Zebra® P120*i*™

Card Printer

User's Manual

Card Printer Solutions

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Foreword

This manual contains installation and operation information for the Zebra P120*i* card printers manufactured by Zebra Technologies Corporation.

Copyright Notice

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Warranty Information

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.

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 by the user.

Printheads

Since printhead wear is part of normal operation, the original printhead is covered for a twelve (12) month period.

To qualify for this warranty, the printer 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. If the use of other manufacturer’s 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 has caused the defect in the thermal printhead for which a warranty claim is made.

Spare Parts

All parts, maintenance kits, replacement printheads, 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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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

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

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Declarations of Conformity

89/336/EEC modified by 92/31/EEC and **93/68/EEC**	**EMC Directive**	EN 55022 (1998)	RF Emissions control
	EMC Directive	EN 301489-3 V1.4.1	RF Emissions and Immunity for radio equipment
	EMC Directive	**EN55024 (2001)**	Immunity to Electro-Magnetic Disturbances
73/23/EEC modified by 93/68/EEC	Low voltage Directive	**EN 60950-1 (2001)**	Product safety
1999/5/CE	**R&TTE Directive**	EN300330-2 V1.1.1	Radio Frequency Interferences

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

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

FI: "Laite on liitettävä suojamaadoitus koskettimilla varustettuun pistorasiaan"

SE: "Apparaten skall anslutas till jordat uttag"

NO: "Apparatet må tilkoples jordet stikkontakt"

Model P120*i* conforms to the following specification: FCC Part 15, Subpart A, Section 15.107(a) and Section 15.109(a) Class B digital device.

Supplemental Information

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 interference in a residential installation. This equipment generates, uses 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's by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the 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.

The user may find the following booklet, prepared by the Federal Communications Commission, helpful:

How to identify and resolve Radio/TV Interference Problems. This booklet is available from the U.S. Government printing Office, Washington, D.C. 20402, Stock No. 004-000-00345-4. Use of a shielded cable is required to comply within Class B limits of Part 15 of FCC Rules. 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.

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Industry Canada Notice

This device complies with Industry Canada ICS-003 class B requirements.

P120*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 120 *i* - _ _ _ _ _ - _ _ _	Base Printer P120*i* Color Card Printer
_ _ _ _ _ - 0 _ _ _ _ - _ _ _	Smart Card Options None
_ _ _ _ _ - _ 0 _ _ _ - _ _ _ _ _ _ _ _ - _ M _ _ _ - _ _ _	Magnetic Encoder None Yes (select defaults below)
_ _ _ _ _ - _ _ 0 _ _ - _ _ _ _ _ _ _ _ - _ _ 1_ _ _ - _ _ _	Magnetic Encoder Defaults None Stripe Down, HiCo
_ _ _ _ _ - _ _ _ 0 _ - _ _ _	Memory Expansion None
_ _ _ _ _ - _ _ _ _ A - _ _ _	Interface USB Only
_ _ _ _ _ - _ _ _ _ _ - I _ _ _ _ _ _ _ - _ _ _ _ _ - U _ _	Power Cords U. S. and Europe U. K. and Australia
_ _ _ _ _ - _ _ _ _ _ - _ A_	Windows Drivers and User Documentation / Training CD Free Demo Software CD with Windows Drivers and User Documentation / Training included on one CD (Software & Documentation Package) which contains Multi-language documentation - English, Spanish, French, German, Chinese, and Italian
_ _ _ _ _ - _ _ _ _ _ - _ D _	Windows Drivers and User Documentation / Training included on one CD (Software & Documentation Package) which contains Multi-language documentation - English, Spanish, French, German, Chinese, and Italian
_ _ _ _ _ - _ _ _ _ _ - _ _ 0	No Starter Kit
_ _ _ _ _ - _ _ _ _ _ - _ _S	Starter kit (including 200 - 30 mil PVC cards and one YMCKOK ribbon, part number 800015-948
Example	
P120*i*-0M10A-ID0	P120i Printer, Magnetic Stripe Encoder (HiCoDn), Standard Memory, USB Interface, US and Europe Power Cords, Windows Driver and User Documentation
Accessories	
105862-001	P120*i* Card Sense™ single card upgrade kit
105912-912	P120*i* Cleaning Kit, includes 4 print engine cleaning cards and 4 feeder cleaning cards

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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.
	Electric Shock Caution • Warns you of a potential electric shock situation.
	Electrostatic Discharge Caution • Warns you of a situation where electrostatic discharge could cause damage to electronic components.
	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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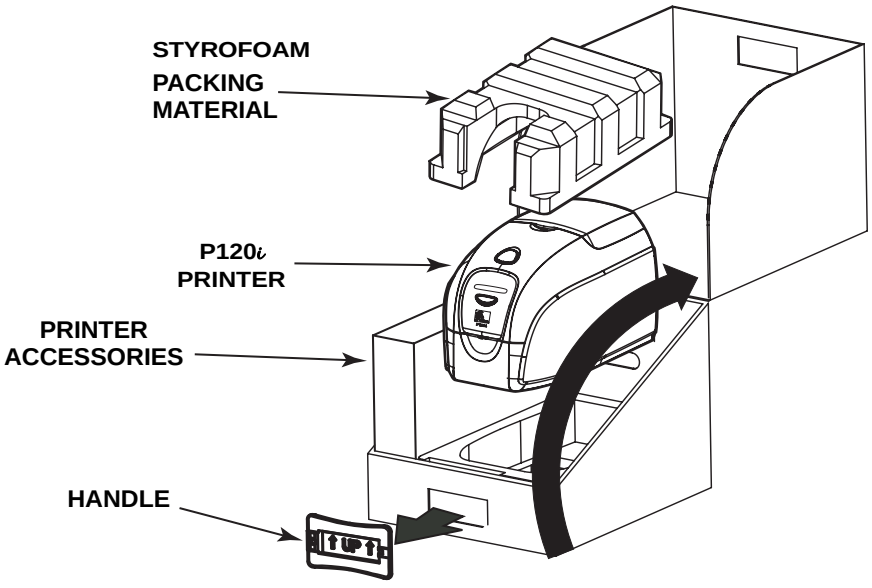
1

Getting Started

Unpacking Your Card Printer

Your P120*i* printer ships in a cardboard carton, protected by styrofoam inserts and a protective anti-static bag. Keep all packaging material in case you need to move or re-ship the printer.

1. Before opening and unpacking the printer, inspect the carton to ensure that no damage occurred during shipment.
2. Ensure that you have a clean and nearly dust free environment for proper operation and storage of the printer.
3. Unlatch and remove the handle, open the printer carton, and remove the styrofoam packing material from the top of the printer.



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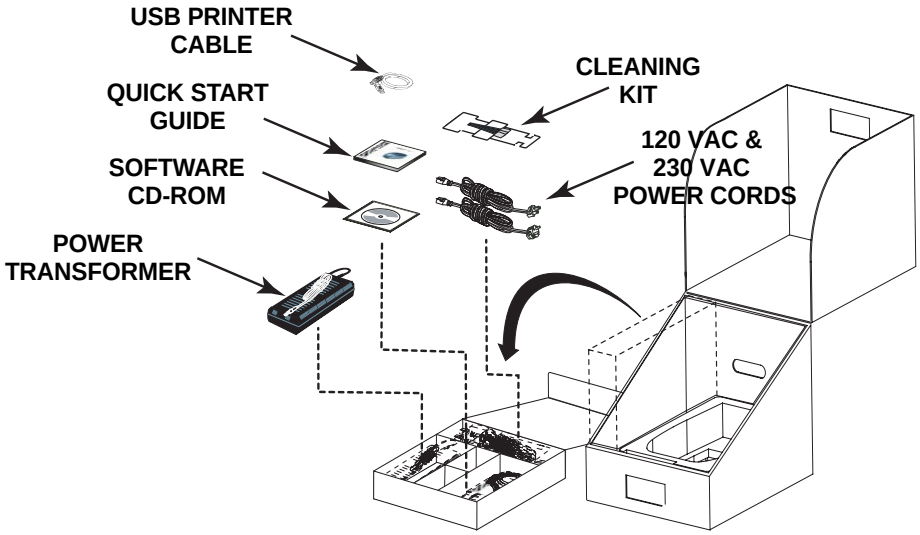
4. Lift the printer out of the carton by holding it on both sides of the bottom and lifting the printer gently from the carton.
5. Remove the box containing the printer accessories from the shipping carton.
6. Make sure the following accessories are included with your P120*i* printer:
   a. Software CD-ROM
   b. Quick Start Guide
   c. Cleaning Kit
   d. 120 vac and 230 vac Power Cords
   e. Power Transformer
   f. USB Printer Cable

If any items are missing, please contact your dealer.



Controls and Indicators

Your P120*i* printer is equipped with a Multi Function LCD Readout Panel to provide printer status information. The readout is controlled by the multi-function control button directly below the viewing window.

Power Switch

The power switch is located at the rear of the printer unit, bottom right.

Power Socket

The power socket is located at the rear of the printer, to the left of the power switch.

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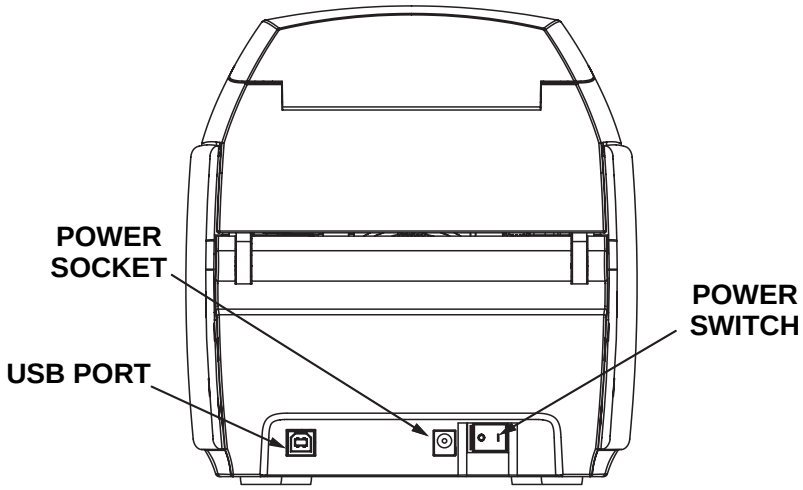
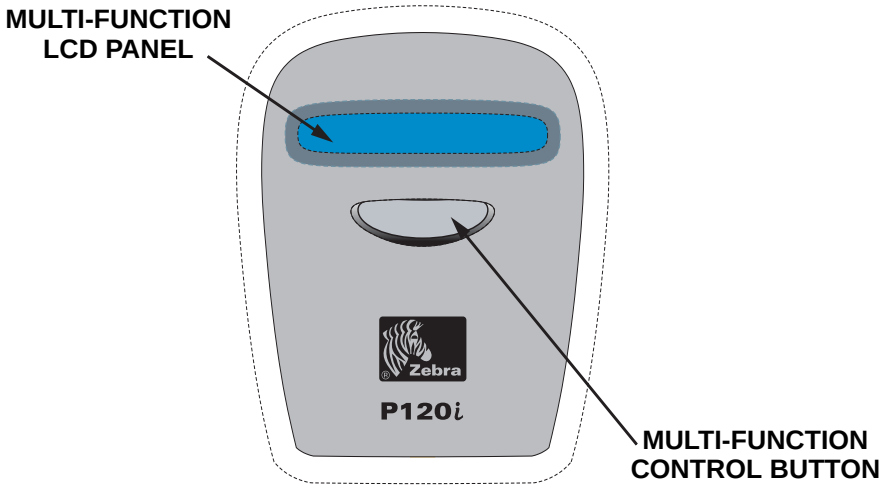


USB Port

The USB port is located at the rear of the printer unit, bottom left.

Multi-Function LCD Panel



The LCD Panel can display the following messages:

Message	Mode
Operational	
INITIALIZING	Scrolling
READY	Fixed
DOWNLOADING DATA	Fixed

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Message	Mode
PRINTING MONO	Fixed
MAG ENCODING	Fixed
PRINTING CYAN	Fixed
PRINTING YELLOW	Fixed
PRINTING MAGENTA	Fixed
PRINTING BLACK	Fixed
PRINTING OVERLAY	Fixed
DOWNLOADING FW	Fixed
CLEANING PRINTER	Fixed
Warnings	
CLEAN PRINTER	Fixed
REMOVE RIBBON THEN CLOSE LID	Scrolling
INSERT FEEDER CLEANING CARD	Scrolling
REMOVE FEEDER CARD	Scrolling
PRESS BUTTON TO CONTINUE	Scrolling
FEED LONG CLEANING CARD IN EXIT	Scrolling
CLEANING PRINTER	Scrolling
INVALID MAGNETIC DATA (encoding stops)	Scrolling
REMOVE RIBBON	Fixed
Errors (Printer will not operate)	
OUT OF RIBBON	Fixed
MECHANICAL ERROR	Fixed
OUT OF CARDS	Blinking
PRINTER OPEN	Blinking

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2 Printer Installation

Installing the P120*i* Printer

Caution • Do not power the printer with USB attached to your computer at this time. The driver will prompt you when it is time to plug in and power up your printer.

To install the P120***i*** Printer on Windows 2000 and Windows XP operating systems, insert the **User Documentation, Drivers, and Training** CD, included with your printer, into your computer and InstallWizard will walk you through the required installation steps. The InstallWizard will:

- Automatically install the User Interface when the driver CD is inserted.
- Start the installation process when the **Install Printer Driver** menu item is selected from the Main Menu.
- Allow you to install Ethernet drivers, if you plan on networking your card printer via an external print server
- Check to see which operating system you are using
- Detect previous versions of the driver and clean up any unnecessary Windows registry entries. You must select “Remove” from the install options to remove any previous driver versions.
- Install the new driver files
- Reboot your computer

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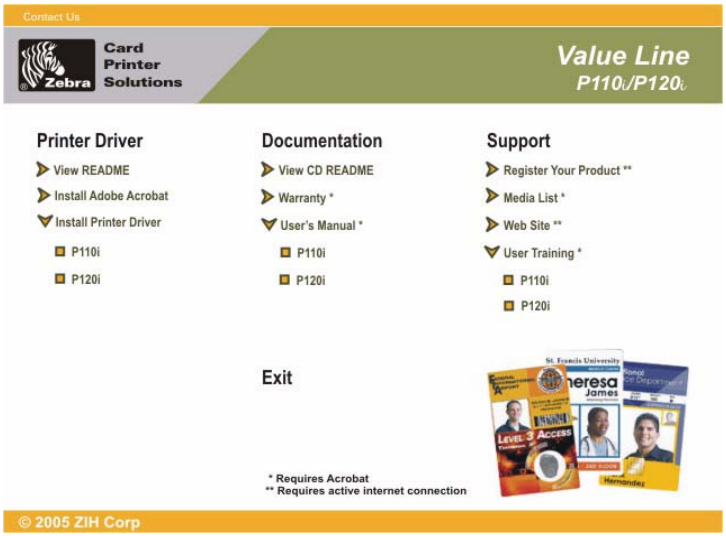
Print Driver Installation

Install the P120i Printer driver as follows:

1. Insert the **P120i User Documentation, Drivers, and Training** CD into the CD drive of the host computer. The **Select Language** window will open.
2. From the **Select Language** window, choose the appropriate language for your system. The Main Menu will open in the selected language.



