Zebra *Xi*III*Plus*™ **Printers**

Users Guide

Proprietary Statement

This guide contains proprietary information of Zebra Technologies. It is intended solely for the information and use of parties operating and maintaining the equipment described herein. Such proprietary information may not be used, reproduced, or disclosed to any other parties for any other purpose without the expressed written permission of Zebra Technologies.

Product Improvements

Continuous improvement of products is a policy of Zebra Technologies. All specifications and signs are subject to change without notice.

FCC Compliance Statement

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 the 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 the receiver.

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

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

Note • This unit was tested with shielded cables on the peripheral devices. Shielded cables must be used with the unit to ensure compliance.

Caution • Any changes or modifications not expressly approved by Zebra Technologies could void the user's authority to operate the equipment.

Canadian DOC Compliance Statement

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus as set out in the radio interference regulations of the Canadian Department of Communications.

CE Compliance

If the accompanying printer displays the CE mark, it also meets EMC directive 89/336/EEC, with amendments effective at the time of manufacture.

Liability Disclaimer

Zebra Technologies takes steps to assure that its published Engineering Specifications and guides are correct; however, errors do occur. Zebra Technologies reserves the right to correct any such errors and disclaims liability resulting therefrom.

No Liability for Consequential Damage

In no event shall Zebra Technologies or anyone else involved in the creation, production, or delivery of the accompanying product (including hardware and software) be liable for any damages whatsoever (including, without limitation, damages for loss of business profits, business interruption, loss of business information, or other pecuniary loss) arising out of the use of or the results of use or inability to use such product, even if Zebra Technologies has been advised of the possibility of such damages. Because some states so not allow the exclusion or limitation of liability for consequential or incidental damages, the above limitation may not apply to you.

DECLARATION OF CONFORMITY

I have determined that the Zebra printers identified as the

*Xi*III*Plus* Series
90*Xi*III*Plus, *96*Xi*III*Plus, *110*Xi*III*Plus,*
140*Xi*III*Plus, *170*Xi*III*Plus, *220*Xi*III*Plus*

manufactured by:

Zebra Technologies
333 Corporate Woods Parkway
Vernon Hills, Illinois 60061-3109 U.S.A.

Have been shown to comply with the applicable technical standards of the FCC

For Home, Office, Commercial, and industrial use

If no unauthorized changed is made in the equipment,
and if the equipment is properly maintained and operated.

M. Charles T. Suro

Warranty Information

Effective December 30, 2002

All new Zebra products are warranted by the manufacturer to be free from defect in material and workmanship.

Printers and Related Hardware Products

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

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 customs, 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 printers (excluding printheads) are warranted against defect in material or workmanship for twelve (12) months from the purchase date.

Printheads

Since printhead wear is part of normal operation, the original printhead is covered by a limited warranty as indicated below. Warranty period begins on purchase date.

Printhead	Warranty Period
Bar code label and receipt printer printheads	6 months
Plastic card printer printheads	12 months

To qualify for this warranty, the printhead must be returned to the factory or to an authorized service center. Customers are not required to purchase Genuine Zebra Supplies (media and/or ribbons) for warranty qualification.

However, if it is determined that the use of inappropriate or inferior supplies has caused any defect in the printhead for which a warranty claim is made, the user is responsible for Zebra's labor and material charges required to repair the defect. The warranty becomes void if the printhead is physically worn or damaged; also if it is determined that failure to follow the preventive maintenance schedule listed in the Users Guide has caused defect in the thermal printhead for which a warranty claim is made.

Related Hardware Items

Products are warranted to be free of defects in material and workmanship from the date of purchase according to this chart:

Product	Warranty Period
Accessories	1 month
Batteries	3 months
Cables	1 month
Chargers/Power Supplies	1 year
Hardware Keys	1 year
Keyboard Display Units	6 months
Parts	3 months

Product	Warranty Period
Pocket Eye®	1 year
Software	1 month
ZebraNet® Print Servers	3 years

Defective product must be returned to Zebra for evaluation. In the event of notification of defect within the warranty period, Zebra will replace the defective item provided there had not been damage resulting from user abuse, modification, improper installation or use, or damage in shipping or by accident or neglect.

Supplies Products

Supplies are warranted to be free from defect in material and workmanship for a period of six (6) months for media and twelve (12) months for ribbon from the date of shipment by Zebra. This is provided the user has complied with storage guidelines, handling, and usage of the supplies in Zebra printers.

Zebra's sole obligation under these warranties is to furnish parts and labor for the repair or possible replacement of products found to be defective in material or workmanship during the warranty period. Zebra may in its discretion issue a credit for any such defective products in such amount as it deems reasonable.

Repair Services

Zebra repairs are warranted against defects in material and workmanship for 90 days from the date of repair by Zebra. This excludes printheads, which are warranted separately. This warranty does not cover normal wear and tear. This warranty becomes void if the item is modified, improperly installed or used, or damaged by accident, neglect, or abuse.

Warranty Exclusions & Conditions Statement

The warranties given above are the only warranties given to you. No other warranties, express or implied, are given. Zebra does not make any *implied warranty of merchantability or fitness for a particular purpose* in connection with its sale of products or services. While Zebra's desire is to be responsive to your specific needs

and questions, Zebra does not assume responsibility for any specific application to which any Products are applied, including, but not limited to, compatibility with other equipment. All statements, technical information, or recommendations relating to Zebra Products are based on tests believed to be reliable, but do not constitute a guaranty or warranty.

Zebra's maximum liability for warranty claims is limited to the invoice price of the Product claimed defective. Zebra does not assume responsibility for delays in replacement or repair of products. Zebra shall not under any circumstances whatsoever be liable to you or any other party for loss or profits, lost data, diminution of goodwill, or any other special or consequential damages whatsoever with respect to any warranty claim made by you. Specifically for software, Zebra is not liable for any incidental or consequential damages caused by abuse or misapplication of the software or by its use in violation of the U.S. copyright law or international treaty. No salesperson, representative, or agent of Zebra is authorized to make any guaranty, warranty, or representation that contradicts the foregoing. Any waiver, alteration, addition, or modification to the foregoing warranties must be in writing and signed by an executive officer of Zebra to be valid.

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Preface

This users guide provides all the information you need to operate the Zebra *Xi*III*Plus* printer.

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Contacts

You can contact Zebra Technologies at any of the following:

Visit us at: www.zebra.com

Our Mailing Addresses:

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Zebra House
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Buckinghamshire HP13 6EQ, UK
Telephone: +44 (0)1494 472872
Fax: +44 (0)1494 450103

Support

You can contact Zebra support at:

Web address: www.zebra.com/SS/service_support.htm

! **Important •** The Web address is case-sensitive. The SS **must** be all caps.

US Phone Number +1 847.913.2259

UK/International Phone Number +44 (0) 1494 768289

About this Document

The *Zebra Xi*III*Plus Users Guide* contains these chapters and appendices:

Ch No.	Title	Content
	Warranty Information	Warranty information on Zebra printers, related hardware, and supplies.
1	*Introduction*	Unpack and inspect your printer.
2	*Printer Setup and Calibration*	Set up your printer in the Tear-Off (default) Mode.
3	*Labels and Print Modess*	Identify your labels and choose the print mode that suits your application
4	*Data Ports*	Standard data ports available on the Zebra *Xi*III*Plus* printers
5	*Memory Cards*	PCMCIA and CompactFlash card options available.
	Appendixes	How to adjust printer settings to fit your printing needs.
		Common printing problems and printer diagnostic tests.
		Zebra *Xi*III*Plus* printer specifications and how to maintain the printer.

Document Conventions

The following conventions are used throughout this document to convey certain information:

About this Chapter Sections This section lists and describes each main section of the chapter, including the initial page number of that section. These sections primarily serve as hyperlink components for the Adobe Acrobat `.pdf` version of this guide.

Alternate Color (online only) Cross-references contain hot links to other sections in this guide. If you are viewing this guide online in `.pdf` format, you can click the cross-reference (blue text) to jump directly to its location.

Command Line Examples All command line examples appear in `Courier` font. For example, you would type the following to get to the Post-Install scripts in the `bin` directory:

```
Ztools
```

Files and Directories All file names and directories appear in `Courier New` font. For example, the `Zebra<version number>.tar` file and the `/root` directory.

Caution, Note and Example

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

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

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

Important • Advises you of information that is essential to complete a task.

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

Example • Provides an example, often a scenario, to better clarify a section of text.

Tools • Tells you what tools you need to complete a given task.

Illustration Callout Instruction Illustration callout instructions are used when an illustration contains either information about a dialog box or step(s) to accomplish in a dialog box.

```
PRINTER READY
4.0MB VX.X.X
```

To enter the front panel menu, press **SETUP/EXIT**.
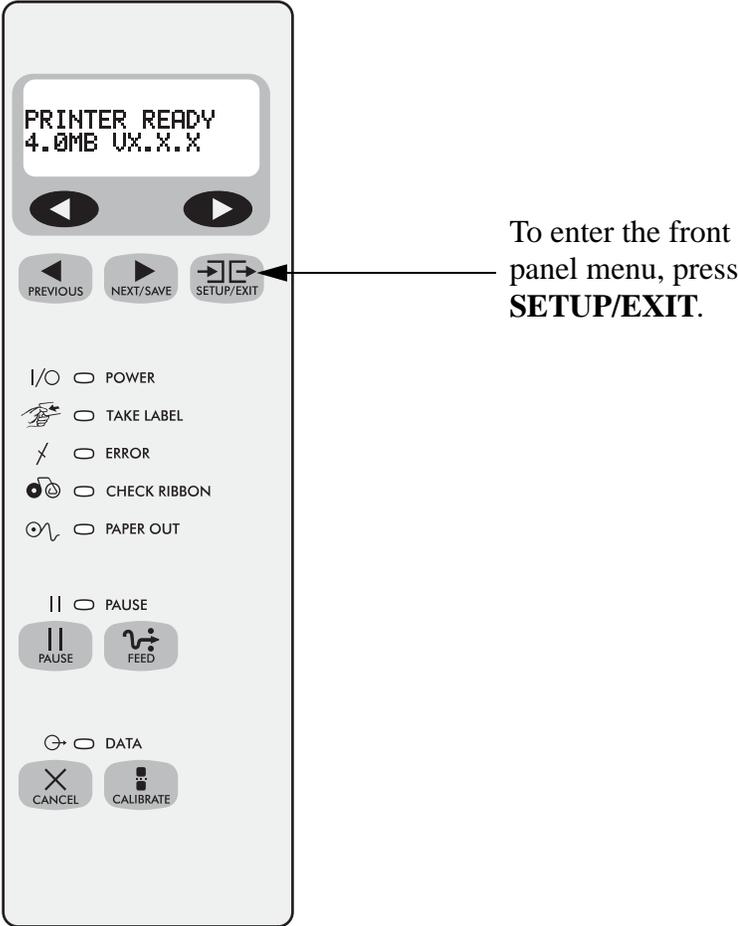
Related Documents

In addition to the *Zebra Xi*III*Plus Users Guide,* the following documents might be helpful references:

- *ZPL II*® *Programming Guide Volume I* (part number 45541L) and *Volume II* (part number 45542L).

- *PrintServer II™ Installation and Users Guide* (part number 45537L).

- *Maintenance Manual* (part number 13185L for the 110*Xi*III*Plus*, part number 48152L for all other *Xi*III*Plus* printers)

CHAPTER 1

Introduction

This chapter gives you an overview of the *Xi*III*Plus* printer.

Contents

Unpack and Inspect the Printer

Make sure the printer is in good condition when you receive it. The instructions below outline what you need to do.

Inspect the Printer

Use this list as a guide to inspect the printer.

- Check all exterior surfaces.
- Raise the media access door and inspect the media compartment.
- In case shipping is required, save the carton and all packing material. Contact your authorized Zebra reseller for instructions.
- A power cord may or may not be included. If one is not included, or if the one included is not suitable for your requirements, see *Power Cord on page 7*.

Caution • For personal and equipment safety, always use an approved three-conductor power cord specific to the region or country intended for installation. This cord must utilize and IEC-320 female connector, and the appropriate region-specific three-conductor grounded plug configuration.

To Report Damage

If you discover shipping damage:

- Immediately notify the shipping company and file a damage report with them. Zebra Technologies is not responsible for any damage incurred during shipment of the equipment and will not repair this damage under warranty.
- Keep the carton and all packing material for inspection.
- Notify your authorized Zebra reseller.

Storage

If you are not placing the printer into operation immediately, repackage it using the original packing materials. The printer may be stored under the following conditions:

- Temperature: –40° to 140° F (–40° to 60° C)
- Relative humidity: 5% to 85% non-condensing

Printer Overview

The printer controls are on the front panel. These controls are used to change print settings as needed for your application.

This illustration shows the printer's front panel. The numbered callouts are described in the table that follows the illustration.
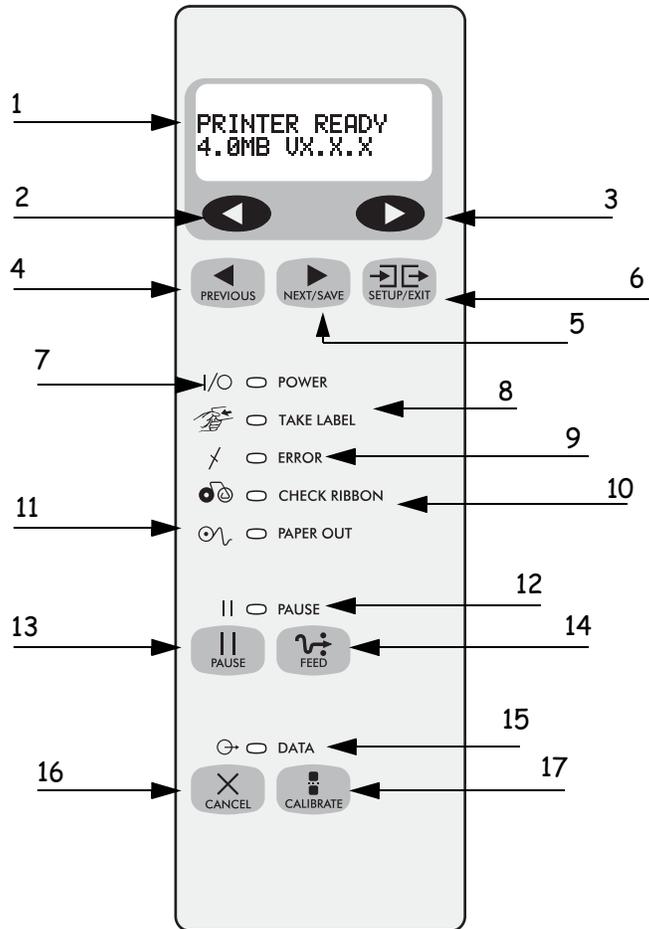
Callout	Description
1	LCD shows printer status.
2	Left oval decreases the value, answers NO, indicates OFF, or returns to the previous selection.

Callout	Description
3	Right oval increases values, answers `YES`, indicates `ON`, or moves to the next selection.
4	**PREVIOUS** goes back one step.
5	**NEXT/SAVE** moves one step or saves settings if used after **SETUP/EXIT**.
6	**SETUP/EXIT** enters or leaves menu from the **PRINTER READY** display.
7	Power light is green when power cord is connected and printer is turned On (**I**).
8	Take Label light flashes to remind you to take a label when the Peel option is used.
9	Error light shows error condition. Additional lights show where the error is happening.
10	Check Ribbon shows ribbon supply problem.
11	Paper Out shows label supply problem.
12	Pause light shows when **PAUSE** is pressed and printer is stopped.
13	**PAUSE** pressed once stops printer; pressed again restarts printer.
14	**FEED** pressed once feeds a label without printing.
15	Data light flashes to show information going to printer.
16	**CANCEL** stops current print job.
17	**CALIBRATE** when used with **PAUSE** calibrates the printer.

Components

This illustration shows the side view of your printer. The callouts are identified in the table that follows.

! **Important •** Depending on the printer options you have selected, your printer may look slightly different. For more about printer options, go to www.zebra.com.
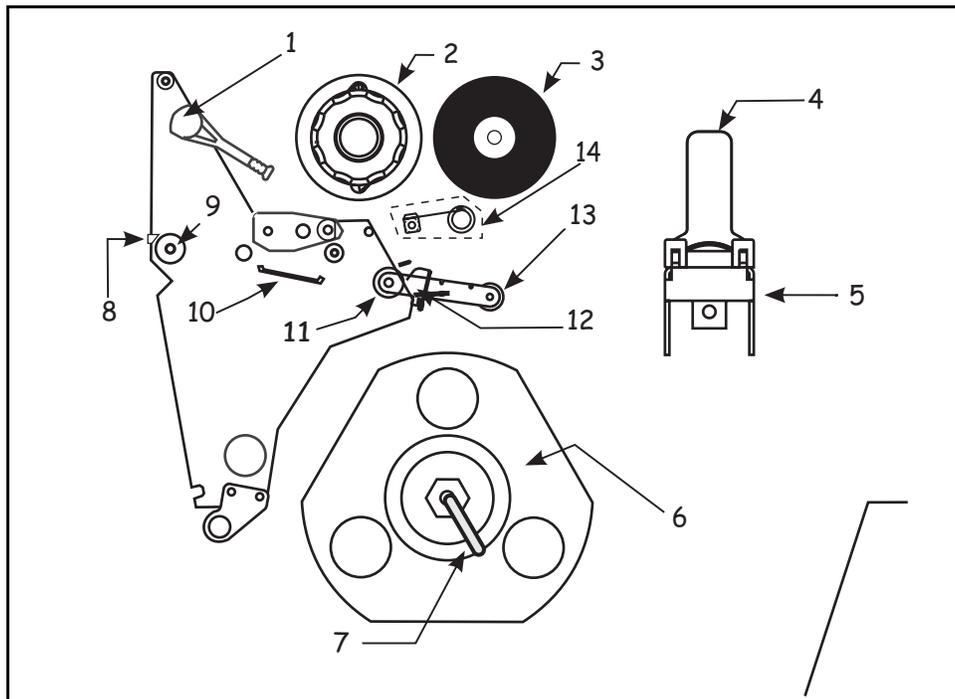
Callout	Description
1	Printhead lever
2	Ribbon take-up spindle
3	Ribbon supply spindle
4	Media supply guide
5	Media supply hanger
6	Rewind spindle (Optional)
7	Spindle hook
8	Tear-off bar
9	Platen roller
10	Snap plate
11	Lower roller
12	Media guide
13	Dancer roller assembly (Selected models only)
14	Ribbon dancer roller assembly (Selected models only)

Printer Options

Your printer can have options including:

- Rewind Spindle
- Peel (Take Label) Sensors
- Cutter

These options change the way your ribbon and labels are loaded. For more information, see .

Standard Interfaces

Standard communication interfaces are:

- RS-232 serial data port
- Bi-directional parallel port
- USB 2.0 port (USB 1.0- and 1.1-compatible).

    For more information on the standard communication interfaces, see *Standard Ports on page 38*.

Optional Interfaces

The optional interfaces are:

- ZebraNet® PrintServer II, which enables the printer to be connected to 10Base-T Ethernet networks.
- Wireless Card Socket for wireless communication with the printer.
- RS-422/485 port with multidrop capability.
- IBM® Twinax or IBM® Coax option is available for those applications that require them.

    For optional interfaces like the PrintServer II, see the documentation that comes with the interface.

Power Cord

Depending on how your printer was ordered, a power cord may or may not be included. If one is not included, or if the one included is not suitable for your requirements, see the power cord illustration for the correct cord configuration.

Caution • For personal and equipment safety, always use an approved three-conductor power cord specific to the region or country intended for installation. This cord must utilize and IEC-320 female connector, and the appropriate region-specific three-conductor grounded plug configuration.

This illustration and the callout table that follows it identify the parts of the power cord. See *Power Cord Specifications on page 110* for certification information.
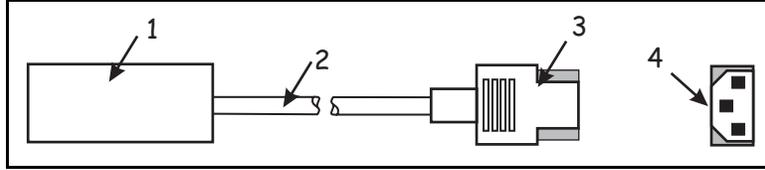
Callout	Description
1	AC power plug for your country
2	3-conductor cable
3	IEC 320 connector
4	Neutral earth live in contact view

CHAPTER 2

Printer Setup and Calibration

This chapter gives you step-by-step instructions to set up your printer and print a calibration label.

Contents

Before You Begin

Review this checklist before you begin loading your Zebra *Xi*III*Plus* printer.

❑**Labels** Do you have the correct labels for your application? If you are not sure, see *Types of Labels on page 24*.

❑**Ribbon** Do you need ribbon?

! **Important •** The label type determines whether ribbon is needed.

• **Direct thermal labels** do not need ribbon. Do not load ribbon with direct thermal labels.

• **Thermal transfer labels** do need ribbon.

Load the Printer

This section gives you a series of instructions to load labels and ribbon (if used).

The instructions that follow are for a standard printer in Tear-Off Mode. For a printer with special options, see *Labels and Print Modes on page 23*. For advanced application instructions, such as how to load different types of labels, or how to choose printing modes, see *Front Panel Controls on page 54*.

⚠ Caution • Be sure the printer is off (**O**) if you have connected the power cable.

