

# PRINTRONIX®

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## *Setup Guide*



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*T3306 and T3308 Label Printers  
LinePrinter Plus® , IGP®/PGL™ & IGP®/VGL*



*T3306 and T3308 Label Printers  
LinePrinter Plus<sup>®</sup>, IGP<sup>®</sup>/PGL<sup>™</sup> & IGP<sup>®</sup>/VGL  
Setup Guide*

**PRINTRONIX<sup>®</sup>**

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## Communication Notices

**Federal Communications Commission (FCC) Statement:** This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

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**Canadian Department of Communications Compliance Statement:**

This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

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Dieses Gerät ist berechtigt in Übereinstimmung mit dem deutschen EMVG vom 9.Nov.92 das EG-Konformitätszeichen zu führen.

Properly shielded and grounded cables and connectors must be used in order to reduce the potential for causing interference to radio and TV communication and to other electrical or electronic equipment.

This product has been tested and found to comply with the limits for Class B Information Technology Equipment according to CISPR 22 / European standard EN 55022. The limits for Class B equipment were derived for typical environments to provide reasonable protection against interference with licensed communication devices.

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## **IMPORTANT WARRANTY INFORMATION**

### **PRINTER WARRANTY**

Printronix® warrants to purchaser that under normal use and service, this printer (excluding the thermal printhead) purchased hereunder shall be free from defects in material and workmanship for a period of ninety (90) days from the date of shipment from Printronix.

Consumable items such as media and ribbons are not covered under this warranty. This warranty does not cover equipment or parts that have been misused, altered, or used for purposes other than those for which they were manufactured. This warranty also does not cover loss, shipping damage, damage resulting from accident or damages resulting from unauthorized service.

### **THERMAL PRINTHEAD**

Printronix warrants the printhead for a period of ninety (90) days, or 1,000,000 linear inches (Thermal Transfer/Direct Thermal) of use, whichever comes first. The warranty does not cover printheads that have been misused, damaged due to improper cleaning, or damaged due to use of improper ribbons or media.

### **SUPPLIES**

For the number of the nearest Printronix full-service distributor that carries Printronix genuine supplies, please call 1-800-733-1900. Enclosed in the supplies starter kit that accompanied this printer is a listing of available ribbons and media for your printer. Supplies design, specification, and selection are critical and integral to the development of any computer imaging system. Printronix's extensive manufacturing and research capabilities, along with years of experience in the design of printers and their applications, assures that you will receive the exact materials that you require to maximize the performance of your Printronix printer. Further information can be obtained by calling the Printronix ThermaLine Help Desk at (714) 221-2488 or from the Printronix Web Page at <http://www.primtronix.com>.

### **ON-SITE MAINTENANCE SERVICE**

Printronix offers on-site support services in the United States. Please contact the Printronix Maintenance Contracts Group at (714) 863-1900, Extension 2798, for detailed service agreement information.

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# 1

## Introduction

### Chapter Contents

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## About This Manual

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This manual is divided into chapters that contain all the information required to use the printer.

**Chapter 1: Introduction.** General information about the manual and the printer, including safety precautions.

**[Chapter 2: Setting Up the Printer.](#)** Procedures for installing the printer and associated components.

**[Chapter 3: Configuring the Printer.](#)** Configuration menus, options and outlines, as well as factory default settings.

**[Chapter 4: Diagnostics and Troubleshooting.](#)** Diagnostics and procedures for cleaning the printer and for interpreting the displayed error messages.

**[Appendix A: Specifications](#)**

**[Appendix B: Printer Options](#)**

**[Appendix C: Setting the Page Length](#)**

**[Appendix D: ASCII Control Codes Chart](#)**

### How to Locate Information

You can locate specific procedures and information three ways:

- Use the **Table of Contents** at the front of the manual.
- Use the **Chapter Contents** list on the first page of each chapter.
- Use the **Index** at the back of the manual.

### Printronix ThermaLine Help Desk

The Printronix ThermaLine Help Desk offers technical support with:

- Installation
- Configuration and Setup
- Operation and Supplies Loading
- Specifying the proper media and ribbon
- Post sales service support questions

Call the Printronix ThermaLine Help Desk at (714) 221–2488 or visit the Printronix Web Page at <http://www.primtronix.com>.

## Warnings and Special Information

For your safety and to protect valuable equipment, it is very important that you read and comply with all information highlighted under special headings:

### WARNING

Conditions that could harm you as well as damage the equipment.

### CAUTION

Conditions that could damage the printer or related equipment.

### IMPORTANT

Information vital to proper operation of the printer.

**NOTE:** Information and helpful tips about printer operation.

## Conventions

Throughout this manual, keys and possible key settings or positions are printed in UPPERCASE type.

In most cases, messages displayed in the liquid crystal display (LCD) are shown in the following format.

USER CONFIG PAPER CONTROL
------------------------------

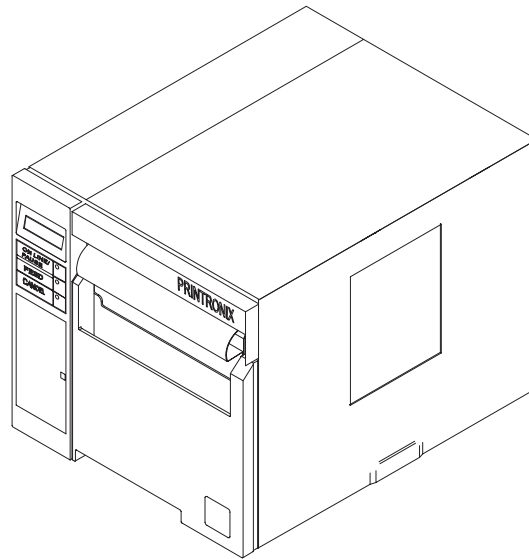
## The T3306 and T3308 Label Printers

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The Printronix® T3306 and T3308 are thermal printers designed for point-of-application label printing. Labels can be designed and printed using the standard Printronix LP+ or optional IGP/PGL and IGP/VGL emulation languages. In addition, the Label Matrix for Printronix label generation software package is available as an option.

The T3306 and T3308 print at a maximum speed of 8 inches (203.2 mm) and 5 inches (127.0 mm) per second, respectively, with maximum print quality. All popular bar codes are resident in the printer memory and can be printed with adjacent, human-readable bar code interpretations. Scaleable outline Courier and Letter Gothic, bit-mapped OCR-A and OCR-B character fonts that can be printed in any of four directions are available as standard. An extensive selection of optional scaleable outline and bit-mapped fonts is also available.

IGP/Auto Label Mapping™ is standard and provides compatibility for programs written for Printronix Wide Web line-matrix printers using Printronix IGP graphics languages.



**Figure 1–1. The T3306 or T3308 Label Printer**

Printronix Dynamic Print Control provides exceptional print quality. A circuit monitors the data to be printed and automatically adjusts the energy applied to the thermal printhead for maximum performance.

The printers can be connected to communicate with the host via RS–232 and RS–422 serial, Centronics-compatible parallel and, optionally, coax/twinax host connections. The interface cable needed to connect the printer to the host device is supplied by the user.

# Thermal Printer Technology

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Quiet and fast, with excellent resolution output, the T3306 and T3308 are multifunction printers using an inline thermal printhead. The operation of a thermal printer is different from that of a line-matrix or laser printer. The thermal printer uses a printhead with heating elements and special paper or ribbon.

## The Printing Process

The thermal printhead allows two modes of operation:

- Direct Thermal
- Thermal Transfer

During *direct* thermal printing, the thermal printhead selectively heats small, rectangular *thermal dots*. When these contact the coated thermal paper, the dyes and developers in the coating react to the heat and develop an image. This mode of printing is generally used for short-term labeling applications.

During thermal *transfer* printing, the heated thermal dots contact a thermal ribbon. The heat reacts with the ribbon and bonds the image to the paper. This method is used especially for abrasive, long-storage applications and for specialized applications, such as in extreme environmental conditions or where tamper-proofing is required.

## Dynamic Print Control

The thermal printer has a unique feature that provides excellent print quality by preventing unevenness of print density. Unevenness is usually caused by the stored heat from previous dots. Print quality largely depends on how the thermal paper or the thermal ribbon and thermal transfer paper responds to the heat of the thermal printhead.

During printing, the thermal printhead must reach a set temperature in the shortest possible time. Then it must cool down to the original temperature in the shortest possible time after printing. Thus print quality is dependent on the precise control of the energy supplied to the thermal dots.

The Dynamic Print Control is a history control whose output is based on the results of the previous printing. The printer predicts the quantity of heat required to print dots and regulates the electrical energy applied to the printhead. This prevents unevenness of print density and results in the printing of narrow-ladder bar codes or vertical grid lines that are straight from the microscopic viewpoint.

## Media Selection

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Since there are two modes of operation, there are two kinds of thermal media:

- Direct thermal media
- Thermal transfer media

Direct thermal media is paper coated with special chemicals that act as an accelerator, acceptor dye and binder. During direct thermal mode, the heat from the thermal printhead contacts the paper and causes a chemical reaction to take place.

There is a wide range of Printronix thermal transfer media available, such as film or synthetic paper substitutes that are excellent in their ability to transfer an image (print quality) and others in scratch resistance (long storage). Most of these media options can be die-cut for easy label applications. The wide selection of media sizes and face stocks have been tested with Printronix ribbons for print quality and usage. Consult your Genuine Printronix Supplies Catalog or contact the factory. Further information can be obtained by calling the Printronix ThermaLine Help Desk at (714) 221-2488 or from the Printronix Web Page at <http://www.printronix.com>.

**NOTE:** The term “media” used in this manual refers to all the different kinds of paper that can be used in the printer.

## Ribbons

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Printronix offers a wide range of ribbons that have been specifically engineered to enhance printing capabilities and to prevent premature printhead wear. Therefore, it is strongly recommended that you use a Printronix Genuine Thermal Ribbon in your printer.



## Printer Standard Features

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Printer standard features include the following:

- Direct thermal or thermal transfer printing
- High-resolution 300 dpi printing
- On-demand or batch printing
- Continuous roll or fan-folded media
- Wide media handling capability

### T3306

Maximum print width:	6.4 inches
Maximum label width:	6.7 inches

### T3308

Maximum print width:	8.5 inches
Maximum label width:	9.0 inches

- Media tear-off bar for on-demand printing
- Window with view of ribbon and media supply
- Printronix Line Printer Plus (LP+) emulation
- Selection of bit-mapped and scaleable fonts
- One serial RS-232/RS-422 and one parallel Centronics host interfaces
- Programmable I/O for label applicators.

## Emulations

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The printer comes with Printronix LP+ as standard, which provides direct compatibility with Printronix P series printers. In addition, Printronix IGP/PGL and IGP/VGL emulations are optionally available. They provide printer system control commands along with label formatting commands for text, bar code, graphics lines and boxes.

Optionally, the Label Matrix for Printronix Label Generation software is available on diskette for the Windows operating environment. Refer to the user's manual supplied with each emulation for specific information.

## Hardware Options

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Ask your Printronix representative about the following options, which can enhance the versatility of your printer.

- **Fonts**

A selection of fonts is available to extend the capabilities of the internal fonts. Optional fonts are installed via font modules.
- **Plug-In Application Memory Modules**

Provides additional memory for storage of custom fonts and graphics data.
- **Memory Expansion**

Provides additional memory to accommodate long label formats.
- **Internal Media Rewinder**

The internal media rewinder allows either printed labels or label backing (liner) material to be rewound inside the printer.
- **Programmable Cutter**

The cutter is used to automatically cut printed media upon exiting the printer. A selection of both heavy and light duty cutters is available.
- **Automatic Label Peel-Off Dispenser**

This option automatically peels a pressure-sensitive label from the liner. It requires installation of the rewinder for take up of the backing material.
- **Label Present Sensor**

This option provides the means to detect the presence of a label at the exit throat of the printer. It is normally used to detect a label that has been manually removed. The sensor is included with the automatic label peel-off dispenser.
- **Ribbon Saver**

Automatically stops the ribbon when the printer is feeding white space.
- **Twinax/Coax Host Interface**

Provides connection to an IBM host computer system using a coax or twinax interface.

## Fonts and Bar Codes

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The printer provides all popular bar codes, as well as a selection of alphanumeric, scaleable, outline and bit-mapped OCR-A and OCR-B fonts, in both portrait and landscape orientations. Additional fonts can be loaded from the host computer into printer memory. Once loaded, these fonts are accessed in the same way as the resident fonts.

Labels can be designed and printed using the following:

- Printronix LP+
- the optional Printronix IGP/PGL or IGP/VGL graphics languages
- the optional Label Matrix for Printronix Label Generation software, which operates with Windows-based PCs

Optional application memory modules provide storage for fonts, label formats and for graphic images. In addition, optional pre-programmed font modules provide a wide variety of special bit-mapped and scaleable fonts.



# 2

## Setting Up the Printer

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## Safety Precautions

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Your Printronix Label Printer has been designed to give you many years of safe, reliable service. As with all electrical equipment, there are a few basic precautions you should take to avoid getting hurt or damaging the printer:

- Read the installation and operating instructions in the documents provided with your printer carefully. Be sure to save them for future reference.
- Read and follow all warning instruction labels on the printer itself.
- Do not use your printer near water or spill liquid of any kind into it.
- Your printer has a grounded, 3-prong plug as a safety feature, and it will fit only into a grounded outlet. If you cannot plug it in, chances are you have an older, non-grounded outlet. Contact an electrician to have the outlet replaced. Do not use an adapter to defeat the grounding.
- Avoid damaging the power cord; do not put anything on it or place it where it will be walked on. If the power cord becomes damaged or frayed, replace it immediately.
- Do not insert anything into the ventilation slots or the openings on the printer, as this can result in electrical shock or fire.
- Do not remove the access door of the printer; there are no operator serviceable parts behind it.
- Do not allow long hair, ties, or jewelry to become entangled in the printer.
- Only qualified, trained service technicians should attempt to repair your printer if damaged or in need of repair.
- Be aware of components in the printer that are potentially hazardous or easily damaged.

## Power Requirements

---

### WARNING

**Do not connect the printer to the power source until instructed to do so and until all shipping restraints have been removed.**

### WARNUNG

**Den Drucker nur unter Anleitung an die Stromquelle anschließen, und erst dann, wenn alle Versandmaterialien entfernt worden sind.**

### ATTENTION

**A moins d'en avoir reçu l'ordre, ne pas brancher l'imprimante avant d'en avoir ôté tout le matériel d'emballage.**

The printer is shipped with an auto-ranging AC power supply that automatically adjusts for proper operation at any AC input voltage between 90–132 or 180–264 VAC, 50/60 Hz. The operating AC input current for the printer will not exceed 7.0 amps and 3.5 amps for AC input voltages of 115 VAC and 230 VAC, respectively. Line voltage should not fluctuate more than 10% and the printer should be connected to a properly grounded receptacle.

The printer is shipped with a power cord, located in the Country Kit ordered with the printer. Be sure that you have the proper power cord for your specific installation. If there are any concerns about the configuration of the printer or of the outlet you are connecting to, check with a qualified electrician or service technician to verify the installation before connecting power.

The printer must be connected to an appropriate AC power source; otherwise, the printer will not operate properly and may be damaged.

The power source must be properly grounded. Since large power fluctuations can cause the printer to malfunction, it should be connected to a “noise-free” power source, not subject to surges or noise generated by motors, lighting, or air conditioning equipment on the same circuit. To allow for an adequate power cable run, the printer should be placed no more than eight feet (2.5 meters) from the power outlet.

## Select a Site

---

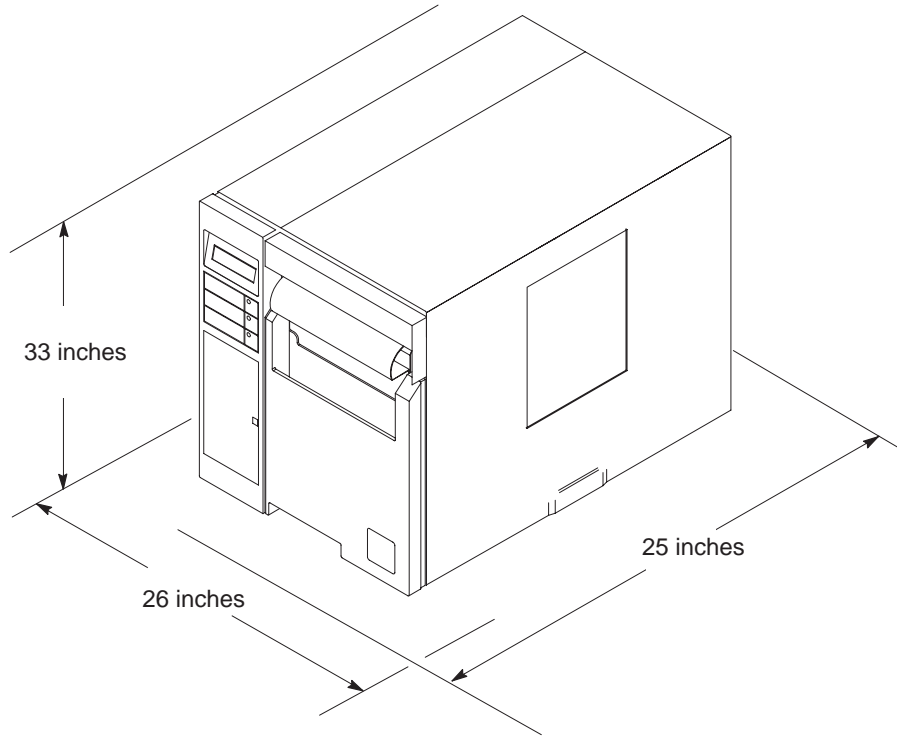
When selecting the location for the printer, consider the following power requirements, interface requirements, and environmental factors:

- A proper power source must be available. (Complete power requirements are specified in the “Power Requirements” section, on [page 2-3](#).)
- The location must be within the maximum cable length specifications for the host computer interface.
- The operating temperature range should be 40–100° F (4–38° C), with no sudden changes in temperature or humidity.
- The location should provide enough space for maintenance and for replacement of media and ribbon. (See [Figure 2-1](#) and [Figure 2-2](#).)

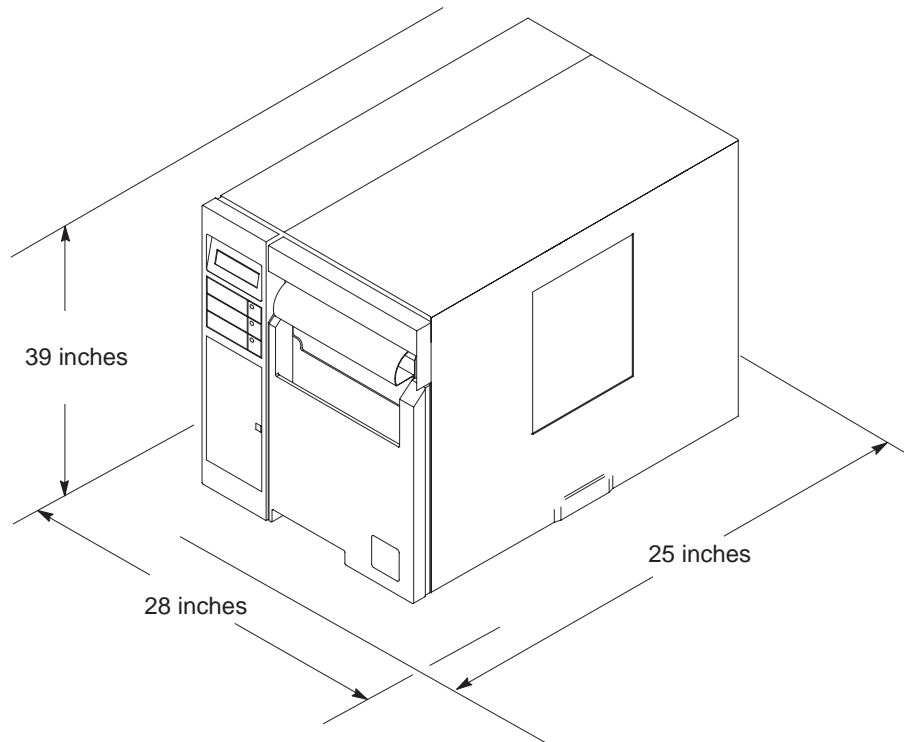
**NOTE:** The required printer clearance dimensions are shown in [Figure 2-1](#) and [Figure 2-2](#).

- The printer should not be exposed to direct sunlight or hot lighting equipment. This may cause an abnormal temperature rise in the printer and adversely affect its operation. If necessary, shade or screen the printer from such exposure.
- Avoid exposing the printer to any corrosive gases or vapors.
- Avoid installing the printer in an area subject to heavy vibrations.
- Place the printer on a firm, solid surface. An unsteady surface may cause the printer to fall.
- To protect your printer from overheating, make sure none of the openings on the printer are blocked. Do not place the printer on or near a heat source, such as a radiator or heat register.
- The printer should be placed no more than eight feet (2.5 meters) from the power outlet.





**Figure 2-1. Clearance Requirements, T3306**



**Figure 2-2. Clearance Requirements, T3308**

## Unpack the Printer

---

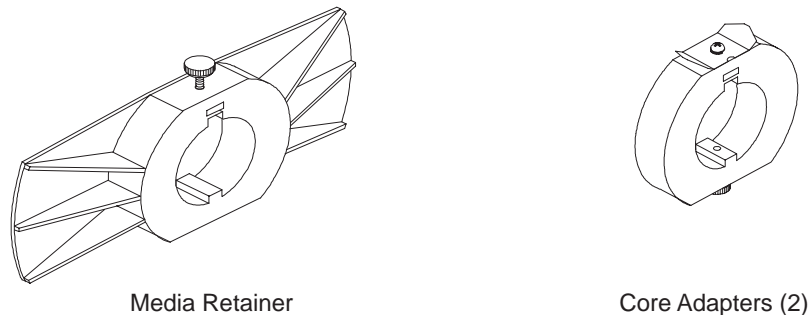
Examine the contents of the shipping carton(s) for indications of damage during transport. If any damage is evident, contact the carrier directly to specify the nature and extent of damage. The printer is packed in molded Styrofoam and is also enclosed in a plastic bag to reduce the chance of moisture damage during shipment. Refer to the unpacking instructions to remove the printer from the shipping carton.

**NOTE:** Save the printer shipping materials, in case they are needed to transport the printer to a new location.

The shipping container(s) should include the following items, in addition to this manual. (See Figure 2–3.)

- T3306 or T3308 Printer (shown in [Figure 2–1](#) and [Figure 2–2](#))
- Tear bar (attached to printer)
- Country Kit — (includes power cord and [Operator's Guide](#))
- Printer media retainer and two core adapters, if optional media rewinder is present (shown in Figure 2–3)

**NOTE:** Host interface cables are supplied by the user.



**Figure 2–3. Media Rewinder Accessories**

## Initial Setup

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To prepare the printer for operation, complete the procedures in the following sections. (Figure 2–4 shows the overall view and the rear view of the printer.)