3. From the **Main Menu**, select **Install Printer Driver**.

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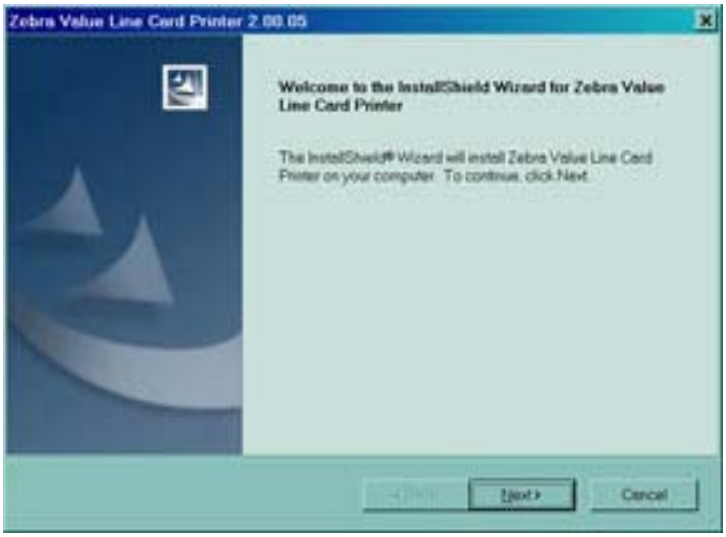
4. The InstallShield Wizard will be installed and a progress window will be displayed. Once the InstalShield Wizard has been installed, the **Welcome to InstallShield Wizard** window will open.



5. On the **Welcome to InstallShield Wizard** window, click the **Next** button. The **Select Features** window will open.

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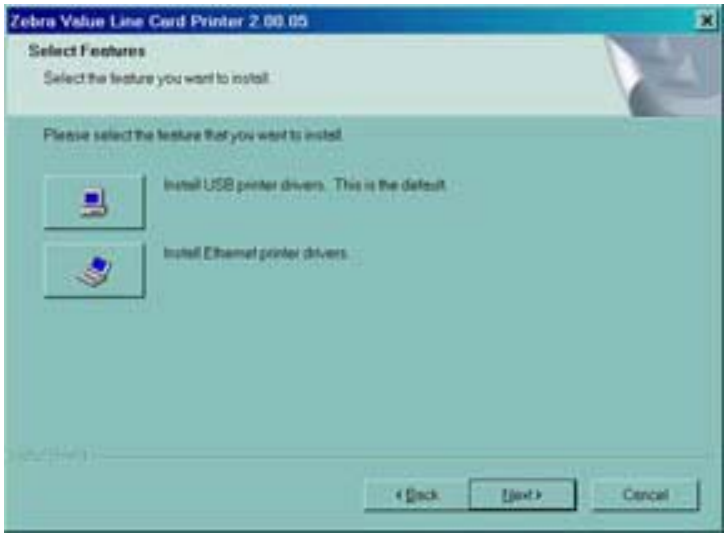
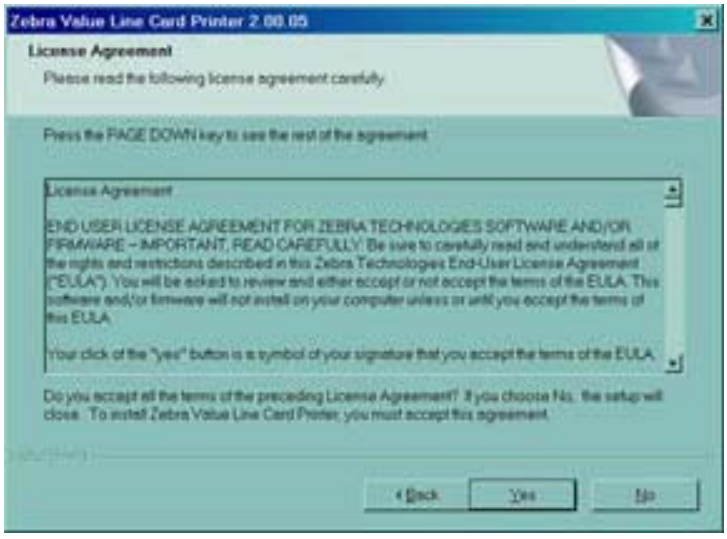


Important • Important • Installation of ethernet printer drivers will also allow the printer to be connected via USB.

6. From the **Select Features** window:

   a. If this printer is to be a stand alone unit, click the **Install USB printer drivers** button. The **License Agreement** window will open. Proceed to **USB Installation**.

   b. To use this printer with an external print server, ethernet printer drivers are required.This procedure will also install the USB printer drivers. Select **Install Ethernet printer drivers**. The **License Agreement** window will open.



7. Accept the License Agreement by clicking the **Yes** button. The **Card Image Rotation** window will open. Proceed to **Ethernet Installation**.

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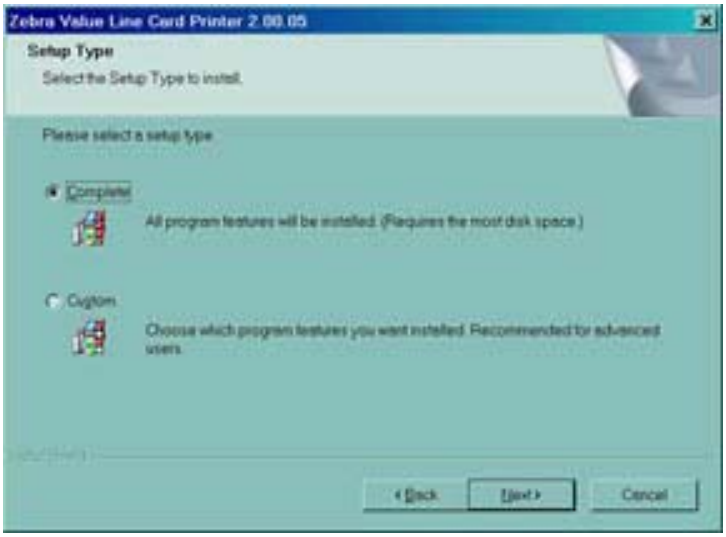
USB Installation

If you reject the License Agreement by clicking the **No** button, the installation process will terminate.

1. Accept the License Agreement by clicking the **Yes** button. The **Select the Setup Type** window will open.



2. From the **Select the Setup Type** window:
   a. If you are willing to accept the default settings for your printer, select the **Complete** installation option, click the **Next>** button. Proceed to **Complete Installation**.
   b. If you want to choose your own particular settings for certain printer functions, select the **Custom** installation option, click the **Next>** button. The **Card Image Rotation** window will open. Proceed to **Custom Installation**.

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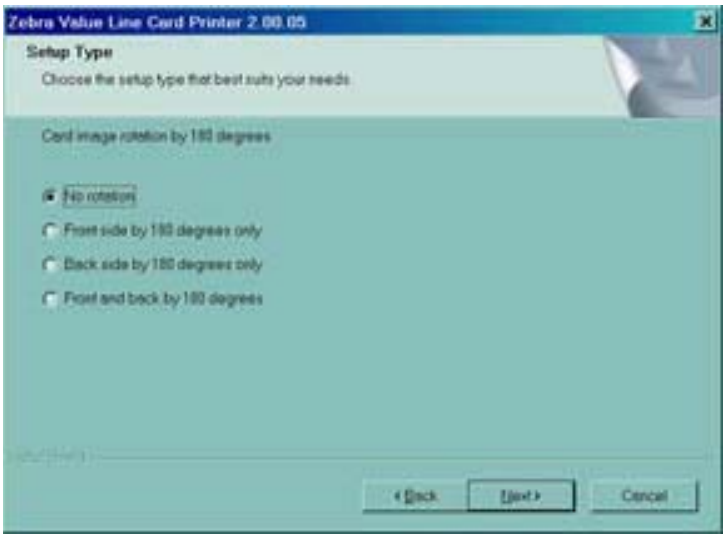
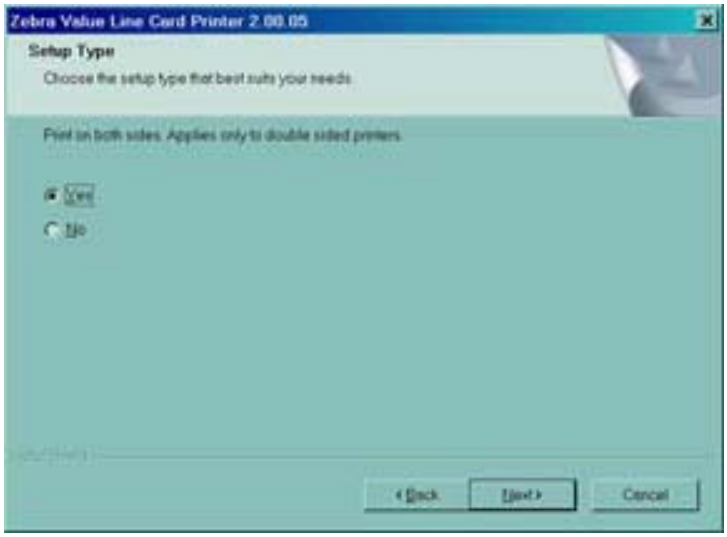
Custom Installation



1. In the **Card Image Rotation** window, select the rotation desired, then click the **Next>** button. The **Print on Both Sides** window will open.



2. In the **Print on Both Sides** window, select Yes or No, and click the **Next>** button. The **Monochrome Conversion** window will open.

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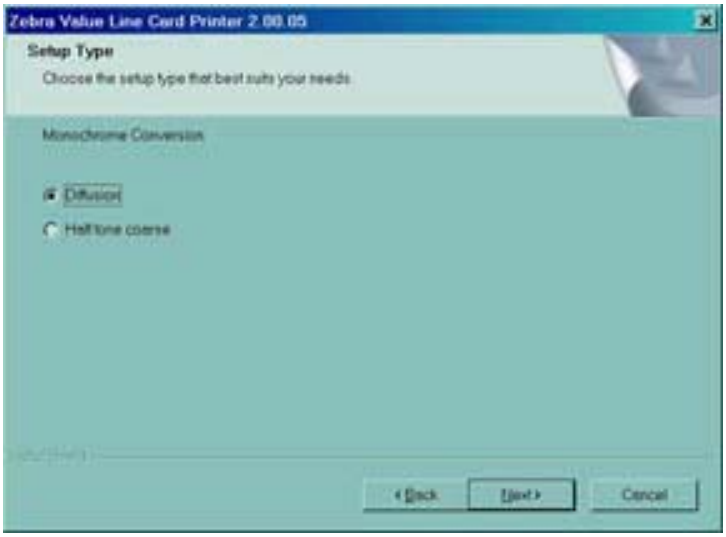
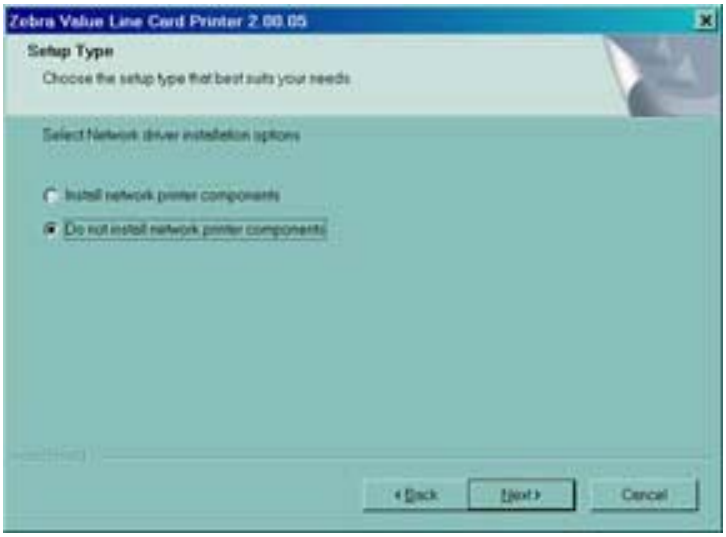


3. In the **Monochrome Conversion** window, choose the conversion type required. Click the **Next>** button. The **Network Printer Components** window will open.



4. From the **Network Printer Components** window
   a. Select the **Install network printer components** option and click the **Next>** button. The **Default network ribbon** window will open.
   b. Select the **Do not install network printer components** option and click the **Next>** button. Proceed to **Encoder Settings**.

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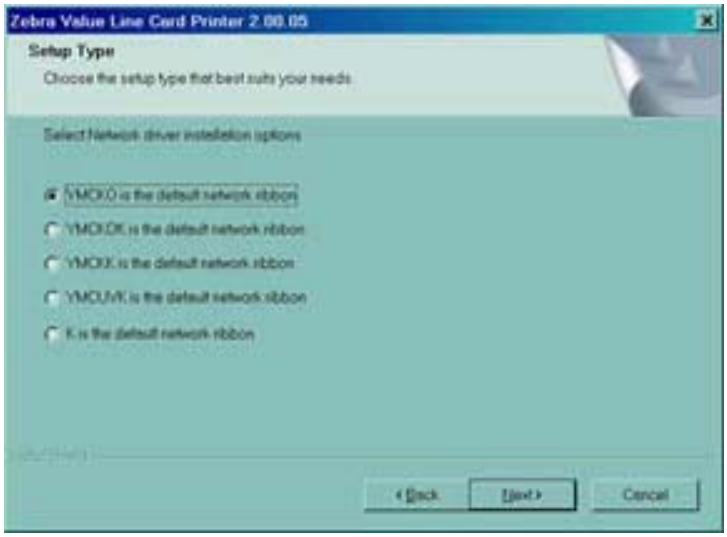
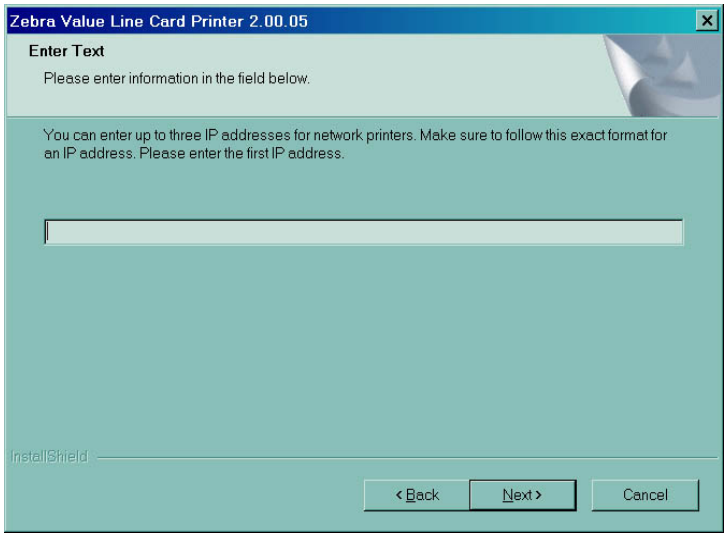


5. In the **Default network ribbon** window, choose the desired default network ribbon, and click the Next> button. The **Enter First IP Address** window will open.



6. Enter the **IP address** of the first printer into the text box and click the **Next** button. The **Enter Second IP Address** window will open.

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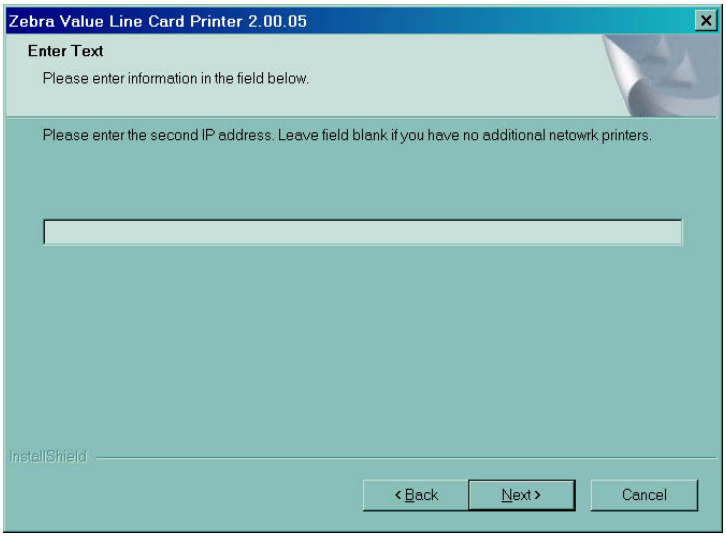
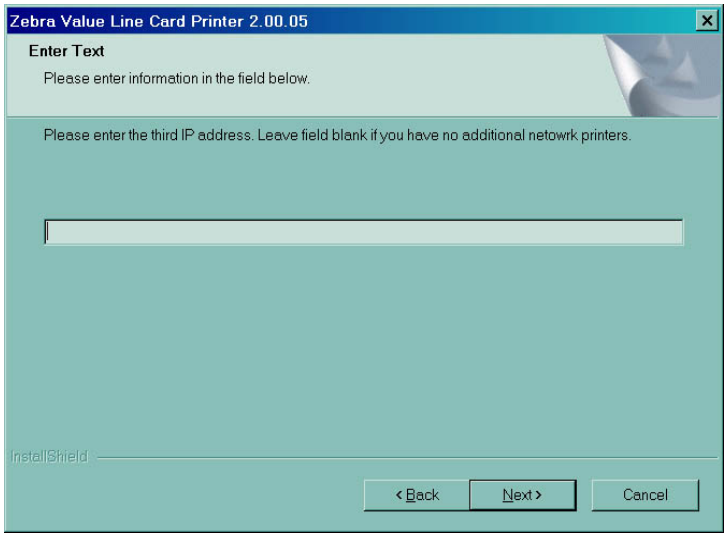


7. If you are installing a second network printer, enter the **IP address** of the second printer into the text box. If you are installing only one network printer, leave text box blank. Click the **Next** button. The **Enter Third IP Address** window will open.