To load the labels, complete these steps:

1. Open the printhead.

This illustration calls out the parts of the printer used when loading the labels.
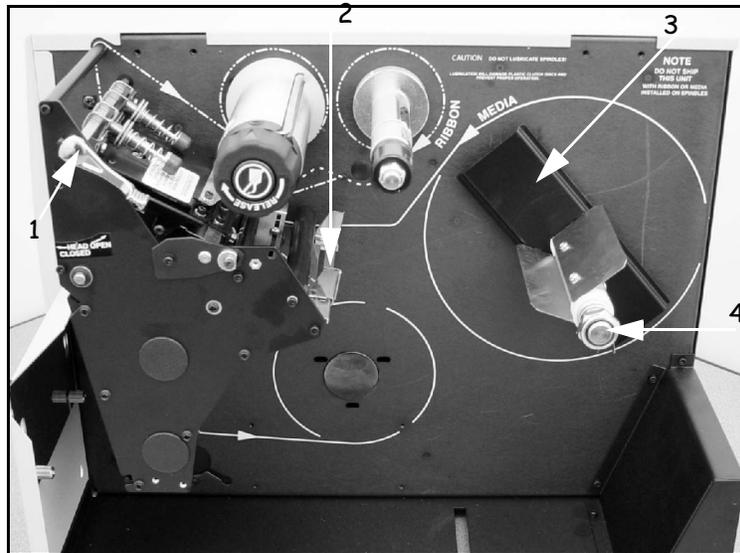
Callout	Description
1	Printhead lever in open position.
2	Media Guide
3	Media back plate
4	Optional media spindle (media hanger standard)

2. Slide the media guide away from the printer frame. You may need to loosen the media guide screw.

3. Put the roll of labels on the media hanger. (Optional media spindle is shown.)

4. Push the label core toward the printer frame. The labels must be aligned with the label core.

The illustration below shows labels loaded in the prnter. The callouts show the labels and the parts of the printer described in the instructions.
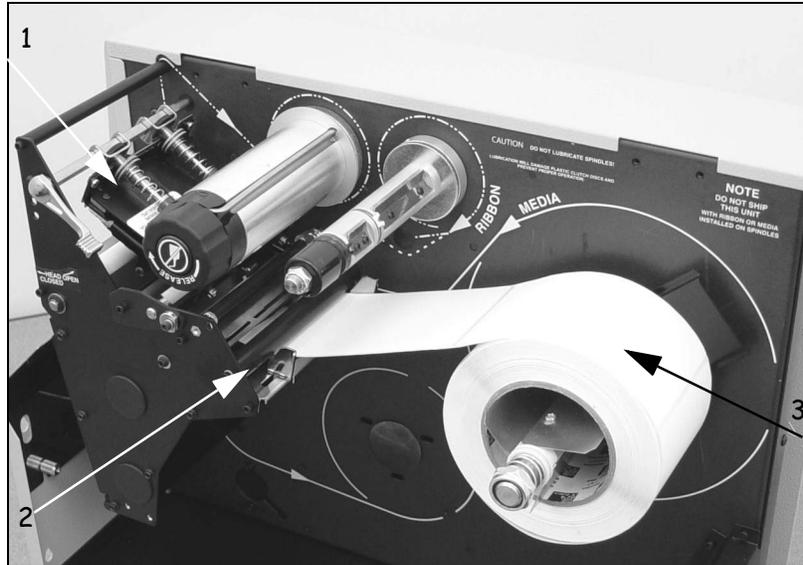
Callout	Description
1	Printhead
2	Media guide roller
3	Labels

5. Feed the labels under the media guide roller and under the printhead.

6. Adjust the media supply guide so it is just touching the edge of the label.

The labels should lie flat as shown in the illustration.

7. Are you using direct thermal labels?

- If yes, close the printhead and go to *To print a configuration label, complete these steps: on page 18*.

- If no, go to *To make a ribbon leader, complete these steps: on page 13*.

! **Important •** The label type determines whether ribbon is needed.

- **Direct thermal labels** do not need ribbon. Do not load ribbon with direct thermal labels.

- **Thermal transfer labels** do need ribbon.

To make a ribbon leader, complete these steps:

1. Unroll about 6″ (150 mm) of ribbon from the roll.
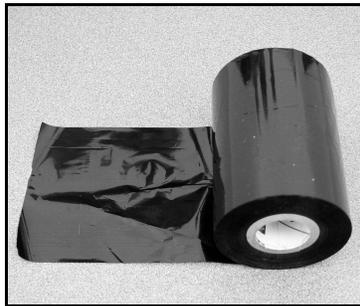
2. Tear off a strip of labels and liner about 6″ (150 mm) long from the label roll.

3. Peel off a label from the liner and apply half of the label to the end of the liner and half to the end of the ribbon.
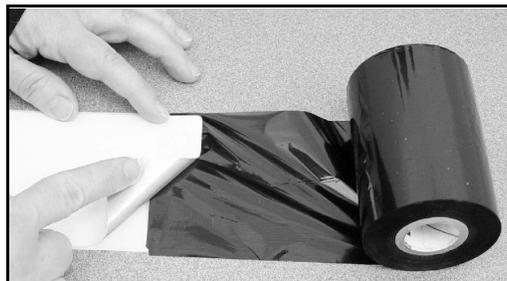
This acts as a ribbon leader.
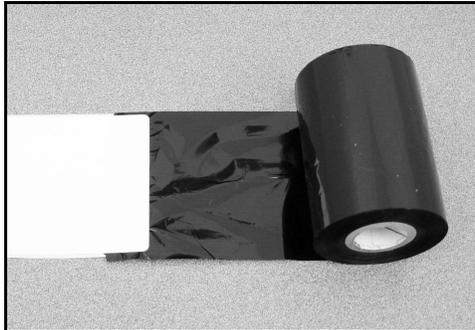
To load the ribbon, complete these steps:

1. Put the roll of ribbon on the ribbon spindle and push the core as far as it will go, until it is against the stop on the ribbon supply spindle.

The callouts in the illustration below and the table that follows show the printer components used when loading the ribbon.
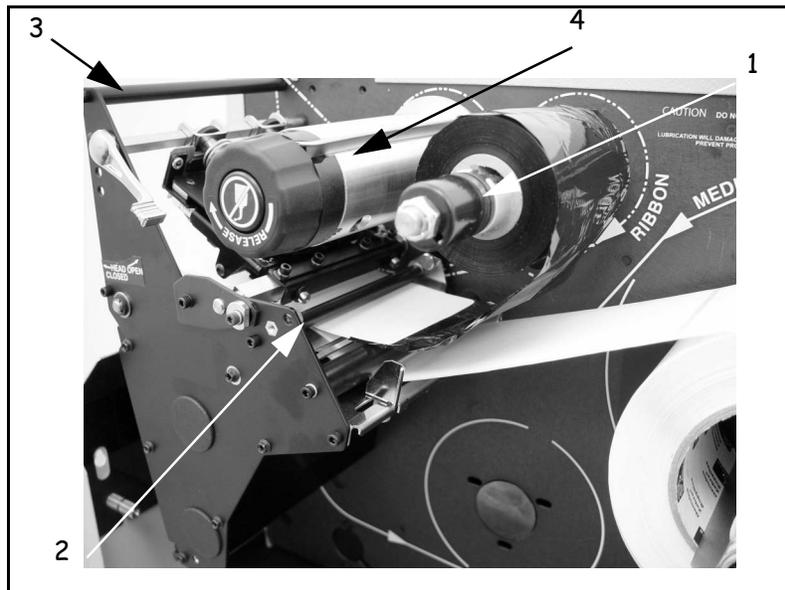
Callout	Description
1	Ribbon supply spindle
2	Ribbon guide roller

Callout	Description
3	Top roller
4	Ribbon takeup spindle

2. Pull the ribbon leader up over the top roller, above the printhead.

The callouts in the illustration and the table that follows show you the ribbon path.
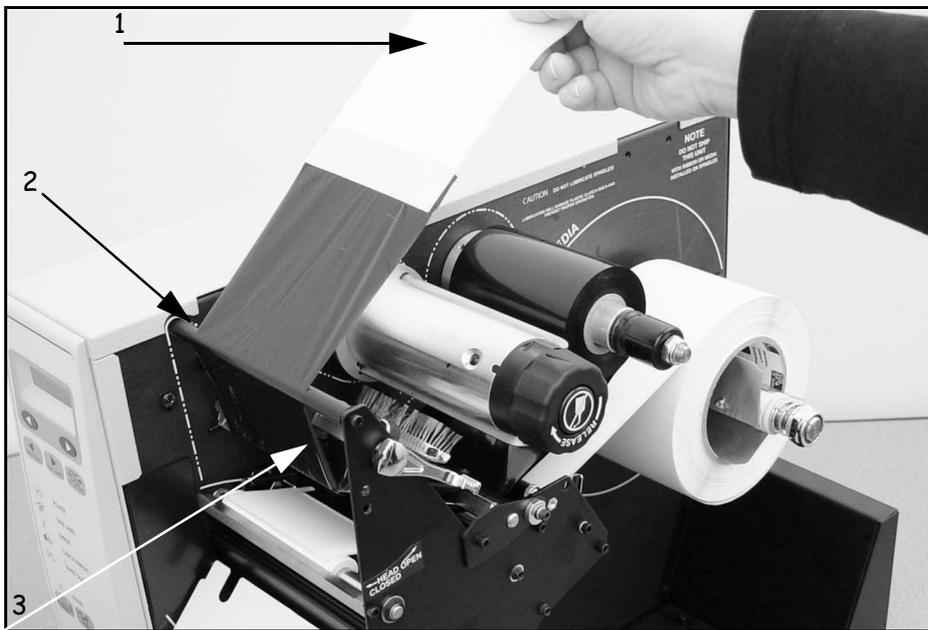
Callout	Description
1	Ribbon leader
2	Top roller
3	Printhead

3. Bring the leader and ribbon under the ribbon takeup spindle. Wrap the leader and ribbon around the spindle. Turn the spindle several times until the ribbon stays on the spindle.

The callouts in the illustration below and the table that follows show the ribbon leader on the takeup spindle.

Callout	Description
1	Ribbon leader
2	Takeup spindle

4. Close the printhead.

The callouts in the illustration below and the table that follows show ribbon and labels loaded in the printer.
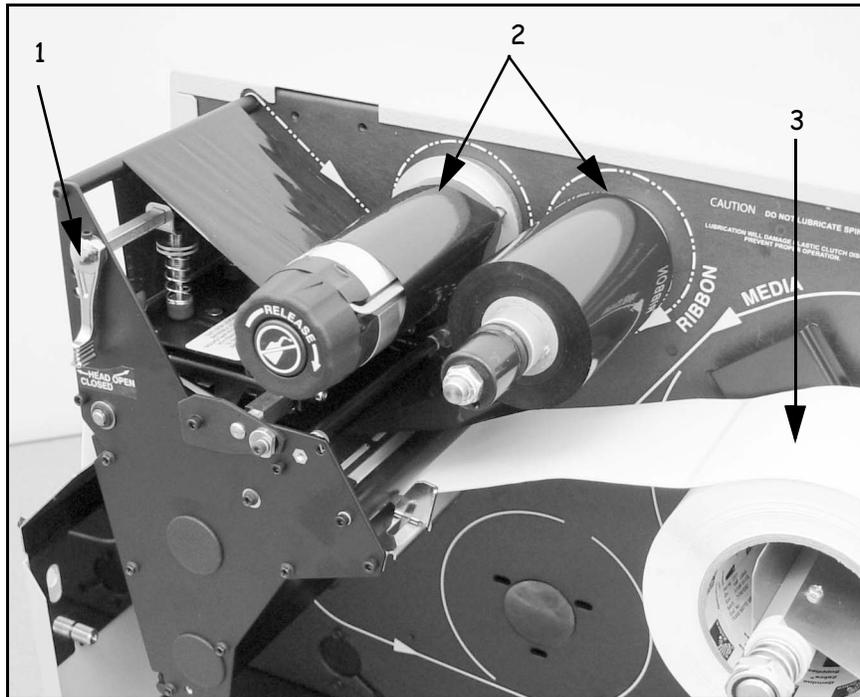
Callout	Description
1	Printhead lever in closed position
2	Ribbon
3	Labels

To print a configuration label, complete these steps:

1. Connect the power cord to the printer.

The power connection is at the back of the printer.

Caution • For personal and equipment safety, always use an approved three-conductor power cord specific to the region or country intended for installation. This cord must utilize and IEC-320 female connector, and the appropriate region-specific three-conductor grounded plug configuration.

2. To confirm the power connection, turn the printer On (**I**).

3. If PRINTER READY displays on the front panel LCD, go to the next step.

If PRINTER READY does not display, go to *Troubleshooting on page 120*.

4. Turn the printer Off (**O**).

5. Press and hold **CANCEL** while turning the printer On (**I**) .

6. After the DATA light turns off (approximately five seconds), release **CANCEL**.

The configuration label prints.

```
            PRINTER CONFIGURATION

Zebra Technologies
ZTC 90XiIII Plus-300dpi

04.0............... DARKNESS
2 IPS.............. PRINT SPEED
+000............... TEAR OFF
TEAR OFF........... PRINT MODE
NON-CONTINUOUS..... MEDIA TYPE
WEB................ SENSOR TYPE
THERMAL-TRANS...... PRINT METHOD
086 08/12 MM....... PRINT  WIDTH
2022............... LABEL LENGTH
39.0IN   988MM..... MAXIMUM LENGTH
MEDIA DISABLED..... EARLY WARNING
MAINT. OFF......... EARLY WARNING
NOT CONNECTED...... USB COMM.
PARALLEL........... PARALLEL COMM.
RS232.............. SERIAL COMM.
9600............... BAUD
8 BITS............. DATA BITS
NONE............... PARITY
XON/XOFF........... HOST HANDSHAKE
NONE............... PROTOCOL
000................ NETWORK ID
NORMAL MODE........ COMMUNICATIONS
<~>  7EH........... CONTROL PREFIX
<^>  5EH........... FORMAT PREFIX
<,>  2CH........... DELIMITER CHAR
ZPL II............. ZPL MODE
CALIBRATION........ MEDIA POWER UP
CALIBRATION........ HEAD CLOSE
DEFAULT............ BACKFEED
+000............... LABEL TOP
+0000.............. LEFT POSITION
0000............... HEAD TEST COUNT
0500............... HEAD RESISTOR
OFF................ VERIFIER PORT
OFF................ APPLICATOR PORT
PULSE MODE......... START PRINT SIG
FEED MODE.......... RESYNCH MODE
DISABLED........... REPRINT MODE
047................ WEB S.
079................ MEDIA S.
072................ RIBBON S.
050................ MARK S.
000................ MARK MED S.
003................ MEDIA LED
000................ RIBBON LED
000................ MARK LED
+10................ LCD ADJUST
DPSWFXM............ MODES ENABLED
................... MODES DISABLED
1024 12/MM FULL.... RESOLUTION
V42.11.0 <-........ FIRMWARE
V12.0.0.21......... HARDWARE ID
CUSTOMIZED......... CONFIGURATION
12288............R: RAM
2048.............E: ONBOARD FLASH
NONE............... FORMAT CONVERT
007 POWER SUPPLY... P31 INTERFACE
004 DISPLAY........ P32 INTERFACE
................... TWINAX/COAX ID
FW VERSION......... IDLE DISPLAY
00/00/00........... RTC DATE
18:19.............. RTC TIME
DYNAMIC............ IP RESOLUTION
ALL................ IP PROTOCOL
010.003.004.095.... IP ADDRESS
255.255.255.000.... SUBNET MASK
010.003.004.001.... DEFAULT GATEWAY
```

! **Important** • Your label may look different from the sample.

- The configuration label is a record of your printer settings.
- Keep the configuration label for baseline information on your printer when troubleshooting printing problems.

7. Did the label print?

- **Yes**, a configuration label printed. Connect the printer to your computer system. Communication can be handled in many different ways.

  More information about the standard interfaces is available in *Standard Ports on page 38*.

- **No**, a label did not print. Sensors out of position is a common cause of printing problems.

Sensor Adjustment

Adjust sensors **only** when the printer cannot detect the top of the label. The front panel LCD displays `ERROR CONDITION PAPER OUT`, even though there are labels loaded in the printer.

Transmissive Sensor

The transmissive sensor consists of two sections: a light source (the lower media sensor) and a light sensor (the upper media sensor). The media passes between the two.

The upper media sensor must be positioned:

- Directly over the hole or notch, or
- Anywhere along the width of the media if there is a gap between labels.

To adjust the upper and lower media sensors, complete these steps:

1. Remove the ribbon (if ribbon is used).

2. Locate the upper media sensor. The upper media sensor eye is directly below the adjustment screw head.

   See the illustration for a simplified view of the media sensor. Callouts in the illustration are explained in the table that follows.
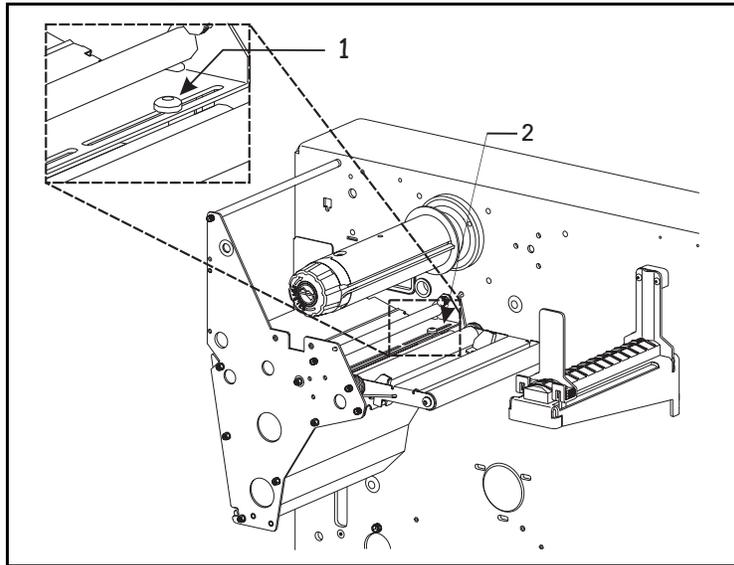
Callout	Description
1	Upper media sensor adjustment screw
2	Upper media sensor

Note • If you are using continuous media, position the upper media sensor over the labels so that the printer can detect an out-of-paper condition.

3. Slightly loosen the upper media sensor adjustment screw (use a Phillips-head screwdriver).

4. Using the tip of the screwdriver, slide the upper sensor along the slot to the desired position.

5. Tighten the adjustment screw to secure the upper media sensor.

The callout in the illustration below and the table that follows show the lower media sensor.
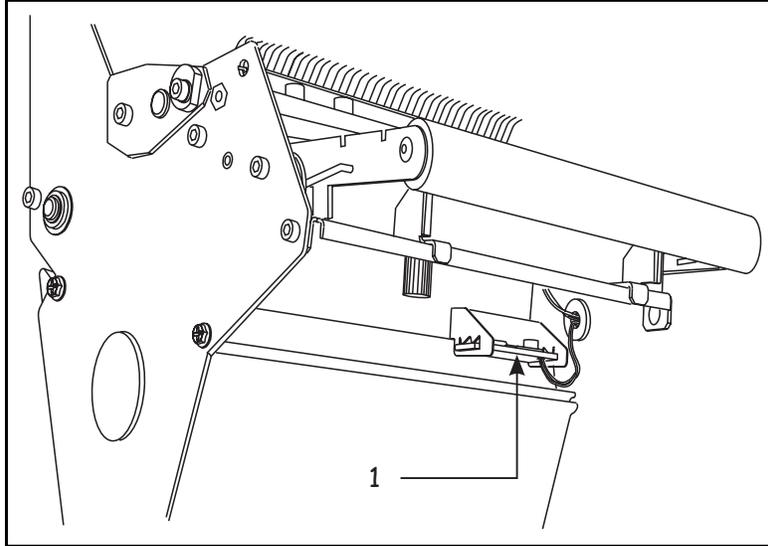
Callout	Description
1	Lower media sensor

6. Position the lower media sensor by sliding it in its slot until it is directly under the upper media sensor

To adjust the black mark sensor

The black mark sensor is in a fixed position and set from the front panel. Refer to *Front Panel Controls on page 54* for instructions.

CHAPTER 3

Labels and Print Modes

This chapter tells you about the label and print mode setups you can use.

Contents

Label Types

Set up the printer to match the label, ribbon, and printer options you have chosen. If your label style or your printer options were different from those shown in *To load the labels, complete these steps: on page 11*, review the label styles and print modes in this chapter.

Note • A calibration must be performed when the labels and ribbon (if used) are first installed in the printer, or when labels or ribbon are changed. The printer default is auto-calibration. Auto-calibration takes place when the printer is first turned on and after the printhead has been closed, unless the settings have been changed through the front panel or through a software command.

Types of Labels

Non-Continuous Web labels Non-continuous web labels (shown below) are individual labels that are separated by a gap, notch, or hole. When you look at the labels, you can tell where one label ends and the next one begins.

The callouts in the illustration and the following table identify different types of non-continuous labels.
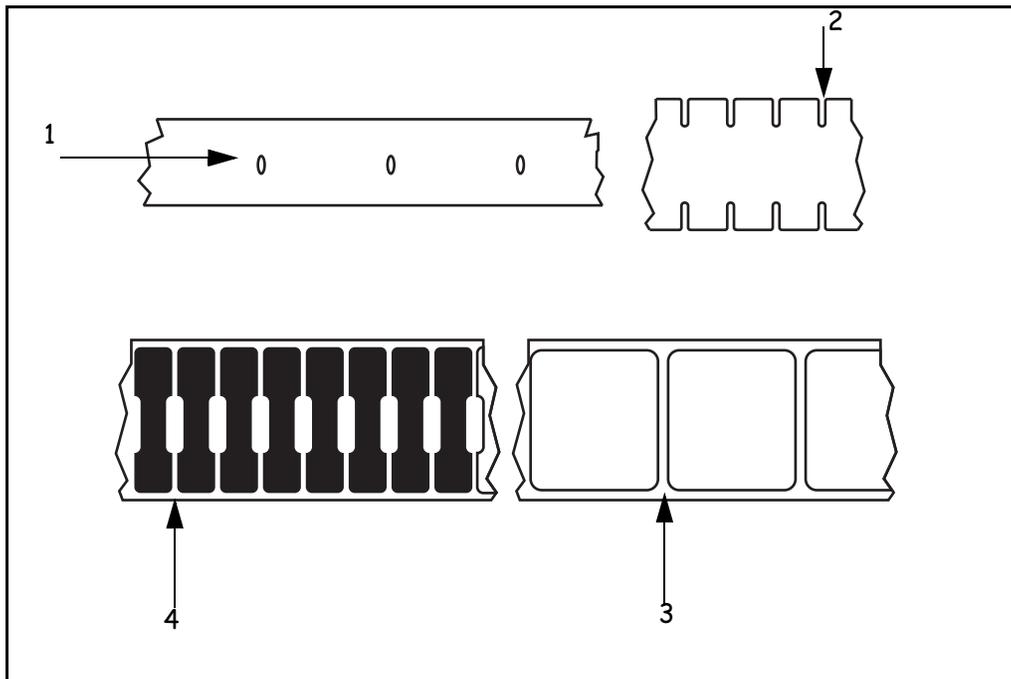
Callout	Description
1	Non-continuous label with hole.
2	Non-continuous label with notch.
3	Non-continuous labels on continuous liner with 0.07–0.16 in. (2–4 mm) gap between labels.
4	Non-continuous labels on continuous liner with 0.07–0.16 in. (2–4 mm) gap between labels.