### Media

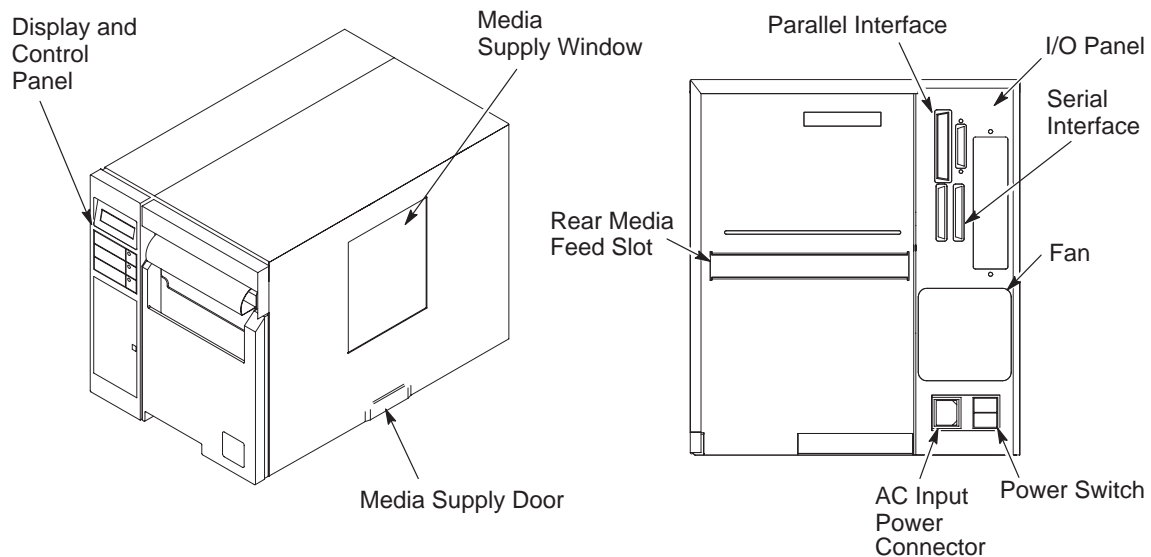
The printer accepts roll-fed, fan-folded or die-cut continuous media, either thermal transfer or direct thermal. Media width can range from 2 in (50.8 mm) to 6.7 in (170 mm) for the T3306 and from 3 in (76.2 mm) to 9.00 in (228.6 mm) for the T3308. The printer will accommodate media thicknesses ranging from 0.0046 in (0.117 mm) to 0.01 in (0.254 mm).

### Ribbon

The kind of media to be used, and whether or not a ribbon is to be installed, depends on the printing mode desired; i.e., direct thermal or thermal transfer.

The direct thermal printing mode does not use a ribbon. Instead, the printer applies heat directly to the print media, which reacts to the heat by turning black. This mode requires the use of a special direct thermal print media. It also requires that the ribbon (if already installed) be removed.

**NOTE:** Using direct thermal print media when a ribbon is installed will result in unacceptable print quality.



**Figure 2–4. Overall and Rear View**

## Media Loading

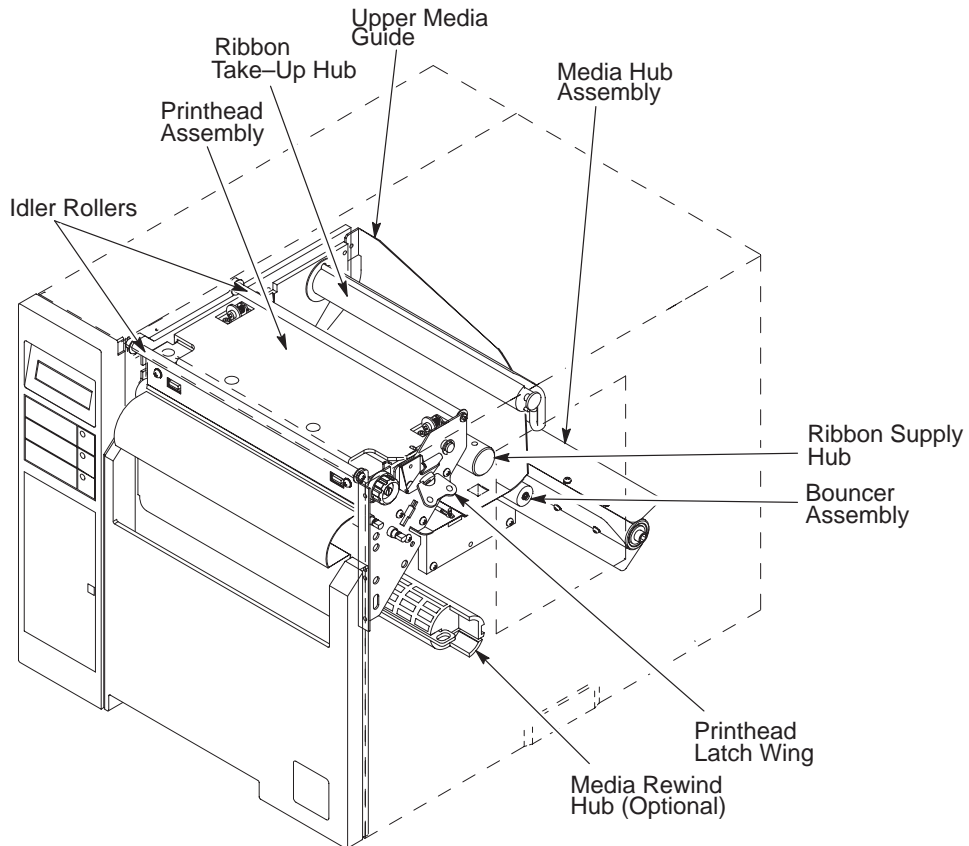
The following procedures describe loading of the various media.

**NOTE:** The optional internal rewinder and rewind bracket are shown on all media loading drawings.

### Roll-Fed

To install roll-fed media, perform the following steps.

1. Open the media supply door.
2. Slide a roll of the chosen media onto the media hub assembly, as far as possible toward the inside of the printer as shown in Figure 2–5.
3. Raise the printhead latch wing, and rotate it counterclockwise one half-turn to unlock the printhead. Swing the printhead to the raised position as shown in Figure 2–5 and [Figure 2–6](#).
4. Route the media under the bouncer assembly and between the upper and lower media guides, as shown in [Figure 2–7](#).
5. Continue feeding the media under the printhead until the media exits the printhead assembly.



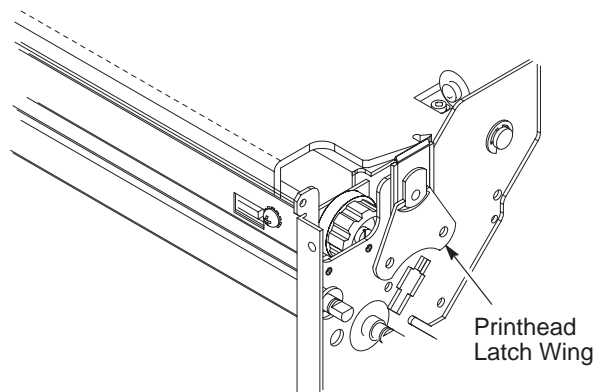
**Figure 2–5. Major Internal Components**

6. Slide the media forward, until it extends beyond the printer front slot.
7. Slide the adjustable guide so that it is slightly touching the edge of the media. Do not turn the knurled nut on top of the guide.
8. Lower the printhead, and engage the printhead latch. Rotate the latch wing one half-turn clockwise, and snap the latch wing down to lock the printhead into position.

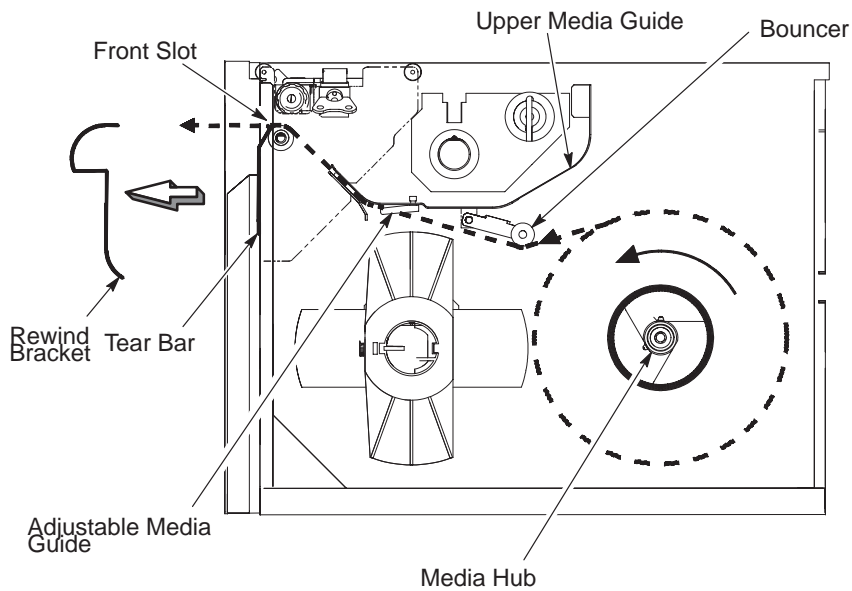
**NOTE:** It may be necessary to feed several labels before proper alignment of the media occurs.

### Fan-Fold

To install fan-folded media, follow the instructions included with the fan fold adapter kit.



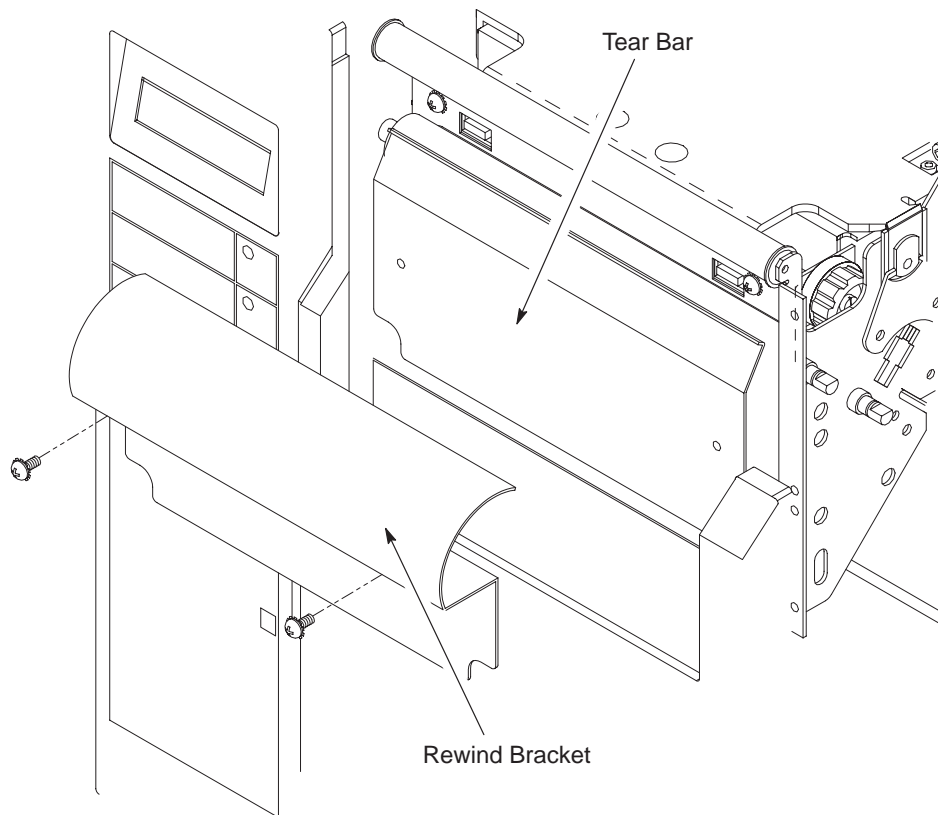
**Figure 2-6. Raising the Printhead**



**Figure 2-7. Routing the Media**

## Using the Tear Bar

The tear bar is already installed on the printer. If the rewind bracket, cutter or peel and present option were installed, that option must first be removed and then replaced by the tear bar. (See Figure 2–8.)



**Figure 2–8. Tear Bar Installation**

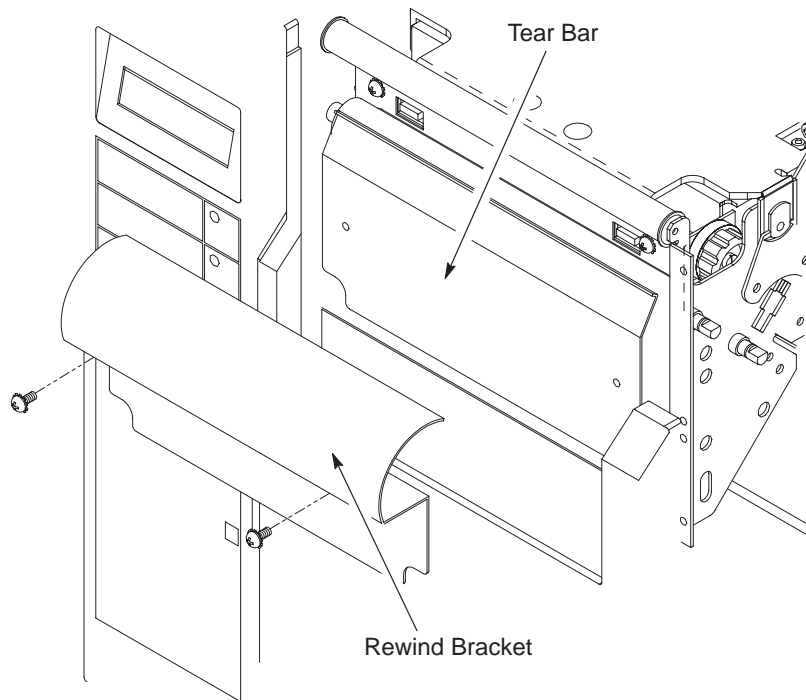
## Optional Media Rewind Hub

The printer can be equipped with a rewind hub that will automatically roll up the label media for convenient handling. The hub is used in the following cases:

- When large quantities of labels must be printed as single batches for later use
- When the automatic label peel-off dispenser option is used, to roll up the used media backing after labels have been peeled off

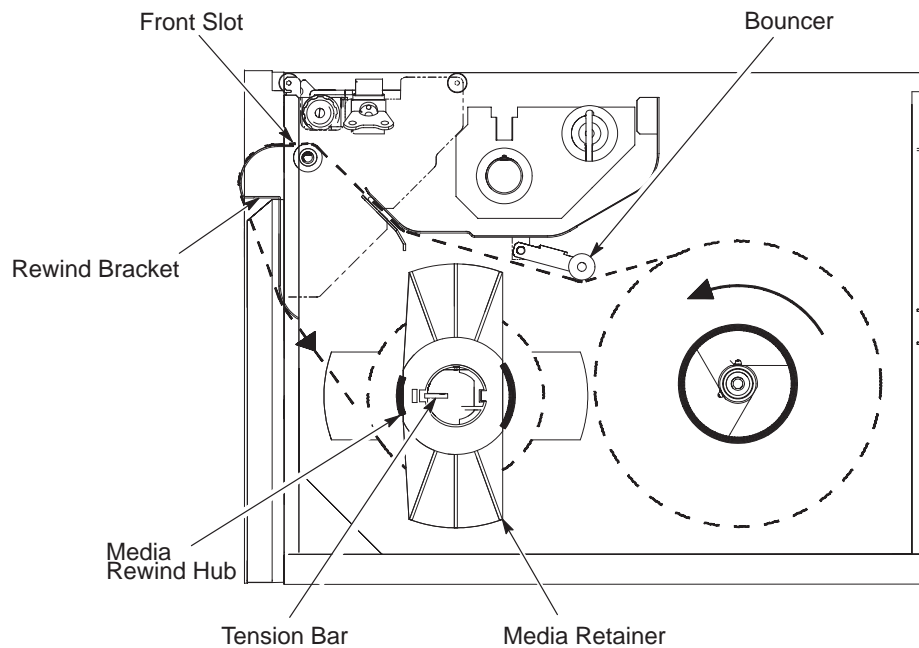
To use the media rewind hub, perform the following steps.

1. Open the media supply door.
2. Ensure that the rewind bracket is installed (as shown in Figure 2–9).
3. Install a roll of the desired label media, following the above procedures, and pull the media through the printer until approximately 18 inches is free in front of the unit.
4. Loosen the thumbscrew, and remove the media retainer from the rewind shaft as shown in [Figure 2–10](#).



**Figure 2–9. Rewind Bracket Installation**

5. Route the free end of the media around the rewind bracket (if in batch mode) or directly through the media take-up slot (if in peel-and-present mode). In the peel-and-present mode, the rewind bracket is *not* installed; media feeds through the automatic label peel-off dispenser.
6. Place the leading edge of the media into the groove on the hub. Turn the hub by hand two or three full turns to secure the media. If it is desired to wind the printed media on to a three inch core for later use, place the two core adapters (shown in [Figure 2-3](#)) on the media rewind hub and then slide the empty core on to the core adapters.
7. Slide the media retainer onto the rewind hub, so it is just touching the media, and tighten the thumbscrew.
8. Close the media supply door.
9. To remove the rolled-up media from the rewind hub, remove the media retainer, grasp the tension bar, and pull. This action releases the tension on the media core. With the tension bar released, pull the rolled media or backing from the hub. If the media has been wound on a three inch core, remove the media retainer and slide the core off the core adapters.



**Figure 2-10. Media Rewind Hub**



## Optional Peel and Present

Perform the following steps to load media for peel and present operation.

1. Pull the peel roller bracket away from the peel and present mechanism using the two release tabs as shown in [Figure 2-10](#).
2. Following Steps 1 through 4 under the Roll-Feed Media Lodging section above.
3. Thread the media over the top of the fixed bracket and under the peel roller of the roller bracket as shown in Figure 2-11.

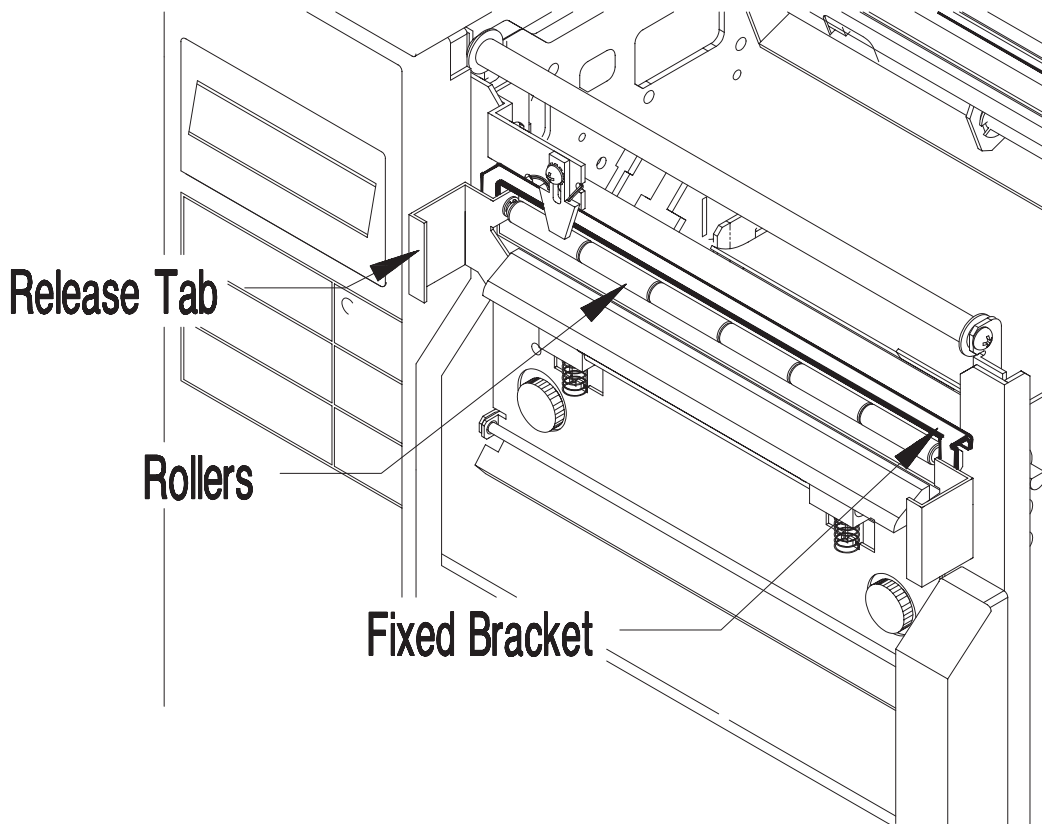
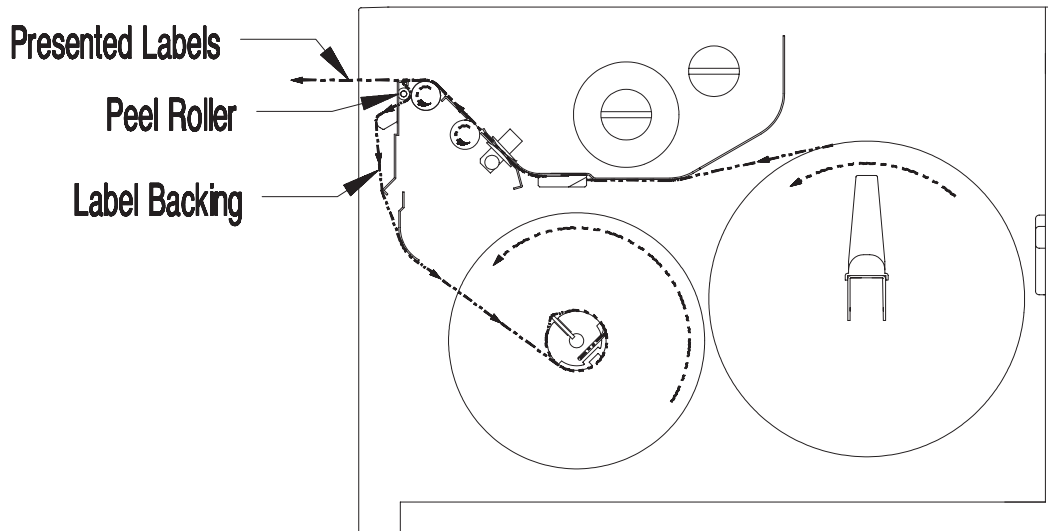


Figure 2-11. Peel and Present Mechanism



**Figure 2–12. Media Loading**

4. Push the roller bracket forward to its closed position.
5. Route the free end of the media to the internal rewind hub and attach as described in the Optional Media Rewind Hub section above.

**NOTE:** It is possible to use the present sensor only (without installing the peel and present mechanism) with the tear bar to provide on-demand printing in the tear-off mode. To operate in this mode, media should be routed as shown in [Figure 2–7](#) and the Media Handling menu selection should be set to Self Strip (see [Figure 3–7](#)).