8. If you are installing a third network printer, enter the **IP address** of the third printer into the text box. If you are installing only one or two network printers, leave text box blank. Click the **Next** button. Proceed to **Encoder Settings**.

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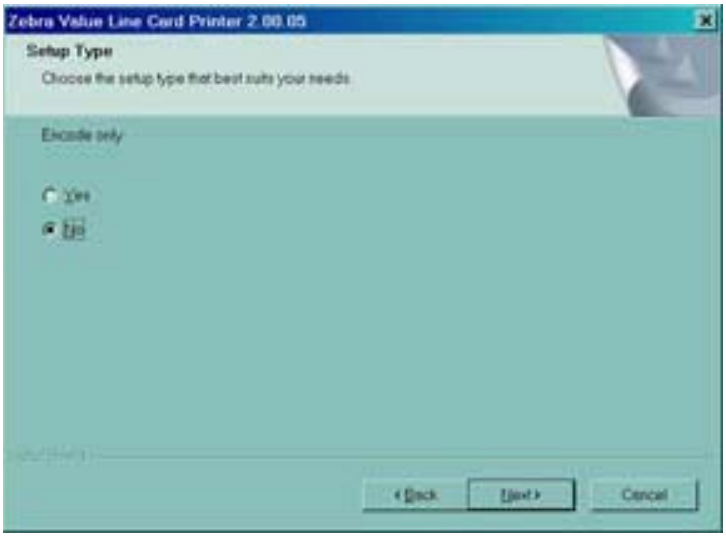
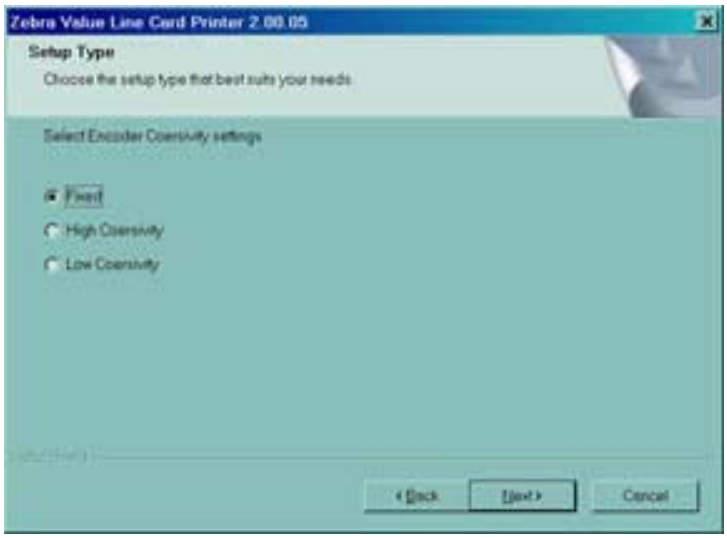
Encoder Settings



1. In the **Encode Only** window, choose **Yes** or **No**. If you choose **Yes**, the printer will be set up to ONLY encode magnetic stripes on cards. No printing of cards will occur. Click the **Next>** button. The **Select Encoder Coercivity** window will open.



2. In the **Select Encoder Coercivity** window, choose coercivity settings that match the type of cards being encoded, then click the Next> button. The **Track 1 Settings** window will open.

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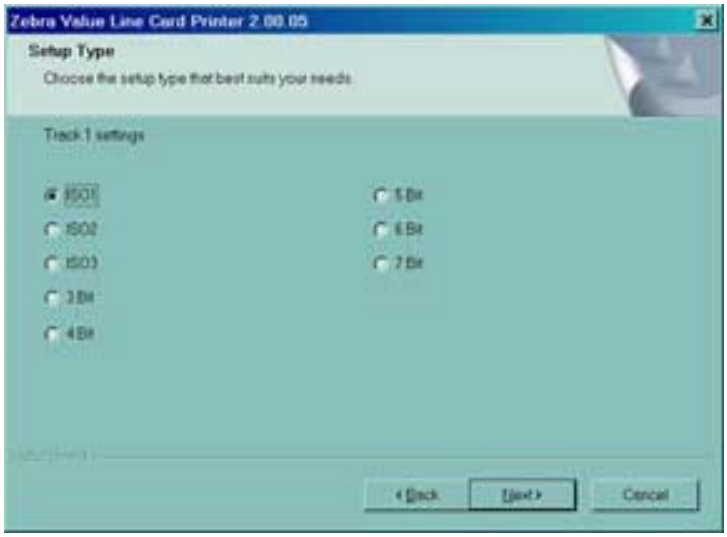
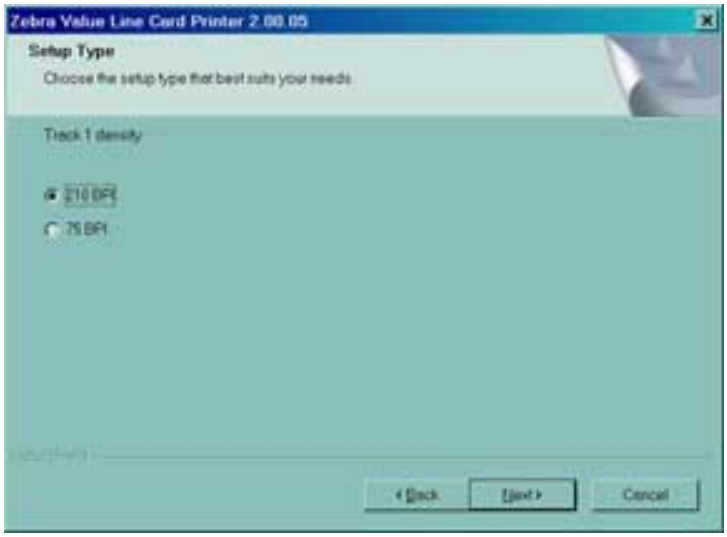


3. In the **Track 1 Settings** window, select the required track settings for Track 1 and click the Next> button. The **Track 1 Density** window will open.



4. In the **Track 1 Density** window, select the density of track 1 and click the Next> button. The **Track 2 Settings** window will open.

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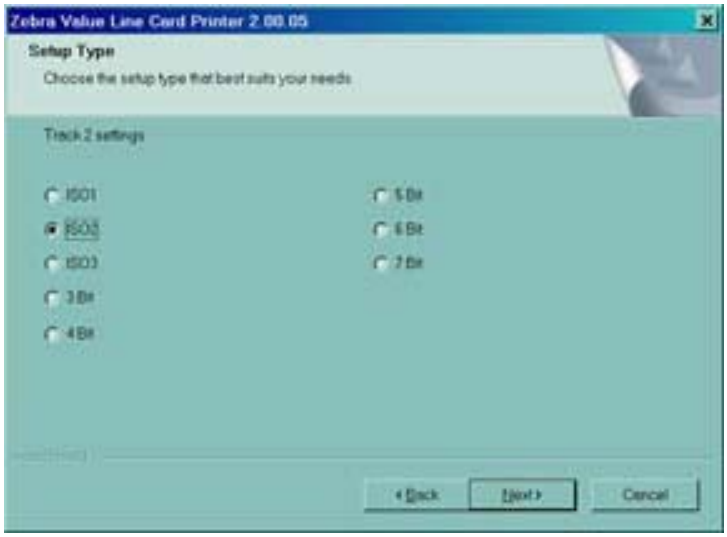
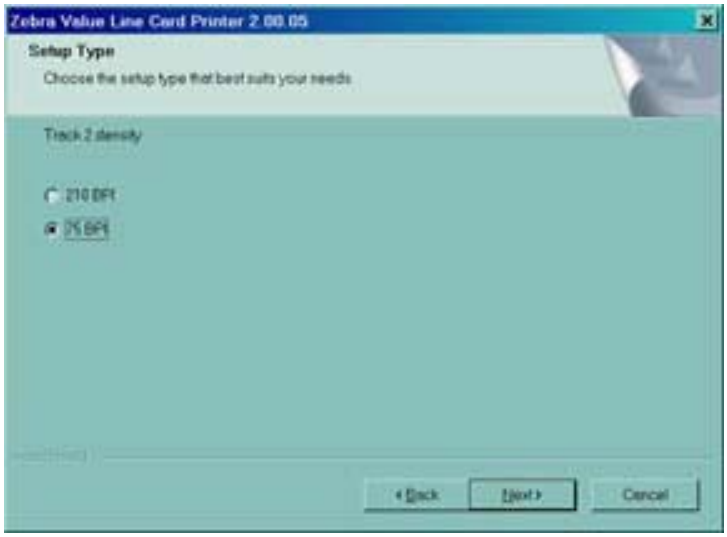


5. In the **Track 2 Settings** window, select the required track settings for Track 2 and click the Next> button. The **Track 2 Density** window will open.



6. In the **Track 2 Density** window, select the density of track 2 and click the Next> button. The **Track 3 Settings** window will open.

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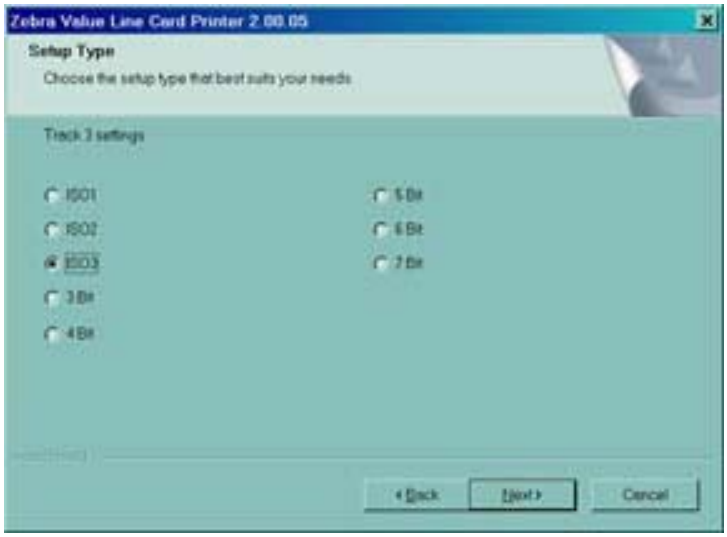
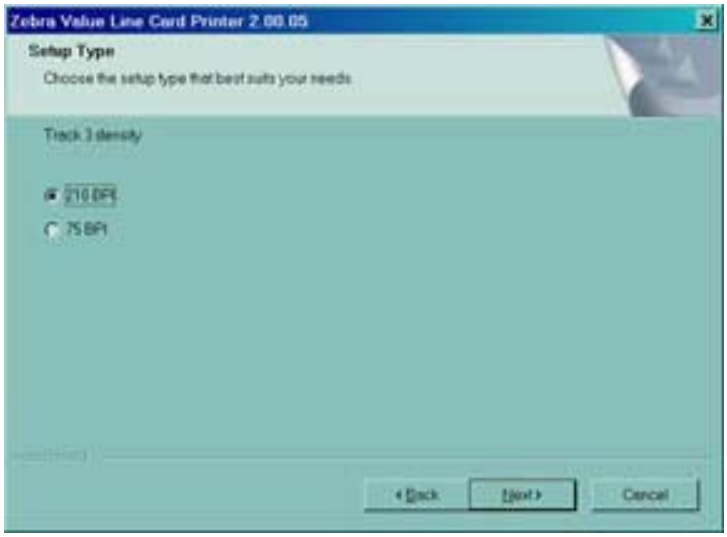


7. In the **Track 3 Settings** window, select the required track settings for Track 3 and click the Next> button. The **Track 3 Density** window will open.



8. In the Track 3 Density window, select the density of the track and click the Next> button.

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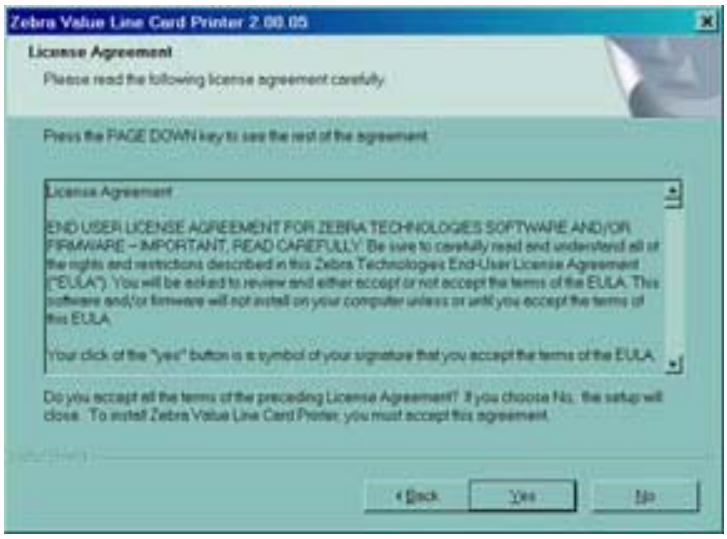
9. You will be asked if you want to apply the custom settings.
   a. If you select **Yes**, the settings you selected in the previous windows will be applied.
   b. If you choose **No**, the default settings will take effect.

   Whether you select **Yes** or **No**, the **Select Program Folder** window will open. Proceed to **Complete Printer Installation**.

Ethernet Installation

Important • If you reject the License Agreement by clicking the No button, the installation process will terminate.



1. Accept the **License Agreement** by clicking the **Yes** button. The **Card Image Rotation** window will open.

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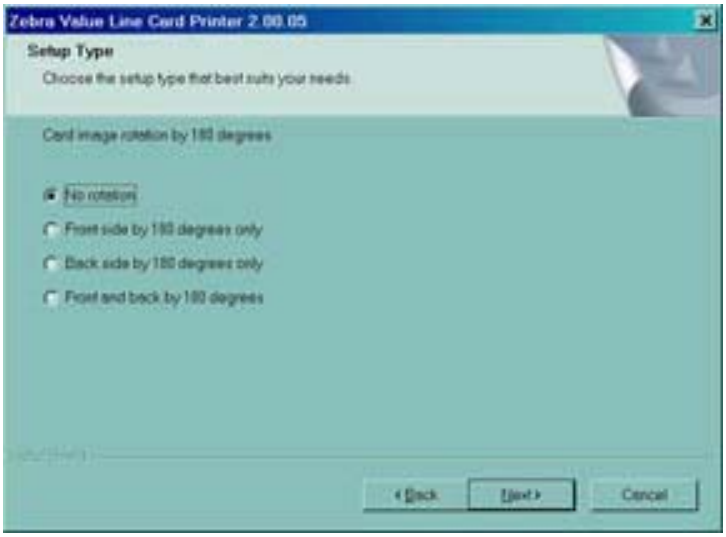
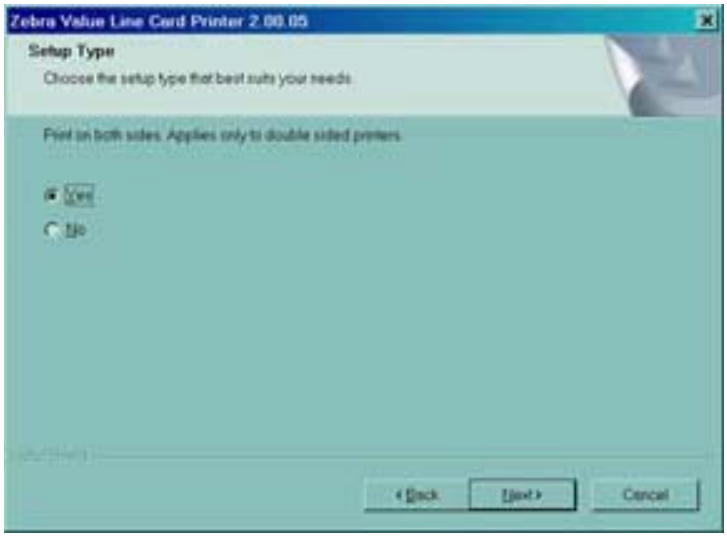


2. In the **Card Image Rotation** window, select the rotation desired, then click the Next> button. The **Print on Both Sides** window will open.