Non-Continuous Black Mark labels Non-continuous black mark labels have black marks printed on the back of the liner material that indicate the start and end of each label. Shown in this illustration are examples of black marks.
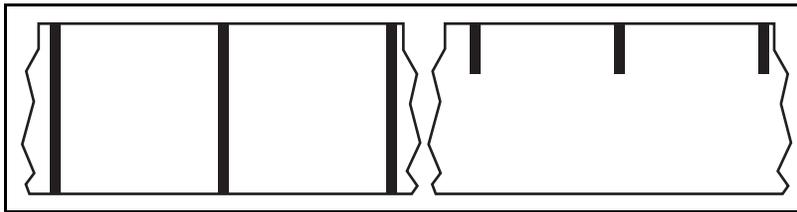
Continuous labels Continuous labels form an uninterrupted roll of material (shown in this illustration) that allows the image to be printed anywhere on the label.
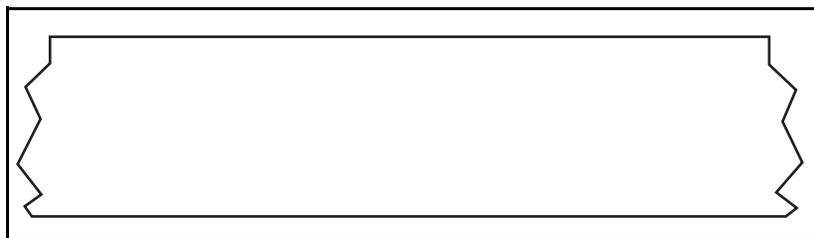
Print Mode Choices

The options on your printer may let you set up additional print modes. See *Front Panel Controls on page 54* to set up the printer front panel controls to match the print mode you are using.

Tear-Off Mode

See *Load the Printer on page 10* to set up roll labels in Tear-Off Mode.

Rewind Mode

Rewind Mode allows the labels to be wound on a core after printing.

Note • Rewind Mode cannot be used with the cutter option for any 110*Xi*III*Plus*.

To set up Rewind Mode, complete these steps:

1. Remove the rewind plate from its storage location inside the printer media compartment.

The callouts in the illustration and the following table identify the parts of the printer and rewind plate.
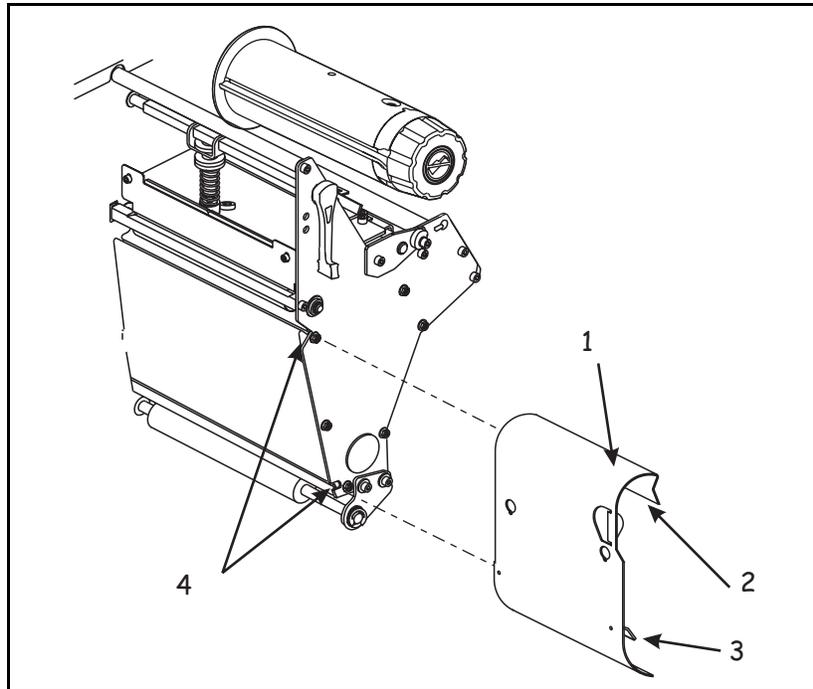
Callout	Description
1	Rewind plate
2	Lip
3	Adjustable hook plate
4	Slots

2. Position the rewind plate so the lip on the attached hook plate points down.

3. Insert the hook plate lip a short distance (1/2 in. or 13 mm) into the lower opening in the side plate.

4. Align the upper end of the rewind plate with the matching opening in the side plate.

5. Slide in the rewind plate until it stops against the printer's main frame.

6. Open the printhead.

7. Slide the media guide and media supply guide as far from the printer frame as possible. Flip down the media supply guide.

8. Load labels as shown in *Load the Printer on page 10*.

9. When loading labels, allow approximately 36 in. (915 mm) of labels to extend past the printhead. Remove all labels from this portion to create a leader.

10. Remove the hook from the rewind spindle. If you are using a core, slide it onto the rewind spindle until it is flush against the guide plate.

11. Wind the label liner around either the 3 in. (76 mm) core or the rewind spindle. Reinstall the hook.

12. Flip up the media supply guide. Slide in the media guide and media supply guide so they just touch the edge of the labels. The labels should lie flat.

13. Before closing the printhead, make sure:

    • The labels are positioned against the inside guides.

    • The labels are taut and parallel to the pathway when wound onto the rewind spindle or core.

14. Close the printhead.

    The labels wind on the rewind spindle or core. The callouts in the illustration and table that follow show the printer and labels in Rewind Mode.
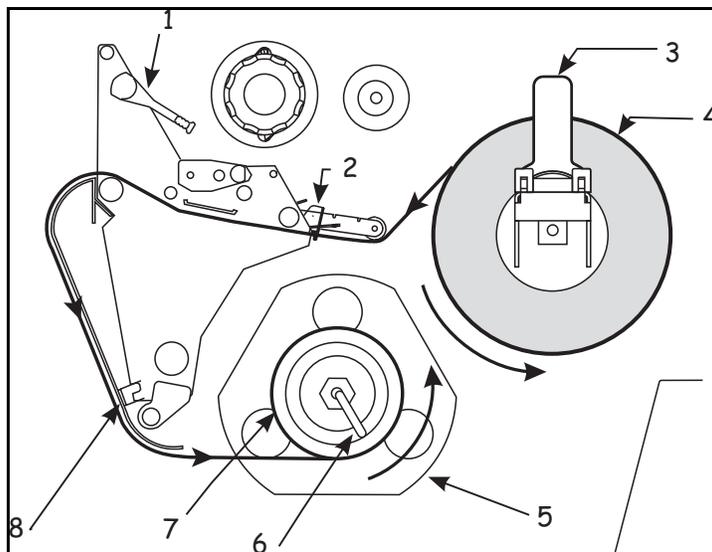
Callout	Description
1	Printhead lever
2	Media guide

Callout	Description
3	Media supply guide
4	Labels
5	Guide plate
6	Spindle hook
7	Rewind spindle
8	Rewind plate

Peel-Off Mode

Peel-Off Mode advances one label at a time. The printer does not print another label until the first label is removed. The TAKE LABEL light flashes until the label is removed. The liner is wound on the rewind spindle, but the rewind plate is not used.

To set up the printer in Peel-Off Mode, complete these steps:

1. Remove the rewind plate (if installed) from the front of the printer. Store it on the two mounting screws on the inside of the front panel.

2. Open the printhead.

3. Slide the media guide and media supply guide as far from the printer frame as possible. Flip down the media supply guide.

4. Start by loading labels as shown in *Load the Printer on page 10*.

5. When loading labels, allow approximately 36 in. (915 mm) of labels to extend past the tear-off/peel-off bar. Remove all labels from this portion to create a leader.

6. Remove the hook from the rewind spindle. If you are using a core, slide it onto the rewind spindle until it is flush against the guide plate.

7. Wind the label liner around either the 3 in. (76 mm) core or the rewind spindle and reinstall the hook.

8. Flip up the media supply guide. Slide in the media guide and media supply guide so they just touch, the edge of the labels. The labels should lie flat.

9. Before closing the printhead, make sure:

   - The labels are positioned against the inside guides.
   - The labels are taut and parallel with the pathway when wound onto the rewind spindle or core.

10. Close the printhead.

The liner winds on the rewind spindle or core. The callouts in the illustration and table that follow show the printer and labels in Peel-off Mode.
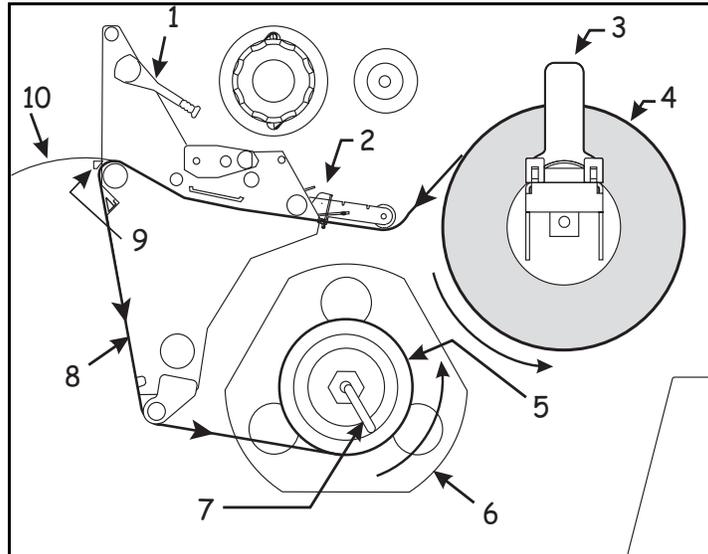
Callout	Description
1	Printhead lever
2	Media guide
3	Media supply guide
4	Labels
5	Rewind spindle
6	Guide plate
7	Spindle hook
8	Label backing
9	Tear-off bar
10	Label

Rewind Mode with Cutter Option

Printers with the Cutter option can use the Rewind Mode, if you wish to print and save a roll of labels. A cutter, as its name suggests, is a rotating knife with a self-sharpening blade. The cutter is attached to the front of the printer. See www.zebra.com for more information about the cutter option.

Note • The 110*Xi*III*Plus* printers do not combine the rewind option with the cutter option.

To set up the Rewind Mode for printers with the cutter option, complete these steps:

1. Turn the printer on (**I**).

   The printer feeds out and cuts one label.

2. Select Rewind Mode from the front panel menu.

3. Remove the rewind plate from its storage location in front of the print mechanism inside the media compartment.

4. Invert the rewind plate so that the lip on the attached hook plate points down.

5. Insert the hook plate lip a short distance (1/2 in. or 13 mm) into the lower opening in the side plate. Slide in the rewind plate until it stops against the printer's main frame.

6. Insert the two small tabs on the rewind plate into the corresponding slots in the cutter support bracket. (The rewind plate should spring into the proper position.)

7. Open the printhead.

8. Slide the media guide and media supply guide as far from the printer frame as possible.

9. Flip down the media supply guide.

10. Load labels as shown in *Load the Printer on page 10*. Feed the labels through the cutter mechanism.

Caution • Cutter blade is sharp. Do **not** touch the blade with your fingers.

11. When loading labels, allow approximately 36 in. (915 mm) of labels to extend past the printhead. Remove all labels from this portion to create a leader.

12. Remove the hook from the rewind spindle.

13. If you are using a core, slide it onto the rewind spindle until it is flush against the guide plate.

14. Wind the label liner around either the 3 in. (76 mm) core or the rewind spindle.

15. Reinstall the hook.

16. Flip up the media supply guide.

17. Slide in the media guide and media supply guide so they just touch, but do not restrict, the edge of the roll.

18. Before closing the printhead, make sure:

- The labels are positioned against the inside guides.
- The labels are taut and parallel with the pathway when wound onto the rewind spindle or core.

19. Close the printhead.

The labels wind on the rewind spindle or core. The callouts in the illustration and table that follows show the printer and labels in Rewind Mode with the cutter option.
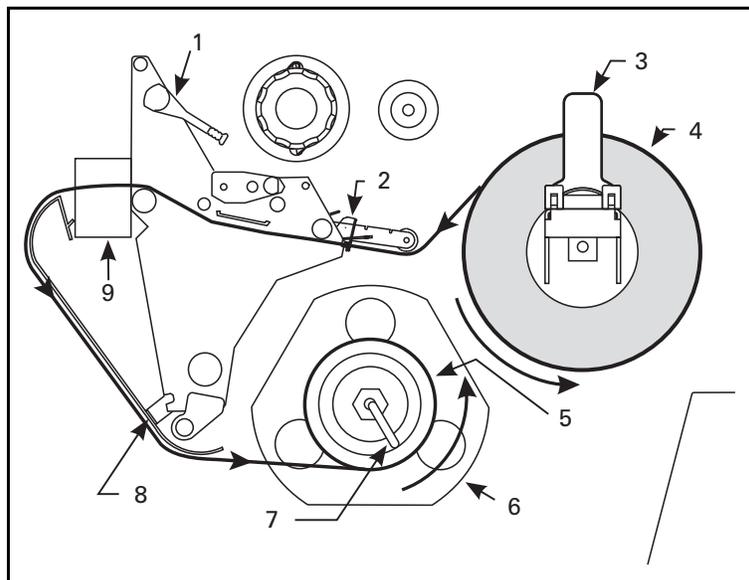
Callout	Description
1	Printhead lever
2	Media guide
3	Media supply guide
4	Labels

Callout	Description
5	Rewind spindle
6	Guide plate
7	Spindle hook
8	Rewind plate
9	Cutter

Rewind Spindle

Rewind Mode and Peel-Off Mode use the rewind spindle. Label liner must be removed every time you change labels for the printer to work correctly.

Important • It is **not** necessary to turn off the power to remove liner from the rewind spindle. If power is turned off, all label formats and images, as well as any temporarily saved parameter settings stored in the printer's internal memory, are lost. When power is turned back on, these items must be reloaded.

To remove label liner from the rewind spindle, complete these steps:

Note • If the labels have not run out, you must cut the label liner at the spindle.

1. Unwind approximately 36 in. (915 mm) of liner from the rewind spindle. Cut it off at the spindle.
2. Pull out the hook. Slide the liner off of the rewind spindle and discard.
3. Wind the labels around the rewind spindle once or twice, then reinstall the hook.
4. Continue winding to remove any slack in the labels.

Fanfold Labels

Fanfold labels feed through either the bottom or rear access slot from outside the printer. The media hanger or media supply spindle are **not** used with fanfold labels.

To load fanfold labels, complete these steps:

1. Open the printhead.

2. Slide the media guide as far from the printer frame as possible.

3. How do you want to feed fanfold labels?

   • From the bottom slot in the printer body. The callouts in the illustration and table that follow show the printer and fanfold labels loaded through the bottom slot.
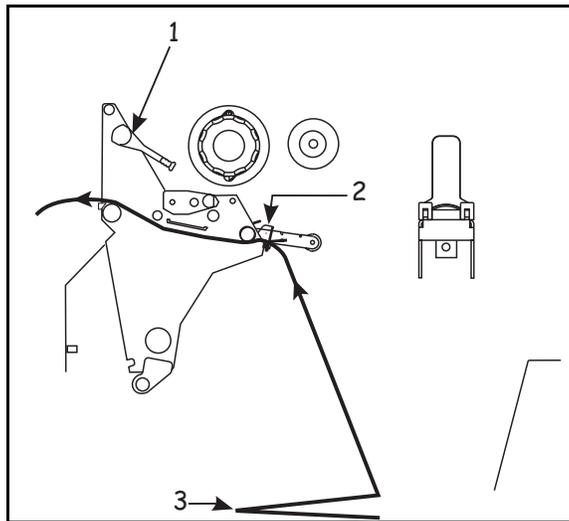
   • From the rear slot in the printer body. The callouts in the illustration and table that follow show the printer and fanfold labels loaded through the rear slot.
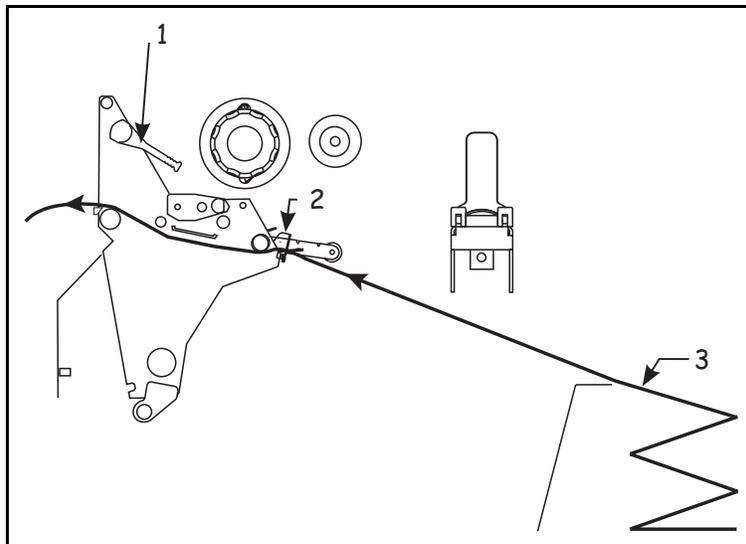
Callout	Description
1	Printhead lever
2	Media guide
3	Fanfold labels

Cutter option

- If you do **not** have a cutter, go to *Step 4, on page 35*.
- If you do have a cutter, feed the fanfold labels through the cutter.

⚠️ **Caution •** The cutter blade is sharp. Do **not** touch the blade with your fingers.

4. Slide in the media guide so it just touches, but does not restrict, the edge of the labels.

5. Close the printhead lever.

Ribbon Removal

When the ribbon has run out or must be changed, remove the used ribbon from the take-up spindle.

- If the ribbon has run out, follow the instructions below.
- If the ribbon has not run out, open the printhead and tear or cut the ribbon as close to the ribbon take-up spindle as possible. Follow the instructions below.

Note • Do **not** cut through the ribbon on the take-up spindle. Using the release knob allows you to slide the ribbon off the spindle. Cutting may damage the spindle.

To remove ribbon from the take-up spindle, complete these steps:

1. Open the printhead.

The illustration below and the table that follows show the ribbon take-up spindle. The inset shows the notches in the spindle.
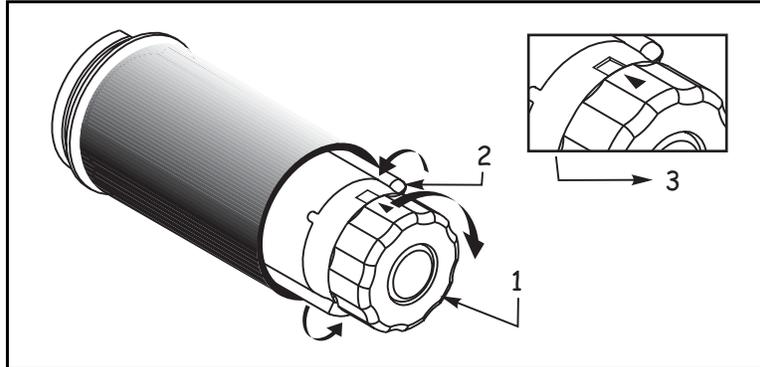
Callout	Description
1	Rewind ribbon spindle knob
2	Ribbon release bars
3	Notch in ribbon supply spindle

2. While holding the ribbon take-up spindle, turn the knob clockwise until it stops. This causes the ribbon release bars to pivot down, easing the spindle's grip on the wound ribbon.

3. Slide the ribbon off the ribbon take-up spindle. Once the spent ribbon has been removed, ensure that the arrow on the knob aligns with the indented notch in the ribbon take-up spindle.

4. Remove the core from the ribbon supply spindle.

5. To load new ribbon, see the directions in *To load the labels, complete these steps: on page 11*.

CHAPTER 4

Data Ports

This chapter describes the standard communication ports on the *Xi*III*Plus* printers.

Contents

Standard Ports

The different ports available to connect the *Xi*III*Plus* printer to your computer or network include:

- Parallel
- Serial RS232
- USB

Parallel Port

A standard 36-pin parallel connector (as shown below) is available at the back of the printer for connection to the data source.
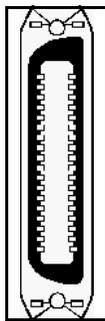
Port selection for status information is determined by the channel sending the request. The parallel port can be set for bidirectional or unidirectional communication. The default setting is bidirectional.

The following table shows the pin configuration and function of a standard computer-to-printer parallel cable.

36-Pin Connectors	Description
1	nStrobe/HostClk
2–9	Data Bits 1–8
10	nACK/PtrClk
11	Busy/PtrBusy
12	PError/ACKDataReq
13	Select/Xflag
14	nAutoFd/HostBusy
15	Not used
16 & 17	Ground
18	+5 V @ 750 mA The maximum current draw may be limited by option configuration.
19–30	Ground
31	ninit
32	nFault/NDataAvail
33 & 34	Not used
35	+5 V through a 1.8 KΩ Resistor
36	NSelectin/1284 active

Serial Port

Communication using the serial data port of the printer requires choosing the number of data and stop bits, parity, and handshaking. Default settings are 9600 baud, 8 data bits, 1 stop bit, no parity, and XON/XOFF. Parity applies only to data transmitted by the printer because the parity of received data is ignored.

