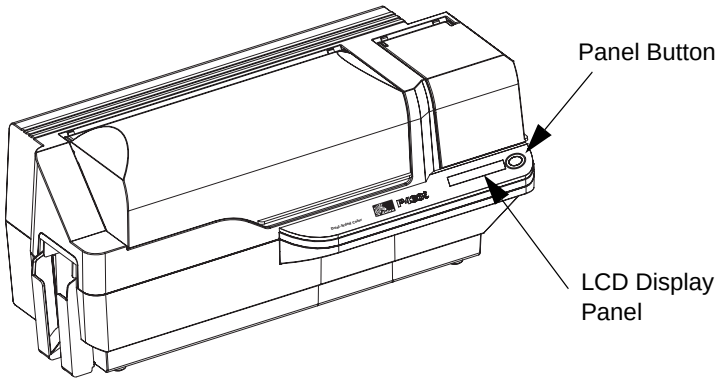
Printer Features

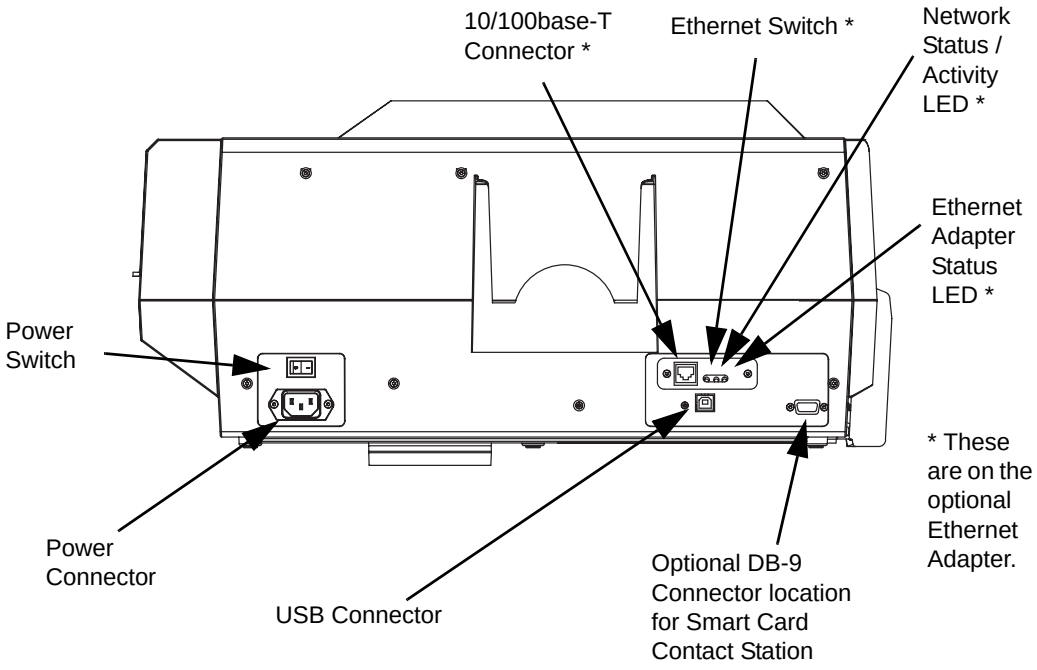
The following shows the main functional features found on your P430*i* Printer.



Controls, Connectors, and Indicators

Your P430*i* Printer has an LCD Display Panel and a Panel Button on the front and a power connector, power switch, and interface connector(s) on the rear panel.





LCD Panel

The LCD Panel can display the following messages:

Message	Mode
Operational	
Initializing	Scrolling
SELF TEST	Scrolling
READY	Fixed
DOWNLOADING DATA	Fixed
PRINTING MONO	Fixed
MAG ENCODING	Fixed
CONTACT ENCODING	Fixed
CONTACTLESS ENCODING	Scrolling
PRINTING CYAN	Fixed
PRINTING YELLOW	Fixed
PRINTING MAGENTA	Fixed
PRINTING BLACK	Fixed
PRINTING OVERLAY	Fixed
DOWNLOADING FW	Fixed
Warnings (Printer will still Operate)	
CLEAN PRINTER	Scrolling
ENCODING ERROR (printing stops)	Blinking
CONTACT ERROR	Blinking
CONTACTLESS ERROR	Scrolling
INVALID MAGNETIC DATA (encoding stops)	Scrolling
INVALID CONTACT DATA (encoding stops)	Scrolling
INVALID CONTACTLESS DATA (encoding stops)	Scrolling
EMPTY FEEDER & PRESS BUTTON	Scrolling
Cleaning	
CLEANING PRINTER	Blinking
REMOVE RIBBON THEN CLOSE HEAD	Scrolling
EMPTY FEEDER & PRESS BUTTON	Scrolling
LOAD CLEANING CARD INTO FEEDER	Scrolling
PRESS BUTTON TO CONTINUE	Scrolling
FEED LONG CLEANING CARD IN EXIT	Scrolling