3. In the **Print on Both Sides** window, select Yes or No, and click the Next> button. The **Monochrome Conversion** window will open.

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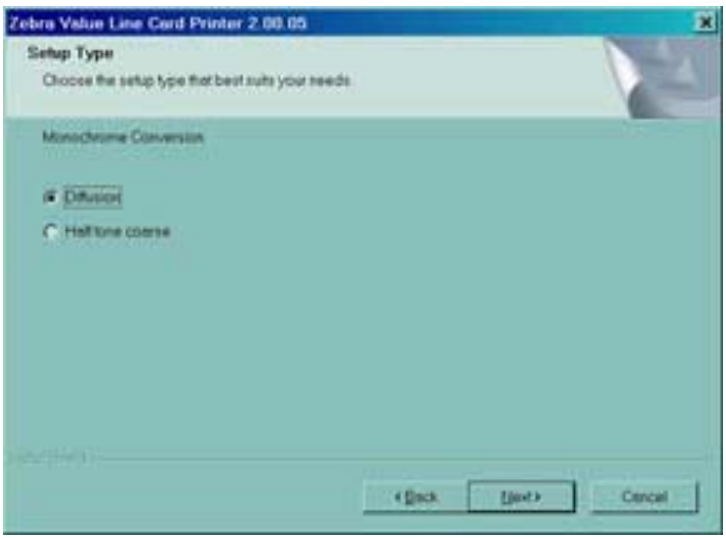
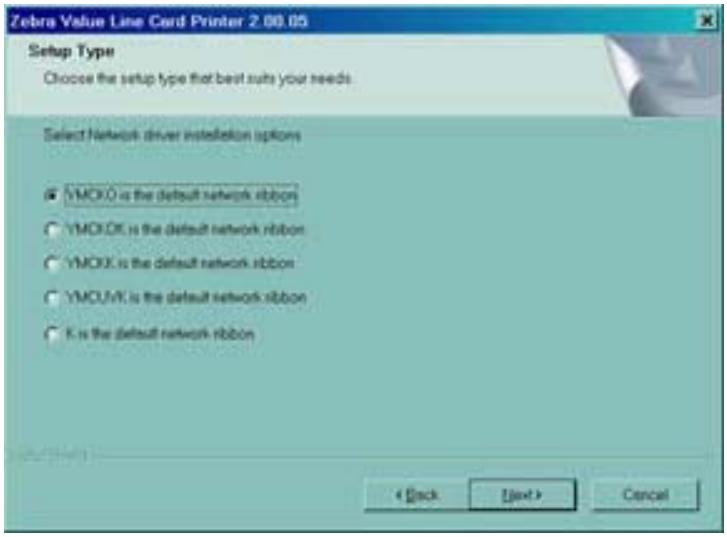


4. In the **Monochrome Conversion** window, choose the conversion type required. Click the **Next>** button. The **Default network ribbon** window will open



5. In the **Default network ribbon** window, choose the desired default network ribbon, and click the Next> button. The **Enter First IP Address** window will open.

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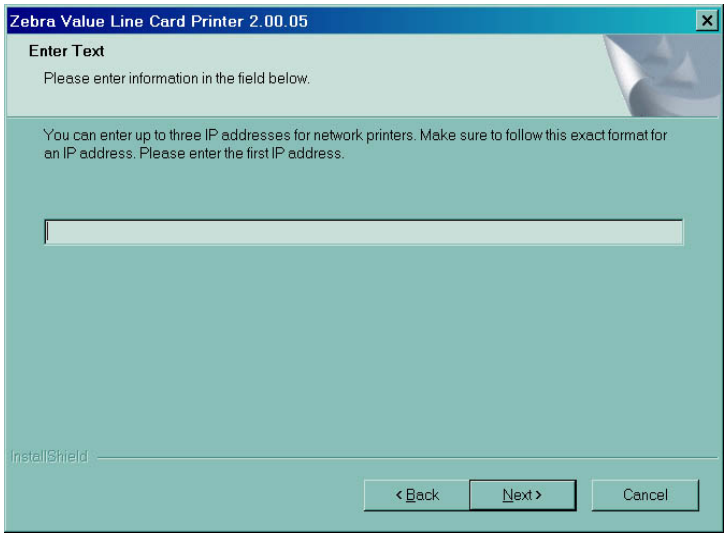
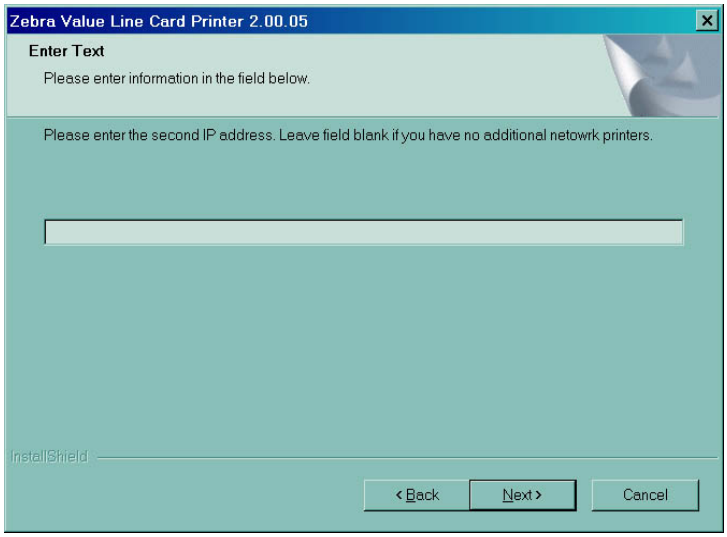


6. Enter the **IP address** of the first printer into the text box and click the **Next** button. The **Enter Second IP Address** window will open.



7. If you are installing a second network printer, enter the **IP address** of the second printer into the text box. If you are installing only one network printer, leave text box blank. Click the **Next** button. The **Enter Third IP Address** window will open.

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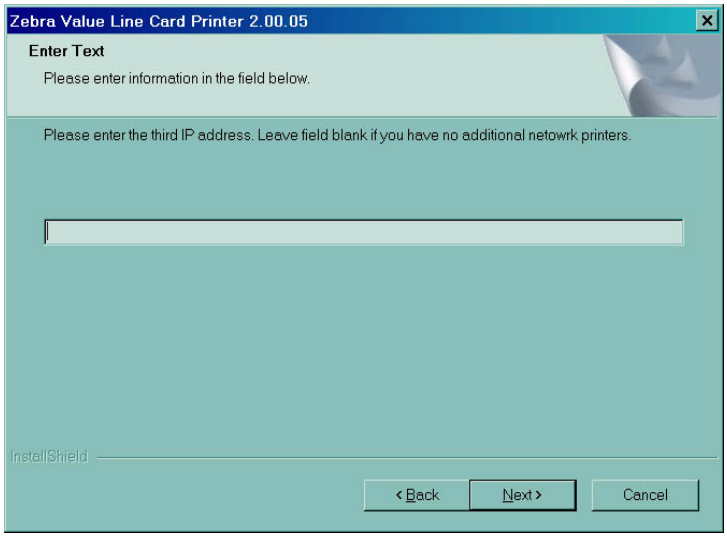
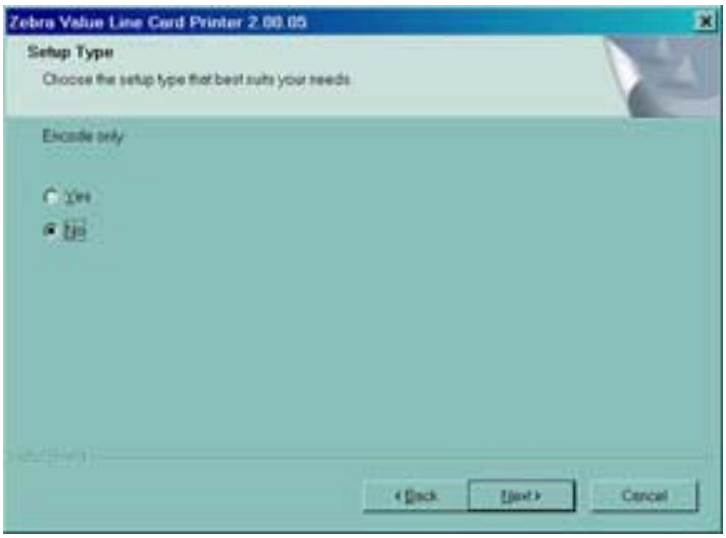


8. If you are installing a third network printer, enter the **IP address** of the third printer into the text box. If you are installing only one or two network printers, leave text box blank. Click the **Next** button. The **Encode Only** window will open..



9. In the **Encode Only** window, choose **Yes** or **No**. If you choose **Yes**, the printer will be set up to ONLY encode magnetic stripes on cards. No printing of cards will occur. Click the **Next>** button. The **Select Encoder Coercivity** window will open.

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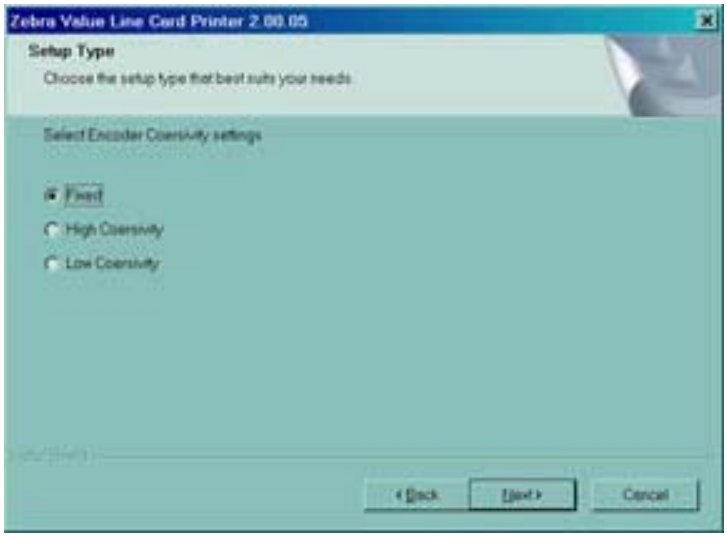
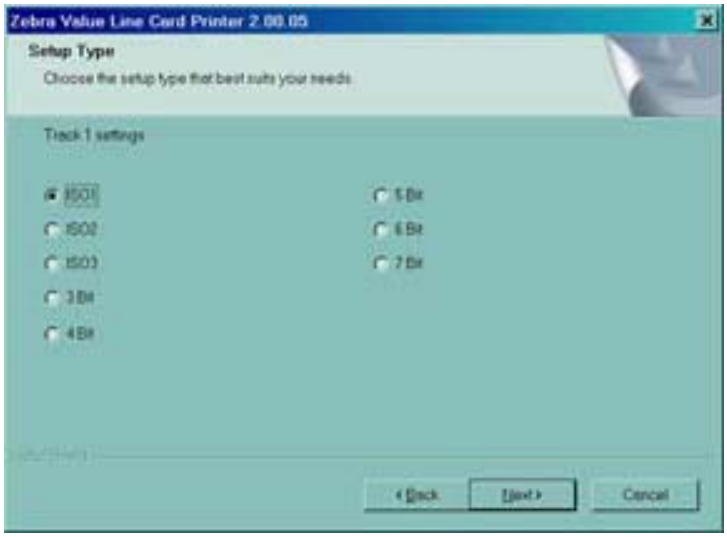


10. In the **Select Encoder Coercivity** window, choose coercivity settings that match the type of cards being encoded, then click the Next> button. The **Track 1 Settings** window will open.



11. In the **Track 1 Settings** window, select the required track settings for Track 1 and click the Next> button. The **Track 1 Density** window will open.

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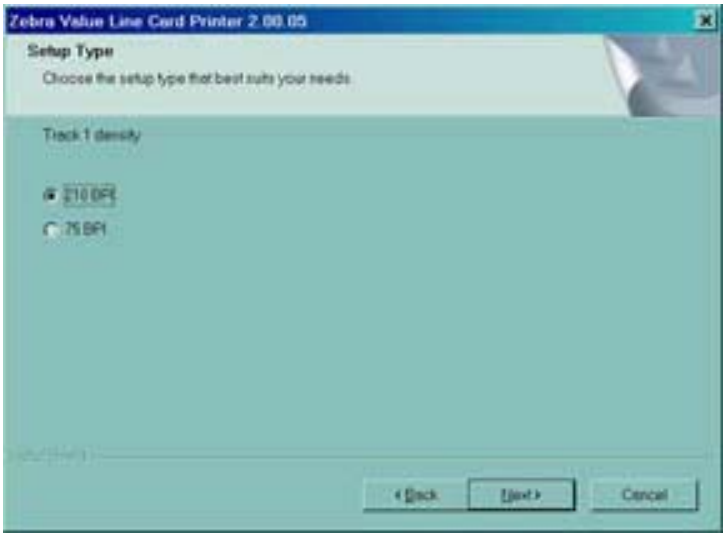
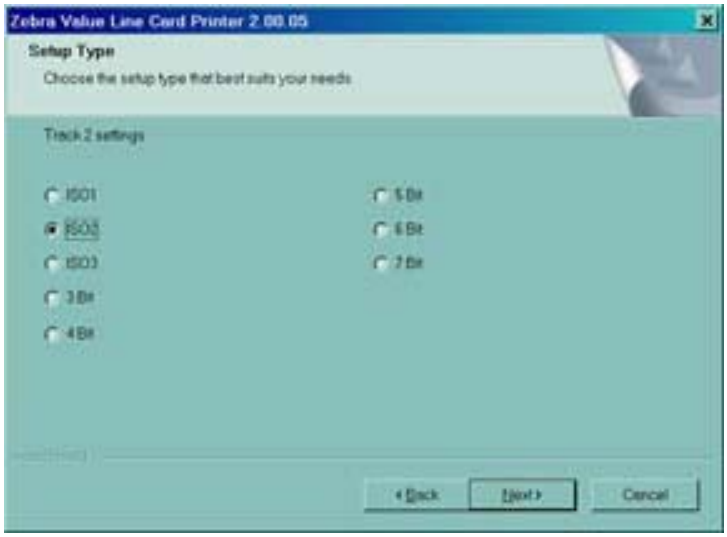


12. In the **Track 1 Density** window, select the density of track 1 and click the Next> button. The **Track 2 Settings** window will open.



13. In the **Track 2 Settings** window, select the required track settings for Track 2 and click the Next> button. The **Track 2 Density** window will open.