The values selected must be the same as those used by the host equipment connected to the printer.

Connect the serial data cable through the female DB-9 connector (shown below) on the back panel of the printer.
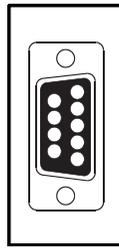
Use a DB-9 to DB-25 interface module for all RS-232 connections through a DB-25 cable.

Note • For all RS-232 input and output signals, the printer follows the specifications of the Electronics Industries Association (EIA) RS-232 and the Consultative Committee for International Telegraph and Telephone (CCITT) V.24.

Serial pin configuration

The table below shows the pin configuration and function of the rear panel serial data connector on the printer.

Pin No.	Name	Description
1	—	Not connected
2	RXD	Receive data—data input to printer
3	TXD	Transmit data—data output from printer
4	DTR	Data terminal ready—output from printer
5	SG	Signal ground
6	DSR	Data set ready—input to printer
7	RTS	Request to send—output from printer
8	CTS	Clear to send—input to printer
9	+5 VDC	+5 VDC signal output **Note •** This pin is also available as a +5 VDC power source at 750 mA. The maximum current draw may be limited by option configuration. To enable this capability, a jumper on the computer's main logic board needs to be installed on JP1, pins 2 and 3.

Note • An interface module is required for RS-422/RS-485 interface support (see *RS-422/ RS-485 Interconnections on page 45*).

RS-232 Interface Connections

Note • Adapters are available from Zebra Technologies LLC.

  • RS422/RS485 adapter, Zebra part number 33130

  • RS232 DB9 to DB 25 adapter, Zebra part number 33138

Direct connection to a computer

The printer is configured as Data Terminal Equipment (DTE).

Note • The cable used to connect the printer to a computer must be a **null modem** (crossover) cable. To connect the printer to any other DTE devices, use a null modem cable.

This illustration shows the internal connections of the printer's RS-232 connector.

RS-232 Connector (DTE)
Rear Panel Female DB-9

2	RXD (receive data) input
3	TXD (transmit data) output
4	DTR (data terminal ready) output
5	SG (signal ground)
6	DSR (data set ready) input
7	RTS (request to send) output
8	CTS (clear to send) input
9	+5 VDC signal source

+5 VDC R1 1 K Ω

NOTE: Pin 1 is unused and unterminated.
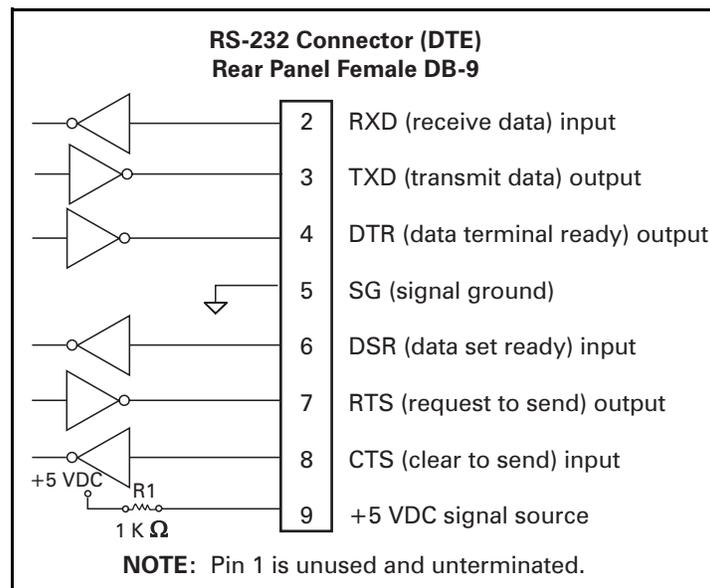
Note • Pin 9 is also available as a +5 VDC power source at 750 mA. The maximum current draw may be limited by option configuration. To enable this capability, a jumper on the computer's main logic board needs to be installed on JP1, pins 2 and 3

DB-9 to DB-25 connections

An interface adapter is required (Zebra part number 33138) to connect the printer's DB-9 interface to a DB-25 connector. A generic DB-25 adapter may also be used. The +5 VDC signal source would not be passed through a generic adapter.

This illustration shows the connections required for the DB-9 to DB-25 interface.
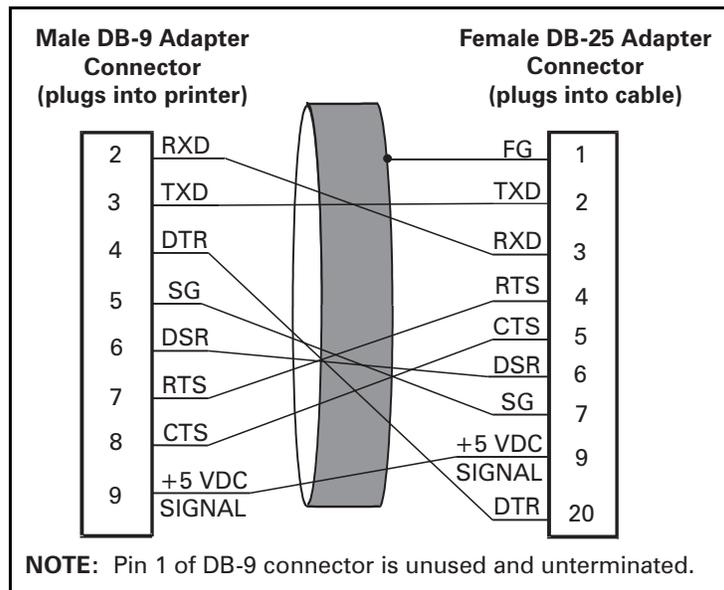
Modem connection

When the printer is connected via its RS-232 interface to Data Communication Equipment (DCE) such as a modem, use a standard RS-232 (straight-through) interface cable.

See this illustration for the connections required for this cable.

DTE (Printer)		DCE (Modem, etc.)
2	← RXD (receive data)	2
3	→ TXD (transmit data)	3
4	→ DTR (data terminal ready)	4
5	← SG (signal ground) →	5
6	← DSR (data set ready)	6
7	→ RTS (request to send)	7
8	← CTS (clear to send)	8
9	→ +5 VDC signal source	9

NOTE: Pin 1 is unused and unterminated at the printer.
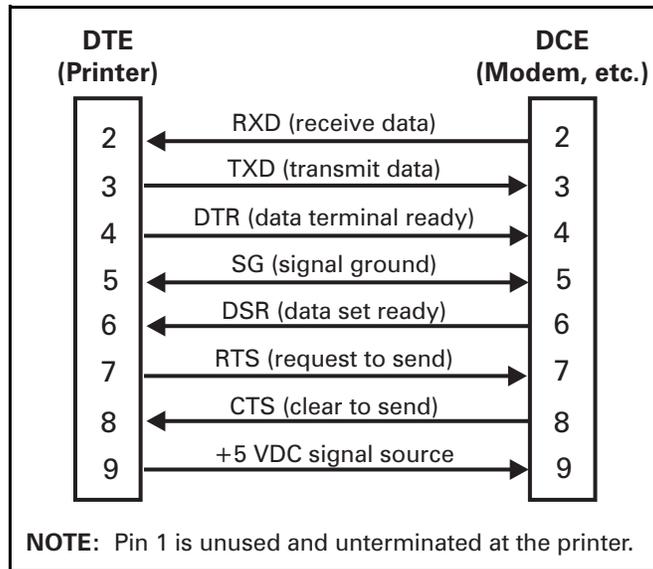
RS-422/RS-485 Interconnections

⚠ **Caution •** A qualified service technician must install a jumper on the main logic board at JP1, Pins 2 and 3 for the RS-422/RS-485 interface adapter to function properly.

An interface adapter (Zebra part number 33130) is required to connect the printer's RS-232 DB-9 interface to a host computer through an RS-422 or RS-485 interface. A generic DB-25 adapter can be used.

This illustration shows the cable wiring for interconnecting the DB-9 to the interface adapter's DB-25 female connector.

Female DB-25 Connector on RS-422/RS-485 Adapter

Signal	Pin
Frame ground	1
+5 VDC 725 mA source	9
Signal ground ref.	11
Data input B (–)	13
Data output B (–)	14
Data input A (+)	16
Data output A (+)	19

NOTE: Pins 2–8, 10, 12, 15, 17, 18, and 20–25 are unused and unterminated.
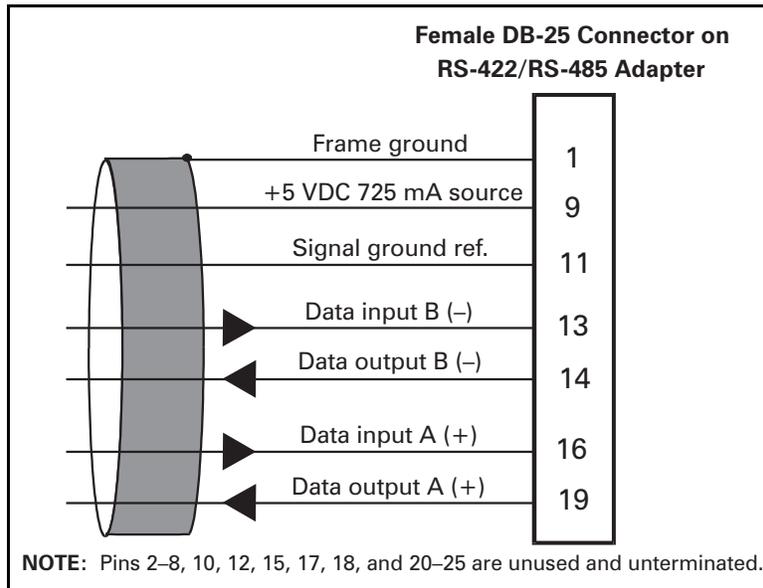
USB 2.0 Port

In addition to serial and parallel data ports, a USB 2.0 port (which is USB 1.1- and 1.0-compatible) is available to connect your printer to the host equipment.

The USB connection is shown in callout 1 of the illustration below.
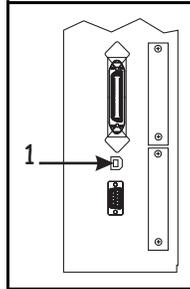
Callout	Description
1	USB port

Note • Use a USB 2.0-certified compliant cable no longer than 15 feet or 5 m long. A 15 foot (5 m) USB cable is available from Zebra (Zebra part number 33011).

Data Cables

Data cables must be fully shielded and fitted with metal or metalized connector shells. Shielded cables and connectors are required to prevent radiation and reception of electrical noise. To minimize electrical noise pickup in the cable, keep data cables as short as possible.

Note • Zebra printers comply with FCC Rules and Regulations, Part 15 for Class B Equipment using fully shielded data cables. Use of unshielded cables may increase radiation above the Class B limits.

• Do not bundle the data cables tightly with the power cords.
• Do not tie the data cables to power wire conduits.

Note • RS-422 and RS-485 applications should use shielded twisted pairs as recommended in the Appendix of the TIA/EIA-485 Specification.

CHAPTER 5

Memory Cards

This chapter describes the optional cards that can be used with the *Xi*III*Plus* printer and gives instructions for installation.

Contents

PCMCIA Card

Caution • The printer electronics are susceptible to static discharge. Before proceeding, ground yourself to the printer to remove any existing static.

See the instructions below to install the Type I- or Type II-compliant PCMCIA card.

Note • The PCMCIA card is hot-swappable (it can be installed while the printer is On).

To install the PCMCIA card, complete these steps:

1. Review the illustration and table that follows to identify the components you will be working with.
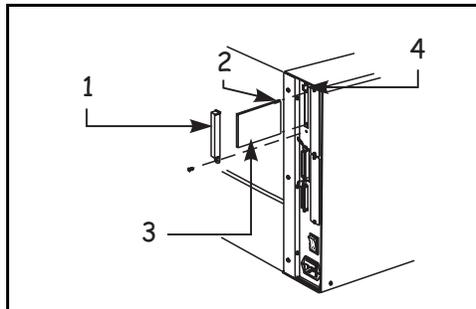
Callout	Description
1	PCMCIA card shield
2	Notch
3	PCMCIA card
4	Card-eject button

2. Remove the PCMCIA card shield from the rear of the printer as shown.

3. Insert the PCMCIA card, with the notch **up**, into the card slot as shown. (Insert far enough to make the eject button pop out.)

4. Reinstall the PCMCIA card shield over the PCMCIA card and card slot.

The printer is now ready to operate with the additional memory or font option.

Note • Initialization of the PCMCIA card may take a few minutes; the PAUSE LED flashes while the card initializes. If the card is already initialized, the PAUSE LED flashes only once or twice.

To be sure the card has successfully initialized, print a configuration label as instructed in *To print a configuration label, complete these steps: on page 18* and review it to see whether the new memory card information is listed.

CompactFlash Card

CompactFlash cards are nonvolatile memory cards that store data even when the power to the printer is turned off.

⚠️ **Caution •** This procedure should only be performed by qualified service technicians.

To install the Type I-compliant CompactFlash card, complete these steps:

Caution • The printer electronics are susceptible to static discharge. Before proceeding, ground yourself to the printer to remove any existing static.

1. Turn the AC power Off (**O**) and disconnect the AC power cord from the printer.

   Callouts in this illustration and the table that follows show the parts of the printer used in this procedure.
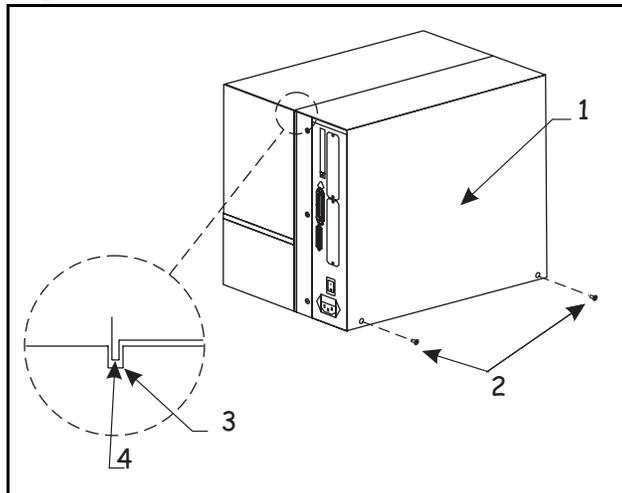
Callout	Description
1	Electronics cover
2	Screws
3	Channel
4	Lip of cover

2. Remove the electronics cover by removing the two screws near the bottom.

3. Lift the electronics cover at the rear top corner as shown and pull the corner forward and up, then lift the cover up and away from the printer.

4. Insert the CompactFlash card into the card slot on the upper portion of the option board—the card can be inserted only one way and should snap into place.

Callouts in this illustration and the table that follows show where to insert the CompactFlash card.
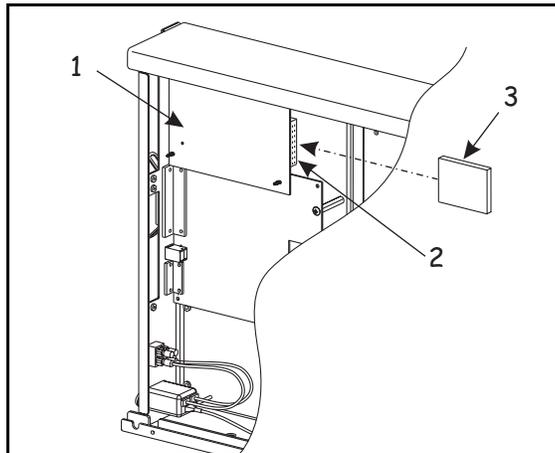
Callout	Description
1	Option board
2	Card slot
3	Compact flash card

Note • The CompactFlash card should be inserted with the **back** (unlabeled) side of the card facing out.

5. Reinstall the electronics cover by lowering the cover so the lip goes into the channel on the top of the printer. Secure the cover by reinstalling the two screws on the bottom of the cover.

6. Reconnect the printer AC power cord.

7. Press and hold **CANCEL** while turning the printer On (**l**).

8. Check the presence of additional memory or optional fonts by looking at the information on the configuration label printed during the power-on sequence.

The printer is now ready to operate with the additional memory or font option.

Note • Initialization of the CompactFlash card may take a few minutes. If the process is not successfully completed within 10 minutes, contact Zebra Technical Support at http://www.zebra.com/SS/service_support.htm for assistance.

Appendixes

These appendixes explain using the front panel controls, troubleshooting your printer, choosing printer supplies, and caring for your printer.

Contents

Front Panel Controls

After you have installed the labels and ribbon and printed a configuration label, you can change your *Xi*III*Plus* printer settings using the front panel controls. Basic information about using the front panel controls is included in this appendix. See *Front Panel Lights on page 57*, and *Troubleshooting on page 120* for detailed information on the printer menu and on solving printing problems.

After the Power-On Self Test (POST) is complete, the LCD shows `PRINTER READY`.

Note • Printers that are operating on an IP network can be quickly configured with the ZebraLink™ WebView (ZebraNet® PrintServer II required). For information, see *ZebraNet Networking: PrintServer II Installation and User's Guide*.

Enter Setup Mode

Press **SETUP/EXIT** to enter Setup Mode. Press either **NEXT/SAVE** or **PREVIOUS** to scroll to the parameter you wish to set.

Parameters are shown in the order displayed when pressing **NEXT/SAVE**. Throughout this process, press **NEXT/SAVE** to continue to the next parameter, or press **PREVIOUS** to return to the previous parameter in the cycle.

Leave Setup Mode

Note • If you need to restore the printer to its factory default settings, see *FEED and PAUSE Self Test on page 136*.

You can leave Setup Mode at any time by pressing **SETUP/EXIT**. The `SAVE CHANGES` display appears. Pressing the left or right black oval displays other choices and pressing **NEXT/SAVE** selects the displayed choice.

The five menu choices are described in the table below.

LCD Display	Description
PERMANENT	Permanently saves the changes. Values are stored in the printer even when power is turned off.
TEMPORARY	Saves the changes until you change them again or until power is turned off.
CANCEL	Cancels all changes from the time you pressed **SETUP/ EXIT** except the darkness and tear-off settings (if they were changed).
LOAD DEFAULTS	Loads the factory defaults. The factory defaults are shown on the following pages.
LOAD LAST SAVE	Loads values from the last permanent save.

Note • Loading factory defaults causes the printer to auto-calibrate.

Password-Protected Parameters

Certain parameters are password-protected by factory default, including the communication parameters.

Note • If the parameters are set incorrectly, the printer function may be unpredictable.

The first attempt to change one of these parameters (pressing one of the black ovals) requires you to enter a four-digit password at the ENTER PASSWORD display. The left black oval changes the selected digit position; the right black oval increases the selected digit value. After entering the password, press **NEXT/SAVE**. The parameter you wish to change is displayed. If the password was entered correctly, you can now change the value.

Default password value

The default password value is **1234**. The password can be changed using the **^KP**
(Define Password) ZPL II instruction or through ZebraLink™ WebView
(ZebraNet® PrintServer II required).

Note • Once the password has been entered correctly, it does not have to be entered
again unless you leave Setup Mode using **SETUP/EXIT**, or if you turn the printer
Off (**O**) and then reenter Setup Mode.

Disable the password protection feature

You can disable the password protection feature so that it no longer prompts you for a
password by setting the password to ØØØØ via the **^KPØ** ZPL/ZPL II command. To
reenable the password-protection feature, send the ZPL/ZPL II command **^KPx**, where
x can be any number, one to four digits in length, except Ø.

Front Panel Lights

Light	Status	Indicates
POWER	Off (**O**)	The printer is off or power is not applied.
	On (**I**)	The printer is on.
TAKE LABEL	Off	Normal operation.
	Flashing	(Peel-Off Mode only.) The label is available. Printing is paused until the label is removed.
ERROR	Off	Normal operation—no printer errors.
	Flashing	A printer error exists. Check the LCD for more information.
CHECK RIBBON	Off	Normal operation—ribbon (if used) is properly loaded.
	On	Printing is paused, the LCD shows a warning message, and the PAUSE light is on. If the printer is in Direct Thermal Mode: ribbon is loaded and should not be. If the printer is in Thermal Transfer Mode: no ribbon is loaded or the ribbon has run out.
PAPER OUT	Off	Normal operation—labels are properly loaded.
	On	No labels are under the media sensor. Printing is paused, the LCD shows an error message, and the PAUSE light is on.
PAUSE	Off	Normal operation.
	On	The printer has stopped all printing operations. Either **PAUSE** was pressed, a pause command was included in the label format, the online verifier detected an error, or a printer error was detected. See the LCD for more information.

Light	Status	Indicates
DATA	Off	Normal operation. No data being received or processed.
	On	Data processing or printing is taking place. No data is being received.

Note • If two operating conditions occur simultaneously (for example, one that causes a light to be on constantly and one that causes the same light to flash), the light flashes.

Front Panel LCD

The LCD display is shown in the order it appears when using **NEXT/SAVE** to move through the front panel menu. **PREVIOUS** may be used to move backward in the menu.

Press	LCD	Description
	`PRINTER READY`	
SETUP/EXIT	`DARKNESS`	**Adjusting Print Darkness:** • Press the right black oval to increase darkness. • Press the left black oval to decrease darkness. **Default:** +4 **Range:** 0 to +30.0 Darkness settings depend on a variety of factors, including ribbon type, labels, and the condition of the printhead. You may adjust the darkness for consistent high-quality printing. If printing is too light, or if there are voids in printed areas, you should increase the darkness. If printing is too dark, or if there is spreading or bleeding of printed areas, you should decrease the darkness. The FEED Self Test described in the *FEED Self Test on page 135* can also be used to determine the best darkness setting. Since the darkness setting takes effect immediately, you can see the results on labels that are currently printing. **Caution •** Set the darkness to the lowest setting that provides good print quality. Darkness set too high may cause ink smearing or burn through the ribbon. Darkness settings also may be changed by the driver or software settings.

