Zebra® TLP 2824™
Desktop Printer

User Guide

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

- Reorient or relocate the receiving antenna.

- Increase the separation between the equipment and the receiver.

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

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

NOTE: This unit was tested with shielded cables on the peripheral devices. Shielded cables must be used with the unit to insure compliance.

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Shock Hazard

The printer and power supply should never be operated in a location where either one can get wet. Personal injury could result.

Media and Ribbon

Always use high-quality, approved labels, tags and ribbons. If adhesive backed labels are used that DO NOT 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. Permanent damage to the print head may result if a non-approved ribbon is used as it may be wound incorrectly for the printer or contain chemicals corrosive to the print head. Approved supplies can be ordered from your dealer.

If labels or ribbon run out while printing, DO NOT turn the power switch OFF (0) while reloading or data loss may result. After loading new supplies, press the feed button to resume printing.

Static Discharge

The discharge of electrostatic energy that accumulates on the surface of the human body or other surfaces can damage or destroy the print head or electronic components used in this device. DO NOT TOUCH the print head or the electronic components under the top cover.

Thermal Printing

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

Contents

Introduction

Getting Started

980485-001A

Introduction

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

Hello!

Thank you for choosing a Zebra® TLP 2824™ printer, a high-quality on-demand printer manufactured by the industry leader in quality, service, and value—Zebra Technologies Corporation. For over 25 years, Zebra Technologies Corporation has provided customers with the highest caliber of products and support.

Your printer is a high-quality on-demand printer. The printer provides thermal-transfer printing (which uses ribbon) and direct-thermal printing.

This manual provides all of the information you will need to operate your printer on a daily basis. To create label formats, refer to your programming guide. This guide is available by contacting your distributor or dealer.

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

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

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.

Sample Labels

Printer

Documentation and Warranty

Cleaning Pen

Ribbon Take-Up Core

Power Supply and Cords
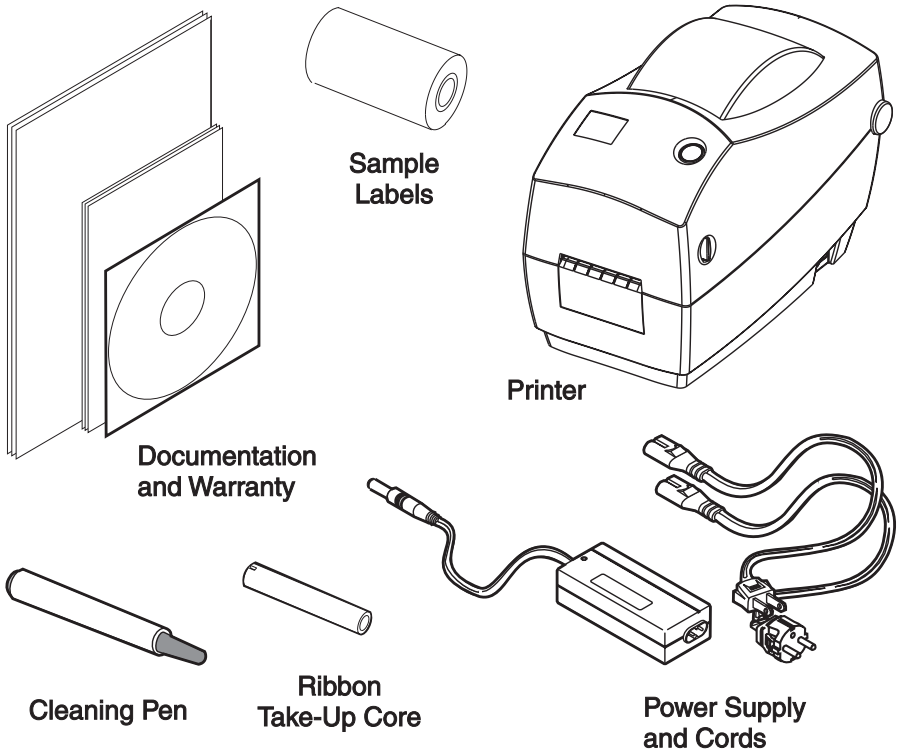
Inspecting the Printer

Look at the outside of the printer and make sure that all parts are present.

Feed Button **Status Light**

Release Latches

Power Switch **Power Supply Receptacle** **Interface Connectors** (vary by option)
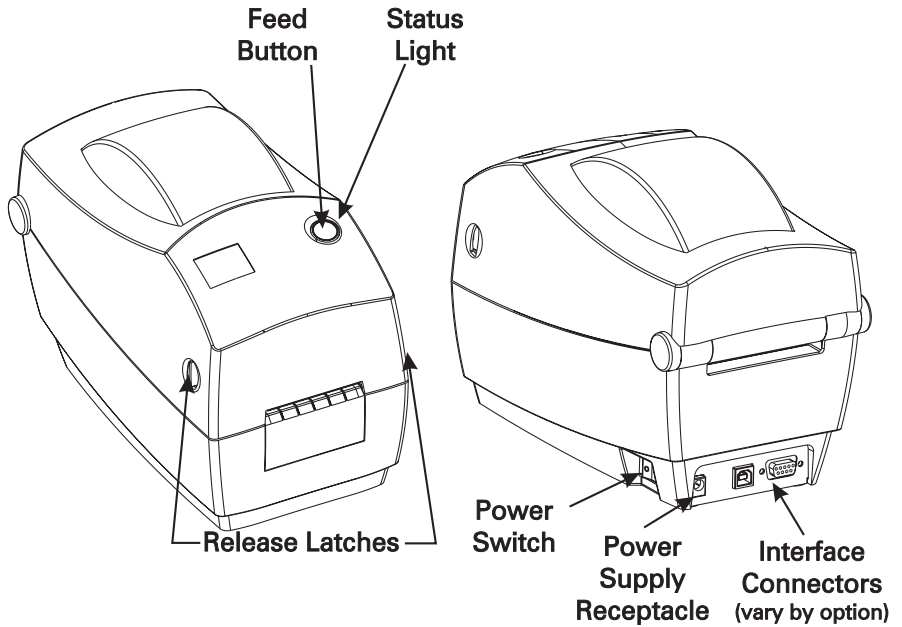
Opening the printer
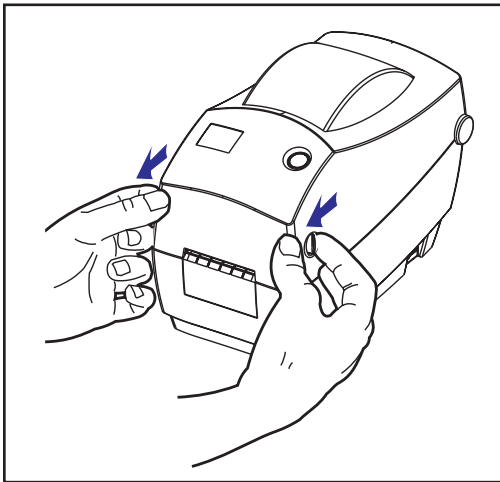
To access the media compartment, you must open the printer.

Pull the release levers towards you and lift the cover.

After opening the printer, check the media compartment.