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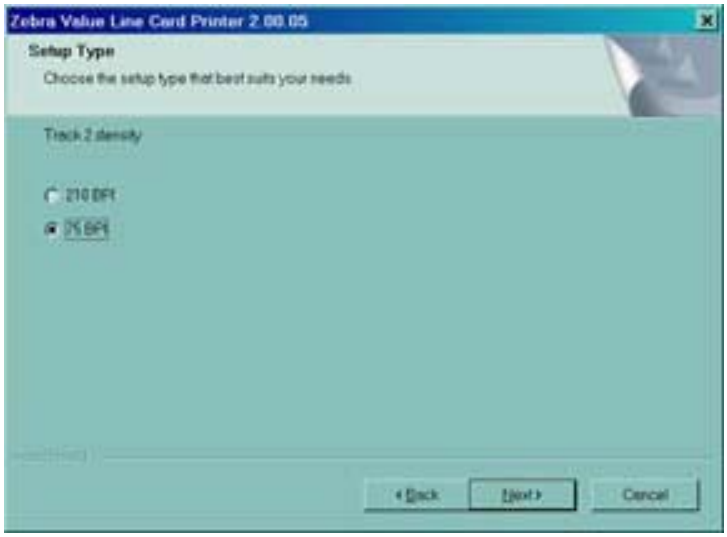
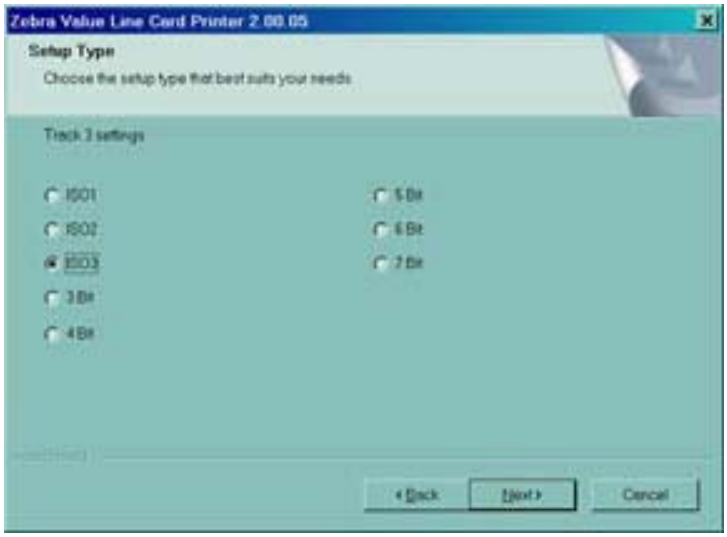


14. In the **Track 2 Density** window, select the density of track 2 and click the Next> button. The **Track 3 Settings** window will open.



15. In the **Track 3 Settings** window, select the required track settings for Track 3 and click the Next> button. The **Track 3 Density** window will open.

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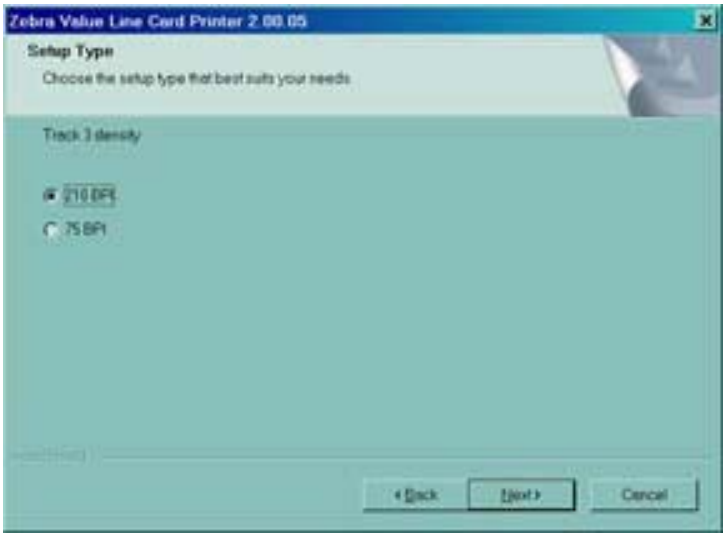

16. In the Track 3 Density window, select the density of the track and click the Next> button.

17. You will be asked if you want to apply the custom settings.
    a. If you select **Yes**, the settings you selected in the previous windows will be applied.
    b. If you choose **No**, the default settings will take effect.

    Whether you select **Yes** or **No**, the **Select Program Folder** window will open. Proceed to **Complete Printer Installation**.

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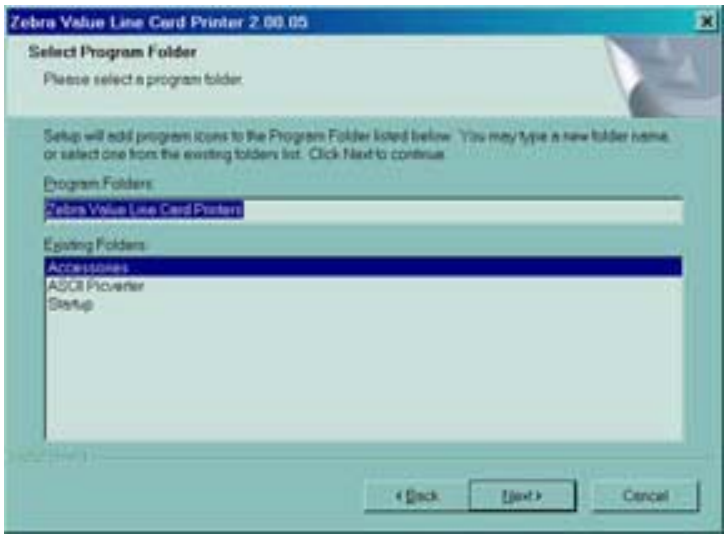
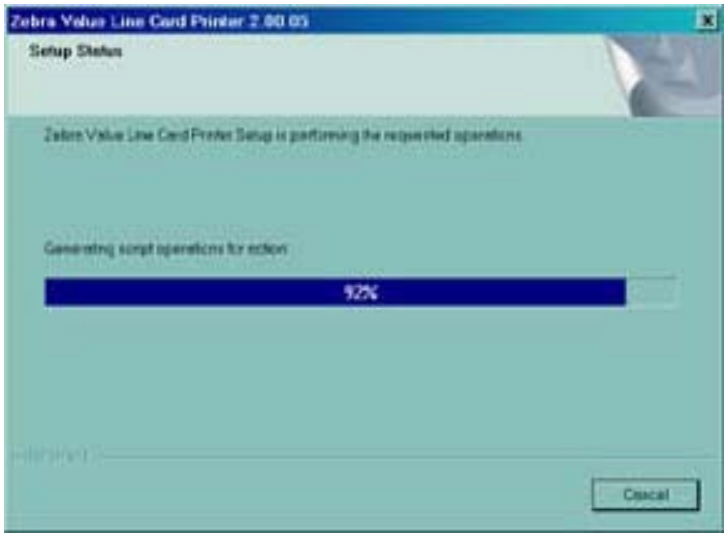
Complete Printer Installation



1. In the **Select Program Folder** window, accept the default folder for the program icons, or choose a different folder. Click the **Next**> button. The **Setup Status** window will open.



2. The **Setup Status** window will show the progress of the driver installation.When driver installation is complete, the **Congratulations** window will open. Proceed to **Connect the P120*i* printer.**

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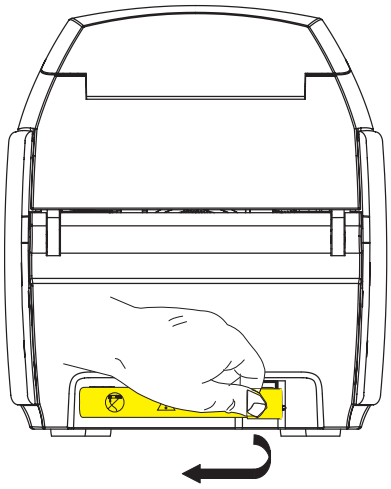
Connect the P120*i* Printer

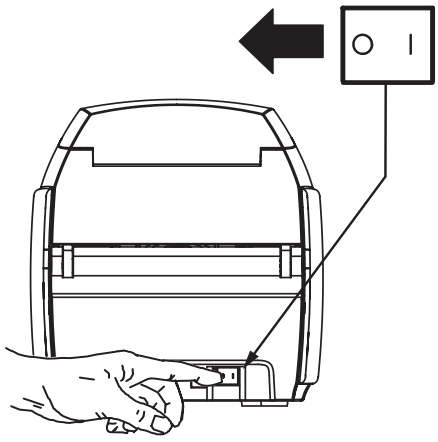
The following instructions will guide you through the installation of the P120*i* printer.

Caution • Limit electrical power supplied to the P120*i* Printer to 24 VDC. 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. The power supply pack can only be replaced by the same product from the manufacturer.

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. Remove the yellow CAUTION label from the back of the printer.



3. Ensure that the printer's power switch in the OFF (O) position.

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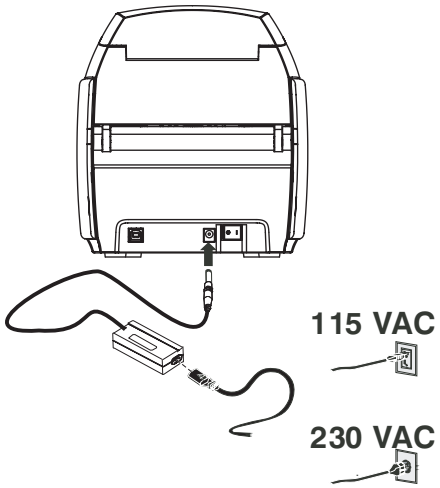
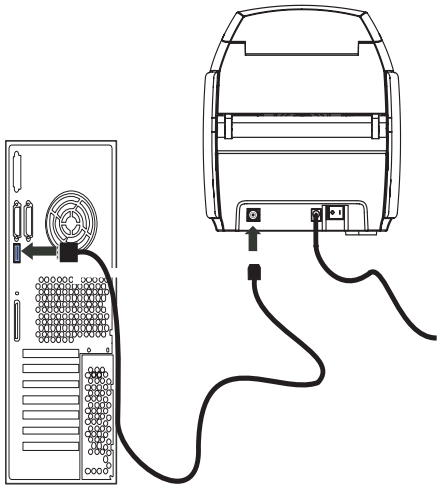
Caution • Intermittent or unpredictable operation may occur from unsecured connectors. If damaged, the power cable must be replaced by an exact equivalent. The socket should always be easily accessible to power off the printer.



4. Insert the power supply plug into the power socket, attach the power cord (120VAC or 230VAC) to the power supply, then plug the power cord in to a grounded electrical socket of the proper voltage and type.



5. Attach USB cable to printer and computer.

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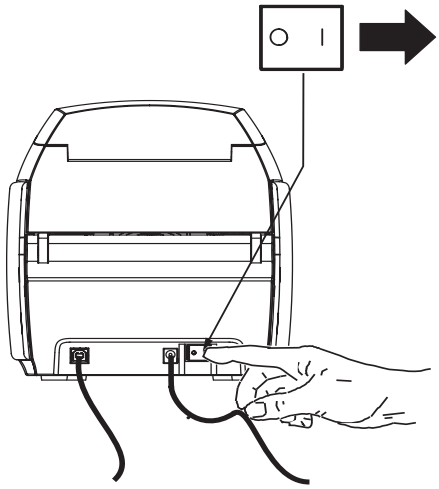

6. Place the printer's power switch in the ON (|) position. The **Found New Hardware** window will open.

7. In the **Found New Hardware** window, select the **No, not at this time** radio button, then click **Next>.** The **Insert installation CD** window will open.

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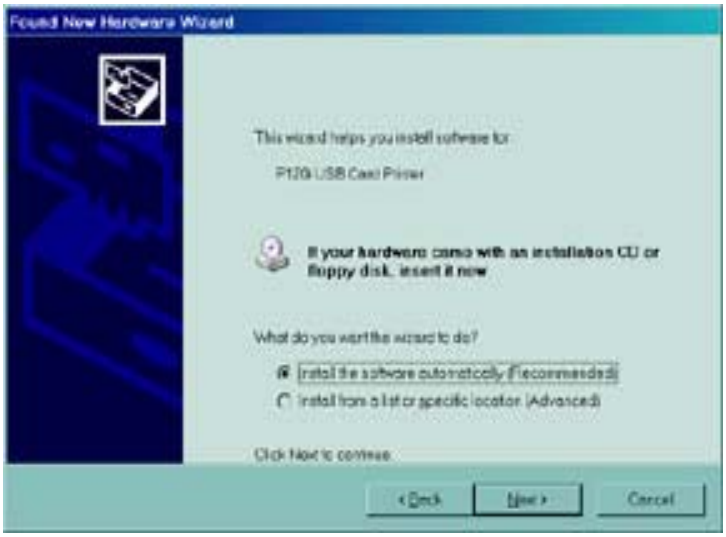
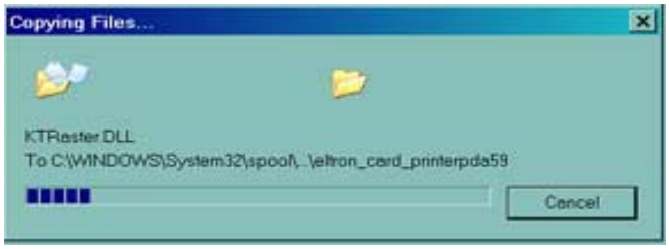


8. In the **Insert installation CD** window, select the **Install the software automatically** radio button and click **Next>.** The **Windows Logo Testing** window will open.

9. In the **Windows Logo Testing** window, select the **Continue Anyway button.** The copying files progress bar will display.



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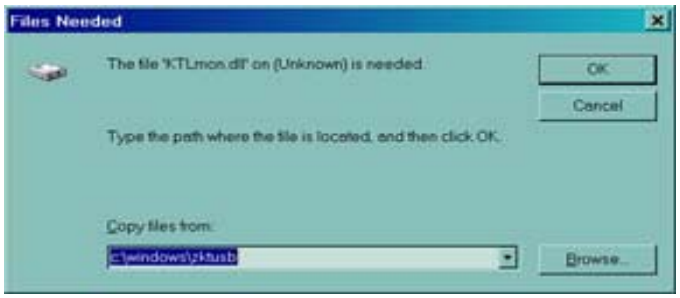

10. If the Files Needed window opens, type in the required file location from the **Congratulations** window. When files have been successfully transferred, the **Completing the New Hardware Found Wizard** window will open.

11. Click the **Finish** button and driver installation will be complete and the **Completing the New Hardware Found Wizard** window will close.
12. On the Congratulations window, click **Next>**. You will be asked if you wish to open the ReadMe file

13. If you have not previously read the ReadMe file, please select Yes. The Readme file contains known issues and late breaking news related to the latest version of the Zebra Driver.

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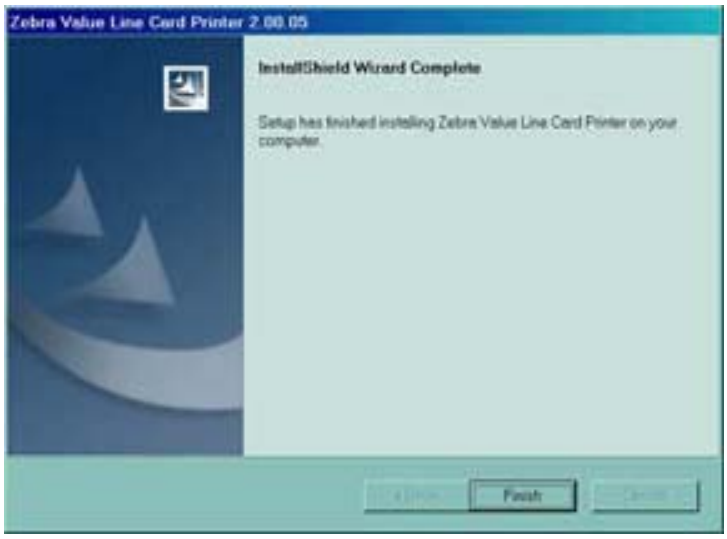
14. Whether you select **Yes** or **No**, the **InstallShield Wizard Complete** window will open.



