

GK888t

Desktop Thermal Printer



ZEBRA

User Guide

2022/10/17

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About This Guide

This document is intended for use by any person who needs to perform routine maintenance, upgrade, or troubleshoot problems with the printer.

Notational Conventions

The following conventions are used in this document:

- **Bold** text is used to highlight the following:
 - Dialog box, window, and screen names
 - Drop-down list and list box names
 - Checkbox and radio button names
 - Icons on a screen
 - Key names on a keypad
 - Button names on a screen
- Bullets (•) indicate:
 - Action items
 - List of alternatives
 - Lists of required steps that are not necessarily sequential.
- Sequential lists (for example, those that describe step-by-step procedures) appear as numbered lists.

Icon Conventions

The documentation set is designed to give the reader more visual clues. The following graphic icons are used throughout the documentation set. These icons and their associated meanings are described below.



NOTE: The text here indicates information that is supplemental for the user to know and that is not required to complete a task.



IMPORTANT: The text here indicates information that is important for the user to know.



CAUTION—EYE INJURY: Wear protective eyewear when performing certain tasks such as cleaning the inside of a printer.

About This Guide



CAUTION—EYE INJURY: Wear protective eyewear when performing certain tasks such as installing or removing E-rings, C-clips, snap rings, springs, and mounting buttons. These parts are under tension and could fly off.



CAUTION—PRODUCT DAMAGE: If the precaution is not taken, the product could be damaged.



CAUTION: If the precaution is not heeded, the user could receive a minor or moderate injury.



CAUTION—HOT SURFACE: Touching this area could result in burns.



CAUTION—ESD: Observe proper electrostatic safety precautions when handling static-sensitive components such as circuit boards and printheads.



CAUTION—ELECTRIC SHOCK: Turn off (O) the device and disconnect it from the power source before performing this task or task step to avoid the risk of electric shock.



WARNING: If danger is not avoided, the user CAN be seriously injured or killed.



DANGER: If danger is not avoided, the user WILL be seriously injured or killed.

Introduction

This section describes what you get in your shipping box and provides an overview of printer features. It includes procedures that describe how to open and close the printer and report any problems.

GK888t Thermal Printers

The Zebra GK888t model is the optimal value in a desktop thermal printer.

The GK888t printer provides thermal transfer and direct thermal printing at speeds up to 4 ips (inches per second) at a 203 dpi (dots per inch) print density. The GK888t supports both ZPL and EPL Zebra printer programming languages and a wide variety of interface and feature options.

The GK888 printer features:

- Automatic printer language detection and switching between ZPL and EPL programming and label formats
- Easy ribbon loading design
- Color-coded operator controls and media guides
- On-board Simplified and Traditional Chinese font set available for EPL (888 legacy fonts - GB-2312 and Big 5) and ZPL (GB18030-2000 and Big 5) programming.
- Zebra Global Printing Solution—Supports Microsoft Windows keyboard encoding (and ANSI), Unicode UTF-8 and UTF 16 (Unicode Transformation Formats), XML, ASCII (7 and 8-bit used by legacy programs and systems), basic single and double-byte font encoding, Hexadecimal encoding, and custom character maps (DAT table creation, font linking, and character remapping).
- Improved printer performance—Faster print speeds and a 32-bit processor.
- A complete suite of free software applications and drivers to configure printer settings, design, and print labels and receipts, get printer status, import graphics, and fonts, send programming commands, update firmware, and download files. Clone printer settings and send graphics, files, fonts, and firmware (updates) to one or more Zebra Ethernet and locally connected printers with ZebraNet Bridge.
- Maintenance reporting is enabled and customizable by the user.

The GK888 printers offer these basic printer options:

- Label dispense (peel-off)
- General media cutter
- Internal 10/100 print server and Ethernet interface

- Zebra ZBI 2.0 (Zebra BASIC Interpreter) programming language. ZBI allows you to create custom printer operations that can automate processes, and use peripherals (i.e., scanners, scales, keyboards, Zebra KDU or KDU Plus, etc.) all without being attached to a PC or network.

This user guide provides all the information you need to operate your printer on a daily basis. To create label formats, refer to your programming guides or label design applications such as ZebraDesigner (see zebra.com/zebradesigner for details).

Your printer, when connected to a host computer, functions as a complete system for printing labels and tags.



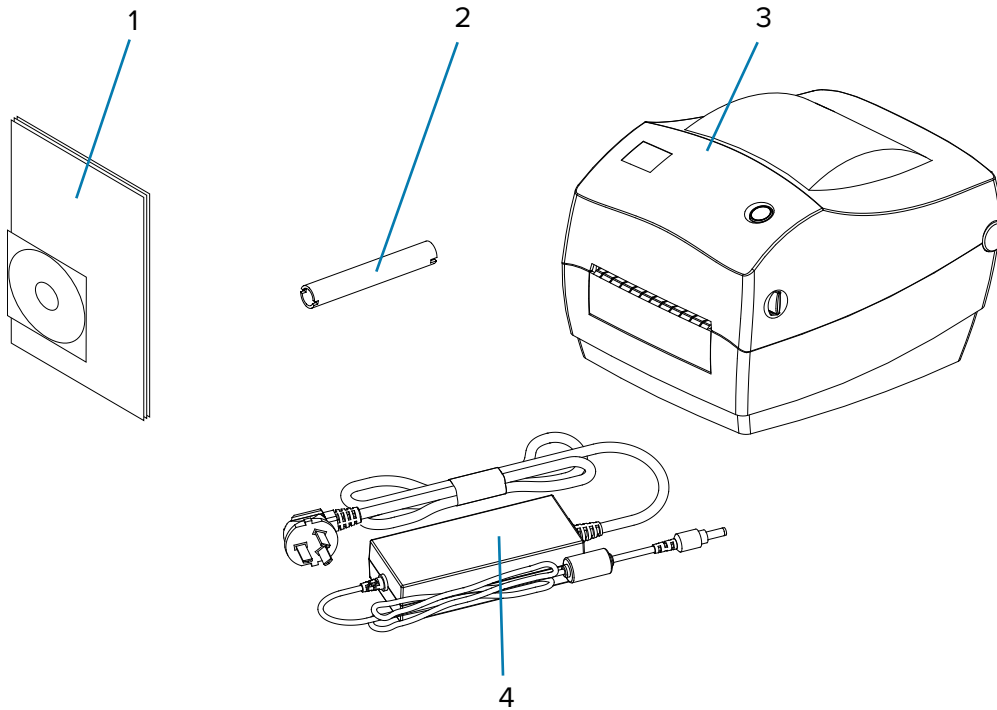
NOTE: Many printer settings may also be controlled by your printer’s driver or label design software. Refer to the driver or software documentation for more information.

What's in the Box

Save the carton and all packing materials in case you need to ship or store the printer later.

After unpacking, make sure you have all parts. Follow the procedures for inspecting the printer to familiarize yourself with printer parts so you can follow the instructions in this book.

Figure 1 Contents of the Box



1	Documentation and Software
2	Ribbon core
3	Printer
4	Power supply

Unpack and Inspect the Printer

When you receive the printer, immediately unpack it and inspect for shipping damage.

- Save all packing materials.
- Check all exterior surfaces for damage.
- Open the printer and inspect the media compartment for damage to components.

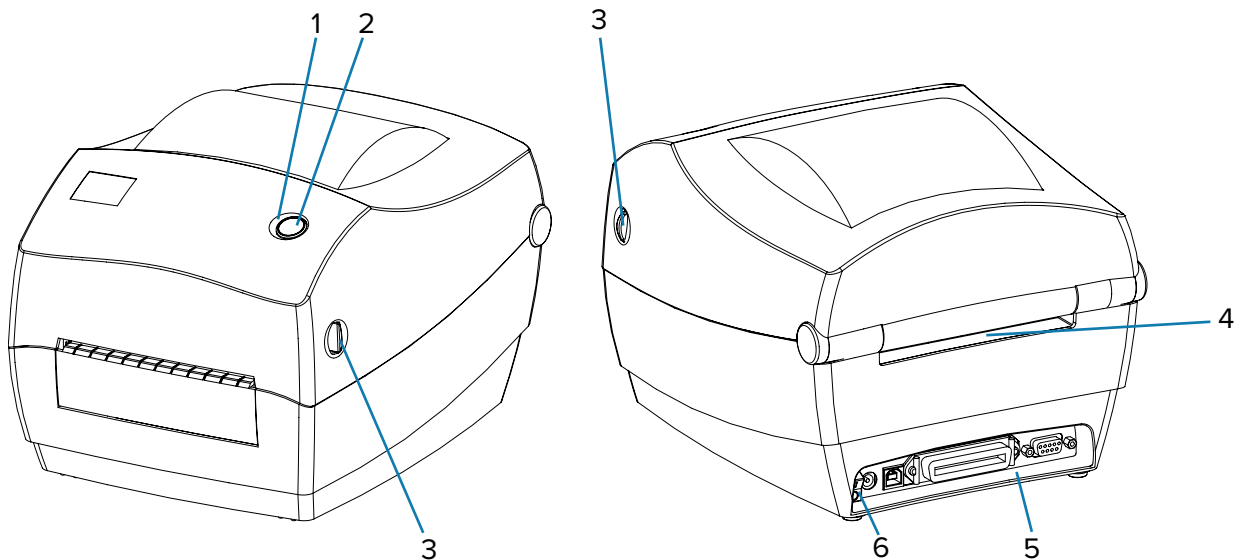
If you discover shipping damage upon inspection:

- Immediately notify the shipping company and file a damage report. Zebra Technologies Corporation is not responsible for any damage to the printer incurred during shipment, and will not cover the repair of this damage under its warranty policy.
- Keep all packaging material for shipping company inspection.
- Notify your authorized Zebra reseller.

Your Printer

Familiarize yourself with your printer's physical features and interfaces.

Figure 2 Features



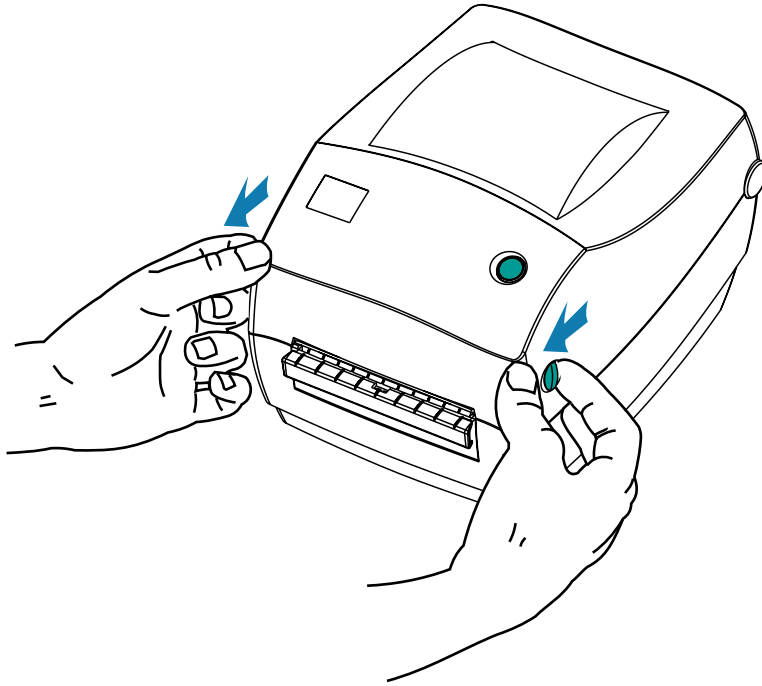
1	Status light
2	Feed button
3	Release latches
4	Fanfold media entry slot
5	Interface connectors
6	DC power switch and receptacle

Opening the Printer

To access the media compartment, you must open the printer.

Pull the release latches towards you and lift the cover. Check the media compartment for loose or damaged components.

Figure 3 Open the Printer

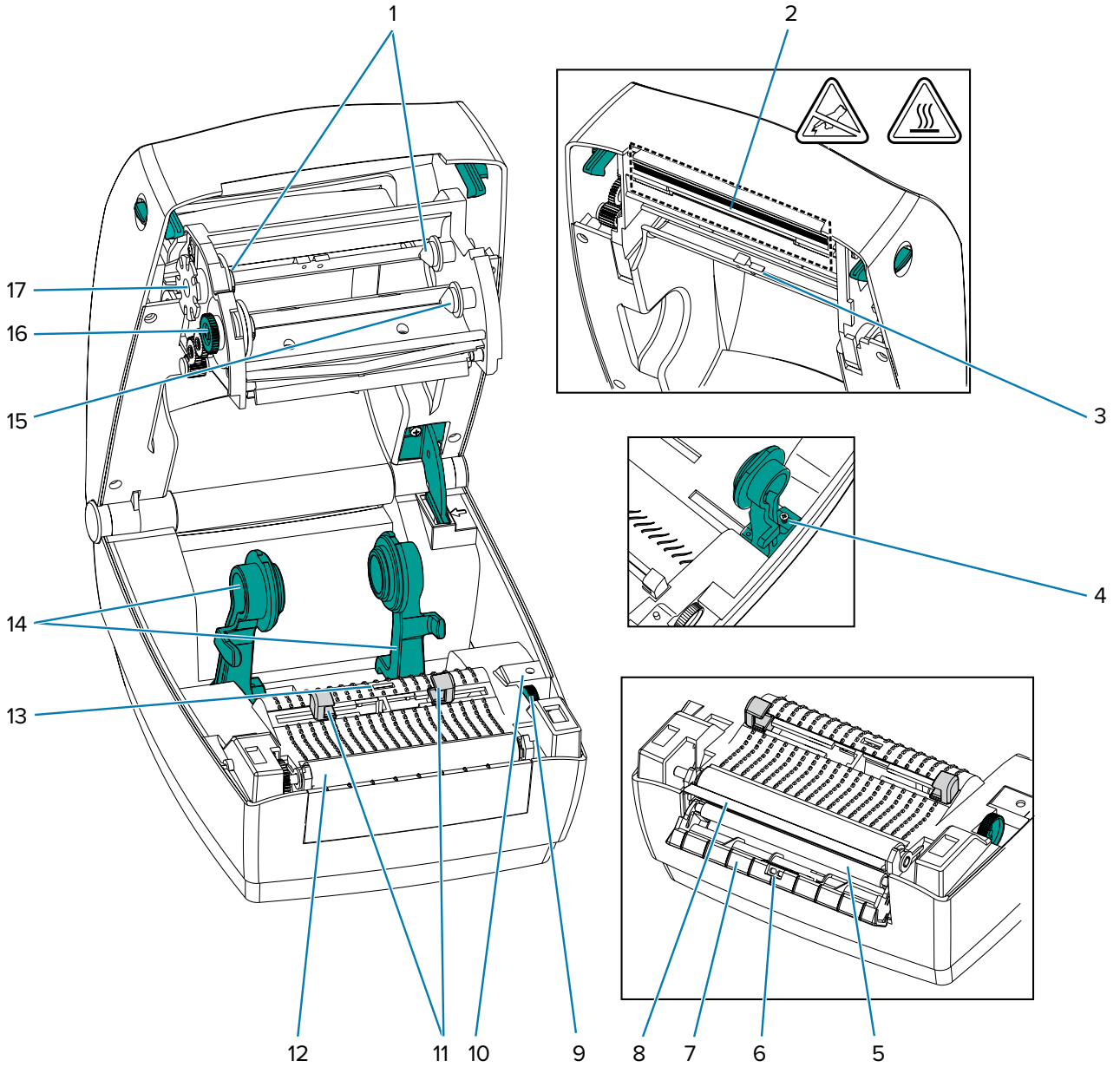


CAUTION: The discharge of electrostatic energy that accumulates on the surface of the human body or other surfaces can damage or destroy the printhead or electronic components used in this device. You must observe static-safe procedures when working with the printhead or the electronic components under the top cover.

Printer Features

Lists the features of the printer.

Figure 4 Features



1	Supply spindles
2	Printhead
3	Web (gap) sensor
4	Fanfold media lock (screw)
5	Pinch roller

6	Sensor
7	Dispenser door (open)
8	Peel bar
9	Media guide adjustment
10	Head-up sensor (inside)
11	Media guides
12	Platen roller
13	Blackline sensor
14	Roll holders
15	Take-up spindles
16	Ribbon take-up gear
17	Ribbon motion sensor

Operator Controls

This section provides information on printer controls.

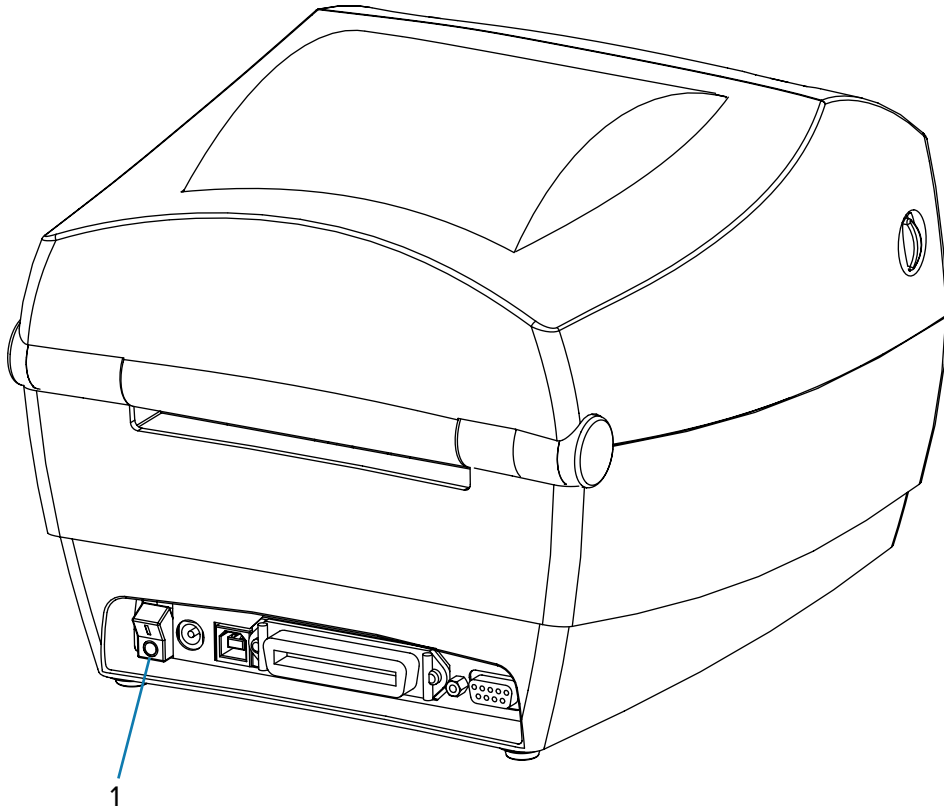
Power Switch

Press up to turn ON or down to turn OFF the printer.



IMPORTANT: Be sure to turn printer power OFF before you connect or disconnect all communication interface and power cables.

Figure 5 Power Switch



1	Power switch
---	--------------

Figure 6 Power On

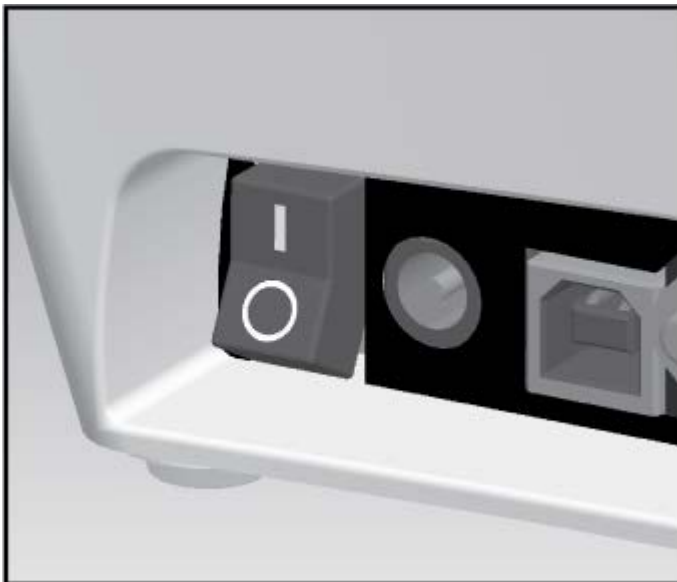
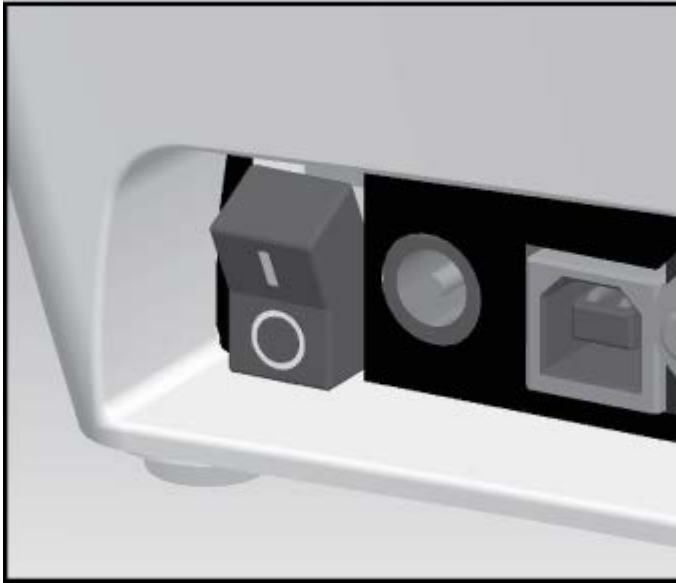


Figure 7 Power Off



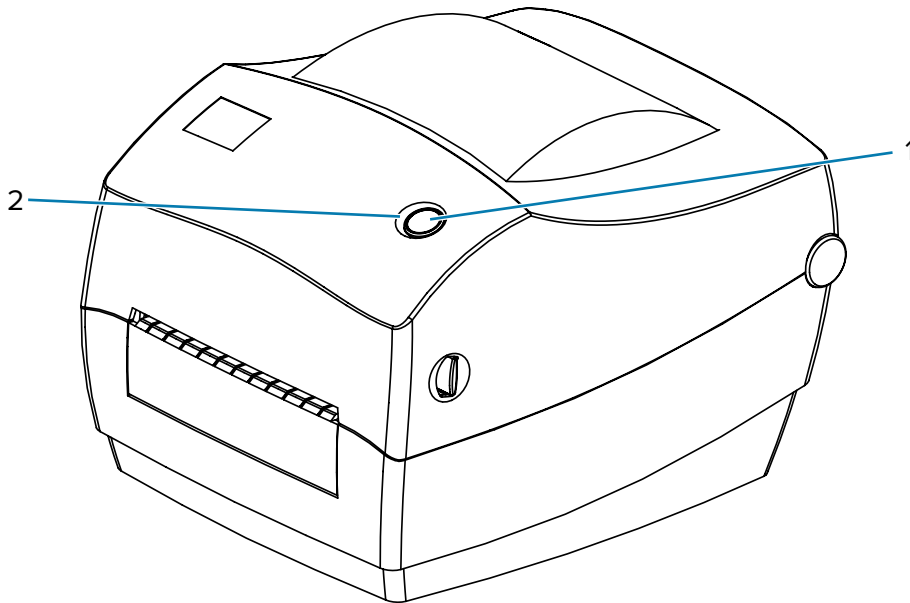
Feed Button

- Tap the **Feed** button once to force the printer to feed one blank label.
- Press the **Feed** button to take the printer out of a pause condition. The printer is put into a pause by either a programming command or an error condition (see [Status Light Descriptions](#)).
- Use the **Feed** button for printer setup and status (see [Feed Button Modes](#)).

Status Light

Located on the top case, the status light functions as printer operational indicator.

See [Status Light Descriptions](#) for information on what the various indications convey.

Figure 8 Status Light

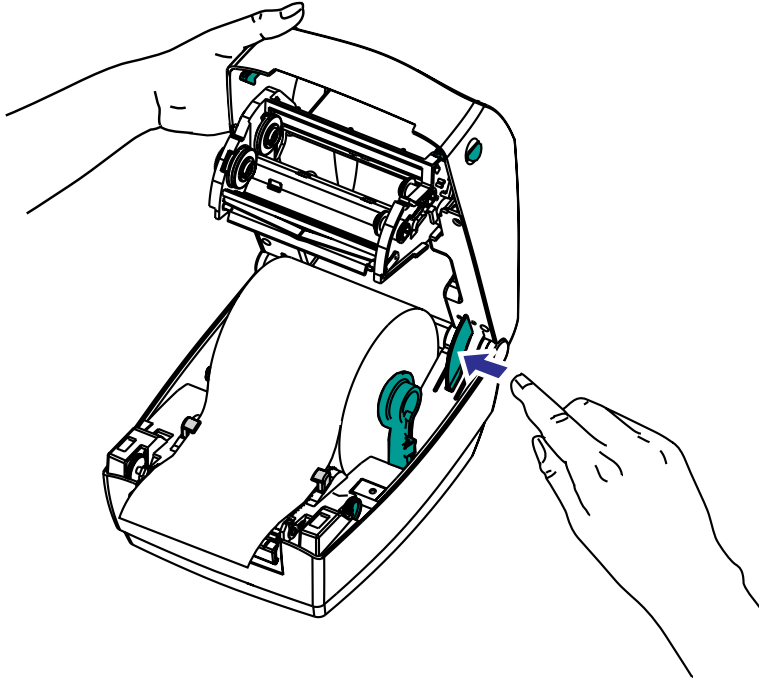
1	Feed button
2	Status light (ring encircling the Feed button)

Closing the Printer

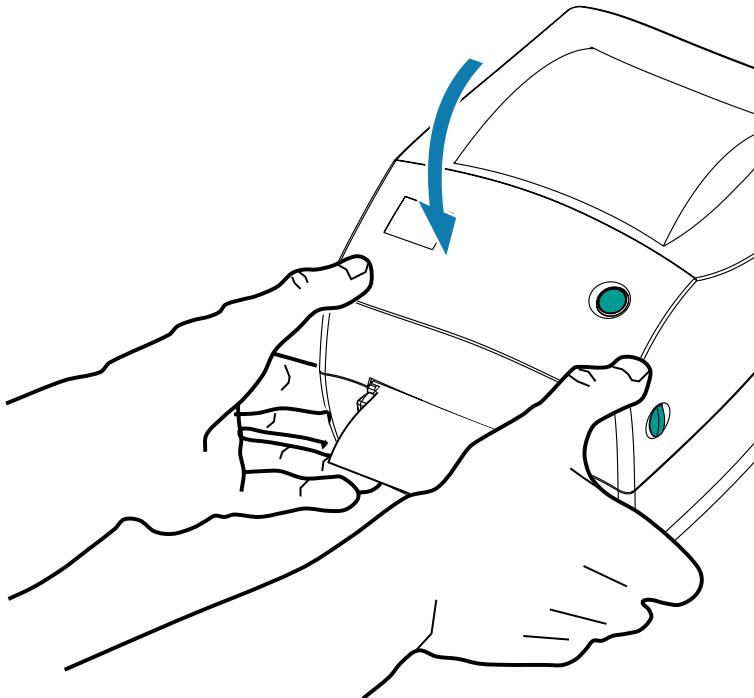
Securely close the printer cover following these instructions.

1. Hold the top cover and press the kick-stand cover lock to release.

2. Lower the top cover. The ribbon carriage automatically folds up into place.



3. Press down until the cover snaps closed.



Getting Started

Learn how to set up your printer for the first time, use the most common media loading procedures, and print your first label.

Printer Setup Overview

This section provides a high-level outline of how to set up your Zebra printer. It includes (1) the hardware setup and (2) the host system or software/driver setup.



IMPORTANT: After finding an appropriate location for the printer—but BEFORE plugging in the printer power cord to a power source—, download the printer drivers on the laptop or PC that you will use to set up and manage the printer.



NOTE: You will need a roll of media (labels, receipt paper, tags, etc.) to set up your first test print. Go to zebra.com/supplies or contact your reseller to help select the right media for your use.

1. Place the printer in a safe location with access to a power source, in a place from where you can connect it to your PC, laptop or mobile device using either interface cables or a wireless connection. (See location considerations in [Attaching Power](#) on page 20.)
2. Access zebra.com/setup to download and install the Zebra Setup Utilities (ZSU) for your Windows Operating System (OS). The utility includes the latest drivers, installation wizards, and various tools to assist you in managing your printer.



NOTE: Optionally download Android, iPhone, or iPad apps that will help you manage your Zebra printer.

3. Attach the printer and power supply to a grounded AC power source. (See [Attaching Power](#) on page 20.)
4. Select and prepare media for your printer.
5. Load the media (see [Loading Media with the Cutter Option](#) on page 73).
6. Turn printer power ON (see [Power Switch](#) on page 14).
7. Calibrate the printer to the media (see [Manual Calibration](#) on page 94).
8. Print a Configuration Report to verify basic printer operation (see [Printing a Test \(Printer Configuration\) Label](#) on page 29).
9. Turn printer power OFF (see [Power Switch](#) on page 14).
10. Choose a method to communicate with your printer using either a wired connection—USB port, optional serial port, or optional Ethernet—or a wireless connection such as Bluetooth or Wi-Fi, and establish the connection.

11. If using a physical connection, be sure to turn OFF power to the printer BEFORE you connect the printer cable to the network or host system.
12. Begin the second phase of the printer setup (See [Installing Drivers and Connecting to a Windows-Based Computer](#) on page 31 and [Connecting Your Printer to a Device](#) on page 30.)



NOTE: Wait to turn printer power ON until the second phase of the printer setup.

During printer driver installation, the Zebra Setup Utilities will prompt you to switch printer power ON at the appropriate stage of the process.

If you switched printer power on and connected your laptop or other device to the printer BEFORE installing the drivers, see [What to Do If You Forget to Install Printer Drivers First](#) on page 48.

Attaching Power

When applying power to the printer, carefully follow these instructions.



WARNING: Never operate the printer and power supply in an area where they can get wet. Serious personal injury could result!



IMPORTANT: Set up your printer so that you can handle the power cord easily if needed.