Ribbon Carriage

Take-Up Hub
Supply Hub
Take-Up Gear

Tear Bar
Print Head

Ribbon
Sensor

Cover
Lock

Media
Hangers

Open-Hanger
Lock

Head-Up
Sensor

Gap
Sensor

Media Guide
Adjuster

Peel-Off Option

Bar

Media
Guides

Platen
Roller

Roller

Sensor
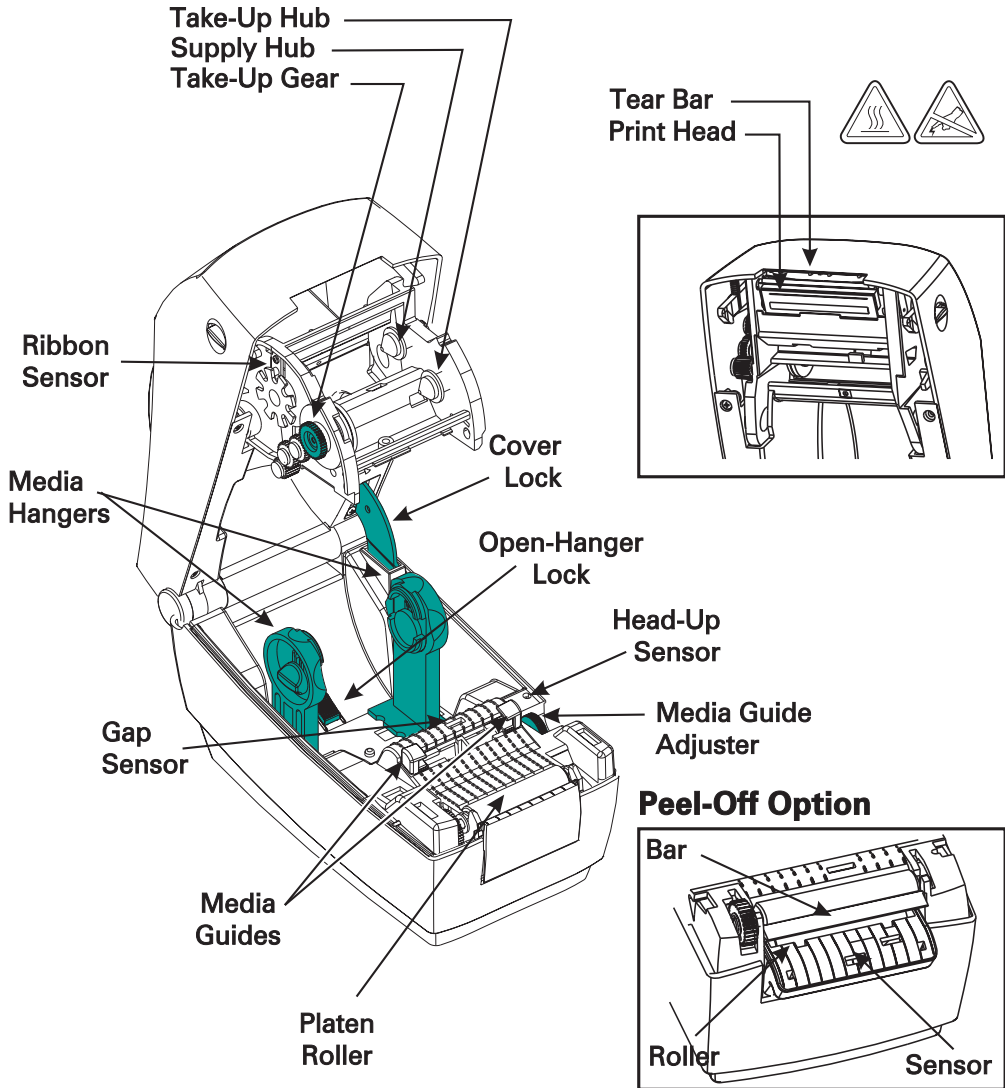
Closing the printer
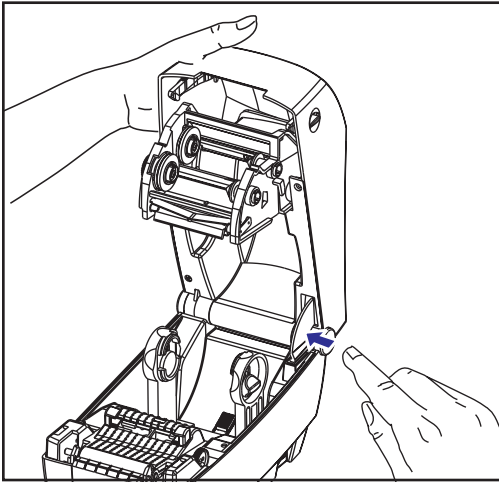
Hold the top cover and press the "kick-stand" cover lock to release. Lower the top cover. The ribbon carriage automatically folds up into place.
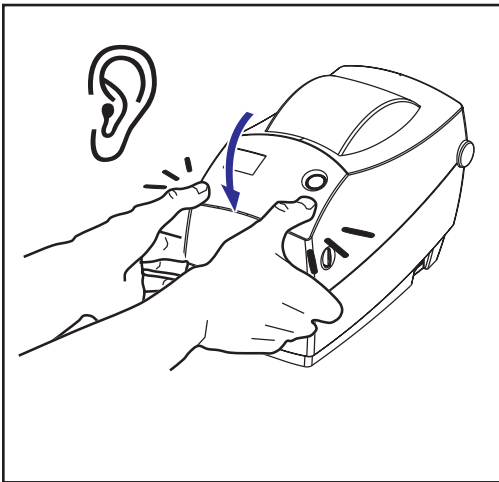
Press down until the cover snaps closed.

Reporting Damage

If you discover damage or missing parts:

- Immediately notify and file a damage report with the shipping company. Zebra Technologies Corporation is not responsible for any damage incurred during shipment of the printer and will not cover the repair of this damage under its warranty policy.

- Keep the carton and all packing material for inspection.

- Notify the authorized reseller

Related Documentation

Depending on the options you have ordered or choose to use with your new printer, you will find the following documents helpful:

- *EPL2® Programmer's Manual—Programming for Page Mode Printing*

- *ZebraNet® PrintServer II™ for Ethernet Networks Installation and Operation Guide*

- *Universal Serial Bus Specification* available from the USB Implementation Forum

This section describes how to set up your printer for the first time and use the most common operating procedures for loading media in tear-off mode and loading ribbon.

Modes of Printing

You can operate this printer in different modes:

- Standard tear-off mode allows you to tear off each label (or a strip of labels) after it is printed.

- In optional peel-off mode, the backing material is peeled away from the label as it is printed. After this label is removed, the next one is printed.

- In optional cutter mode, an attached unit cuts through the media.

The printer typically uses roll media, but you can use fan-fold or other continuous media as well.

For procedures to use optional modes and features, refer to the Operation and Options section.

Attaching Power Supply

Check the power supply to make certain it is appropriate for your input voltage.

Warning: Use the power supply that came with your printer.

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

1. Make sure the power switch is in the off position (forward).

2. The DC power supply has a barrel connector on one end that must be inserted into the power supply receptacle on the back of the printer.

3. Insert the separate AC power cord into the power supply.

4. Plug the other end of the cord into an appropriate AC electrical outlet.
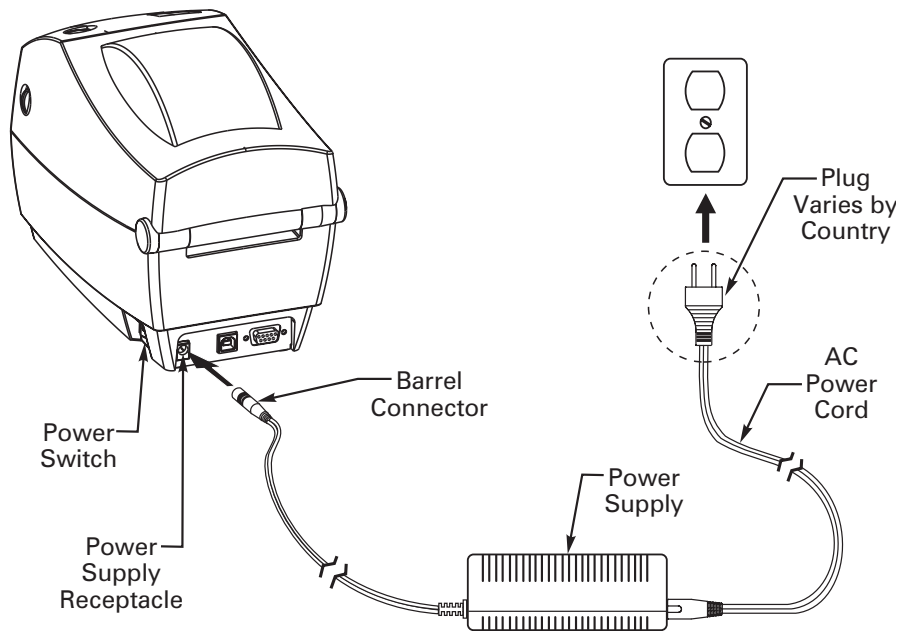
Loading Roll Media

When you load media, you must place the roll on the media hangers and then adjust the media guides.

You must use the correct media for the type of printing you require. When printing without a ribbon, you must use direct thermal media. When using ribbon, you must use thermal transfer media. The printer's ribbon sensor detects motion of the supply spindle.

Adjusting the Roll Holders
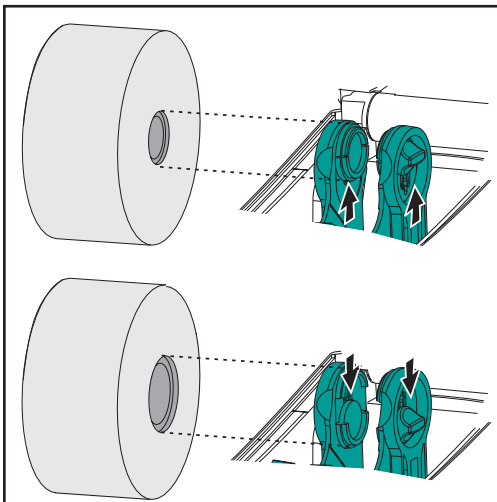
Check the core of the media roll and adjust the holders if necessary.

— For a narrow core, lift the adjusters up.

— For a wide core, press the adjusters down

Placing the Roll in the Media Compartment
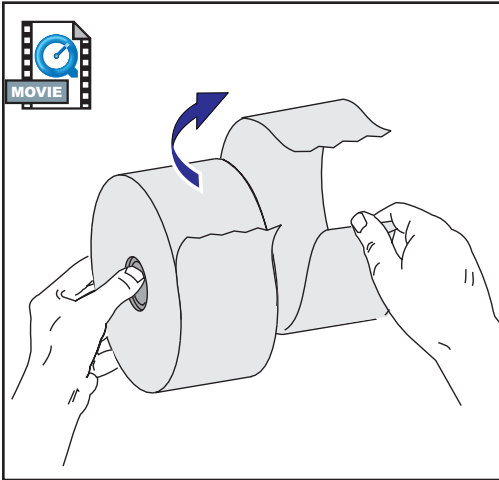
Whether your roll media is inside or outside wound you load it into the printer the same way.

1. Open the printer. Remember that you need to pull the release levers toward the front of the printer.

2. Remove the outside length of media. During shipment, the roll may become dirty when handled or dusty when stored. Removing the outside length avoids dragging adhesive or dirty media between the print head and platen.