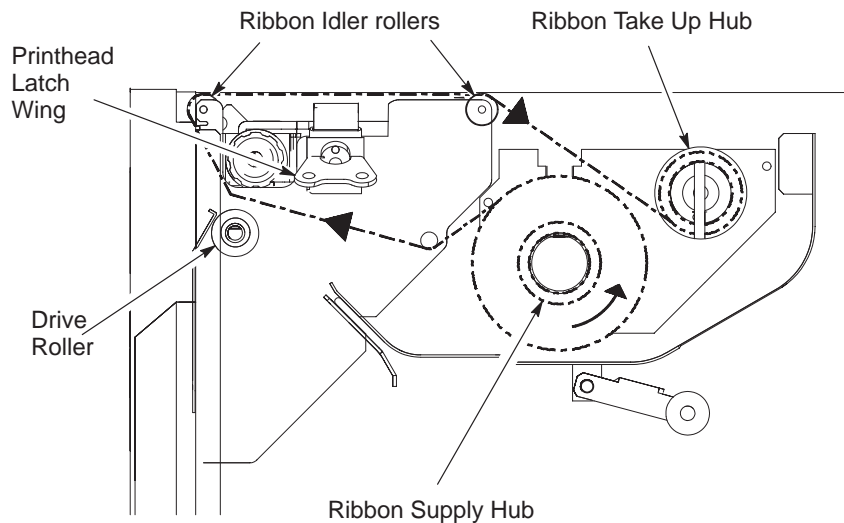
## Ribbon Installation

A ribbon must be used when the printer is operated in the thermal transfer mode. To install a ribbon, perform the procedure below.

As noted previously, when printing in direct thermal mode, the printer does not use a ribbon. There may, however, be occasions when the use of a direct thermal medium is required, but a previously-installed ribbon has not been completely used up. (Generally, ribbons are used to completion and then replaced; removal of the old ribbon is simply a matter of removing the J-hook and pulling the ribbon straight off the take-up hub and discarding it.) In these cases, complete the procedure below on the next page.

To install a ribbon, use the following procedure.

1. Open the media supply door
2. Raise the printhead latch wing, and rotate it counterclockwise one half-turn to unlock the printhead. Swing the printhead to the raised position. (See Figure 2–13.)



**Figure 2–13. Routing the Ribbon**

3. Grasp the ribbon take-up hub to prevent it from turning, twist the J-hook counterclockwise until it disengages, and remove the J-hook.
4. Slide a roll of ribbon onto the ribbon supply hub as far as possible toward the inside of the printer.
5. Pull the free end of the ribbon under the printhead mounting frame.

6. Pull the ribbon over the ribbon idler rollers — it will completely cover the printhead mounting frame.
7. Wrap the free end of the ribbon around the ribbon take-up hub, and turn the hub two or three full turns. Replace the J-hook, and twist it clockwise until it snaps into place.
8. Lower the printhead and engage its latch. Rotate the printhead latch wing one half-turn clockwise to lock the printhead in place.
9. Close the media supply door.

To remove a ribbon, use the following procedure.

1. Cut the ribbon at a point near the first ribbon idler roller. The locations of the idler rollers are shown in [Figure 2-5](#), on [page 2-8](#), and in [Figure 2-13](#), on [page 2-15](#). *Do not cut directly over the idler roller.*
2. Turn the printhead latch wing one half-turn counterclockwise to unlock the printhead (it is not necessary to fully unlatch the printhead).
3. Turn the ribbon supply hub clockwise to draw the unused portion of the ribbon back until it is clear of the printhead.
4. Slide the used ribbon off the take-up hub and dispose of it.
5. Turn the printhead latch wing one half-turn clockwise to lock the printhead.

**NOTE:** The unused portion of the ribbon may be left in place until the next thermal transfer print job, at which time it may be reinstalled following the ribbon installation procedure.

## Connect the Cables

---

Energized electrical equipment is dangerous. Never work on energized equipment unless authorized to do so. If emergency work on energized equipment is authorized, be sure it is accomplished in strict compliance with current safety regulations.

Operate the printer using the power source indicated adjacent to the power switch. Failure to do so may cause injury to you and damage to the printer. Unplug the printer before performing any removal, replacement or cleaning procedure.

### **WARNING**

**To prevent injury to yourself or damage to the printer, make sure the printer is connected to a proper power source.**

### **WARNUNG**

**Um Personenschäden oder eine Beschädigung des Druckers zu verhindern, sicherstellen, daß der Drucker an eine geeignete Stromquelle angeschlossen ist.**

### **ATTENTION**

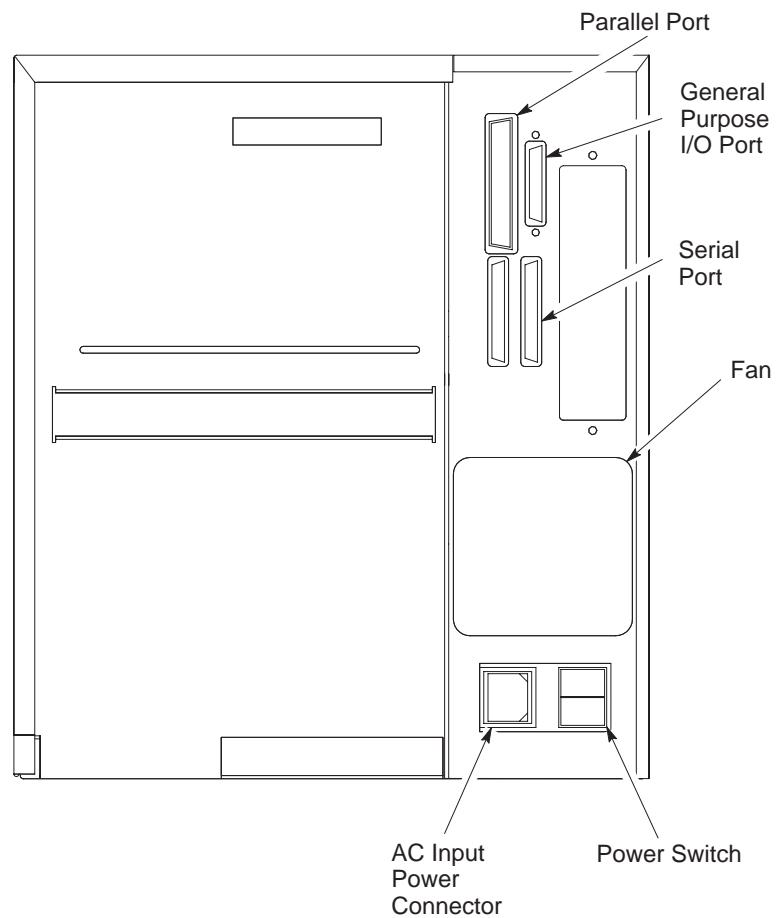
**S'assurer que l'imprimante est branchée afin d'éviter tout risque de blessures corporelles ou de dommages à l'imprimante.**

Refer to [Figure 2-14](#) and perform the steps listed below.

1. Connect the interface cable to the appropriate printer interface connector and to the host computer. The printer supports a variety of standard and optional interfaces:

- Centronics-compatible parallel
  - RS-232 and RS-422 serial
  - Coax/Twinax (optional)
- } Standard

**NOTE:** The serial and parallel ports are both active. If data is received simultaneously on both ports, the output may be mixed.



**Figure 2-14. Cable Connections**

**NOTE:** The printer must be properly configured for the appropriate interface. The RS-422 port is enabled or disabled via a DIP switch inside the printer. Make sure this selection is properly made for your application. If your application requires a change in switch setting, contact your authorized Printronix service person.

2. Verify that the site line voltage is the same as the voltage specified in the “Power Requirements” section, on [page 2-3](#).
3. Make sure the printer power switch is set to O (OFF).
4. Connect the power cord (supplied with the printer) to the AC power connector on the printer.

**NOTE:** To avoid possible electrical interference, separate the AC power cord from the interface cable.

5. Connect the opposite end of the power cord to the AC line receptacle.
6. Turn the printer power switch to I (ON).

## Operator Panels

---

The *primary* operator panel is used to perform routine, day-to-day operations. The panel contains three operator-accessible keys and three LED indicator lights, used to control and indicate printer status.

There is also a *secondary* operator panel, consisting of an (LCD) message display and six keys. This is used to configure the printer and to run self-tests via the configuration menus.

**NOTE:** In addition to the primary and secondary controls, an operator adjustment ([page 2–23](#)) is provided to compensate for different media widths. If different media *thicknesses* are encountered, it may be necessary to adjust the printhead pressure. If such an adjustment is required, contact your trained Printronix service representative.

The following pages describe the status LEDs and keys comprising the *primary* operator panel, along with the related operating modes.

**NOTE:** Refer to the [“Configuring the Printer”](#) chapter for complete instructions in how to access and use the secondary operator panel.



## Operator Panel Layout

The primary and secondary operator panels are illustrated in Figure 2–15, below.

### Status LEDs

The three primary operator panel status LEDs provide information about current printer operation, as described below.

**POWER** Lit when the printer is powered on

**ON LINE/PAUSE** Lit when the printer is on line or blinking when:

- the printer is off line
- the printer is in a standby/fault state

**RIBBON MEDIA** Lit when the printer sensors fail to detect label media or the presence of a ribbon

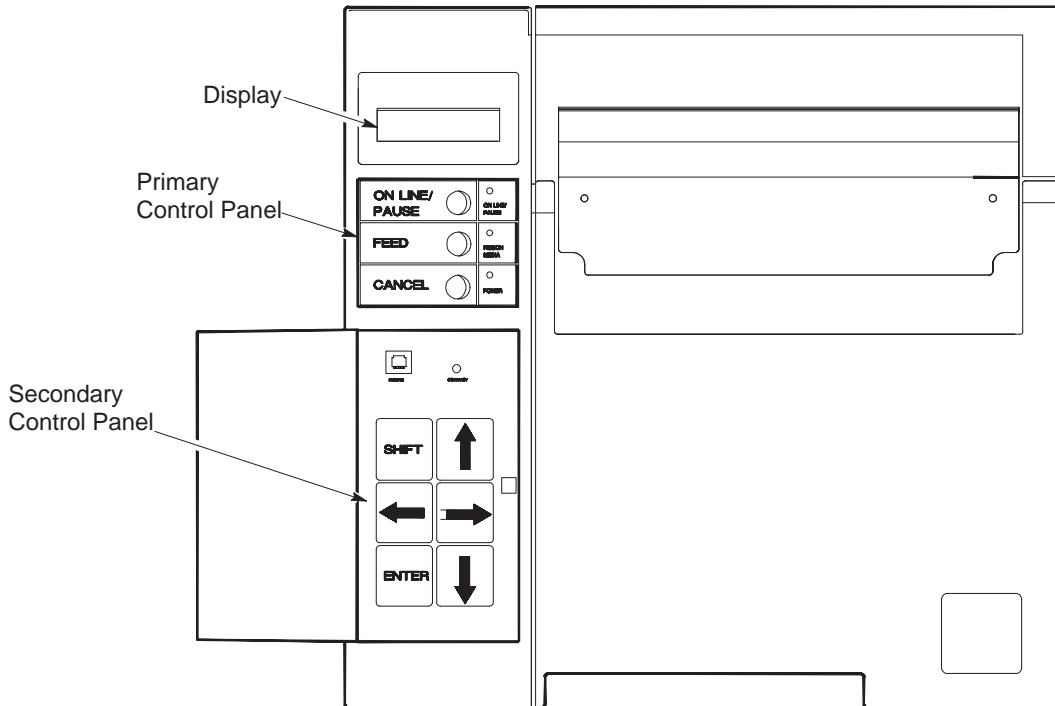


Figure 2–15. Keys and Indicators

## Keys

Three primary operator panel keys provide for the basic, day-to-day control of the printer, as described below.

**CANCEL** Cancels all jobs, if pressed when the printer is off line *and* not in a fault state; clears all imaged and buffered data

Clears faults and puts the printer in the off line state, if pressed when the printer is in a fault state, either on line or off line; will *not* clear imaged and buffered data

This key has no effect when the printer is on line and running

**FEED** With the printer off line, pressing the FEED key will cause the printer to print any labels that have been imaged and also the current label in progress; if no label is being processed, a blank page will print

**ON LINE/PAUSE** Temporarily stops the printing of labels and controls the online/offline status of the printer. Pressing the key when the printer is printing will:

- stop the print mechanism when printing of the current label is completed, and hold all data in memory
- start the ON LINE/PAUSE indicator blinking
- indicate to the host system that the printer is busy

Pressing the key when the printer is paused will:

- restart the printer
- turn on the ON LINE/PAUSE indicator

Pressing the key when the printer is in a fault condition allows toggling between displaying the appropriate error message on the message display and allowing access to the user or service menus.

## Media Width Adjustment

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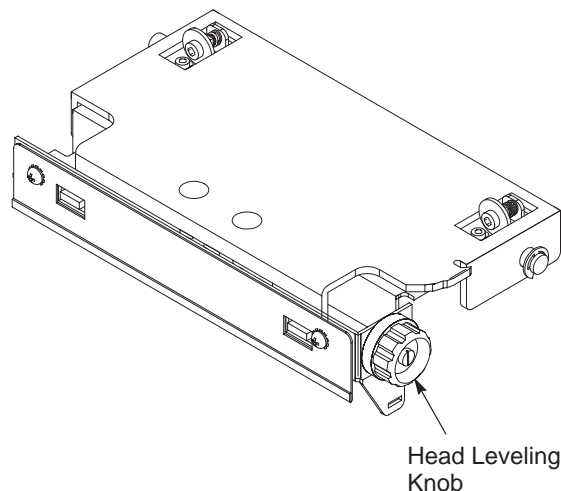
The printer can use a variety of media widths and thickness. To ensure even print quality across the media regardless of changes in media dimensions, the printhead has a leveling cam adjustment. The cam raises and lowers the right side of the printhead to keep the printhead level across the media.

The printer is factory-set, using standard 4-mil thick, 6.5-inch wide print media for the T3306 and 4-mil thick, 9.0-inch wide media for the T3308 (cam knob position 9). The cam adjustment is designed to compensate for changes in printhead pressure when narrower width stock is used. When out of adjustment, the printed image along one side of the label will be missing. The image drops off suddenly, rather than gradually fading.

The adjustment knob (see Figure 2–16, below) is designed with detents that allow it to turn a specific distance, one click at a time. The knob is numbered for the convenience of the operator.

**NOTE:** The numbers do not relate to specific media sizes.

To adjust the printer for maximum print quality when using narrower media, pull the head leveling knob outward, and rotate it one detent. Rotating the knob counterclockwise from position 9 will adjust the printer for media that is narrower than the maximum width accepted by the printer. Rotating the head leveling knob counterclockwise from the last detent position before position 9 to position 9 returns the printhead to the maximum media width position.



**Figure 2–16. Head Leveling Knob**

## Check for Interference

---

The printer should be used only with FCC or CE certified computing devices. If the printer is installed within 10 feet of audio or video equipment, interference may occur. Determine if there is interference by turning the printer on and off while checking the audio and video equipment for noise spikes. If interference occurs, perform the following:

1. Relocate the printer or the electronic device affected by the interference, including the antenna, if applicable.
2. Ensure that the printer and electronic device are on separate power circuits or install AC line filters.
3. Ensure that the wall outlets are properly grounded.

If these steps do not resolve the problem, refer to the Federal Communications Commission Booklet, "How to Identify and Resolve Radio – TV Interference Problems" (stock number: 004–000–00345–4), available through the U.S. Government Printing Office, Washington, D.C. 20402.

## Transporting the Printer

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Take precautions to prevent damage to the printer during transport. If a move requires trucking, use the original packaging materials.

### Short-Distance Transport

1. Turn off the printer, and unplug the power cord from the wall outlet.
2. Remove the media and ribbon.
3. Remove all external communication and interconnection cables (AC line cord, coax cable, any optional attachment cards, etc.) from the printer.

### Long-Distance Transport

1. Turn off the printer, and unplug the power cord from the wall outlet.
2. Remove the media and ribbon.
3. Pack all connecting cables in a plastic bag.
4. Use original packing material if available. Otherwise, use sufficient shock-absorbing packaging material.

**NOTE:** Replacement packaging material can be procured from Printronix.

5. Secure the top and front covers to keep them from opening.

# 3

## Configuring the Printer

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## Overview

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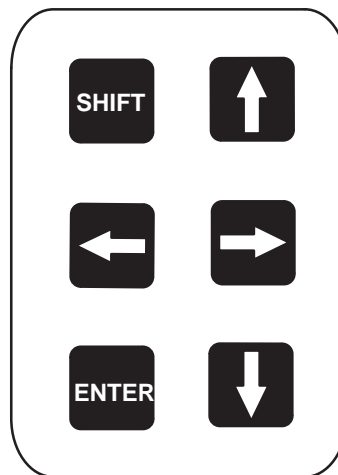
The configuration process is directed by the secondary operator panel and includes the following:

- Configuring the printer for different host interface options
- Customizing label formats
- Checking printer status
- Running various maintenance tests

**NOTE:** Control codes sent by the host system will override the operator panel settings.

The secondary operator panel consists of a 32-character message display and six keys. Figure 3–1 is an illustration of the keypad section of the panel. An explanation of each key function is given in [Table 3–1](#).











This chapter explains how to use the secondary operator panel to change individual settings and save them as a customized configuration.



**Figure 3–1. Secondary Operator Panel**



**Table 3–1. Key Function Summary**

Key	Function
	None. This key is used in combination with other keys.
	If the menu selection is a value, pressing this key causes the value to be decremented. If the menu selection is an option, pressing the key allows selection among options on the current menu level. Holding the key down causes the key to repeat at about seven times a second.
	If the menu selection is a value, pressing this key causes the value to be incremented. If the menu selection is an option, pressing the key allows selection among options on the current menu level. Holding the key down causes the key to repeat at about seven times a second.
	This key causes the printer to go up one level in the menu structure. Pressing  and  simultaneously toggles the ENTER LOCK function.
	This key causes the printer to go down one level in the menu structure. Pressing  and  simultaneously toggles the ENTER LOCK function.
	Pressing the ENTER key selects the current value and displays an asterisk (*) next to the selected value. If the ENTER key is locked, pressing the ENTER key will <i>not</i> select a value: the message “ENTER KEY LOCKED” will display on the control panel for one second; and then the previous value will display. Also, pressing the ENTER key while holding the SHIFT key toggles the ENTER LOCK function.

## Using the Secondary Operator Panel

---

Configuration parameters are set from the secondary operator panel or are retrieved from the nonvolatile memory, located in the printer. The parameters define how the printer will respond to command and interface signals from the host computer.

The configuration menu structure consists of the main configuration menus and the corresponding submenus, where applicable.

**NOTE:** Many of the selectable configurations refer to printer options or features that may or may not be present in your printer. Selecting an option or feature that is not present will result in no action being performed by the printer.

There are two basic menu modes: user and service. The service mode allows full access to all menu items, whereas the user mode allows access only to those menu items that operators should be able to access. To enter either mode, the printer must first be set to the OFFLINE status. Press the down arrow key to begin using the configuration menus. To enter the service menus, press the SHIFT and down arrow keys simultaneously.

The diagrams in [Figure 3-2](#) and [Figure 3-3](#) are overviews of the printer configuration menu options when in the user and service modes respectively. For details on the parameters that pertain to those options, refer to the specified pages.

### Moving Within the Configuration Menu

Movement within the configuration menus is controlled by using the appropriate arrow keys. (Refer back to [Table 3-1](#), on [page 3-5](#), for more details on the function of the operator panel keys.)

[Figure 3-4](#) provides an example of the steps you must follow to change a configuration menu option. The illustration is divided into two parts: the left shows a portion of a configuration menu as it is presented in this manual, and the right shows the keys you must press to access a particular parameter. Also shown are the messages that appear in the display after you press each key.

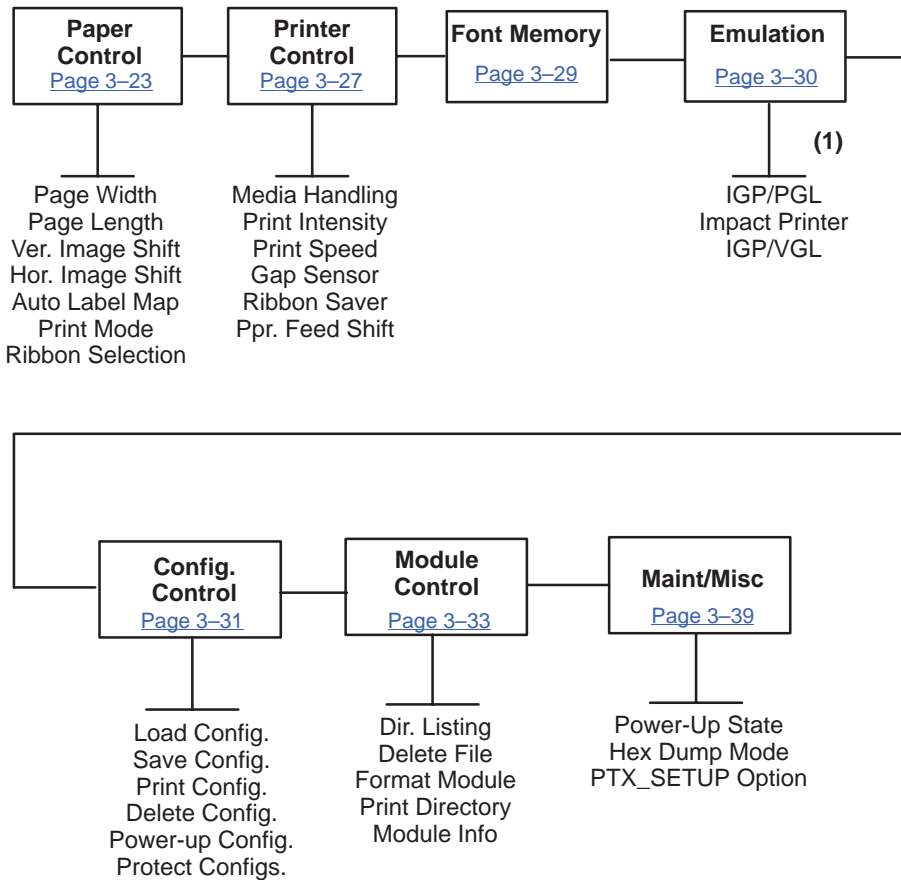
If you follow the example shown in [Figure 3-4](#), you will configure the printer for a page length of 30 mm.

Use these basic guidelines to move throughout all the main and sublevel configuration menus.

To configure the printer, it must be off line. If the ON LINE/PAUSE indicator is lit, press and release the ON LINE key to place the printer off line. When the printer is placed off line, OFF LINE appears in the message display.