Message	Mode
CLEANING PRINTER	Blinking
Errors (Printer will not operate)	
BROKEN RIBBON	Blinking
OUT OF RIBBON	Blinking
MECHANICAL ERROR	Blinking
OUT OF CARDS	Blinking
PRINT HEAD OPEN	Blinking
CHECK RIBBON	Blinking
REJECT BOX FULL	Blinking
LID OPEN	Fixed
COMMAND ERROR	Blinking

2

Installation and Setup

General Information

This section will guide you through the installation and setup of your P430*i* Card Printer. This consists of the following procedures, which should be performed in the order presented.

- Unpacking the Printer
- Installing the Print Driver Software and Setting Driver Options
- Loading a Ribbon
- Installing the Card Cleaning Cartridge
- Setting the Card Thickness Control
- Loading Cards
- Connecting the Printer to your Computer
- Connecting Power
- Printing a Test Card to verify printer operation

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

The printer should be placed in a location that allows easy access to all sides. The printer should never be operated while resting on its side or upside down.

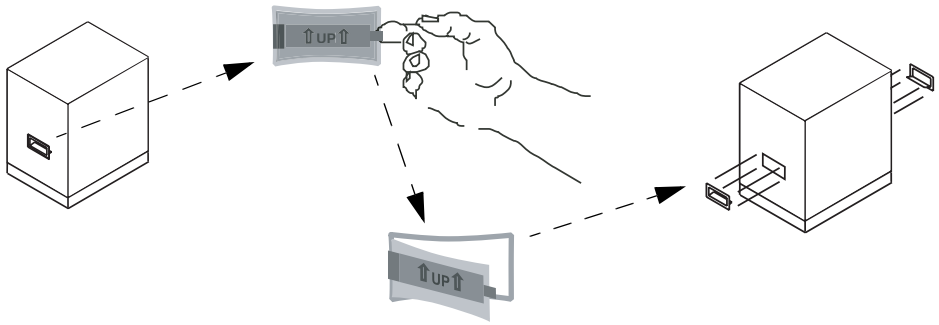
Electric Shock Caution • Limit AC power supplied to the P430*i* Printer to 100 – 230 volts, 60 ~ 50 Hertz. Limit excess current draw to 16 amps or less, using an associated circuit breaker or other such device. Never operate the printer in a location where operator, computer, or printer can get wet. Personal injury could result. The printer must be connected to an earthed electrical power source and properly protected against electrical surges and grounding faults; the electrical reliability of the printer is based on the reliability of the mains power source and with the earth connection.

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

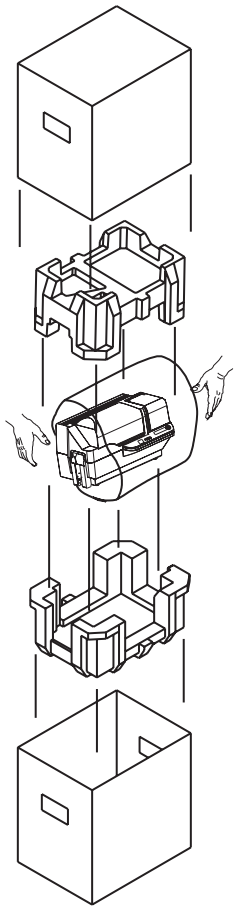
Unpacking the Printer

Your P430*i* Card 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.

1. Inspect the shipping container to ensure that no damage has occurred during shipment. If any damage is apparent, file a claim with the shipper.
2. Unlatch and remove the handles on either end of the shipping container, as shown in the figure below.

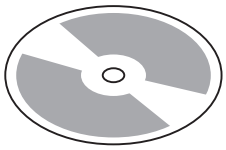


3. (See the figure on the next page as you perform the following steps.) Lift the upper part of the shipping container off of the lower part (which will still hold the printer and its packing material).
4. Remove the packing material around the top of the printer.