3. Separate and hold open the media hangers.

4. Orient the media roll so that its printing surface will be up as it passes over the platen.

5. Lower the roll between the hangers and close them onto the core.
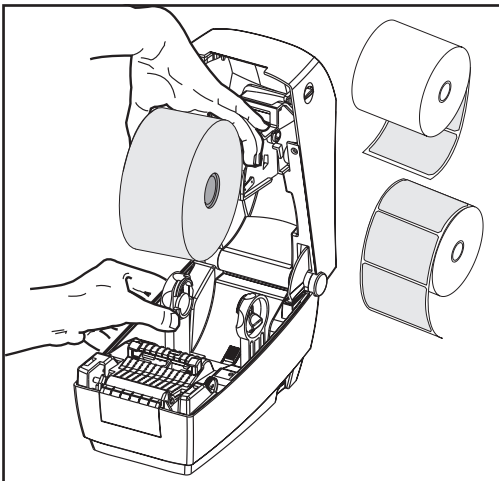
Adjusting the Guides
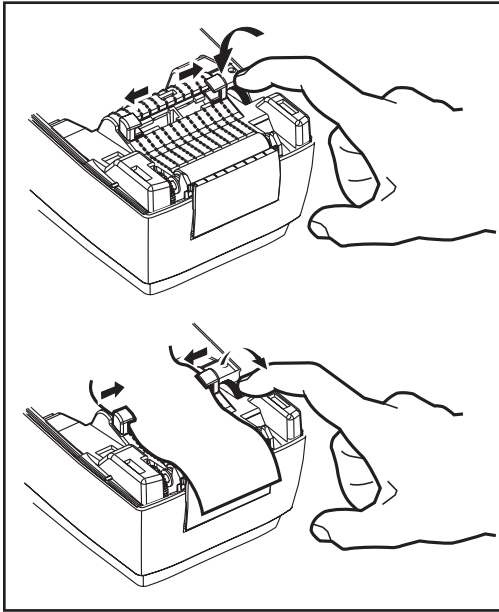
The adjustable guides direct the media toward the platen and print head.

1. Open the media guides by turning the guide adjuster knob to the rear.

2. Thread the media through the guides.

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

4. Unless you need to load ribbon, close the top cover. Remember that you need to release the cover lock, lower the top cover, and press down until the latches snap into place.

Loading Ribbon

You must use thermal transfer media (accepts wax and/or resin transferred off a ribbon) when you use a ribbon. When loading ribbon, you install the supply and take-up rolls, then tighten the ribbon on the carriage.

Install the Ribbon Supply Roll
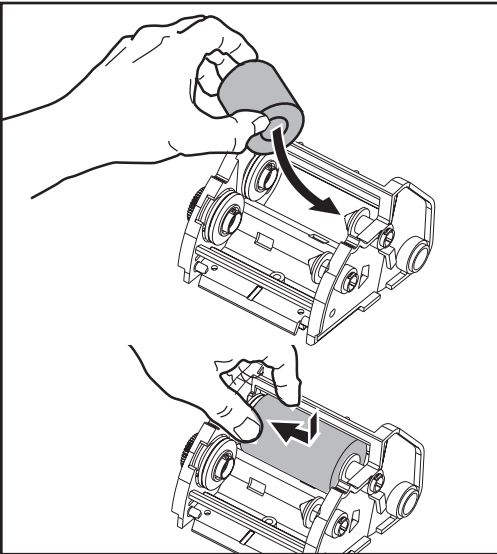
Before following these steps, prepare the ribbon by removing its wrapping and pulling its adhesive strip free.

1. Thread the ribbon through the carriage.

2. Press the right side onto the supply hub.

3. Align the notches on the left side and mount onto the spokes of the left hub.

Install the Take-Up Core
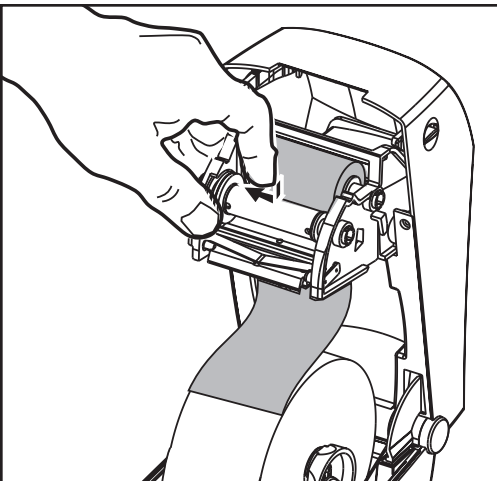
1. Press the right side onto the take-up hub.

2. Align the notches on the left side and mount onto the spokes of the left 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.

Attach and Tighten the Ribbon
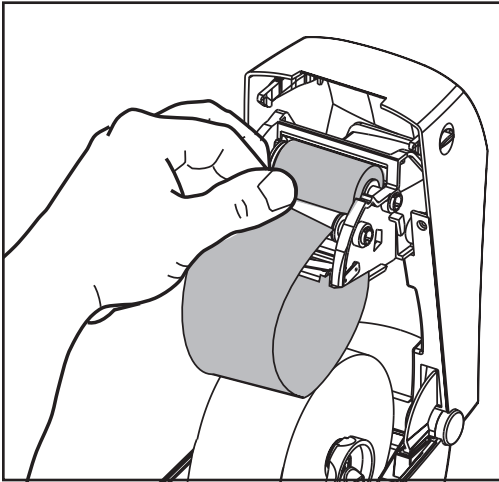
You must align the ribbon so that it will be taken straight onto the core.

1. Attach the ribbon to the take up core. Use the adhesive strip on new rolls; otherwise, use tape.
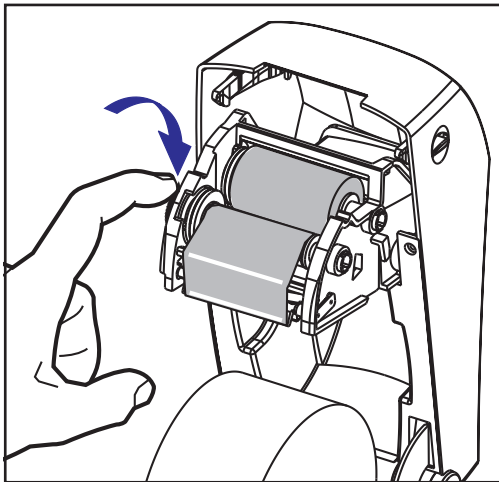
2. Turn the ribbon take-up gear counter-clockwise (top moves toward rear) to remove slack from the ribbon.

3. Close the top cover. Remember that you need to release the cover lock, lower the top cover, and press down until the latches snap into place.

Operator Controls

Power Switch

Press *backward* to turn **ON** or *forward* to turn **OFF** the printer.

CAUTION: The power should be turned off before connecting or disconnecting the communications and power cables.

Feed Button

Forces the printer to feed one blank label.

Takes the printer out of a "pause" condition. (The printer is put into "pause" by either a programming command or an error condition.) See "What the Status Light is Telling You" on page 35.

Use the Feed button for printer setup and status (see "Feed Button Modes" on page 42).

Status Light

Functions as a printer operational indicator (see "What the Status Light is Telling You" on page 35).
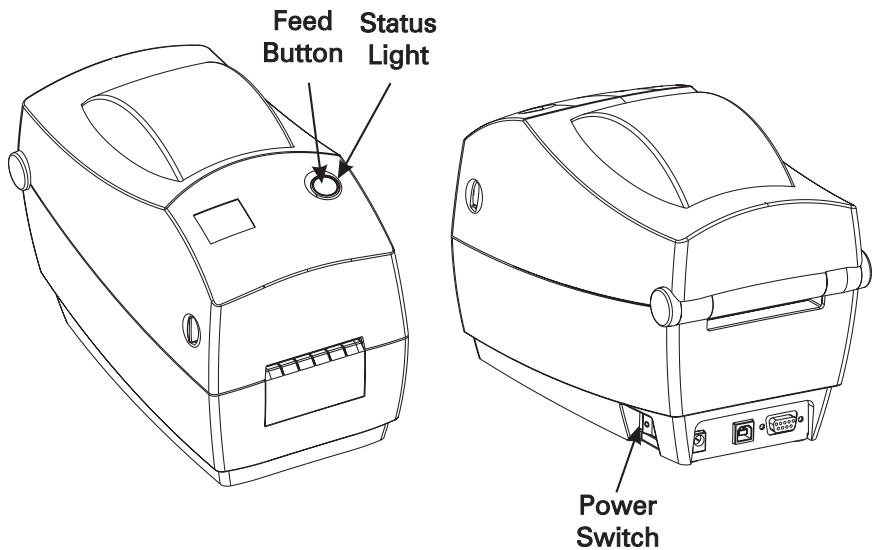
Media Length Sensing

Before you connect the printer to your computer, make sure that the printer is in proper working order. You can do this by making the printer measure media and print a status printout.
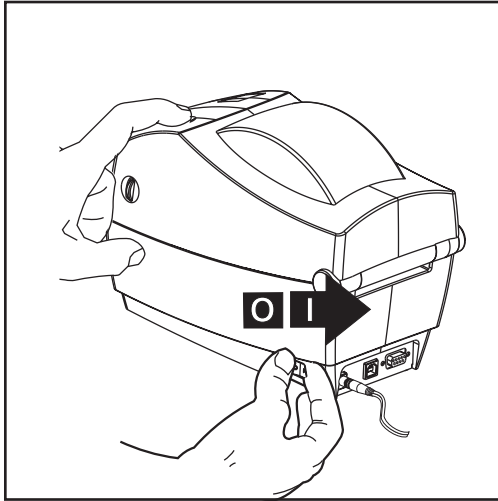
After loading media, perform the following procedure that measures the length of each label or tag. Make sure the top cover of the printer is closed.

1. Make sure that printer power is off.

2. Press and hold the feed button.

3. Turn printer power on.

4. When the status light blinks, release the feed button.

5. The printer advances the media to measure and verify the length of individual labels or tags. The printer then prints a status summary and remains in diagnostic dump mode.