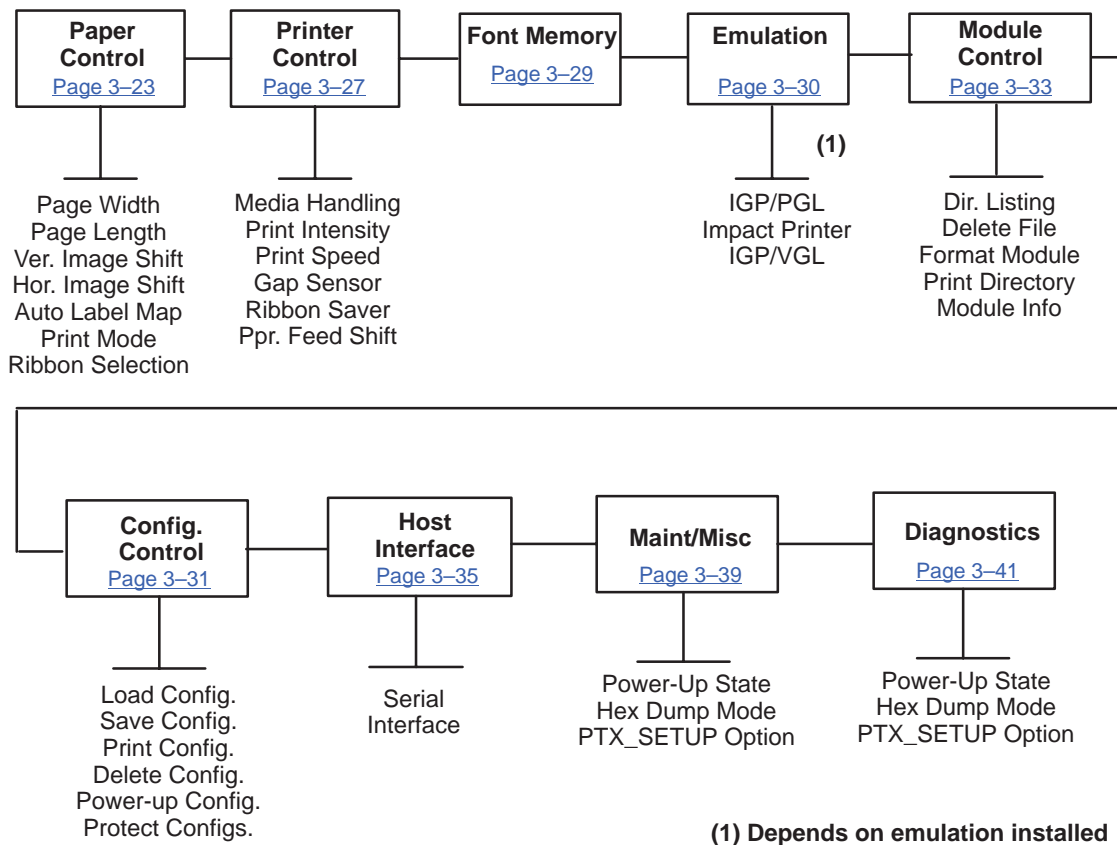
## Selecting a Menu Option

By default, the ENTER key is “locked” when the printer is turned on. The purpose of this is to prevent accidental changes to the configuration values. If the ENTER key is pressed when the key is locked, the message ENTER SWITCH LOCKED will be displayed on the message display for one second, rather than selecting the value.



(1) Depends on emulation installed

**Figure 3-2. User Configuration Menu Structure**



**Figure 3-3. Service Configuration Menu Structure**

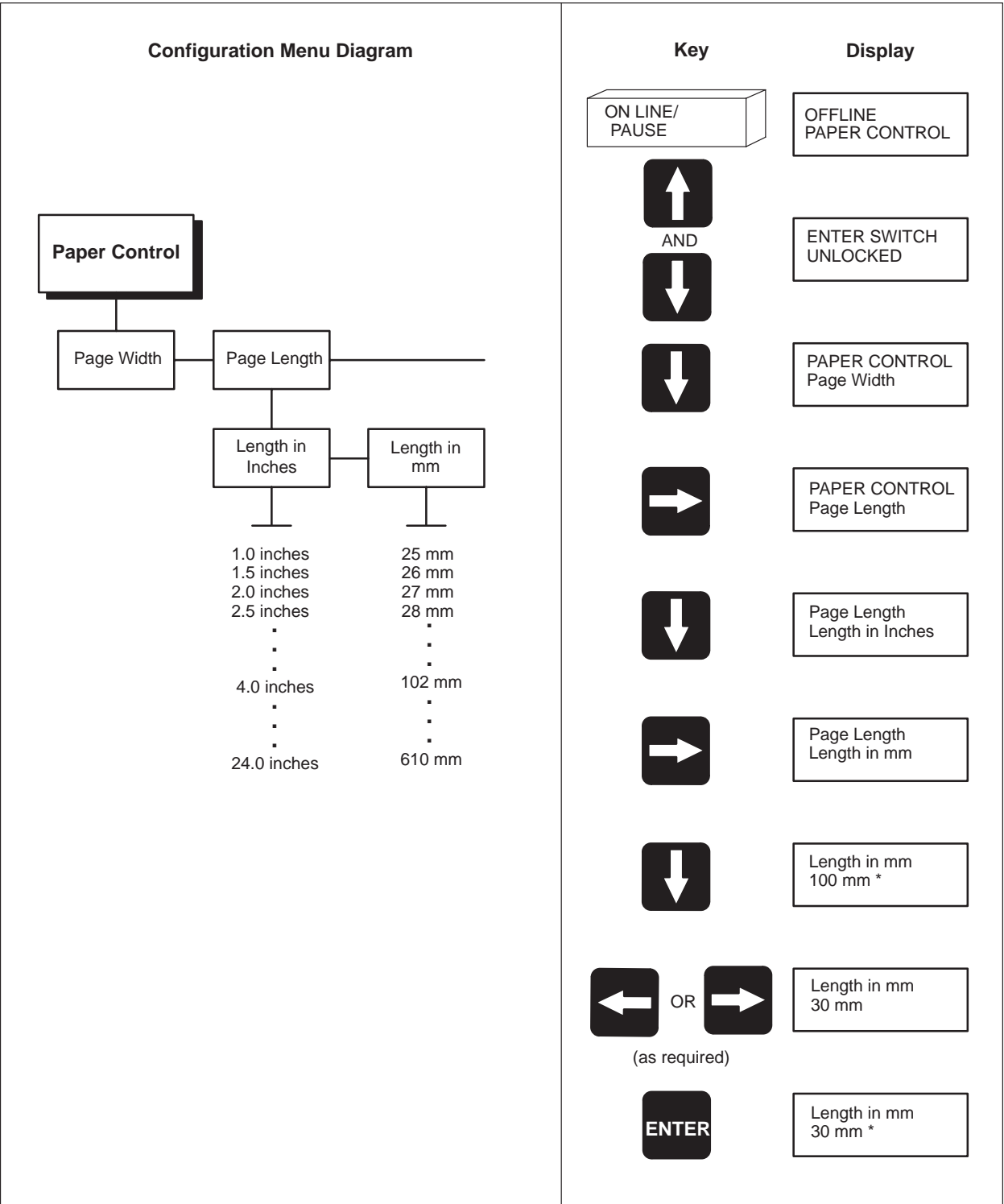


Figure 3-4. Moving within the Configuration Menu

Pressing the up and down arrow keys simultaneously, or holding the SHIFT key while pressing the ENTER key will toggle the enter lock function. If either of these functions are performed while the ENTER key is locked, the message ENTER SWITCH UNLOCKED will be displayed for one second, and the ENTER key will be unlocked.

If either of these functions are performed while the ENTER key is unlocked, the message ENTER SWITCH LOCKED will be displayed for one second, and the ENTER key will be locked.

Whenever the ENTER key is pressed for a specific value (if the ENTER key is unlocked), the value is entered and the configuration is changed immediately.

This change will take effect for all subsequent data and operations for the printer. However, the configuration change is used only until the printer is turned off. When the power is turned off, all configuration data is lost.

To save configuration information permanently and/or to select it as the power-up default, see the "Saving Your New Configuration" section on [page 3-11](#) for details.

## Changing Printer Settings


Changing printer settings, such as page length or emulation, is referred to as configuration. Configure the printer through the control panel.

1. Make sure the printer is off line. If the ON LINE/PAUSE LED is lit, press

the  key.





OFF LINE  
IMPACT PRINTER


2. Press  for the following display:














USER CONFIG.  
PAPER CONTROL

3. Press  or  to cycle through these options:

Paper Control  
Printer Control  
Font Memory  
Emulation  
Module Control  
Config. Control  
Host Interface (Service menu selection only.)  
Maint./Misc.  
Diagnostics (Service menu selection only.)

4. When the desired menu displays, press  to access the available options or submenus.

5. Press and hold  or  to scroll through the values.
6. Press  to select a value. An asterisk (\*) displays next to the selected value.
7. If there are more values you want to change, use the     keys to access the value and the  key to select it. At any time, you may press the  key to return to the options one level higher.
8. At any time, you may also press the  key to save your changes, then the  to exit the configuration menu and place the printer on line. Once you have finished selecting all your options, save your configuration.

### CAUTION

**If you do not save your configuration, all your new values will be lost when you turn off the printer.**

## Saving Your New Configuration

You can save up to eight different configurations to meet eight unique print job requirements. For example:

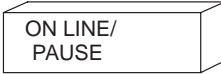
- |            |  |
|------------|--|
| Config. 0: | Factory Default (This cannot be altered.)  |
| Config. 1: | Selects RS-232 Serial Interface<br>Selects Page Width of 4 inches<br>Selects Page Length of 24 inches<br>Selects image Horizontal Shift of 0.20 inches, etc. |
| Config. 2: | Selects Parallel Interface<br>Selects Page Width of 2.2 inches<br>Selects Page Length of 25.0 mm<br>Selects image Vertical Shift of 0.10 inches, etc.        |

The configurations are saved and stored in nonvolatile memory for later use. These configurations, including the factory default configuration, will not be erased from memory when the printer power is turned off.


If you do not save your configuration (to the nonvolatile memory) before you turn off the printer, that current configuration will be lost.

**NOTE:** If the Protect Save CFG option is enabled, the new configuration will not be saved unless the existing configuration has been deleted.

Follow these steps to save a new configuration:

1. Press  to take the printer off line.

OFF LINE  
IMPACT PRINTER



2. Press  for the following display:

USER CONFIG.  
PAPER CONTROL

3. Press  or  until the following displays:



OFF LINE  
CONFIG. CONTROL


4. Press 

5. Press  or  until the following displays:

CONFIG. CONTROL  
Save Config.

6. Press 

7. Press  or  to cycle through the options (1–8). Note that “0” is the default configuration and cannot be altered.

8. When the desired number displays, press  to select it.

If the configuration number has been previously saved and the Protect Save CFG option is enabled, the following error message displays:

CFG FILE EXISTS  
DELETE FIRST



When processing is completed, the display shows:

Save Config.  
X \*

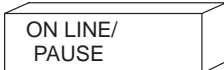
It is recommended that you print your configuration and store it in a safe place for future reference. Refer to the “Printing a Configuration” section, on [page 3–16](#), for details.

## Modifying a Saved Configuration


You can change a saved configuration by rewriting over it. For example, you can modify Config. 1, shown below. Suppose you want to keep all the settings but you want to select the parallel interface instead of the serial interface.

Config. 1:                      Selects RS–232 Serial Interface  
                                      Selects Page Width of 4 inches  
                                      Selects Page Length of 24 inches  
                                      Selects image Horizontal Shift of 0.20 inches, etc.


1. Load the configuration to be changed (for example, Config. 1).

- a. Press  to take the printer off line.

OFF LINE  
IMPACT PRINTER

- b. Press  for the following display:





USER CONFIG.  
PAPER CONTROL

- c. Press  or  until the following displays:

OFF LINE  
CONFIG. CONTROL

- d. Press 
- e. Press  or  until the following displays:


CONFIG. CONTROL  
Load Config.


- f. Press 
- g. Press  or  to cycle through the options (1–8). Note that “0” is the default configuration and cannot be altered.
- h. When the desired number displays, press  to select it. The following message is displayed while loading.

STANDBY . . .


Then, the following message displays when it is loaded:

Load Config.  
X \*



2. Move through the menu and change all the desired values. (In this example, you would change the value from Serial to Parallel.)
3. Press the  key to save each new value. An asterisk (\*) displays.
4. Before saving the modified configuration, you must delete the original configuration if the Protect Save CFG option is enabled.

- a. Press  to take the printer off line.

OFF LINE  
IMPACT PRINTER

- b. Press  for the following display:

USER CONFIG.  
PAPER CONTROL

- c. Press  or  until the following displays:




OFF LINE  
CONFIG. CONTROL

- d. Press 

- e. Press  or  until the following displays:

CONFIG. CONTROL  
Delete Config.

- f. Press 

- g. Press  or  to cycle through the options (1–8). When the desired number displays, press  to select it. The following message is displayed.

STANDBY . . .

Then, the following displays when it is deleted:

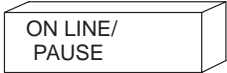
Delete Config.  
X \*

5. Save the new configuration as described in the “Saving Your New Configuration” section, on [page 3–11](#). Make sure you select the same number (e.g., Config. 1) when saving the modified configuration. The new configuration writes over the existing one.
6. Print a copy of this newest configuration and store it in a safe place. Refer to the “Printing a Configuration” section, on [page 3–16](#), for details.


## Printing a Configuration

It is recommended that you print and store your configurations for future reference. The printout provides a list of the parameters that were set when you configured the printer. A sample configuration printout is shown in [Figure 3-5](#), on [page 3-17](#).



To print a configuration:

1. Press  to take the printer off line.

OFF LINE  
IMPACT PRINTER



2. Press  for the following display:

USER CONFIG.  
PAPER CONTROL

3. Press  or  until the following displays:

OFF LINE  
CONFIG. CONTROL

4. Press 


5. Press  or  until the following displays:

CONFIG. CONTROL  
Print Config.

6. Press 

7. Press  or  to cycle through the following printout options.

Current  
Factory (this is 0)  
Power-Up  
All  
1-8 customized configurations

8. When the desired option displays, press . The ON LINE/PAUSE LED flashes, and the printer prints the specified configuration. Refer to [Figure 3-5](#), on [page 3-17](#), for a sample configuration printout.

CURRENT CONFIGURATION

T3308 Printer Configuration  
Copyright (c) 1992-97 by PRINTRONIX Inc.  
All rights reserved.  
IGP/PGL Version 1.13B Part No.: 750278  
LinePrinter+ Version 1.13B  
25-Feb-1997

PAPER CONTROL

Page Width	
Width In Inches	6.0 Inches
Width In MM	152 mm
Page Length	
Length In Inches	4.0 Inches
Length In MM	102 mm
Ver. Image Shift	
Shift In Inches	0/100 Inches
Shift In MM	.00 mm
Hor. Image Shift	
Shift In Inches	0/100 Inches
Shift In MM	.00 mm
Auto Label Map	
Selection	Disable
Narrow Web Width	
Width In Inches	8.5 Inches
Width In MM	216 mm
Wide Web Width	
Width In Inches	13.2 Inches
Width In MM	335 mm
Print Mode	Thermal Xfer
Ribbon Selection	Other

PRINTER CONTROL

Media Handling	Continuous
Print Intensity	0
Print Speed	5.0 Inches/Sec.
Gap Sensor	None
Ribbon Saver	Disable
Ppr. Feed Shift	
Shift In Inches	0/100 Inches
Shift In MM	.00 mm

FONT MEMORY

	50 K bytes
--	------------

Figure 3-5. Sample Configuration Printout (sheet 1 of 3)

```

EMULATION
  IGP/PGL
    Define CR code          CR = CR
    Define LF code         LF = LF
    Autowrap                Disable
    Select SFCC             126
    Select font             0
    Autoeject               Disable
    Select LPI              6
    Auto Uppercase          Disable
    Skip Cmd Prefix         Enable
    Power on IGP/PGL       Enable
    Ext Execute Copy       Disable
    UPC Descenders         Enable
    Host Form Length        Enable
    IGP100 Compatbl.       Disable
    Slash 0                 Disable
  Impact Printer
  Printer Protocol
    P-Series
      Control Code 06       8.0 LPI
      Control Code 08       Elongated
      Define CR code        CR = CR
      Auto LF                Disable
      Overstrike             Enable
      Define LF code        LF = CR + LF
      Select SFCC            1
      EVFU Select            Enable
      Alt. Set 80-9F        Control Code
      Character Set          Multinational
    Orientation             Portrait
  CPI/LPI Select
    Select CPI               10.0 CPI
    Select LPI               6.0 LPI
  Font Attributes
    Typeface                 Std. Typeface
    Prop. Spacing            Enable
    Slashed Zero             Disable
  Plot Attributes
    Horizontal DPI           120 dpi
    Vertical DPI             72 dpi
  Page Format
  Margins
    Logical Form
      Left Margin            0 characters
      Right Margin           0 characters
      Top Margin             0 linespaces
      Bottom Margin          0 linespaces
    Physical Page
      Left Margin            00.00 inches
      Right Margin           00.00 inches
      Top Margin             00.00 inches
      Bottom Margin          00.00 inches
  Perforation Skip         Disable
  Menu Form Size           Disable
  Form Length
    Absolute Length         04.0 inches
    Function of LPI         24 lines
  Form Width
    Absolute Width          06.0 inches
    Function of CPI         60 characters
  Host Form Length         Disable
Module Info
  Top Module (B:)          NONE
  Bottom Mod (C:)          NONE

```

**Figure 3–5. Sample Configuration Printout (sheet 2 of 3)**

```

HOST INTERFACE
  Serial
    Host Protocol          None
    Baud Rate              9600 Baud
    Data Bits              8 Data Bits
    Stop Bits              1 Stop Bit
    Parity                 None
    DTR Function           Enable
    ETX/ACK BUFFER        512 bytes
    ENQ/STX                Disable
  Parallel
    Data Bit 8             Enable
    Data Polarity          Normal
    Fault Polarity         Normal
    PE Polarity            Normal
MAINT / MISC
  Power-up State          Online
  Hex Dump Mode           Disable
  PTX_SETUP Option       Enable
  SETUP PARSE
  SETUP SFCC              21h
DIAGNOSTICS
  Test Print
    Test Selection        Checkerboard
    Test Count            1
    Start Test            Press ENTER
  Printhead Test
    Test Selection        Disable
    Test Period           250 Labels
  Print Statistics
    Head Life
      Length Printed      223 Meters
      Power up Time       631 Hours
      Reset Head Data     Press ENTER
    Printer Life
      Length Printed      223 Meters
      Power up Time       631 Hours
  System Memory
    Total Ram             5 MegaBytes
    Total RAM             1.13B
    PGL Version

```

**Figure 3–5. Sample Configuration Printout (sheet 3 of 3)**

## Factory Settings

[Table 3–2](#), on [page 3–21](#), lists the factory default settings. These values are available for loading at any time and are maintained until new configuration settings are saved as the default.

## Configuration Option Definitions

The printer provides the following *main level* configuration options:

- Paper Control
- Printer Control
- Font Memory
- Emulation
- Configuration Control
- Module Control
- Host Interface
- Maintenance/Miscellaneous
- Diagnostics

These options are described on the following pages.



**Table 3–2. Factory Settings**

Parameter	Factory Settings
<b>Paper Control</b> Page Width Page Length Vertical Image Shift Horizontal Image Shift Auto Label Mapping Print Mode Ribbon Selection	6.4 or 8.5 inches (T3306 or T3308, respectively) 4.0 inches (102 mm) 0.00 inches (0 mm) 0.00 inches (0 mm) Disable Thermal XFER Other
<b>Printer Control</b> Media Handling Print Intensity Print Speed Gap Sensor Ribbon Saver Paper Feed Shift	Continuous 0 8.0 or 5.0 IPS (T3306 or T3308, respectively) None Disable 0.00 inches (0 mm)
<b>Font Memory</b> 50 K bytes * to 4000 K bytes in 25 K increments	Impact Printer
<b>Emulation</b>	Impact Printer
<b>Module Control</b> Dir. Listing Internal (A:) External (B:) Delete File Internal (A:) External (B:) Format Module Press ENTER key Print Directory Internal (A:) External (B:) Module Info External (B:)	

**Table 3–2. Factory Settings (continued)**

<p><b>Config. Control</b></p> <ul style="list-style-type: none"> <li>Load Configuration</li> <li>Save Configuration</li> <li>Print Configuration</li> <li>Delete Configuration</li> <li>Power-Up Configuration</li> <li>Protect Saved Configuration</li> </ul>	<ul style="list-style-type: none"> <li>0</li> <li>1</li> <li>Current</li> <li>1</li> <li>0</li> <li>Disable</li> </ul>
<p><b>Host Interface</b></p> <ul style="list-style-type: none"> <li>Serial</li> <li>Host Protocol</li> <li>Baud Rate</li> <li>Data Bits</li> <li>Stop Bits</li> <li>Parity</li> <li>DTR Function</li> </ul>	<ul style="list-style-type: none"> <li>None</li> <li>9600</li> <li>8</li> <li>1</li> <li>None</li> <li>Enable</li> </ul>
<p><b>Maint/Misc</b></p> <ul style="list-style-type: none"> <li>Power-Up State</li> <li>Hex Dump</li> <li>PTX_SETUP Option</li> </ul>	<ul style="list-style-type: none"> <li>On Line</li> <li>Disable</li> <li>21h ("!" character)</li> </ul>
<p><b>Diagnostics</b></p> <ul style="list-style-type: none"> <li>Test Print</li> <li>Printhead Test</li> <li>Print Statistics</li> <li>System Memory</li> </ul>	<ul style="list-style-type: none"> <li>Checkerboard, 1 page</li> <li>Disable</li> <li>Used for displaying printer life counts</li> <li>Used for displaying system memory configuration</li> </ul>

# Paper Control Menu Options

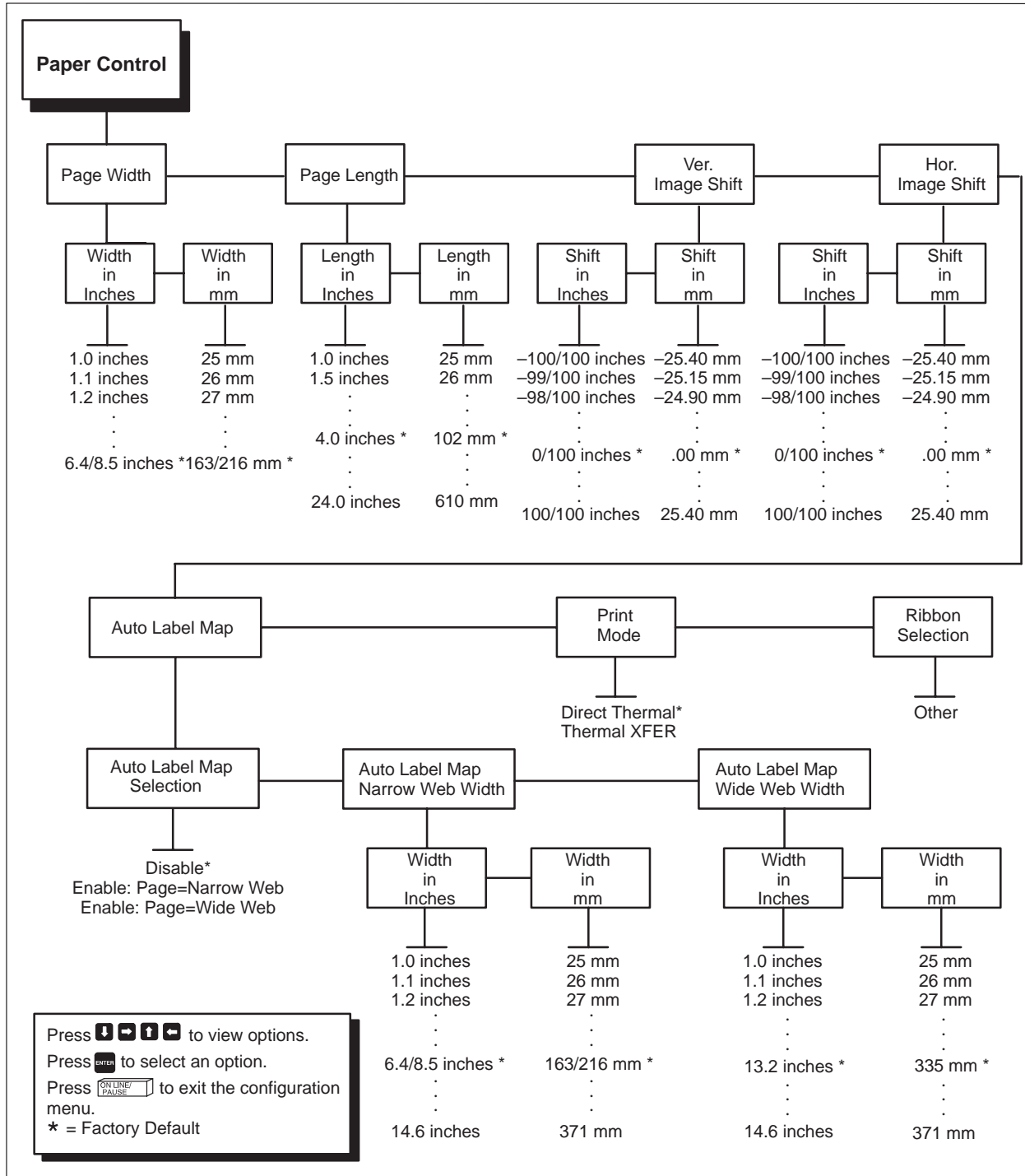


Figure 3–6. Paper Control Menu

## Page Width

This option specifies the width of the image to be printed. When Auto Label Map is enabled, Page Width is not used for boundary checking; therefore, it is possible that the form is designed for a wider page than the Page Width settings. The values may be specified in inches or millimeters.