Press	LCD	Description
▶ NEXT/SAVE	PRINT SPEED	**Adjusting Print Speed:** • Press the right black oval to increase print speed. • Press the left black oval to decrease print speed. **Default:** 2 ips **Range:** 2 ips to +12 ips (depends on specific printer) Slower print speeds typically yield better print quality. Print speed changes take effect upon exiting the menu mode.
▶ NEXT/SAVE	TEAR OFF	**Adjusting the Tear-Off Position:** Each press of the black oval adjusts the tear-off position by four dot rows. • Press the right black oval to increase value. • Press the left black oval to decrease value. **Default:** +0 **Range:** –120 to +120 This parameter establishes the position of the labels over the tear-off/peel-off bar after printing.
▶ NEXT/SAVE	PRINT MODE	**Selecting Print Mode:** Press either black oval to display choices. **Default:** Tear-off **Selections:** Tear-off, peel-off, cutter, rewind, applicator Print mode settings tell the printer the method of label delivery you wish to use. Be sure to select a print mode that your hardware configuration supports as some of the selections displayed are for optional printer features.

Press	LCD	Description
▶ NEXT/SAVE	MEDIA TYPE	**Setting Media Type:** Press either black oval to display choices. **Default:** Continuous **Selections:** Continuous, non-continuous This parameter tells the printer the type of media you are using. Selecting continuous media requires that you include a label length instruction in your label format (**^LLxxxx** if you are using ZPL or ZPL II). When non-continuous media is selected, the printer feeds media to calculate label length (the distance between two recognized registration points of the inter-label gap, webbing, or alignment notch or hole).
▶ NEXT/SAVE	SENSOR TYPE	**Setting the Sensor Type:** Press either black oval to display other choices. **Default:** Web **Selections:** Web, mark This parameter tells the printer whether you are using media with a web (gap/space between labels, notch, or hole) to indicate the separations between labels or if you are using media with a black mark printed on the back. If your media does not have black marks for registration on the back, leave your printer at the default (web).

Press	LCD	Description
NEXT/SAVE	PRINT METHOD	**Selecting Print Method:** Press either black oval to display choices. **Default:** Thermal transfer **Selections:** Thermal transfer, direct thermal The print method parameter tells the printer the method of printing you wish to use: direct thermal (no ribbon) or thermal transfer (using thermal transfer media and ribbon). **Note •** Selecting direct thermal when using thermal transfer media and ribbon creates a printer error condition, but printing continues.
NEXT/SAVE	PRINT WIDTH	**Setting Print Width:** • To increase the value, press the right black oval. • To decrease the value, press the left black oval. To change the unit of measurement: **1.** Press the left black oval until the unit of measurement is active. **2.** Press the right black oval to toggle to a different unit of measure (mm, inches, or dots). **Default Range:** The default and range of acceptable values vary depending on what printer you have. See *General Specifications on page 94* for further information about the ranges available for your model. Print width determines the printable area across the width of the label. **Note •** The printer does not accept any value larger than the maximum print width listed on *Labels and Print Modes on page 23*.

Press	LCD	Description
▶ NEXT/SAVE	MAXIMUM LENGTH	**Setting Maximum Length:** • To increase the value, press the right black oval. • To decrease the value, press the left black oval. **Default Range:** The default and range of acceptable values vary depending on your printer's configuration. Values are adjustable in 1 in. (25.4 mm) increments. Maximum length is used in conjunction with the calibration procedure. The value of this setting is the maximum label length that is used during the media portion of the calibration process. Only a few labels are required to set media sensors. Always set the value that is at least 1 in. (25.4 mm) longer than the longest label to be used on the printer.

Press	LCD	Description
![NEXT/SAVE button] NEXT/SAVE	EARLY WARNING	**Setting Early Warning:** Press the right or left black oval to display other choices. **Default:** Media disabled, ribbon disabled, maintenance disabled **Selections:** Media disabled, media enabled, ribbon disabled, ribbon enabled, maintenance disabled, maintenance enabled This parameter enables the printer to provide early warnings when labels or ribbons are running low or when the printhead needs to be cleaned. To enable the Early Warning System, **1.** Press **SETUP/EXIT** **2.** Press **NEXT/SAVE**. To select the Early Warning setting, **3.** Scroll back until Media Enabled is listed on the LCD. **4.** Press **NEXT/SAVE** to access the media settings. **5.** Use the right or left black oval to select the setting. **6.** Press **SETUP/EXIT** and **NEXT/SAVE** to save the setting. **7.** Repeat this process to set the early warning for ribbon or maintenance (printhead cleaning). **Note •** When setting the early warning for maintenance, an additional setting appears after the media setting that prompts the LCD to ask HEAD CLEAN. **1.** Use the right black oval to select YES. **2.** Press **SETUP/EXIT** **3.** Press **NEXT/SAVE**

Press	LCD	Description
		When the printer detects it is running low with less than 15% of the remaining labels or ribbons, WARNING MEDIA LOW or WARNING RIBBON LOW appears on the LCD. If the alert function has been enabled, an alert is also sent. When the printhead is opened and then closed after a media or ribbon warning has been received, the LCD displays MEDIA REPLACED or RIBBON REPLACED. Press the right black oval YES to clear the warning and rest the label counter. **Note •** Labels per roll and ribbon length need to be updated when beginning use of the Early Warning System. Also, the printer does not make any adjustments when power is turned off and on.
▶ NEXT/SAVE	LABELS PER ROLL	**Setting Labels Per Roll:** Press the right or left black oval to display other choices. **Default:** 900 labels **Range:** 100 labels–9999 labels This parameter needs to be updated when setting the Early Warning System so the printer can provide early warnings when labels are running low.
▶ NEXT/SAVE	RIBBON LENGTH	**Setting Ribbon Length:** Press the right or left black oval to display other choices. **Default:** 450 m **Range:** 100 m–450 m This parameter needs to be updated when setting the Early Warning System so the printer can provide early warnings when ribbon is running low.
▶ NEXT/SAVE	LIST FONTS	**List Fonts:** Press the right black oval to print a label listing all of the available fonts in the printer, including standard printer fonts plus any optional fonts. Fonts may be stored in RAM, Flash memory, font EPROMs, or font cards.

Press	LCD	Description
▶ NEXT/SAVE	LIST BAR CODES	**List Bar Codes:** Press the right black oval to print a label listing all available bar codes in the printer.
▶ NEXT/SAVE	LIST IMAGES	**List Images:** Press the right black oval to print a label listing all available images stored in the printer's RAM, Flash memory, optional EPROM, or optional memory card.
▶ NEXT/SAVE	LIST FORMATS	**List Formats:** Press the right black oval to print a label listing all of the available formats stored in the printer's RAM, Flash memory, optional EPROM, or optional memory card.
▶ NEXT/SAVE	LIST SETUP	**List Setup:** Press the right black oval to print a label listing the current printer configuration. (Same as **CANCEL** Self Test as shown in *CANCEL Self Test on page 132*.)
▶ NEXT/SAVE	LIST ALL	**List All:** Press the right black oval to print a label listing all available fonts, bar codes, images, formats, and the current printer configuration.

Press	LCD	Description
NEXT/SAVE	FORMAT CARD A B	**Initialize Memory Card** **Caution •** Perform this operation only when it is necessary to erase all previously stored information from the memory card. **1.** Press **NEXT/SAVE** to bypass this function. If your printer is set to require a password, you are prompted to enter it. Enter the password and then press **SELECT**. **2.** Press the right black oval to select B memory (PCMCIA card) or press the left black oval to select the A memory (internal CompactFlash). The front panel LCD asks ARE YOU SURE. **3.** Press the right black oval YES to begin initialization. or **4.** Press the left black oval NO to cancel the request and return to INITIALIZE CARD prompt. FORMATTING CARD displays. When formatting is complete, FORMAT CARD displays. **Note •** Depending on the amount of memory in the memory card, initialization may take up to three minutes to complete.

Press	LCD	Description
NEXT/SAVE	INIT FLASH MEM	**Initialize Flash Memory** **Caution •** Perform this operation only when it is necessary to erase all previously stored information from Flash memory. **1.** To bypass this function, press **NEXT/SAVE**. **2.** Press the right black oval to select YES. If your printer is set to require a password, you are now prompted to enter it. **3.** Enter the password and then press **NEXT/SAVE.** The LCD asks INITIALIZE FLASH. **4.** Press the right black oval YES. **5.** The LCD asks ARE YOU SURE. **6.** Press the right black oval YES to begin initialization. *or* **7.** Press the left black oval NO to cancel the request and return to the INITIALIZE FLASH prompt.

Press	LCD	Description
![NEXT/SAVE button] NEXT/SAVE	SENSOR PROFILE	**Sensor Profile:** **1.** Press **NEXT/SAVE** to skip this standard calibration procedure and continue with the media and ribbon calibration parameter that follows. **2.** Press the right black oval to start this standard calibration procedure and print a media sensor profile. See the media sensor profile below. The media sensor profile may be used to troubleshoot registration problems that may be caused when the media sensor detects preprinted areas on the media or experiences difficulty in determining web location. If the sensitivity of the media and/or ribbon sensors **must** be adjusted, use the media and ribbon sensor sensitivity procedure.

Media Sensor Profile

Press	LCD	Description
▶ NEXT/SAVE	MEDIA AND RIBBON CALIBRATE	This procedure is used to adjust the sensitivity of the media and ribbon sensors. **Note •** The procedure must be followed exactly as presented. All steps must be performed even if only one of the sensors requires adjustment. **1.** Press **NEXT/SAVE** to skip the calibration procedure and continue with the host port selection parameters that follow. **2.** Press the right black oval to start the calibration procedure. **Note •** You may press the left black oval at any step in this procedure to cancel the procedure.
▶ NEXT/SAVE	LOAD BACKING	**1.** Open the printhead. **2.** Remove approximately 8 in. (203 mm) of labels from the media liner, and pull the media into the printer so that only the liner is between the media sensors. **3.** Leave the printhead open. **4.** Press the right black oval to continue.
▶ NEXT/SAVE	REMOVE RIBBON	**1.** Press the left black oval to cancel the operation or do the following: **2.** Remove the ribbon. **3.** Close the printhead. **4.** Press the right black oval to continue.
▶ NEXT/SAVE	CALIBRATING PLEASE WAIT	The printer automatically adjusts the scale (gain) of the signals it receives from the media and ribbon sensors. On the sensor profile, this essentially corresponds to moving the peak of the graph up or down to optimize the readings for your application.

Press	LCD	Description
—	RELOAD ALL	When RELOAD ALL is displayed: **1.** Open the printhead and pull the media forward until a label is positioned under the media sensor. **2.** Reload the ribbon back into to its proper position. **3.** Close the printhead. **4.** Press the right black oval to continue.
▶ NEXT/SAVE	MEDIA AND RIBBON CALIBRATE	The printer does a calibration equivalent to pressing **CALIBRATE**; during this process, the printer determines the label length. The process is now complete. To see the new readings on the new scale, print a sensor profile.
▶ NEXT/SAVE	PARALLEL COMM	**Setting Parallel Communications:** Press the right or left black oval to display other choices. **Default:** Bidirectional **Selections:** Bidirectional, unidirectional, or Twinax/coax Select the communications port that matches the one being used by the host computer.
▶ NEXT/SAVE	SERIAL COMM	**Setting Serial Communications:** Press the right or left black oval to display other choices. **Default:** RS-232 **Selections:** RS-232, RS-422/485, RS-485 multidrop Select the communications port that matches the one being used by the host computer.

Press	LCD	Description
▶ NEXT/SAVE	BAUD	**Setting Baud:** Press the right or left black oval to display other choices. **Default:** 9600 **Selections:** 110, 300, 600, 1200, 2400, 4800, 9600, 14400, 19200, 28800, 38400, 57600, 115200 The baud setting of the printer must match the baud setting of the host computer for accurate communications to take place. Select the value that matches the one being used by the host computer.
▶ NEXT/SAVE	DATA BITS	**Setting Data Bits:** Press the right or left black oval to display other choices. **Default:** 8 bits **Selections:** 7 bits, 8 bits The data bits of the printer must match the data bits of the host computer for accurate communications to take place. Set the data bits to match the setting being used by the host computer. **Note •** Must be set to 8 data bits to match Code Page 850.
▶ NEXT/SAVE	PARITY	**Setting Parity:** Press the right or left black oval to display other choices. **Default:** None **Selections:** None, Even, Odd The parity of the printer must match the parity of the host computer for accurate communications to take place. Select the parity that matches the one being used by the host computer.

Press	LCD	Description
▶ NEXT/SAVE	HOST HANDSHAKE	**Setting Host Handshake:** Press the right or left black oval to display other choices. **Default:** XON/XOFF **Selections:** XON/XOFF, RTS/CTS, DTR/DSR The handshake protocol of the printer must match the handshake protocol of the host computer for proper communications to take place. Select the handshake protocol that matches the one being used by the host computer.
▶ NEXT/SAVE	PROTOCOL	**Setting Protocol:** Press the right or left black oval to display other choices. **Default:** None **Selections:** None, Zebra, ACK/NACK Protocol is a type of error checking system. Depending on the selection, an indicator may be sent from the printer to the host computer signifying that data has been received. Select the protocol that is requested by the host computer. Further details on protocol can be found in the *ZPL II Programming Guide*. **Note •** Zebra is the same as ACK/NACK, except that Zebra response messages are sequenced. If Zebra is selected, printer must use **DTR/DSR** host handshake protocol.

Press	LCD	Description
▶ NEXT/SAVE	NETWORK ID	**Setting Network ID:** **1.** Press the left black oval to move to the next digit position. **2.** Press the right black oval to increase the value of the digit. **Default:** 000 **Range:** 000–999 Network ID is used to assign a unique number to a printer used in an RS-422/RS-485 network. This gives the host computer the means to address a specific printer. If the printer is used in an RS-422/RS-485 network, you must select a network ID number. This does not affect TCP/IP or IPX networks.

Press	LCD	Description
NEXT/SAVE ▶	COMMUNICA-TIONS	**Setting Communications Mode:** Press the right or left black oval to display other choices. **Default:** Normal mode **Selections:** Normal mode, diagnostics The communication diagnostics mode is a troubleshooting tool for checking the interconnection between the printer and the host computer. When DIAGNOSTICS is selected, all data sent from the host computer to the printer is printed as straight ASCII characters, with the hex value below the ASCII text. The printer prints all characters received, including control codes, like CR (carriage return). A sample printout is shown in *To perform a FEED and PAUSE self test, complete these steps: on page 136*. **Notes** on diagnostic printouts are: • FE indicates a framing error. • OE indicates an overrun error. • PE indicates a parity error. • NE indicates noise. **1.** For any errors, check that your communication parameters are correct. **2.** Set the print width equal to or less than the label width used for the test. See *Label Specifications on page 103* for more information.

Press	LCD	Description
▶ NEXT/SAVE	CONTROL PREFIX	**Control Prefix Character:** **1.** Press the left black oval to move to the next digit position. **2.** Press the right black oval to increase the value of the digit. **Default:** 7E (tilde—displayed as a black square) **Range:** 00–FF The printer looks for this two-digit hex character to indicate the start of a ZPL/ZPL II control instruction. **Note •** Do not use the same hex value for the control, format, and delimiter character. The printer must see different characters to work properly.
▶ NEXT/SAVE	FORMAT PREFIX	**Format Prefix Character:** **1.** Press the left black oval to move to the next digit position. **2.** Press the right black oval to increase the value of the digit. **Default:** 5E (caret) **Range:** 00–FF The format prefix is a two-digit hex value used as a parameter place marker in ZPL/ZPL II format instructions. The printer looks for this 2-digit hex character to indicate the start of a ZPL/ZPL II format instruction. See the *ZPL II Programming Guide Volume I* for more information. **Note •** Do **not** use the same hex value for the control, format, and delimiter character. The printer must see different characters to work properly.

Press	LCD	Description
NEXT/SAVE	DELIMITER CHAR	**Delimiter Character:** **1.** Press the left black oval to move to the next digit position. **2.** Press the right black oval to increase the value of the digit. **Default:** 2C (comma) **Range:** 00–FF The delimiter character is a 2-digit hex value used as a parameter place marker in ZPL/ZPL II format instructions. See the *ZPL II Programming Guide Volume I* for more information. **Note •** Do **not** use the same hex value for the control, format, and delimiter character. The printer must see different characters to work properly.
NEXT/SAVE	ZPL MODE	**Selecting ZPL Mode:** Press the right or left black oval to display other choices. **Default:** ZPL II **Selections:** ZPL II, ZPL The printer remains in the selected mode until it is changed by this front panel instruction or by using a ZPL/ZPL II command. The printer accepts label formats written in either ZPL or ZPL II. This eliminates the need to rewrite any ZPL formats you already have. See the *ZPL II Programming Guide* for more information on the differences between ZPL and ZPL II.

Press	LCD	Description
NEXT/SAVE	MEDIA POWER UP	**Media Power Up:** Press the right or left black oval to display the choices.This sets the action of the labels when the printer is turned on. **Default:** Calibration **Selections:** Feed, Calibration, Length, and No Motion **Calibration:** Determines the length of the label **Length:** In Continuous Mode, feeds the last stored label length **No Motion:** Labels do not move. **Feed:** Feeds one label to the first registration point.
NEXT/SAVE	HEAD CLOSE	**Head Close:** Press the right or left black oval to display the choices. This sets the action of the labels when the printhead is closed. **Default:** Calibration **Selections:** Feed, Calibration, Length, and No Motion **Calibration:** Determines the length of the label **Length:** In Continuous Mode, feeds the last stored label length **No Motion:** Labels do not move. **Feed:** Feeds one label to the first registration point.

Press	LCD	Description
▶ NEXT/SAVE	BACKFEED	**Backfeed Sequence:** Press the right or left black oval to display other choices. **Default:** Default (90%) **Selections:** Default, after, before, 10%, 20%, 30%, 40%, 50%, 60%, 70%, 80%, off This parameter establishes when and how much label backfeed occurs after a label is removed or cut in Peel-Off, Cutter, and Applicator Modes. It has no effect in Rewind or Tear-Off Modes. This parameter setting can be superseded by the ~JS instruction when received as part of a label format (see the *ZPL II Programming Guide*). **Note •** The difference between the value entered and 100% establishes how much backfeed occurs before the next label prints. For example, a value of 40 means that 40% of the backfeed takes place after the label is removed or cut. The remaining 60% takes place before the next label prints. A value of BEFORE means that all backfeed takes place before the next label prints.
▶ NEXT/SAVE	LABEL TOP	**Adjusting Label Top Position:** The displayed value represents dots. • To increase the value, press the right black oval. • To decrease the value, press the left black oval. **Default:** +0 **Range:** –120 to +120 dot rows The label top position adjusts the print position vertically on the label. Positive numbers adjust the label top position further down the label (away from the printhead), negative numbers adjust the position up the label (toward the printhead).

Press	LCD	Description
▶ NEXT/SAVE	LEFT POSITION	**Adjusting Left Position:** The displayed value represents dots. **1.** Press the left black oval to move the cursor. **2.** Press the right black oval to change between + and to increase the value of the digit. **Default:** 0000 **Range:** –9999 to +9999 **3.** For a negative value, enter the value before changing to the minus sign. This parameter establishes how far from the left edge of a label the format begins to print by adjusting horizontal positioning on the label. Positive numbers adjust the printing to the left by the number of dots selected, negative numbers shift printing to the right.
▶ NEXT/SAVE	HEAD TEST COUNT	110*Xi*III*Plus* printers do not display this. **Setting the Head Test Count:** **1.** Press the left black oval to move to the next digit position. **2.** Press the right black oval to increase the value of the digit. **Default:** 0000 (disables the test) **Range:** 0000–9999 The printer periodically performs a test of the printhead functionality, called a **printhead test** or **head test**. This parameter establishes how many labels are printed between these internal tests.

Press	LCD	Description
NEXT/SAVE ▶	HEAD RESISTOR	**Setting the Head Resistor Value:** **Caution •** Do **not** set the value higher than that shown on the printhead. Setting a higher value may damage the printhead. **1.** Press the left black oval to move to the next digit position. **2.** Press the right black oval to increase the value of the digit. **Caution •** This parameter should be changed only by qualified service personnel. **Initial Value:** Factory-set to match the printhead shipped with your printer. **Default Value:** 0500 **Range:** 0500–1175 This value has been preset at the factory to match the resistance value of the printhead. It does not need to be changed unless the printhead is replaced or the main logic board is replaced. Before replacing a printhead, look on the printhead for the label that shows the resistance value (ohm value).

Press	LCD	Description
NEXT/SAVE	VERIFIER PORT	**Setting the Verifier Port:** Press the right or left black oval to display other choices. **Default:** Off **Selections:** Off, VER-RPRNT, VER-THRUPUT The auxiliary port is used to determine how the printer reacts to the online verifier. The three operating conditions for this port are: OFF: The verifier port is off. VER-RPRNT ERR: Label reprinted if verifier detects an error. If a bar code is near the upper edge of the label, the label is fed out far enough to be verified and then backfed to allow the next label to print and be verified. VER-THRUPUT: Allows greatest throughput but may not indicate a verification error immediately upon detection. May print from one to three labels before an error is recognized and printing stops. For more information on the operation of the optional verifier, see the documentation provided with that option.

Press	LCD	Description
NEXT/SAVE ▶	APPLICATOR PORT	**Setting the Applicator Port:** Press the right or left black oval to display other choices. **Default:** Off **Selections:** Off, mode 1, mode 2, mode 3, mode 4 Determines the action of the verifier port. Off: The applicator port is off. Mode 1: Asserts the ~END_PRINT signal low while the printer is moving the label forward. Mode 2: Asserts the ~END_PRINT signal high while the printer is moving the label forward. Mode 3: Asserts the ~END_PRINT signal low for 20 milliseconds when a label has been completed and positioned. Not asserted during continuous printing modes. Mode 4: Asserts the ~END_PRINT signal high for 20 milliseconds when a label has been completed and positioned. Not asserted during continuous printing modes. **Note** • Set as suggested by the applicator manufacturer.