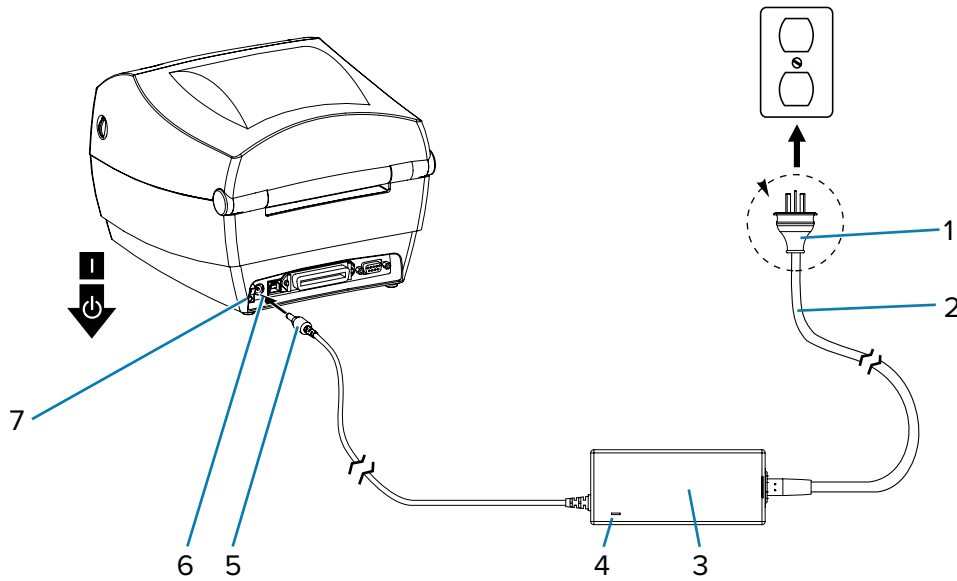
During some setup or troubleshooting tasks, you may be instructed to switch printer power ON or OFF at specific stages in the process. Be sure to follow these instructions.

When you need to make certain that the printer is not carrying electrical current, be sure to unplug the power cord from the power supply receptacle and the AC electrical outlet.

1. Make sure the printer's power switch is in the OFF position (down).
2. Insert the AC power cord into the power supply.
3. Plug the other end of the cord into an appropriate AC electrical outlet.

If power is on at the AC outlet, the active power light on the power supply will light up.

4. Insert the power supply's power connector into the printer's power receptacle.



1	Plug (varies by country)
2	AC power cord
3	Power supply
4	Active power light
5	Power connector
6	Power receptacle
7	Power switch



NOTE: Ensure the appropriate power cord is used at all times. The power cords must bear the relevant certification mark of the country in which the product is being used.

Loading Media

When you load media, you must place the roll onto the media hangers.

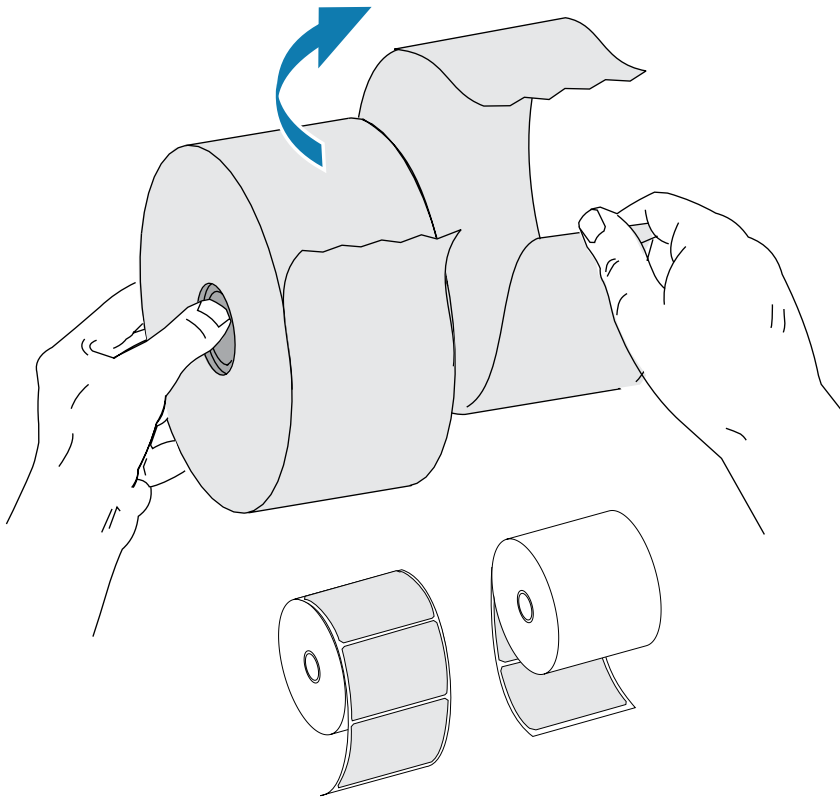
You must use the correct media for the type of printing you require.



NOTE: Go to zebra.com/supplies or contact your reseller to identify and procure the appropriate media for your use.

Preparing the Media for Loading

Remove the outside length of the media to prevent any dirt, dust or adhesives—accumulated on it from shipment, handling or storage—from being dragged between the printhead and the platen.

Figure 9 Preparing Media

Placing the Roll in the Media Compartment

Use this procedure to load a roll of labels, receipt paper, tags or other compatible media into the printer before you print.

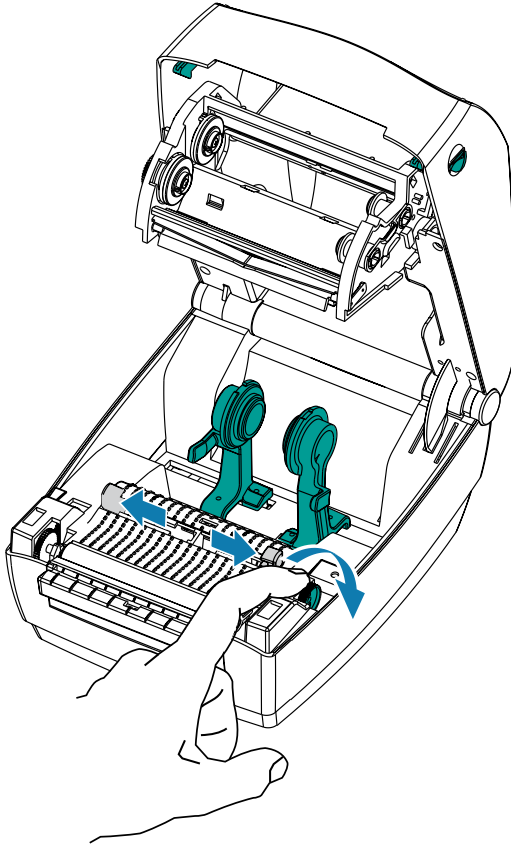
Remove the outside length of the media to prevent any accumulated dust or dirt from entering the media compartment during loading and printing.



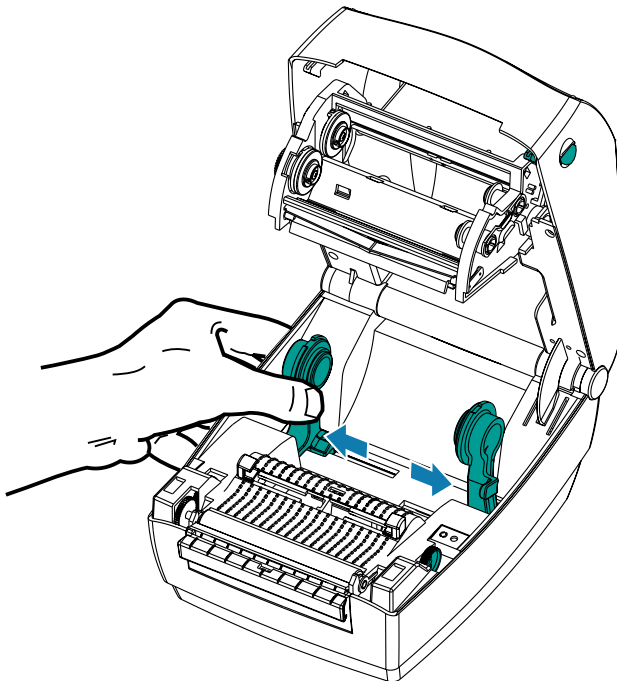
NOTE: Both inside and outside-wound media are loaded into the printer the same way using this procedure.

1. Open the printer by pulling the release-latch levers toward the front of the printer (see [Opening the Printer](#) on page 12).

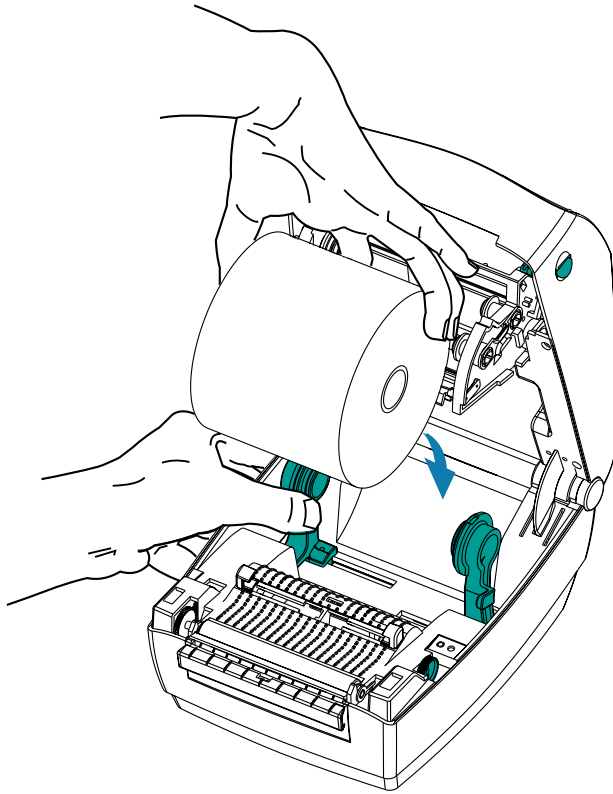
2. Open the media guides by turning the media guide adjustment knob towards the rear of the printer.



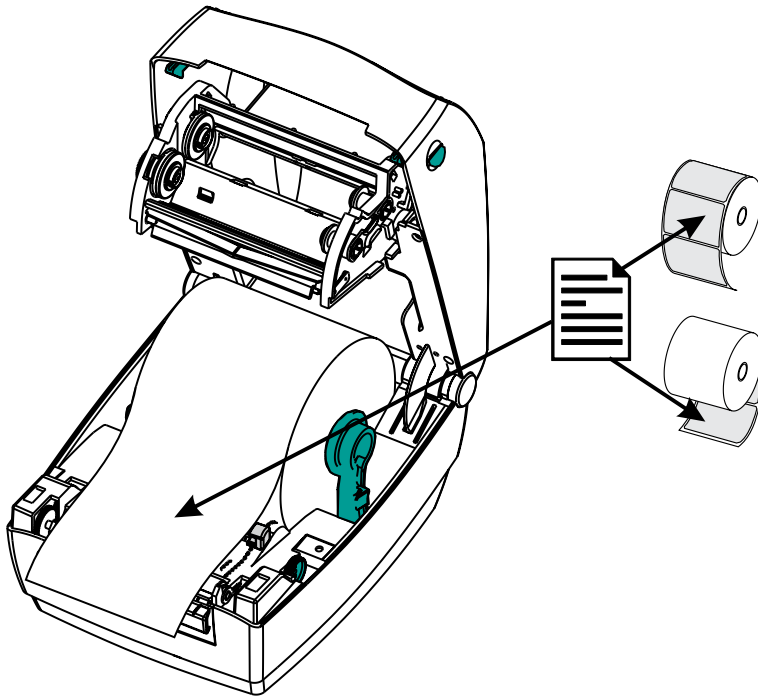
3. Open the media roll holders. Pull the media guides open with your free hand and place the media roll on the roll holders, then release the guides. Orient the media roll so that its printing surface will face up as it passes over the platen (drive) roller.



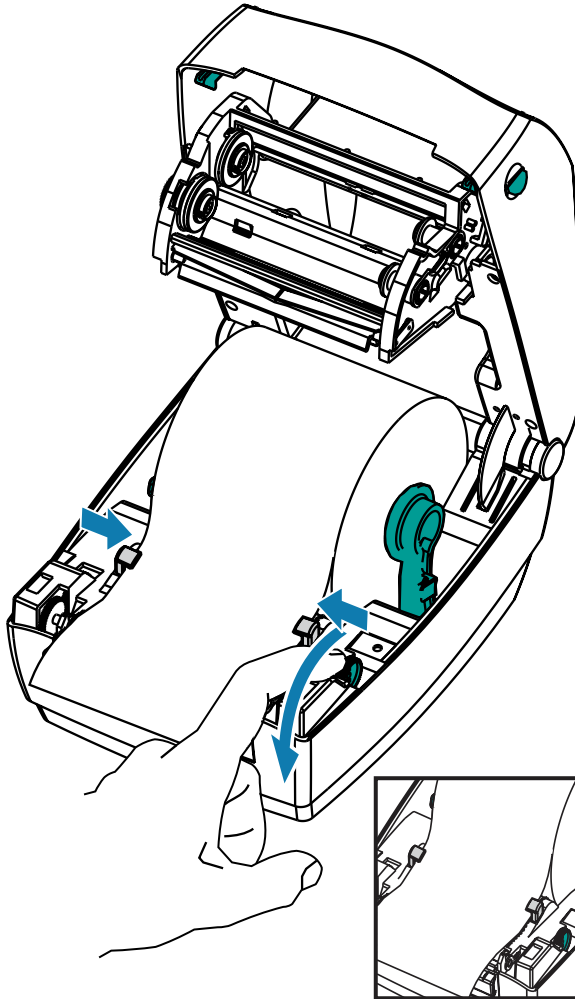
4. Pull the media so that it extends out of the front of the printer. Verify the roll turns freely. The roll must not sit in the bottom of the media compartment. Verify that the media's printing surface faces up.



5. Push the media under both media guides.



6. Close the media guides by turning the media guide adjustment knob to the front. The guides should just touch—but not restrict—the edges of the media.



7. Unless you need to load transfer ribbon, close the top cover by releasing the cover lock, lowering the top cover, and pressing down until the latches snap into place (see [Closing the Printer](#) on page 17).
8. If printer power is switched OFF, press the **Power** switch apply power to the printer (see [Power Switch](#) on page 14).
9. Press the **Feed** button to feed the installed media.

The printer auto-calibrates to the loaded media (see [Media Sensing](#) on page 60) in preparation for printing.

Loading the Transfer Ribbon

Transfer ribbons come in several varieties—and in some cases colors—to match your application needs. Genuine Zebra transfer ribbons are specifically designed for your printer and Zebra brand media.

See [Ribbon Overview](#) on page 61 and [When to Use Ribbon](#) on page 61 to determine if you need to load ribbon into the printer for your printing needs.



IMPORTANT: Using non-Zebra media or ribbons not approved for use in your Zebra printer may damage your printer or printhead.

- The media and ribbon types should be matched for optimal print results.
- Always use a ribbon that is wider than the media to protect the printhead from wear.
- For direct thermal printing, do NOT load ribbon in the printer.

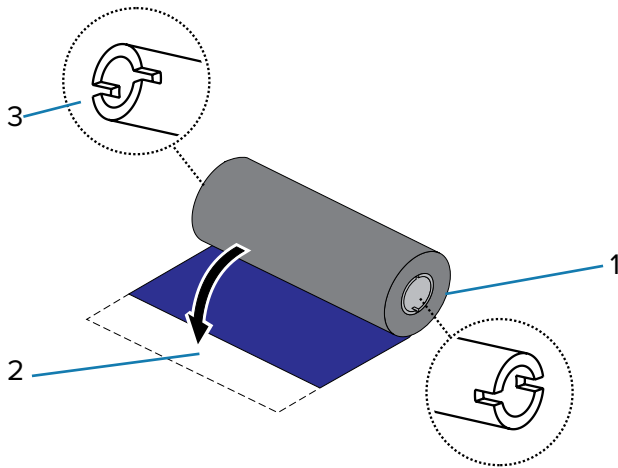
Your printer needs Zebra Uni-Ribbon (universal ribbon) to print. Uni-Ribbons have a ribbon-out trailer (reflector) to stop printing when empty. Zebra Uni-Ribbons can also be used on older-model Zebra desktop printers.

Uni-Ribbons are identified with a color-coded leader.

- Blue—Performance Wax (5319) Silver - Premium Wax/Resin (3200)
- Gold—Performance Resin (5095) for synthetics (6 ips max. speed) and coated paper (4 ips max. speed)
- Red—Premium Resin (5100) for synthetics (4 ips max. speed)

Prepare the ribbon by removing its wrapping and pulling its adhesive strip free.

Figure 10 Remove Wrapping



See [Ribbon Overview](#) for more information on ribbon use.



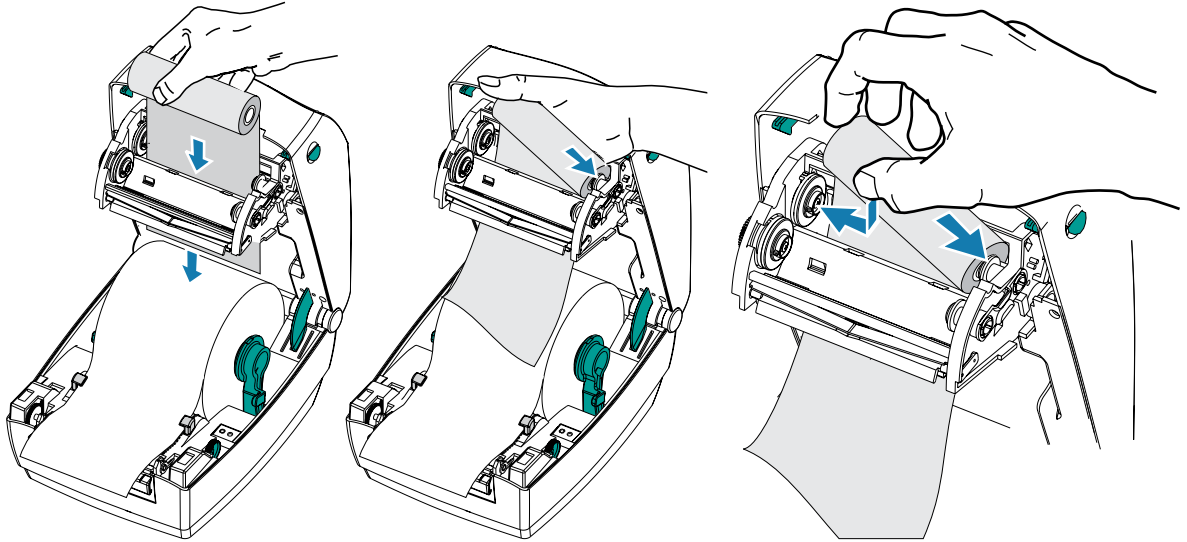
IMPORTANT: DO NOT USE early-model desktop printer ribbon cores! The older ribbon cores can be identified by notches on only one side of the ribbon core. These older cores are too large and will cause the take-up spool to bind.



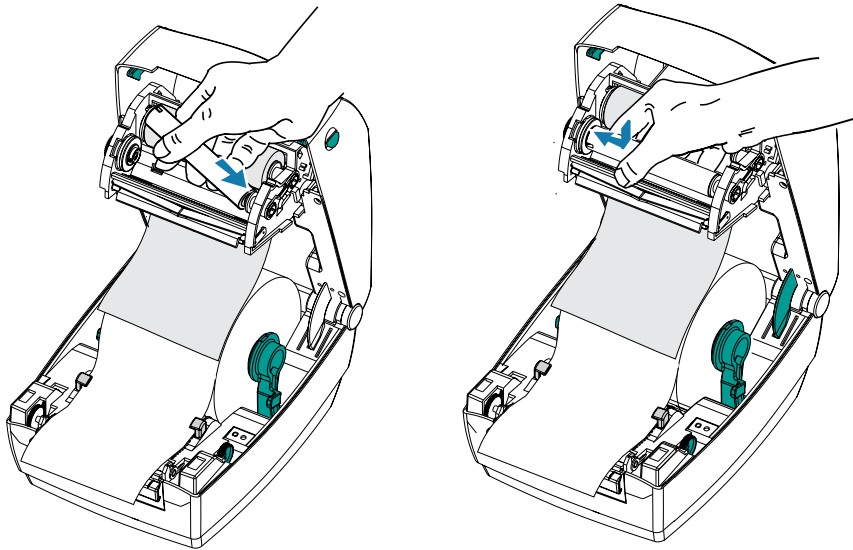
NOTE: DO NOT USE ribbon cores with damaged notches (rounded, frayed, smashed, etc.) The core notches should be square to lock the core on the spindle or else the core may slip causing ribbon wrinkle, poor end of ribbon sensing, or other intermittent failures.

Getting Started

1. With the printer open, thread the ribbon through the ribbon carriage. Press the right side onto the spring-loaded supply hub. Align the left side of the ribbon core notches to the left supply (spindle) hub spokes. Rotate the roll until the notches align and lock into the left side of the supply hub.

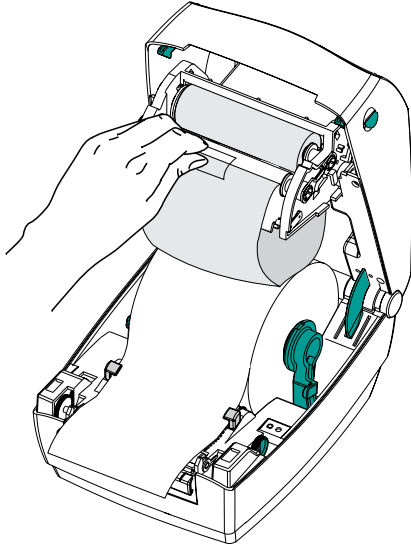


2. Place an empty ribbon core on the printer's take-up spindles. Rotate the ribbon core until the notches align and lock into the left side of the take-up hub.

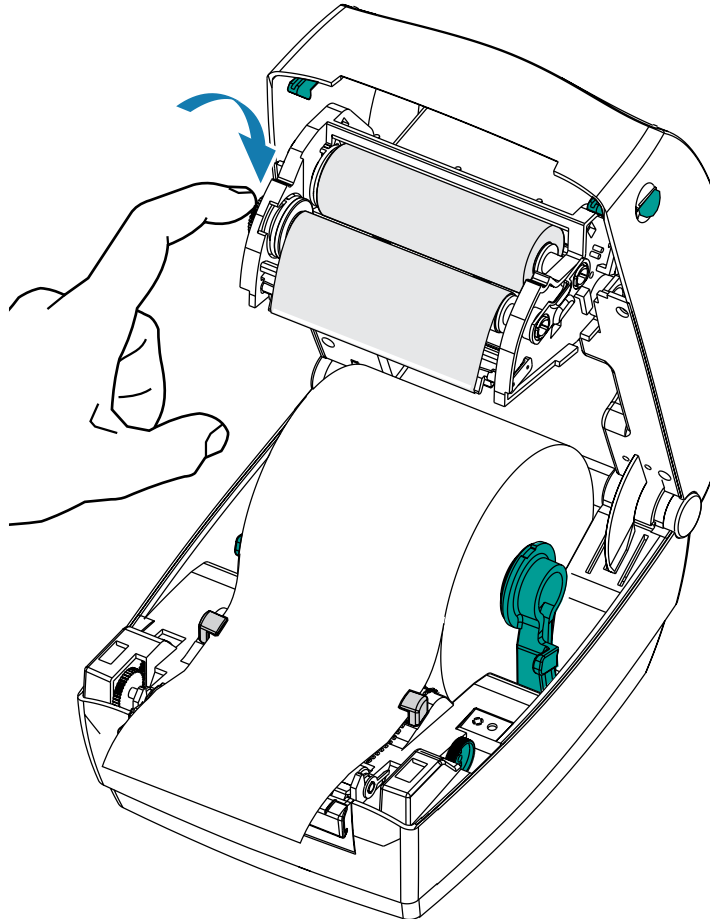


You can find your first ribbon take-up core in the packing box. Subsequently, use the empty supply core to take up the next roll of ribbon.

3. Attach the ribbon to the take-up core. Use the adhesive strip or tape on new rolls. Align the ribbon when you are attaching it to the core so that it will be taken straight onto the core and line up with the supply.



4. Turn the ribbon take-up gear counterclockwise (top moves toward the rear) to remove slack from the ribbon.



5. Verify that the media is loaded and ready to print, then close the printer cover by releasing the cover lock, lowering the top cover, and pressing down until the latches snap into place.
6. Switch printer power ON if it is not already on, then press the **Feed** button to have the printer feed a minimum of 10 cm (4 inches) of media to remove slack and ribbon wrinkle, and align the ribbon on the spindles.
7. Change the Print Mode setting from Direct Thermal printing to Thermal Transfer to set the printer's temperature profiles for thermal transfer media. This can be done with the printer driver, application software, or printer programming commands.
 - When controlling printer operations with ZPL programming, refer to the Media Type (^MT) ZPL II command. (Follow the instructions in the ZPL Programming Guide.)
 - When controlling printer operations with EPL Page Mode, refer to the Options (O) EPL command. (Follow the instructions in the EPL Page Mode Programmer's Guide.)
8. To verify the mode change from Direct Thermal printing to Thermal Transfer printing, print a configuration label (see [Printing a Test \(Printer Configuration\) Label](#)).

The **PRINT METHOD** should read **THERMAL-TRANS** on the printer configuration status label.

Your printer is now ready to print.

Printing a Test (Printer Configuration) Label

Before you connect the printer to your computer, make sure that the printer hardware is in proper working order.

You can do this by printing a configuration status label.

1. Make sure the media is properly loaded (see [Placing the Roll in the Media Compartment](#) on page 22 and [Loading Media with the Cutter Option](#) on page 73) and the top cover of the printer is closed (see [Closing the Printer](#) on page 17).
2. Turn printer power on if you have not already done so.

If the printer initializes with the status light blinking green (pause mode)..	Press the Feed button one time to place the printer in Ready (to print) mode.
If the printer's status light does not turn solid green (Ready)...	See Troubleshooting .

3. Press the **Feed** button two to three times to allow the printer to auto-calibrate for the installed media. (see [Media Sensing](#) on page 60).

The printer may feed several labels during this process.

- When the status light is solid green, press and hold the **Feed** button until the status light flashes one time, then release the button.

A configuration label will print.



If the label does not print, verify that you have followed the hardware setup instructions in [Printer Setup Overview](#) on page 19. and see [Troubleshooting](#) on page 90.)

Connecting Your Printer to a Device

Zebra printers support a variety of interface options and configurations.

Printer interface options include:

- Universal Serial Bus (USB) interface
- RS-232 Serial
- Parallel (IEEE 1284.4)

- 10/100 Ethernet

The Zebra Setup Utility is designed to assist you with installing these interfaces. Review the cabling and unique parameters for each physical printer communication interface in [Interface Wiring](#) on page 101. This will help you make configuration setup choices both before and immediately after applying power to the printer.



CAUTION: Keep the power switch in the OFF position when attaching the interface cable. The power cord must be inserted into the power supply and the power receptacle on the back of the printer before you connect or disconnect any printer interface communications cables.

The Zebra Setup Utility configuration wizards will instruct you to turn the printer's power on at the appropriate time to complete the printer installation.

Connecting to a Phone or Tablet

Download the free Zebra Printer Setup Utility app for your device:

- [Android devices](#)
- [Apple devices](#)

The applications support the following types of connectivity:

- Bluetooth Classic
- Wired/Ethernet
- Wireless
- USB 2.0

For the User Guides for these printer setup utilities, go to zebra.com/setup.

Installing Drivers and Connecting to a Windows-Based Computer

To use your printer with a Microsoft Windows-based computer, you must install the correct drivers first.



NOTE: You may connect your printer to your computer using any of the supported connections that are available to you to use. However, do NOT connect any cables from your computer to the printer UNTIL you are instructed to do so by the installation wizards.

If you connect the cables at the wrong time, your printer will not install the correct printer drivers. To recover from incorrect driver installation, see [What to Do If You Forget to Install Printer Drivers First](#) on page 48.

Pre-install Windows Printer Drivers

Zebra is changing the way you install and use your printer with your Windows-based PC systems.

After you have set up the printer and verified that it can print a configuration label, you are ready to connect the printer to your device (such as a computer, phone, or tablet) and install the drivers.

We recommend that, at minimum, you pre-install the ZebraDesigner Windows driver to avail of the ease-of-use and simplicity advancements in Windows operating systems (OS) higher than Windows XP OS version SP2.

Zebra provides the following:

- Zebra Setup Utilities (ZSU)—A suite of Zebra printer drivers, utilities, and communications and installation tools deployable on most Windows PC operating systems.

Zebra Setup Utilities and Zebra Windows printer drivers are available on the CD provided with your printer. For later versions, go to the Zebra website at zebra.com.

- ZebraDesigner Driver and Zebra Setup Utilities—The driver supports 32-bit and 64-bit Windows OS and is Microsoft Certified.

ZebraDesigner driver and Zebra Setup Utilities support the following G-Series printer communication interfaces:

- USB port
- Parallel port
- Serial port
- Wired and wireless Ethernet
- Bluetooth (using a virtual Bluetooth printer port)



IMPORTANT: Wait to apply power to the printer until after you have installed the drivers on the PC following the instructions in [Installing the Drivers](#).

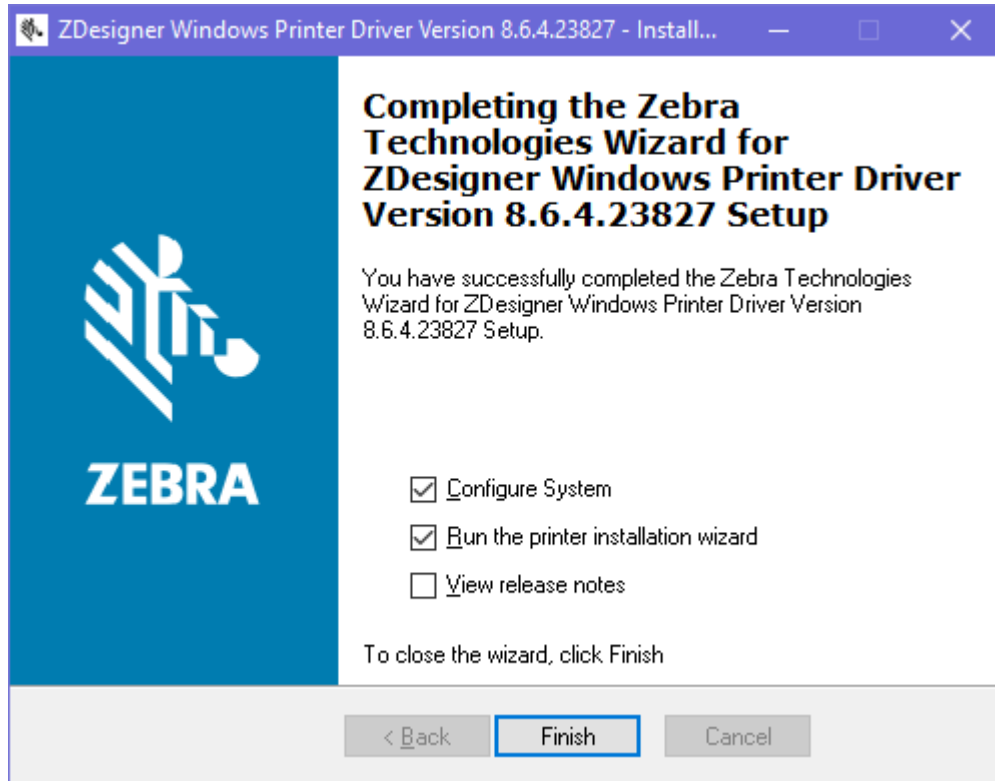
Installing the Drivers

1. Navigate to zebra.com/drivers.
2. Click **Printers**.
3. Select your printer model.
4. On the printer product page, click **Drivers**.
5. Download the appropriate driver for Windows.