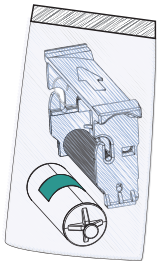


5. Lift the printer out of the carton by holding it with both hands.
6. Please ensure that you have a clean and nearly dust free environment for proper operation and storage of the printer.
7. Make sure the following items are included with your P430*i* printer:

CD-ROM with Driver Wizard and User's Manual

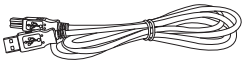


Card Cleaning Cartridge

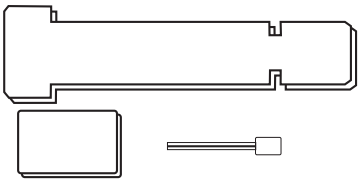


Power Cables (2)

USB Cable

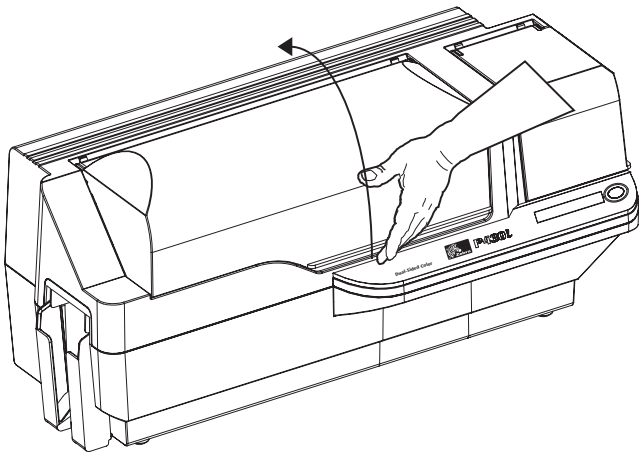


Cleaning Kit

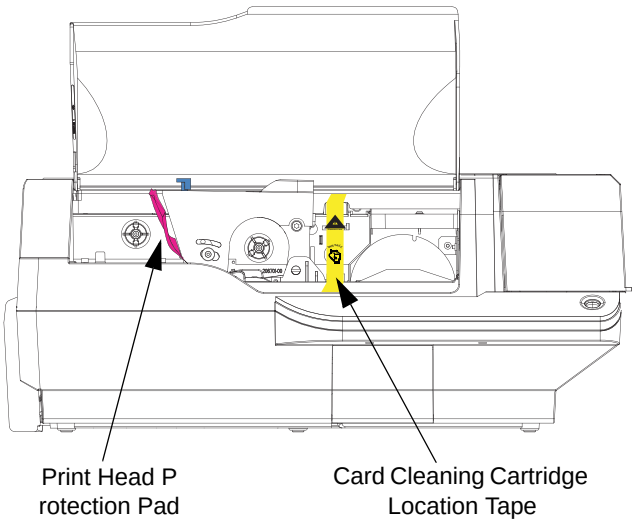


If any items are missing, please contact your dealer. To reorder, please refer to Appendix D of this manual.

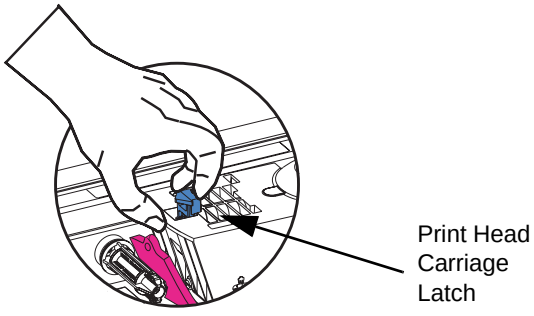
8. Remove packing tape securing the printer's Main Cover and Card Feeder Cover.
9. Your P430i Printer ships with warning tape where the Card Cleaning Cartridge will be installed, and a pad that protects the print head from possible damage in shipment. To remove the tape and pad, follow the following steps:
   a. Open the printer's main lid by lifting at its lower front lip.

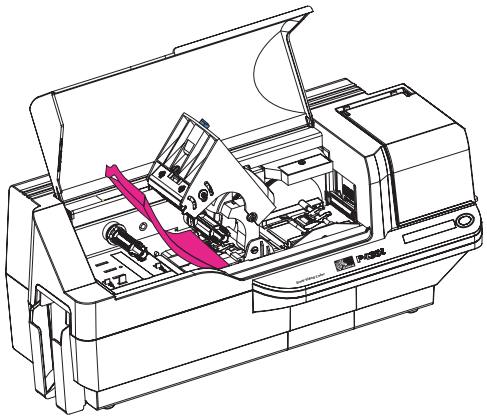


b. Locate the Print Head protection pad and the Card Cleaning Cartridge location tape (see below). Remove the tape.