Press	LCD	Description
▶ NEXT/SAVE	START PRINT SIG	**Start Print Signal:** Press the right or left black oval to display other choices. **Default:** Pulse Mode **Selections:** Pulse Mode, Level Mode This parameter determines how the printer reacts to the Start Print Signal input on pin 3 of the applicator interface connector at the rear of the printer. • In Pulse Mode, labels print when the signal transitions from HIGH to LOW. • In Level Mode, labels print as long as the signal is asserted LOW. **Caution •** Start Print Signal is set by the applicator manufacturer and should not be changed unless the factory defaults have been reloaded. The printer must be returned to its designated setting for it to work properly.

Press	LCD	Description
![NEXT/SAVE button] NEXT/SAVE	RESYNCH MODE	**Resynch Mode:** Press the right or left black oval to display other choices. **Default:** Feed Mode **Selections:** Feed Mode, Error Mode This parameter determines how the printer reacts if the label synchronization is lost and the label top is not where expected. **Feed Mode**—If the label top is not where expected, the printer feeds a blank label to find the label top position. **Error Mode**—If the label top is not where expected, the printer stops, enters PAUSE Mode, displays the message `Error Condition Feed Label`, flashes the ERROR LED, and asserts the Service Required signal (pin 10 on the Applicator Interface Connector). To resynch the media to the top of the label in Error Mode: **1.** Press **PAUSE** to exit Pause Mode. The ERROR LED stops flashing and the Service Required signal is deactivated. The action of the printer is determined by the `Head Close` configuration selection: `CALIBRATION`—determines the length of the label. `FEED`—feeds the labels to the first registration point. `LENGTH`—used in continuous mode to feed the last stored label length. `NO MOTION`—the media does not move. **2.** You must press **FEED** to cause the printer to resynch to the start of the next label if `NO MOTION` is selected.

Press	LCD	Description
▶ NEXT/SAVE	WEB S.	These parameters are automatically set during the calibration procedure. They should be changed only by a qualified service technician. See the maintenance manual for more information on these parameters. Press **NEXT/SAVE** to scroll through these parameters.
▶ NEXT/SAVE	MEDIA S.	
▶ NEXT/SAVE	RIBBON S.	
▶ NEXT/SAVE	TAKE LABEL	
▶ NEXT/SAVE	MARK MED S.	
▶ NEXT/SAVE	MEDIA LED	
▶ NEXT/SAVE	RIBBON LED	
▶ NEXT/SAVE	MARK LED	
▶ NEXT/SAVE	RIBBON LED	
▶ NEXT/SAVE	MARK LED	

Press	LCD	Description
▶ NEXT/SAVE	LCD ADJUST	**LCD Adjustment:** **1.** Press the left black oval to move the cursor. **2.** Press the right black oval to change between + and to increase the value of the digit. **Range:** 00–19 This parameter allows you to adjust the contrast of your LCD if it is difficult to read.
▶ NEXT/SAVE	FORMAT CONVERT	**Format Convert:** Press the right or left black oval to display other choices. **Default:** None **Selections:** None, 150 → 300, 150 → 600, 200 → 600, 300 → 600 Selects the bitmap scaling factor. The first number is the original dots per inch (dpi) value; the second, the dpi to which you would like to scale. Not applicable on all printers.
▶ NEXT/SAVE	IDLE DISPLAY	**Idle Display:** Press the right or left black oval to display other choices. **Default:** Firmware version **Selections:** mm/dd/yy (24 hour), mm/dd/yy (12 hour), dd/mm/yy (24 hour), dd/mm/yy (12 hour) This parameter selects the LCD options for the real-time clock. **Note •** If the default value is not selected, pressing either black oval briefly displays the firmware version of the printer.

Press	LCD	Description
NEXT/SAVE	RTC DATE	**RTC (Real-time clock) Date:** This parameter allows you to set the date following the convention selected in IDLE DISPLAY. **1.** Press the left black oval to move to the next digit position. **2.** Press the right black oval to increase the value of the digit.
NEXT/SAVE	RTC TIME	**RTC (Real-time clock) Time:** This parameter allows you to set the time following the convention selected in IDLE DISPLAY. **1.** Press the left black oval to move to the next digit position. **2.** Press the right black oval to increase the value of the digit.

ZebraNet® PrintServer II Option Display

These menu options displays only if you have a ZebraNet® PrintServer II installed.

Press	LCD	Explanation
NEXT/SAVE	IP RESOLUTION	**IP Resolution:** Press the right or left black oval to display other choices. **Default:** Dynamic **Selections:** Dynamic, permanent Depending on the selection, allows either the user (**permanent**) or the server (**dynamic**) to select the IP address. For more information, see *PrintServer II™ Installation and Users Guide*.
NEXT/SAVE	IP PROTOCOLS	**IP Protocols:** Press the right or left black oval to display other choices. **Default:** All **Selections:** All, gleaning only, RARP, BOOTP, DHCP, DHCP/BOOTP If **dynamic** was chosen in the previous parameter, this selection determines the method(s) by which the PrintServer II receives the IP address from the server. For more information, see *PrintServer II™ Installation and Users Guide*.
NEXT/SAVE	IP RESOLUTION	**IP Resolution:** Press the right or left black oval to display other choices. **Default:** Dynamic **Selections:** Dynamic, permanent Depending on the selection, allows either the user (**permanent**) or the server (**dynamic**) to select the IP address. For more information, see *PrintServer II™ Installation and Users Guide*.

Press	LCD	Explanation
▶ NEXT/SAVE	IP ADDRESS	**IP Address:** **1.** Press the left black oval to move to the next digit position. **2.** Press the right black oval to increase the value of the digit. This parameter allows you to select the IP address if **permanent** was chosen in IP RESOLUTION. (If **dynamic** was chosen, the user cannot select the address.) For more information, see *PrintServer II™ Installation and Users Guide*.
▶ NEXT/SAVE	SUBNET MASK	**Subnet Mask:** This parameter selects the part of the IP address that is considered to be part of the local network. It can be reached without going through the default gateway. Press the right or left black oval to display other choices. **Default:** Permanent (user must set) **Selections:** Dynamic (user may set, but server can assign), permanent
▶ NEXT/SAVE	DEFAULT GATEWAY	**Default Gateway:** This parameter allows you to select the IP address that the network traffic is routed through if the destination address is not part of the local network. **1.** Press the left black oval to move to the next digit position. **2.** Press the right black oval to increase the value of the digit.

Press	LCD	Explanation
▶ NEXT/SAVE	LANGUAGE	**Selecting the Display Language:** Press the right or left black oval to display other choices. **Default:** English **Selections:** English, Spanish, French, German, Italian, Norwegian, Portuguese, Swedish, Danish, Spanish 2, Dutch, Finnish, Japanese This parameter allows you to change the language used on the LCD.
You have now completed the entire configuration and calibration sequence.		
SETUP/EXIT	SAVE CHANGES	**Save Changes:** Press the right or left black oval to display other choices. **Default:** Permanent **Selections:** **Permanent:** Permanently saves the changes, even when printer power is turned off. **Temporary:** Saves the changes until changed again or until power is turned off. **Cancel:** Cancels all changes since you entered the setup mode except for darkness and tear-off position (if they were changed). **Load defaults:** Loads factory defaults. **Note •** Loading factory defaults requires calibration. **Load last save:** Loads the values from the last permanent save.
▶ NEXT/SAVE	SAVING CHANGES	Save option selected.
—	PRINTER READY	The configuration and calibration sequence is done. The printer is ready for normal printer operation.

Specifications and Care

This appendix describes the specifications for your printer and tells you how to keep it in good condition.

Standard *Xi*III*Plus* Features

Note • Printer specifications are subject to change without notice.

- Thermal transfer and direct thermal printing
- DRAM 16 MB
- USB 2.0 Port
- Real-time Clock
- Advanced Counter

Print Modes

Four different print modes can be used, depending on the printer options purchased.

- **Tear-Off Mode:** Labels are produced in strips.
- **Peel-Off Mode:** Labels are dispensed and peeled from the liner as needed.
- **Cutter Mode:** Labels are printed and individually cut.
- **Rewind Mode:** Labels are rewound internally.

Zebra Programming Language (ZPL II®)

ZPL features include:

- Downloadable graphics, scalable and bitmap fonts, and label formats
- Object copying between memory areas
- (RAM, memory card, and internal Flash)
- Code page 850 character set
- Adjustable print cache
- Data compression

- Automatic virtual input buffer management
- Format inversion
- Mirror image printing
- Four-position field rotation (0°, 90°, 180°, 270°)
- Slew command
- Controlled via mainframe, mini-computer, PC, portable data terminal
- Programmable quantity with print, pause, and cut control
- Communicates in printable ASCII characters
- Error-checking protocol
- Status message to host upon request
- Serialized fields
- In-spec OCR-A and OCR-B
- UPC/EAN
- User-programmable password

Bar Codes

Types of bar codes include:

- Bar code ratios—2:1, 7:3, 5:2, 3:1
- Codabar (supports ratios of 2:1 up to 3:1)
- CODABLOCK
- Code 11
- Code 39 (supports ratios of 2:1 up to 3:1)
- Code 49 (two-dimensional bar code)
- Code 93
- Code 128 (with subsets A, B, and C and UCC case codes)
- Check digit calculation where applicable
- Data Matrix
- EAN-8, EAN-13, EAN extensions
- ISBT-128
- Industrial 2 of 5
- Interleaved 2 of 5 (supports ratios of 2:1 up to 3:1, Modulus 10 Check Digit)
- LOGMARS

- MaxiCode
- Micro PDF
- MSI
- PDF-417 (2-dimensional bar code)
- PLANET code
- Plessey
- POSTNET
- QR-Code
- RSS code
- Standard 2 of 5
- TLC 39
- UPC-A, UPC-E, UPC extensions

General Specifications

The tables below give the general specifications for the printer by model number.

90*Xi*III*Plus*, 96*Xi*III*Plus*, and 110*Xi*III*Plus*

Dimensions	90*Xi*III*Plus*	96*Xi*III*Plus*	110*Xi*III*Plus*
Height	15.5 in. (393.7 mm)	15.5 in. (393.7 mm)	15.5 in (393.7 mm)
Width	9.15 in. (232.4 mm)	9.15 in. (232.4 mm)	10.37 in. (263.5 mm)
Depth	19.5 in. (495.3 mm)	19.5 in. (495.3 mm)	19.5 in. (495.3 mm)
Weight without options	50 lb. (22.7 kg)	50 lb. (22.7 kg)	51 lb. (25 kg)

140*Xi*III*Plus,* 170*Xi*III*Plus,* and 220*Xi*III*Plus*

Dimensions	140*Xi*III*Plus*	170*Xi*III*Plus*	220*Xi*III*Plus*
Height	15.5 in. (393.7 mm)	15.5 in. (393.7 mm)	15.5 in (393.7 mm)
Width	11.5 in. (283.2 mm)	13.15 in. (334.4 mm)	15.65 in. (397.5 mm)
Depth	19.5 in. (495.3 mm)	19.5 in. (495.3 mm)	19.5 in. (495.3 mm)
Weight without options	55 lb. (25 kg)	67 lb. (30.5 kg)	72 lb. (32.7 kg)

Agency approvals for all printers

Approvals include:

- Binational UL 60950 3rd edition/CSA CAN/CSA-C22.2 No. 60950-00 3rd edition
- IEC 950/EN60950
- EN55022:1998 Class B
- EN55024: 1998
- EN61000-3-2,3
- Canadian ICES-003, Class B
- FCC class B
- Argentina 92/98 Phase 3
- Australia AS/NZS 3548
- R.OC. CNS 13438

Compliance for all printers

- Complies with FCC class B and Canadian Doc. class A rules.
- Carries the CE mark of compliance.

Electrical Specifications

Power	90*Xi*III*Plus*	96*Xi*III*Plus*	110*Xi*III*Plus*
General	90–264 VAC; 48–62 Hz	90–264 VAC; 48–62 Hz	90–264 VAC; 48–62 Hz
Power consumption printing **PAUSE** test at slowest speed	121 W	121 W	180 W
Printer idle	20 W	20 W	20 W

Power	140*Xi*III*Plus*	170*Xi*III*Plus*	220*Xi*III*Plus*
General	90–264 VAC; 48–62 Hz	90–264 VAC; 48–62 Hz	90–264 VAC; 48–62 Hz
Power consumption printing **PAUSE** test at slowest speed	180 W	220 W	269 W
Printer idle	19 W	19 W	20 W

Temperature for Printer Operation and Storage

Environment	Mode	Temperature
Operation	Thermal Transfer	41° to 104° F
		5° to 40° C
	Direct Thermal	32° to 104° F
		0° to 40° C
Storage	Thermal Transfer or	–40° to 140°F
	Direct Thermal	–40° to 60° C

Relative Humidity for Printer Operation and Storage

Environment	Relative Humidity
Operating	20% to 85% non-condensing
Storage	5% to 85% non-condensing

Print Specifications by Model

Refer to the key and the tables that follow for printer specifications.

Model Specifications Key

This table contains the key for print specifications for the tables that follow.

■	Non-Continuous printing (gap, notch, or hole between labels).
▪	Continuous printing (no gap, notch or hole).
◆	Ladder (rotated) orientation.
✧	Picket fence (nonrotated) orientation.

110*Xi*III*Plus*

Specification	110*Xi*III*Plus*-200	110*Xi*III*Plus*-300	110*Xi*III*Plus*-600
Printhead resolution	203 dots/inch (8 dots/mm)	300 dots/inch (12 dots/mm)	600 dots/inch (24 dots/mm)
Dot size (width × length)	0.0049 in. × 0.0049 in. (0.125 mm × 0.125 mm)	0.0033 in. × 0.0039 in. (0.84 mm × 0.100 mm)	0.0016 in. × 0.0016 in. (0.042 mm × 0.042 mm)
First dot location (measured from inside media edge)	0.10 in. ±0.035 in. (2.5 mm ± 0.89 mm)	0.023 in.±0.035 in. (0.6 mm ± 0.9 mm)	0.023 in.± 0.035 in. (0.6 mm ± 0.9 mm)
Maximum print width	4.09 in. (104 mm)	4.09 in. (104 mm)	3.2 in. (81 mm)
Selectable print speeds (inches per second)	2.4, 3 through 10	2.4, 3 through 8	1.5, 2 through 4
Maximum Print length	39 in. (991 mm) ■ 150 in. (3810 mm)▪■	39 in. (991 mm) ■ 100 in. (3810 mm)▪■	39 in. (991 mm) ■ 39 in. (991 mm)▪■
Bar code modulus (X) dimension	4.9 mil to 49 mil♦ 4.9 mil to 49 mil✧	3.9 mil to 39 mil♦ 3.33 mil to 33 mil✧	1.6 mil to 16 mil♦ 1.6 mil to 16 mil✧
Thin film printhead with Element Energy Equalizer $(E^3)^®$	Yes	Yes	Yes

90*Xi*III*Plus* and 96*Xi*III*Plus*

Specification	90*Xi*III*Plus*	96*Xi*III*Plus*)
Printhead resolution	300 dots/inch (12 dots/mm)	600 dots/inch (24 dots/mm)
Dot size (width × length)	0.0033 in. × 0.0039 in. (0.084 mm × 0.100 mm)	0.0016 in. × 0.0016 in. (0.042 mm × 0.042 mm)
First dot location (measured from inside media edge)	0.023 in. ± 0.035 in. (0.6 mm ± 0.89 mm)	0.023 in.± 0.035 in. (0.6 mm ± 0.89 mm)
Maximum print width	3.4 in. (86 mm)	3.29 in. (81 mm)
Selectable Print Speeds (inches per second)	2.4, 3, 4, 5, 6, 7, 8	1.5, 2, 3, 4
Maximum print length	39 in. (991 mm) ■ 100 in. (2540 mm)■■	39 in.(991 mm) ■ 39 in.(991 mm)■■
Bar code modulus (X) dimension	3.9 mil to 39 mil◆ 3.33 mil to 33 mil✧	1.6 mil to 16 mil◆ 1.6 mil to 16 mil✧
Thin film printhead with Element Energy Equalizer (E$^{3)®}$	Yes	Yes

140*Xi*III*Plus,* 170*Xi*III*Plus,* and 220*Xi*III*Plus*

Specification	140*Xi*III*Plus*	170*Xi*III*Plus*	220*Xi*III*Plus*
Printhead resolution	203 dots/inch (8 dots/mm)	300 dots/inch (12 dots/mm)	203 dots/inch (8 dots/mm)
Dot size (width × length)	0.0049 in. × 0.0049 in. (0.125 mm × 0.125 mm)	0.0033 in. × 0.0039 in. (0.84 mm × 0.100 mm)	0.0049 in. × 0.0049 in. (0.125 mm × 0.125 mm)
First dot location (measured from inside media edge)	0.10 in. ±0.035 in. (2.5 mm ± 0.89 mm)	0.10 in. ±0.035 in. (2.5 mm ± 0.89 mm)	0.10 in. ±0.035 in. (2.5 mm ± 0.89 mm)
Maximum print width	5.04 in. (128 mm)	6.6 in. (168 mm)	8.5 in. (216 mm)
Selectable print speeds (in. per second)	2.4, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12	2.4, 3, 4, 5, 6, 7, 8	2.4, 3, 4, 5, 6, 7, 8, 9, 10
Maximum print length	39 in. (991 mm) ■ 150 in. (3810 mm)■■	39 in. (991 mm) ■ 100 in.(3810 mm)■■	39 in. (991 mm) ■ 150 in. (3810 mm)■■
Bar code modulus (**X**) dimension	4.9 mil to 49mil◆ 4.9 mil to 49 mil✧	3.9 mil to 39 mil◆ 3.33 mil to 33 mil✧	4.9 mil to 49mil◆ 4.9 mil to 49 mil✧
Thin film printhead with Element Energy Equalizer (E^3)®	Yes	Yes	Yes

Ribbon Specifications by Model

Note • Match the ribbon to the label width and printhead width you are using.

- Ribbon must be wound with the coated side out.
- Ribbon should be at least as wide as the labels to protect the printhead from excessive wear.

110*Xi*III*Plus*

Specifications	110*Xi*III*Plus*-200	110*Xi*III*Plus*-300	110*Xi*III*Plus*-600
Printhead resolution	203 dots/inch (8 dots/mm)	300 dots/inch (12 dots/mm)	600 dots/inch (24 dots/mm)
Ribbon width Minimum	0.79 in. (20 mm)	0.79 in. (20 mm)	0.79 in. (20 mm)
Ribbon width Maximum	4.33 in. (110 mm)	4.33 in. (110 mm)	3.40 in. (87 mm)
Standard length with 2:1 label to ribbon ratio	984 ft. (300 m)	984 ft. (300 m)	984 ft. (300 m)
Standard length with 3:1 label to ribbon ratio	1476 ft. (450 m)	1476 ft. (450 m)	1476 ft. (450 m)
Ribbon core inside diameter	1.0 in. (25.4 mm)	1.0 in. (25.4 mm)	1.0 in. (25.4 mm)
Maximum ribbon roll outside diameter	3.2 in. (81.3 mm)	3.2 in. (81.3 mm)	3.2 in. (81.3 mm)

90*Xi*III*Plus* and 96*Xi*III*Plus*

Specifications	90*Xi*III*Plus*	96*Xi*III*Plus*
Printhead resolution	300 dots/inch (12 dots/mm)	600 dots/inch (24 dots/mm)
Ribbon width Minimum	0.79 in. (20 mm)	0.79 in. (20 mm)
Ribbon width Maximum	3.40 in. (87 mm)	3.40 in. (87 mm)
Standard length with 2:1 label to ribbon ratio	984 ft. (300 m)	984 ft. (300 m)
Standard length with 3:1 label to ribbon ratio	1476 ft. (450 m)	1476 ft. (450 m)
Ribbon core inside diameter	1.0 in. (25.4 mm)	1.0 in. (25.4 mm)
Maximum ribbon roll outside diameter	3.2 in. (81.3 mm)	3.2 in. (81.3 mm)

140*Xi*III*Plus,* 170*Xi*III*Plus,* and 220*Xi*III*Plus*

Specifications	140*Xi*III*Plus*	170*Xi*III*Plus*	220*Xi*III*Plus*
Printhead resolution	203 dots/inch (8 dots/mm)	300 dots/inch (12 dots/mm)	203 dots/inch (8 dots/mm)
Ribbon width Minimum	1.57 in. (40 mm)	2.0 in. (51 mm)	4.25 in. (108 mm)
Ribbon width Maximum	5.10 in. (130 mm)	6.7 in. (170 mm)	8.60 in. (220 mm)
Standard length with 2:1 label to ribbon ratio	984 ft. (300 m)	984 ft. (300 m)	984 ft. (300 m)

Specifications	140*Xi*III*Plus*	170*Xi*III*Plus*	220*Xi*III*Plus*
Standard length with 3:1 label to ribbon ratio	1476 ft. (450 m)	1476 ft. (450 m)	1476 ft. (450 m)
Ribbon core inside diameter	1.0 in. (25.4 mm)	1.0 in. (25.4 mm)	1.0 in. (25.4 mm)
Maximum ribbon roll outside diameter	3.2 in. (81.3 mm)	3.2 in. (81.3 mm)	3.2 in. (81.3 mm)

Label Specifications

*Xi*III*Plus* printers need the correct size and type of labels for best performance. The tables that follow give you the specifications you need.

110*Xi*III*Plus* Printers

! **Important •** Media registration and minimum label length are affected by label type and width, ribbon type, print speed, and printer mode of operation. Performance improves as these factors are optimized. Zebra recommends qualifying any application with thorough testing.