15. Click the **Finish** button to complete the installation.

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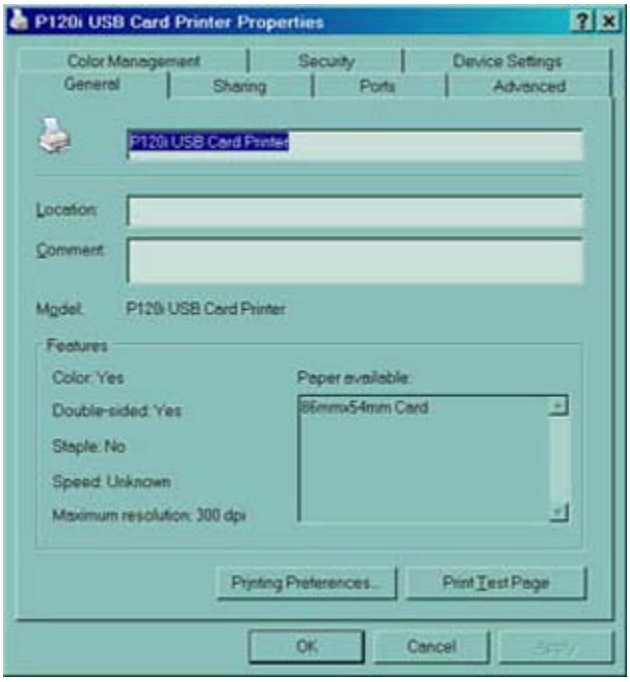
Change Printer Driver Options

You can change the default settings for the P120*i* Printer driver. Change the options as follows:

1. Select Start>Settings>Printers and Faxes.

2. From the Printers and Faxes list, right click the P120*i* USB Card Printer and select **Properties** from the pop-up menu.The **Printer Properties** window will open.



3. On the General tab, click on the Printing Preferences button to change the card orientation settings, monochrome conversion settings, various ribbon settings, or to adjust the color and head settings properties.

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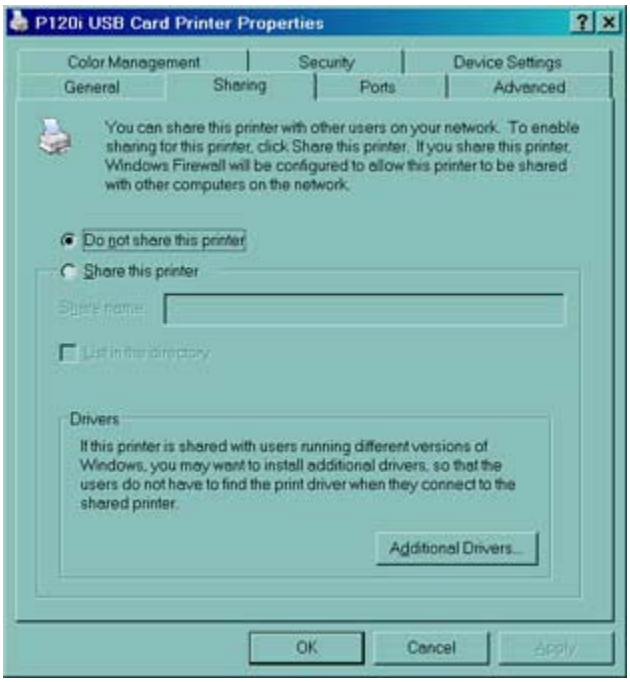
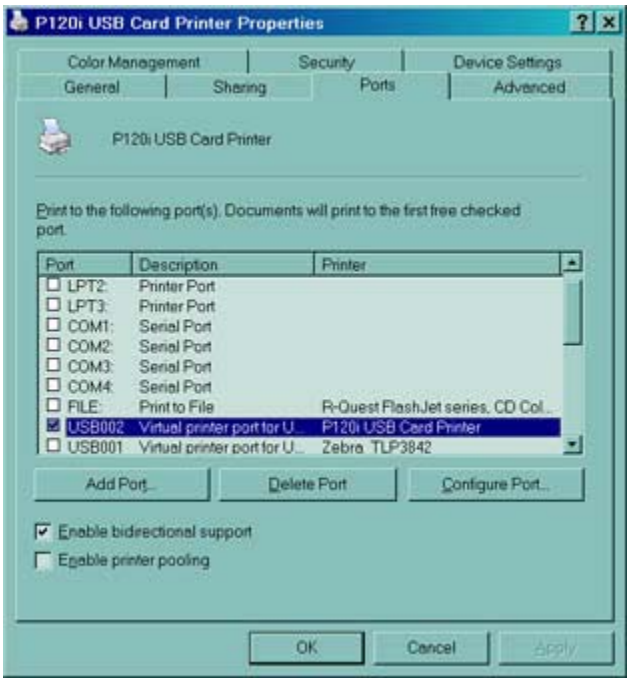


4. On the Sharing tab, you can choose to share the printer over the network, and install additional drivers to accommodate different operating systems.



5. On the Ports tab you can select which add, delete, and configure the printer ports, as well as choose which port the P120*i* printer is assigned.

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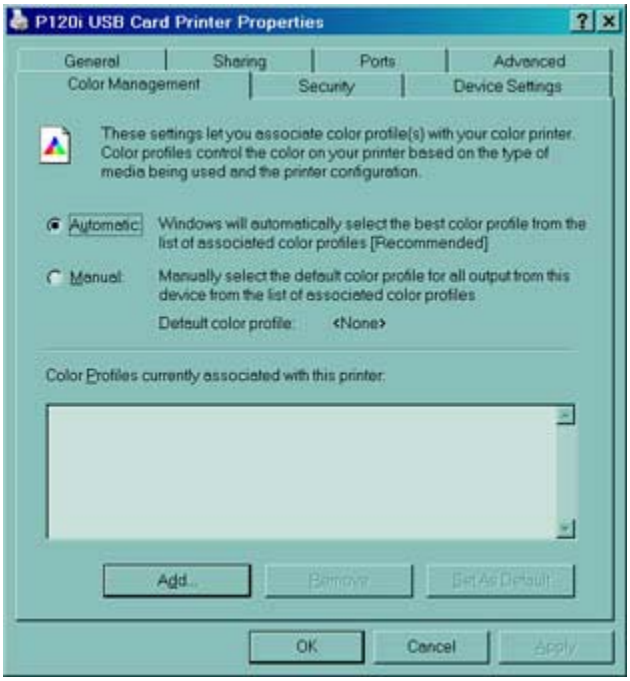
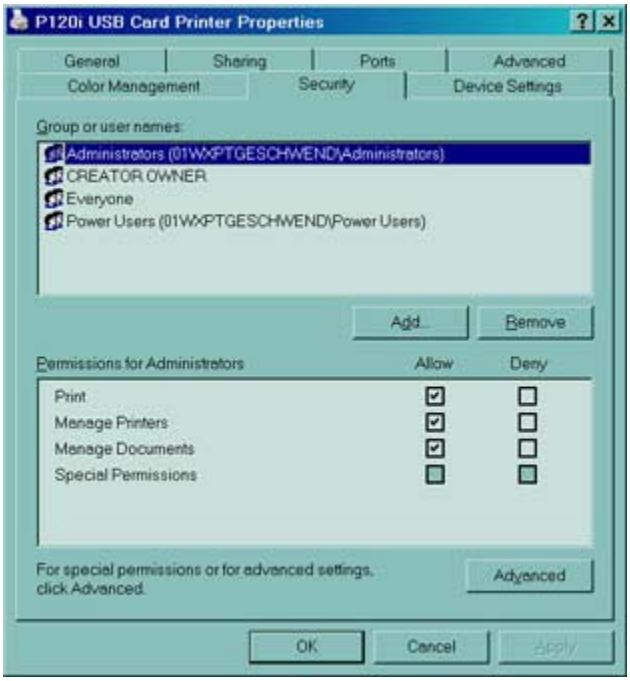


6. On the Color Management tab, you can add, remove, and change printer color profiles.



7. Use the Security tab to change permissions for the P120*i* printer.

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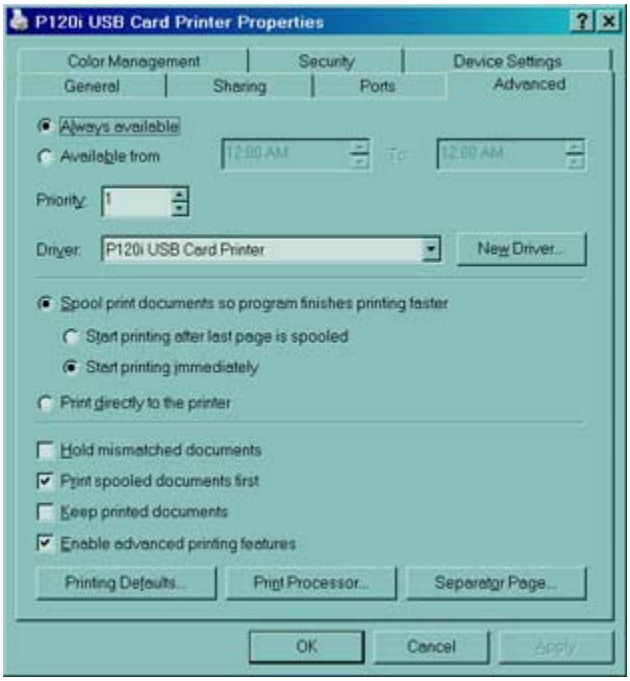
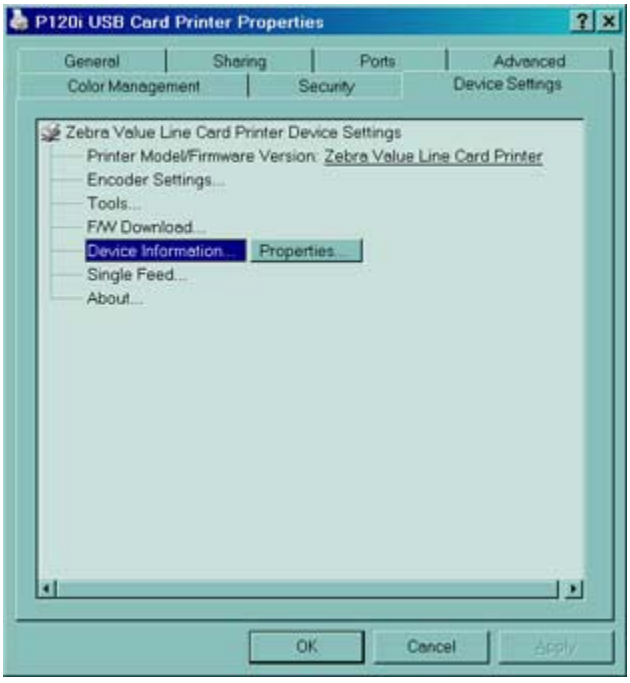


8. On the Advanced tab, you can choose various printer properties, install different printer drivers, and change default printer settings.



9. On the Device Settings tab, you can change settings for a Magnetic Encoder and change to and from single feed mode.
10. Once the P120*i* printer driver options have been configured to your satisfaction, click the OK button to save your new configuration and close the Properties window.

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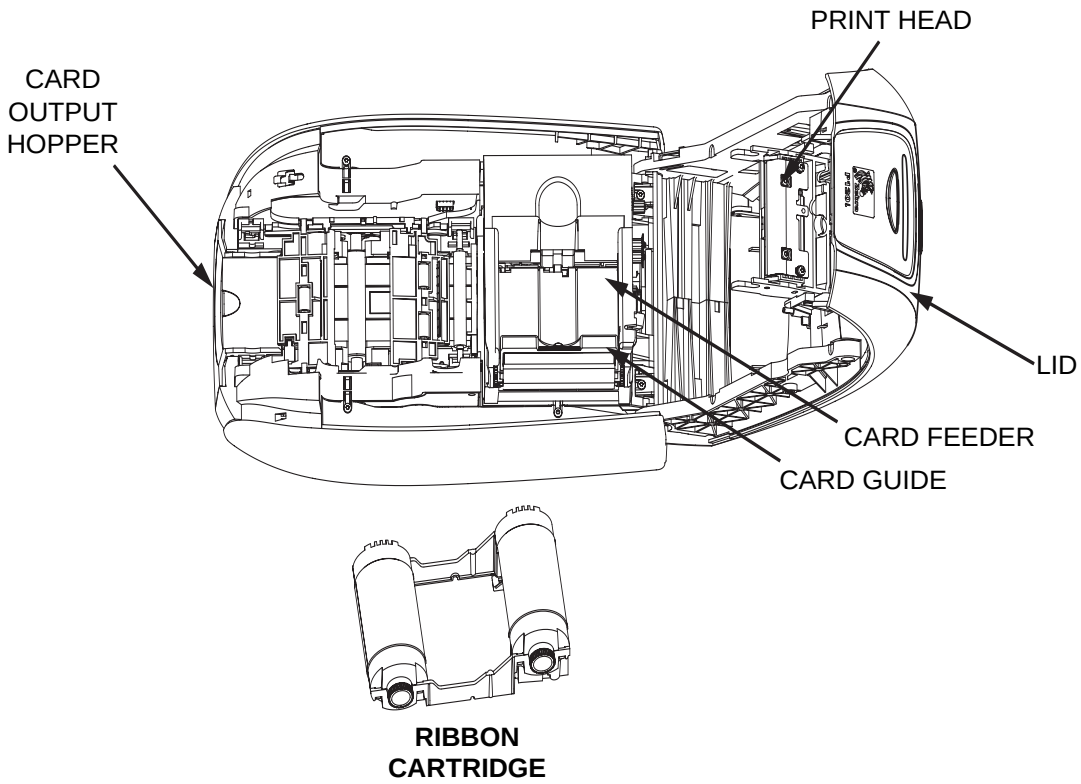
3

P120i Printer Setup

Printer Features

The following shows the features found on your P120i Printer:



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Loading Ribbon Cartridge

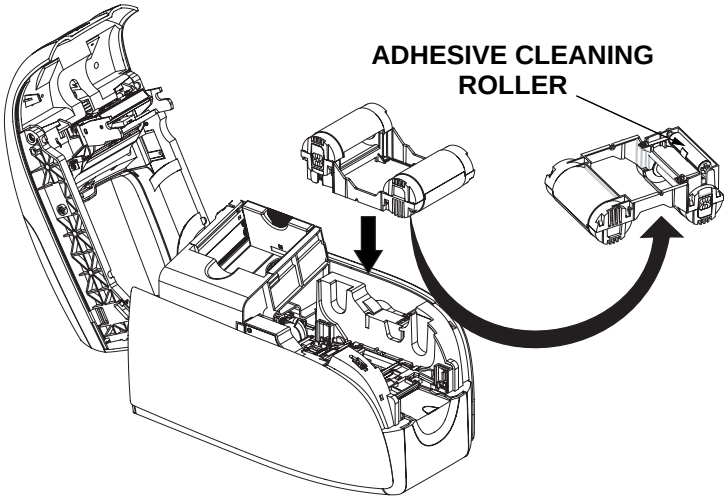
The P120i Printer requires approved ribbon cartridges (see Appendix C). The Resin Thermal Transfer and Dye Sublimation ribbons are specifically designed for your P120i Printer.

- *i* Series Printers require the use of *i* Series ribbons for full color printing.
- Each ribbon cartridge includes an integrated adhesive cleaning roller assembly that is used to clean the cards entering the printer. Improper cleaning will reduce printer life and degrade print quality
- When the ribbon is completely used, change the whole cartridge assembly.

1. Place the printer power switch in the OFF (0) position

Electrostatic Discharge Caution • DO NOT TOUCH the print head or the electronic components on the print head. Discharge of electrostatic charge from the human body or other surfaces can damage the print head or other electronic components

2. Open printer lid by pressing the Cover Release button on the top of your printer.
3. Peel protective wrapper from adhesive cleaning roller by gently pulling on the tape. Discard the protective wrapper.



4. Insert the ribbon cartridge with the cleaning roller facing down, so the gears on the ends of the rollers fit into the appropriate slots.
5. Close the printer lid and push down until you hear an audible click.
6. Place the printer power switch in the ON (|) position

Note • Please note that the ribbon automatically synchronizes.