The allowable range in inches is 1.0 to the maximum print width of the printer (6.4 and 8.5 inches for the T3306 and T3308, respectively), in 0.1-inch increments. The allowable range in millimeters is 25 to the maximum print width of the printer (162 and 216 millimeters for the T3306 and T3308, respectively), in 1-millimeter increments. The factory default values are the maximum print width of the printers in inches or millimeters.

## Page Length

This option specifies the vertical perf-to-perf distance of the continuous-form paper (i.e., the physical form length). The values may be specified in inches or millimeters. The allowable range in inches is 1.0 to 24.0, in 0.5-inch increments. The factory default value in inches is 4.0. The allowable range in millimeters is 25 to 610, in 1-mm increments. The factory default value in millimeters is 102. Refer to [Appendix C](#) for further information on the various considerations involved when setting the page length.

## Ver. Image Shift

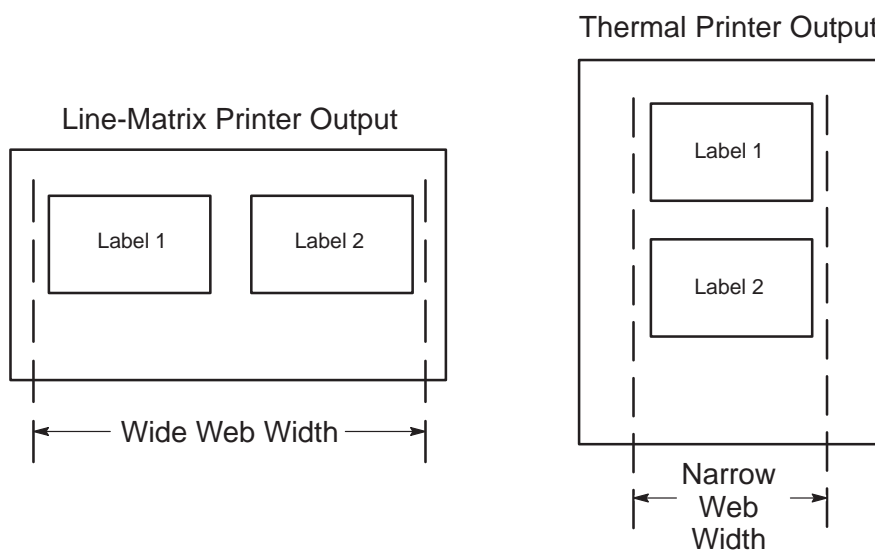
This option specifies the amount to shift an image vertically up (–) or down (+) for precise positioning on the page. The actual height of the image is not affected by this parameter. The values may be specified in inches or millimeters. The allowable range in inches is –1.00 to +1.00 inches, in 0.01-inch increments, displayed as xx/100. The allowable range in millimeters is –25.4 to +25.4, in 0.25-mm increments. The factory default value in inches or millimeters is 0.

## Hor. Image Shift

This option specifies the amount to shift an image horizontally left (–) or right (+) for precise positioning on the page. The actual width of the image is not affected by this parameter. The values may be specified in inches or millimeters. The allowable range in inches is –1.00 to +1.00 inches, in 0.01-inch increments, displayed as xx/100. The allowable range in millimeters is –25.4 to +25.4, in 0.25-mm increments. The factory default value in inches or millimeters is 0.

## Auto Label Mapping

This option specifies the maximum print width to be used by the application. The IGP/Auto Label Mapping™ feature allows backward compatibility of programs written for Printronix Wide Web line-matrix printers using Printronix IGP graphics languages. It allows the printer to print two-up (or other multi-up) labels. Instead of printing multiple labels across the printer, it prints the leftmost label and the rightmost label, so the printout will be twice as long but half as wide.



### *Wide Web Width*

Sets the logical page width by selecting the page width that the original form was designed for. Generally, it is the width of the paper or printout on the original (line-matrix) printer.

### *Narrow Web Width*

Selects the width of the label being printed by the T3000 series.

**NOTE:** When using IGP/PGL, determine the proper narrow web width with the HDUP command used to duplicate the label. Generally, it should be the same as the distance between duplications given in the HDUP command (or some multiple of the distance between duplications).

### *Selection*

Selects whether to use the auto label mapping feature. If disabled, the auto label mapping parameters are not used. There are two different “states” of enable:

- *Enable: Page=Narrow Web* – The printer treats a page as each of the individual strips or labels that are printed. This affects the position used for cutting or tearing a label. With this selection, if the labels are to be cut (or torn off), the printer will cut label after each label.
- *Enable: Page=Wide Web* – The printer treats a page as the entire string of labels printed from the original page. This affects the position used for cutting or tearing a label. With this selection, if the labels are to be cut or torn, the printer will cut the label only after all the labels from the original page are printed.

**NOTE:** When in the self-strip mode, the printer must be configured to Enable: Page=Narrow Web. If the printer is programmed to cut or tear from the emulation, but not after every page or label, the printer must be configured to Enable: Page=Wide Web.

### **Print Mode**

This option specifies the printing mode: direct thermal or thermal transfer.

### **Ribbon Selection**

This menu contains part numbers for Printronix ribbons and one “other” selection. When a part number is selected, the print speed and print intensity are set to predefined defaults.

# Printer Control Menu Options

## Media Handling

This option specifies how the printer will handle the paper.

- *Tear-Off* – After each label is printed, the printer waits for you to tear off the label before printing the next one (*on-demand* printing).
- *Cutter* – Cuts continuous roll paper or labels without assistance.
- *Self-Strip* – Prints and strips die-cut labels from the liner without assistance. The printer waits for you to tear off the label before printing the next one (*on-demand* printing).
- *Continuous* – Printer prints paper and sends it out the front.

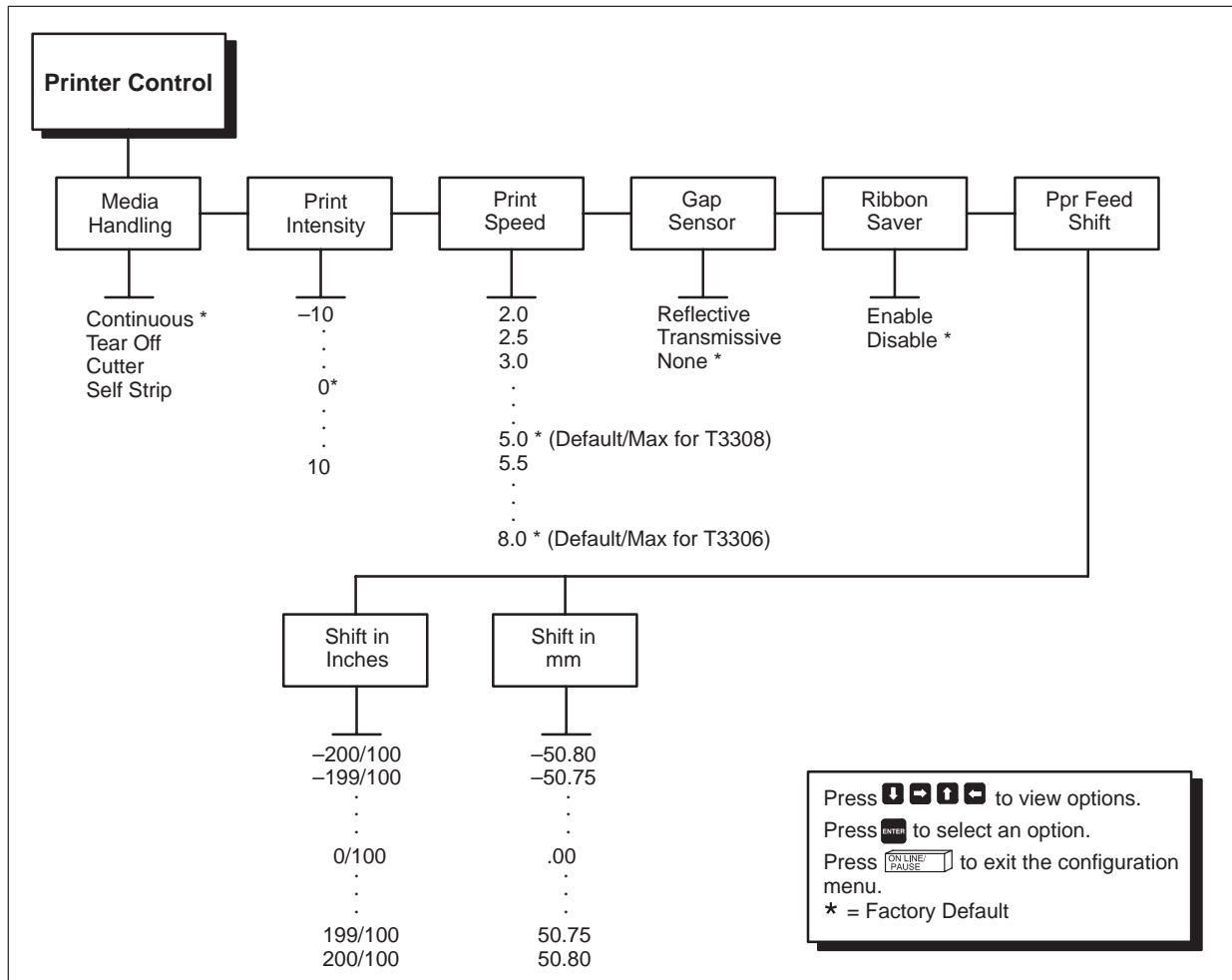


Figure 3–7. Printer Control Menu

**NOTE:** The Cutter, Self-Strip and Ribbon Saver options require that the appropriate options be installed to operate correctly.

### **Print Intensity**

This option specifies the level of thermal energy from the printhead to be used for the type of paper and ribbon being used.

Larger numbers imply more heat (thermal energy) to be applied for each dot. This has a significant effect on print quality. The print intensity and speed must match the paper and ribbon type to obtain the best possible print quality and bar code grades.

### **Print Speed**

This option specifies the speed at which the paper will pass through the printer. This parameter has a significant effect on print quality (refer to “Print Intensity”).

### **Gap Sensor**

This option specifies whether either of the label gap sensors are enabled or disabled.

### **Ribbon Saver**

This option specifies whether the Ribbon Saver feature (when available) is enabled or disabled.

### **Ppr Feed Shift**

This menu represents the distance to advance a label when the tearoff, cutter or Automatic Label Peel-Off Dispenser options are selected.



## Font Memory Menu Options

---

This option allows the user to set the amount of memory reserved for scalable font caching. The maximum amount of memory which can be selected is determined by the total amount of memory installed in the printer.

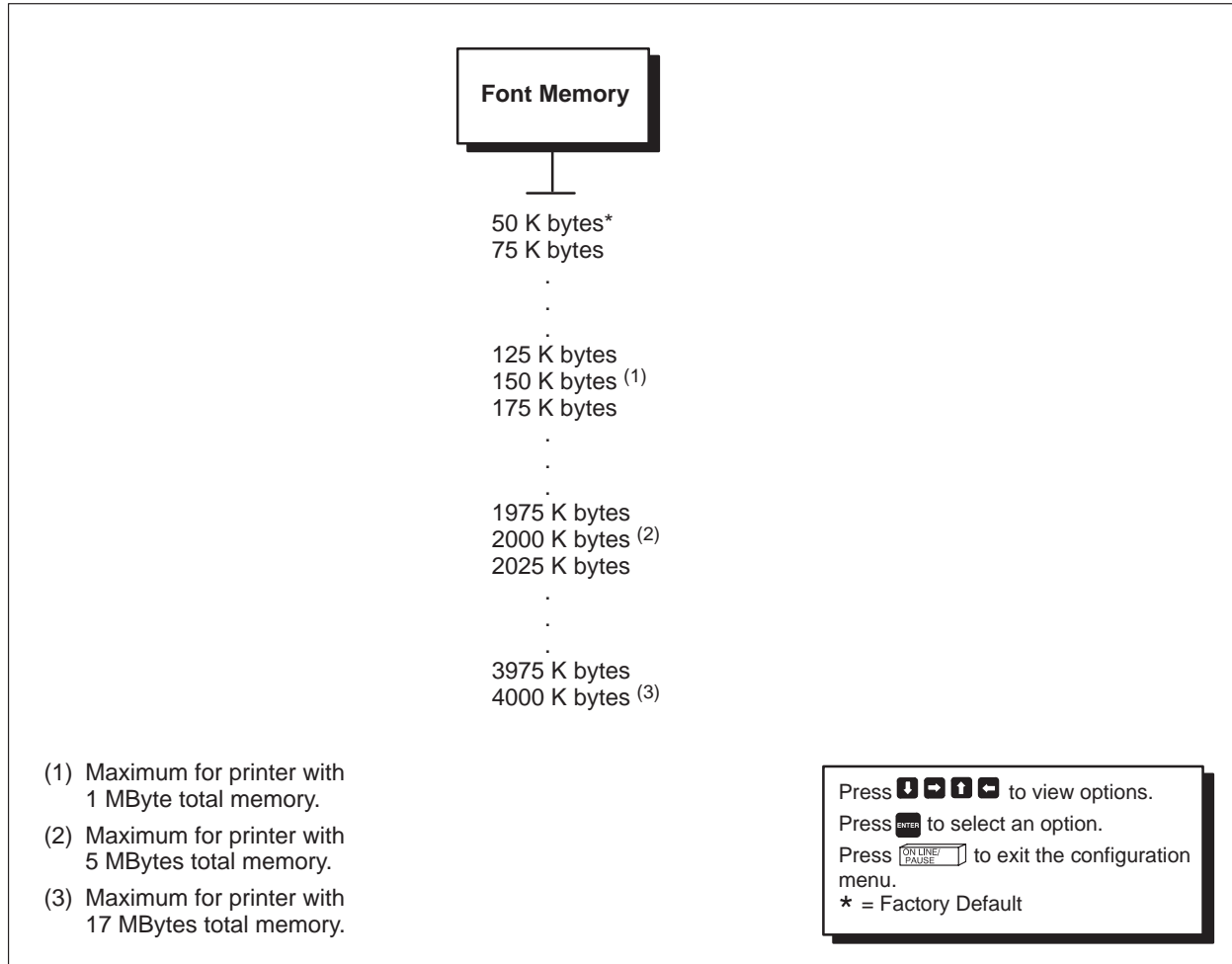


Figure 3–8. Font Memory Menu

## Emulation Menu Options

---

The LinePrinter+ emulation is the standard emulation on the printer. IGP/PGL and IGP/VGL emulations are available as options.

The contents of the emulation menu structure will be created by the printer at run-time, and, when powered up, the printer will automatically load the default configuration values. The default set of parameters is the factory setting until a new setting is saved to nonvolatile memory. Refer to the “Factory Settings” section on [page 3-20](#) to restore the factory settings after you have created a new default setting.

**NOTE:** Each emulation may have a unique set of configuration options in addition to those that are in the printer system list. Refer to the appropriate section at the end of this chapter for those settings.

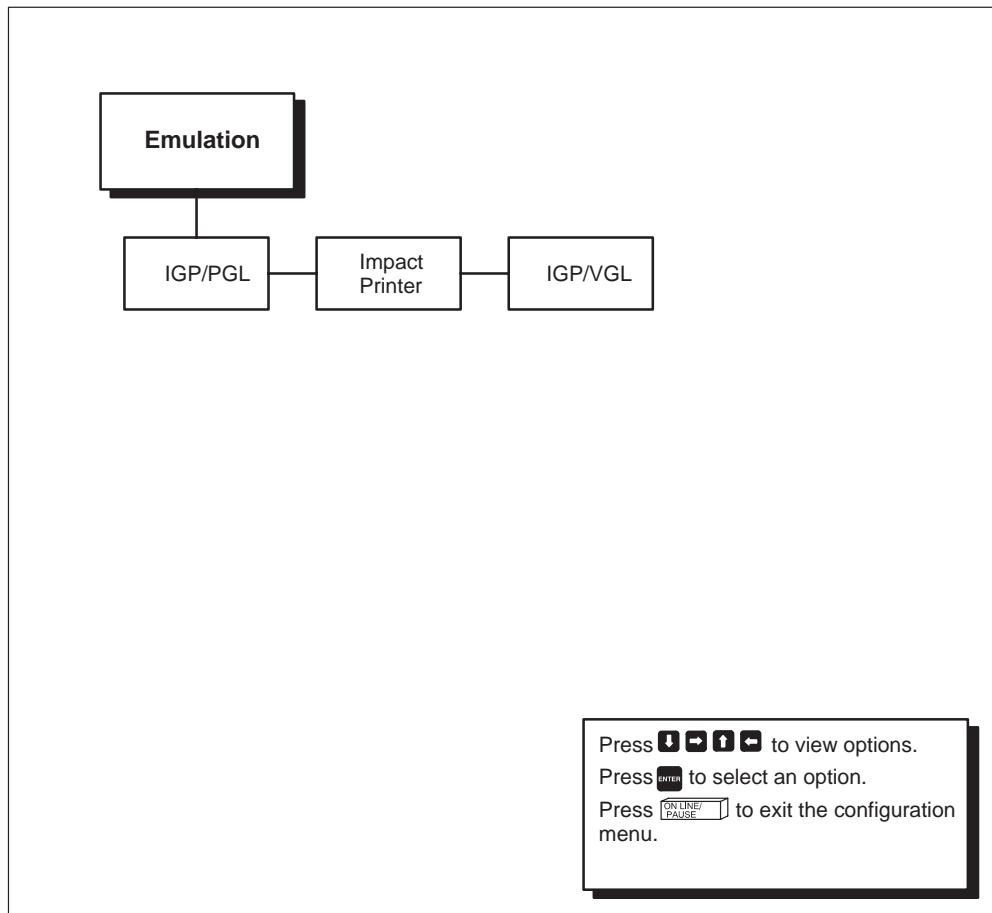


Figure 3-9. Emulation Menu

# Configuration Control Menu Options

## Load Configuration

The printer can store numerous configurations. This option allows you to select and load a specific configuration. The factory default for loading is configuration 0. Note that configuration 0 is a factory-preset configuration that cannot be changed and is always available for loading.

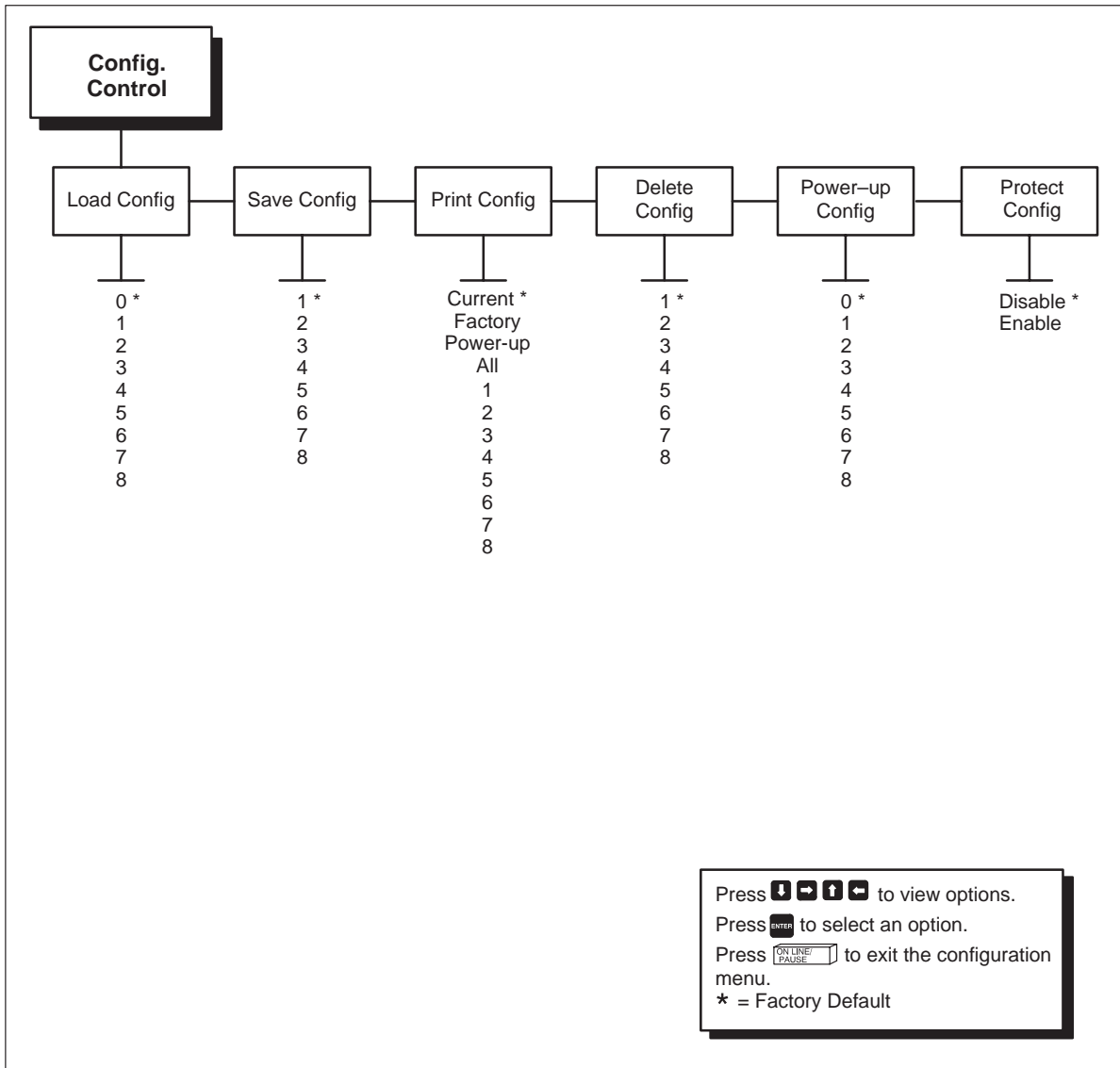


Figure 3–10. Configuration Management Menu

## Save Configuration

You can save up to eight different configurations to meet different print job requirements. See the “Saving Your New Configuration” section on [page 3–11](#) for details.