The driver executable file (such as `zd86423827-certified.exe`) is added to your Download folder.

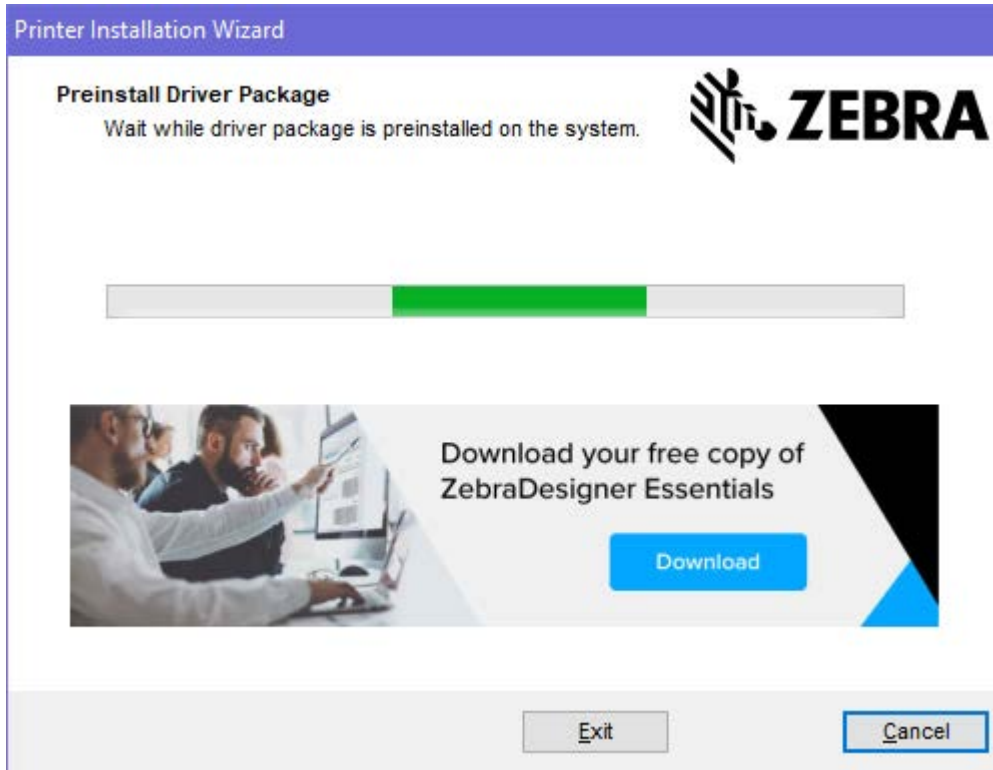
6. Run the executable file and follow the prompts.

When the setup is complete, you may select to add the drivers to your system (Configure System) or to add specific printers, see [Running the Printer Installation Wizard](#) on page 35.



7. Select **Configure System**, then click **Finish**.

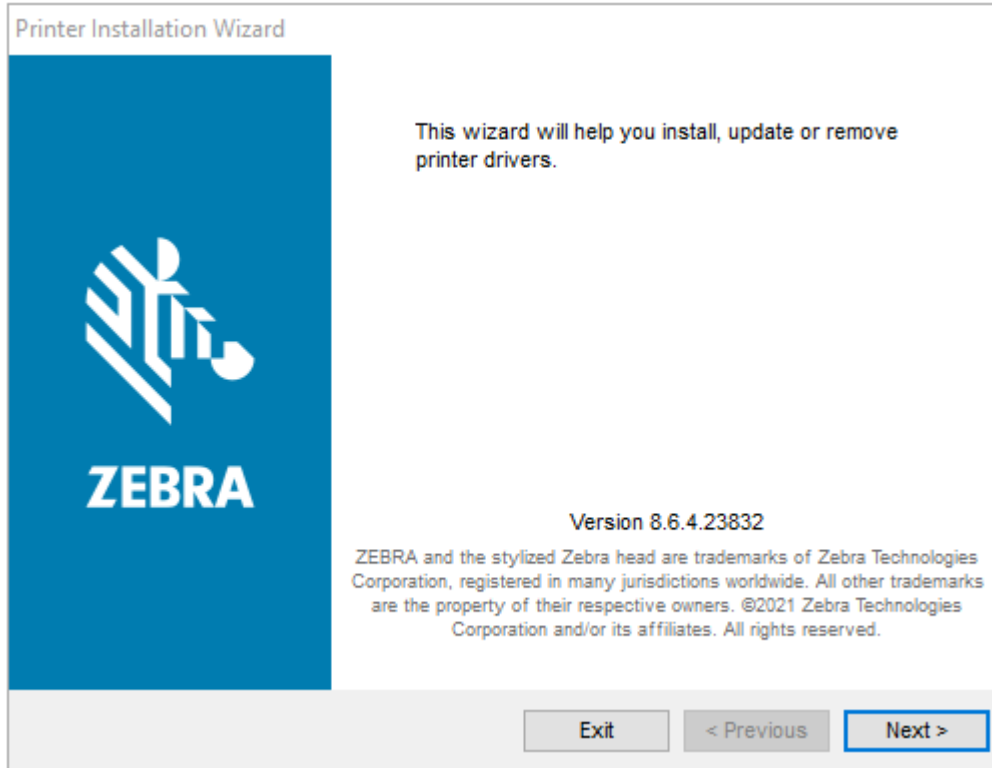
The **Printer Installation Wizard** installs the drivers.



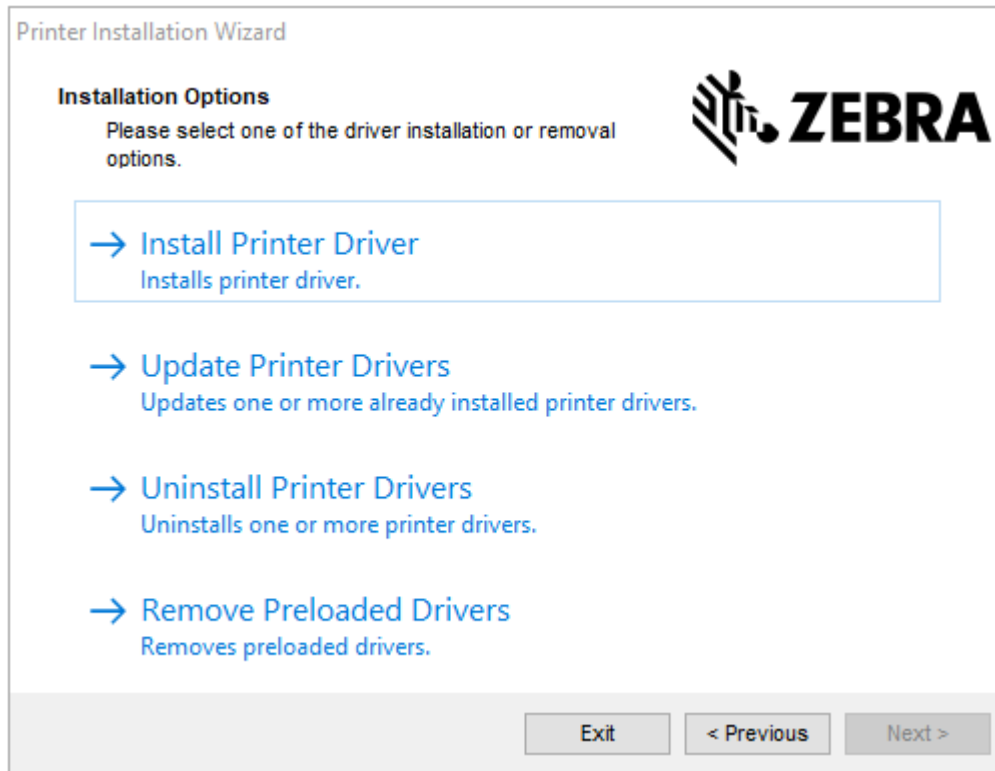
Running the Printer Installation Wizard

1. On the last screen of the driver installer, leave Run the Printer Installation Wizard checked, and then click **Finish**.

The printer driver wizard displays.

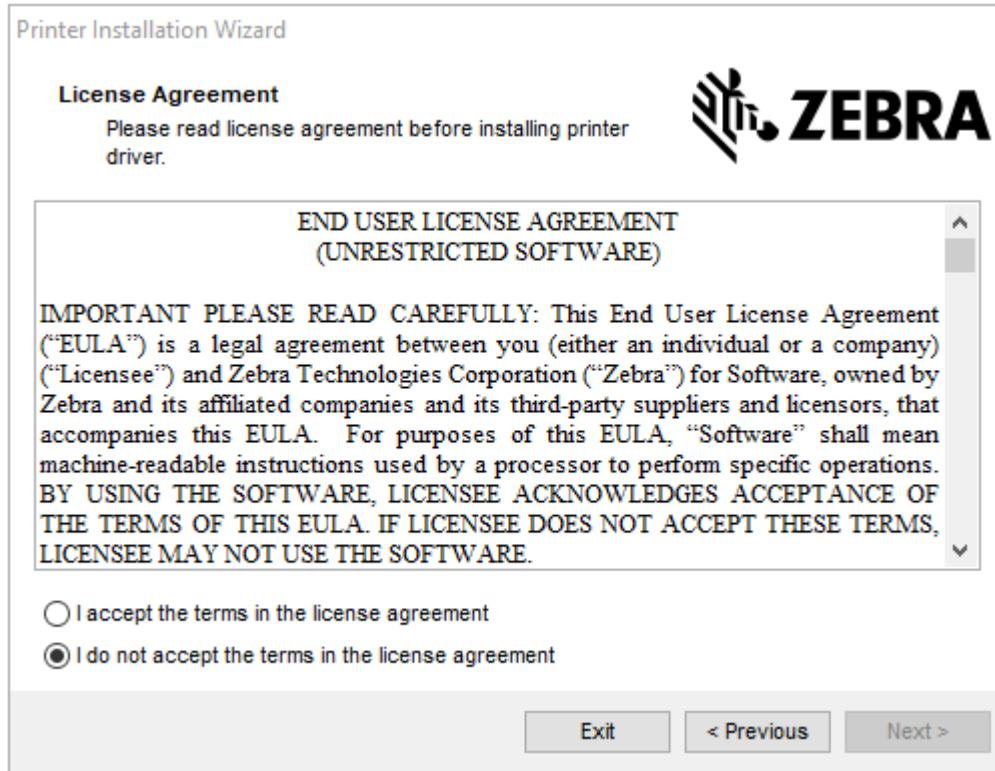


2. Click **Next**.

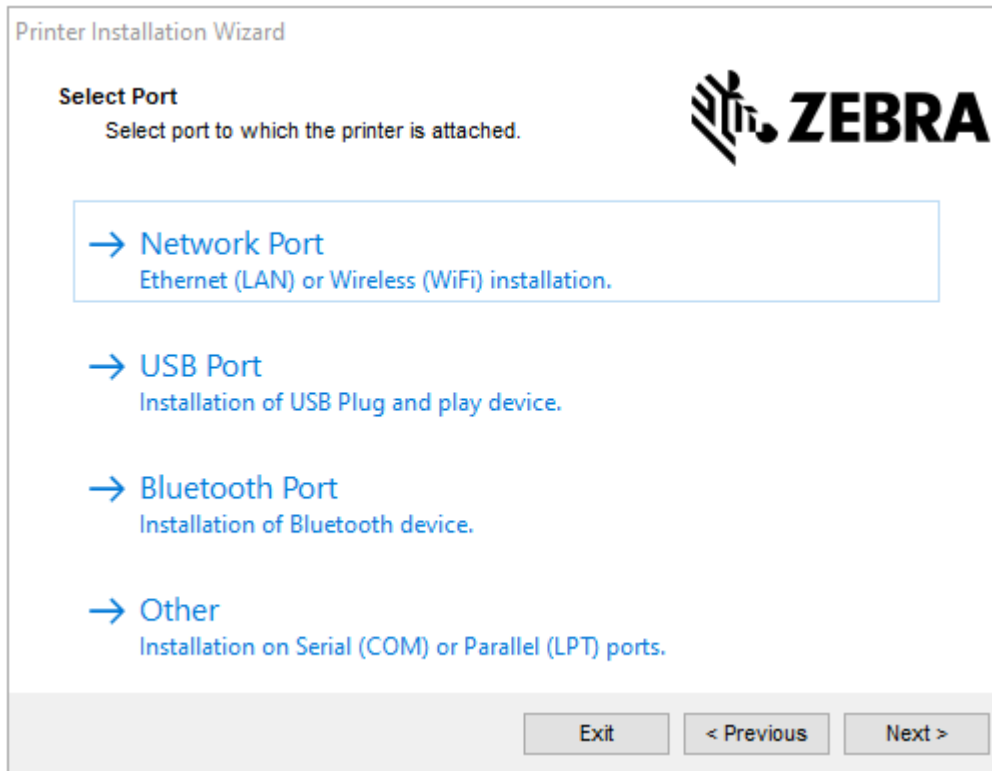


3. Click **Install Printer Driver**.

The license agreement displays.



4. Read and accept the terms of the license agreement, and then click **Next**.



5. Select the communication option that you want to configure for your printer:
- **Network Port:** For installing printers with an Ethernet (LAN) or wireless (Wi-Fi) network connection. Wait for the driver to scan your local network for devices and follow the prompts.
 - **USB Port:** For installing printers connected with the USB cable. Connect the printer to the computer. If the printer is already connected and powered on, you may need to remove the USB cable and install it again. The driver will automatically search for the model of the connected printer.
 - **Bluetooth Port:** For installing printers with a Bluetooth connection.
 - **Other:** For installation on another type of cable, such as Parallel (LPT) and Serial (COM). No additional configuration is necessary.
6. If prompted, select your printer model and resolution.

The model and resolution are on the printer configuration label. See [Printing a Test \(Printer Configuration\) Label](#) on page 29 for instructions on printing a label.)

Plug'n'Play (PnP) Printer Detection and Windows Operating Systems

Depending on the hardware configuration and the Windows version, your printer may be Plug-and-Play (PnP) detected when connecting to the USB, parallel, or serial port interfaces. More recent Windows operating systems automatically detect the printer when it is connected via the USB interface.

Recent Windows operating systems automatically detect the printer when it is connected via the USB interface.



NOTE: At this time, the printer drivers do not support serial port PnP installation.

For PnP operations, the printer's PC interface configuration for the parallel port must support and have bidirectional communications.

When connecting the printer for the first time to the PC, the operating system will automatically initiate an "Add new hardware" wizard. If you have pre-loaded the driver suite using the Zebra Setup Utility, the printer driver will automatically install.

Access your Windows printer directory, then right-click the printer name and select **Properties**. Click the **Print test page** button to verify a successful installation.

The Windows operating system detects and re-links a previously-installed printer if:

- it is reconnected to the USB interface, or
- if printer power is turned on when the PC has finished rebooting the OS.



IMPORTANT: Wait to apply power to the printer until after you have installed the drivers on the PC. See [Running the Printer Installation Wizard](#) on page 35.

Ignore the "new device detected" warnings and close the Taskbar prompts. Wait several seconds for the operating system to match the printer to the driver software. The warnings will disappear, and the printer should now be ready to begin printing.

Ethernet

This printer option has a variety of methods and utilities to assist with printer connection and configuration of networked Zebra printers on a LAN (local area network), WAN (wide area network) and Wi-Fi.

Zebra Setup Utility configuration wizards allow you to connect to a printer on a shared network of Windows-based systems using the printer's IP address.

The printer's internal web pages provide easy access to printer and network configuration. You can access these pages via the printer's IP address using any web browser.

The free version of ZebraNet Bridge software allows you to centrally deploy, manage, and monitor your Zebra printers with automatic Zebra printer discovery of up to three printers from a single PC screen anywhere on your global network. ZebraNet Bridge Enterprise is available for purchase to manage larger numbers of Zebra printers.



IMPORTANT: Wait to apply power to the printer until after you have installed the drivers on the PC (see [Running the Printer Installation Wizard](#) on page 35).

Serial Port and Windows Operating Systems

Windows OS default settings for the serial port communication closely match the printer's default settings with one exception; the data Flow Control settings. This setting must be changed.

The Windows default data Flow Control setting is NONE. The GK888 printer requires data Flow Control set to Hardware.



NOTE: At this time, the GK888 printer does not support Windows Serial Port Plug and Play (PnP) device detection.

Universal Serial Bus Device Communications

The printer is a terminal device (not a host or hub) when using a USB interface. See the USB Specification for details regarding this interface.



NOTE: Scanners, scales, or other data input (terminal) devices must use the serial port (not the USB port) to send data to the printer.

Interface Cable Requirements

Data cables must be of fully shielded construction and fitted with metal or metalized connector shells.



IMPORTANT: 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 (1.83 m (6 ft.) recommended).
- Do not tightly bundle the data cables with power cords.
- Do not tie the data cables to power wire conduits.



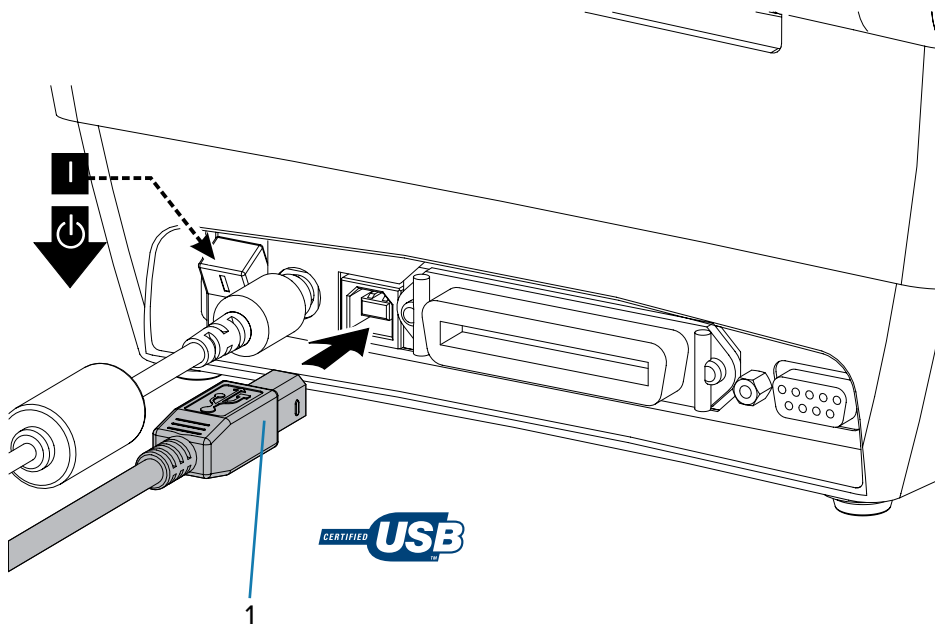
IMPORTANT: This printer complies with FCC Rules and Regulations, Part 15, for Class B Equipment, using fully shielded data cables. Use of un-shielded cables may increase radiated emissions above the Class B limits.

USB Interface Requirements

Universal Serial Bus (version 2.0 compliant) provides a fast interface that is compatible with your existing PC hardware.

The “plug and play” (PnP) design of USBs makes installation easy. Multiple printers can share a single USB port/hub.

When using a USB cable (not supplied with your printer), verify that the cable or cable packaging bears the Certified USB mark (see below) to guarantee USB 2.0 compliance.

Figure 11 USB Interface

1	USB cable
---	-----------



IMPORTANT: Wait to apply power to the printer until after you have installed the drivers on the PC.

Serial Communications

The GK888 printer features DCE serial communication port for hardware compatibility with legacy 888 printers.

The required cable must have a nine-pin “D” type (DB-9P) male connector on one end which plugs into the mating (DB-9S) serial port located on the back of the printer. The other end of this signal interface cable connects to a serial port on the host computer. The cable is a Null-Modem (cross-over signal connections) cable. For pinout information, see [Interface Wiring](#).

The serial port communication settings between the printer and host (typically a PC) must match for reliable communication. The most common settings that require changes are Bits per second (or Baud rate) and Flow Control.

The host (typically a Windows PC) must have the data Flow control changed to match the printer’s default communication method; in legacy printers, it is noted by the Host Handshake setting DTR/Xon/Xoff. This combined hardware (DTR) and software (Xon/Xoff) mode may require changes based on any non-Zebra application software and the serial cable variation being used.

Serial communications between the printer and the host computer can be set by:

- [Autobaud](#) on page 42 synchronization
- Programming using the [ZPL ^SC Command](#) on page 42
- Programming using the [EPL Y Command](#) on page 42
- [Resetting the Default Serial Port Parameters](#) on page 42

Autobaud

Autobaud synchronization allows the printer to automatically match the communication parameters of the host computer.

To autobaud:

1. Press and hold the **Feed** button until the green status LED flashes once, twice, and then three times.
2. While the status LED flashes, send the `^XA^XZ` command sequence to the printer.
3. When the printer and host are synchronized, the LED changes to solid green.



NOTE: No labels will print during autobaud synchronization.

ZPL ^SC Command

Use the Set Communications (^SC) command to change the communications settings on the printer.

1. With the host computer set at the same communications settings as the printer, send the ^SC command to change the printer to the desired settings.
2. Change the host computer settings to match the new printer settings.

Refer to the ZPL Programming Guide for more information about this command.

EPL Y Command

Use the serial port setup (Y) command to change the communications settings on the printer.

1. With the host computer set at the same communications settings as the printer, send the Y command to change the printer to the desired settings.



NOTE: The Y command does not support setting data Flow Control. Use the `Xon/Xoff` setting instead.

2. Change the host computer settings to match the new printer settings.

Refer to the EPL Page Mode Programming Guide for more information about this command.

Resetting the Default Serial Port Parameters

Use this procedure to reset the communications parameters on the printer to the factory defaults.

The recommended serial communication settings are 9600 baud, 8-bit word length, NO parity, 1 stop bit, and DTR/XON/XOFF data flow control).



NOTE: Early models of Zebra printers running the EPL programming language had 9600 baud, NO parity, 8 data bits, 1 stop bit, and a HARDWARE and SOFTWARE (merged) data control (essentially DTR/Xon/Xoff) as the default serial port settings.

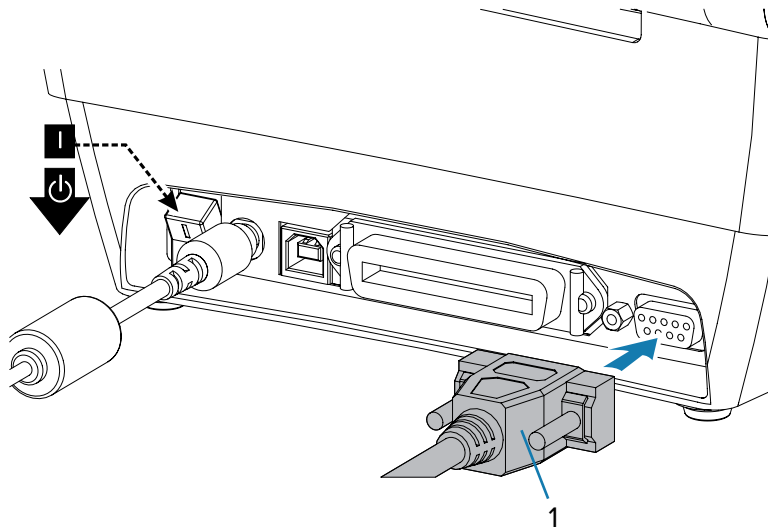
The Windows operating system flow control setting default is Hardware for most applications.

1. Press and hold the **Feed** button until the green status LED flashes once, after a moment flashes twice, and then waits again before flashing three times. Release immediately.
2. While the status LED rapidly flashes amber and green, press the **Feed** button.



NOTE: Serial communications between the printer and the host computer can be set by the ZPL ^SC command or the EPL Y command.

Early models of Zebra printers running the EPL programming language had 9600 baud, NO parity, 8 data bits, 1 stop bit, and a HARDWARE and SOFTWARE (merged) data control (essentially *DTR/Xon/Xoff*) as the default serial port settings. The Windows operating system Flow Control setting was Hardware for most applications.

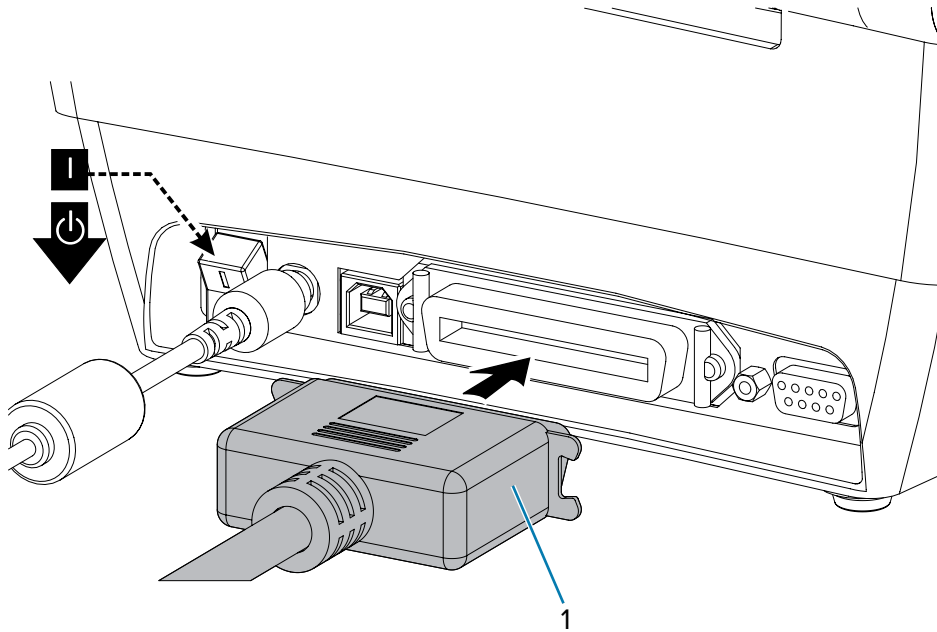


1	Serial cable (tighten the screws after plugging in the cable)
---	---

Parallel Port

The cable for a parallel port connection must have a 25-pin D-type (DB-25P) male connector on one end and a Centronics on the end (IEEE 1284 A-B parallel interface specification).

Early models of G-Series printers originally supported parallel cables with two 25-pin D-type (DB-25P) male connectors on both ends (IEEE 1284 A-A parallel interface specification).

Figure 12 Parallel Cable

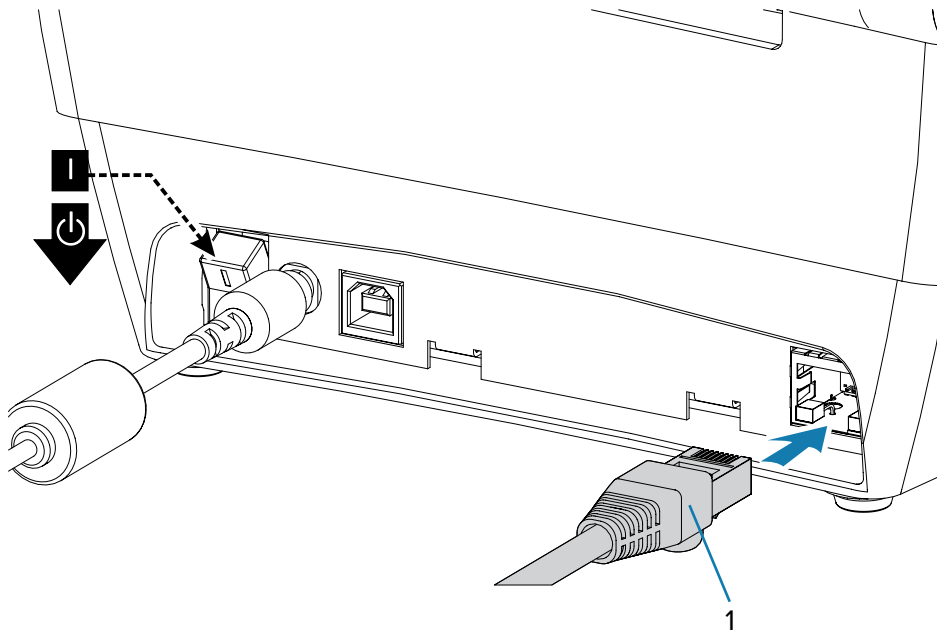
1	Parallel cable
---	----------------

Ethernet Port

The printer requires a UTP RJ-45 Ethernet cable rated CAT-5 or better.

For more information on configuring your printer to run on a compatible Ethernet-based network, see the ZebraNet 10/100 Internal Print Server manual. The printer must be configured to run on your LAN (local area network) or WAN (wide area network). The print server onboard your printer can be accessed through the printer's web pages.