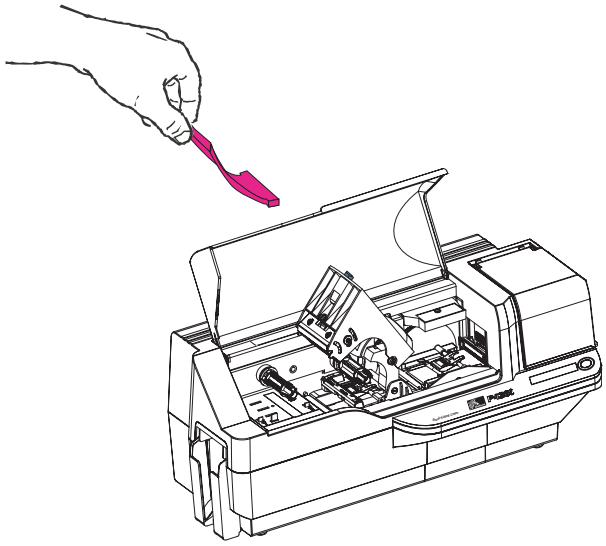


c. Release the Print Head Carriage by pushing the Print Head Carriage Latch to the left, and raise the Print Head Carriage. It will remain open at about a 45° angle.





d. Remove the print head protection pad. Keep the pad, as well as the other packing material and the shipping carton, in case the printer is shipped or moved. If the original material is lost, a replacement Shipping Kit can be ordered from your reseller.



Installing the Print Driver Software and Setting Driver Options

Printing with the P430*i* Printer requires the Windows Printer Driver and your card design/issuing software or printer command level programming through the printer interface.

The P430*i* Card Printer can be used with any Windows 2000 or Windows XP computer, using the drivers provided on CD with the printer.

This section contains information on the printing of a sample card in color (using the 5-panel color ribbon YMCKO and the Windows Printer Driver).

Note • If updating the printer driver from a previous version, before installing the updated printer driver version, always delete the existing version from your computer.

Installing the P430*i* Print Driver

To install the P430*i* Printer Driver automatically on all Operating Systems, use the Zebra Install Wizard.

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

The Install Wizard will walk you through the appropriate installation steps. The Wizard will:

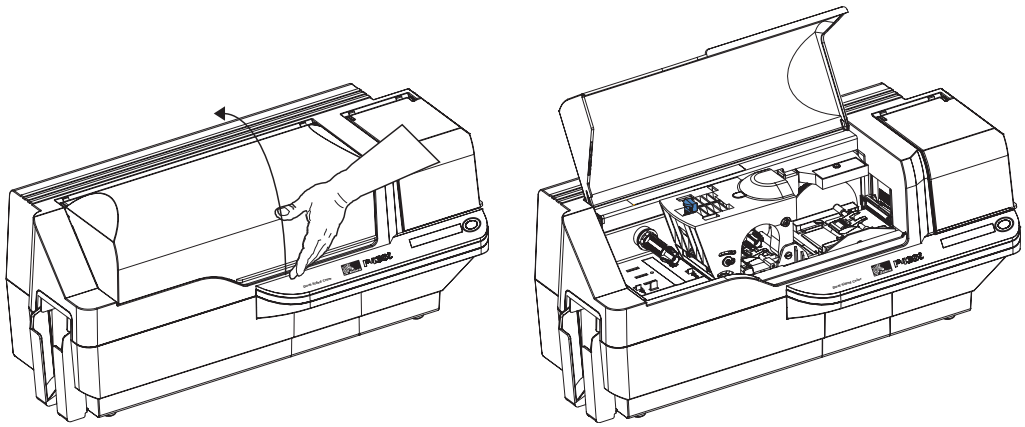
- Automatically launch when the driver CD is inserted.
- From the main menu of your documentation CD, select your desired language and then select “DRIVERS” from the subsequent menu. The Install Wizard will walk you through the appropriate steps.

- Delete previous versions of the driver and clean up any necessary Registry entries. You must select “Remove” from the install options to remove any previous driver versions.

Loading a Ribbon

i Series Printers require the use of *i* Series ribbons for full color printing. The Resin Thermal Transfer and Dye Sublimination ribbons for P430*i* are specifically designed for your P430*i* Printer.

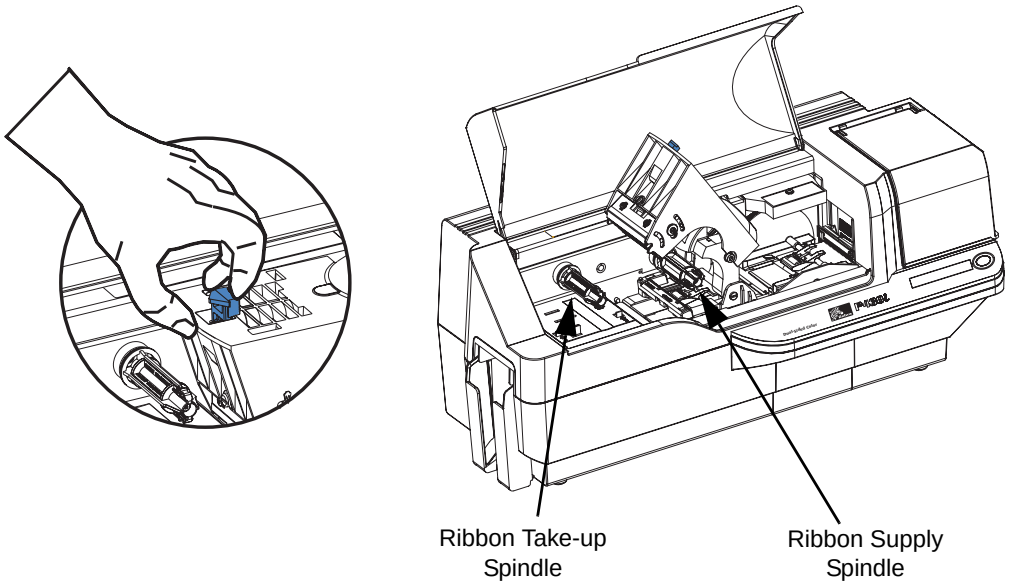
1. Place the printer power switch in the OFF (0) position.
2. If the printer’s Main Lid is closed:
   a. Open the printer’s Main Lid; lift it by the lip at the bottom front as shown in the figure below left.