Configuration 0 is a factory-preset configuration that cannot be changed or saved.

**NOTE:** If the Protect Save CFG option is enabled, the new configuration will *not* be saved unless the existing configuration has been deleted.

## Print Configuration

You can output a listing of various stored printer configuration parameters. You can print the following configurations.

- Current
- Factory
- Power-up
- All
- 1 – 8 customized configurations

Refer to the “Printing a Configuration” section on [page 3–16](#) for details.

## Delete Configuration

You can delete one or all of your eight customized configurations. Configuration 0 is a factory-preset configuration and cannot be changed or deleted.

## Power-up Configuration

You can specify one of nine (0 – 8) configurations to be used upon printer power-up. The factory default for power-up is configuration 0.

## Protect Configuration

You can specify whether or not a new configuration should overwrite an existing configuration when you activate the SAVE CONFIG option. When disabled (default), the new configuration will overwrite the existing configuration. When enabled, the new configuration will *not* overwrite the existing configuration, and the following will be displayed:

CFG FILE EXISTS  
DELETE FIRST

Therefore, you must delete an existing configuration before trying to save a new configuration.

## Module Control Menu Options

The Module Control Menu provides the capability to view and print the directories of all files located in the printer non-volatile memories. These memories are identified as Internal (A:), Top Module (B:) and Bottom Module (C:). The Internal Memory is supplied as standard, while the Top Module and Bottom Module are available in either 1 or 4 MByte flash memory cards. Modules may be installed in both the top and bottom locations simultaneously. The capability to delete files individually as well as format an entire memory module is also provided.

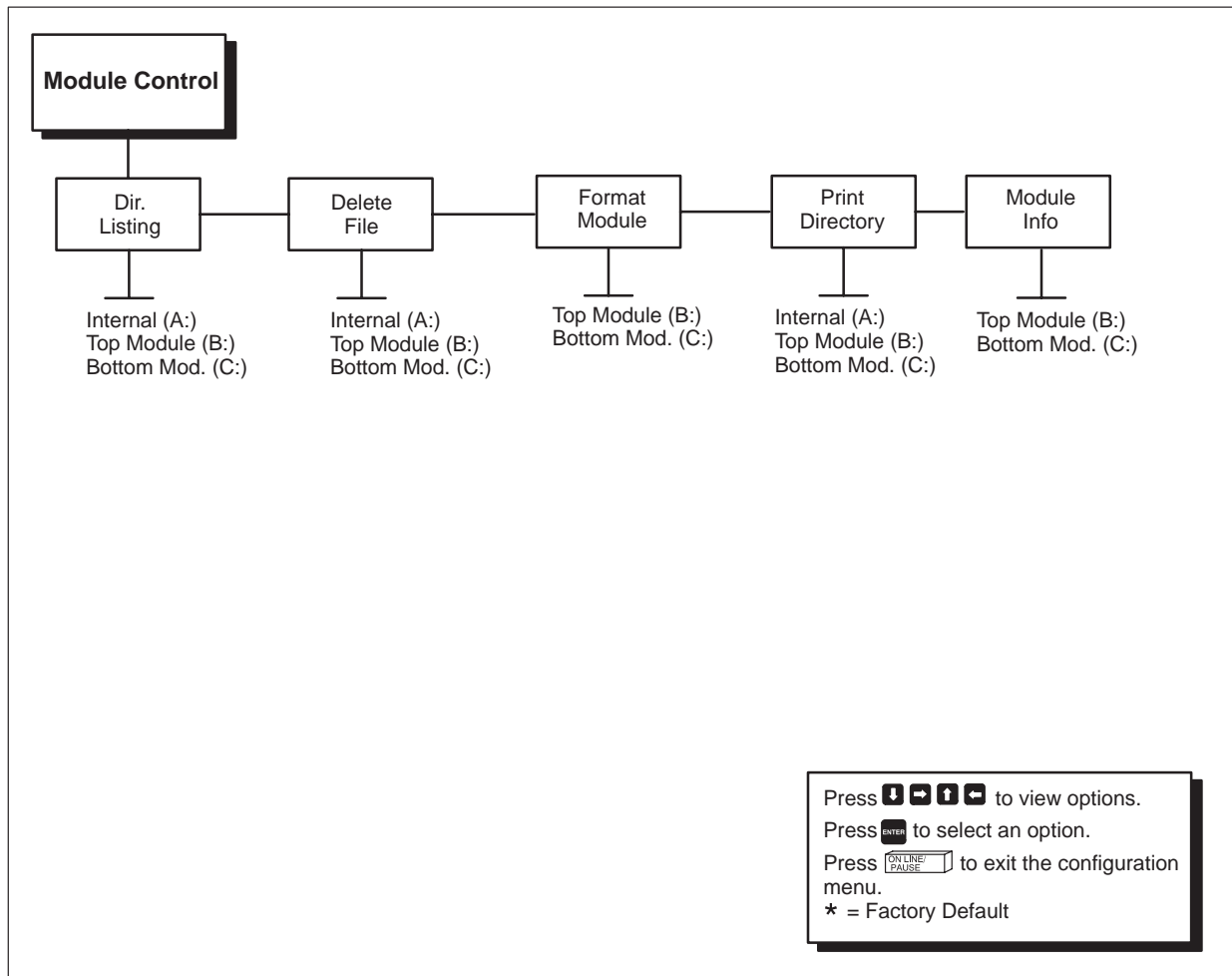


Figure 3–11. Module Control Menu

## **Dir. Listing**

This menu selection allows you to view the file listing of both internal and external memory modules. Under each sub menu choice, file names are displayed on the LCD, one at a time, by pressing the RIGHT or LEFT arrow key.

## **Delete File**

This menu selection allows you to delete a file from any of the memory modules. The file is deleted by selecting the desired file from the directory listing of the selected memory module and pressing the ENTER key. The confirmation message “Are you sure?” will be displayed on the LCD with “No” as the default selection. The file is deleted by pressing the RIGHT arrow key to change the selection to “Yes” and pressing the ENTER key.

## **Format Module**

This menu selection allows you to format any of the external memory modules. Select the desired module to be formatted, press the DOWN arrow key and then the ENTER key.

## **Print Directory**

This menu selection allows you to print a listing of all files and their sizes in any memory module. The total size of the memory module is also printed. Select the desired memory module and press the ENTER key. Note that the Page Width must be set equal to the width of the media actually installed in the printer for proper operation.

## **Module Info**

This menu selection lists the type and size of each external memory module. Individual modules are selected by pressing either the RIGHT or LEFT arrow keys.

## Host Interface Menu Options

The printer provides the following standard host interface options:

- Parallel (Centronics compatible)
- Serial (RS-232 or RS-422)

The configurations for each interface type are described in the following pages. Set these options to meet the specific data communications requirements set by the host system and by the application program running on the host. Refer to Figure 3-12.

### Parallel Interface

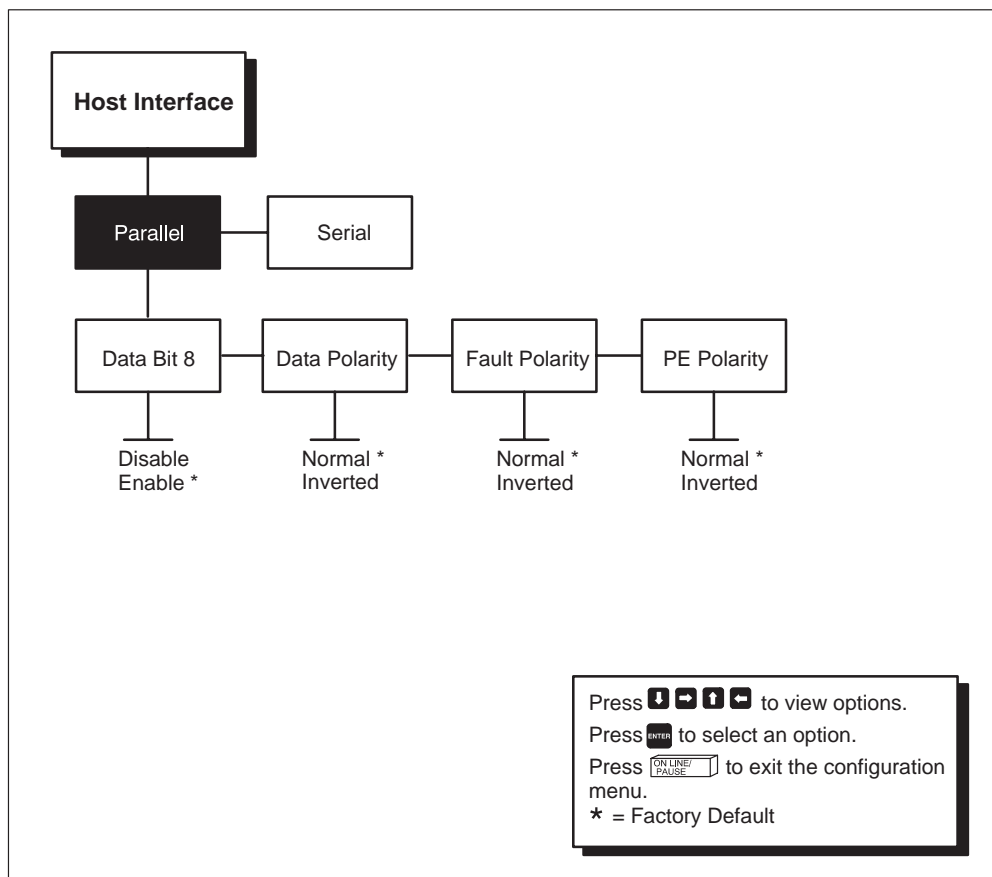


Figure 3-12. Host Parallel Interface Menu

### Data Bit 8

**Values:** Enable or Disable.

Normally, this parameter is enabled. It allows access to the extended ASCII character set.

### Data Polarity

**Values:** Normal or Inverted.

This must be set to match the Data Polarity of your host system. There are normally seven or eight data bits that define each ASCII character sent from the host to the printer. The bits are usually high-true.

### Fault Polarity

**Values:** Normal or Inverted.

This must be set to match the host computer. When the printer detects a paper error or a fatal machine check, it sends a Fault signal to the host, which, in turn, stops sending data.

### PE Polarity

**Values:** Normal or Inverted.

This must be set to match the host computer. When a *paper out* or *paper jam* occurs while printing, the printer sends a Paper Empty (PE) signal to the host, telling it to stop sending data.



# Serial Interface

## Host Protocol

**Values:** NONE or XON/XOFF. This must be set to match your host computer. The factory default is NONE.

XON means transmit on and XOFF means transmit off. In XON/XOFF protocol, the printer sends ASCII code DC1 (Device Code 1, hex 11, XON) to the host system when it is ready to receive more data (i.e., the printer is on line and the data buffer is empty). The printer sends ASCII code DC3 (Device Code 3, hex 13, XOFF) when it is *not* ready to receive data (i.e., the buffer is full or the printer is off line).

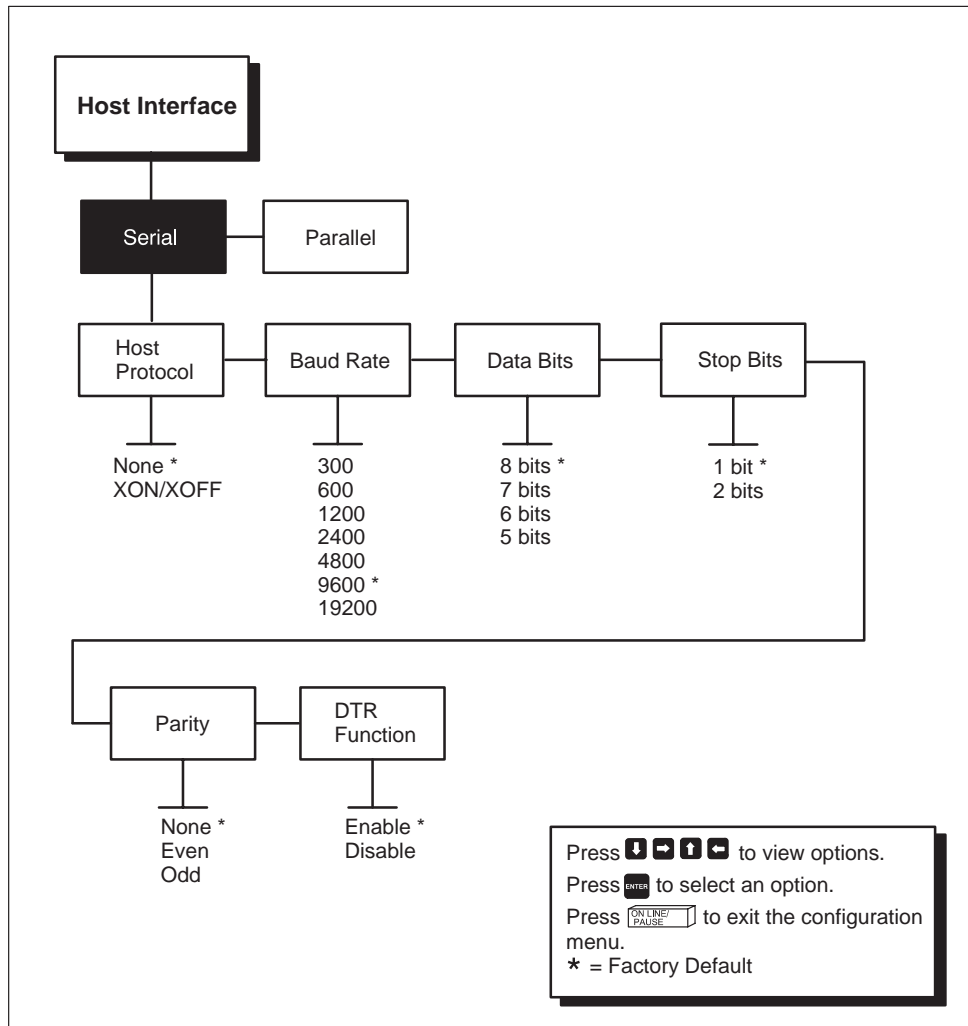


Figure 3–13. Host Serial Interface Menu

## Baud Rate

**Values:** 300 – 19,200. Must be set to match your host computer. The factory default is 9600.

Baud rate is the number of bits, including control bits (start/stop and parity bits) transferred per second over the interface.

## Data Bits

**Values:** 5 – 8. Must be set to match your host computer. The factory default is 8.

Serial interfaces support 5-, 6-, 7- and 8-bit transfer of data words. Most use 8-bit data transfer, but this *must* match the host computer.

## Stop Bits

**Values:** 1 or 2. Must be set to match your host computer. The factory default is 1.

Stop bits signal the end of a transferred data word.

## Parity

**Values:** NONE, EVEN or ODD. Must be set to match your host computer. The factory default is NONE.

The host system may send a parity bit with every data word. The parity bit is used for error checking.






## DTR Function

**Values:** ENABLE or DISABLE. The factory default is ENABLE. Must be set to match your host computer.

This selection determines if the DTR and CTS signals are used for flow control.

## Maintenance/Miscellaneous Menu Options

### Power-Up State

This option allows you to configure the printer to power-up in the off line or on line state. From MAIN / MISC, press the  key and then  until you reach POWER UP STATE. Press the  key to display OFF LINE and  to display ON LINE (default). Press  to select.

### Hex Dump Mode

This option allows the printer to be placed in the HEX-DUMP mode, in which the printer will output a hexadecimal data stream.

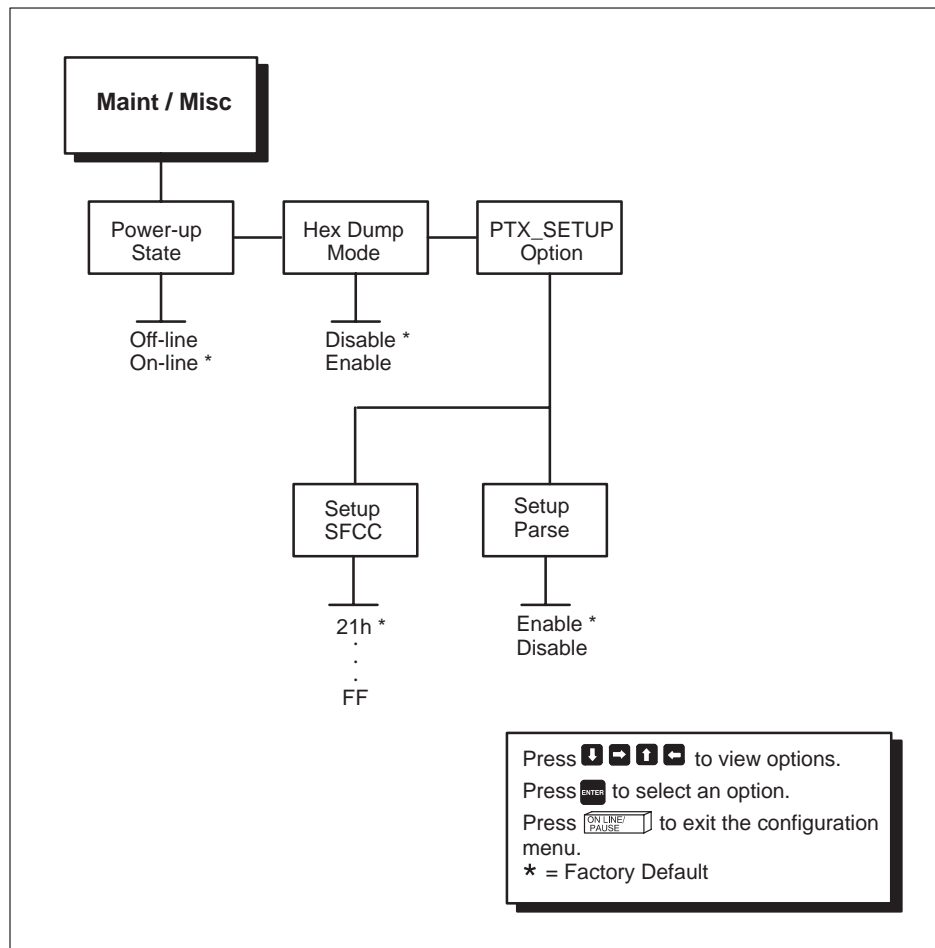


Figure 3–14. Maintenance/Miscellaneous Menu

When enabled, the hex dump mode translates all host interface data to its hexadecimal equivalent, then prints the hex code and its printable symbol, if one exists.

All characters printed after entering the hex dump mode (including any in the input buffer) are printed in two forms: as a two-symbol hexadecimal code and as its printable symbol, if any. A nonprintable code is printed as a period (.) symbol. Up to 16 characters can be printed per line. No control codes will be acted upon by the printer while in hex dump mode. (See [Figure 3–15](#).)

The 16 characters are formatted so that the 16 printable symbols are printed in columns 1 through 16. Columns 17 and 18 are blank. Columns 18 and 19 contain the hexadecimal code for the first character, followed by two blanks. The hexadecimal code for the 16th character is printed in columns 79 and 80.

Subsequent printing observes the current setting for skip-over perforation, form length and top-of-form position parameters

Cancel the hex dump mode (while off line) by disabling it from the control panel. The paper then may be advanced to the next top-of-form.

If a fault occurs while printing a hex dump, the printer reverts to the normal fault state. When the fault is cleared, the printer resumes printing the hex dump (either a partial line with a form feed, or nothing at all). Top-of-form remains unaffected.

### *PTX\_SETUP Option*

This option selects the special function control code for the PTX\_SETUP command and functions. The legal values are 1h – FF, which represent the ASCII code (in hexadecimal) of the character used as the SFCC for the PTX\_SETUP command. The default value is 21h, which corresponds to the “!” character.

The Impact Print	54	68	65	20	49	6D	70	61	63	74	20	50	72	69	6E	74
er Emulation pri	65	72	20	45	6D	75	6C	61	74	69	6F	6E	20	70	72	69
nts in one-up, t	6E	74	73	20	69	6E	20	6F	6E	65	2D	75	70	2C	20	74
wo-up, and four-	77	6F	2D	75	70	2C	20	61	6E	64	20	66	6F	75	72	2D
up page windows,	75	70	20	70	61	67	65	20	77	69	6E	64	6F	77	73	2C

**Figure 3–15. Example of Hex Dump**

# Diagnostics Menu Options

## Test Print

This option is used to define and activate a test printout. You must specify the test pattern and the number of pages to be printed.

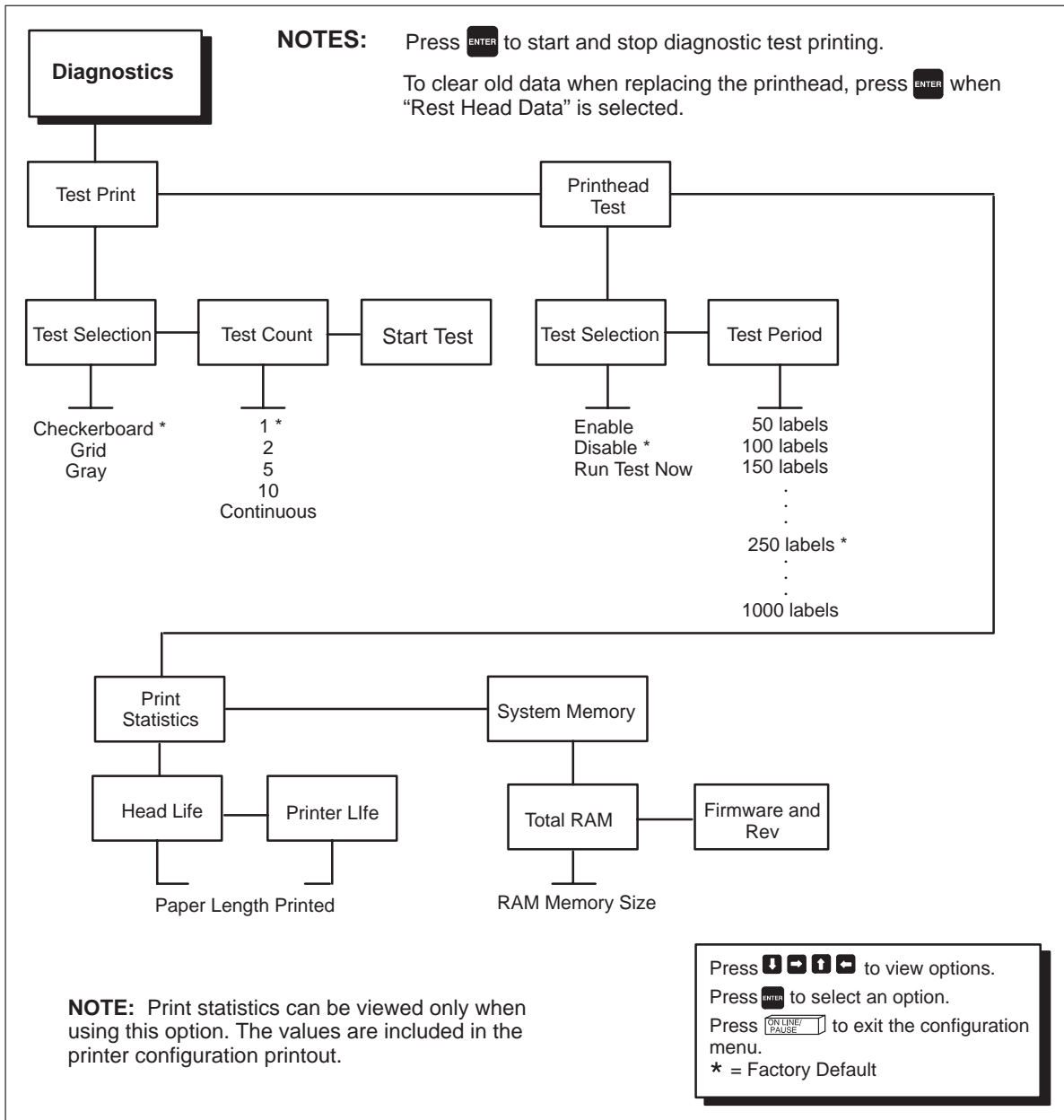


Figure 3–16. Diagnostics Menu

## Test Selection

This menu item is used to select the type of pattern to be used for the test printout.