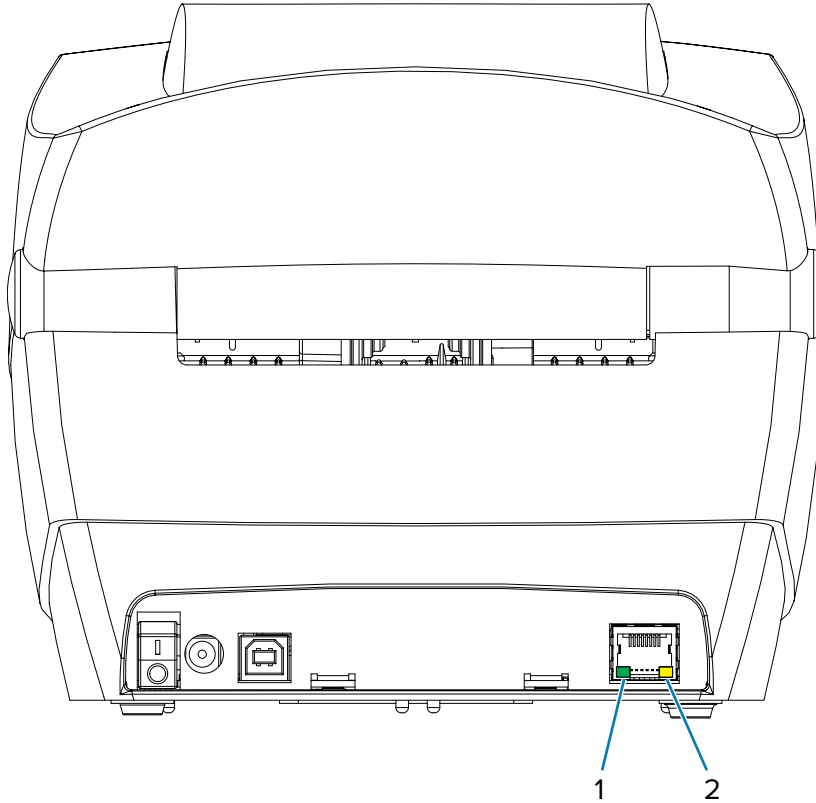
Figure 13 Ethernet Cable



Ethernet Status/Activity Indicators

The indicators on the connector indicate the status and activity.

Figure 14 Ethernet Status Indicators



1	Green LED
2	Amber LED

Table 1 How to Interpret Ethernet Status Indicator States

LED Status	Description
Both OFF	No Ethernet link detected
Green	100 Mbps link detected
Green with the Amber flickering on and off	100 Mbps link and Ethernet activity detected
Amber	10 Mbps link detected
Amber with the Green flickering on and off	10 Mbps link and Ethernet activity detected

After Your Printer is Connected

Now that you have basic communication with your printer, you may want to test printer communications and then install other printer-related applications, drivers, or utilities.

Testing Communications by Printing

Verifying the print system's operation is a relatively simple process.

For Windows operating systems, use the Zebra Setup Utility or the Windows **Printers and Faxes** Control Panel to access and print a test label.

For non-Windows operating systems, copy a basic ASCII text file with a single command (~WC) to print a configuration status label.

Test Printing with Zebra Setup Utility

Test communications using the Zebra Setup Utility.

1. Open the Zebra Setup Utility.
2. Click on the newly installed printer's icon to select the printer and activate the printer configuration buttons below it in the window.
3. Click the **Open Printer Tools** button.
4. In the **Print** tab window, click on the **Print configuration label** line and click on the **Send** button. The printer should print a configuration status label.

Test Printing with Windows Printer and Faxes Menu

Print a test label using the Windows Printers and Faxes menu.

1. Click on the Windows Start menu button, to access the **Printers and Faxes** menu or **Control Panel** to access the **Printers and Faxes** menu. Open the menu.
2. Select the newly install printer's icon to select the printer and right-click the mouse to access the printer **Properties** menu.
3. From the printer's **General** tab window, click on the **Print Test Page** button. The printer should print a Windows test print page.

Test Print on an Ethernet Printer

Test Print on an Ethernet printer connected to a network (LAN or WAN) with an (MS-DOS) Command Prompt (or Run from the Windows XP Start menu).

1. Create a text file with the following ASCII three characters: ~WC.
2. Save the file as: TEST.ZPL (an arbitrary file name and extension name).
3. Read the IP address from the printer's Configuration Status Label's Network Status printout. On a system that is connected to the same LAN or WAN as the printer, type the following in the Web browser window's address bar and enter:

```
ftp ( IP address ) (for IP address 123.45.67.01 it would be: ftp 123.45.67.01)
```

4. Type the word `put` followed by the file name and press enter. For this test print file, it would be: `put TEST.ZPL`

The printer should print a new Print Configuration Status label.

Test Print with a Copied ZPL Command File

Test print with a copied ZPL command file for non-Windows operating systems.

1. Create a text file with the following ASCII three characters: ~WC.
2. Save the file as: TEST.ZPL (an arbitrary file name and extension name).
3. Copy the file to the printer.

For DOS, a file sent to a printer connected to the system's parallel port would be as simple as:

```
COPY TEST.ZPL LPT1
```

Other interface connection types and operating systems will have different command strings. See your operating system documentation for detailed instructions on how to copy to the appropriate printer interface for this test.

What to Do If You Forget to Install Printer Drivers First

If you plug your Zebra printer into a power source before installing the drivers, the printer displays as an Unspecified device.

1. Follow the instructions in [Pre-install Windows Printer Drivers](#) to download and install the drivers on your laptop.
2. From the **Windows** menu, open the **Control Panel**.
3. Click **Devices and Printers**.

In this example, the ZTC ZT320-203dpi ZPL is an incorrectly installed Zebra printer.

▼ **Unspecified (1)**



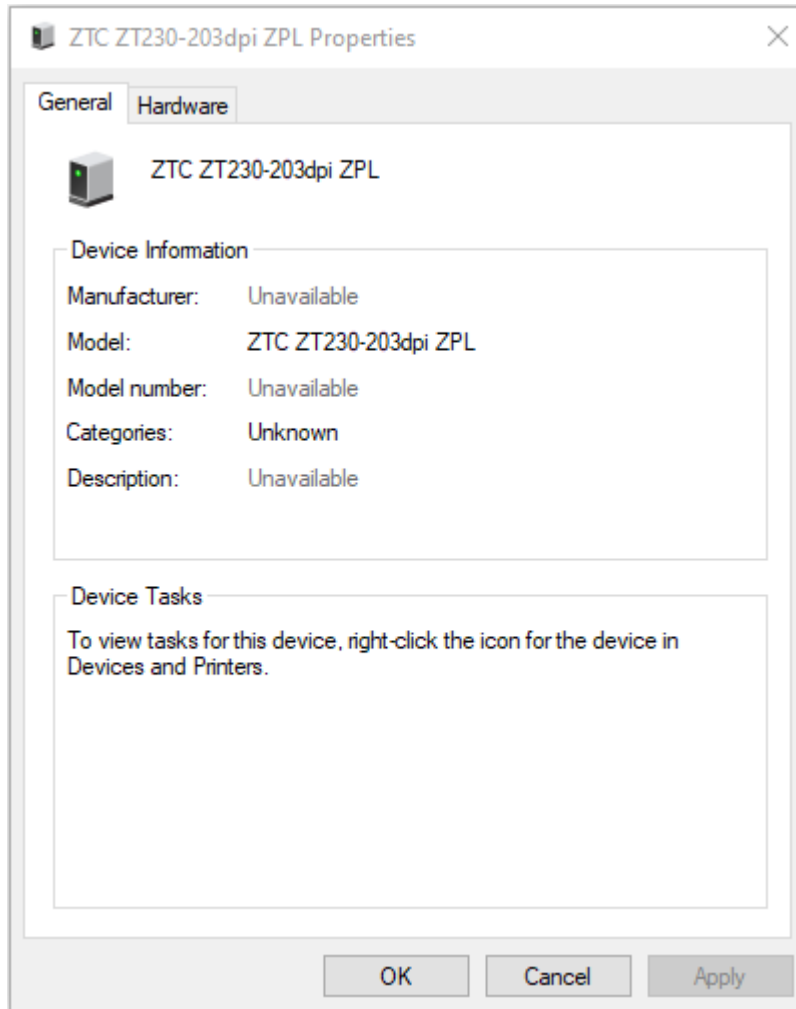
ZTC
ZT230-203dpi
ZPL



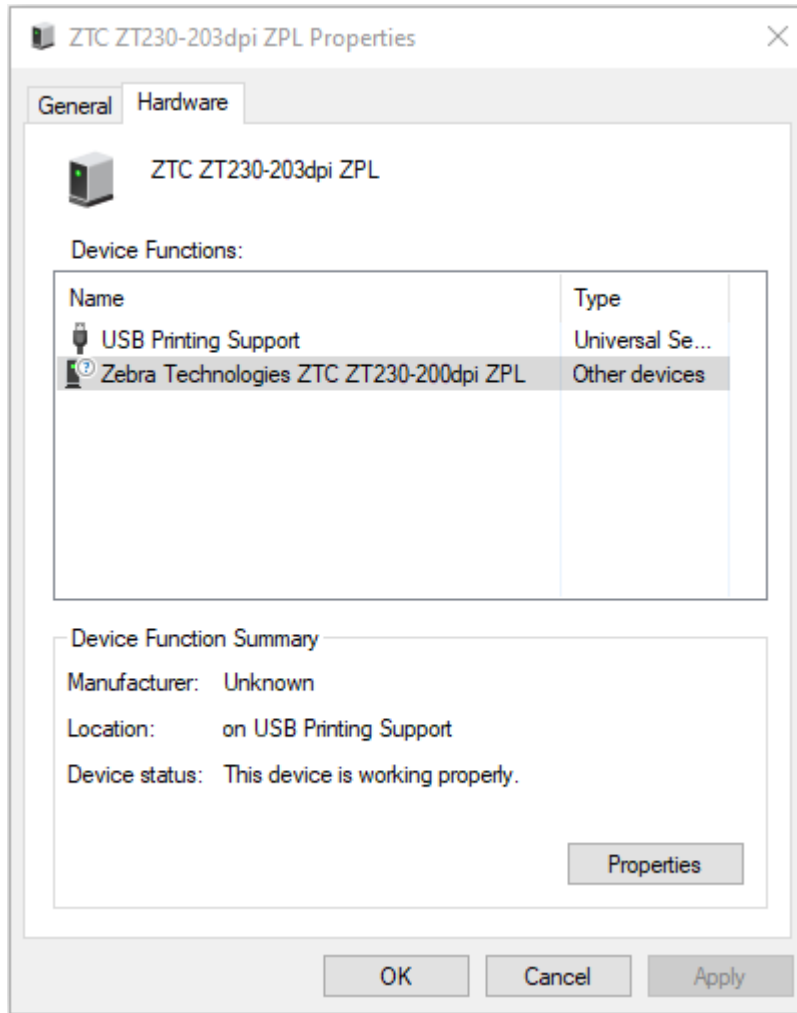
NOTE: You can verify your printer's model number and print resolution (for example, 203dpi) using the test print of the Configuration Report label from the top of the report. (See [Printing a Test \(Printer Configuration\) Label](#).)

4. Right-click on the icon representing the device, then select **Properties**.

The properties for the device display.

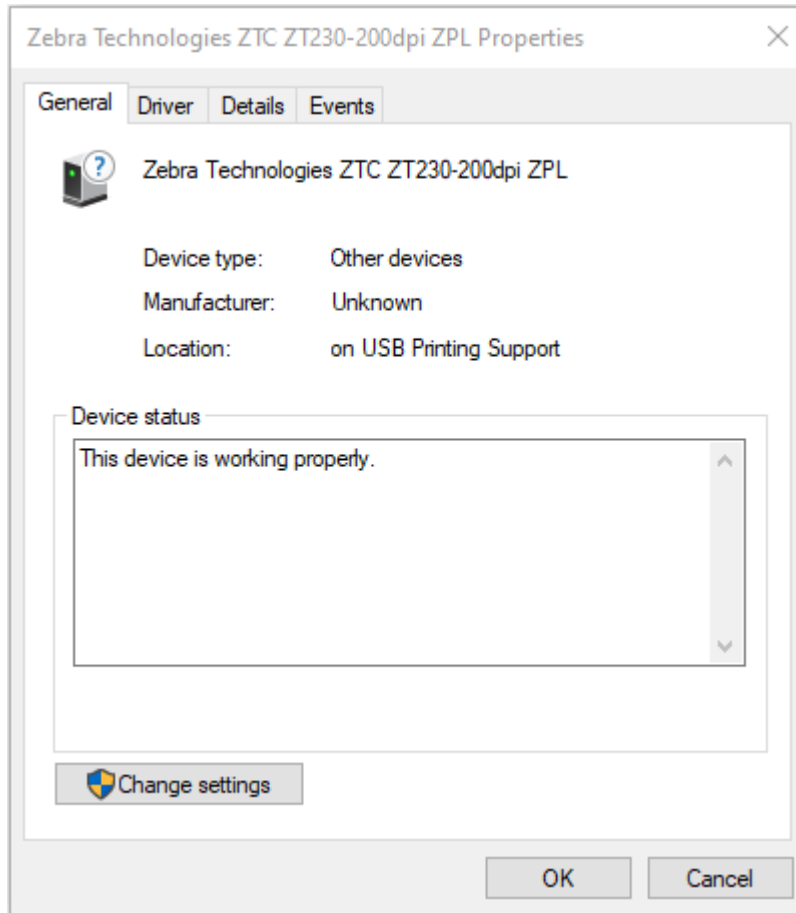


5. Click the **Hardware** tab.

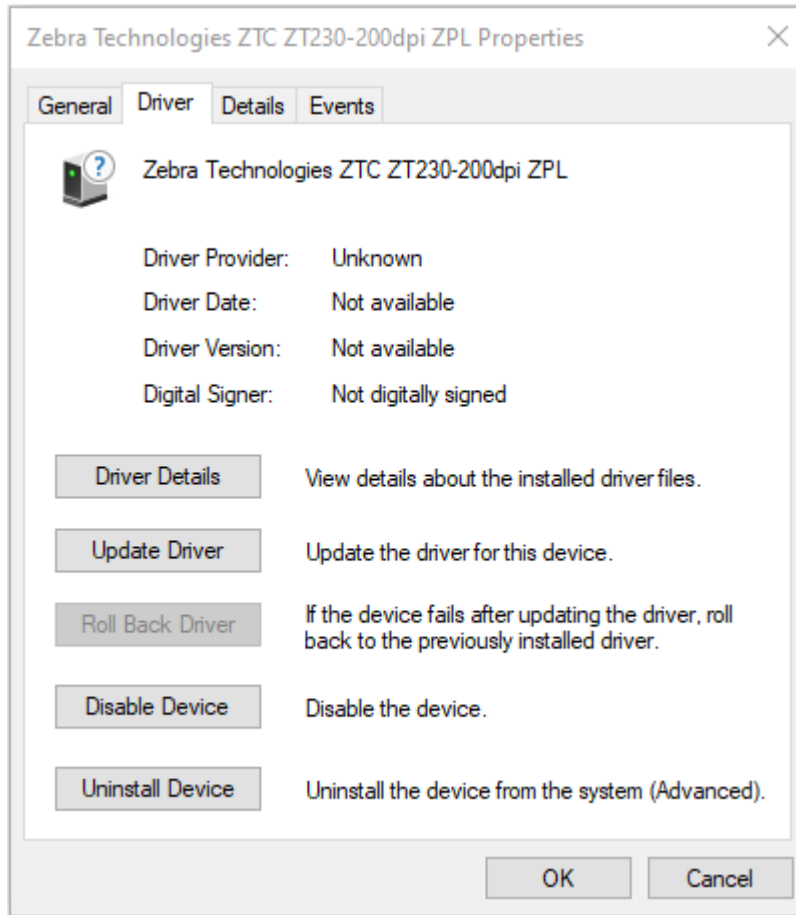


6. Select the printer in the **Device Functions** list, and then click **Properties**.

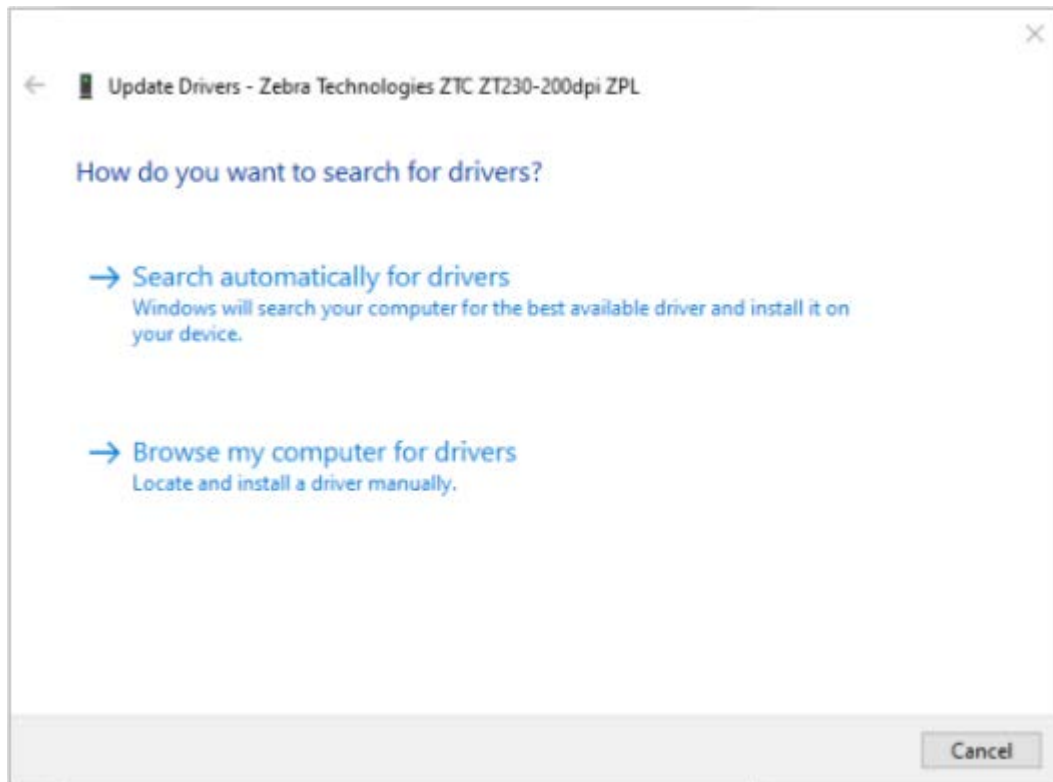
The properties display.



7. Click **Change settings** and then click the **Driver** tab.

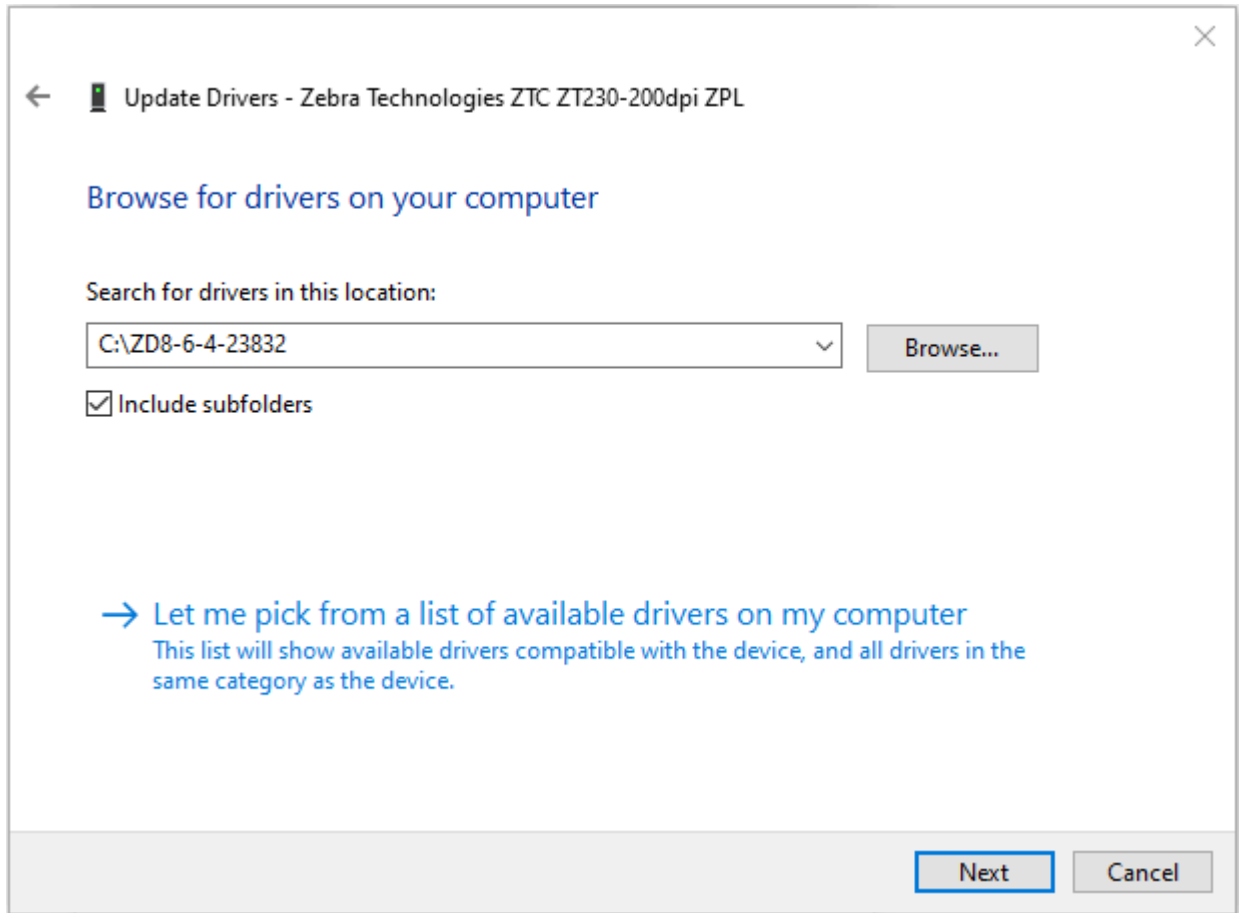


8. Click **Update Driver**.



9. Click **Browse my computer for driver software**.
10. Click **Browse...** and navigate to the **Downloads** folder.

11. Click **OK** to select the folder.



12. Click **Next**.

The device is updated with the correct drivers.

Print Operations

This section provides media and print handling, font and language support, and the setup of less common printer configurations.

Determining Printer Configuration

The G-Series printer uses a ZPL printer configuration status label to report the printer's configuration status for both EPL and ZPL operations.

The ZPL style label provides a more intuitive and functionally descriptive naming convention than the EPL style printer status label. Operational status (darkness, speed, media type, etc.), installed printer options (network, interface settings, cutter, etc.), and printer description information (serial number, model name, firmware version, etc.) are all included in the status label. See [Printing a Test \(Printer Configuration\) Label](#) on page 29 to print this label. See [ZPL Printer Configuration Format](#) on page 108 for details on printer configuration and the ZPL commands that control the printer settings listed on the Printer Configuration Status Label.

To get an EPL style printer configuration status label, send the printer the EPL `U` command.

See the EPL programmer's guide for more information on the various EPL `U` commands and interpreting the settings displayed on these labels.



NOTE: You can localize the label in languages other than English (see [Localizing the Printer with Code Pages](#) on page 66).

Long Term Printer Inactivity or Storage

Over time the printhead may stick to the platen (drive) roller. To prevent this, always store the printer with a piece of media (a label or paper) between the printhead and the platen roller.



IMPORTANT: Do not ship the printer with a roll of media installed or damage to the printer or media may result.

Thermal Printing

In thermal printing which this printer supports, heat is used to transfer text and images onto thermal paper.



CAUTION: The printhead becomes hot while printing. To protect from damaging the printhead and risk of personal injury, avoid touching the printhead. Only use the cleaning pen to perform printhead maintenance.



NOTE: The discharge of electrostatic energy that accumulates on the surface of the human body or other surfaces can damage or destroy the printhead or electronic components used in this device. You must observe static-safe procedures when working with the printhead or the electronic components under the top cover.

Modes of Printing

You can operate this printer in many different modes and media configurations:

- Direct thermal printing (which uses heat-sensitive media to print).
- Thermal transfer printing (which uses a ribbon to heat transfer print to the media).
- Standard Tear-Off mode allows you to tear off each label (or batch print a strip of labels) after it is printed.
- Label Dispense Mode: If an optional dispenser is installed, the backing material can be peeled away from the label as it is printed. After this label is removed, the next one is printed.
- Stand-alone: The printer can print without being connected to a computer using the printer's auto-running label form feature (programming based) or by using a data input device connected to the printer's serial port. This mode accommodates data input devices, such as scanners, weigh scales, Zebra KDU Plus or Zebra KDU (Keyboard Display Unit), etc.
- Shared network printing: Printers configured with the Ethernet interface option include an internal print server with a ZebraLink printer configuration web page and ZebraNet Bridge software for managing and monitoring the status of Zebra printers on a network.

Print Media Types

Your printer can use various types of media.



NOTE: Zebra strongly recommends the use of Zebra-brand supplies for continuous high-quality printing. A wide range of paper, polypropylene, polyester, and vinyl stock has been specifically engineered to enhance the printing capabilities of the printer and prevent premature printhead wear. To purchase supplies, go to zebra.com/howtobuy.

- Standard media—Most standard (non-continuous) media uses an adhesive backing that sticks individual labels or a continuous length of labels to a liner.
- Continuous roll media—Most continuous roll media is direct thermal media (similar to FAX paper) and is used for receipt or ticket style printing.
- Linerless media—Linerless labels have an adhesive backing, but they are wound onto a core without a liner. The media typically is perforated and may have black marks on the bottom surface of the media to indicate label separations. The top surface of linerless media labels has a special coating that keeps the labels from sticking to each other. The printer must be equipped with a special Linerless option to be able to use linerless media to keep the media from sticking to the printer.
- Tag stock—Tags are usually made from heavy paper (up to 0.0075in./0.19mm thick). Tag stock does not have adhesive or a liner, and it is typically perforated between tags.

The table below provides more information on basic media types.

The printer typically uses roll media, but you can use fan-fold or other continuous media too. Use the correct media for the type of printing you require. You must use direct thermal media. When printing without a ribbon, you must use direct thermal media. When using ribbon, you must use thermal transfer media.

Table 2 Types of Media Roll and Fanfold Media

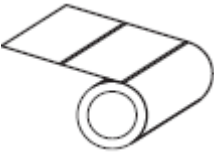
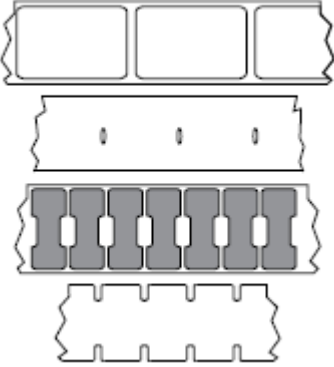

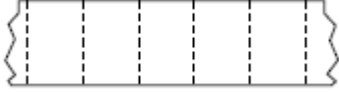
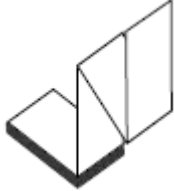
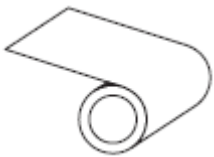
Media Type	How it Looks	Description
<p>Non-Continuous Roll Media</p>		<p>Roll media is wound on a core that can be 0.5 to 1.5 in. (12.7 to 38.1 mm) in diameter. Labels have adhesive backing that sticks them to a liner, and they are separated by gaps, holes, notches, or black marks. Tags are separated by perforations. Individual labels are separated by one or more of the following methods:</p> <ul style="list-style-type: none"> • Web media separates labels by gaps, holes, or notches.  <ul style="list-style-type: none"> • Black mark media uses pre-printed black marks on the back side of the media to indicate label separations.  <ul style="list-style-type: none"> • Perforated media has perforations that allow the labels or tags to be separated from each other easily. The media may also have black marks or other separations between labels or tags. 
<p>Non-Continuous Fanfold Media</p>		<p>Fan-Fold media is folded in a zigzag pattern. Fanfold media can have the same label separations as non-continuous roll media. The separations would fall on or near the folds.</p>

Table 2 Types of Media Roll and Fanfold Media (Continued)

Media Type	How it Looks	Description
Continuous Roll Media		Roll media is wound on a core that can be 0.5 to 1.5 in. (12.7 to 38.1 mm) in diameter. Continuous roll media does not have gaps, holes, notches, or black marks to indicate label separations. This allows the image to be printed anywhere on the label. A cutter can be used to cut apart individual labels. With continuous media, use the transmissive (gap) sensor so the printer can detect when the media runs out.

Determining Thermal Media Types

Thermal transfer media requires a ribbon for printing while direct thermal media does not. To determine if ribbon must be used with a particular media, perform a media scratch test.

To perform a media scratch test, complete these steps:

1. Scratch the print surface of the media with a fingernail or pen cap. Press firmly and quickly while dragging it across the media surface. Direct thermal media is chemically treated to print (expose) when heat is applied. This test method uses friction heat to expose the media.
2. Did a black mark appear on the media?

If a black mark...	Then the media is...
Does not appear on the media	Thermal transfer. A ribbon is required.
Appears on the media	Direct thermal. No ribbon is required.

Replacing Supplies

If labels run out while printing, leave the printer power on while reloading (data loss results if you turn off the printer). After you re-load media, press the **Feed** button to restart.

Always use high-quality, approved labels and tags. If adhesive-backed labels are used that don't lay flat on the backing liner, the exposed edges may stick to the label guides and rollers inside the printer, causing the label to peel off from the liner and jam the printer.



IMPORTANT: Permanent damage to the printhead may result if a non-approved ribbon is used as it may be wound incorrectly for the printer or contain chemicals corrosive to the printhead.

Adding a New Transfer Ribbon

If ribbon runs out in the middle of a print job, the indicator lights red and the printer waits for you to add a fresh roll.

Keep printer power ON when changing the ribbon so as not to lose the print job that is in progress.

1. Open the top cover, then cut the used ribbon so you can remove the cores.
2. Load a new ribbon roll and empty ribbon core. If necessary, review the instructions in [Loading the Transfer Ribbon](#) on page 25.



IMPORTANT: Do NOT USE ribbon cores with a damaged notch. The notches on the core should have square corners.

3. Close the top cover.
4. Press the **Feed** button to restart printing.

Replacing a Partially Used Transfer Ribbon

To remove the used transfer ribbon, perform the following steps.

1. Cut the ribbon from the take-up roll.
2. Remove the take-up roll and discard the used ribbon.
3. Remove the supply roll and tape the end of any fresh ribbon to prevent it from unwrapping. When reinstalling a partially used supply roll, tape the cut end onto the empty take-up roll.