6. To begin normal operation, tap the feed button. The printer prints "out of DUMP" and advances a label.
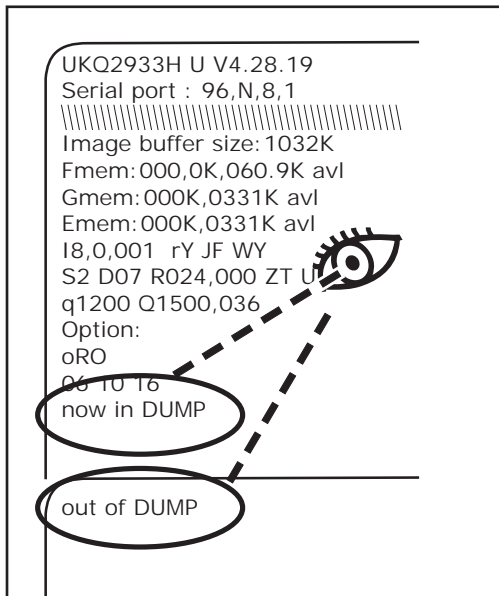
If the status light remains amber or red or you cannot get this printout, refer to Troubleshooting on page 35.

```
UKQ2933H U V4.28.19
Serial port : 96,N,8,1
\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
Image buffer size:1032K
Fmem:000,0K,060.9K avl
Gmem:000K,0331K avl
Emem:000K,0331K avl
I8,0,001  rY JF WY
S2 D07 R024,000 ZT U
q1200 Q1500,036
Option:
oRO
06 10 16
now in DUMP

out of DUMP
```

Hooking Up the Printer and Computer

Your printer will have one of three combinations of interfaces:

- Parallel

- Universal Serial Bus (USB) and DB-9 serial

- Ethernet and RJ-11 serial

Each specific interface option—USB, parallel, ethernet, serial—is discussed individually.

You must supply the required interface cable for your application.

CAUTIONS:Keep the power switch in the OFF position when attaching the interface cable.

The power supply barrel connector must be inserted into the power supply receptacle on the back of the printer before connecting or disconnecting the communications cables.

This printer complies with FCC "Rules and Regulations," Part 15, for Class B Equipment, using fully shielded six-foot data cables. Use of longer cables or unshielded cables may increase radiated emissions above the Class B limits.

Interface Cable Requirements

Data cables must be of fully shielded construction and fitted with metal or metalized connector shells. Shielded cables and connectors are required to prevent radiation and reception of electrical noise.

To minimize electrical noise pickup in the cable:

Keep data cables as short as possible (6' [1.83 m] recommended).

Do not tightly bundle the data cables with power cords.

Do not tie the data cables to power wire conduits.

USB Interface Requirements

Universal Serial Bus (version 1.1) provides a high-speed interface that is compatible with your existing PC hardware. USB's "plug and play" design makes installation easy. Multiple printers can share a single USB port/hub.

Parallel Interface Requirements

The required cable (IEEE 1284-compliant is recommended) must have a standard 36-pin parallel connector on one end, which is plugged into the parallel port located on the back of the printer. The other end of the parallel interface cable connects to the printer connector at the host computer.

For pinout information, refer to page 44.

Ethernet Interface Requirements

Ethernet provides a powerful networking capability that can be of use in a variety of internet/intranet printing solutions. After you load media and close the top cover, you can press the test button next to the connector on the rear of the printer to get an ethernet configuration label.

Serial Interface Requirements

The standard cable must have a nine-pin "D" type (DB-9P) male connector on one end, which is plugged into the mating (DB-9S) serial port located on the back of the printer.

There is an optional serial interface that uses a 6-pin RJ-11 male connector on one end, which is plugged into the mating RJ-11 alternative serial port located on the back of the printer.

The other end of the signal interface cable connects to a serial port at the host computer. Depending on the specific interface requirements, this will most likely be a straight-through cable.

For pinout information, refer to page 47

Communicating with the Printer

Universal Serial Bus (USB) Communications

The printer is a terminal device when using a universal serial bus interface. You can refer to the Universal Serial Bus Specification for details regarding this interface.

Parallel Communications

When using the parallel port, typically there is no setup is required once the cable is plugged in. If you should encounter any problems, consult the user's guide that came with your computer.

Internal ZebraNet® PrintServer II™ Ethernet Communications

You can refer to the ZebraNet® PrintServer II™ for Ethernet Networks Installation and Operation Guide for details regarding this interface.

Serial Communications

Serial communications between the printer and the host computer can be set by the **Y** command.

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.

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

Refer to the programming guide for more information about this command.

Default the Serial Parameters

The default communications parameters on the printer are 9600 baud, no parity, 8 data bits, 1 stop bit. Many utilities, downloaders and programs use these settings.

Adjusting the Print Width

Print width must be calibrated when you use a roll with a different width from previous media.

Print width may be set by using the Set Label Width (**Q**) command (described in the programming guide).

Adjusting the Print Quality

Print quality is influenced by the heat of the print head, the speed of the media and the type of media you are using. Only by experimenting will you find the optimal mix for your application.

If you find that the print darkness needs to be adjusted, refer to the heat density (**D**) command (described in the programming guide).

If you find that the print speed needs to be adjusted, refer to the print speed (**S**) command (described in the programming guide).

This section helps you get the most from your printer.

You must use programming to control many of the printer's functions. A few examples:

- The **Q** command (set form length) controls label length.
- The **O** command (hardware options) has a parameter "D" that changes the printing mode to direct thermal.

For detailed information about creating labels using page description programming language, refer to the programming guide.

To improve print quality, changing both print speed and density may be required to achieve the desired results. Your application's printer driver provides control of the speed and heat (density).

Thermal Printing

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

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

You must use the correct media for the type of printing you require. When printing without a ribbon, you must use direct thermal media. When using ribbon, you must use thermal transfer media. The printer's ribbon sensor detects motion of the supply spindle.

Replacing Supplies

If labels or ribbon run out while printing, leave the printer power on while reloading (data loss results if you turn off the printer). After you load a new label or ribbon roll, press the Feed button to restart .

Always use high quality, approved labels, tags and ribbons. 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. Permanent damage to the print head may result if a non-approved ribbon is used as it may be wound incorrectly for the printer or contain chemicals corrosive to the print head. Approved supplies can be ordered from your dealer.

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.

1. Keep the power on as you change ribbon.
2. Open the top cover, then cut the used ribbon so you can remove the cores.
3. Load a new ribbon roll. If necessary, review the Ribbon Loading steps.
4. Close the top cover.
5. Press the Feed button to restart printing.

Replacing a Partially Used Transfer Ribbon

To remove used transfer ribbon, perform the following steps.

1. Cut the ribbon from the take-up roll.
2. Remove the take-up roll and discard 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.

Printing in Peel-Mode
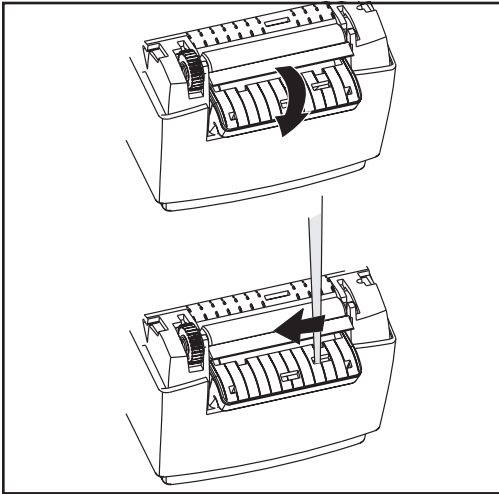
The optional dispenser allows you to print in "peel-mode" where the label backing follows a different path and the labels are presented one at a time for subsequent placement.

1. Remove several labels from the backing material.

2. Open the top cover.

3. Open the dispenser door.

4. Using a stylus, switch on the label-taken sensor.

5. Insert the backing in front of the peel bar and behind the peel roller.

6. Close the dispenser door.

7. Close the top cover.

8. Press the Feed button to advance the label.
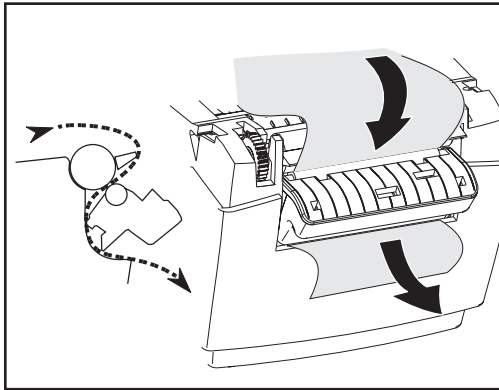
During the print job, the printer will peel off the backing and present a single label. Take the label from the printer so it will print the next label.
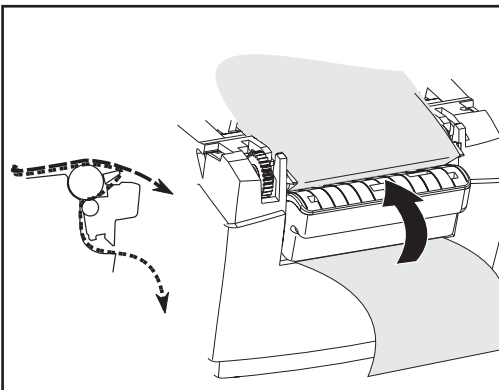
Printing on Fan-Fold Media
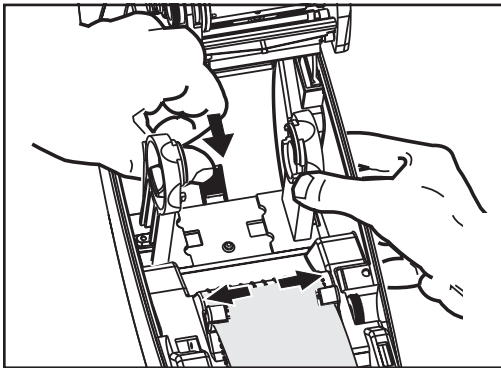
Printing on fan-fold media requires you to set both the media hangers and the media guides in position.