## Test Count

This menu item is used to select the number of pages for the test printout. You may select 1, 2, 5 or 10 pages, or a continuous number of pages. The default is one page.

## Start Test

Press the  key to start and stop diagnostic test printing.

## Printhead Test

This option is used to define and activate a printhead test. You must enable the test selection and specify the test period.

## Print Statistics

This option provides access to miscellaneous items that provide information about printer usage.

## Printer Life

This menu item displays the total number of meters printed (normalized to 300 dpi).

## Head Life

This menu item displays the total number of meters printed (normalized to 300 dpi) for the printhead. Use the Reset Head Data menu item when you replace the printhead.

## System Memory

This menu provides information about system memory configuration.

- Total RAM – Total RAM in printer
- *Firmware Rev* – Firmware revision

## Configuring IGP/PGL with the Control Panel

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Matching certain printer operational settings to those of the host computer is known as “printer configuration.” The settings, or configuration parameters, such as selecting the host interface, are adjusted according to the printer function key descriptions in this manual. Configure IGP/PGL in the same way you would configure the printer for other features.

You can select IGP/PGL default parameters directly from the control panel as explained in this chapter.

The IGP/PGL parameters are described on the following pages. Parameters marked with an asterisk (\*) indicate the default value. The printer must be off-line to enter the configuration structure.

Pressing an invalid key to enter a parameter value may move you to another level in the configuration or exit the configuration menu completely.

### **IMPORTANT**

**BEFORE you reconfigure IGP/PGL parameters, print a configuration sheet to see all of the current settings.**

Configure the IGP/PGL according to your specific requirements. Please note that the Left Margin Sign option no longer exists in the IGP/PGL configuration menu. To establish a signed left margin and a top/bottom margin, access the option from the LP+ configuration menu.

The IGP/PGL sub-menu is shown on the following page.

## The IGP/PGL Emulation Submenu

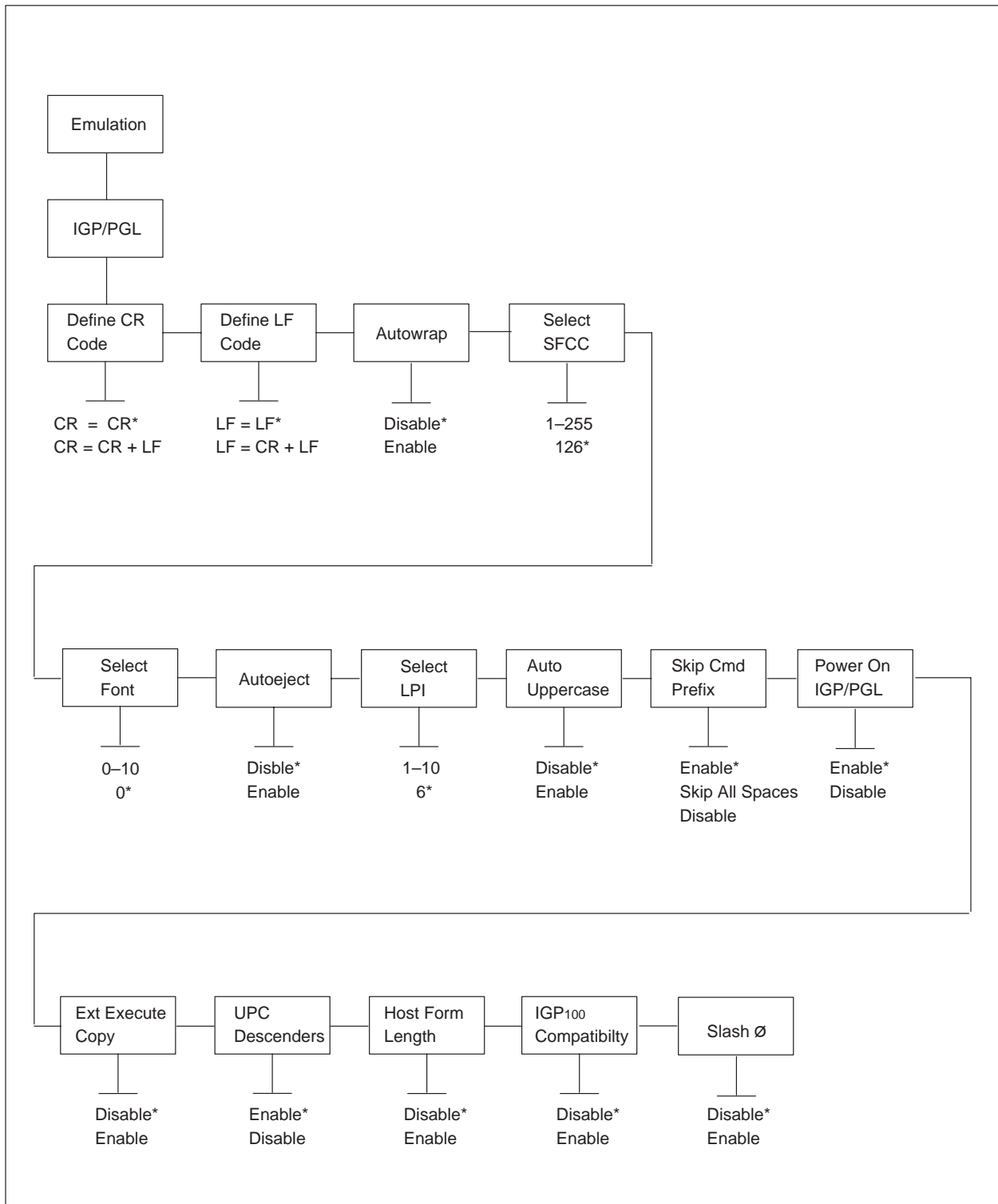


Figure 3-17. The Configuration Menu



**Table 3–3. IGP/PGL Configuration Mode Options**

**NOTE:** Parameters marked with an asterisk (\*) indicate the factory default value. The printer must be off-line to enter the configuration structure.

Option	Parameter Value	Comments
<b>AutoEject</b>	DISABLE * ENABLE	If the last page of a job is only 1/2 full (the data does not fill the entire page), you can instruct the printer to eject the page or leave it in the printer. ENABLE causes the printer to eject the last page after the entire page has been processed and printed. DISABLE instructs the printer to eject the page only if you send a Page Eject command or when the printer receives the next print job.
<b>Auto Wrap</b>	DISABLE * ENABLE	Controls automatic “wrapping” of text to the next line down when the text exceeds the right margin. DISABLE truncates text beyond the page margin until a CR or CR + LF is received. ENABLE automatically inserts a CR + LF after a full print line. If a proportional spaced font is used, this option is ignored and the printer does not wrap text.
<b>Define CR Code</b>	CR = CR * CR = CR + LF	When CR = CR + LF, a line feed is automatically inserted after each CR received, otherwise data passes through unchanged.
<b>Define LF Code</b>	LF = LF * LF = CR + LF	When LF = CR + LF, a CR is automatically inserted before each line feed is processed, otherwise data passes through unchanged.
<b>Ext Execute Copy</b>	DISABLE* ENABLE	If DISABLED, dynamic data, overlay data, etc. are not allowed if the optional Form Count parameter is specified as part of the Execute command. If ENABLED, dynamic data, overlay data, etc. are allowed within a form in which the Form Count parameter is specified in the Execute command. In this case, the exact same form (with identical dynamic data, etc.) is printed for whatever the Form Count is. Also, each form is printed on a separate page.

Option	Parameter Value	Comments
<b>Host Form Length</b>	DISABLE ENABLE*	DISABLE sets the form length to the value set from the front panel. ENABLE sets the printer page size equal to the form length defined in the CREATE FORM mode.
<b>IGP 100 Compatibility</b>	DISABLE* ENABLE	DISABLE does not change the PGL behavior. ENABLE makes PGL behavior compatible to that of IGP 100.
<b>Power On IGP/PGL</b>	DISABLE ENABLE*	DISABLE puts printer in QUIET mode at power-up, otherwise ENABLE or LISTEN mode is active at power-up.
<b>Select SFCC</b>	1 – 255 decimal 126 *	Select any ASCII character on page in <a href="#">Appendix D</a> (0 – 127) to set the binary pattern for the selected Special Function Control Character. Default is decimal 126 (~).
<b>Uppercase</b>	DISABLE* ENABLE	If ENABLED, all incoming data is converted to uppercase.
<b>Select Font</b>	0 * 1 2 3 4 5 6 7 8 9 10	0 = US ASCII      11–23 = Undefined default to ASCII. 1 = German        24–31 = User-defined symbol set 2 = Swedish        from the USET command. 3 = Danish 4 = Norwegian 5 = Finnish 6 = English 7 = Dutch 8 = French 9 = Spanish 10 = Italian
<b>Select LPI</b>	1 – 10	Any integer value from 1 to 10. Default is 6.
<b>Skip Cmd Prefix</b>	DISABLE SKIP ALL SPACES ENABLE*	DISABLE prints text before a valid IGP/PGL command as if a line feed preceded the command's SFCC. SKIP ALL SPACES ignores all spaces between the CR/LF and the first character of this next command. ENABLE ignores any text before a valid command.
<b>Upc Descenders</b>	DISABLE ENABLE*	If ENABLED, human readable text for UPC and EAN bar codes is embedded within the bar code. If DISABLED, the text is printed below the bar code.
<b>Slash Ø</b>	DISABLE* ENABLE	If DISABLED, prints zeros without a diagonal slash. If ENABLED, prints zeros with a diagonal slash.

## PGL MNEMONIC LIST

AFn;L	Dynamic Alpha Field number; length
BFn;L	Dynamic Bar Code Field number; length
CC	Control Character
CCW	90 degree Counterclockwise Rotation
CD	Check Digit
Cn	Compression Factor (text)
CPI	Characters Per Inch
CW	90 degree Clockwise Rotation
D	Dark Field
DIR	Direction of Alpha Rotation
DN	Duplication Number (quantity)
E	Elongated Print
EC	Ending Column
ER	Ending Row
FC	Forms Counter
FL	Forms Length
FONT	Font Style (optional/normal)
HE	Horizontal Expansion Factor
HL	Horizontal Length
Hn	Height (bar code)
INV	180 Degree Rotation
L	Long Field for dynamic reverse alpha with descenders
LOC	Location of Human Readable Data Field
LPI	Lines Per Inch
LT	Line Thickness
MAG	Magnification Factor (bar code)
MODE	IGP-20 Printer Mode
n1	XON Threshold Level
n2	XOFF Threshold Level
OF	Off Set For Duplication
PDF	Print Data Field (bar code)
R	Reverse Contrast
RMODE	IGP-20 Printer Return Mode
SC	Starting Column
SR	Starting Row
UC	Uppercase Only
VE	Vertical Expansion Factor
VL	Vertical Length
VSCAN	Vertical Bar Code Printing

## Configuring IGP/VGL With The Control Panel

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Matching certain printer operational settings to the host computer is known as *printer configuration*. The settings, or configuration parameters, such as selecting the host interface and parallel/serial data input, are adjusted according to the printer function key descriptions in this manual. Configure IGP/VGL as you would configure the printer for other features.

You can select IGP/VGL default parameters directly from the control panel as explained in this chapter.

The IGP/VGL parameters are described on the following pages. Parameters marked with an asterisk (\*) indicate the default value. The printer must be off-line to enter the configuration structure.

Pressing an invalid key to enter a parameter value may move you to another level in the configuration or exit the configuration menu completely.

Using the appropriate function key, move through the printer configuration structure until the emulation options are displayed, and select IGP/VGL.

**NOTE: BEFORE you reconfigure IGP/VGL parameters, print a configuration sheet to see all of the current settings.**

The IGP/VGL sub-menu, which is accessible from the control panel menu, is shown on the following page.

# The IGP/VGL Emulation Submenu

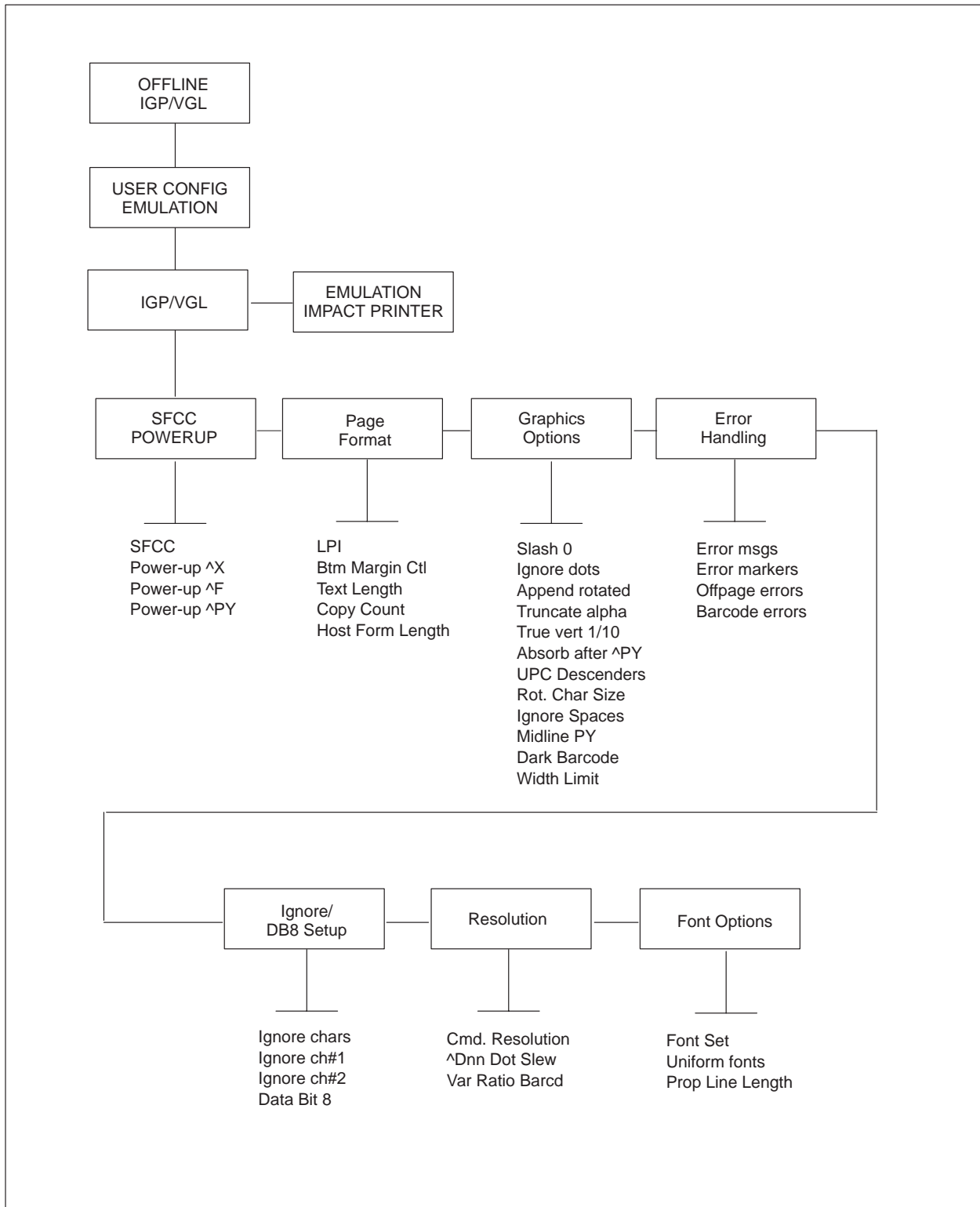


Figure 3–18. Printer Configuration Menu

**Table 3–4. IGP/VGL Parameters**

<b>Option</b>	<b>Parameter</b>	<b>Comments</b>
<b>^Dnn Dot Slew</b>	Low Resolution* High Resolution	The ^Dnn Dot Slew option determines if the ^Dnn dot slew command dot values will be interpreted as 60 dpi P-Series dots (Low Resolution) or as print engine dots (High Resolution).
<b>Absorb after ^PY</b>	DISABLE ENABLE *	Enable prevents paper motion following a system terminator in a graphics (cc)PY command. When disabled, system terminators following a graphics command are sent to the printer and result in paper motion.
<b>Append Rotated</b>	DISABLE * ENABLE	Enable appends logos to an alphanumeric string rotated in a clockwise, counterclockwise, or inverted orientation. Otherwise, the logo is treated as a separate element.
<b>Barcode Errors</b>	DISABLE ENABLE *	When disabled, the IGP/VGL will not print an error for illegal bar code data; the bar code will be skipped.
<b>Btm Margin Ctl</b>	VGL Text Length  LP+ Menu*	Bottom Margin Control determines the page's bottom margin. If this option is set to VGL Text Length, then Text Length changes the bottom margin value in the LP+ sub-menu as follows: bottom = physical page length – top margin – text length. If the option is set to LP+ Menu, then a change in Text Length has no effect, although the new value still shows in the menu.
<b>Cmd Resolution</b>	Low Resolution* High Resolution	The Command Resolution Option determines the command resolution mode (normal or high), which can also be set by using the ^IPARAM,NORMAL (EXTENDED) command.
<b>Copy Count</b>	1 * 1–999	The Copy Count Option determines the number of identical copies of each physical page that will be printed, which can also be set by using the ^IPAGE,COPY command.
<b>Dark Barcode</b>	DISABLE* ENABLE	Not applicable to T3000 series printers.
<b>Width Limit</b>	DISABLE* ENABLE	When disabled, prints text in the expansions requested. When enabled, the ratio of height/width is limited as in IGP <sub>110</sub> series printers.

Option	Parameter	Comments
<b>Data Bit 8</b>	DISABLE * ENABLE	When data bit 8 is enabled, all 8 bits are used for data bits, and characters in the 80–FF hex range can be accessed. When data bit 8 is disabled, only characters from 0–7F hex may be accessed.
<b>Error Markers</b>	DISABLE ENABLE *	<p>Enable prints the following error markers for those elements that print beyond the page boundaries:</p> <ul style="list-style-type: none"> <li>&gt;&gt; for elements that begin off the right side of the page;</li> <li>&lt;&lt; for elements that begin at the indicated position but end off the page;</li> <li>■ for elements where the starting position of the command contains an error other than an off-page error.</li> </ul>
<b>Error Msgs</b>	DISABLE ENABLE *	When enabled, command syntax is checked and error messages printed when command parameters are incorrect. When disabled, error checking and error messages are suppressed.

Option	Parameter	Comments
<b>Font Set</b>	0 * 1 2 3 4 5 6 7 8 9 10 11	0 = US ASCII 1 = German 2 = Swedish 3 = Danish 4 = Norwegian 5 = Finnish 6 = English 7 = Dutch 8 = French 9 = Spanish 10 = Italian 11 = Turkish
<b>Host Form Length</b>	DISABLE ENABLE*	DISABLE turns off the feature that uses the form length command ^L or ^H to set the page length for the printer. ENABLE sets the printer page size to equal the form length, which was set by ^L or ^H.
<b>Ignore Chars</b>  <b>Ignore Character #1</b>  <b>Ignore Character #2</b>	DISABLE * Char 1 Char 2 Char 1 & 2  0 – 255 decimal 0 *  0 – 255 decimal 0 *	Enables/disables the ignore function for Character #1 and/or Character #2.  Specifies a decimal character sent by the host to be ignored by the IGP/VGL. Select the appropriate decimal value for the character to ignore from <a href="#">Appendix D</a> (0 – 127).  Specifies a second decimal character sent by the host to be ignored by the IGP/VGL. Select the appropriate decimal value for the character to ignore from <a href="#">Appendix D</a> (0 – 127).
<b>Ignore Dots</b>	DISABLE * ENABLE	Enable causes the IGP/VGL to expect position values to be specified only in 1/10ths of an inch. If the dot position is also given, it is treated as text.
<b>Ignore Spaces</b>	DISABLE * ENABLE	When disabled, trailing spaces are NOT deleted from alphanumeric elements in a graphics pass. When enabled, trailing spaces are deleted from alphanumeric elements in a graphics pass.



Option	Parameter	Comments
<b>LPI</b>	6 * 7 8 9 10	Can also be set by using the ^@L command.
<b>Midline PY</b>	DISABLE* ENABLE	When disabled, the Graphics mode Enabled command, ^PY, must be the first three characters of a line. When enabled, the ^PY can occur anywhere in a line.
<b>OffPage Errors</b>	DISABLE * ENABLE	Enable reports errors for elements that start or end beyond the right edge of the page; disable does not report these errors.
<b>Power-up ^F</b>	DISABLE * ENABLE	Enable selects free format as the power-up default, and selects the graphics mode (cc)PY as the power-up default. Free format causes the IGP/VGL to ignore carriage returns, line feeds and all characters below 20 hex sent from the host.
<b>Power-up ^PY</b>	DISABLE * ENABLE	Enable selects the graphics mode (cc)PY as the power-up default.
<b>Power-up ^X</b>	DISABLE * ENABLE	Enable selects the ignore mode as the power-up default, and selects the graphics mode (cc)PY as the power-up default. All characters are ignored until a (cc)A command is received.

Option	Parameter	Comments
<b>Prop Line Length</b>	ENABLE * DISABLE	When enabled, the position of the next graphic element will be determined by the physical length of a text string (when using a proportional-spaced font). When disabled, the position will be determined as if the font was monospaced (as if all characters had the exact width specified).
<b>Rot. Char Size</b>	Adjusted* Not Adjusted	The Rotated Character Size option determines if rotated (clockwise/counter-clockwise), expanded characters have a different size than an unrotated character with the same size parameters (Adjusted) or the same size (Not Adjusted).
<b>SFCC</b>	17–255 dec 94 (^) *	Select any decimal character above 16 decimal from <a href="#">Appendix D</a> (0 – 127) to set the binary pattern for the selected Special Function Control Character. Default is the hat ^ (dec 94). Throughout this manual, the tilde ~ (dec 126) is used as the SFCC. Always use the SFCC required for your configuration wherever the tilde, or (cc) is shown. Obtain a configuration printout to determine the currently selected SFCC.
<b>Slash 0 (zero)</b>	DISABLE * ENABLE	Enable selects zeros printed with a slash to distinguish zeros from the alphabetical capital “O.”
<b>Text Length</b>	66 * 1 – 255	The Text Length option is the printable length on the page below the top margin. It is in character lines at the lpi in effect when the new value is entered. This option can also be set by using the ^IPAGE,MARGIN.
<b>Truncate Alpha</b>	DISABLE ENABLE *	When enabled, Truncate Alpha prevents the printing of Error 48 (Element Off Page Error) if alphanumeric data, including spaces, extends beyond the right side of the form.
<b>True Vert 1/10</b>	DISABLE * ENABLE	Default is disabled. Vert 1/10 equals 7/72nd inches. Enable actual inch equals 72/72.
<b>UPC Descenders</b>	DISABLE ENABLE *	When disabled, the IGP/VGL will not leave gaps for the human-readable data in the UPC/EAN bar codes when there is no human-readable data.