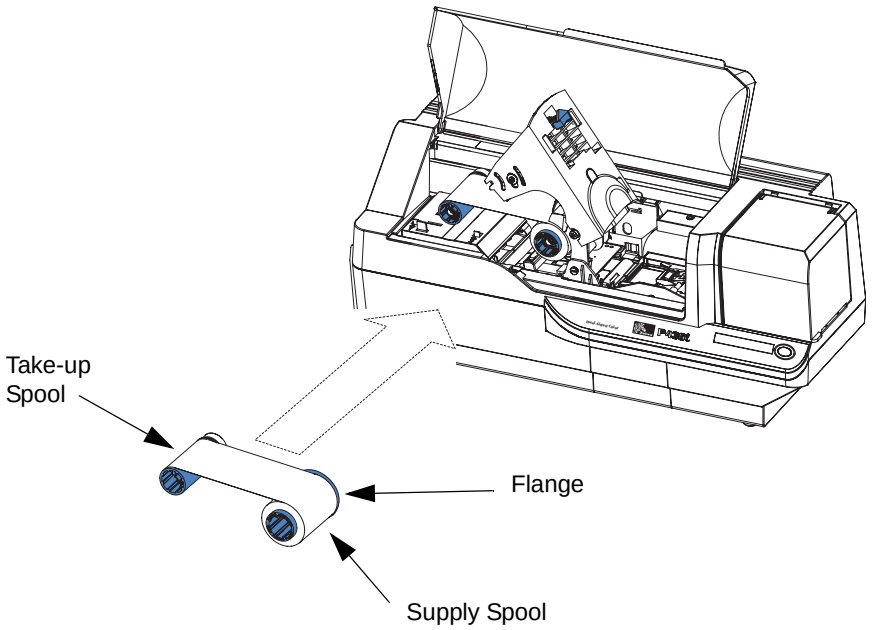
Electrostatic Discharge Caution • **DO NOT TOUCH** the Print Head or the electronic components on the Print Head Carriage. Discharges of electro-static energy that accumulate on the human body or other surfaces can damage the Print Head or other electronic components used in the printer.

Note • Avoid any direct contact with the print head to prevent transfer of oils or contamination. Outside of normal operation, only the Zebra-approved cleaning materials should come in contact with the print head.

   b. Raise the Print Head Carriage by pressing the release latch to the left (toward the output hopper) and lifting as shown below to about a 45° angle. The Print Head Carriage will stay in that position, as shown at the right below.



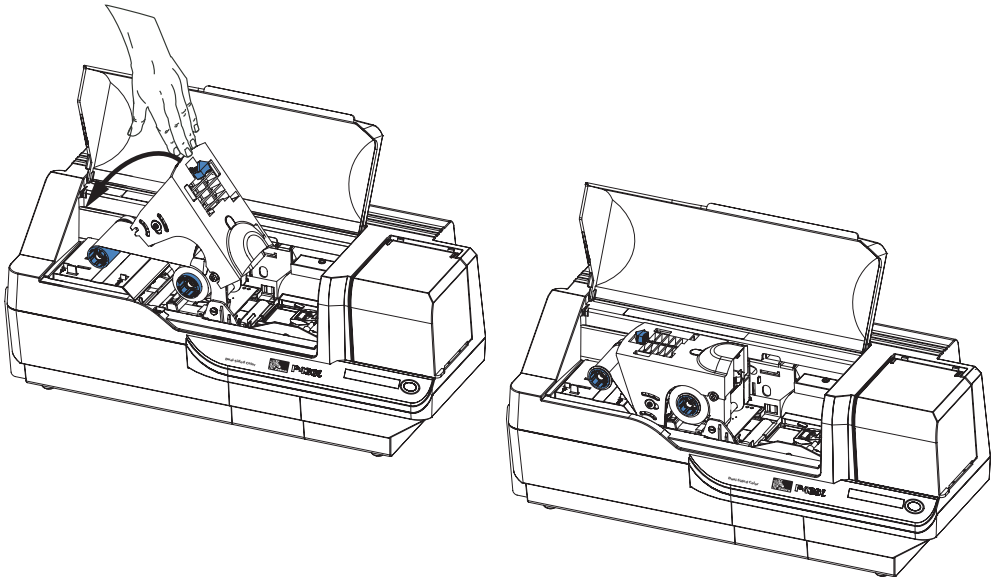
3. Locate the Ribbon Supply Spindle and the Ribbon Take-up Spindle (see above). Load ribbon onto the supply spindle (under the print head carriage) **flange side in**, and load the empty core (with tape attached) onto the take-up spindle. Make sure the ribbon comes off the top of the supply spindle and feeds to the top of the take-up spindle.