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Loading Cards

To help you load, print, and collect cards, the P120i has the following items:

Card Feeder

The card feeder is used for loading cards, it can hold up to 100 cards of 30 mils thickness. The card feeder is located under the card feeder cover of the P120*i* printer.

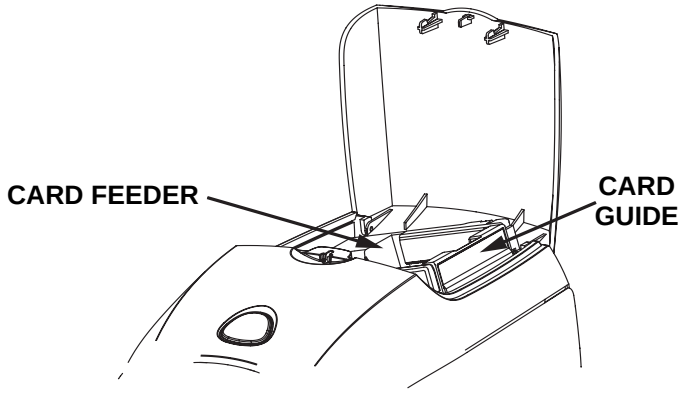
Caution • **DO NOT** bend cards or touch print surfaces as this can reduce print quality.

Note • 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 fan or shuffle them.

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

Load cards into card feeder as follows:

1. Open card feeder cover.
2. Slide card guide all the way to the right until it locks in place with an audible click.



3. Remove cellophane wrapper from card stack.

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

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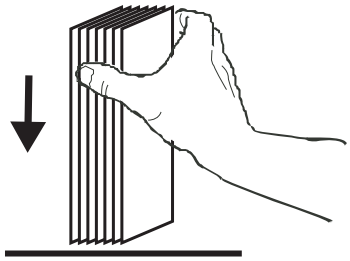
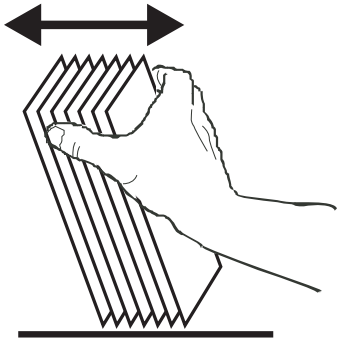
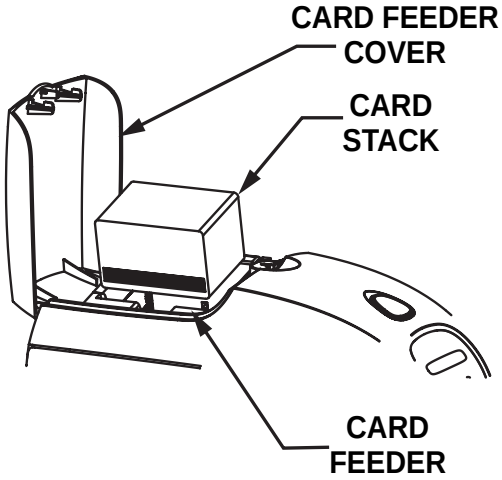


4. Holding the card deck by the sides, hold it vertically against a flat surface such as a desktop. If the deck is too thick for your hand to hold it comfortably, use about half a deck at a time.



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

6. Restore the card stack to its original squared-off condition, and place the cards in the input hopper.
7. Place stack of up to 100 cards into card feeder and close the card feeder cover. When card feeder cover is closed, the card guide locking mechanism will automatically be released.



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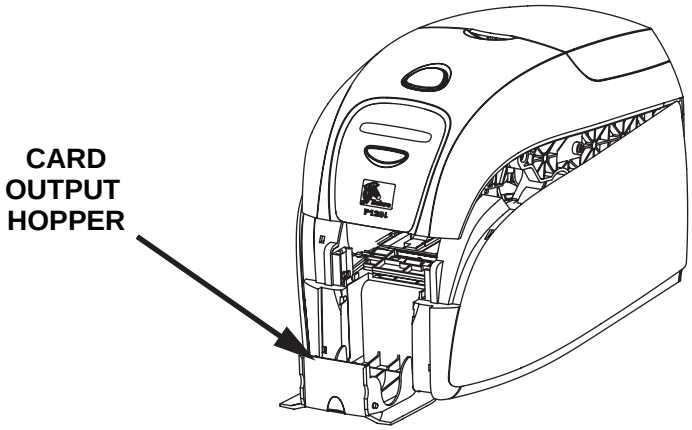
Card Output Hopper

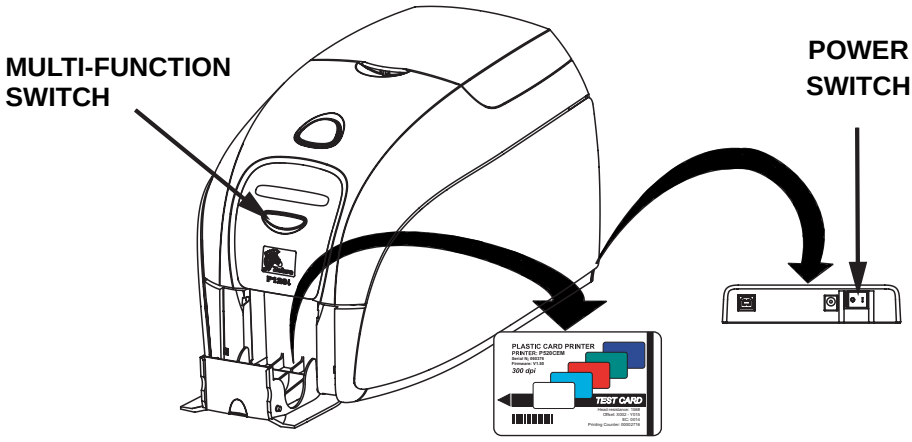
1. Raise the printer lid and pull the output hopper down to place it in its functional position.
2. When not using the printer, place the card output hopper back in its closed position to protect the printer from dust.



Printing a Test Card

With ribbon cartridge and cards loaded, your P120i printer is ready to print. To check the operation of the printer, you should print a test card.

1. Place the printer power switch in the OFF (0) position.
2. While holding down the Multi Function Button, place the printer power switch in the ON (|) position. The LCD status window will glow blue.



3. Keep pressing the Multi Function button until the PRINT TEST CARD message appears in the window.
4. Release the Multi Function button and a test card will print after a few seconds.

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4

P120*i* Printer Operation

Printing

Printing with the P120*i* Printer requires the Windows Printer Driver, your card design/issuing software or printer command level programming through the printer interface.

The P120*i* Card Printer can be used with any Windows 2000, or Windows XP software application program, using the drivers provided on CD with the printer. Reference Chapter 2 for instructions on installing the P120*i* printer driver.

Creating a Sample Card

Before you begin a new printing session, print a sample card to ensure that the cards will be printed correctly. Follow the steps below to print your first card using the True Colours™ Card Printer Ribbon Cartridge and the Windows printer driver.

1. Go to the Microsoft Word Software.
2. If the P120*i* printer was not selected as the default printer, go to File> Select Printer and choose Zebra P120*i* Card Printer from the printer names list. Close the Print dialog box.
3. Go to File>Page Setup.
4. Select the Size tab, and under Paper Size, choose Card. Under orientation, select Landscape or Portrait.
5. Select the Margins tab, and set the Top, Bottom, Left and Right margins to O (zero).
6. Press OK to close Page Setup window.
7. The card appears on the window.
8. Design a card with both black and colored text and with colored pictures similar to the sample card shown below.

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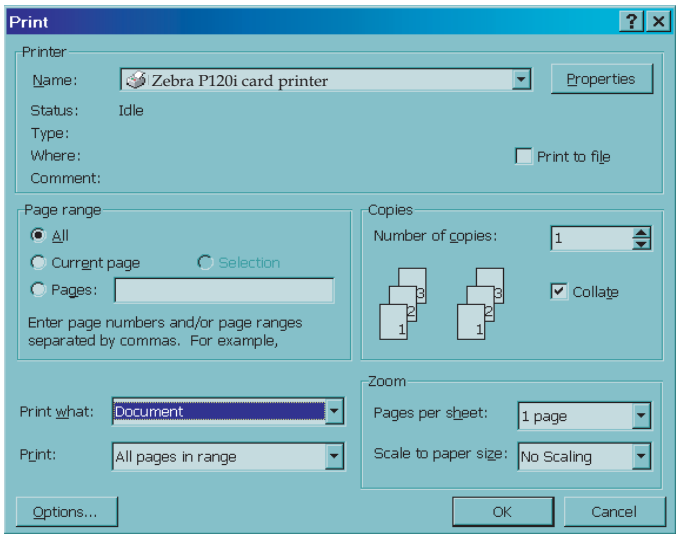
Printing a Sample Card

Once you completed creating your sample card, you are ready to print. Ensure your printer has a True Colours™ Card Printer Ribbon Cartridge installed and there is card stock in the card feeder. Reference Chapter 3 for instructions on installing the ribbon and loading the cards Print your sample card as follows:.

1. Select File>Print to open the Print dialogue box. Ensure the following settings in the Print dialogue box:
    - Printer Name: - Zebra P120*i* Card Printer
    - Print to File: - Unchecked
    - Page Range: - All
    - Number of Copies: - 1
    - Collate: - Unchecked
    - Print What?: - Document
    - Print: - All pages in range
    - Pages per sheet: - 1 page
    - Scale to paper size: - No scaling



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2. Click the OK button.
3. 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.
4. Once the printing is completed, the card is ejected from the printer into the printed card hopper.
5. Remove the sample card from the card output hopper and check for any discrepancies. If the sample card is correct, your P120*i* card printer is to produce more cards.

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5 Cleaning

Cleaning System

Caution • 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 authorized technicians to service the P120*i* 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 P120*i* Printer includes a simple cleaning system using Pre-Saturated Cleaning Cards provided. The regular use of these cards will clean and maintain important parts of your printer that cannot be reached: including Print Head,. the Transport Rollers, and the Magnetic Encoder Station (optional feature).

When to Clean

After approximately 1000 color cards have been printed, the printer LCD will prompt **CLEAN PRINTER**, or when print quality has been degraded.

How to Clean

1. Leave power on.
2. Press and hold the Multi-Function Control Button for 5 seconds.
3. When the cleaning cycle is initiated, the LCD message **REMOVE RIBBON THEN CLOSE LID** will display.
4. After the ribbon is removed and the lid is closed, the message **EMPTY FEEDER THEN CLOSE COVER** will display.

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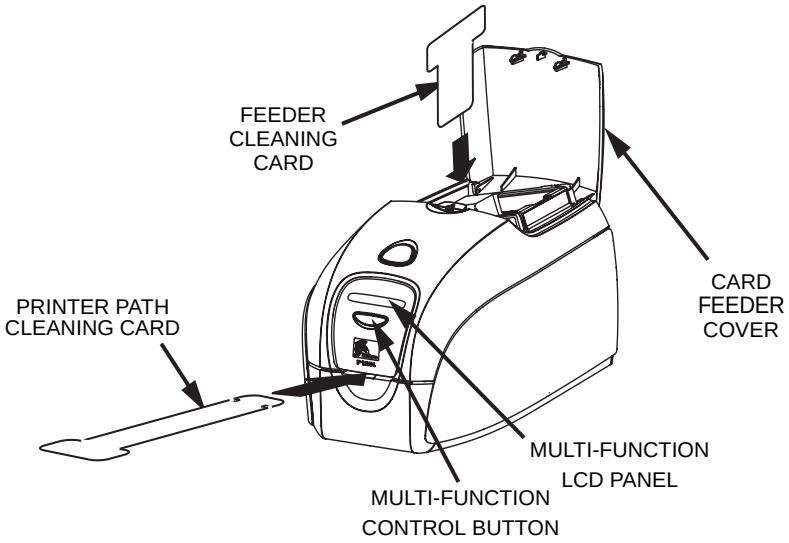

5. If the lid is opened and closed without removing the ribbon, the **REMOVE RIBBON THEN CLOSE LID** message will remain.
6. Once the cover is closed, the firmware will eject any card inside the printer. The message **EJECTING CARD** will display.
7. The LCD will then display **FEED LONG CLEANING CARD IN EXIT.** When the card sensor registers the presence of the cleaning card, the rollers should take the card into the printer.
8. When the cleaning process is done, the printer will eject the cleaning card. If the card sensor still senses the cleaning card, the message **REMOVE LONG CLEANING CARD** will display.
9. Once the long cleaning card is no longer sensed by the exit card sensor, the message **INSERT FEEDER CLEANING CARD** will display. Open the feeder cover and insert the feeder cleaning card.
10. When the feeder cleaning card has been sensed by the feeder card sensor, the message **CLOSE FEEDER COVER** will display.
11. When feeder cleaning is complete, the message **REMOVE FEEDER CLEANING CARD** will display.
12. After the card is removed, the LCD will display **READY.** You may now reload the ribbon and cards and continue printing.

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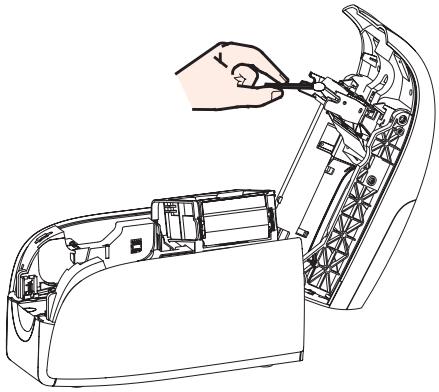
Cleaning the Print Head

Use of the cleaning cards will normally do an adequate job of cleaning the printer. 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.

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

1. Place the printer power switch in the OFF (0) position.
2. Open printer lid by pressing cover release button and open cover fully to reveal print head mounted to inside of cover.



3. Clean Print Head by moving alcohol-moistened swab tip side-to-side across Print Head elements. Only use moderate force.
4. Allow two to three minutes for the printhead to dry before placing the printer power switch in the ON (|) position.
5. To reorder swabs, reference the P120*i* Printer Media List.

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6 Troubleshooting

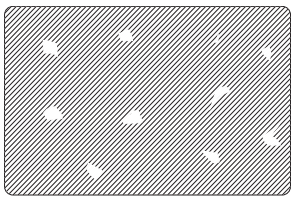
Troubleshooting Procedures

This section offers solutions to potential problems you may experience with your P120*i* printer.

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 procedures below:

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



Possible Cause:

- Contamination on the card surface

Solutions:

- Check that cards are stored in a dust free environment
- Use a different supply of cards

Possible Cause:

- Cleaning roller not installed
- Dust inside the printer and/or dirty Cleaning Roller

Solutions:

- Perform a Cleaning of the printer (reference Chapter 5)
- Check that the protective cover was removed from the ribbon cartridge cleaning roller (reference Chapter 3).
- If printing one card at a time, replace the cleaning roller located at the front of the printer (reference Appendix B).

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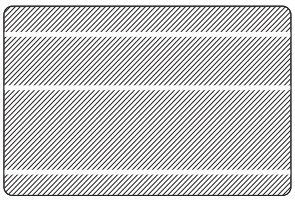
Example • There are non-printing horizontal lines (white) on the card surfaces.



Possible Cause:

- Ribbon cartridge is not correctly positioned.

Solutions:

- Ensure that the ribbon is properly rolled onto the ribbon cores of the cartridge and that there are no wrinkles in the ribbon.
- Replace ribbon cassette.

Possible Cause:

- Print Head is dirty.

Solutions:

- Clean the Print Head

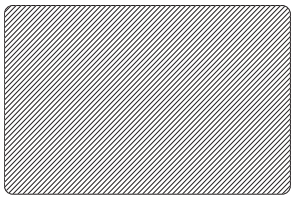
Possible Cause:

- Print Head elements are damaged (e.g. scratched or burnt).

Solutions:

- Call Zebra Customer Service for Print Head replacement information.

Example • Printing shows very pale or inconsistent results.



Possible Cause:

- Ribbon cartridge have been stored improperly or is damaged.

Solution:

- Change ribbon cartridge and print again.

Possible Cause:

- Cards may not meet specifications

Solution:

- Use a different supply of cards.