Adjusting the Print Width

Print width must be set when you are using the printer for the first time or there is a change in media width.

Print width may be set by:

- The Windows printer driver or application software such as ZebraDesigner.
- The five-flash sequence in [Feed Button Modes](#) on page 97.
- Controlling printer operations with ZPL programming; refer to the Print Width (^PW) command (consult your ZPL Programming Guide).
- Controlling printer operations with EPL Page Mode programming, refer to the Set Label Width (α) command (consult your EPL Programmer's Guide).

Adjusting the Print Quality

Print quality is influenced by the heat (density) setting of the printhead, the print speed, and the media in use.



NOTE: Media manufacturers may have specific recommendations for speed settings for your printer and the media. Some media types have lower maximum speeds than your printer's maximum speed.

Experiment with these settings to find the optimal mix for your application. Print quality can be set with the Zebra Setup Utility's 'Configure Print Quality' routine.

The relative darkness (or density) setting can be controlled by:

- The six-flash sequence in [Feed Button Modes](#) on page 97. This will overwrite any ZPL and EPL programmed darkness/density settings.
- The Set Darkness (~SD) ZPL command (consult your ZPL Programming Guide).
- The Density (D) EPL command (consult your EPL Programmer's Guide).

If you find that the print speed needs to be adjusted, use:

- The Windows printer driver or application software such as ZebraDesigner.
- The Print Rate (^PR) command (consult your ZPL Programming Guide).
- The Speed Select (S) command (consult your EPL Programmer's Guide).

Media Sensing

The G-Series printer has automatic media sensing capability.

The printer is designed to continuously check and adjust media length sensing for minor variations. Once the printer is printing or feeding media, the printer continually checks and adjusts the media sensing to accommodate for minor changes in media parameters from label to label on a roll and from roll to roll of media. The printer will automatically initiate a media length calibration if the expected media length or the label to label gap distance has exceeded the acceptable variation range when starting a print job or feeding media. The automatic media sensing in the G-Series printers works the same for printer operations that use EPL and ZPL label formats and programming.

If the printer does not detect labels or black marks (or notches with blackline sensing) after feeding the media the default maximum label length distance of 39 inches (1 meter), the printer will switch to continuous (receipt) media mode. The printer will keep these settings until changed by software, programming, or a manual calibration with different media.

Optionally, the printer can be set to do a short media calibration after printer power-up or when closing the printer with power on. The printer will then feed several labels while calibrating.

The printer's media settings can be verified by printing a Printer Configuration label. See [Printing a Test \(Printer Configuration\) Label](#) on page 29 for more details.

The maximum distance that the automatic media type detection and sensing will check can be reduced by using the ZPL Maximum Label Length command (^ML). It is recommended that this distance be set to no less than two times the longest label being printed. If the largest label being printed was a 4 by 6 inch label, then the maximum label (media) length detection distance can be reduced from the default distance of 39 inches down to 12 inches.

If the printer has difficulty automatically detecting the media type and auto-calibrating, see [Manual Calibration](#) on page 94 to perform an extensive calibration. It includes a printed graph of sensor operation for your media. This method disables the printer's automatic media sensing capability until the printer's default parameters are reset to the factory defaults with the four flash Feed button mode. See [Feed Button Modes](#) on page 97 for more details.

The automatic media calibration can be modified, turned on, or turned off to meet your needs. Sometimes print job conditions require that the printer use all the media on a roll. The two automatic media conditions, power up with media loaded and closing the printer with power on, can be controlled individually with the ZPL Media Feed command, ^MF. The feed action discussed in the ZPL programmers guide for the ^MF command is primarily for automatic media sensing and calibration. The automatic media calibration that controls the dynamic media (label to label) calibration is the ^XS command. If multiple media types of different lengths, material or detection methods (web/gap, black mark, notches or continuous) are used, you should not change these settings.

The media calibration and detection process can also be refined to match the media type loaded into the printer. Use the ZPL Media Tracking command (^MN) to set the media type. Sometimes the printer can detect preprinted media as the gap between labels or the liner backing with print as a black marks. If the ^MN parameter for continuous media is set, then the printer does not perform the automatic calibration. The ^MN command also includes an automatic calibration parameter (^MNA) to return the printer to its default setting to automatically detect all media types.

Ribbon Overview

Ribbon is a thin film that is coated on one side with wax, resin, or wax resin. These substances are transferred to the media during the thermal transfer printing process.

The media determines whether you need to use a ribbon and how wide the ribbon must be. When the ribbon is used, it must be as wide as or wider than the media being used. If the ribbon is narrower than the media, areas of the printhead are unprotected and subject to premature wear.

When to Use Ribbon

Thermal transfer media requires ribbons for printing while direct thermal media does not.

Direct thermal media should never be used with ribbon. Bar codes and graphics can get distorted. To determine if ribbon must be used with a particular media, perform a media scratch test.

Coated Side of Ribbon

Ribbon can be wound with the coated side on the inside or outside.

This printer can only use a ribbon that is coated on the outside. If you are unsure which side of a particular roll of ribbon is coated, perform an adhesive test or a ribbon scratch test to determine which side is coated.



To determine which side of a ribbon is coated, complete the following tests.

Ribbon Test with Adhesive

If you have labels available, perform the adhesive test to determine which side of a ribbon is coated. This method works well for ribbon that is already installed.

To perform an adhesive test, complete these steps:

1. Peel a label from its liner.
2. Press a corner of the sticky side of the label to the outer surface of the roll of ribbon.
3. Peel the label off of the ribbon.
4. Observe the results. Did flakes or particles of ink from the ribbon adhere to the label?

If the ink from the ribbon...	Then...
Adhered to the label	The ribbon is coated on the outside and can be used with the GK888 printer.
Did not adhere to the label	The ribbon is coated on the inside and can not be used in the GK888 printer.

Ribbon Scratch Test

Perform the ribbon scratch test when labels are unavailable.

To perform a ribbon scratch test, complete these steps:

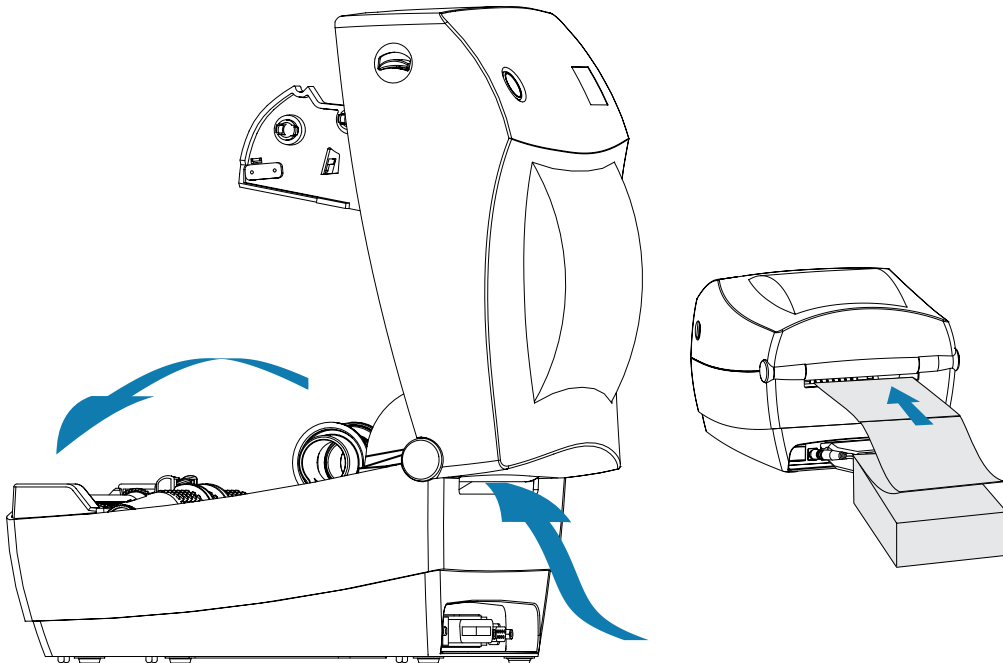
1. Unroll a short length of ribbon.
2. Place the unrolled section of ribbon on a piece of paper with the outer surface of the ribbon in contact with the paper.
3. Scratch the inner surface of the unrolled ribbon with your fingernail.
4. Lift the ribbon from the paper.
5. Observe the results. Did the ribbon leave a mark on the paper?

If the ribbon...	Then...
Left a mark on the paper	The ribbon is coated on the outside and can be used with the GK888 printer.
Did not leave a mark on the paper	The ribbon is coated on the inside and can not be used in the GK888 printer.

Printing on Fan-Fold Media

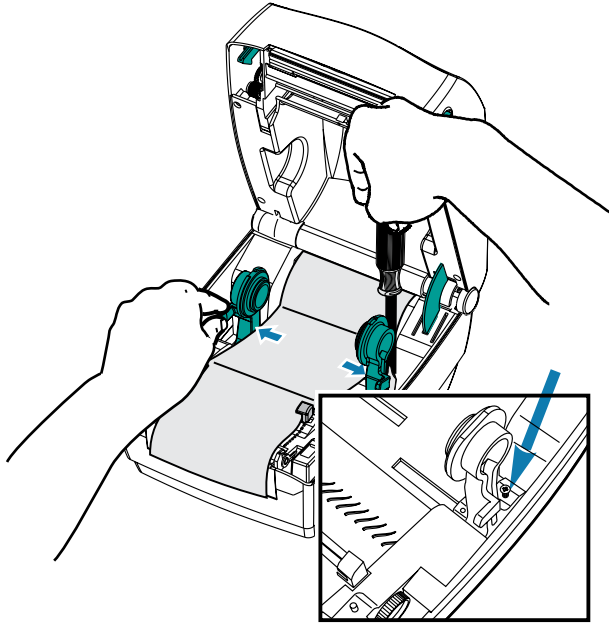
Printing on fan-fold media requires you to adjust the media guide's stop position.

1. Open the top cover.

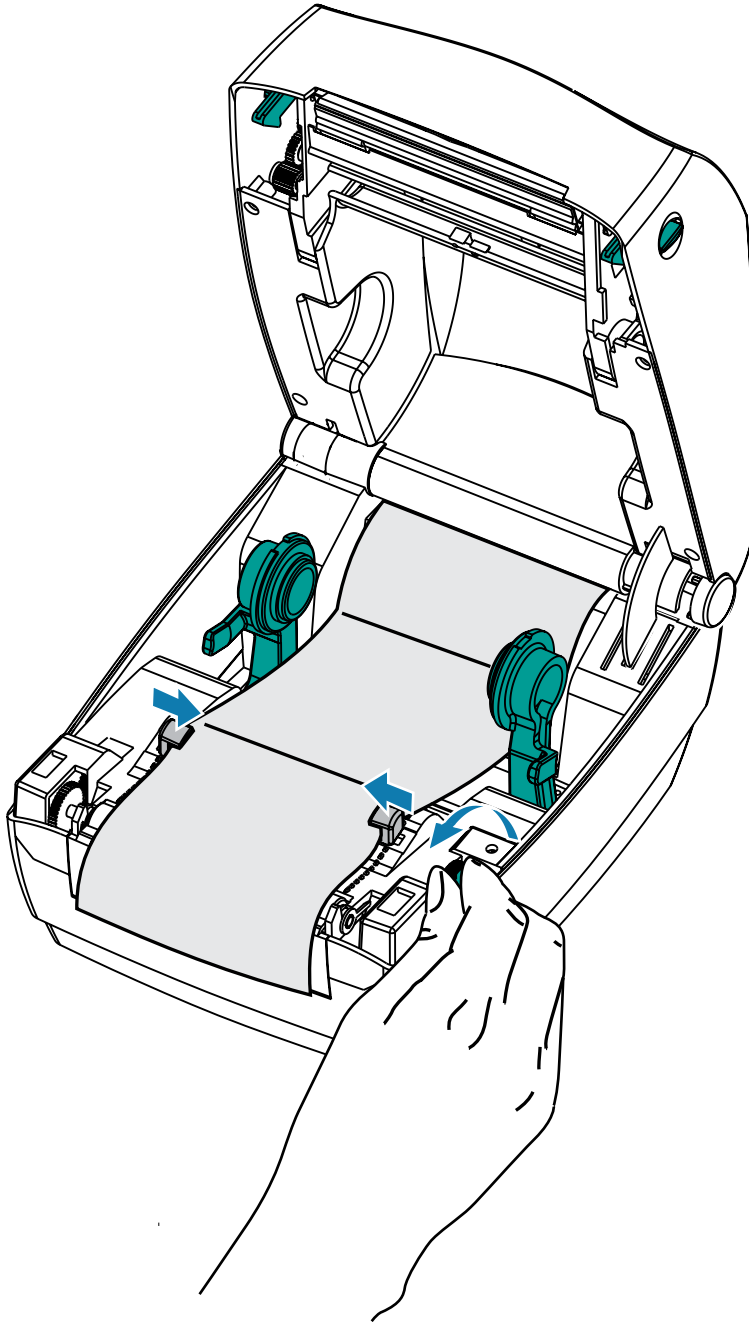


2. With a sample of your media, adjust the media roll holders to the width of the media. The hangers should just touch, but not restrict, the edges of the media.

3. Tighten the screw using a small Phillips driver #1.



4. With a sample of your media, adjust the guides to the width of the media. The guides should just touch, but not restrict, the edges of the media.



5. Run the media between the media guide and roll holders.
6. Close the top cover.

After printing or feeding several labels: If the media does not track down the center (moves from side to side) or the sides of the media (liner, tag, paper, etc.) are frayed or damaged when exiting the printer, then the media guides or roll holders may need further adjustment.

Printing with Externally Mounted Roll Media

The G-Series printer accommodates externally mounted roll media similar to the printer's support of fanfold media.

The printer requires the media roll-and-stand combination to have low initial inertia to pull the media off the roll. The G-Series motor has 30% more torque than the Zebra 2800 Series desktop printers to provide improved media handling and speed.

Zebra at this time does not offer an external media option for the G-Series printer.

Externally Mounted Roll Media Considerations

Ensure that externally mounted roll media is properly configured.

- The media ideally should enter the printer directly behind the printer through the fanfold media slot in the rear of the printer.
- Lower the print speed to decrease the chance of motor stalls. The roll typically has the highest inertia when trying to start the roll moving. Larger media roll diameters require the printer to have more torque applied to get the roll moving.
- The media should move smoothly and freely. The media should not slip, skip, jerk, bind and then move, etc. when mounted on your media stand.
- The printer should not touch the media roll.
- The printer should not slip or lift up off the operating surface.

Fonts and Your Printer

The G-Series printer supports your language and font requirements with a variety of internal fonts, on-board font scaling, international font sets, and character code page support, Unicode support, and font download.

The G-Series printer's font capabilities are programming language-dependent. The EPL programming language provides basic bitmapped fonts and international code pages. The ZPL programming language provides advanced font mapping and scaling technology to support outline fonts (TrueType or OpenType) and Unicode character mapping as well as basic bitmapped fonts and character code pages. ZPL and EPL programming guides describe and document the fonts, code pages, character access, listing fonts, and limitations for their respective printer programming languages. See the printer programming guides for information on Text, Fonts, and Character support.

The G-Series printer includes utilities and application software that support font downloading into the printer for both printer programming languages.



IMPORTANT: Some factory-installed ZPL fonts in your printer cannot be copied, cloned, or restored to your printer by reloading or updating firmware. If these license-restricted ZPL fonts are removed by an explicit ZPL object delete command, they must be repurchased and reinstalled using a font activation and installation utility. EPL fonts do not have this restriction.

Localizing the Printer with Code Pages

The G-Series printer supports two sets of language, region, and character sets for permanent fonts loaded into the printer for each printer programming language, ZPL, and EPL. The printer supports localization with common international character map code pages.

- For ZPL code page support, including Unicode, see the `^CI` command in the ZPL programmer's guide.
- For EPL code page support, see the `I` command in the EPL programmer's guide.

Identifying Fonts in Your Printer

Fonts and memory are shared by the programming languages in the printer.

Fonts can be loaded in many memory areas in the G-Series printer. ZPL programming can recognize EPL and ZPL fonts. EPL programming can only recognize EPL fonts. See the respective programmer guides for more information on fonts and printer memory.

ZPL Fonts

To manage and download fonts for ZPL print operation, use the Zebra Setup utility or ZebraNet Bridge.

To display all of the fonts loaded in your G-Series printer, send the printer the ZPL command `^WD`. See the ZPL Programmers Guide for details.

- Bitmap fonts in the various printer memory areas are identified by the `.FNT` file extension in ZPL.
- Scalable fonts are identified with the `.TTF`, `.TTE` or `.OTF` file extensions in ZPL. EPL does not support these fonts.

EPL Fonts

To download fonts for EPL print operations, use the Zebra Setup Utility or ZebraNet Bridge to send files to the printer.

To display Soft Fonts (ext.) available to EPL, send the printer the EPL command `EI`.

- Optional Asian Fonts in G-Series printers are displayed as Soft Fonts, but are still accessible as documented in the `A` command in the EPL programmer's guide.
- All EPL fonts displayed are bitmap fonts. They do not include the `.FNT` file extension or the horizontal (`H`) or vertical (`V`) designators that are displayed with the ZPL command `^WD` as described above in ZPL Fonts.

To remove non-Asian EPL fonts with EPL programming, use the `EK` command.

To remove EPL Asian fonts from the printer, use the ZPL `^ID` command.

Standalone Printing

Your printer can be configured to work without being attached to a computer.

The printer has the ability to automatically run a single label form. One or more downloaded label forms can be accessed and run with a terminal or wedge device or a Zebra KDU (keyboard display unit) to call a label form. These methods allow the developer to incorporate data input devices, such as scanners or weight scales, to the printer via the serial port.

Label formats can be developed and stored in the printer to support labels that have:

- No data entry required and print when the **Feed** button is pressed.
- No data entry required and print when a label is removed from the printer's optional label dispenser.
- One or more data variables to be entered via the terminal or wedge device. The label will print after the last variable data field has been input.
- One or more label formats that are called by scanning bar codes containing programming to run a label form.
- Label forms designed to work as a process chain with each label including a bar code containing the programming to run the next label in the process sequence.

Both printer programming languages support special label forms that will automatically run after a power cycle or reset. The ZPL looks for a file named `AUTOEXEC.ZPL` and EPL looks for a label form named `AUTOFR`. If both files are loaded in the G-Series printer, then only the `AUTOEXEC.ZPL` will run. The EPL `AUTOFR` form runs until it is disabled. Both files must be deleted from the printer followed by a reset or a power cycle to completely remove the files.



NOTE: The G-Series EPL `AUTOFR` command can only be disabled with `NULL` character (00 hex or ASCII 0). The G-Series printer will ignore the other character that normally disables the `AUTOFR` form operation in most other EPL printers, the `XOFF` character (13 hex or ASCII 19).

The G-Series printer can source up to 750mA through the serial port's 5-volt line; see [Interface Wiring](#) for more information on the printer's serial port interface.

Sending Files to the Printer

Graphics, fonts and programming files can be sent to the printer from the Microsoft Windows operating systems by using the Zebra Setup Utilities (and driver), ZebraNet Bridge or Zebra ZDownloader found on the user's CD or at zebra.com.

These methods are common for both programming languages and the G-Series printers.

Print Meter

The G-Series printer has the capability to report printhead maintenance alerts.

The printer can provide cleaning and early warning of end of calculated printhead life alerts. If the RTC (Real Time Clock) is installed in the printer, the printhead life and history reporting will also include the date. By default, print metering alerts are disabled.

Many of the print meter messages and reports are customizable. See the ZPL or EPL Programming Guides for more information on the Print Meter.

To activate Print Meter Alerts, send one of the following commands to the printer:

- EPL command `oLY`
- ZPL command `^JH, , , , E`

Printer Options

This section covers the common printer options and accessories with brief descriptions and how to get you started using or configuring your printer option or accessory.

Label Dispenser Option

The factory-installed label dispenser option allows you to print a label with backing (liner/web) being removed from the label as it prints, ready for application. When printing multiple labels, removing the dispensed (peeled) label notifies the printer to print and dispense the next label.

To use dispenser-mode correctly, use your printer driver to activate the label (taken) sensor along with these typical label settings which include but are not limited to length, non-continuous (gap), and web (liner). Otherwise, you must send the ZPL or EPL programming commands to the printer.

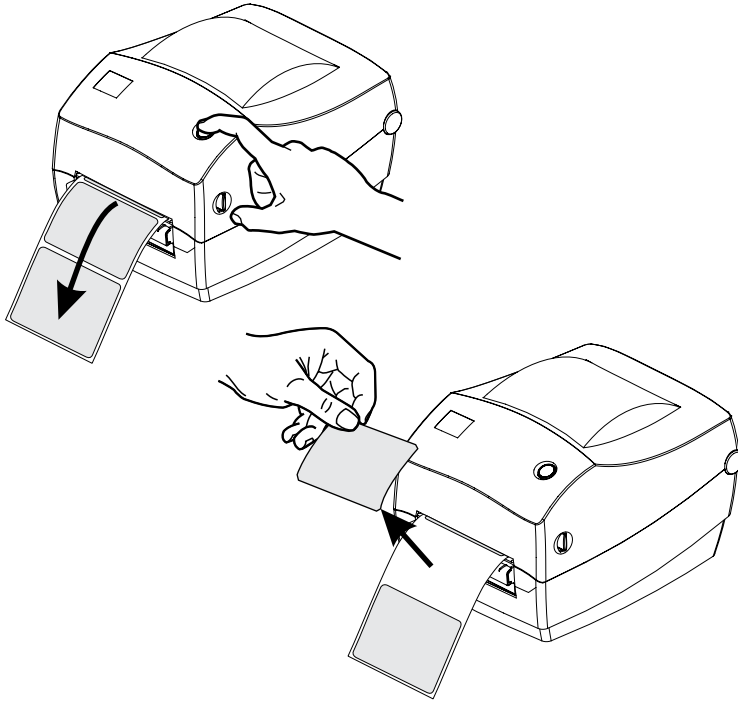
When programming in ZPL, you can use the following command sequences shown below and refer to your ZPL Programming Guide for more information on ZPL programming.

- `^XA ^MMP ^XZ`
- `^XA ^JUS ^XZ`

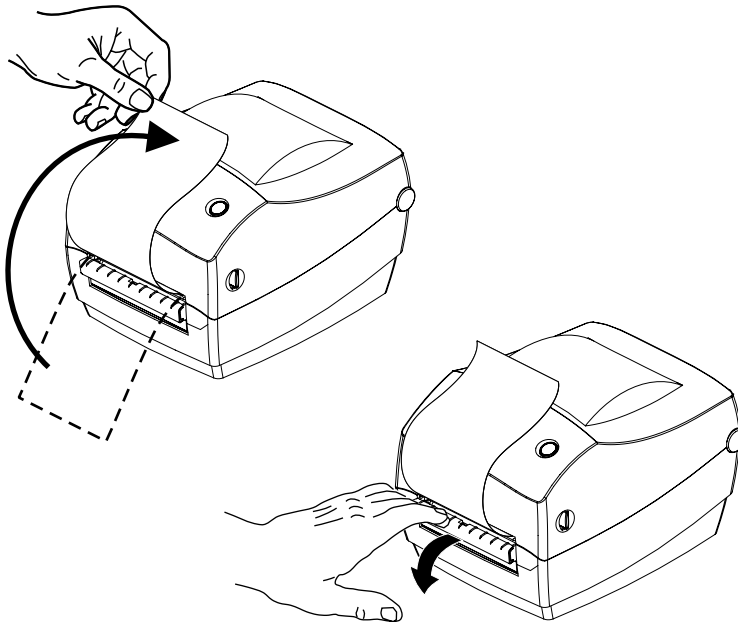
When programming in EPL, send the Options (O) command with the 'P' command parameter (OP) to enable the Label Taken sensor. Other printer option parameters may also be included with the Options command string. Refer to your EPL Programmer's Guide for more information on programming with EPL and the Options (O) command behaviors.

Printer Options

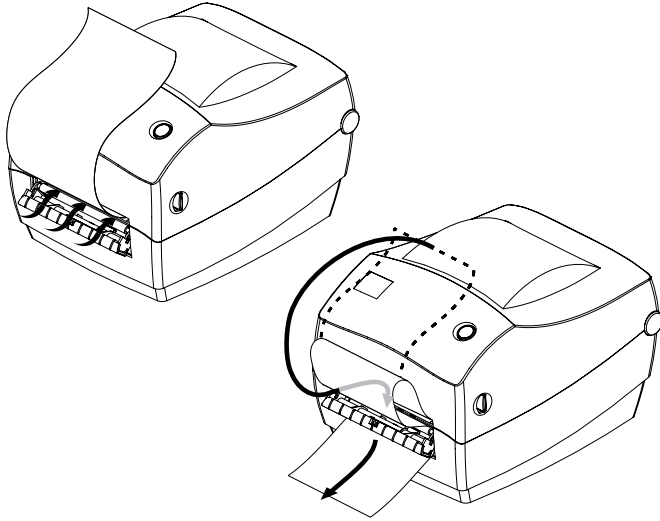
1. Load your labels into the printer. Close the printer and press the **Feed** button until a minimum of 4 inches or 100 millimeters of exposed labels exit the printer. Remove the exposed labels from the liner.



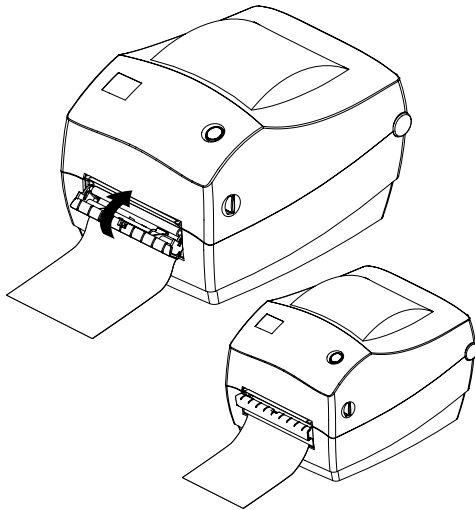
2. Lift the liner over the top of the printer and open the dispenser door.



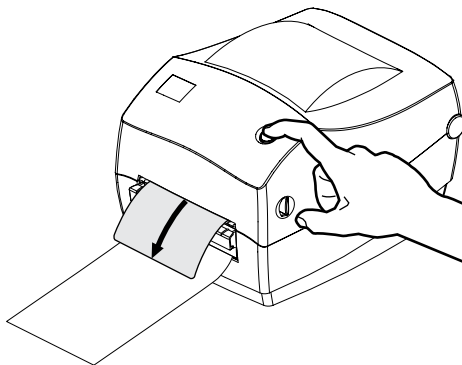
3. Insert the label liner between the dispenser door and the printer body.



4. Close the dispenser door.



5. Press the **Feed** button to advance the media.



6. During the print job, the printer will peel off the backing and present a single label. Take the label from the printer to allow the printer to print the next label. Take the label from the printer to allow the printer to print the next label.



NOTE: If you did not activate the label taken sensor to detect the removal of the dispensed (peeled) label with software commands, the printer will stack and eject peeled labels.

Cutter Option

The printer supports a factory-installed media cutter option for full-width cutting of label liner, tag media, or receipt media.

These cutter options are all supported in a single cutter housing design. The type of cutter option installed in your printer can be verified by printing a printer configuration status label (see [Printing a Test \(Printer Configuration\) Label](#))

The cutter options are:

- A medium-duty cutter for cutting label liner and light tag media (LINER/TAG)
 - Maximum paper weight (thickness): up to 180 g/m² (0.0077 in.)
 - Cutter life:
 - 2 million cuts: 0.5 mil to 5 mil stock (10-120 g/m²)
 - 1 million cuts: 5 mil to 7.5 mil stock (120-180 g/m²)
 - 750,000 cuts: 7.5 mil to 10 mil (180-200 g/m²)



IMPORTANT: - Exceeding the maximum media weight (density/hardness) and thickness will shorten the cutter's usable life or can cause the cutter to fail (jam or other error).

- Cut width: 108 mm (4.25 in.) maximum to 19 mm (0.75 in.) minimum
- Distance between cuts (label length): 25.4 mm (1 in.)



NOTE: Cutting shorter media lengths between the cuts may cause the cutter to jam, or error.

By default, the cutter operations include a self-cleaning preventive maintenance cleaning cut after every 25th cut. While this feature can be disabled using the ZPL or EPL SGD (Set/Get/DO) programming commands (`cutter.clean_cutter`), disabling the feature is NOT recommended.

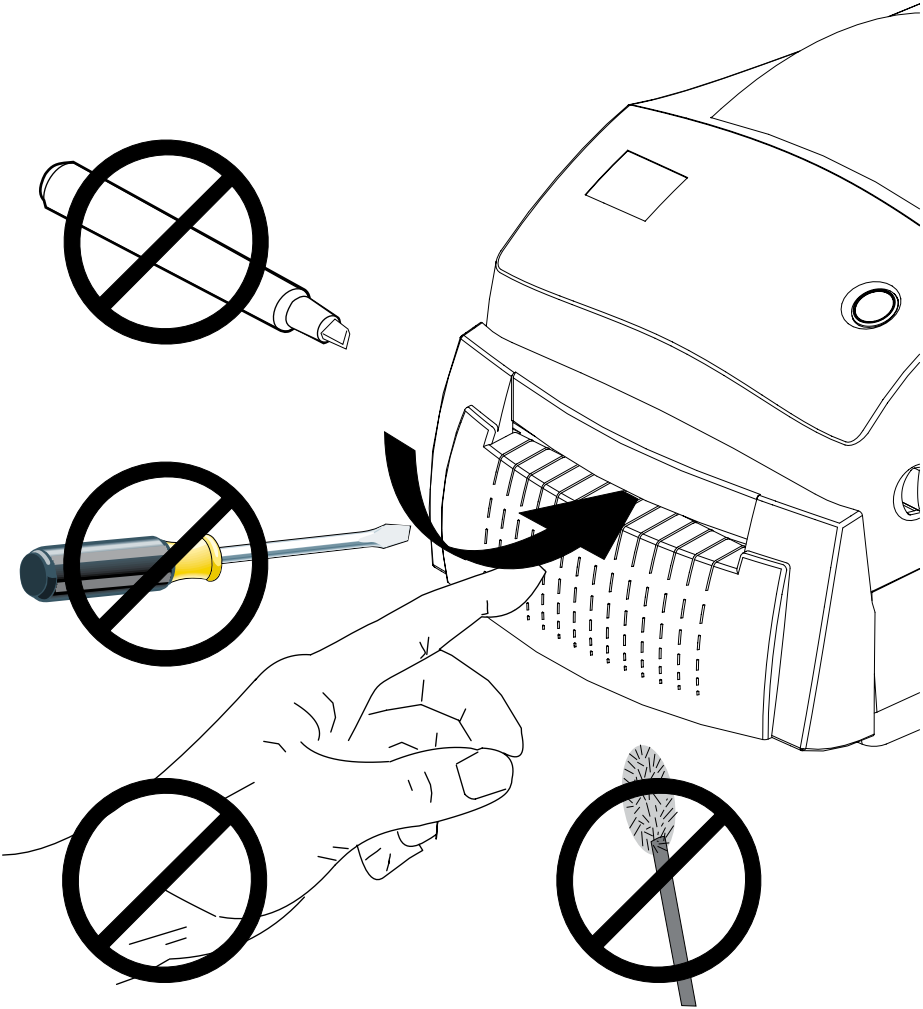


CAUTION: There are no operator serviceable parts in the cutter unit. Never remove the cutter cover (bezel). Never attempt to insert objects or fingers into the cutter mechanism.