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

Electrostatic Discharge Caution • A static discharge is possible if you touch any exposed metal parts. Use of an anti-static wrist strap or comparable anti-static protection is required.

4. Gently press the print head carriage down until it is fully lowered, as shown below. Very little force is neccessary to perform this step.



Note • During normal operation (with power connected and turned on), the ribbon would automatically synchronize when the Print Head is restored to its fully-down position. The ribbon would be identified and the corresponding parameters sent to the driver.

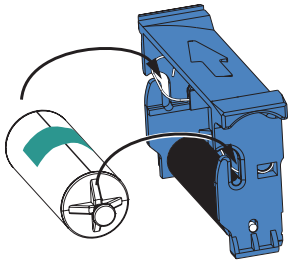
Since power is not connected at this point in the Installation and Setup Procedure, nothing will happen when the Print Head Carriage is closed. The ribbon will synchronize when power is turned on.

Installing the Card Cleaning Cartridge

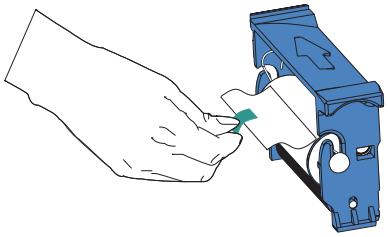
The Card Cleaning Cartridge cleans the cards entering the printer. The Card Cleaning Cartridge consists of a Cartridge Frame and an Adhesive Roller, which are packed together.

1. Remove the Cartridge Frame and the Adhesive Roller from their packaging. Insert the Adhesive Roller into the Cartridge Frame, as shown below. To avoid contamination, always hold the frame and the roller by the ends.

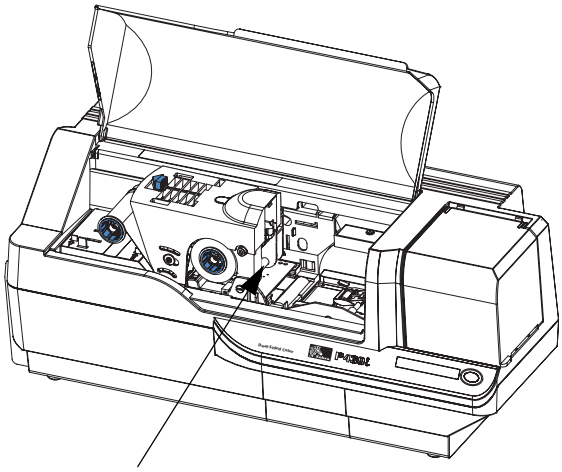
.



2. Peel the protective wrapper from the Adhesive Roller.

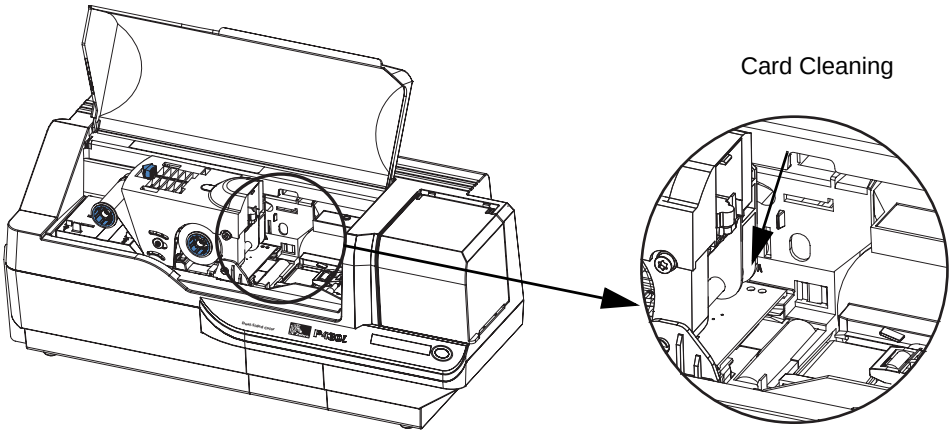


3. If the printer's Main Lid is closed, open it. Locate the area where the Card Cleaning Cartridge will be installed (initially, this area was covered by a warning tape).