Possible Cause:

- Contrast and/or Intensity may be set to values which are too high.

Solution:

- Adjust Contrast and/or Intensity values in software.

Possible Cause:

- Dust or embedded contamination on elements of the Print Head.

Solution:

- Perform a Cleaning of the Print Head (Reference Chapter 4, Cleaning the Print Head

Example • Printing shows blurry printed image.

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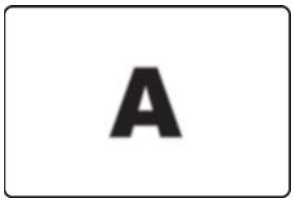
Possible Cause:

- Ribbon cartridge may not be correctly positioned.



Solution:

- Check that the ribbon is properly rolled onto the ribbon cores of the cartridge, with no wrinkles.
- Replace ribbon cartridge, making sure it locks in place, and print again.

Possible Cause:

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

Solution:

- Open lid, then close lid to synchronize ribbon.

Possible Cause:

- Cards may not meet specifications.

Solution:

- Use a different supply of cards.

Possible Cause:

- Dust or embedded contamination inside the printer and/or dirty Cleaning Roller.

Solution:

- Clean the Print Head.
- Replace Cleaning Roller

Example • No printing on the card.

Possible Cause:

- Ribbon cartridge may not be installed in the printer.

Solution:

- Check for ribbon cartridge in the printer

Possible Cause

- Cards may not meet specifications.

Solution:

- Use a different supply of cards

Possible Cause

- Cable on Print Head may be disconnected
- Print Head elements may be scratched or burnt.

Solution

- Call Service for Print Head repair or replacement information.

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7 Technical Specifications

General

- Integrated card feeder-and-flipper
- Load-N-Go™ drop-in ribbon cartridge
- 16-digit LCD display
- Windows® drivers for 2000 and XP
- One year printer warranty
- One year (unlimited passes) printhead warranty

Color Printing

- Color dye sublimation or monochrome thermal transfer printing
- XX seconds per card full color single sided (YMCKO)
- YY seconds per card full color dual-sided (YMCKOK)
- 300 dpi (11.8 dots/mm) print resolution

Bar Code

- Code 39, Code 128 B & C with & without check digit
- 2 of 5 & 2 of 5 Interleaved
- UPC-A, EAN 8 & EAN 13
- PDF-417 2D bar code and other symbologies can be printed via Windows drivers

Cards

- Types: PVC, PVC Composite, Adhesive backed
- Card width/length: ISO CR-80-ISO 7810, 2.12" (54mm) x 3.38" (86mm)
- Magnetic Stripe-ISO 7811
- Smart Card-ISO 7816-2
- Card thickness: 30 mil (.76mm) (+/- 10%)
- Card feeder capacity: 100 cards (30 mil)
- Card output hopper capacity: 45 cards (30 mil)

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Ribbons Cartridges

- Load-N-Go™ ribbon cartridge with integrated card-cleaning roller
- i Series technology featuring contact-chip-based ribbon detection
- YMCKO: 200 cards/cartridge
- YMCKOK: 165 cards/cartridge
- Monochrome: 1000 cards/cartridge in black, blue, or white

Interfaces

- USB 1.1 (cable included)

Dimensions

- Width: 7.9 in (201mm)
- Depth: 12.9 in (328mm)
- Height: 8.5 in (216mm)
- Weight: 9.5 lbs (4.3kg)

Electrical

- 110 ~ 240 Volts AC, 50 ~ 60 Hz (auto switching)
- 16MB image memory standard
- FCC Class B, CE, UL and CUL approved

Environmental

- Operating Temperature: 60°F to 86°F (15°C to 30°C)
- Operating Humidity: 20% to 65% non-condensing
- Storage Temperature: 23°F to 158°F (-5°C to 70°C)
- Storage Humidity: 20% to 70% non-condensing
- Ventilation: Free air

Options

- Magnetic encoder (30 mil cards only), 3 track HiCo/LoCo
- CardSense™ single card-feed mode
- Starter Kit (200 cards and 1 YMCKOK ribbon)
- Cleaning Kit (4 print engine and 4 feeder cleaning cards)

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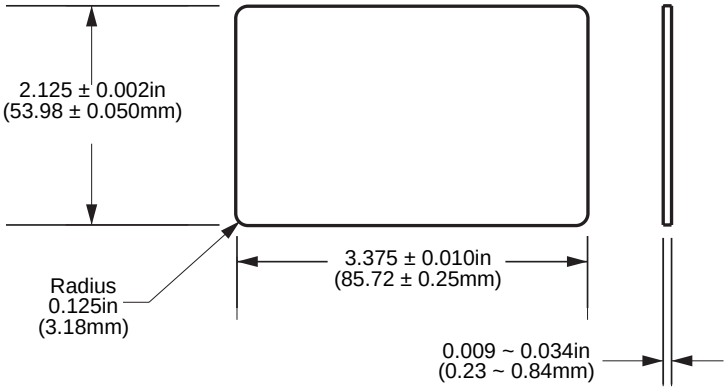
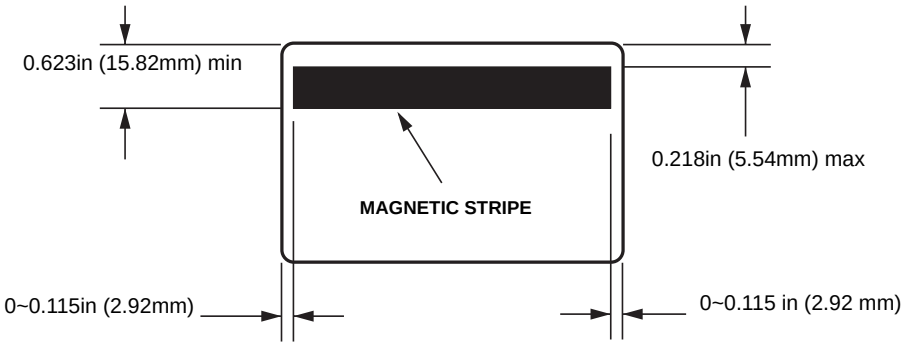
Card Dimensions

ISO standard dimensions for plain card



ISO standard dimensions for magnetic stripe card



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Appendix A

Encoder

Magnetic Card Stripe Encoder

This section contains information on the additional operations of the P120*i* Printers with Magnetic Card Stripe Encoder.

Introduction

Operation and maintenance requirements for the P120*i* Printer with the optional magnetic card stripe encoder. The magnetic encoder can be set for either high or low coercivity.

Media Loading Orientation

Caution • ONLY USE cards that comply with ISO 7810 & 7811 standards for magnetic stripe cards. The magnetic stripe must be flush to the surface of the card to work properly. Never use cards which have taped-on magnetic stripes.

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

When loading cards with magnetic stripes into the card feeder, please ensure that the magnetic stripe is facing the left side of the printer, and closest to the bottom edge of the card feeder.

Note • Zebra approved HICO & LOCO PVC cards are available. (Reference P120*i* printer Media List).

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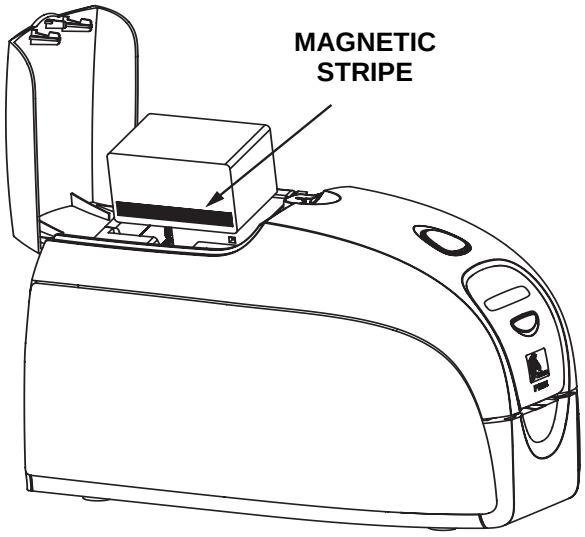

Magnetic Encoder Cleaning

Use the standard cleaning card process as described in Chapter 4. This cleans the most important parts of the printer; including the print Head, Transport Roller and Magnetic Stripe Encoder.

ISO Standard Encoding

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

*Bits per inch

†Except the “?” character

‡Including Start, Stop, and LRC characters. Also note that these 3 characters areautomatically 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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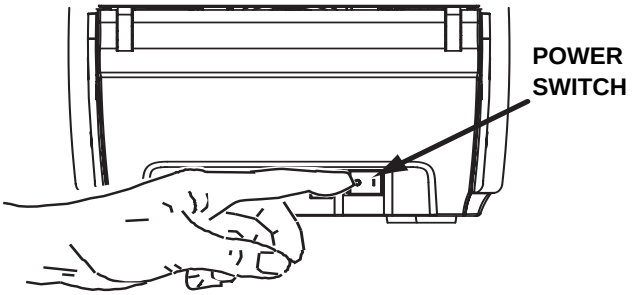
Appendix B

Card Sense™ Single Card Feed Mode

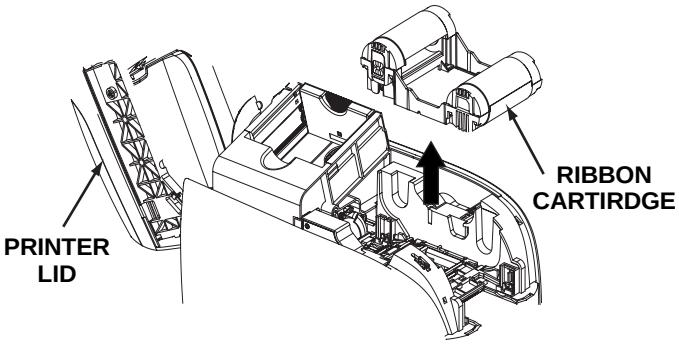
Printing a Single Card Without Using the Feeder

For operating the P120i card printer in single card feed mode, the printer requires that the operator install an optional Card Sense™ Single Card Feed Kit. In Single Card Feed Mode, the printer will only accept cards through the front slot, not from the card feeder.



Install Card Sense™Single Card Feed Kit

1. Set printer to OFF.



2. Open the lid and remove the ribbon cartridge.

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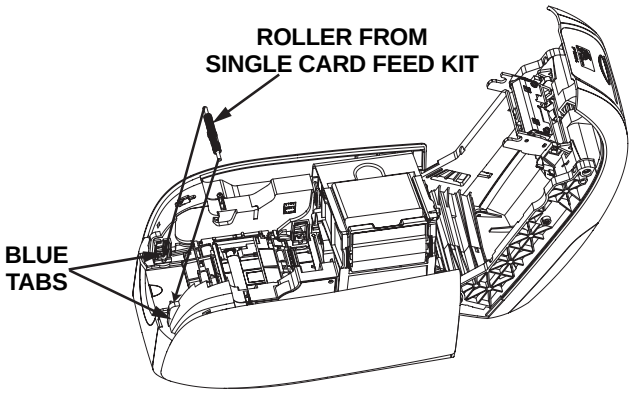
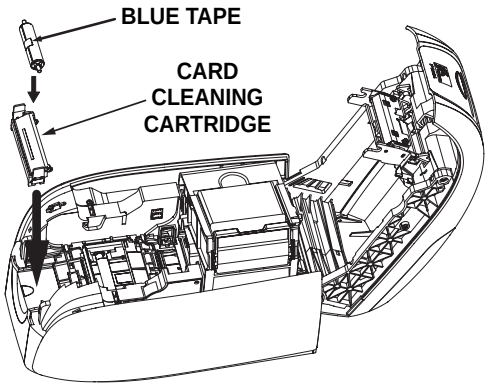
Important • Make sure the output hopper remains closed.



3. Install the black roller from the Single Card Feed Kit into the blue tabs at the front of the printer, and press roller down firmly to lock into the tabs.

Install Card Cleaning Cartridge

Install the Card Cleaning Cartridge as follows:



1. Open the lid of the card cleaning cartridge.
2. Insert the cleaning roller into the card cleaning cartridge and close the cartridge.
3. Peel protective wrapper from adhesive cleaning roller by gently pulling on the blue tape, and discard the wrapper.
4. Slide the Card Cleaning Cartridge into the slots provided at the front of the printer. An alignment tab is located on the left side of the Card Cleaning Cartridge to ensure proper installation.

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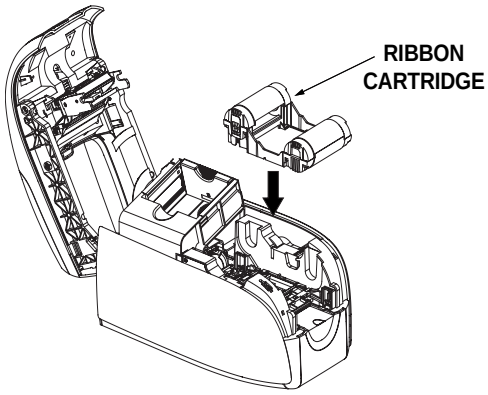
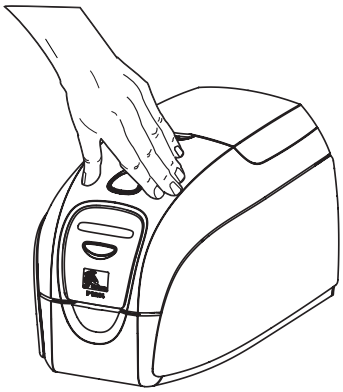


5. Insert the ribbon cartridge with the cleaning roller facing down, so the gears on the ends of the rollers fit into the appropriate slots.



6. Close the printer lid and push down until you hear an audible click. If you can not close the lid, the cleaning cartridge or the ribbon cartridge may be installed wrong.

Setting Up the Printer Driver

1. Go to Printer Properties
2. Select the Device Settings tab
3. Select Single Feed Properties
4. Select Enable Single Feed Support
5. Click the Apply button.

Important • You can disable Single Feed Support and return to printing cards from the hopper. You do not have to remove the components of the Single Card Feed Kit in order to operate in normal mode.

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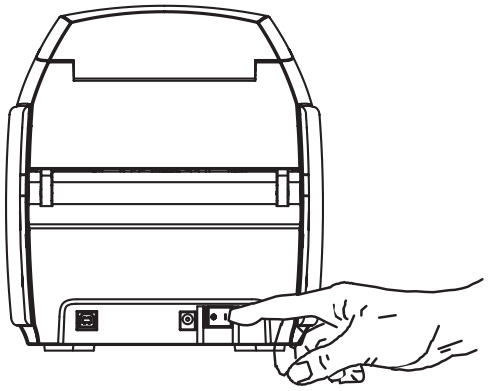
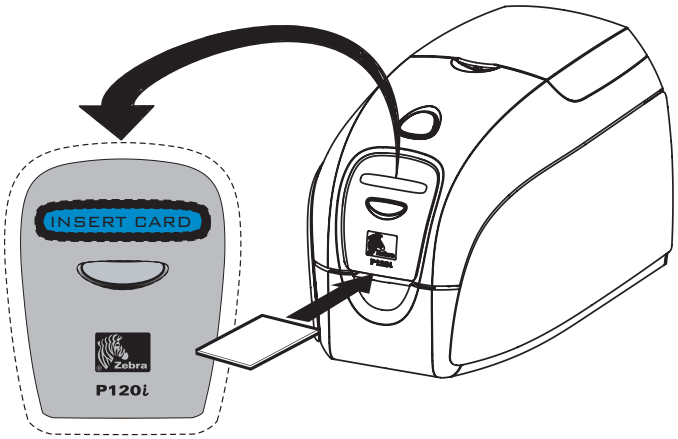
Printing a Single Card



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



2. Insert a single card into the slot at the front of the printer, directly above the card output hopper. Do not feed more than one card at a time. Printer will take the card.

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Card
Printer
Solutions

Zebra Technologies Corporation
333 Corporate Woods Parkway
Vernon Hills, Illinois 60061.3109 U.S.A.
Telephone: +1 847.634.6700
Facsimile: +1 847.913.8766

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