Label Specification Key

This table contains the key for the label modes, dimensions, and directions:

T	Tear-Off
P	Peel-Off
C	Cutter
R	Rewind
☐	Minimum

■   Maximum

●   Preferred

Specifications	110*Xi*III *Plus*-200	110*Xi*III *Plus*-300	110*Xi*III *Plus*-600
Minimum label length	0.7 in. (18 mm) **T**	0.7 in. (18 mm) **T**	0.7 in. (18 mm) **T**
	0.5 in.(13 mm) **P**	0.5 in.(13 mm) **P**	0.5 in. (13 mm) **P**
	1.5 in. (38 mm) **C**	1.5 in. (38 mm) **C**	1.5 in.(38 mm) **C**
	0.25 in.(6 mm) **R**	0.25 in. (6 mm) **R**	0.25 in. (6 mm) **R**
Total media width (label + liner, if any)	0.79″ (20 mm) □ 4.5″(114 mm)■	0.79″ (20 mm) □ 4.5″(114 mm)■	0.79″ (20 mm) □ 4.5″(114 mm)■
Total thickness (includes liner, if any)	0.003 in. (0.076 mm) □ 0.012″(0.305 mm) ■	0.003 in. (0.076 mm)□ 0.012″(0.305 mm) ■	0.003 in. (0.076 mm)□ 0.012″(0.305 mm) ■
Cutter maximum full-width media thickness	0.009 in. (0.23 mm)	0.009 in. (0.23 mm)	Does not apply
Roll media core inside diameter	3 in. (76 mm)	3 in. (76 mm)	3 in.(76 mm)
Maximum roll diameter on 3 in. (76 mm) core	8.0 in. (203 mm)	8.0 in. (203 mm)	8.0 in. (203 mm)
Interlabel gap	0.079 in.2 mm)□ 0.157 in.(4 mm)■ 0.118 in. (3 mm) ●	0.079 in. (2 mm)□ 0.157 in. (4 mm)■ 0.118 in. (3 mm) ●	0.079 in. (2 mm)□ 0.157 in. (4 mm)■ 0.118 in. (3 mm) ●

Specifications	110*Xi*III*Plus*-200	110*Xi*III*Plus*-300	110*Xi*III*Plus*-600
Maximum internal fanfold media pack size (label + liner) L × W × H	8.0″ × 4.5″ × 4.5″ (20 mm × 114 mm × 114 mm)	8.0″ × 5.5″ × 4.5″ (203 mm × 40 mm × 114 mm)	8.0″ × 7.1″ × 4.5″ (203 mm × 180 mm × 114 mm)
Ticket/tag sensing notch L × W	0.12 in.× 0 .25 in. (3 mm) × (6 mm)	0.12 in. × 0 .25 in. (3 mm) × (6 mm)	0.12 in. × 0 .25 in. (3 mm) × (6 mm)
Ticket/tag sensing hole diameter	0.125 in. (3 mm)	0.125 in. (3 mm)	0.125 in. (3 mm)
Label registration tolerance (vertical)	± 0.06 in. (±1.5 mm)	± 0.06 in. (±1.5 mm)	± 0.06 in. (±1.5 mm)
Label registration tolerance (horizontal)	± 0.06 in. (±1.5 mm)	± 0.06 in. (±1.5 mm)	± 0.06 in. (±1.5 mm)

Black Mark Sensing Only

Specifications	110*Xi*III*Plus*-200	110*Xi*III*Plus*-300	110*Xi*III*Plus*-600
Mark length (measuring parallel to label/tag edge)	0.12 ″ (3 mm) ☐ 0.43″ (11 mm) ■	0.12″ (3 mm) ☐ 0.43″ (11 mm) ■	0.12″ (3 mm) ☐ 0.43″ (11 mm) ■
Mark width (measuring to perpendicular label/tag edge)	0.43″ (11 mm) ☐ Full media width ■	0.43″ (11 mm) ☐ Full media width ■	0.43″ (11 mm) ☐ Full media width ■
Mark location	within 0.040 in. (1 mm) of the inside media edge	within 0.040 in. (1 mm) of the inside media edge	within 0.040 in. (1 mm) of the inside media edge
Mark density in Optical Density Unit (ODU)	>1.0	>1.0	>1.0

Label Specifications

90*Xi*III*Plus*, 96*Xi*III*Plus*, 140*Xi*III*Plus*, 170*Xi*III*Plus,* and 220*Xi*III*Plus* Printers

! **Important •** Media registration and minimum label length are affected by label type and width, ribbon type, print speed, and printer mode of operation. Performance improves as these factors are optimized. Zebra recommends qualifying any application with thorough testing.

Label Specification Key

This table contains the key for the label modes, dimensions, and directions:

T	Tear-Off
P	Peel-Off
C	Cutter
R	Rewind
☐	Minimum
■	Maximum
●	Preferred

90*Xi*III*Plus* and 96*Xi*III*Plus*

Specifications	90*Xi*III*Plus*	96*Xi*III*Plus*
Minimum label length	0.7 in. (18 mm) **T**	0.7 in. (18 mm) **T**
	0.5 in. (13 mm) **P**	0.5 in. (13 mm) **P**
	1.5 in. (38 mm) **C**	1.5 in. (38 mm) **C**
	0.25 in. (6 mm) **R**	0.25 in. (6 mm) **R**
Total media width (label + liner, if any)	0.79 in. (20 mm) ☐	0.79 in. (20 mm) ☐
	3.54 in. (90 mm) ■	3.54 in. (90 mm) ■

Specifications	90*Xi*III*Plus*	96*Xi*III*Plus*
Total thickness (includes liner, if any)	0.003 in. (0.076 mm) ☐ 0.012 in. (0.305 mm) ■	0.003 in. (0.076 mm) ☐ 0.012 in. (0.305 mm) ■
Cutter maximum full-width media thickness	0.014 in. (0.35 mm)	0.014 in. (0.35 mm)
Roll media core inside diameter	3 in. (76 mm)	3 in. (76 mm)
Maximum roll diameter	8.0 in. (203 mm)	8.0 in. (203 mm)
Interlabel gap	0.079 in. (2 mm) ☐ 0.118 in. (3 mm) ■	0.079 in. (2 mm) ☐ 0.118 in. (3 mm) ■
Preferred interlabel gap	Maximum inter-label gap = 2 × (label length for which you have calibrated the printer) + 1 in. (25.4 mm)	Maximum inter-label gap = 2 × (label length for which you have calibrated the printer) + 1 in. (25.4 mm)
Maximum internal fanfold media pack size (label + liner) L × W × H	8.0″ × 4.5″ × 4.5″ (203 mm × 114 mm × 114 mm)	8.0″ × 4.5″ × 4.5″ (203 mm × 114 mm × 114 mm)
Ticket/tag sensing notch L × W	0.12 in. × 0.25 in. (3 mm) × (6 mm)	0.12 in. × 0.25 in. (3 mm) × (6 mm)
Ticket/tag sensing hole diameter	0.125 in. (3 mm)	0.125 in. (3 mm)
Effective leading edge registration accuracy (vertical)	± 0.060 in. (±1.5 mm)	± 0.060 in. (±1.5 mm)
Effective leading edge registration accuracy (horizontal)	± 0.060 in. (±1.5 mm)	± 0.060 in. (±1.5 mm)

90*Xi*III*Plus* and 96*Xi*III*Plus* Black Mark Sensing Only

Specifications	90*Xi*III*Plus*	96*Xi*III*Plus*
Mark length (measuring parallel to label or tag edge)	0.12 in. (3 mm) ☐ 0.43 in. (11 mm) ■	0.12 in. (3 mm) ☐ 0.43 in. (11 mm) ■
Mark width (measuring to perpendicular label/tag edge)	0.43 in. (11 mm) Full media width	0.43 in. (11 mm) Full media width
Mark location	Marks must be located within 0.040 in. (1 mm) of the inside media edge.	Marks must be located within 0.040 in. (1 mm) of the inside media edge.
Mark density in Optical Density Unit (ODU)	>1.0	>1.0

140*Xi*III*Plus,* 170*Xi*III*Plus,* and 220*Xi*III*Plus*

Specifications	140*Xi*III*Plus*	170*Xi*III*Plus*	220*Xi*III*Plus*
Minimum label length	0.7 in. (18 mm) **T** 0.5 in. (13 mm) **P** 1.5 in. (38 mm) **C** 0.25 in. (6 mm) **R**	0.7 in. (18 mm) **T** 0.5 in. (13 mm) **P** 1.5 in. (38 mm) **C** 0.25 in. (6 mm) **R**	0.7 in. (18 mm) **T** 0.5 in. (13 mm) **P** 1.5 in. (38 mm) **C** 0.25 in. (6 mm) **R**
Total media width (label + liner, if any)	1.57 in. (40 mm) ☐ 5.51 in. (140 mm) ■	2.00 in. (51 mm) ☐ 7.1 in. (180 mm) ■	4.25 in.(108 mm) ☐ 8.80 in. (224 mm) ■
Total thickness (includes liner, if any)	0.003 in. (0.076 mm) ☐ 0.012 in. (0.305 mm) ■	0.003 in. (0.076 mm) ☐ 0.012 in. (0.305 mm) ■	0.003 in. (0.076 mm) ☐ 0.012 in. (0.305 mm) ■

| Specifications	140*Xi*III*Plus*	170*Xi*III*Plus*	220*Xi*III*Plus*
Cutter maximum full-width media thickness	0.009 in. (0.23 mm)	0.007 in. (0.18 mm)	0.005 in.(0.14 mm)
Roll media core inside diameter	3 in. (76 mm)	3 in. (76 mm)	3 in. (76 mm)
Maximum roll diameter	8.0 in. (203 mm)	8.0 in. (203 mm)	8.0 in.(203 mm)
Inter-label gap	0.079 in. (2 mm) □ 0.118 in. (3 mm) ■	0.079 in. (2 mm) □ 0.118 in. (3 mm) ■	0.079 in. (2 mm) □ 0.118 in. (3 mm) ■
Preferred inter-label gap	Maximum inter-label gap = 2 × (label length for which you have calibrated the printer) + 1″ (25.4 mm)	Maximum inter-label gap = 2 × (label length for which you have calibrated the printer) + 1″ (25.4 mm)	Maximum inter-label gap = 2 × (label length for which you have calibrated the printer) + 1″ (25.4 mm)
Maximum internal fanfold media pack size (label + liner) L × W × H	8.0″ × 5.5″× 4.5″ (203 mm × 114 mm × 114 mm)	8.0″ × 7.1″× 4.5″ (203 mm × 114 mm × 114 mm)	8.0″ × 8.8″× 4.5″ (203 mm × 114 mm × 1 14 mm)
Ticket/tag sensing notch L × W	0.12 in. ×0.25 in. (3 mm) × (6 mm)	0.12 in. ×0.25 in. (3 mm) × (6 mm)	0.12 in. ×0.25 in. (3 mm) × (6 mm)
Ticket/tag sensing hole diameter	0.125 in. (3 mm)	0.125 in. (3 mm)	0.125 in. (3 mm)
Effective leading edge registration accuracy (vertical)	± 0.070 in.(±1.8 mm)	± 0.060 in. (±1.5 mm)	± 0.050 in. (±1.5 mm)
Effective leading edge registration accuracy (horizontal)	± 0.070″ (±1.8 mm)	± 0.060″ (±1.5 mm)	± 0.060″ (±1.5 mm)

140*Xi*III*Plus* and 170*Xi*IIIPlus Black Mark Sensing Only

Specifications	140*Xi*III*Plus*	170*Xi*III*Plus*	220*Xi*III*Plus*
Mark length (measuring parallel to label or tag edge)	0.12 in. (3 mm) ☐ 0.43 in. (11 mm) ■	0.12 in. (3 mm) ☐ 0.43 in. (11 mm) ■	0.12 in. (3 mm) ☐ 0.43 in. (11 mm) ■
Mark width (measuring to perpendicular label/tag edge)	0.43 in. (11 mm) ☐ Full media width ■	0.43 in. (11 mm) ☐ Full media width ■	0.43 in. (11 mm) ☐ Full media width ■
Mark location	Marks must be located within 0.040 in. (1 mm) of the inside media edge.	Marks must be located within 0.040 in. (1 mm) of the inside media edge.	Marks must be located within 0.040 in. (1 mm) of the inside media edge.
Mark density in Optical Density Unit (ODU)	>1.0	>1.0	>1.0

Power Cord Specifications

Your power cord must meed these standards:

- The overall length must be less than 9.8 ft. (3.0 m).
- It must be rated for at least 5 A, 250 V.
- The chassis ground (earth) **must** be connected to ensure safety and reduce electromagnetic interference.

  The ground connection is handled by the third wire (earth) in the power cord as shown in the illustration callouts and table below.
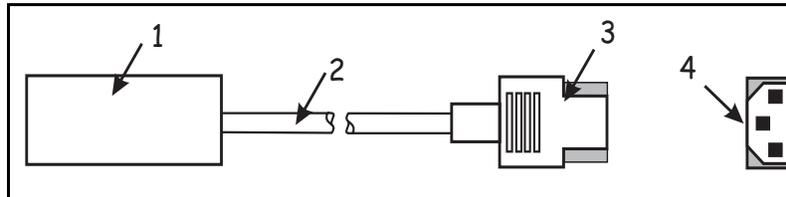
Callout	Description
1	AC power plug for your country
2	3-conductor HAR cable
3	IEC 320 connector
4	Neutral earth live in contact view

• The AC power plug and IEC 320 connector must bear the certification mark of at least one of the known international safety organizations shown below.
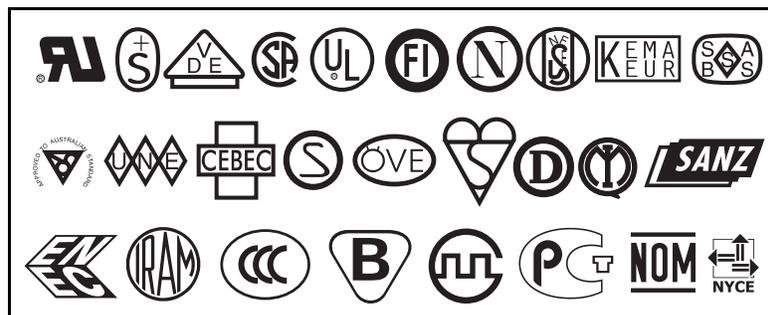
Printer Care

Cleaning your printer regularly maintains print quality and may extend the life of the printer.

Routine Procedures

The recommended cleaning schedule is shown in the table below. See the following pages for specific procedures.

Caution • Use only the cleaning agents indicated. Zebra Technologies is not responsible for damage caused by any other fluids being used on this printer.

Area	Method	Interval
Printhead	Solvent*†	When CLEAN HEAD NOW appears, or:
Platen roller	Solvent*	**Direct Thermal Print Mode:** After every roll of labels or 500 ft. or 150 m of fanfold labels.
Transmissive sensor	Air blow	
Black mark sensor	Air blow	**Thermal Transfer Print Mode:** After every roll (1500 ft.or 450 m) of ribbon.
Media path	Solvent*	
Ribbon sensor	Air blow	
Label available sensors	Air blow	Monthly
Tear-off/peel-off bar	Solvent*	
Snap plate	Solvent*	As needed
Cutter	Solvent*	

* Zebra recommends using 90% isopropyl alcohol.

† For 600 dpi printers, use Zebra's *Save-a-Printhead* cleaning film.This specially coated material removes contamination buildup without damaging the printhead. Call your authorized Zebra reseller or distributor for more information.

Exterior

Caution • Do not use harsh or abrasive cleaning agents or solvents.

- Clean the outside surfaces of the printer with a lint-free cloth.
- Use a mild detergent solution or desktop cleaner sparingly, as needed.

Interior

- After every four rolls of labels, inspect the inside of the printer.
- Use a soft bristle brush or a vacuum cleaner to remove any dirt and lint from the interior of the printer.

Printhead and Platen Roller

After every roll of ribbon, clean the printhead. Clean the printhead more often if you see inconsistent print quality, such as voids in the bar code or graphics.

For 200 and 300 dpi printers Clean after every roll (1500 feet or 450 m) of thermal transfer ribbon or after every roll (500 feet or 150 m) of direct thermal labels or when CLEAN HEAD NOW appears on the LCD.

For 600 dpi printers   Clean after each roll (500 feet or 150 m) of labels or when CLEAN HEAD NOW appears on the LCD.

Caution • An improperly seated printhead, data cable or power cable could result in the printhead generating excessive heat that could cause harm if it is touched.

Notes • You do **not** need to turn off the printer before cleaning the printhead.

If power is turned off, all label formats and images, as well as any temporarily saved parameter settings stored in the printer's internal memory, are lost. When power is turned back on, these items must be reloaded.

If power is removed from a 600 dpi printer when cleaning the printhead, the CLEAN HEAD NOW warning shown on the LCD will **not** disappear.

To clean the printhead, complete these steps:

1. Open the printhead.

2. Remove the labels and ribbon (if loaded).

3. Moisten an applicator tip with solvent and wipe along the print elements from end to end. (The print elements are on the brown strip just behind the chrome strip on the printhead.)

   Allow a few seconds for the solvent to evaporate.

4. Rotate the platen roller and clean thoroughly with solvent and an applicator.

5. Brush or vacuum any accumulated paper lint and dust away from the rollers.

6. Reload ribbon and close the printhead.

Note • If print quality has not improved after performing this procedure, try cleaning the printhead with Save-a-Printhead cleaning film. This specially coated material removes contamination buildup without damaging the printhead. Call your authorized Zebra reseller or distributor for more information.

Sensors

Brush or vacuum any accumulated paper lint and dust off the sensors at any time the sensors are blocked. At minimum, clean the sensors (the ribbon sensor and optional label available sensor shown below and the media sensors shown in *Sensor Adjustment on page 20*) according to the schedule in *Routine Procedures on page 112*.

The callouts in this illustration show the sensor components and the printhead and platen roller assembly. The table that follows identifies the callouts.
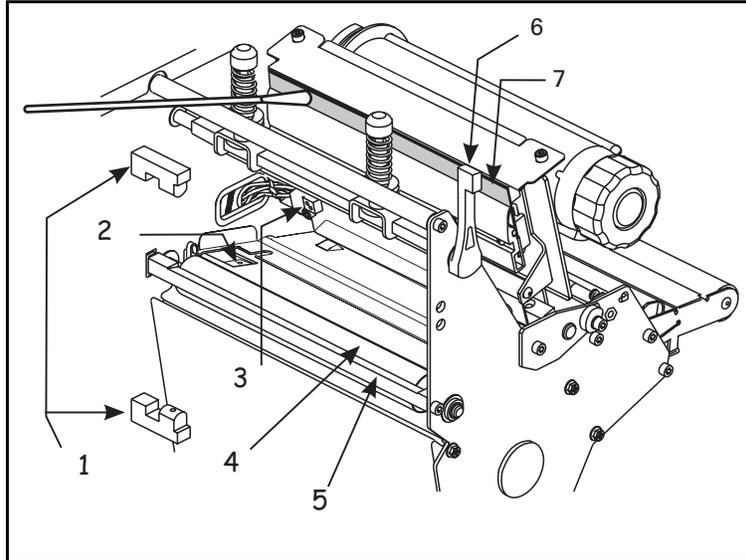
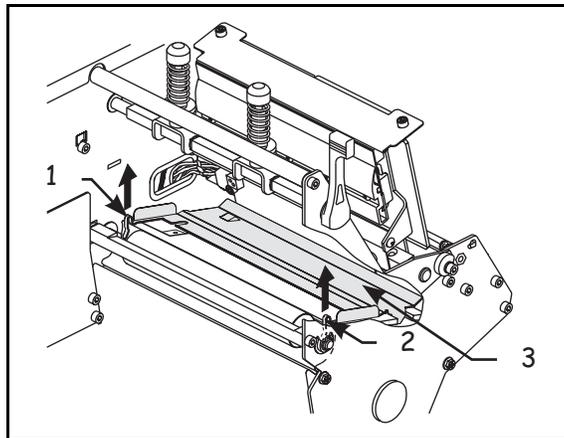| Callout	Description
1	Label-available sensor
2	Black mark sensor
3	Ribbon sensor
4	Platen roller
5	Tear-off bar
6	Printhead lever
7	Printhead

Snap Plate

Clean the snap plate when label adhesive or a label is stuck to the underside of the snap plate.

To clean the snap plate, complete these steps:

1. Insert a small-blade screwdriver or similar tool into the loop on the left side of the snap plate.

The illustration callouts show the loops and snap plate, as identified in the table following the illustration.   .

Callout	Description
1	Left loop
2	Right loop
3	Snap plate

Note • Take care not to bend, twist, or otherwise deform the loops. If the snap plate is damaged in any way, you may need a new plate for proper ribbon sensing.

2. Gently lift the snap plate.

3. Insert a small-blade screwdriver or similar tool into the loop on the right side of the snap plate.

4. Gently lift the snap plate.

5. Remove the snap plate from the printer.

6. Clean the snap plate with cleaning solvent and a soft cloth.

7. To reinstall the snap plate, insert the two tabs on the bottom of the snap plate into the two slots of the media path.

8. Slide the snap plate toward you.

9. Press down on the loops to lock the snap plate into place.

Cutter

If the cutter is not cutting the labels cleanly, or if the cutter jams with labels, clean the cutter.

Caution • Turn the AC power switch Off (**O**) and unplug the power cord. The cutter blade is sharp. Do **not** rub the blade with your fingers.

To clean the cutter, complete these steps:

1. Turn Off (**O**) the printer.

2. Unplug the power cord.

3. Clean the stationary cutter blade with a solvent of 90% isopropyl alcohol.

   If this does not remove label fragments and adhesive, contact an authorized service technician.

Fuse Replacement

90*Xi*III*Plus,* 96*Xi*III*Plus,* 140*Xi*III*Plus,* 170*Xi*III*Plus,* and 220*Xi*III*Plus*

Important • The 110*Xi*III*Plus* fuse can be replaced **only** by an authorized service technician.

Caution • Turn the AC power switch Off (**O**) and remove the power cord before performing this procedure.

The printer uses a metric-style fuse (5 × 20 mm IEC) rated at F5A, 250 V. The AC power entry module comes with two approved fuses in the fuse holder: one is in-circuit and the second is provided as a spare (see the Fuse Removal illustration below). The end caps of the fuse must bear the certification mark of a known international safety organization.