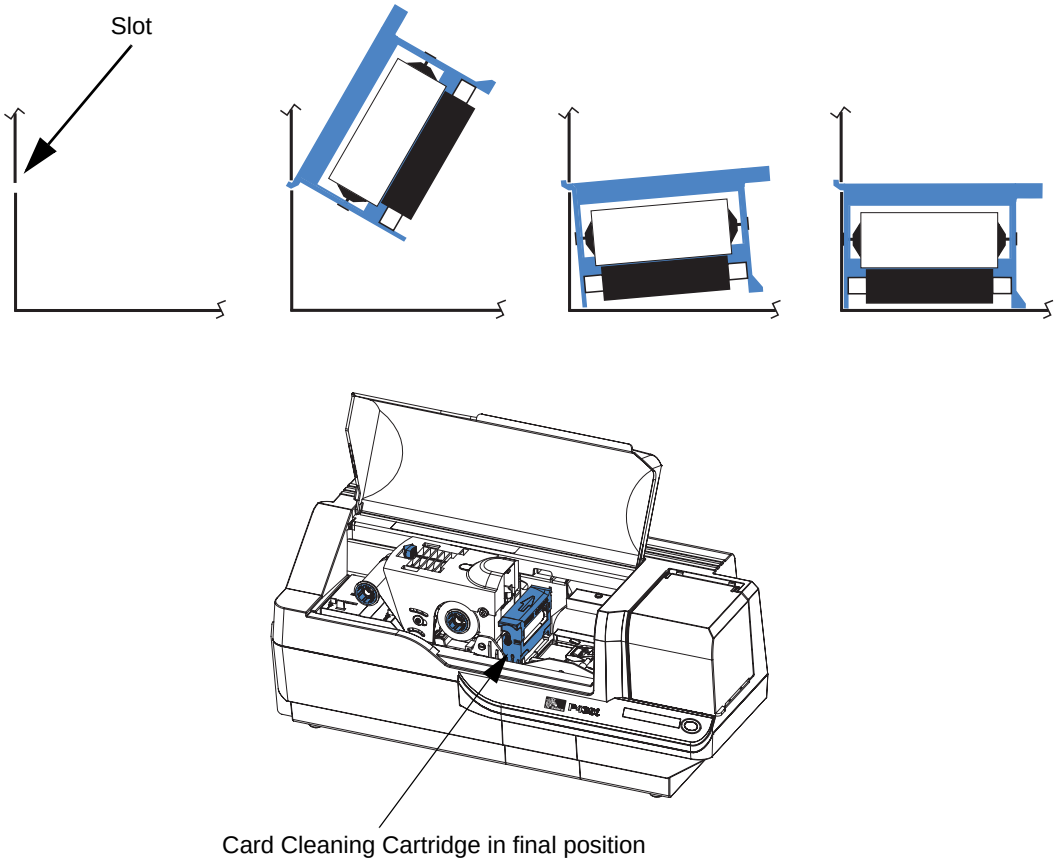


Card Cleaning Cartridge Mounting Location

4. Locate the slot at the rear of the Card Cleaning Cartridge mounting location; see below.



5. Hold the Card Cleaning Cartridge by the extended “handle” (so the large arrow on the top is pointing away from you). With the cartridge at about a 30° angle (pointing downward), insert the lip of the cartridge into the slot, until the cartridge seats against the back wall. Then press the front of the cartridge down until it seats all the way down and latches with an audible “click”. See below.



6. Close the printer’s Main Lid.

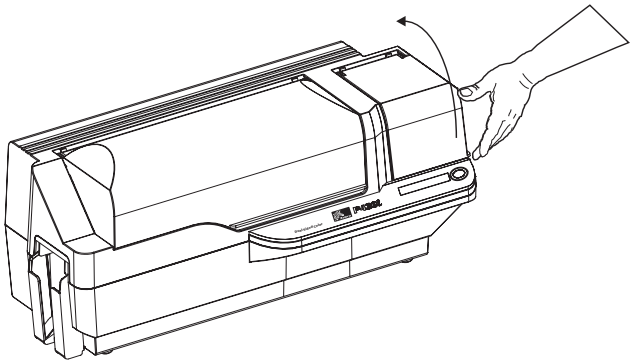
Setting the Card Thickness Control

The Card Thickness Control is set by the user to adjust the gap as cards enter the printer, to prevent double-feeds (which could cause a jam) or mis-feeds.