IMPORTANT: Tools, cotton swabs, solvents (including alcohol), etc. all may damage or shorten the cutter's usable life or cause the cutter to jam.

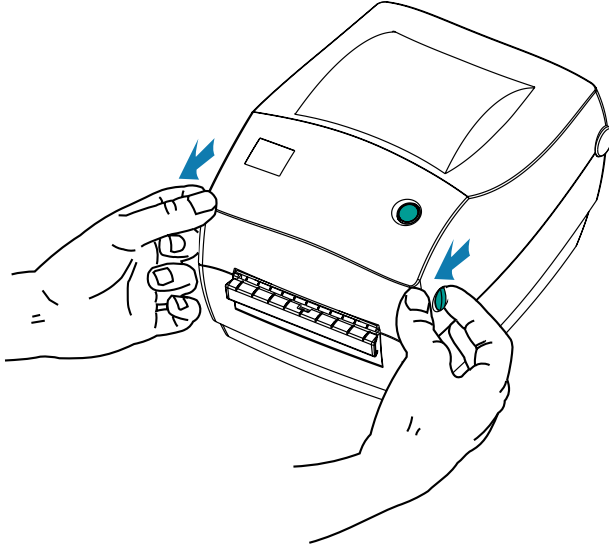
Figure 15 Do not Shorten the Cutter's Usable Life!



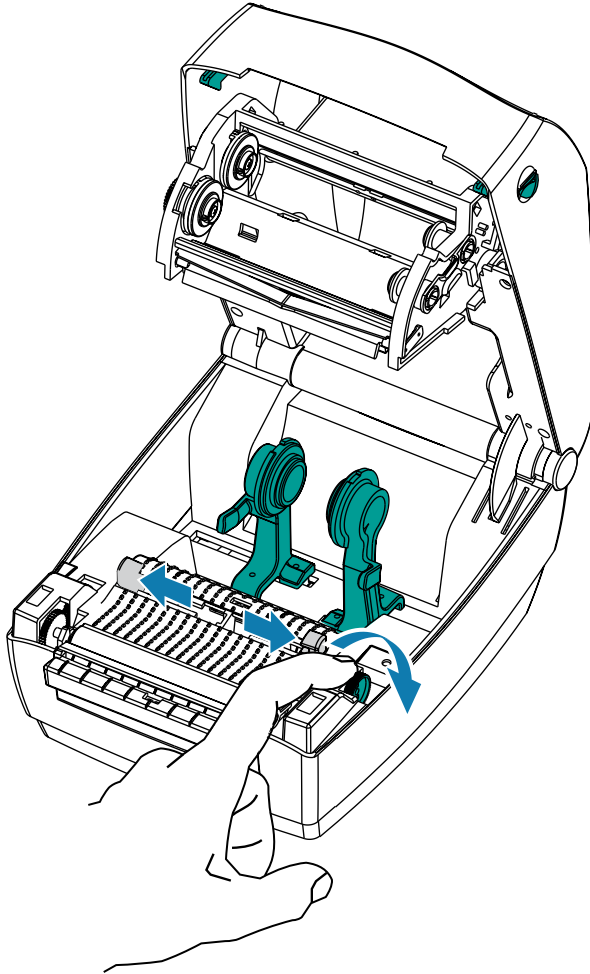
Loading Media with the Cutter Option

If your printer has the cutter option, use this procedure to load media into the printer.

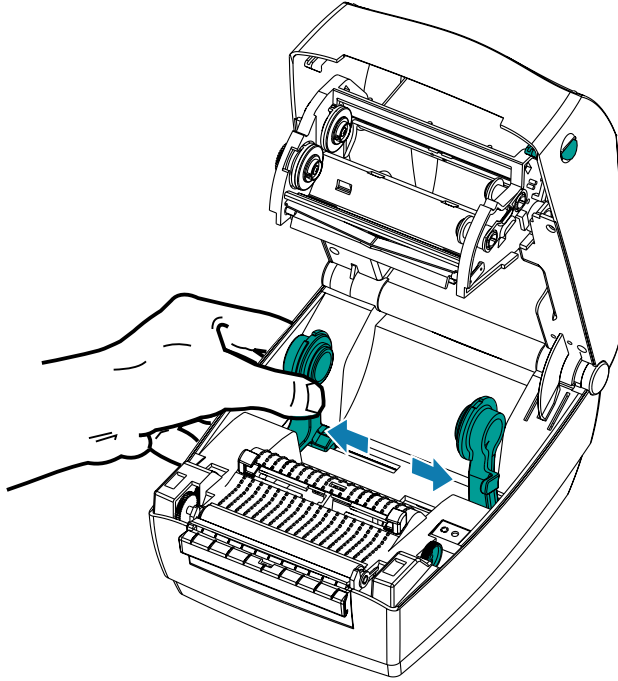
1. Open the printer by pulling the release latch levers toward the front of the printer.



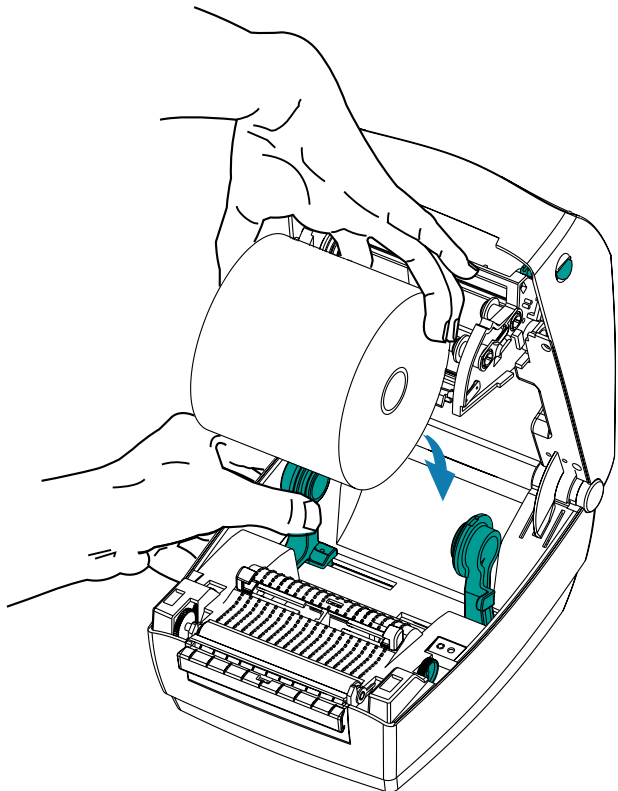
2. Open the media guides by turning the media guide adjustment knob toward the rear of the printer.



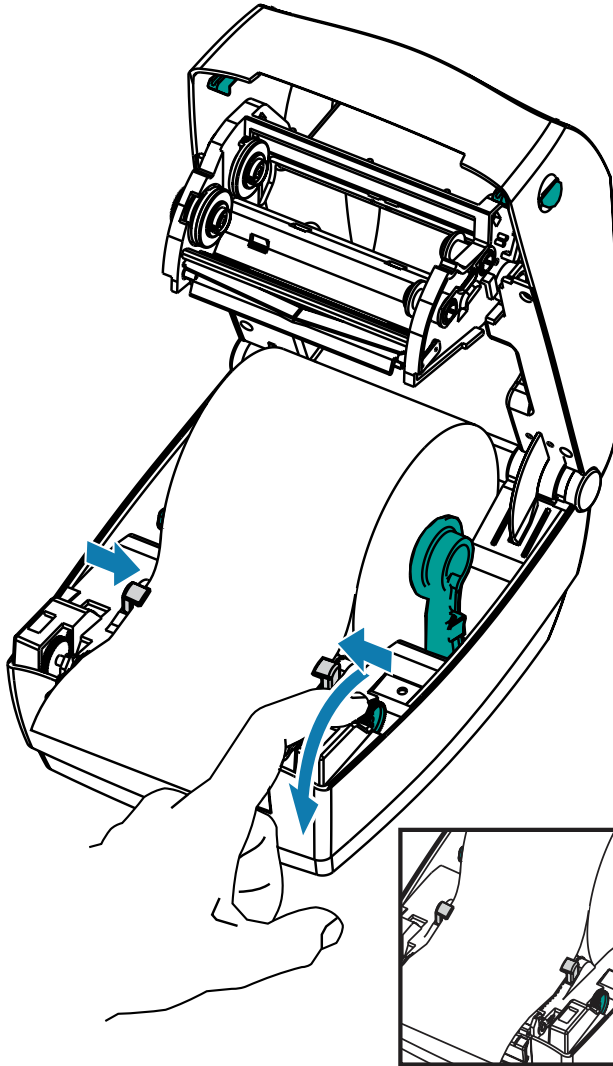
3. Open the media roll holders. Pull the media guides open with your free hand and place the media roll on the roll holders and release the guides. Orient the media roll so that its printing surface will be up as it passes over the platen (drive) roller.



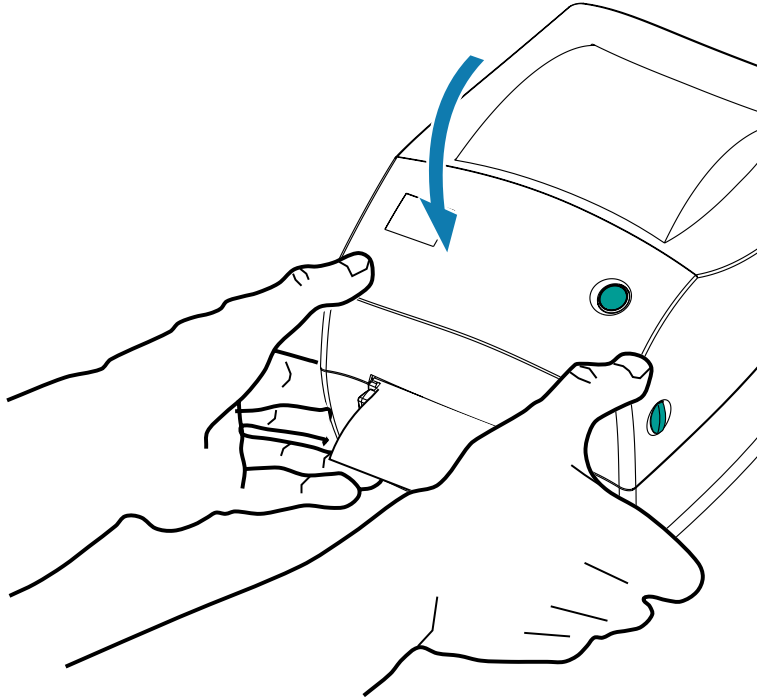
4. Thread the media through the cutter's inside slot so that it extends out of the front of the printer. Verify the roll turns freely. The roll must not sit in the bottom of the media compartment. Verify that the media's printing surface is facing up.



5. Close the media guides by turning the guide adjuster knob to the front. They should just touch, but not be restricted. the edges of the media.



6. Close the printer. Press down until the cover snaps closed.



ZebraNet 10/100 Internal (Wired) Print Server Option

The ZebraNet 10/100 Internal Print Server (PS) is an optional factory-installed device that connects the network and your ZebraLink-enabled printer.

The print server provides you with a browser interface for printer and print server settings. If you use the ZebraNet Bridge Zebra network printer management software, you can easily access the specialized features of a ZebraLink-enabled printer.

Printers with the 10/100 Internal PS provide the following features:

- Print server and printer setup using a browser
- Remote monitoring and configuration capability of the 10/100 Internal PS using a browser
- Alerts
- The ability for you to send unsolicited printer status messages via E-mail-enabled devices

ZebraNet Bridge—A software program that works with the 10/100 Internal PS and enhances the features of ZebraLink resident within ZPL-based printers. The features include the following:

- Locate Printers automatically—ZebraNet Bridge searches on parameters such as IP address, subnet, printer model, printer status, and many other user-defined characteristics.
- Remote Configuration—Manage all your Zebra label printers throughout the enterprise without having to travel to remote sites or physically handle any printers. Any Zebra printer connected to the enterprise network can be accessed from the ZebraNet Bridge interface and configured remotely through an easy-to-use graphical user interface.
- Printer Alerts, Status, Heartbeat Monitoring, and Event Notification—ZebraNet Bridge lets you configure multiple event alerts per device with different alerts directed to different people. Receive alerts and

notifications by e-mail, cell phone/pager, or through the ZebraNet Bridge Events tab. View alerts by printer or group, and filter by date/time, severity, or trigger.

- **Configure and Copy Printer Profiles**—Copy and paste settings from one printer to another or broadcast them to an entire group. ZebraNet Bridge allows you to copy printer settings, printer-resident files (formats, fonts, and graphics), and alerts with a click of the mouse. Create printer profiles—virtual “golden printers”—with desired settings, objects, and alerts, and clone or broadcast them as if they were real printers, providing extensive savings in setup time. Printer profiles are also an excellent way to back up a printer’s configuration for crisis recovery.

Printer Network Configuration Status Label

GK888 printers with the ZebraNet 10/100 Internal Print Server option onboard print an additional printer configuration status label for information needed to establish and troubleshoot network printing.

The following printout is printed with the ZPL ~WL command.

```
Network Configuration
-----
Zebra Technologies
ZTC GK888t
ZBR3573999
-----
Internal Wired*
ALL..... IP PROTOCOL
172.029.001.043.... IP ADDRESS
255.255.255.000.... SUBNET MASK
172.029.001.001.... DEFAULT GATEWAY
172.029.001.003.... WINS SERVER IP
YES..... TIMEOUT CHECKING
300..... TIMEOUT VALUE
000..... ARP INTERVAL
9100..... BASE RAW PORT
00074d3688ef..... MAC ADDRESS
-----
FIRMWARE IN THIS PRINTER IS COPYRIGHTED
```

The regular printout of the configuration status label has some of the printer’s network settings (such as the printer’s IP address) on the lower half of the printout.

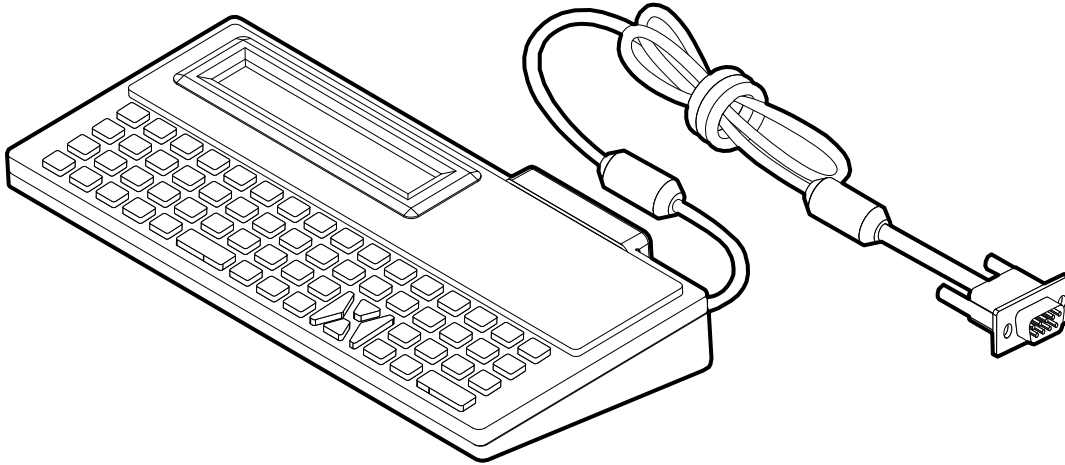
You will need the printer’s IP address to identify and configure the printer for operations on your network. See the ZebraNet 10/100 Internal Print Server manual for more information.

Zebra KDU — Printer Accessory

The KDU (keyboard display unit) is a small terminal unit that interfaces with the printer for accessing EPL label forms stored in the printer.

The KDU is strictly a terminal and does not have the capability to store data or set up parameters. The KDU is used for the following functions:

- List label forms stored in the printer
- Retrieve label forms stored in the printer
- Input variable data
- Printing labels



KDU Plus — Printer Accessory

The KDU Plus is a terminal device with memory for storing files and maintaining one or more remote printers. The KDU Plus has a larger laptop-style keyboard than the Zebra's original KDU design.

The KDU Plus is designed for the following functions:

- List label forms stored in the printer
- Retrieve label forms stored in the printer
- Input variable data
- Printing labels
- File storage and transfer

The KDU Plus is designed to work with ZPL and EPL printers by dynamically detecting and switching the printer's communications configuration (DTE or DCE) to match your Zebra printer. By default, the KDU Plus will start-up forms mode. This is compatible with the operation of Zebra's original KDU. The KDU Plus is configurable to work in ZPL or terminal modes too.

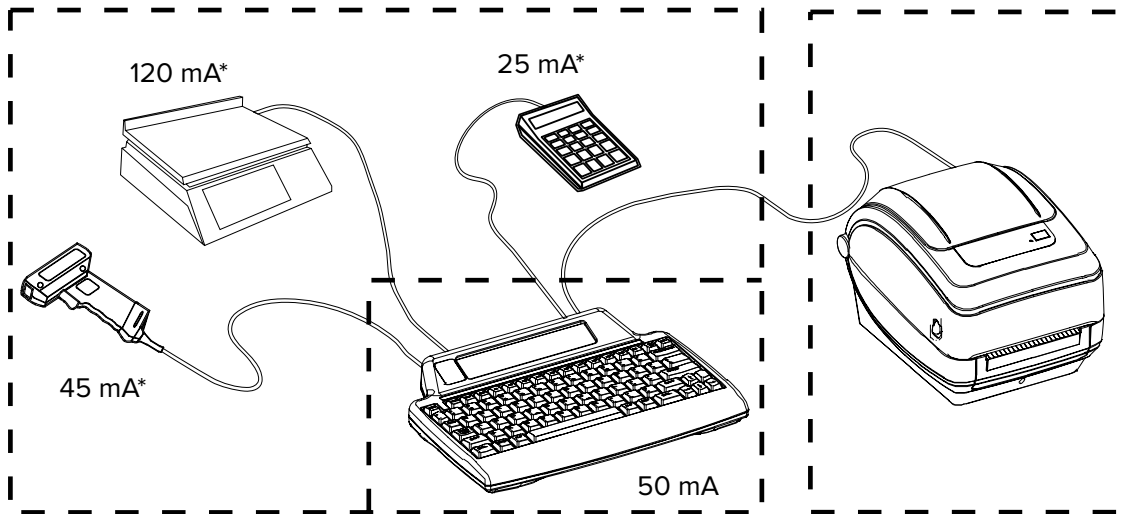
The KDU Plus has file transfer and storage capabilities. This is great for maintaining remote and stand-alone printers with label forms, logos, and smaller font sets.

The KDU Plus has two configurable serial ports and a PS/2 port to connect to other data input devices such as scanners, weigh scales, etc.

The +5 volts from the printer's serial (pin 9) provides power for the KDU Plus and any additional input devices attached to the KDU Plus.

Maximum total current draw for the G-Series printer's serial port: 750mA

The KDU Plus's current without external input devices attached is: 50mA



* Not real values

$$(45\text{mA} + 120\text{mA} + 25\text{mA}) + 50\text{mA} < \text{Max. Current}$$



CAUTION: The KDU Plus's input ports (AUX1, AUX2, and PS/2 style) are not fused. Exceeding the total current draw available could damage an input device, KDU Plus, or the printer.

ZBI 2.0 Zebra Basic Interpreter

Customize and enhance your printer with ZBI 2.0 optional programming language, ZBI 2.0 allows Zebra printers to run applications and take input from scales, scanners, and other peripherals—all without a PC or network connection.

ZBI 2.0 works with the ZPL printer command language so that printers can understand non-ZPL data streams and convert them into labels. That means the Zebra printer can create bar codes and text from input received, non-ZPL label formats, sensors, keyboards, and peripherals. Printers can also be programmed to interact with PC-based database applications to retrieve information to be used on printed labels.

ZBI 2.0 can be activated by ordering a ZBI 2.0 Key Kit or activated by purchasing a key from the ZBI 2.0 store at zebrasoftware.com.

Use the ZDownloader utility to apply the key. Zdownloader is available on the Zebra web site at zebra.com.

An intuitive ZBI-Developer programming utility is used to create, test, and distribute ZBI 2.0 applications available on the Zebra web site: zebra.com.

Maintenance

This section provides routine cleaning and maintenance procedures.

Cleaning

Always use a new cleaning pen on the printhead. (An old pen carries contaminants from its previous uses that may damage the printhead.)


To clean the printer, use one of the following supplies that reasonably suit your needs:

Table 3 Cleaning Supplies

Cleaning Supplies	Order Quantity	Intended Purpose
Cleaning pens (105950-035)	Set of 12	Clean printhead
Cleaning swabs (105909-057)	Set of 25	Clean media path, guides, and sensors

To procure cleaning supplies, go to zebra.com/supplies.

Cleaning the printer takes only a few minutes. Use the steps outlined below.

Printer Part	Method	Interval
Printhead	<p>Let the printhead cool for a minute, then use a new cleaning pen to swab the dark line on the printhead cleaning from the center to the outside edges of the printhead (see Cleaning the Printhead).</p> <p>Wait at least one minute before closing the printer to allow the printhead to dry thoroughly.</p> <p> NOTE: The printhead becomes hot while printing. To protect from damaging the printhead and risk of personal injury, avoid touching the printhead. Use only the cleaning pen to perform maintenance.</p>	When using ribbon: after every roll of ribbon; when using direct thermal: after every roll of media.

Printer Part	Method	Interval
Platen roller	Remove the platen roller to clean. Clean the roller thoroughly with 90% medical-grade alcohol and a cleaning swab or lint-free cloth. See Platen Cleaning and Replacement .	As needed.
Peel bar	Clean it thoroughly with 90% medical-grade alcohol and a fiber-free cleaning swab. Let the alcohol dissipate and the printer dries completely.	
Exterior	Wipe using a lightly water-dampened cloth.	
Interior	Gently brush the interior of the printer, taking care not to damage any internal components.	



IMPORTANT: Adhesives and media material can over time transfer onto the printer components along the media path including the platen and printhead. This build-up can accumulate dust and debris. Failure to clean the printhead, media path, and platen roller could result in inadvertent loss of labels, label jams, and possible damage to the printer.



NOTE: Minimize the amount of alcohol you use for the cleaning. Using too much can result in contamination of the electronic components and take a much longer drying time than otherwise before the printer can function properly.

Cleaning the Printhead

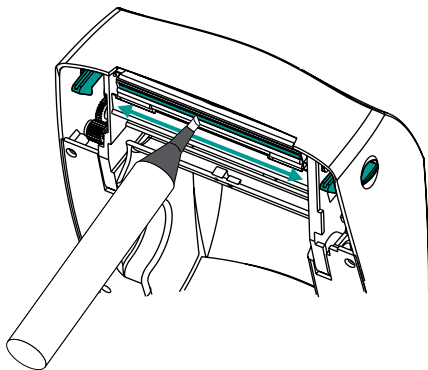
Always use a new cleaning pen on the printhead. (An old pen carries contaminants from its previous uses that may damage the printhead.)



CAUTION: The printhead becomes hot while printing. To protect from damaging the printhead and risk of personal injury, avoid touching the printhead. Use only the cleaning pen to perform maintenance.

Ideally, clean the printhead each time you load new media.

1. Rub the cleaning pen across the dark area of the printhead. Clean from the middle to the outside. This will move adhesive transferred from the edges of the media to the printhead outside of the media path.



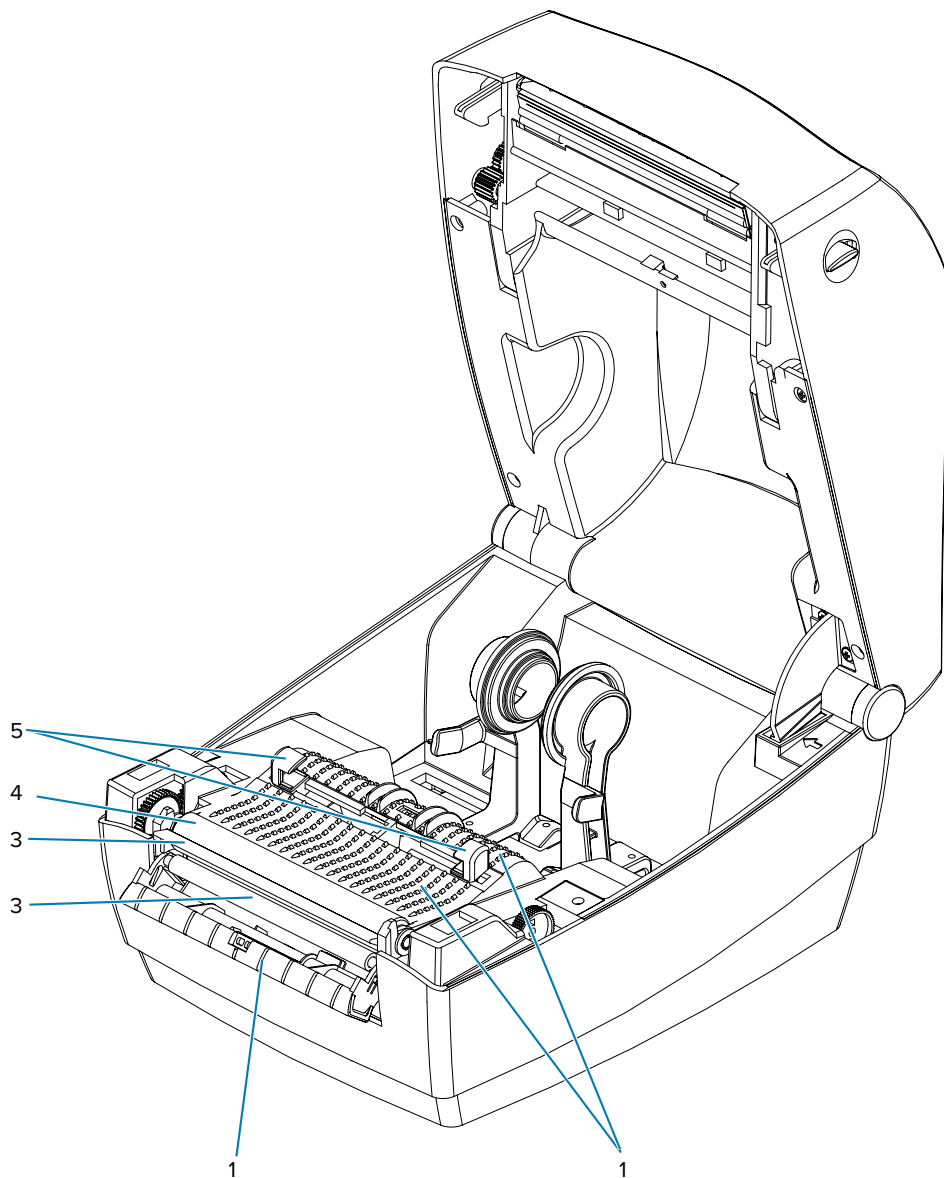
2. Wait one minute before closing the printer to allow the cleaned areas to dry.

Cleaning the Media Path

Use a cleaning swab to remove debris, dust, or crust that may have built up on the holders, guides, and media path surfaces.

- Use the alcohol in the cleaning swab to soak the debris to break up the adhesive.
- Wipe the ridges to remove accumulated debris.
- Wipe the inside edges of both edge guides to remove any built-up residue.
- Wait one minute before closing the printer.
- Discard the cleaning swab and use a new one for each cleaning.

Figure 16 Media Path components



1	Ridges
---	--------

2	Pinch roller
3	Peel bar
4	Platen
5	Media guides

Cleaning the Sensor

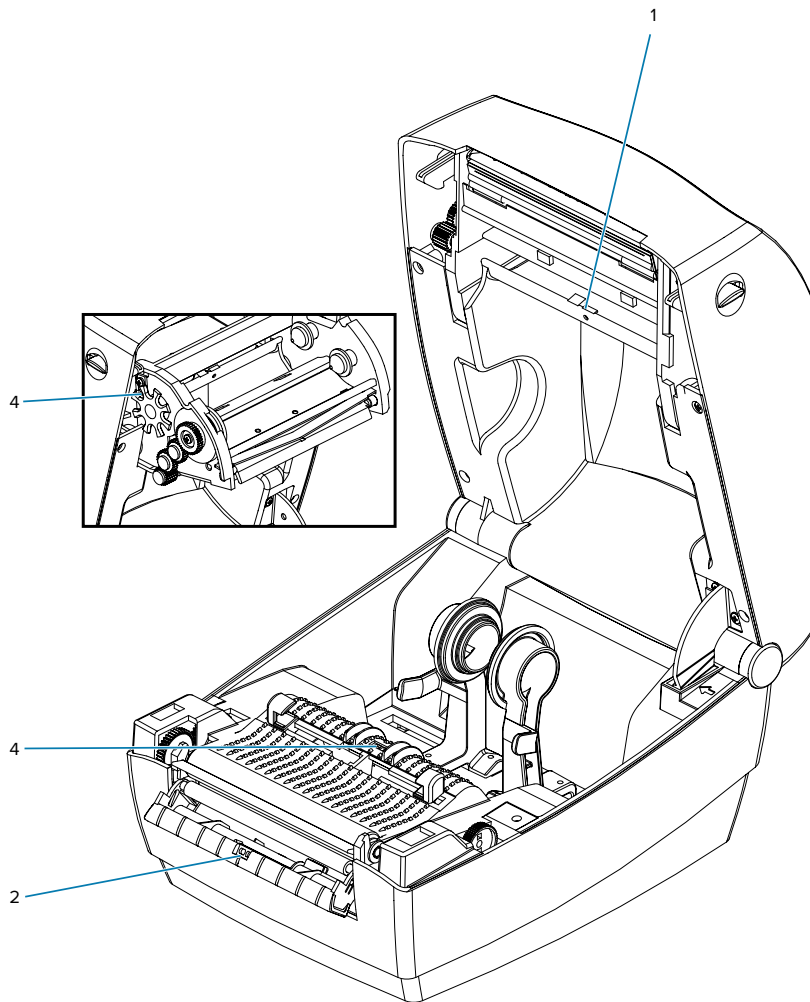
Dust can accumulate on the media sensors.