1. Open the top cover.

2. Open the hangers to their widest position.

3. Snap the holder-open lock towards the front of the printer.

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. Insert the media through the slot at the rear of the printer.

6. Run the media between the hangers and guides.

7. Close the top cover.
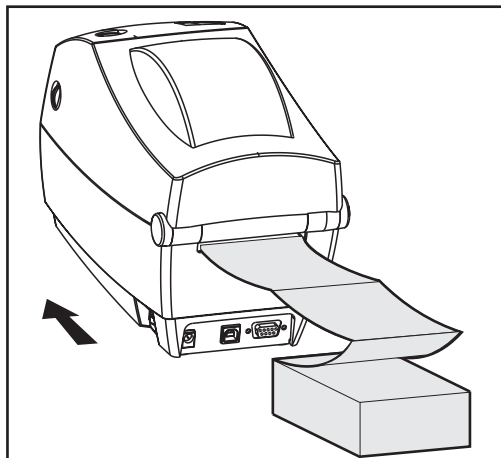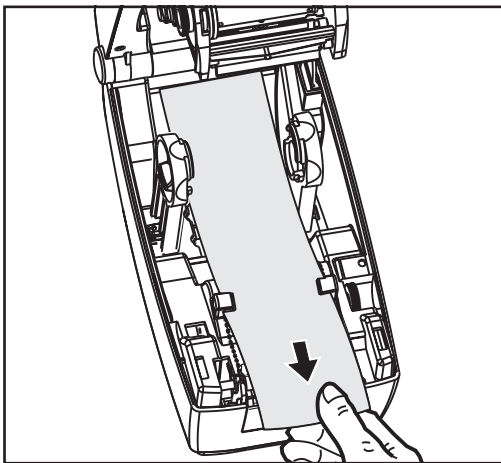
Using the Cutter Option

Printers that have a bezel with a motorized blade can dispense one or more forms that are then automatically cut from the media supply. This option cuts through continuous paper from rolls and liner between labels. Keep the cutter dry. Never use any solutions or solvents to clean the blade.

Use the **f** command to set the cut position and the **C** command to cut immediately outside a form.
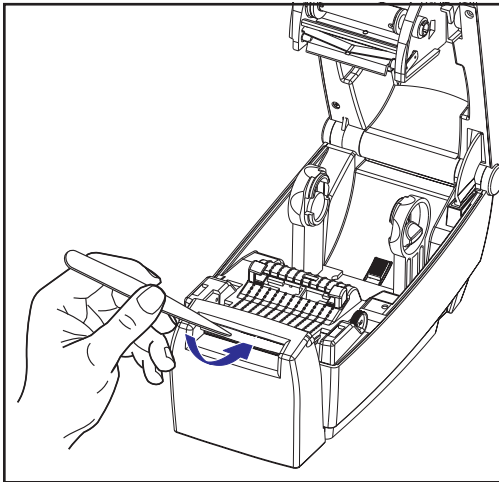
If the blade cuts through labels, adhesive can jam the cutter.

1. Turn OFF (O) printer power and unplug the power and interface cables before clearing the cutter.

2. After removing debris, plug in the power and interface cables, turn on the printer, then test for normal operation.
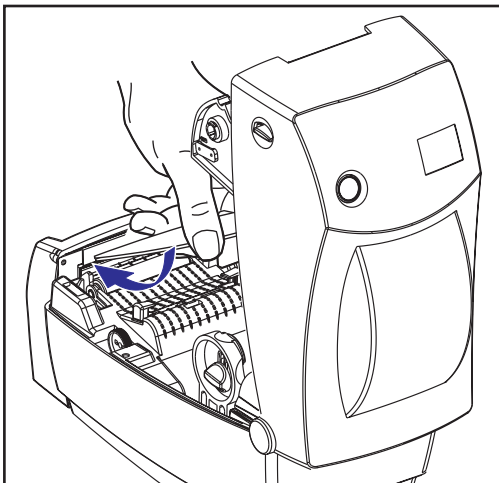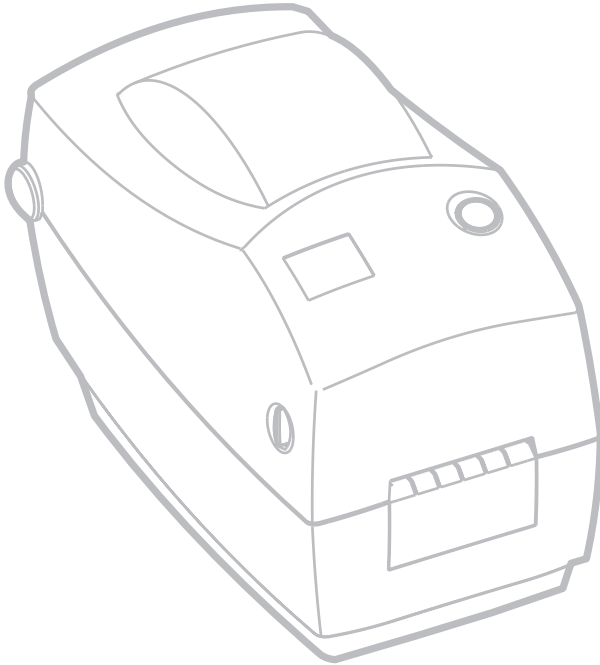
Cleaning

When you clean the printer, use one or more of the following supplies that best suits your needs:

CLEANING SUPPLIES
Cleaning pens (12)
Cleaning swabs (25)
Cleaning cards, 2-in wide (25)
Save-a-Print Head film, 2-in wide (3)

The cleaning process takes just a couple of minutes using the steps outlined below.

Printer Part	Method	Interval
Print head	Let the print head to cool for one minute, then use a new cleaning pen to swab the print elements (the thin gray line on the print head) from end to end. ***NOTE:*** *You do not have to turn off the printer to do this.* If print quality remains poor after cleaning, try the Save-a-Print Head cleaning film to remove buildup without damaging the print head. Call your authorized reseller for more information.	As necessary or after every five rolls of media
Platen roller	Manually rotate the platen roller. Clean it thoroughly with 70% isopropyl alcohol and a cleaning swab, cleaning card, or lint-free cloth.	
Peel bar	Clean it thoroughly with 70% isopropyl alcohol and a cotton swab.	As needed
Tear bar		
Exterior	Water-dampened cloth	
Interior	Brush or air blow	
Cutter	Use tweezers to remove scraps	

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

Print Head Considerations

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

Media Path Considerations

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

1. Use the alcohol in the cleaning swab or pen to soak the debris so that it breaks up.

2. Wipe the area with the cleaning swab or pen to remove the debris.

3. Discard the cleaning swab or pen after use.

Cleaning Card Considerations

Use a cleaning card to remove debris that has built-up on the platen. Avoid scrubbing or vigorously rubbing the platen; otherwise, the surface could be damaged.

1. Open the printer and remove labels.

2. Place the cleaning card into the label path so that it is under the guides and it extends between the print head and platen roller.

3. Close and latch the printer.

4. With the power switch on, press the feed switch to move the cleaning card through the printer.

5. Discard the card after use.

Platen Considerations

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

Keep a new platen available as a spare and install it whenever the printer has significantly poorer performance, print quality or media handling. 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 (70% pure or better).

1. Open the media door and remove the media.

2. Clean the platen surface with the alcohol moistened swab. Rotate the platen while swabbing. Repeat this process two to three times with a new swab to remove residual contaminates. Adhesives and oils, for example, may be thinned by the initial cleaning but not completely removed.

3. Discard the cleaning swab or pen after use.

Allow the printer to dry for one minute before loading labels.

Lubrication

No lubricating agents of any kind should be used on this printer! Some commercially available lubricants, if used, will damage the finish and the mechanical parts inside the printer.

Replacing the Platen
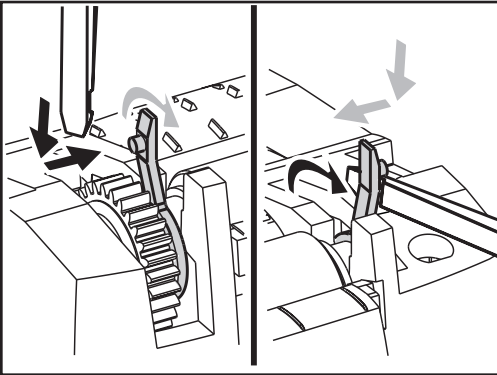
Removal

Open the printer and remove any media.

1. Using a pointed stylus (such as tweezers, small slot-head screwdriver, or razor-knife), unhook the tabs on the right and left sides. Then rotate them forward.

2. Lift the platen out of the printer's bottom frame.
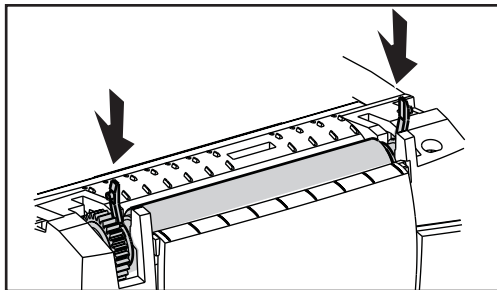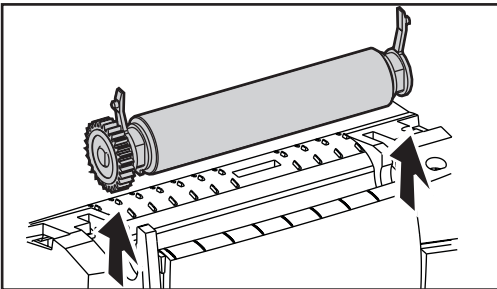
Assembly

Make sure the right bearing is on the shaft of the platen.