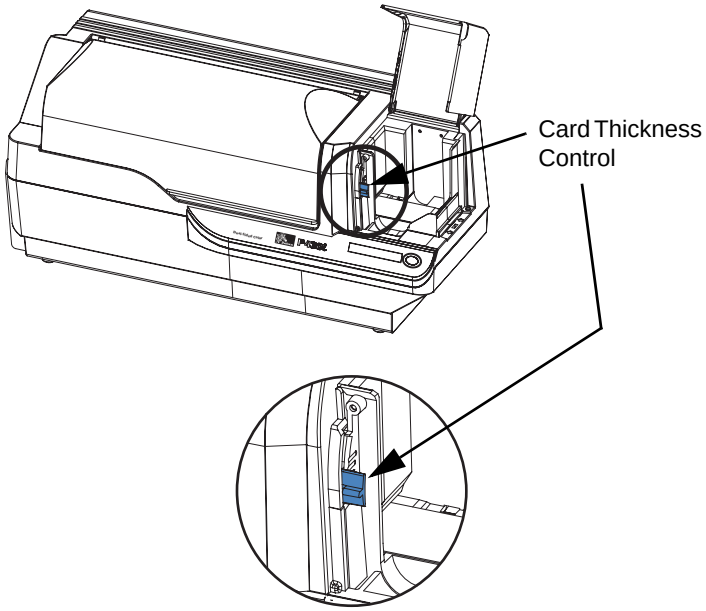
Note • Set the Card Thickness Control before loading cards.

1. Open the Card Feeder cover. The cover is hinged; lift it by the lip at the right front corner.

Note • To reduce contamination and ensure better print quality, minimize the time the Card Feeder cover is open.



2. The Card Thickness Control Lever is at the front of the left-side opening of the Card Feeder area.



3. There are four detents to set the position of the Card Thickness Control. Slide the Card Thickness Control to the position corresponding to the following:

Detent Position	Card Thickness
Highest	50 mil (1.27 mm) to 60 mil (1.52 mm)
3rd position	30 mil (0.76 mm) to 50 mil (1.27 mm)
2nd position	20 mil (0.51 mm) to 40 mil (1.02 mm)
Lowest	10 mil (0.25 mm) to 20 mil (0.51 mm)

Note • The overlap in settings above accomodates variations in environmental conditions (especially humidity) and cards from different manufacturers. In general, start at the lowest position and move the lever up until cards feed reliably.

Note • “60 mil” (“1.524 mm”) cards may have a significant variation (over 10%) in the actual thickness of the cards; do not use these cards unless each card has been measured to have a thickness less than 66 mil (1.676 mm).

Loading Cards

This section shows how to load plastic cards into the P430*i* Printer. The P430*i* can use cards with a range of thickness from 10 mil (0.25 mm) to 60 mil (1.5 mm).

Note • Do not mix cards of different thicknesses!

The P430*i* Printer can also load and print cards fed individually. Information on this is given in the next chapter.

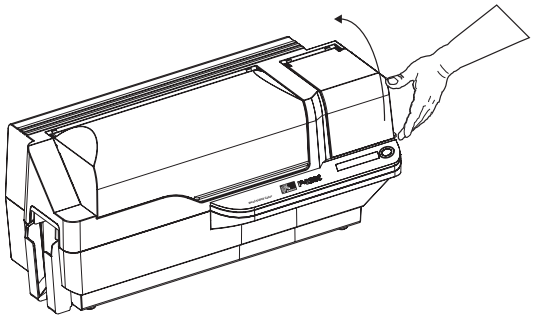
Note • DO NOT bend cards or touch print surfaces as this can reduce print quality. The surface of the cards must remain clean and dust free. Always store cards in an enclosed container. Ideally, use cards as soon as possible.

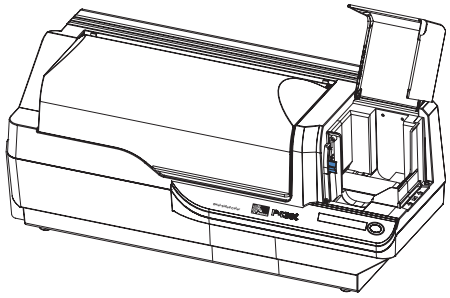
Note • For cards with magnetic stripe, refer to Appendix A for loading instructions.

The plastic cards generally come in decks of 100 cards; the Card Feeder can hold a full deck of 100 30-mil cards. Cards sometimes will stick together; this can cause mis-feeding or double-feeding. To avoid this, separate the cards before loading, as described in steps 2 through 4 below.

1. If the Card Feeder cover is closed, open it. The cover is hinged; lift it by the lip at the right front corner.

Note • To reduce contamination and ensure better print quality, minimize the time the Card Feeder cover is open.





Caution • Do not touch print surfaces of the cards; this can reduce print quality