1. Gently brush away dust; if necessary, use a dry swab for the brushing. If adhesives or other contaminants remain, use an alcohol moistened swab to break them up. Gently brush the sensor surface or use a can of compressed air to blow dust off the sensor.



IMPORTANT: Do NOT use an air compressor to clean the sensor. Oil from the pump and dirty water will contaminate the printer and printhead.

2. Use a dry swab to remove any residue that may remain after the first cleaning.
3. Repeat steps 1 and 2 as required until all residue and streaks are removed from the sensor.



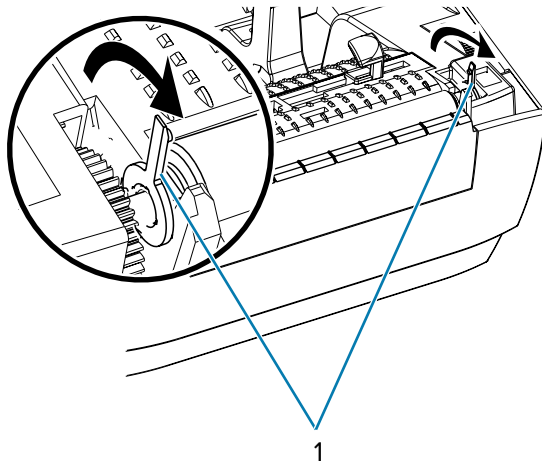
Platen Cleaning and Replacement

The standard platen (drive roller) normally does not require cleaning. Paper and liner dust can accumulate without affecting print operations. Contaminates on the platen roller can damage the printhead or cause the media to slip or stick when printing. Adhesive, dirt, general dust, oils and other contaminants should be cleaned immediately off the platen.

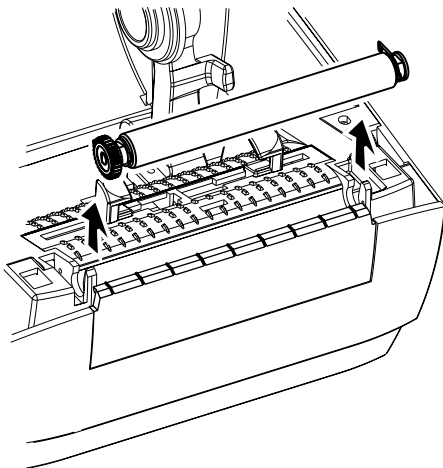
Clean the platen (and media path) whenever the printer has significantly poorer performance, print quality, or media handling. The platen is the print surface and drive roller for your media. If sticking or jamming continues even after cleaning, you must replace the platen.

The platen can be cleaned with a fiber-free swab (such as a Texpad swab) or a lint-free, clean, damp cloth very lightly moistened with medical grade alcohol (90% pure or better).

1. Open the cover (and dispenser door). Remove media from the platen area.
2. Pull the platen bearing latch release tabs on the right and left sides towards the front of the printer and rotate them up.

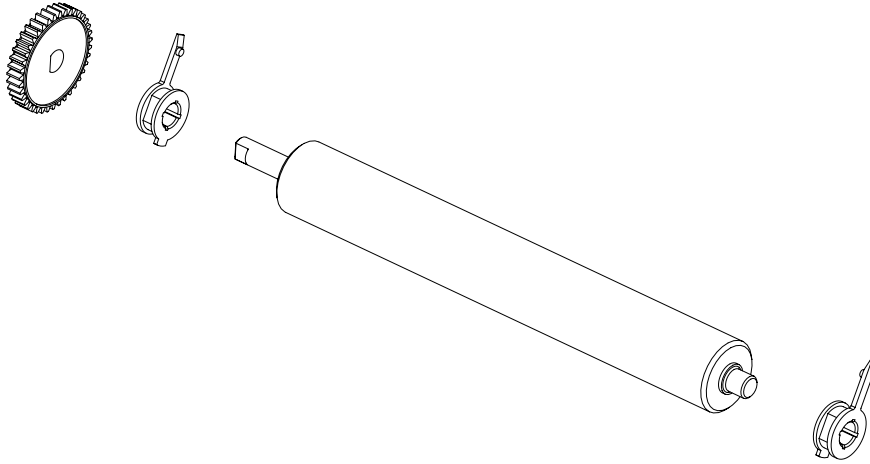


3. Lift the platen out of the printer's bottom frame.

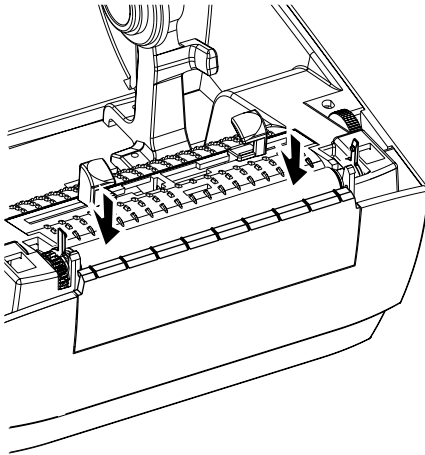


4. Clean the platen with the alcohol-moistened swab. Clean from the center out. Repeat this process until all of the roller surfaces has been cleaned. If there has been heavy adhesive build-up or label jam, repeat with a new swab to remove residual contaminants. Adhesives and oils, for example, may be thinned by the initial cleaning but not completely removed.

5. Install the platen in the printer. Discard the cleaning swabs after use. Do not reuse them.
6. Make sure the bearings and drive gear are on the shaft of the platen.



7. Align the platen with the gear to the left and lower it into the printer's bottom frame.



8. Rotate the platen bearing latch release tabs down on the right and left sides towards the rear of the printer and snap them into place.

Allow the printer to dry for one minute before closing the dispenser door, media cover, or loading labels.

Other Printer Maintenance

There are no user-level maintenance procedures beyond those detailed in this section.

See [Troubleshooting](#) for more information on diagnosing printer and print problems.

Replacing the Printhead

If you need to replace the printhead, read the procedure and review the removal and installation steps before actually replacing the printhead.



CAUTION: Prepare your work area by protecting it against static discharge. Your work area must be static-safe and include a properly grounded conductive cushioned mat to hold the printer and a conductive wrist strap for yourself.

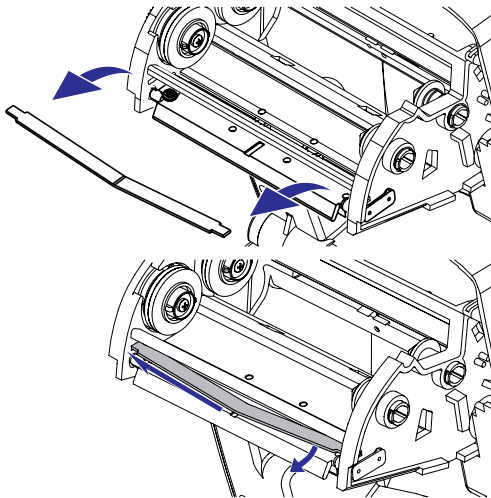


CAUTION: Turn printer power OFF and unplug the power cord before replacing the printhead.

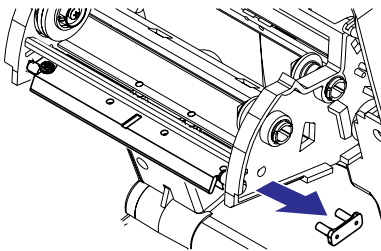
Before following the steps in this procedure, open the printer by pulling the release latches forward and then lifting the top cover.

To remove the printhead:

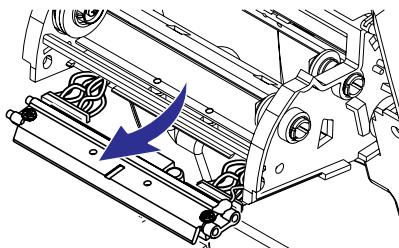
1. Remove any transfer ribbon from the printer.
2. Grasp the print head spring and pull it to the left; then, slide it free of the carriage.



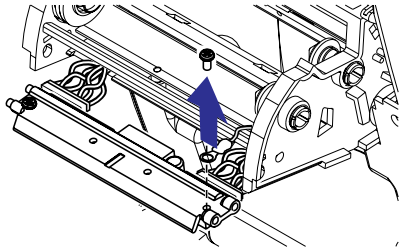
3. Use the spring to pry the printhead clip off the right side of the carriage.



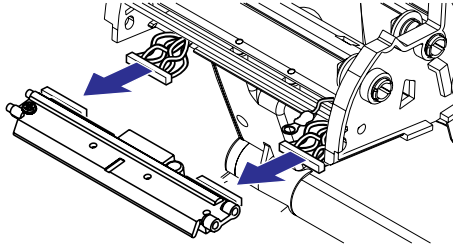
4. Pull the printhead and bracket forward.



- Use a #2 Phillips driver to remove the screw that holds the ground wire.

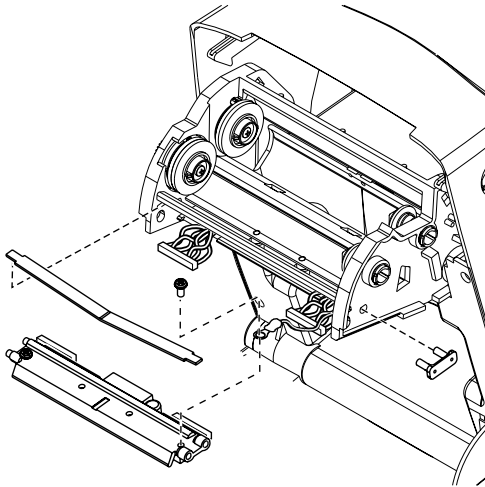


- Unplug both bundles of printhead wires from their connectors.



NOTE: The new printhead comes with a clip and a ground screw attached.

- Align the printhead and bracket to plug the left and right connectors into the black and white wire bundles.



- Attach the ground wire and secure it with the screw, then use a #2 Phillips driver to tighten it.
- Slip the left end of the printhead spring into the left side of the ribbon carriage; then slide the right end into the other side. The angle of the "V" fits into the indent on the top of the printhead bracket.
- Insert the bracket pegs into the left side of the carriage.
- Align the right side of the bracket and insert the printhead clip through the right side of the ribbon carriage into the bracket.
- Verify that the printhead moves up and down freely when pressure is applied and remains locked when released.
- Clean the printhead. Use a new pen to wipe body oils (fingerprints) and debris from the printhead. Clean from the center of the printhead to the outside (see [Cleaning the Printhead](#)).

- 14.** Reload media into the printer. Plug in the power cord, turn printer power ON, and print a status report to ensure proper function (see [Printing a Test \(Printer Configuration\) Label](#)).

Troubleshooting


This section provides information about printer error reporting that you might need for printer troubleshooting. Assorted diagnostic tests are included.

Status Light Descriptions

The LED status indicators provide information on the printer's status and error conditions if any.

Table 4 What the Status Lights are Telling You

LED Status and Color	Printer Status	For a Resolution, Refer to Number:
Off	Off	1
Solid Green	On	2
Solid Amber	Stopped	3
Flashing Green	Normal Operation	4
Flashing Red	Stopped	5
Double Flashing Green	Paused	6
Flashing Amber	Paused	7
Alternately Flashing Green and Red	Needs service	8
Flashing Red, Red, and Green	Needs service	9
Flashing Red, Amber Green	Memory Defragmentation	10

 **NOTE:** Do NOT reset or turn off the power when you see this condition!

Status Light Error Resolutions

1. The printer is not receiving power.

The following Status Error Light Resolution numbers correspond to the descriptions listed in [Table 1](#). Each error number may have one or more resolutions to correct that error listed.

- Have you turned on the printer power?
- Check power connections from the wall outlet to the power supply, and from the power supply to the printer.
- Disconnect the printer from the wall outlet for 30 seconds and reconnect the printer to the wall outlet.

2. The printer is on and in an idle state.

- No action is necessary.

3. The printer has failed its power-on self-test (POST).

There is a memory error.

The printhead needs to cool down.

- If this error occurs right after turning on the printer, contact an authorized reseller for assistance. When the printer is operating normally, the printer status light will be amber for about 10 seconds before turning green (solid or blinking).
- If this error occurs after you have been printing, turn the printer power off and on, and then resume printing.
- If this error continues, turn the printer power off for five minutes or more, and then turn it on. If the amber light persists, then the printer requires service.

4. The printer is receiving data.

- As soon as all of the data has been received, the status LED will turn green and the printer will automatically resume operation.

5. The media is out.

The printhead is open.

- Load the media. Then press the **Feed** button to resume printing.
- Close the top cover and press the **Feed** button to resume printing.

6. The printer is paused.

- Press the **Feed** button to resume printing.

7. The printhead is over-temperature.

- Printing will stop until the printhead cools to an acceptable printing temperature and resume when it has cooled sufficiently.

8. FLASH memory is not programmed.

- Return the printer to an authorized reseller.

9. The printhead or motor has had a critical failure.

- Return the printer to an authorized reseller.

10. The printer is defragmenting memory.



CAUTION: Do NOT turn off the printer power during defragmentation. Doing so can damage the printer.

- Defragmentation is a normal operation of the printer—necessary to manage the memory space for optimal use. The printer will defragment its memory both after a factory default and when the printer detects that a defragment is required. When the printer is in this condition, allow it to finish defragmenting. If this warning occurs frequently, check the label formats. Formats which frequently and repeatedly write to and erase from memory may cause the printer to defragment often. Using formats that avoid frequent and repeated memory write/erase events will minimize the need for defragmentation.
- If this warning condition does not go away, the printer requires service. Contact Technical Support.

Print Quality Problems

Use a short description in a reference topic to briefly describe what the reference item does, what it is, or what it is used for.

No print on the label.

- Check the type of media—The media may not be direct thermal media which is required when printing without ribbon (i.e. thermal transfer). See the test procedure [Determining Thermal Media Types](#).
- Check the media orientation—The wrong side of the media is facing up contacting the printhead. The media roll may not be outside wound.
- Check the transfer ribbon winding—The outside of the ribbon must be wound with the transfer material facing out. See the following ribbon test procedures: [Ribbon Test with Adhesive](#) and [Ribbon Scratch Test](#).
- Check if the media is loaded correctly—Follow the instructions for [Loading Roll Media](#). For printing using transfer ribbon, see [Loading Transfer Ribbon](#).

The printed image does not look right.

- The printhead is dirty. Clean the printhead (see [Cleaning the Printhead](#)).
- The printhead is under temperature.
- Adjust the print darkness and/or print speed.
 - Use the ^PR (speed) and ~SD (darkness) commands referenced in the ZPL Programming Guide.
 - Use the D (darkness/density) and S (speed) commands in the EPL Programmer's Guide.
 - Manually adjust print darkness with the six-flash sequence of [Feed Button Modes](#).
 - The Windows printer driver or the application software may change these settings and may require a change to optimize print quality.
- The media being used is incompatible with the printer. Be sure to use the recommended media for your application, and always use Zebra-approved labels and tags.

- The printhead has worn out. The printhead is a consumable item and will wear out due to friction between the media and printhead. Using unapproved media may shorten life or damage your printhead. Replace the printhead.
- The platen may need cleaning or replacement. The platen (driver) roller may be losing traction due to:
 - Foreign objects have become attached to its surface,
 - The normal rubbery-smooth surface has become polished and slippery, or
 - There is damage to the normally smooth and flat print surface such as from box knife cuts.

There are long tracks of missing print (blank vertical lines) on several labels.

- The printhead is dirty. Clean the printhead.
- The printhead elements are damaged.

The printing does not start at the top of the label or misprint of one to three labels.

- The media may not be threaded correctly. Follow the instructions for [Loading Roll Media](#).
- The printer needs to be calibrated. Refer to the two-flash sequence of [Feed Button Modes](#).
- ZPL Label Formats—The correct media sensor may not be activated. Manual calibration selects the media sensing method for the labels being used (refer to the ^MN command in the ZPL Programming Guide).
- ZPL Label Formats—Verify that the Label Top (^LT) command is correctly set for your application (consult the ZPL Programming Guide).
- EPL Label Formats—The correct media sensor may not be activated for label dispensing, blackline or notch sensing, or for Gap/Web sensing. Manual calibration selects the media sensing method for the labels being used (refer to the O and Q commands in the EPL Programmer's Guide).
- EPL Label Formats—Verify that the Set Label Length (Q) command is correctly set for your application (consult the EPL Programmer's Guide).

A ZPL label format was sent to, but not recognized by the printer.

- Is the printer in PAUSE mode? If so, press the **Feed** button.
- If the status LED is on or flashing, see [Status Light Descriptions](#).
- Make sure the data cable is correctly installed.
- A communications problem has occurred. First, make sure that the correct communications port on the computer is selected. See [Connecting your Printer to a Device](#).
- Verify the correct Format and Control Prefix on the printer match what you are using in your ZPL programmed label format. The default Format (COMMAND CHAR) is Caret (^) character and the Control (CONTROL CHAR) is a Tilde (~) character. Verify the characters with the Configuration Status label printout. See the one-flash sequence of [Feed Button Modes](#) to print this label.

An EPL label format was sent to, but not recognized by the printer.

- Is the printer in PAUSE mode? If so, press the **Feed** button.
- If the printer has label dispensing enabled, the printer may be waiting for the label to be removed. The liner/web must be properly threaded through the label dispenser mechanism (peeler) to correctly operate in label dispense mode, see [Label Dispenser Option](#).
- If the status LED is on or flashing, see [Status Light Descriptions](#).
- Make sure the data cable is correctly installed.

- A communications problem has occurred. First, make sure that the correct communications port (USB) on the computer is selected. Refer to [Connecting your Printer to a Device](#) .

Manual Calibration

Manual calibration is recommended whenever you are using pre-printed media or if the printer will not correctly auto-calibrate.

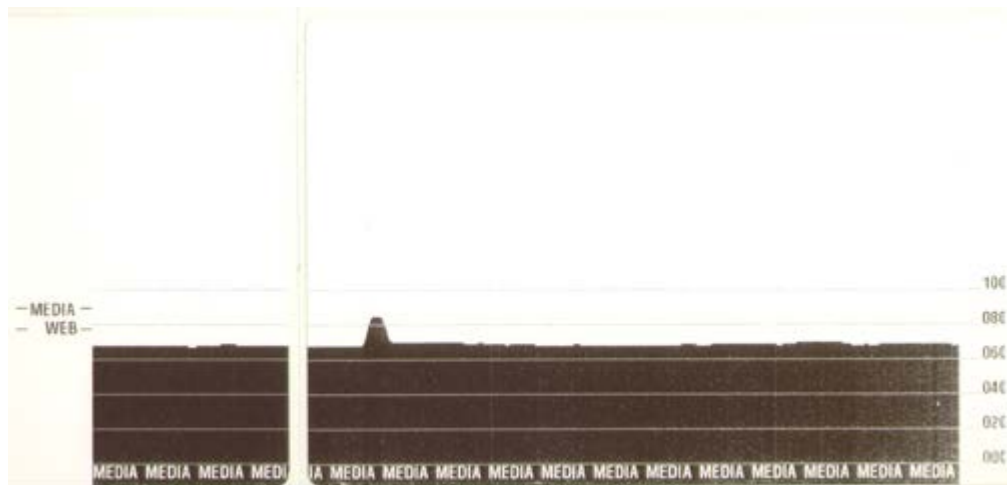
1. Make sure media is loaded.
2. Turn printer power on.
3. Press and hold the **Feed** button until the green status light flashes once, then twice, and then continuing until the flash groups reach the group of seven flashes. Release the **Feed** button.

The printer will set the media sensor for the label backing being used. After it is done making this adjustment, the roll will automatically feed until a label is positioned at the printhead. A profile of the media sensor settings (similar to the example below) will print. Upon completion, the printer will save the new settings in memory and the printer is ready for normal operation.

4. Press the **Feed** button. One entire blank label will feed. If this does not happen, try resetting printer defaults (refer to the four-flash sequence in [Feed Button Modes](#) on page 97) and recalibrating the printer.



NOTE: Performing a manual calibration disables the auto-calibration function. To return to auto-calibration, default the printer (see the four-flash sequence in [Feed Button Modes](#) on page 97).



Troubleshooting Tests

Printing a Configuration Label

To print out a listing of the printer's current configuration, refer to the one-flash sequence in [Feed Button Modes](#) . See [ZPL Configuration](#) to interpret the label.

```

PRINTER CONFIGURATION
Zebra Technologies
ZTC GK888:
10.0..... DARKNESS
4 IPS..... PRINT SPEED
+000..... TEAR OFF
TEAR OFF..... PRINT MODE
GAP/NOTCH..... MEDIA TYPE
WEB..... SENSOR TYPE
AUTO..... SENSOR SELECT
DIRECT-THERMAL..... PRINT METHOD
832..... PRINT WIDTH
1248..... LABEL LENGTH
39.0IN 989MM..... MAXIMUM LENGTH
CONNECTED..... USB COMM.
BIDIRECTIONAL..... PARALLEL COMM.
9600..... BAUD
8 BITS..... DATA BITS
NONE..... PARITY
DTR & XON/XOFF..... HOST HANDSHAKE
NONE..... PROTOCOL
<~> 7EH..... CONTROL CHAR
<^> SEH..... COMMAND CHAR
<.> 2CH..... DELIM. CHAR
ZPL II..... ZPL MODE
NO MOTION..... MEDIA POWER UP
FEED..... HEAD CLOSE
DEFAULT..... BACKFEED
+000..... LABEL TOP
+0000..... LEFT POSITION
NO..... HEXDUMP
046..... WEB S.
096..... MEDIA S.
032..... WEB GAIN
050..... MARK S.
000..... MARK GAIN
095..... MARK MED S.
000..... MARK MEDIA GAIN
095..... CONT MEDIA S.
007..... CONT MEDIA GAIN
075..... RIBBON OUT
040..... RIBBON GAIN
066..... TAKE LABEL
CWF..... MODES ENABLED
..... MODES DISABLED
832 8/MM FULL..... RESOLUTION
V71.17.112P12A <-..... FIRMWARE
1.3..... XML SCHEMA
V27.00.01..... HARDWARE ID
CUSTOMIZED..... CONFIGURATION
2104k.....R: RAM
5632k.....E: ONBOARD FLASH
NONE..... FORMAT CONVERT
DISABLED..... ZBI
2.1..... ZBI VERSION
10.665 IN..... LAST CLEANED
10.665 IN..... HEAD USAGE
10.665 IN..... TOTAL USAGE
10.665 IN..... RESET CNTR1
10.665 IN..... RESET CNTR2
..... SERIAL NUMBER
MAINT. OFF..... EARLY WARNING
2010-09-22 08:24:57 TIME STAMP
FIRMWARE IN THIS PRINTER IS COPYRIGHTED
    
```

Recalibration

Recalibrate the printer if it starts to display unusual symptoms, such as skipping labels. Refer to the two-flash sequence in [Feed Button Modes](#) .

Resetting the Factory Default Values

Sometimes, resetting the printer to the factory defaults may solve some problems.

Refer to the four-flash sequence in [Feed Button Modes](#).

Communications Diagnostics

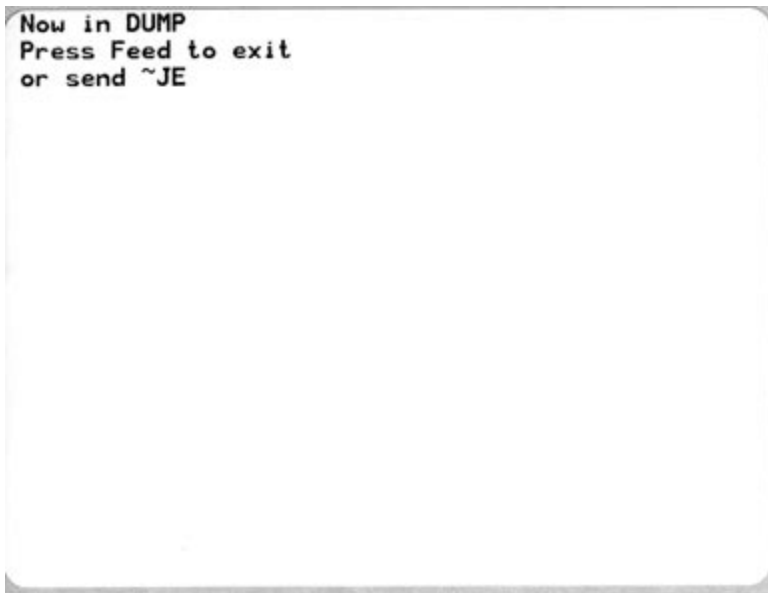
If there is a problem transferring data between the computer and printer, try putting the printer in communications diagnostics mode.

The printer will print the ASCII characters and their respective hexadecimal values (a sample is shown below) for any data received from the host computer. To find out how.

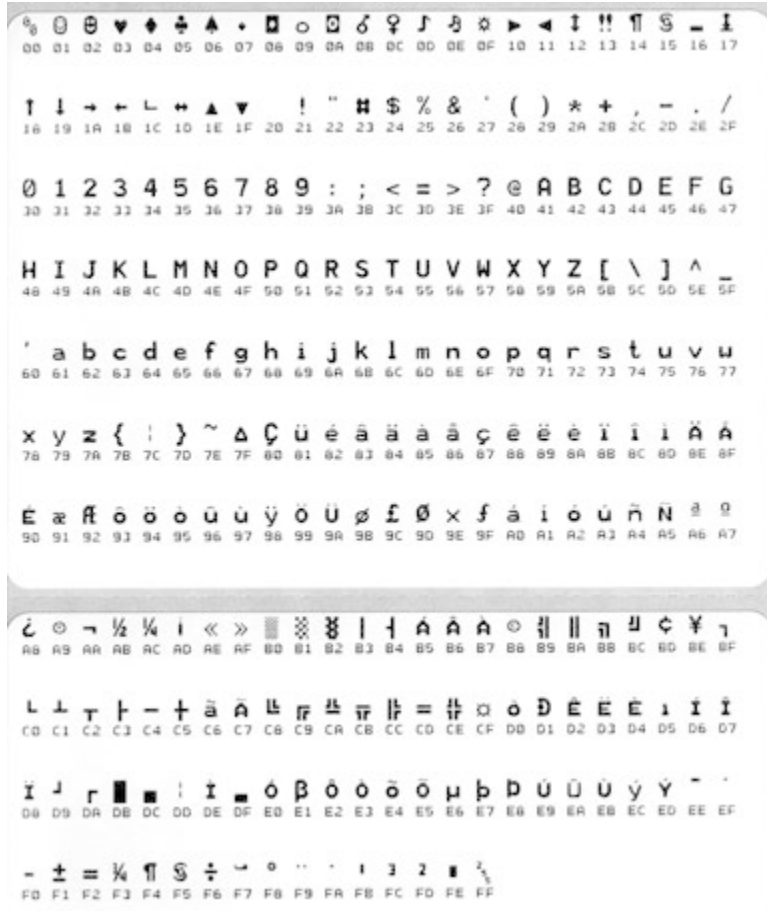
There are multiple ways to enter hex data dump mode:

- The ~JD ZPL command
- The dump EPL command
- On power up with the **Feed** button pressed. Refer to the power-off mode procedure in [Feed Button Modes](#).

The printer will print 'Now in DUMP' (see below) and advance to the top of the next label.



The following example of a communications DUMP mode printed out. The printout displays hexadecimal data 00h-FFh (0-255 decimal) with a unique character for each hexadecimal value displayed above the hexadecimal data.



The blank lines between the lines of data are where the serial port and Bluetooth data handling errors get logged. The errors are:

To exit the diagnostic mode and resume printing, turn off and then turn on the printer. An alternate method for exiting the diagnostic mode is to press the Feed button as many times as it takes to clear the printer's command buffer and print 'Out of DUMP' on the label.

- F = Frame Error
- P = Parity Error
- N = Noise Error
- O = Data Overrun Error



Feed Button Modes

To access the Feed button modes, with the printer power off, press and hold the **Feed** button while turning on power to the printer.

Power Off Modes




Flash Sequence	Action
Amber - Red Flashing	<p>Firmware Download Mode—The printer starts rapidly flashing red to denote entry into the Firmware Download mode. Releasing the Feed button here will start initializing the printer for download.</p> <p>The printer is ready to start downloading firmware when the status light begins to slowly flash between red and green.</p> <p>See Sending Files to the Printer for more information on using the Firmware (and File) Download utility available for use with this printer. Firmware updates for your printer, if available, are posted on the Zebra on our web site at: zebra.com</p>
Amber	<p>Normal Operations Mode—The printer continues into a normal printer initialization. Releasing the Feed button here will allow the printer to start normally without firmware download or operating in Communications Diagnostic mode.</p>
Green	<p>Communications Diagnostic (Dump) Mode—Release the Feed button immediately after the printer status light turns green.</p> <p>The printer will print <code>Now in DUMP</code> at the top of the label and then advance to the next label.</p> <p>To exit diagnostic mode and resume printing, turn off and then turn on the printer.</p> <p>Another way to exit diagnostic mode is to press the Feed button as many times as it takes to clear the printer's command buffer and print 'Out of DUMP' on the label.</p>


Power On Modes

With the printer power on and the top cover closed, press and hold the **Feed** button for several seconds.

The green status LED will flash a number of times in sequence. The explanation at the right (Action column) shows what happens when you release the key after the start of the specific number of flashes and before the next flash sequence starts.