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

2. Rotate the tabs back and snap them into place.
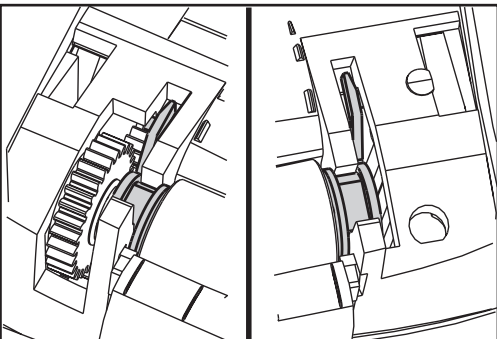
Replacing the Print Head

In the event you need to replace the print head, read the procedure and review the removal and installation steps before actually replacing the print head.

Prepare your work area by protecting 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.

NOTE: Turn the printer power off and unplug the power cord before replacing the print head.

Thermal-Transfer TLP Model
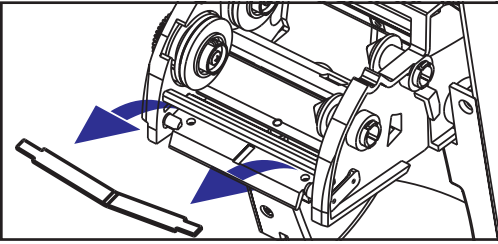
Before following the steps in this procedure, open the printer by pulling the release latches forward then lifting the top cover. Remove any ribbon from the carriage.
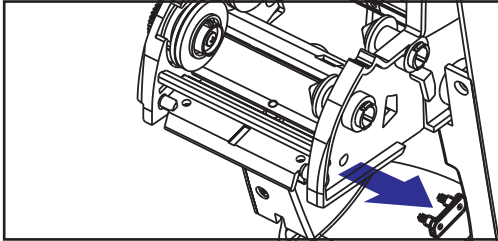
Removal

1. Grasp the print head spring and pull it to the left; then, slide it free of the carriage.
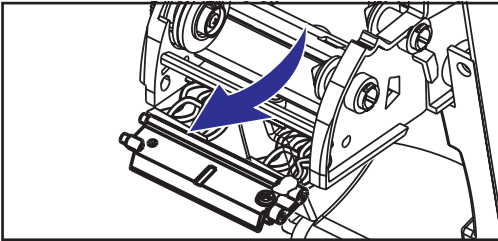
2. Use the spring to pry the print head clip off the right side of the carriage.

3. Pull the print head and bracket forward.
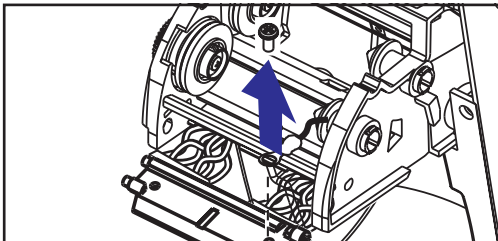
4. Use a #2 Phillips driver to remove the screw that holds the ground wire.
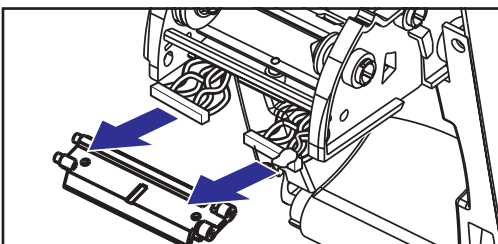
5. Unplug both bundles of print head wires from their connectors.

Assembly
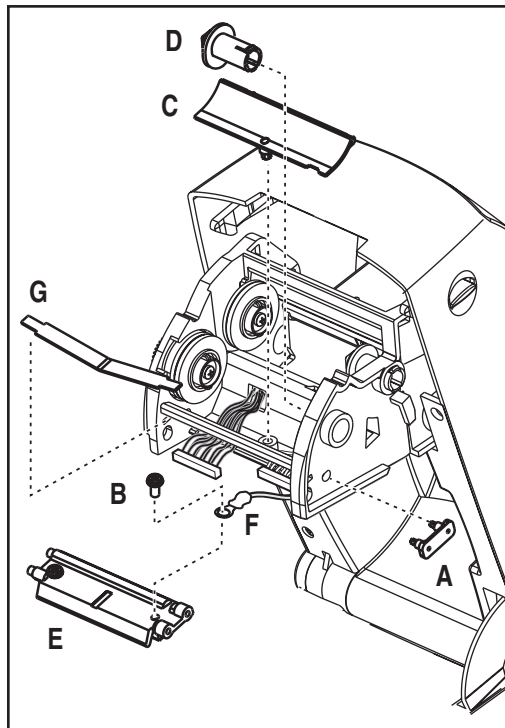
The new print head comes with the clip (**A**) and ground screw (**B**) attached.

1. Detach the wire cover (**C**).

2. Detach the ribbon take-up hub (**D**).

3. Align the print head and bracket (**E**) to plug the left and right connectors into the black and white wire bundles.

4. Attach the ground wire (**F**) and secure it with the screw (**B**). Use a #2 Phillips driver to tighten it.

5. Insert the bracket pegs into the left side of the carriage.

6. Align the right side of the bracket and insert the print head clip (**A**) through the right side of the ribbon carriage into the bracket.

7. Slip the left end of the print head spring (**G**) 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 top of the print head bracket.

8. Attach the ribbon take-up hub (**D**).

9. Attach the wire cover (**C**).

10. Clean the print head with the cleaning pen.

Reload media and ribbon. Plug in the power cord. Print a status report to ensure proper function.
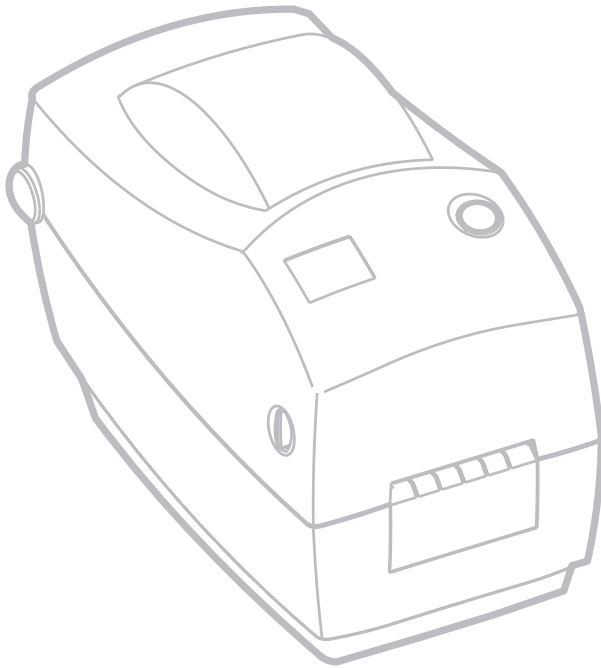
What the Status Light is Telling You		
Color	**Status**	**Solution or Reason**
None	off	1. Check power connection from the A.C. outlet to power supply to printer.
Green	constant	1. Printer printing (normal operation). 2. Printer paused; ready to receive data (normal operation). 3. Printer paused; waiting for user action (for example, to take a dispensed label or to tap the feed button).
Amber	constant	1. The cover open sensor is active. Press top cover to close and lock. 2. Printer has a syntax or command error. Check program and resend print job.
Red	blinking	1. Firmware download in progress. Indicator lights red, then green. 2. Signal to begin media length sensing after turning ON printer. Release the feed button.
	constant	1. Media or ribbon is out. Reload a new supply. Press feed button to continue. 2. Power-up failure. Switch power OFF then back ON. 3. Printer ready to receive flash programming during firmware download.

Printer Operation	
Problem	**Solution or Reason**
Media does not advance.	1. Check interface cable connections from computer to printer. 2. Make sure top cover is locked closed. 3. Check that labels are correct. 4. Verify media has print surface up for printing. 5. Check that transfer ribbon is correctly routed and has the ink side out for thermal transfer printing. 6. Printer has a syntax or command error. Check program and resend print job.
Media moves but nothing is printed.	1. Verify that the labels are the correct type (thermal transfer or direct thermal). 2. Check that the roll is loaded with the thermal side facing up. 3. Clean the print head with cleaning pen. 4. Ensure top cover is locked closed.
Printing is faded or poor.	1. Clean the print head with cleaning pen. 2. Adjust print speed/darkness in software. 3. Check the media and verify that print surface is facing up. 4. Check that correct thermal media is in use.
Prints only partial label or skips a label.	1. Perform media length sensing. 2. Label caught on print head. 3. Top cover is not properly latched. 4. Possible software problem. Check the printer memory configuration. Refer to the programming manual.
Printing stops and indicator lights Amber or Red.	1. Perform media length sensing. 2. Possible problem with label stock. Use only approved labels and tags. 3. Possible label jam. 4. Insufficient memory for label size. Check the printer memory configuration. 5. Possible software problem. Refer to the programming manual.

980485-001A

Media Handling	
Problem	**Solution or Reason**
Label Dispenser	
Printing continues between labels.	1. Make sure label-taken sensor is on. 2. The label-taken sensor is blocked or dirty. Remove any scraps or dust. 3. Continuous media may be set. Verify form length setting through programming **Q** command. See the programming guide.
Prints one label and then stops.	1. Verify the quantity has been correctly set.
Cutter Operation	
Blade cuts through labels instead of cutting liner between labels.	1. Verify form length setting through programming
Media jammed in cutter.	1. Unplug power and interface cables. Use tweezers to remove scraps from cutter opening.
Blade fails to cut direct thermal paper or label liner.	1. Use programming **C** command to cycle cutter several times without media to perform a self-cleaning. See the programming guide. 2. Cutter must be replaced.

Print Quality Problems

No print on the label.