To replace a faulty fuse, complete these steps:

1. Use a small-blade screwdriver or similar tool to remove the fuse holder.

The fuse holder is part of the AC power entry module at the rear of the printer. The illustration callouts and the table that follows identify the parts of the AC power entry modlule.
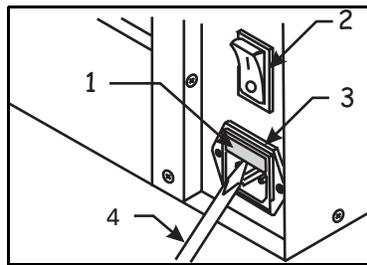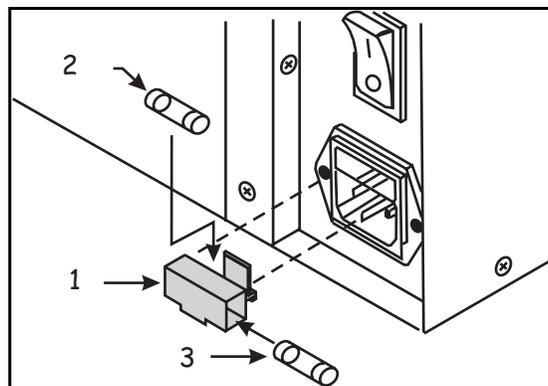

Callout	Description
1	Fuse holder
2	Power switch

Callout	Description
3	AC power entry module
4	Small-blade screwdriver

2. Remove the faulty fuse and install a new fuse in the in-circuit position as shown. If you use the spare fuse, be sure to order a replacement fuse from your Zebra distributor.

The illustration callouts and the table that follows identify the parts of the fuse holder.

Callout	Description
1	Fuse holder
2	In-circuit fuse
3	Spare fuse

Caution • The spare fuse should be the exact type and rating as the original in-circuit fuse.

3. Snap the fuse holder back into the AC power entry module.

4. Reconnect the power cord and turn the printer On (**I**).

Note • If the AC power is not restored, an internal component failure may have occurred and the printer requires servicing by an authorized service technician.

Troubleshooting

If there is an error condition on the printer or the labels are not printing or advancing correctly, review the checklist below.

❑What type of labels are you using? Review the types of label and the print modes, see *Labels and Print Modes on page 23*.

❑Review the label- and ribbon-loading illustrations, starting with *Load the Printer on page 10*.

❑Check the position of the media sensor and move if necessary, as shown in *Sensor Adjustment on page 20*.

Printhead Adjustment

Important • Print quality depends on the labels and ribbon used as well as the toggle pressure. Make sure your labels and ribbon are right for your application.

- **Direct thermal labels** do not need ribbon.
- **Thermal transfer labels** need thermal transfer ribbon.

Printhead pressure and the darkness setting affect print quality. If the darkness setting is too high for the labels and ribbon being used, it causes premature printhead wear. If the toggle pressure is not even, labels and ribbon may slip.

Toggle adjustment may be needed if printing is too light on one side or if thick labels are used. Make sure that the toggles are positioned properly.

Both toggles should be positioned so they provide even pressure on the labels. The toggles are positioned by sliding them to the desired location.

- If you are using a 90*Xi*III*Plus* or 96*Xi*III*Plus* printer, position the single toggle over the center of the labels.
- All other printer models have two toggles. If the labels are too narrow to fit both toggles, position one toggle over the center of the labels and decrease the pressure on the unused toggle.

If positioning the toggles properly does not solve the problem, adjust printhead pressure.

To adjust printhead pressure, complete these steps:

Note • Printhead life can be maximized by using the lowest pressure that produces the desired print quality.

1. Print some labels at 2.4 in. (61 mm) per second by running the **PAUSE** Self Test described in *To perform a PAUSE self test, complete these steps: on page 134*.

2. While printing labels, lower the darkness setting using the front panel controls until a gray level of printing is seen.

3. Loosen the adjusting nuts at the top of the toggle assemblies.

4. The 90*Xi*III*Plus* and 96*Xi*III*Plus* printers have only one toggle.Loosen the adjusting nuts at the top of the toggle assemblies.
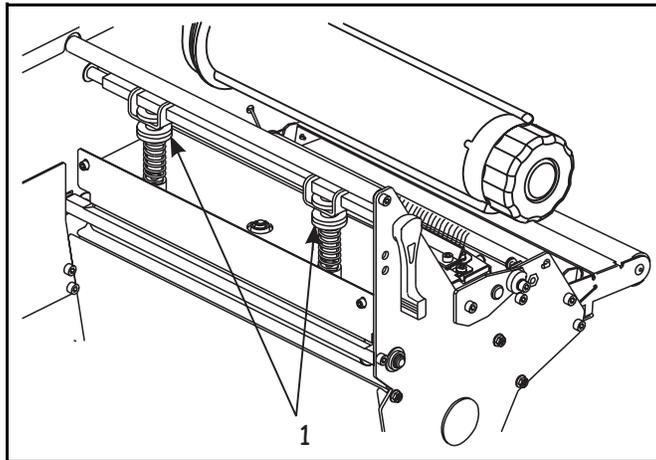
Callout	Description
1	Adjusting nuts

To adjust printhead pressure for specialized labels, complete these steps:

1. For label types that require higher pressure to print well, increase the pressure using the adjusting nuts at the top of the toggle assemblies.

2. Increase the darkness level using the front panel controls until the printing is clear.

3. Tighten the knurled adjusting nuts.

Media and Ribbon Sensor Calibration

Note • Before you begin this procedure, make sure that the maximum length is set to a value 1 in. (25.4 mm) greater than the length of the labels you are using. If the maximum length is set to a lower value, the calibration process assumes that continuous media is in the printer. See *Labels and Print Modes on page 23* for more information.

Media and ribbon sensor calibration is one of the most common adjustments to the printer settings. There are two different types of calibration that can be done by the printer.

Auto-calibration is done by the printer feeding media when the printhead has been closed and it is first turned on. The printer automatically sets the value it detects for the spaces between labels. This type of calibration also happens as part of both the sensor profile and media and ribbon calibration procedures.

Media and Ribbon Sensor Sensitivity Calibration resets the sensitivity of the sensors to detect correctly the media and ribbon you are using. See *MEDIA AND RIBBON CALIBRATE on page 70* for instructions. Changing the type of ribbon and/or media may require resetting the sensitivity of the media and ribbon sensors. When the sensors are at their new sensitivity, the printer performs a standard calibration. Indications that the sensitivity may need to be reset are:

- A CHECK RIBBON light on with the ribbon properly installed
- Non-continuous labels being treated as continuous labels.

Printer Settings Can Be Changed

Printer settings can be controlled by your printer's driver or label preparation software, as well as at the front panel of the printer. Some examples of ways or places to change the printer settings are:

- Front panel of the printer, as shown in *Front Panel Controls on page 54*.
- Zebra Universal Driver
- BAR-ONE®
- PrintServer II Guide

LCD Error Conditions

The LCD displays messages when there is an error condition. The error messages are listed below with the most likely causes and their solution.

Error Condition Ribbon Out

Cause	Solution
Thermal Transfer Mode, ribbon is not loaded or is loaded incorrectly.	Load the ribbon correctly, following directions in *To load the ribbon, complete these steps: on page 14*.
Thermal Transfer Mode, ribbon is loaded but the ribbon sensor is not sensing the ribbon.	Adjust the media and ribbon sensor calibration.
Direct Thermal Mode	Make sure ribbon is not loaded and printer is in Direct Thermal Print Mode.
	Make sure the printer driver and software settings are compatible with Direct Thermal Print Mode.

Error Condition—Paper Out

Cause	Solution
Labels are not loaded or are loaded incorrectly.	Load the labels correctly.
Media Sensor is not adjusted correctly.	Check the position of the media sensors, and adjust if necessary.
Printer is set for non-continuous labels but continuous labels are loaded.	• Make sure the labels and the Media Type settings match.
	• Make sure the printer driver or software settings match the label and Media Type settings
	• Calibrate the printer.

Cause	Solution
Media Sensor does not match labels.	• Using the front panel controls, check the sensor type to ensure that the correct one is used for the labels loaded. • Calibrate the printer.

Error Condition—Head Open

Cause	Solution
The printhead is not fully closed.	Close the printhead.

Error Condition—Head Element Bad

! **Important** • Does not apply to the 110*Xi*III*Plus* printers.

Cause	Solution
One or more of the printhead elements has failed the printhead element test.	If the failed elements affect your printing application, replace the printhead. To override this error, disable the head test count feature on the front panel by defaulting the value to **0000**. See *Front Panel Controls on page 54*.

Warning—Ribbon In

Cause	Solution
The ribbon is loaded.	• Remove the ribbon and set the printer to Direct Thermal Mode. • Ensure that the printer driver and/or software settings are correctly set (if applicable).

Warning—Head Too Hot

⚠️ **Caution •** The printhead is hot and can cause severe burns. Allow the printhead to cool.

Cause	Solution
The printhead is over temperature.	Printing automatically resumes when the printhead elements cool to an acceptable operating temperature.

Warning—Clean Head Now

Cause	Solution
The printhead requires cleaning.	See *To clean the printhead, complete these steps: on page 114* and clean the printhead. **Note •** If the warning does not go away after the printhead is cleaned, open the printhead and then close it.

Warning—Head Cold

⚠️ **Caution •** An improperly connected cable can cause this warning. The printhead is hot and can cause severe burns. Allow the printhead to cool.

Cause	Solution
The printhead is under temperature.	Continue printing while the printhead reaches the correct operating temperature. If the error remains, the environment may be too cold for proper printing. Relocate the printer to a warmer area.
Printhead data cable is not properly connected.	Disconnect and reconnect data cable to the printhead. Ensure that the cable connector is fully inserted into the printhead connector.

Warning—Cutter Jammed

Cause	Solution
Cutter blade is in the media path.	Turn off the printer power and unplug the printer. Inspect the cutter module for debris and clean as needed following the cleaning instructions in *To clean the cutter, complete these steps: on page 117*.

Out of Memory

Cause	Solution
There is not enough memory to perform the function shown on the second line of the error message.	• Shut off the printer to clear memory and try to print again. • If the error recurs, there is insufficient memory for the label length, downloaded fonts or graphics, and images. • Ensure that the device, such as Flash memory or PCMCIA card, is installed and not write-protected or full. • Ensure that the data is not directed to a device that is not installed or available.

Print Quality Problems

General Print Quality Issues

Cause	Solution
You are using an incorrect labels and ribbon combination for your application.	Consult your authorized Zebra reseller ordistributor for information and advice.
The printer is set at the incorrect print speed.	For optimal print quality, set the print speed to the lowest possible setting via ZPL II, the driver, or the software.
The printer is set at the incorrect darkness level.	For optimal print quality, set the darkness to the lowest possible setting via the front panel, the driver, or the software.

Cause	Solution
The printhead is dirty.	Clean the printhead according to the instructions *To clean the printhead, complete these steps: on page 114*.
There is light printing (or no printing) on the left or right side of the label or the printed image is not sharp.	The toggle pressure needs to be adjusted. Follow the printhead pressure adjustment instructions in *Printhead Adjustment on page 120*.

Gray lines on blank labels with no consistent pattern

Cause	Solution
The printhead is dirty.	Clean the printhead according to the instructions *To clean the printhead, complete these steps: on page 114*.

Light, consistent vertical lines running through all of the labels

Cause	Solution
The printhead or platen roller is dirty.	Clean the printhead, platen roller, or both as instructed in *To clean the printhead, complete these steps: on page 114*.

Intermittent creases on the left and right edges of the labels

Cause	Solution
There is too much toggle pressure on the printhead.	Reduce the toggle pressure. See *Printhead Adjustment on page 120*.

Wrinkled Ribbon

Cause	Solution
The ribbon is not loaded correctly.	Load the ribbon correctly. See *To load the ribbon, complete these steps: on page 14.*
The darkness setting is incorrect.	Set the darkness to the lowest possible setting for good print quality.
Incorrect printhead pressure or balance.	Set the pressure to the minimum required for good print quality. See *Printhead Adjustment on page 120*.
The labels are not feeding correctly. They are shifting from side to side.	Make sure that the media guide and media supply guide touch the edge of the media. Adjust the ribbon strip plate.

Communications

A label format was sent to the printer but not recognized. The DATA light does not flash.

Cause	Solution
The communication parameters are incorrect.	• Check the printer driver or software communications settings (if applicable). • If you are using serial communication, check the serial port setting in the front panel menu. See *Front Panel Controls on page 54*. • Make sure you are using the correct communication cable. See *USB 2.0 Port on page 45* for the requirements. • Using the front panel controls, check the protocol setting. It should be set to NONE. See *Front Panel Controls on page 54*. • If a driver is used, check the driver communication settings for your connection.

A label format was sent to the printer. Several labels print, then the printer skips, misplaces, misses, or distorts the image on the label.

Cause	Solution
The host is set to EPP parallel communications.	• Change the settings on the computer host to standard parallel communications. • Ensure that the flow control settings match.
The serial communication settings are incorrect.	• Check the communication cable length. See *Data Cables on page 46* for requirements. • Check the printer driver or software communications settings (if applicable).

A label format was sent to the printer but not recognized. The DATA light flashes but no printing occurs.

Cause	Solution
The prefix and delimiter characters set in the printer do not match the ones in the label format.	Verify the prefix and delimiter characters. See *Front Panel Controls on page 54* for the requirements.
Incorrect data is being sent to the printer.	• Ensure that ZPL is being used. • Check the communication settings on the computer. Ensure that they match the printer settings.

The printer fails to calibrate or detect the top of the label.

Cause	Solution
The printer was not calibrated for the label being used.	Perform the calibration procedure in *CANCEL Self Test on page 132*.
The printer is configured for continuous media.	Set the media type to non-continuous media.
The driver or software configuration is not set correctly.	Driver or software settings produce ZPL commands that can overwrite the printer configuration. Check the driver or software media-related setting.

Printer Diagnostics

Self tests give information about the condition of the printer. The most commonly used are the Power-On and the CANCEL self test.

Power-On Self Test

The Power-On Self Test (POST) is performed automatically each time the printer is turned on. During either test sequence, the front panel LEDs light up and the LCD monitors the progress of the POST. If the printer fails any of these tests, FAILED shows on the LCD. If this occurs, notify an authorized Zebra reseller.

Additional Printer Self Tests

These self tests produce sample printouts and provide specific information that help determine the operating conditions for the printer.

Each self test is enabled by pressing a specific front panel key or combination of keys while turning the POWER On (**l**). Keep the key(s) depressed until the DATA light turns off. When the POST is complete, the selected self test starts automatically.

Note • When performing a self test, do not send a label format to the printer.

For remote hosts, disconnect all data interface cables from the printer.
For printers in Peel-Off Mode, remove the labels as they come out of the printer.

Caution • Be sure that the print width is set to match the label width you are using before running any self tests. If the labels are not wide enough, the test may print on the platen roller and damage it.

CANCEL Self Test

The CANCEL self test prints a configuration label. The configuration label tells you the current settings for the printer.

To perform the CANCEL Self Test, complete these steps:

1. Turn the printer Off (**O**).
2. Press and hold **CANCEL** while turning the powerOn (**l**). Hold **CANCEL** until the DATA light turns off.

A configuration label prints.

```
        PRINTER CONFIGURATION

  Zebra Technologies
  ZTC 90XiIII Plus-300dpi

  04.0............... DARKNESS
  2 IPS.............. PRINT SPEED
  +000............... TEAR OFF
  TEAR OFF........... PRINT MODE
  NON-CONTINUOUS..... MEDIA TYPE
  WEB............... SENSOR TYPE
  THERMAL-TRANS...... PRINT METHOD
  086 08/12 MM....... PRINT  WIDTH
  2022............... LABEL LENGTH
  39.0IN   988MM..... MAXIMUM LENGTH
  MEDIA DISABLED..... EARLY WARNING
  MAINT. OFF......... EARLY WARNING
  NOT CONNECTED...... USB COMM.
  PARALLEL........... PARALLEL COMM.
  RS232.............. SERIAL COMM.
  9600............... BAUD
  8 BITS............. DATA BITS
  NONE............... PARITY
  XON/XOFF........... HOST HANDSHAKE
  NONE............... PROTOCOL
  000................ NETWORK ID
  NORMAL MODE........ COMMUNICATIONS
  <~>  7EH........... CONTROL PREFIX
  <^>  5EH........... FORMAT PREFIX
  <,>  2CH........... DELIMITER CHAR
  ZPL II............. ZPL MODE
  CALIBRATION........ MEDIA POWER UP
  CALIBRATION........ HEAD CLOSE
  DEFAULT............ BACKFEED
  +000............... LABEL TOP
  +0000.............. LEFT POSITION
  0000............... HEAD TEST COUNT
  0500............... HEAD RESISTOR
  OFF................ VERIFIER PORT
  OFF................ APPLICATOR PORT
  PULSE MODE......... START PRINT SIG
  FEED MODE.......... RESYNCH MODE
  DISABLED........... REPRINT MODE
  047................ WEB S.
  079................ MEDIA S.
  072................ RIBBON S.
  050................ MARK S.
  000................ MARK MED S.
  003................ MEDIA LED
  000................ RIBBON LED
  000................ MARK LED
  +10................ LCD ADJUST
  DPSWFXM............ MODES ENABLED
  ................... MODES DISABLED
  1024 12/MM FULL.... RESOLUTION
  V42.11.0 <-........ FIRMWARE
  V12.0.0.21......... HARDWARE ID
  CUSTOMIZED......... CONFIGURATION
  12288...........R: RAM
  2048.............E: ONBOARD FLASH
  NONE............... FORMAT CONVERT
  007 POWER SUPPLY... P31 INTERFACE
  004 DISPLAY........ P32 INTERFACE
  .................. TWINAX/COAX ID
  FW VERSION......... IDLE DISPLAY
  00/00/00........... RTC DATE
  18:19.............. RTC TIME
  DYNAMIC............ IP RESOLUTION
  ALL................ IP PROTOCOL
  010.003.004.095.... IP ADDRESS
  255.255.255.000.... SUBNET MASK
  010.003.004.001.... DEFAULT GATEWAY
```

The printer configuration can be changed by performing a calibration procedure. See *To print a configuration label, complete these steps: on page 18* for further information about the configuration procedure.

PAUSE Self Test

This self test can be used to provide the test labels required when making adjustments to the printer's mechanical assemblies. See the sample printout below.

To perform a PAUSE self test, complete these steps:

1. Turn off the printer.

2. Press and hold **PAUSE** while turning the power On (**l**). Hold **PAUSE** until the Data light turns off.

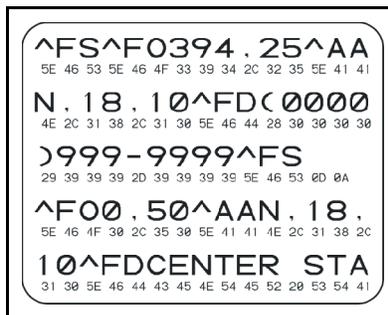   • The initial self test prints 15 labels at 2.4 in. (61 mm) per second (1 in. or 25.4 mm per second for the 96*Xi*III*Plus*), then automatically pauses the printer. When **PAUSE** is pressed, an additional 15 labels print. The labels are like the one shown below.

   • While the printer is paused, pressing **CANCEL** alters the self test. When **PAUSE** is pressed, 15 labels print at 6 in. or 152 mm per second (4 in. or 102 mm per second for the 96*Xi*III*Plus*).

   • While the printer is paused, pressing **CANCEL** again alters the self test a second time. When **PAUSE** is pressed, 50 labels print at 2.4 in. (61 mm per second). For the 96*Xi*III*Plus*, printing at 1 in. (25.4 mm) per second.

   • While the printer is paused, pressing **CANCEL** again alters the self test a third time. When **PAUSE** is pressed, 50 labels print at 6 in. (152 mm) per second. For the 96*Xi*III*Plus,* printing at 4 in. (102 mm) per second .

   • While the printer is paused, pressing **CANCEL** again alters the self test a fourth time. When **PAUSE** is pressed, 15 labels print at the printer's maximum speed.

   • To exit this self test at any time, press and hold **CANCEL**.

FEED Self Test

This test helps you choose the best darkness setting for your printer.

To perform a FEED self test, complete these steps:

1. Turn off the printer.

2. Press and hold **FEED** while turning the power On (**I**). Hold **FEED** until the Data light turns off.

This self test prints out a series of labels like the one below at various darkness settings higher and lower than the darkness value shown on the configuration label.

Inspect these labels and determine which one has the best darkness setting for your application. This value can be entered into the printer by setting the darkness during the configuration procedure.

The value printed on that label is added to (plus) or subtracted from (minus) the darkness value specified on the configuration label. The resulting numeric value (0 to 30) is the best darkness value for that specific label/ribbon combination.

FEED and PAUSE Self Test

Performing this self test temporarily resets the printer configuration to the factory default values. These values are active only until power is turned off unless you save them permanently in memory.

To perform a FEED and PAUSE self test, complete these steps:

1. Turn off the printer.

2. Press and hold **FEED** and **PAUSE** while turning the power On (**l**). Hold **FEED** and **PAUSE** until the DATA light turns off.

No labels print at the end of this test.

Communications Diagnostics Test

This test is controlled from the front panel display. See *Front Panel Controls on page 54*. A typical printout from this test is shown below. Turn off the power to exit this self test and return to normal operation.

Note • The communications test label is upside down when printed.

```
^FS^FO394.25^AA
5E 46 53 5E 46 4F 33 39 34 2C 32 35 5E 41 41
N.18.10^FD(0000
4E 2C 31 38 2C 31 30 5E 46 44 28 30 30 30 30
)999-9999^FS
29 39 39 39 2D 39 39 39 39 5E 46 53 0D 0A
^FO0.50^AAN.18.
5E 46 4F 30 2C 35 30 5E 41 41 4E 2C 31 38 2C
10^FDCENTER STA
31 30 5E 46 44 43 45 4E 54 45 52 20 53 54 41
```

Additional Printer Diagnostics

Additional diagnostic tests are available for this printer. See the Maintenance Manual for information about these additional tests.

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