Flash Sequence	Action
*	<p>Configuration Status—The printer prints a detailed printer configuration status label.</p> <p>You can use this label to:</p> <ul style="list-style-type: none"> • verify proper print function • assist with configuring computer communications, maintenance, and troubleshooting • help our support team diagnose and address issues as needed

Flash Sequence	Action
* **	<p>Standard Auto Media Calibration—The printer detects and sets media type and media length and adjusts the media sensors for optimal performance with the installed media (equivalent ZPL command ~JC).</p> <p>The printer will feed one to four labels while calibrating.</p> <p> NOTE: Users familiar with the Zebra EPL desktop printer can use this Feed mode to replace power-up AutoSensing calibration (equivalent EPL command XA).</p>
* ** ***	<p>Serial Port Configuration—Applies only to printers with serial interface ports.</p> <p>To reset serial port communication parameters, except for Flow Control, press and release the Feed button while the LED rapidly flashes amber and green.</p> <p>For autobaud synchronization, send the ^XA^XZ command sequence to the printer while the LED rapidly flashes amber and green.</p> <p>When the printer and host are synchronized, the LED changes to solid green.</p> <p> NOTE: No labels will print during autobaud synchronization.</p>
* ** *** ****	<p>Factory Defaults—Resets the printer to the factory default settings (equivalent to ZPL command ^JUN). See ZPL Configuration on page 108 for a description of the primary configuration settings and their associated ZPL commands.</p> <p>Some configuration settings are not returned to their initial ‘out of box’ settings. Other settings are exclusively set, viewed, and controlled by programming and are also reset.</p> <p>This performs a standard media calibration and then a memory defragmentation routine.</p> <p>When the printer has entered Factory Default mode, the status light will turn amber for three seconds. During that time you may do two things:</p> <ul style="list-style-type: none"> • Do nothing and the printer will reset the factory defaults automatically as described above, OR • Press and hold the Feed button to enter Factory Default Reset mode for printers that have a network print option such as Ethernet, Wi-Fi, or Bluetooth (equivalent ZPL command ^JUF.) <p>Releasing the button after the first flash resets the network factory options only (equivalent ZPL command ^JUN).</p> <p>Releasing the button after the third flash sequence (three flashes) will reset both printer and network settings (equivalent ZPL commands ^JUN and ^JUF)</p>
* ** *** **** *****	<p>Print Width Adjustment—Prints a succession of boxes starting at the minimum print width and ending in the printer’s maximum print width in 4mm increments.</p> <p>Press the Feed button once when the printer has reached the desired maximum print width.</p> <p> NOTE: The printer driver and applications can override this setting.</p>

Flash Sequence	Action
<p>* ** *** **** ***** *****</p>	<p>Print Darkness (Density) Adjustment—Prints a succession of bar code simulation patterns starting at the minimum darkness (print density/heat) and ending in the printer’s maximum darkness in increments of four using the ZPL darkness setting range values.</p> <p>Press the Feed button once the pattern is clear and legible. Do not continue to increase the darkness setting or bar code line widths may become distorted reducing readability.</p> <p> NOTE: The printer driver and applications can override this setting.</p>
<p>* ** *** **** ***** ***** *****</p>	<p>Manual Media Calibration—The printer runs extensive tests to detect and set media type and media length, and then it adjusts the media sensors for optimal performance with the installed media (equivalent ZPL command ~JG).</p> <p>Manual calibration is recommended whenever you are using pre-printed media, print on the liner or if the printer will not correctly auto-calibrate. A graphical profile of the media sensing will print.</p> <p>See Manual Calibration on page 94 for more details and considerations</p>
<p>To exit configuration mode, keep the Feed button pressed until after the seventh flash sequence cycle ends, then release the button.</p>	

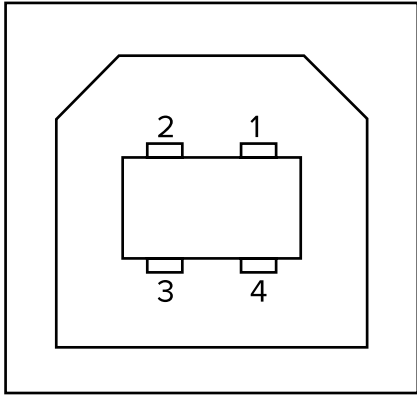
Interface Wiring

It is important to follow the interface connection specifications for each type of connection you plan to use.

Universal Serial Bus Interface

The figure below displays the cable wiring required to use the printer's USB interface.

The printer requires a cable or cable packaging that bears the "Certified USB™" mark to guarantee USB 2.0 compliance.

	Pin	Signal
	1	Vbus - N/C
	2	D-
	3	D+
	4	Ground
Shell	Shield / Drain Wire	

For printer supported operating systems and drivers, see the software and documentation CD or visit the Zebra website at zebra.com.

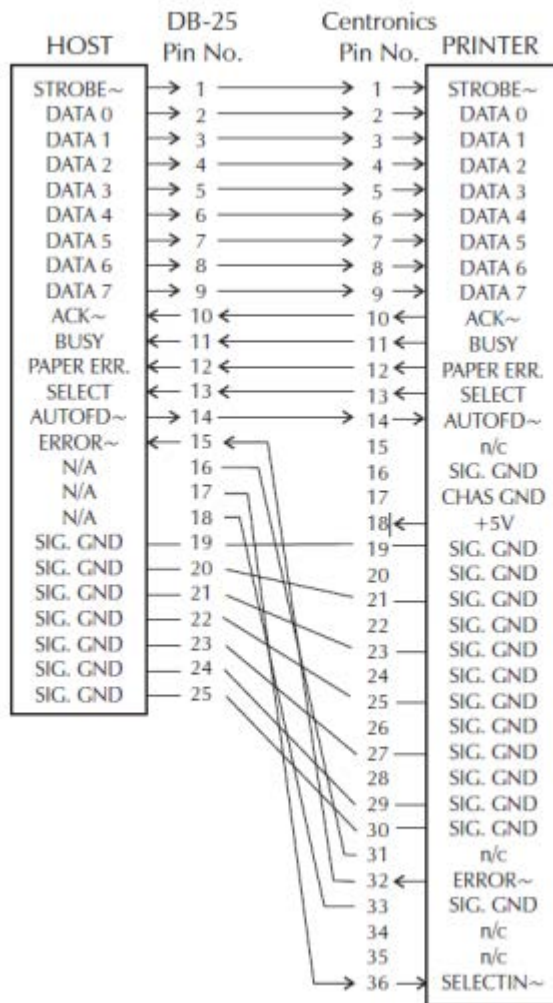
For information on the USB interface, go to the USB website at usb.org.

Parallel Interface

The printer's parallel interface uses the IEEE 1284-A to 1284-B parallel interface cables.

The host connector has a DB-25 pin male connector. The printer connector is a Centronics-style connector. Early model G-Series printers had a DB-25 pin connector on the printer side, as well as on the host connection side (IEEE 1284-A to A parallel cable).

Figure 17 DB-25 to Centronics (Cable)



Ethernet Interface

This interface requires a UTP RJ45 Ethernet cable rated CAT-5 or better.

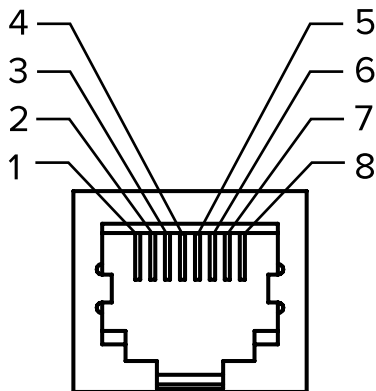
The table below provides the cable's pinout assignments.

Table 5 Ethernet Pin-Outs

Signal	Pin	Pin	Signal
Tx+	1	1	Tx+
Tx-	2	2	Tx-
Rx+	3	3	Rx+
—	4	4	—
—	5	5	—

Table 5 Ethernet Pin-Outs (Continued)

Signal	Pin	Pin	Signal
Rx-	6	6	Rx-
—	7	7	—
—	8	8	—



Serial Port Interface

Configurations for the Serial Port Interface are described here.

Table 6 Serial Port Signal Description

Pin	Description
1	Not used
2	RXD (receive data) input to the printer
3	TXD (transmit data) output from the printer
4	DTR (data terminal ready) output from the printer -- controls when the host may send data
5	Chassis ground
6	DSR (data set ready) input to the printer
7	RTS (request to send) output from the printer -- always in the ACTIVE condition when the printer is turned on
8	CTS (clear to send) - Not used by the printer
9	+5 V @ 0.75 A fused



IMPORTANT: The maximum current available through the serial and/or parallel port is not to exceed a total of 0.75 Amps.

When XON/XOFF handshaking is selected, data flow is controlled by the ASCII control codes DC1 (XON) and DC3 (XOFF). The DTR control lead will have no effect.

Interconnecting to DCE Devices—When the printer is connected via its RS-232 interface to data communication equipment (DCE) such as a modem, a STANDARD RS-232 (straight-through) interface cable must be used. The figure below shows the connections required for this cable.

Table 7 Connecting the Printer to a DCE Device

DB-25S Connector to DCE Device	DB-9P Connector to Printer	DB-9S Connector to DCE Device	DB-9P Connector to Printer

Connecting to the KDU (Keyboard Display Unit)—The KDU was designed for DCE printer connections and requires a Zebra custom serial port gender-changing adapter. The KDU now includes the KDU adapter and the Zebra kit part number for the KDU Adapter is 105934-088.

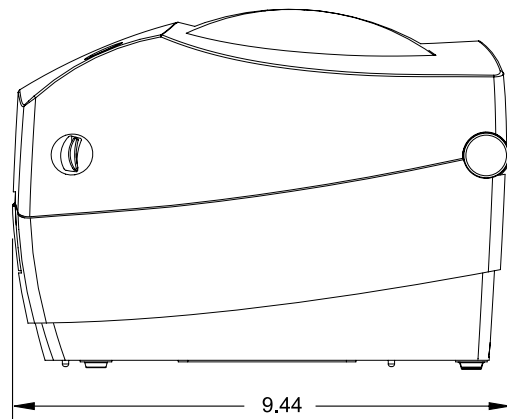
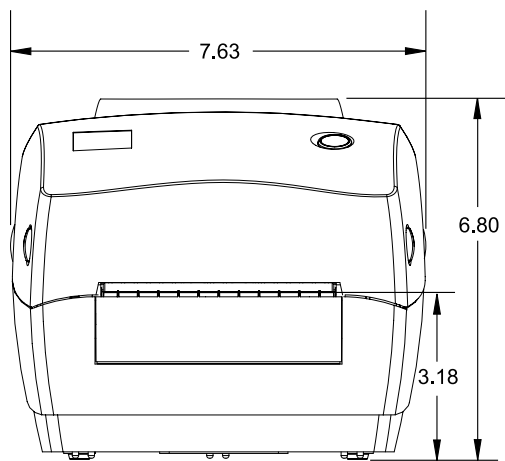
Dimensions

This section provides external printer dimensions.

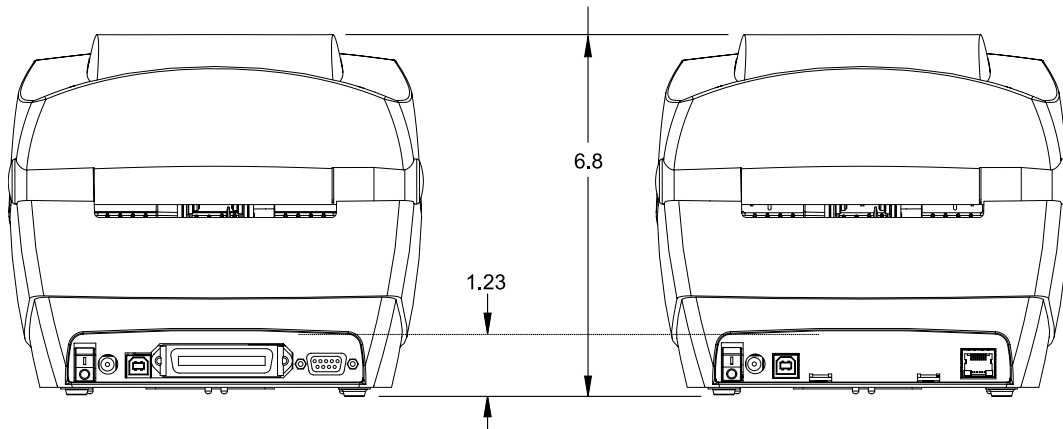
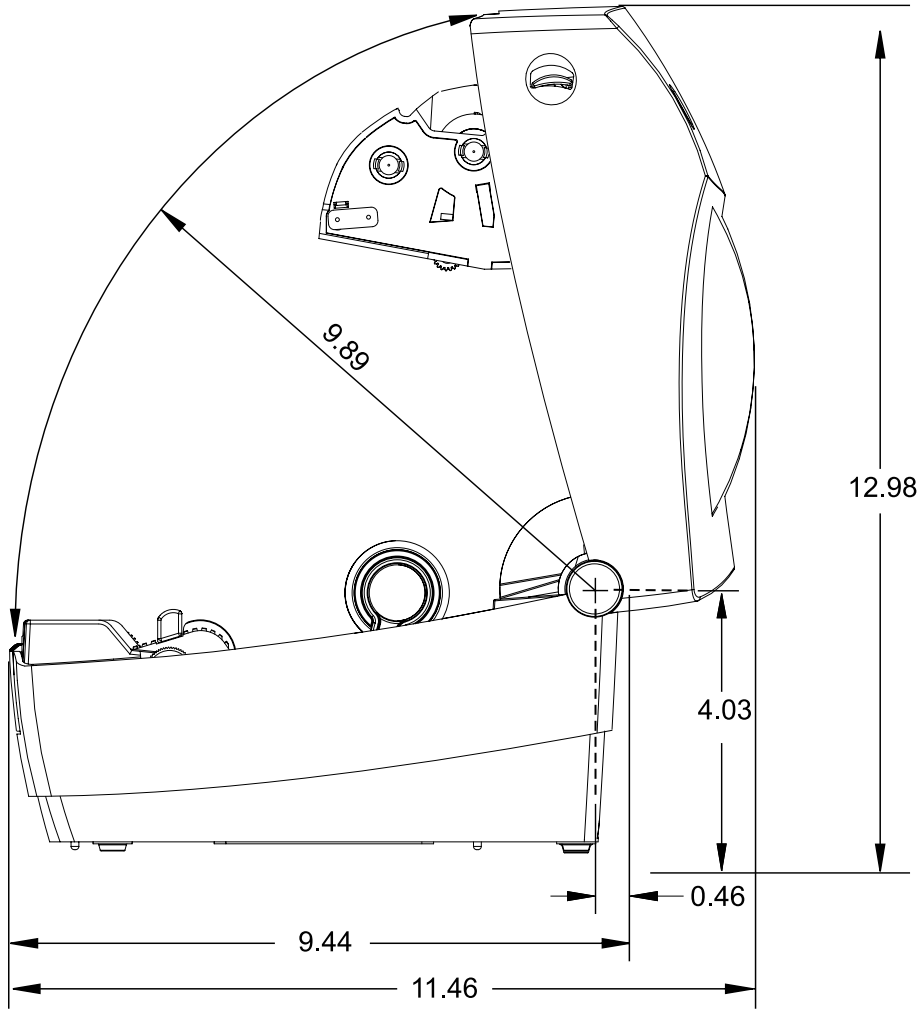
External GK888t Printer Dimensions



NOTE: All dimensions are in inches.

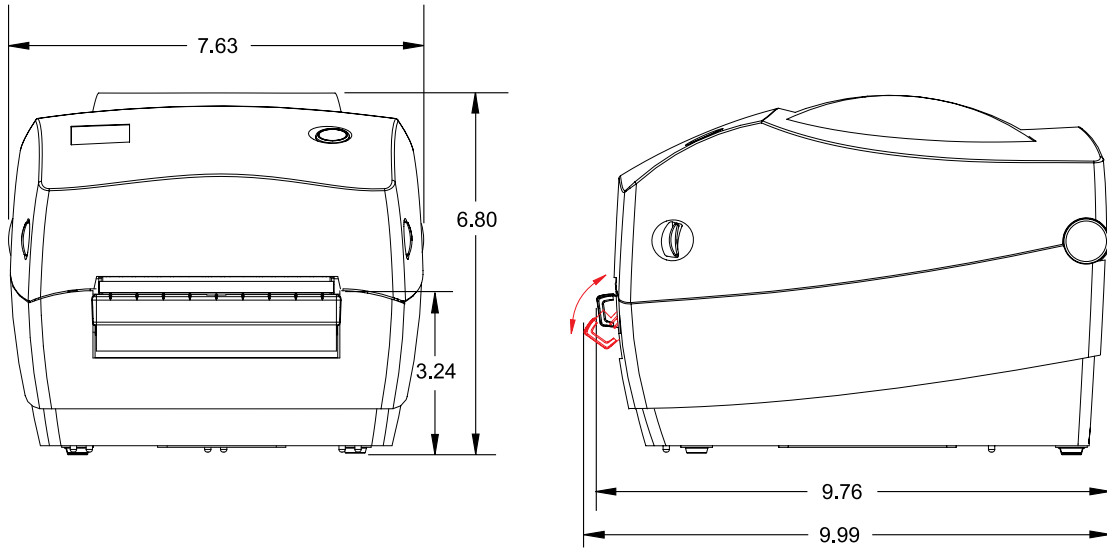


Dimensions

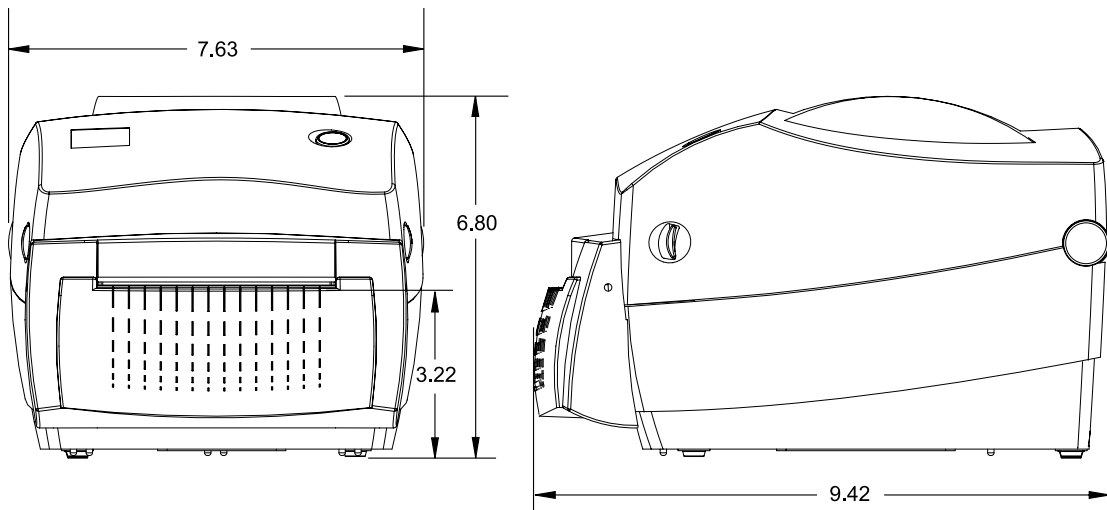


Label Dispenser Dimensions

Dimensions



Cutter Dimensions



ZPL Configuration

This section provides a basic overview of managing printer configuration, the Configuring Status Printout, and Printer Memory Printouts.

Managing the ZPL Printer Configuration

The ZPL printer is designed to allow you to change printer settings dynamically for fast first label out printing. Printer parameters that are persistent, will be retained for the following formats to use.

Those settings will remain in effect until they are changed by subsequent commands, the printer is reset, power is cycled, or when you restore a parameter that has a factory default by using the **Feed** Button Mode four (4) flash routine. The ZPL Configuration Update command (^JUS) saves and restores printer configurations to initialize (or re-initialize) the printer with pre-configured settings.

- To keep settings after a power cycle or printer reset, a ^JUS can be sent to the printer to save all current persistent settings.
- The values are recalled with a ^JUR command to restore the last saved values to your printer.

ZPL stores all parameters at once with a single command discussed above. The legacy EPL programming language (supported by this printer) changes and saves individual commands immediately. Most configurations and settings are shared between ZPL and EPL. For example, changing the speed setting with EPL will also change the speed set for ZPL operations. The changed EPL setting will persist even after a power cycle or reset issued by either printer language.

To assist the developer, the printer has a listing of the operating parameters, a Printer Configuration Label. It can be accessed by using the printer's **Feed** button and the [Printing a Test \(Printer Configuration\) Label](#) on page 29. The Zebra Setup Utility and the ZebraDesigner Windows driver also print this label and other printer status labels to help you manage your printer.

ZPL Printer Configuration Format

Managing more than one printer can be done by creating a printer configuration programming file to send to one or more printers or ZebraNet Bridge can be used to clone a printer's setup.

The figure below shows the basic structure of a ZPL programming configuration file.

See the ZPL programmer's guide and the ZPL Configuration Status to Command Cross-reference on page 101 to create a programming file. The Zebra Setup Utility (ZSU) can be used to send programming files to the printer. Windows Notepad (text editor) can be used to create programming files.

Figure 18 Configuration Parameter Format Structure

^XA — Start Format Command

Format Commands are order sensitive

- a) General Print and command settings
- b) Media handling and behaviors
- c) Media print size

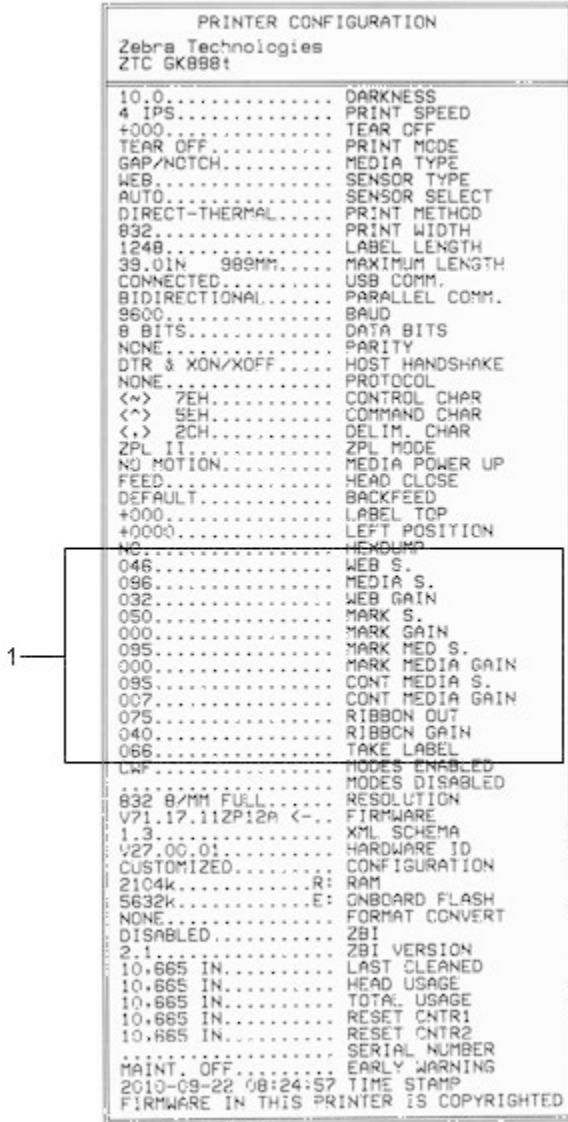
^ **JUS** command to save

^XZ — End Format Command

ZPL Configuration Status to Command Cross-Reference

The Printer Configuration Label, shown below, provides a listing of a majority of the configuration settings that can be set by ZPL command.

Figure 19 Configuration Label Printout



1	Sensor Settings used for Service Purposes
---	---

Table 8 ZPL Commands and Configuration Receipt Callout Cross-Reference

Command	Listing Name	Description
~SD	DARKNESS	Default: 10.0
^PR	PRINT SPEED	Default: 6 IPS / 152.4 mm/s (max.)

Table 8 ZPL Commands and Configuration Receipt Callout Cross-Reference (Continued)

Command	Listing Name	Description
~TA	TEAR OFF	Default: +000
^MN	MEDIA TYPE	Default: GAP/NOTCH
	SENSOR TYPE	Default: WEB
	SENSOR SELECT	Default: AUTO (^MNA - Auto-Detect)
^PW	PRINT WIDTH	Default: 832 (dots)
^LL	LABEL LENGTH	Default: 1225 (dots) (the value constantly recalibrates with automatic Web-Gap detection for label media)
^ML	MAXIMUM LENGTH	Default: 39.0IN 989MM
—	USB COMM.	Connection Status: Connected / Not Connected
—	PARALLEL COMM.	Connection Available: BIDIRECTIONAL
^SCa	BAUD	Default: 9600
^SC , b	DATA BITS	Default: 8 BITS
^SC , , c	PARITY	Default: NONE
^SC , , , e	HOST HANDSHAKE	Default: DTR & XON/XOFF
^SC , , , , f	PROTOCOL	Default: NONE
	SER COMM. MODE	Default: AUTO
	CUTTER TYPE	Option Present: LINER/TAG FULL (cut)
^CT / ~CT	CONTROL CHAR	Default: <^> 7EH
^CC / ~CC	COMMAND CHAR	Default: <^> 5EH
^CD / ~CD	DELIM./CHAR	Default: <,> 2CH
^SZ	ZPL MODE	Default: ZPL II
^MFa	MEDIA POWER UP	Default: NO MOTION
^MF , b	HEAD CLOSE	Default: FEED
~JS	BACKFEED	Default: DEFAULT
^LT	LABEL TOP	Default: +000
^LS	LEFT POSITION	Default: +0000
~JD / ~JE	HEXDUMP	Default: NO (~JE)

From this point in the Configuration Receipt listing, the printout has sensor settings and values are displayed to troubleshoot sensor and media operations. These are typically used by Zebra Tech Support to diagnose printer problems.

The configuration settings listed here resume after the TAKE LABEL sensor value. These listings contain printer features seldom changed from default or provide status information (e.g. Firmware Version).

Table 9 ZPL Commands and Configuration Receipt Callout Cross-Reference

Command	Listing Name	Description
^MP	MODES ENABLED	Default: CWF (See ^MP Command) (CWF for wireless printers with display)
	MODES DISABLED	Default: (nothing set)
^JM	RESOLUTION	Default: 832 8/mm FULL (203 dpi) 1280 8/mm FULL (300 dpi)
	FIRMWARE	Lists ZPL Firmware Version
—	XML SCHEMA	1.3
—	HARDWARE ID	Lists Firmware Boot-block Version
—	CONFIGURATION	CUSTOMIZED (after first use)
—	RAM	2104k..... R:
—	OPTION MEMORY	65536k.....B: (only displays this if installed)
—	ONBOARD FLASH	1536k.....E:
^MU	FORMAT CONVERT	NONE
^JI / ~JI	ZBI	DISABLED (Requires key to enable)
	ZBI VERSION	2.1
^JH ^MA ~RO	LAST CLEANED	X,XXX IN
	HEAD USAGE	X,XXX IN
	TOTAL USAGE	X,XXX IN
	RESET CNTR1	X,XXX IN
	RESET CNTR1	X,XXX IN
—	SERIAL NUMBER	XXXXXXXXXXXX
^JH	EARLY WARNING	MAINT. OFF

The printer has the ability to set a command or a group of commands once for all receipts (or labels) that follow. Those settings will remain in effect until they are changed by subsequent commands, the printer is reset, or you restore factory defaults.

Printer Memory Management and Related Status Reports

To help you manage printer resources, the printer supports a variety of format commands to manage memory, transfer objects (between memory areas, import, and export), object naming, and provide various printer operating status reports.

They are very similar to the old DOS commands like DIR (directory listing) and DEL (delete file). The most common reports are also part of the Zebra Setup Utility and ZebraDesigner Windows driver.

It is recommended that a single command be processed within this type of format (form). A single command is easily reused as a maintenance and development tool.

^XA — Start Format Command	
	(A Single Format Command is recommended for purposes of reuse.)
^XZ — End Format Command	

Many of the commands that transfer objects, manage, and report on memory are control (~) commands. They do not need to be within a format (form). They will be processed immediately upon receipt by the printer whether in a format (form) or not.



NOTE: To maximize available printer memory, the printer includes an automatic memory defragmentation (defrag). Several factors can trigger a defrag operation. Changing memory by deleting or adding objects to memory can cause a defrag. The printer status light will begin flashing Red, Amber, and Green when a memory defrag is in process. Do not turn off the printer's power while the status light is flashing. This operation may take several minutes if memory use and file fragmentation are high.

ZPL Programming for Memory Management


ZPL has various printer memory locations that are used to run the printer, assemble the print image, store formats (forms), graphics, fonts, and configuration settings.

- ZPL treats Formats (Forms), Fonts, and Graphics like files; and memory locations like disk drives in the DOS operating system environment:
 - Memory Object Naming: Up to sixteen alphanumeric characters followed by a three alphanumeric character file extension: i.e. 123456789ABCDEF.TTF
 - Legacy ZPL printers with V60.13 firmware and earlier can only use the 8.3 file name format versus today's 16.3 file name format.
- Allows moving objects between memory locations and deleting objects.
- Supports DOS directory style file list reports as printouts or status to the host.
- Allows use of 'wild cards' (*) in file access

Table 10 Object Management and Status Report Commands

Command	Name	Description
^WD	Print Directory Label	Prints a list of objects and resident bar codes and fonts in all addressable memory locations.
~WC	Print Configuration Label	Prints a configuration Status Receipt (Label) Same as Feed Button mode one flash routine.
^ID	Object Delete	Deletes objects from the printer memory.
^TO	Transfer Object	Used to copy an object or group of objects from one memory area to another.
^CM	Change Memory Letter Designation	Reassigns a letter designation to a printer memory area.
^JB	Initialize Flash memory	Similar to formatting a disk - erases all objects from the specified memory locations B: or E: .

Table 10 Object Management and Status Report Commands (Continued)

Command	Name	Description
~JB	Reset Optional Memory	Similar to formatting a disk - erases all objects from the B: memory (factory option).
~DY	Download Objects	Downloads and installs a wide variety of printer usable programming objects: fonts (OpenType and TrueType), graphics, and other object data types.  NOTE: It is recommended that you use ZebraNet Bridge to download graphics and fonts to the printer.
~DG	Download Graphic	Downloads an ASCII Hex representation of a graphic image. This is used by ZebraDesigner (label creation application) for graphics.
^FL	Font Linking	Appends secondary TrueType font or fonts to the primary TrueType font to add glyphs (characters).
^LF	List Font Links	Prints a list of the linked fonts.
^CW	Font Identifier	Assigns a single alphanumeric character as an alias to a font stored in memory.