- You must use the correct media for the method of printing you require. When printing without a ribbon, you must use direct thermal media. When using ribbon, you must use thermal transfer media. The printer's ribbon sensor detects motion of the supply spindle.

- Is the media loaded correctly? Follow the instructions in "Loading the Media" on page 9.

The printed image does not look right.

- The print head is dirty. Clean the print head according to the instructions on page 33.

- The print head is under temperature.

- Adjust the print darkness and/or print speed. Use the **S** and **D** commands in the programming guide.

- The media being used is incompatible with the printer. Be sure to use the recommended media for your application, and always use manufacturer-approved labels and tags.

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

- The print head is dirty. Clean the print head according to the instructions on page 33.

- The print head elements are damaged. Replace the print head (see "Replacing the Print Head" on page 32).

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

- The media may not be threaded under the media guides. Refer to "Loading the Media" on page 9.

- The printer needs to be calibrated. Refer to "Auto Calibration" on page 13.

A 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, refer to "What the Status LED is Telling You" on page 35.

- 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. Refer to "Communicating with the Printer" on page 18.

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 the printer power is off and that media is loaded.

2. Press and hold the feed button then turn on the printer power.

3. Continue to hold the feed button until the status light LED flashes. Release the feed button.

4. The printer will set the media sensor for the label backing being used. After the printer is done making this adjustment, the roll will automatically feed until a label is positioned at the print head.

5. The configuration settings (similar to the example below) will print. Upon completion, the printer will save the new settings in memory and remain in diagnostic dump mode.

6. Press the feed button. The printer will dispense another label with the message "Out of DUMP" and be ready for normal operation.

```
UKQ2933H U V4.28.19
Serial port : 96,N,8,1
\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
Image buffer size:1032K
Fmem:000,0K,060.9K avl
Gmem:000K,0331K avl
Emem:000K,0331K avl
I8,0,001  rY JF WY
S2 D07 R024,000 ZT U
q1200 Q1500,036
Option:
oRO
06 10 16
now in DUMP

out of DUMP
```
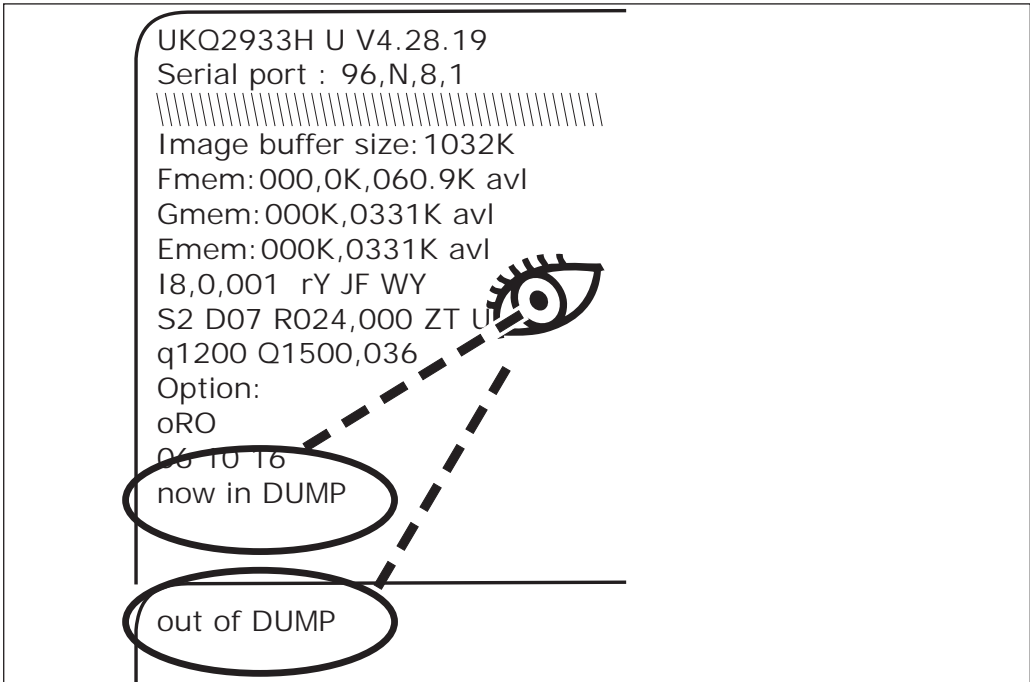
Resetting the Factory Default Values

Sometimes, resetting the printer to the factory defaults solves some of the problems. For troubleshooting and to overwrite all stored parameters, send the **^default** command.

Communications Diagnostics

If there is a problem transferring data between the computer and printer, try putting the printer in the 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, refer to "Manual Calibration" on page 40.

```
N♪◻q1248♪◻A080,100,1,b,1,2,N,"M"♪◻A081,150,1,b,1
,2,N,"M"♪◻A082,200,1,b,1,2,N,"M"♪◻A083,250,1,b,1
,2,N,"M"♪◻A084,300,1,b,1,2,N,"M"♪◻A085,350,1,b,1
,2,N,"M"♪◻A086,400,1,b,1,2,N,"M"♪◻A087,450,1,b,1
,2,N,"M"♪◻A088,500,1,b,1,2,N,"M"♪◻A089,550,1,b,1
,2,N,"M"♪◻LE080,50,1,600♪◻♪◻A200,100,1,b,2,2,N,"
M"♪◻A201,150,1,b,2,2,N,"M"♪◻A202,200,1,b,2,2,N,"
M"♪◻A203,250,1,b,2,2,N,"M"♪◻A204,300,1,b,2,2,N,"
M"♪◻A205,350,1,b,2,2,N,"M"♪◻A206,400,1,b,2,2,N,"
M"♪◻A207,450,1,b,2,2,N,"M"♪◻A208,500,1,b,2,2,N,"
M"♪◻A209,550,1,b,2,2,N,"M"♪◻LE200,50,1,600♪◻♪◻A3
20,100,1,b,3,2,N,"M"♪◻A321,150,1,b,3,2,N,"M"♪◻A3
22,200,1,b,3,2,N,"M"♪◻A323,250,1,b,3,2,N,"M"♪◻A3
24,300,1,b,3,2,N,"M"♪◻A325,350,1,b,3,2,N,"M"♪◻A3
26,400,1,b,3,2,N,"M"♪◻A327,450,1,b,3,2,N,"M"♪◻A3
28,500,1,b,3,2,N,"M"♪◻A329,550,1,b,3,2,N,"M"♪◻LE
320,50,1,600♪◻♪◻A480,100,1,b,4,2,N,"M"♪◻A481,150
```

Feed Button Modes

Printer Condition	Feed Button Action
Printer is OFF	
Printer is off.	Tapping or holding the button has no result.
Printer is ON	
Cover is open	Tapping or holding the button has no result.
Labels, tags or fan-fold forms are loaded.	Tap the button once to perform a "form feed."
	Hold the button to perform a "continuous feed." The printer stops at the top of the next form.
Continuous media roll is loaded.	Tap the button to perform a "line feed." The printer stops on the next line.
	Hold the button to perform a "continuous feed." The printer stops at the next line when you release the button.
Fresh media has just been loaded.	Tap the button to advance media. If printer fails to detect media, the platen stops turning and the status LED lights Red; if the printer cannot detect a gap within 11 inches (27.9 cm), the platen stops turning and the status LED lights Amber.

Appendix

Interfaces

Universal Serial Bus (USB) Connector

The figure below displays the cable wiring required to use the printer's USB interface.
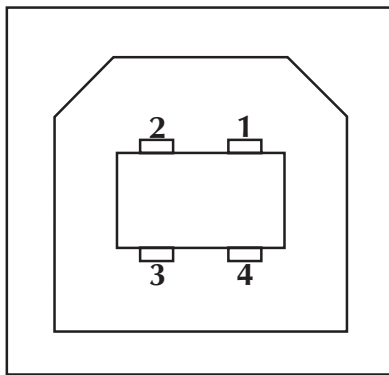
Pin	Signal
1	Vbus - N/C
2	D-
3	D+
4	Ground
Shell	Shield/ Drain Wire

For information on the USB interface, go to the USB web site at:

Http://www.usb.org

Parallel Interface

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

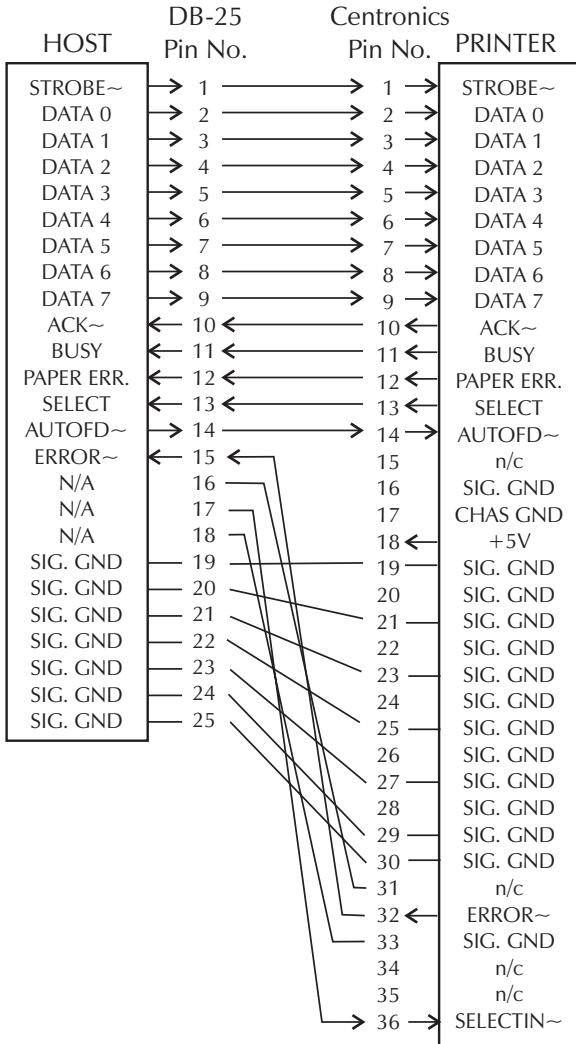| HOST	DB-25 Pin No.	Centronics Pin No.	PRINTER
STROBE~	→ 1 ─────────→	1 →	STROBE~
DATA 0	→ 2 ─────────→	2 →	DATA 0
DATA 1	→ 3 ─────────→	3 →	DATA 1
DATA 2	→ 4 ─────────→	4 →	DATA 2
DATA 3	→ 5 ─────────→	5 →	DATA 3
DATA 4	→ 6 ─────────→	6 →	DATA 4
DATA 5	→ 7 ─────────→	7 →	DATA 5
DATA 6	→ 8 ─────────→	8 →	DATA 6
DATA 7	→ 9 ─────────→	9 →	DATA 7
ACK~	← 10 ←─────────	10 ←	ACK~
BUSY	← 11 ←─────────	11 ←	BUSY
PAPER ERR.	← 12 ←─────────	12 ←	PAPER ERR.
SELECT	← 13 ←─────────	13 ←	SELECT
AUTOFD~	→ 14 ─────────→	14 →	AUTOFD~
ERROR~	← 15 ←	15	n/c
N/A	16	16	SIG. GND
N/A	17	17	CHAS GND
N/A	18	18 ←	+5V
SIG. GND	19	19	SIG. GND
SIG. GND	20	20	SIG. GND
SIG. GND	21	21	SIG. GND
SIG. GND	22	22	SIG. GND
SIG. GND	23	23	SIG. GND
SIG. GND	24	24	SIG. GND
SIG. GND	25	25	SIG. GND
		26	SIG. GND
		27	SIG. GND
		28	SIG. GND
		29	SIG. GND
		30	SIG. GND
		31	n/c
		32 ←	ERROR~
		33	SIG. GND
		34	n/c
		35	n/c
		36 →	SELECTIN~

Male DB-25 to Male Centronics (Cable)

Internal Ethernet PrintServer

This interface uses an RJ-45 straight-through cable type. The table below provides the pinout assignments.

Signal	Pin	Pin	Signal
Tx+	1	1	Tx+
Tx-	2	2	Tx-
Rx+	3	3	Rx+
—	4	4	—
—	5	5	—
Rx-	6	6	Rx-
—	7	7	—
—	8	8	—

Pin 4   **Pin 5**
Pin 3   **Pin 6**
Pin 2   **Pin 7**
Pin 1   **Pin 8**
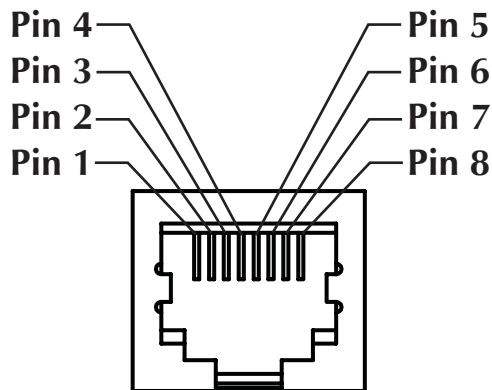
**Looking into the Printer's
RJ-45 Modular Connector**

Serial (RS-232) Connector

The printer operates as a Data Communication Equipment (DCE) and normally connects via a standard RS-232 modem cable to a Data Terminal Equipment (DTE) such as a computer or terminal with a default configuration of 9600 baud, 8 bit data, 1 stop bit and No parity.

Host	DB-9 Pin #		DB-9 Pin #	Printer
N/C	→ 1		1 >	← +5 Volts*
RxD ←	→ 2 >	——————→	2 >	← TxD
TxD →	→ 3 >	——————→	3 >	→ RxD
DTR	→ 4 >	——————→	4 >	CTS
GND	→ 5 >	——————→	5 >	GND
DSR ←	→ 6 >	——————→	6 >	← RDY
RTS	→ 7 >	——————→	7 >	N/C
CTS ←	→ 8 >	——————→	8 >	← RDY
RI	→ 9		9 >	N/C

Female DB-9 to Male DB-9

Host	DB-25 Pin #		DB-9 Pin #	Printer
N/C	→ 8		1 >	← +5 Volts*
RxD ←	→ 3 >	——————→	2 >	← TxD
TxD →	→ 2 >	——————→	3 >	→ RxD
DTR	→ 20 >	——————→	4 >	N/C
GND	→ 7 >	——————→	5 >	GND
DSR ←	→ 6 >	——————→	6 >	← RDY
RTS	→ 4 >	——————→	7 >	N/C
CTS ←	→ 5 >	——————→	8 >	← RDY
RI	→ 22		9 >	N/C

Female DB-25 to Male DB-9
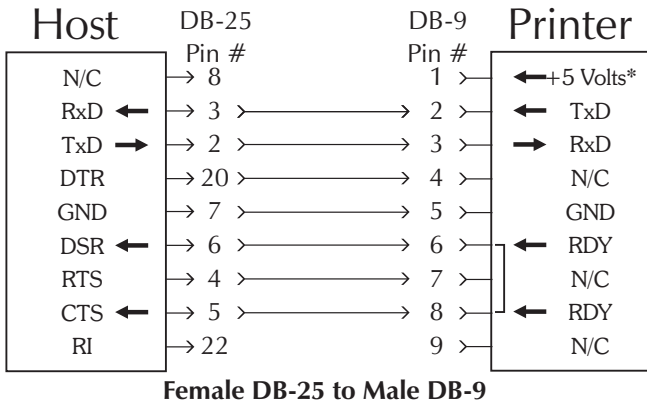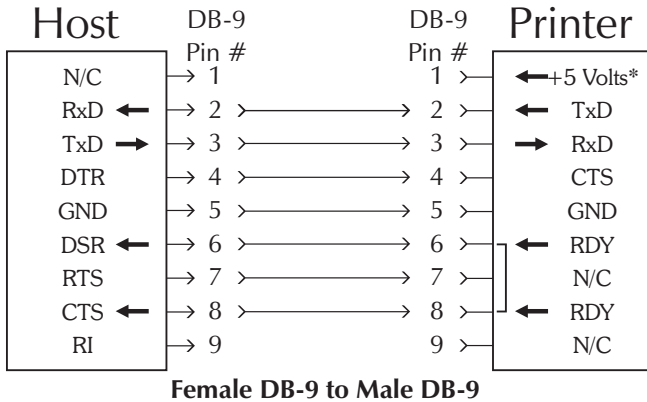
*+5 volts at 150 mA for external device (e.g. KDU or scanner)

Serial (RJ-11) Alternative Connector

The printer operates as a Data Communication Equipment (DCE) and those printers with ethernet connectors also have an alternative serial RJ-11 interface used to connect to a Data Terminal Equipment (DTE) such as a computer or terminal with a default configuration of 9600 baud, 8 bit data, 1 stop bit and No parity.
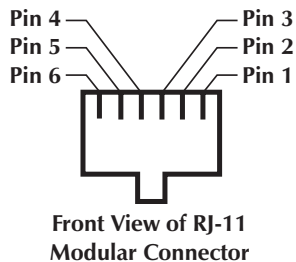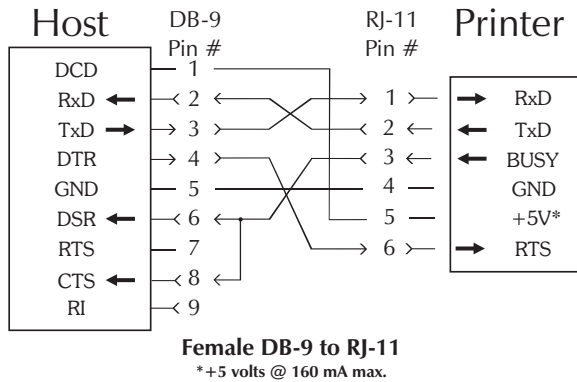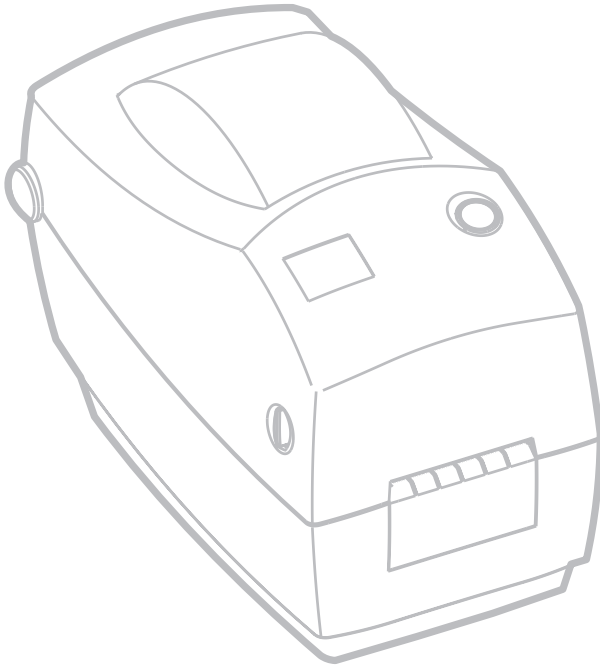
Note that looking into the printer's connector with the key notch pointing down, pins are numbered from left to right.

Female DB-9 to RJ-11
*+5 volts @ 160 mA max.

Front View of RJ-11 Modular Connector

Zebra Technologies Corporation