Option	Parameter	Comments
<b>Uniform Fonts</b>	DISABLE * ENABLE	When disabled, the typeface selected while in Extended Graphics mode will be cancelled when the graphics pass is complete. When enabled, a typeface selected while in Extended Graphics mode will also be used in Standard Graphics mode and Normal mode.
<b>Var Ratio Barcd</b>	Low Resolution * High Resolution	The Variable Ratio Bar Code determines if standard Variable Ratio Barcode command dot values (e.g., ^Bxy9 & ^IBARC,type,R) will be interpreted as 60 dpi P-Series dots (Low Resolution) or as print engine dots (High Resolution).

**Table 3–5. Other IGP/VGL-related Parameters**

Option	Parameter	Comments
<b>Left Margin</b>	0–99.99	Available from LP+ sub-menu. This option can also be set by using the ^IPAGE,MARGIN command.
<b>Top Margin</b>	0–99.99	Available from LP+ sub-menu. This option can also be set by using the ^IPAGE,MARGIN command.
<b>Bottom Margin</b>	0–99.99	Available from LP+ sub-menu. This option can also be set by using the ^IPAGE,MARGIN command.
<b>Orientation</b>	Portrait* Landscape/ Inv. Portrait/ Inv. Landscape	Available from LP+ sub-menu. This option can also be set by using the ^IPAGE,PORT (LAND, etc...) command.

## VGL MNEMONIC LIST

Amount	Numeric Amount for Data Field Update
CC	Control Character
CPI	Characters Per Inch
CR	Carriage Return
data	Data Characters
Dis	Interrupt Position Distance
Dist	Horizontal Tab Distance
Dt	Dot Rows Slewed
Expand	M, U, V, or E Alphanumeric Command
FF	Form Feed
Font	Font selection
G	Universal Terminator
H	Horizontal Border Thickness (Box)
Horz	Horizontal Length of Box
Ht	Character Height
Jus	Vertical Justification Distance
Len	Dynamic Form Field Length
LF	Line Feed
Lg	Form Length in Lines
Li	Line Spacing Parameter
Line 1	Line Position Parameter
Ln	Lines Slewed
LPI	Lines Per Inch
Mk	Shading Mask
No	Number of Dynamic Form Copies or Horizontal Duplications
Operand	Starting Numeric Data for Auto Increment
p	Print Optional Readable Data Field
ratio	Ratio Data (Variable Ratio Bar Codes)
Rpt#	Number of Data Repetitions
Sc	Scaling Parameter
Sp	Gap Spacing
t	Bar Code Type Selection
Ty	Character Type Parameter
V	Vertical Border Thickness (Box)
Vert	Vertical Length of Box
Wd	Character Width
9	Variable Ratio Length Bar Code Selection
#0	Compressed Print Terminator
#	Compressed Print Font Selection
*	Graphic Line Feed Mnemonic
+	Graphic Vertical Tab Mneumatic
+/-	Increment/Decrement Numeric Data

**Table 3–6. VGL/PGL ASCII Conversion Table**

ASCII	Dec	Hex	7	Binary Pattern 1	ASCII	Dec	Hex	7	Binary Pattern 1	ASCII	Dec	Hex	7	Binary Pattern 1	ASCII	Dec	Hex	7	Binary Pattern 1
NUL	0	00	0000000		SP	32	20	0100000		@	64	40	1000000		'	96	60	1100000	
SOH	1	01	0000001		!	33	21	0100001		A	65	41	1000001		a	97	61	1100001	
STX	2	02	0000010		"	34	22	0100010		B	66	42	1000010		b	98	62	1100010	
ETX	3	03	0000011		#	35	23	0100011		C	67	43	1000011		c	99	63	1100011	
EOT	4	04	0000100		\$	36	24	0100100		D	68	44	1000100		d	100	64	1100100	
ENQ	5	05	0000101		%	37	25	0100101		E	69	45	1000101		e	101	65	1100101	
ACK	6	06	0000110		&	38	26	0100110		F	70	46	1000110		f	102	66	1100110	
BEL	7	07	0000111		'	39	27	0100111		G	71	47	1000111		g	103	67	1100111	
BS	8	08	0001000		(	40	28	0101000		H	72	48	1001000		h	104	68	1101000	
HT	9	09	0001001		)	41	29	0101001		I	73	49	1001001		i	105	69	1101001	
LF	10	0A	0001010		*	42	2A	0101010		J	74	4A	1001010		j	106	6A	1101010	
VT	11	0B	0001011		+	43	2B	0101011		K	75	4B	1001011		k	107	6B	1101011	
FF	12	0C	0001100		,	44	2C	0101100		L	76	4C	1001100		l	108	6C	1101100	
CR	13	0D	0001101		.	45	2D	0101101		M	77	4D	1001101		m	109	6D	1101101	
SO	14	0E	0001110		.	46	2E	0101110		N	78	4E	1001110		n	110	6E	1101110	
SI	15	0F	0001111		/	47	2F	0101111		O	79	4F	1001111		o	111	6F	1101111	
DLE	16	10	0010000		0	48	30	0110000		P	80	50	1010000		p	112	70	1110000	
DC1	17	11	0010001		1	49	31	0110001		Q	81	51	1010001		q	113	71	1110001	
DC2	18	12	0010010		2	50	32	0110010		R	82	52	1010010		r	114	72	1110010	
DC3	19	13	0010011		3	51	33	0110011		S	83	53	1010011		s	115	73	1110011	
DC4	20	14	0010100		4	52	34	0110100		T	84	54	1010100		t	116	74	1110100	
NAK	21	15	0010101		5	53	35	0110101		U	85	55	1010101		u	117	75	1110101	
SYN	22	16	0010110		6	54	36	0110110		V	86	56	1010110		v	118	76	1110110	
ETB	23	17	0010111		7	55	37	0110111		W	87	57	1010111		w	119	77	1110111	
CAN	24	18	0011000		8	56	38	0111000		X	88	58	1011000		x	120	78	1111000	
EM	25	19	0011001		9	57	39	0111001		Y	89	59	1011001		y	121	79	1111001	
SUB	26	1A	0011010		:	58	3A	0111010		Z	90	5A	1011010		z	122	7A	1111010	
ESC	27	1B	0011011		;	59	3B	0111011		[	91	5B	1011011		{	123	7B	1111011	
FS	28	1C	0011100		<	60	3C	0111100		\	92	5C	1011100			124	7C	1111100	
GS	29	1D	0011101		=	61	3D	0111101		]	93	5D	1011101		}	125	7D	1111101	
RS	30	1E	0011110		>	62	3E	0111110		^	94	5E	1011110		~	126	7E	1111110	
US	31	1F	0011111		?	63	3F	0111111		_	95	5F	1011111		■	127	7F	1111111	

## Configuring LP+ With The Control Panel

---

The Printronix® ThermaLine™ Series Label Printers LinePrinter Plus® (line-matrix printer emulation) is a software application on a single PROM set capable of emulating four different line-matrix printer protocols:

- P-Series P3000/6000/9000, hereafter called P-Series
- Proprinter III XL, hereafter called Proprinter XL
- Serial Matrix
- P-Series XQ P300/600, hereafter called P-Series XQ

The software is designed to be compatible with a variety of paper sizes as well as different print engine dots-per-inch ratios.

Matching certain printer operational settings to those of the host computer is known as “printer configuration.” The settings, or configuration parameters, such as selecting the host interface, are adjusted according to the printer function key descriptions in this manual. Configure LP+ in the same way you would configure the printer for other features.

You can select LP+ default parameters directly from the control panel as explained in this chapter.

The LP+ parameters are described on the following pages. Parameters marked with an asterisk (\*) indicate the default value. The printer must be off-line to enter the configuration structure.

Pressing an invalid key to enter a parameter value may prove you to another level in the configuration or exit the configuration menu completely.

### IMPORTANT

**BEFORE you reconfigure LP+ parameters, print a configuration sheet to see all of the current settings.**

The LP+ sub-menus are shown on the following pages.

## LP+ Configuration Menu

---

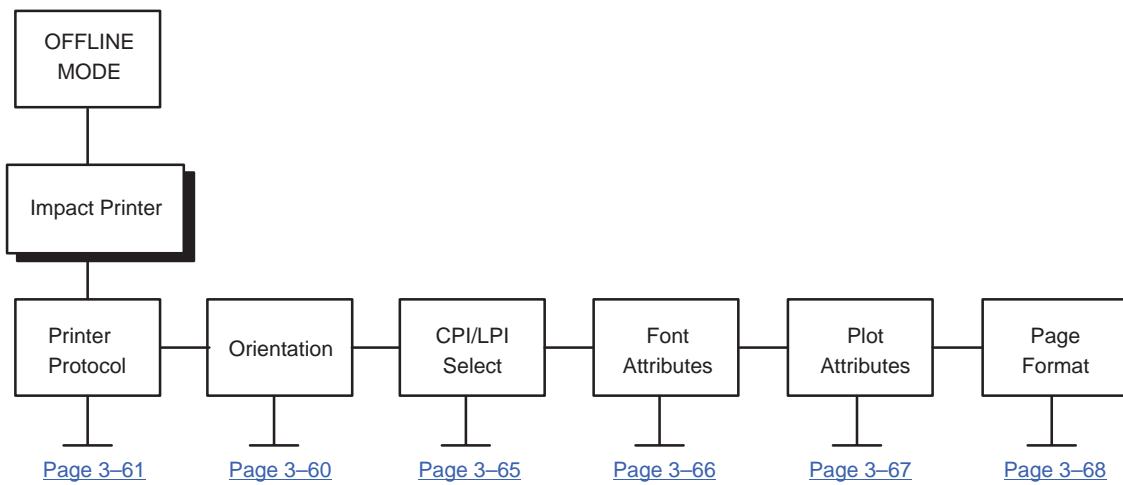
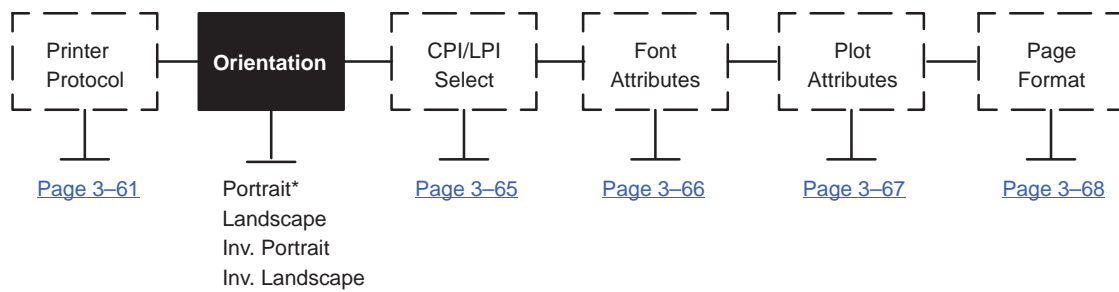


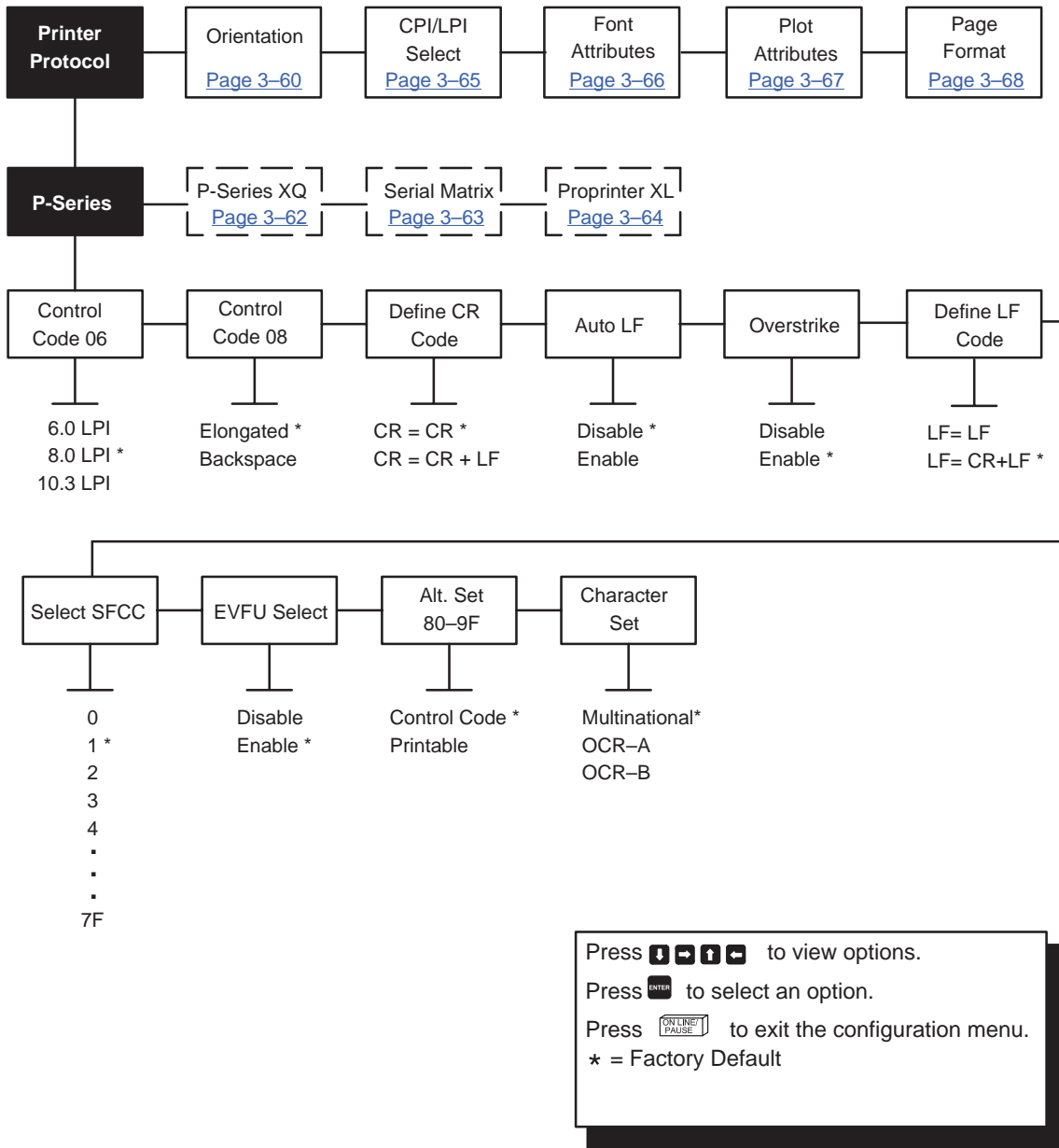
Figure 3-19. LP+ Configuration Menu



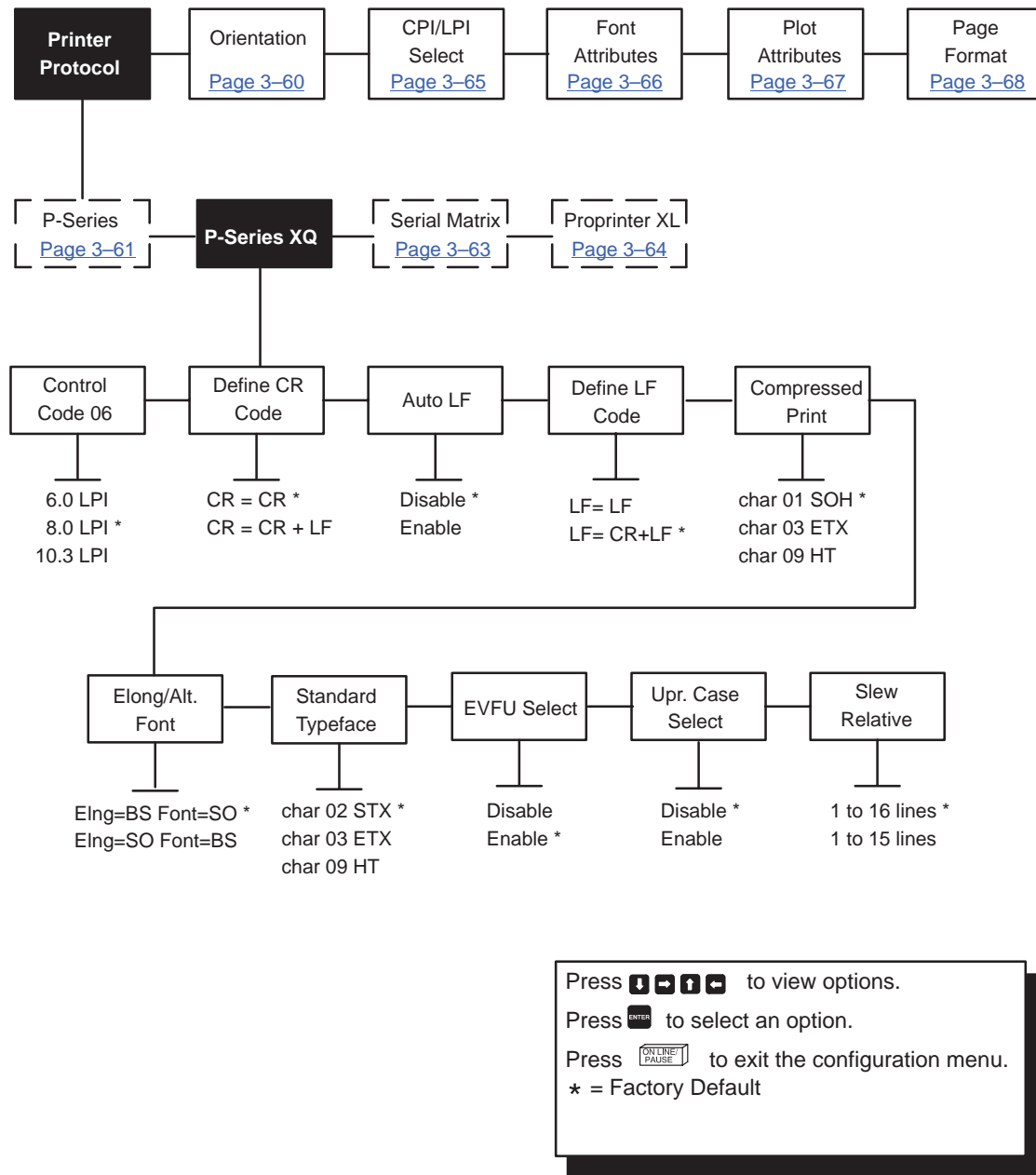
Press to view options.  
 Press to select an option.  
 Press to exit the configuration menu.  
 \* = Factory Default

**Figure 3-20. Orientation Menu**

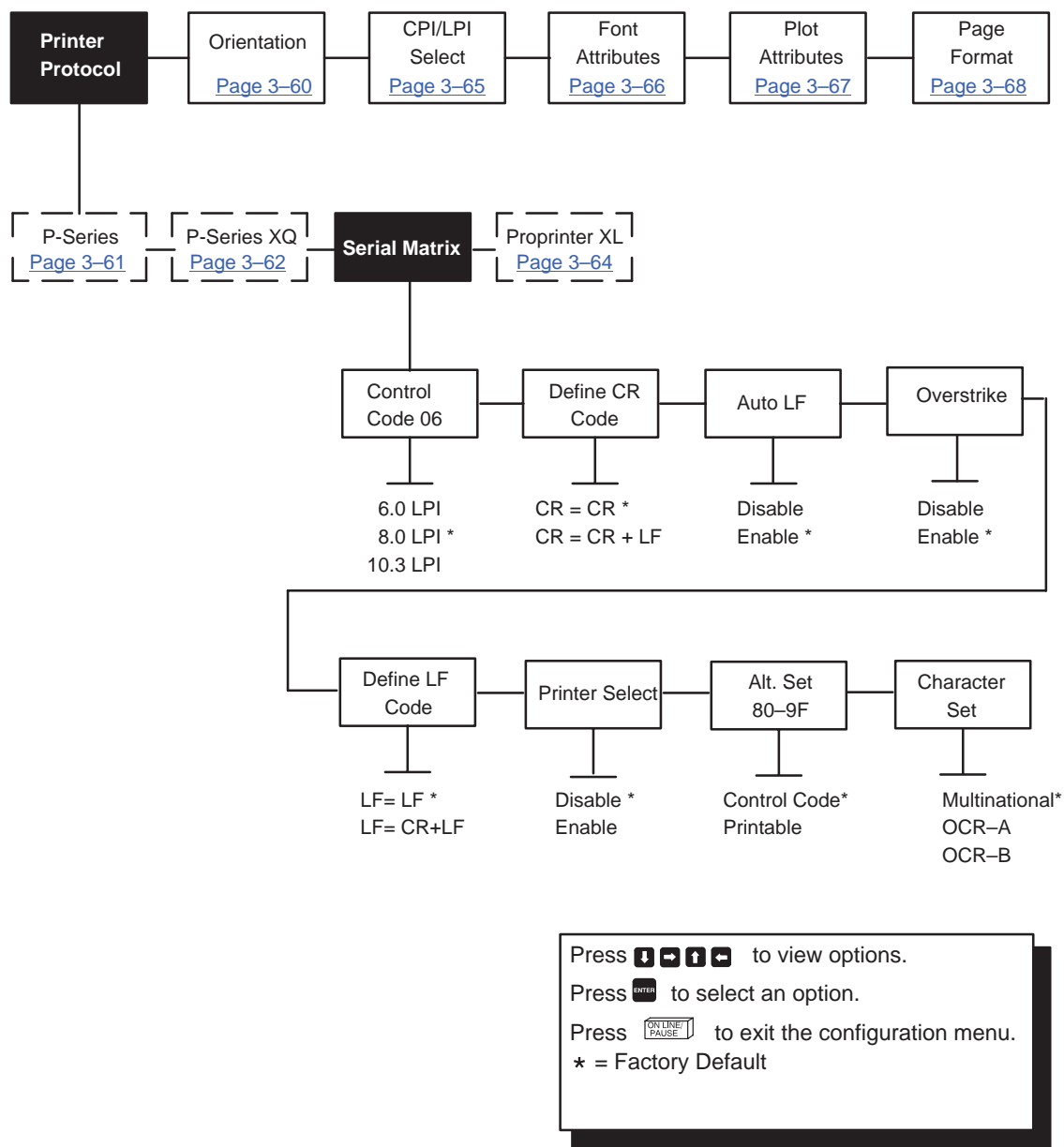




**Figure 3-21. P-Series Menu**



**Figure 3-22. P-Series XQ Menu**



**Figure 3-23. Serial Matrix Menu**

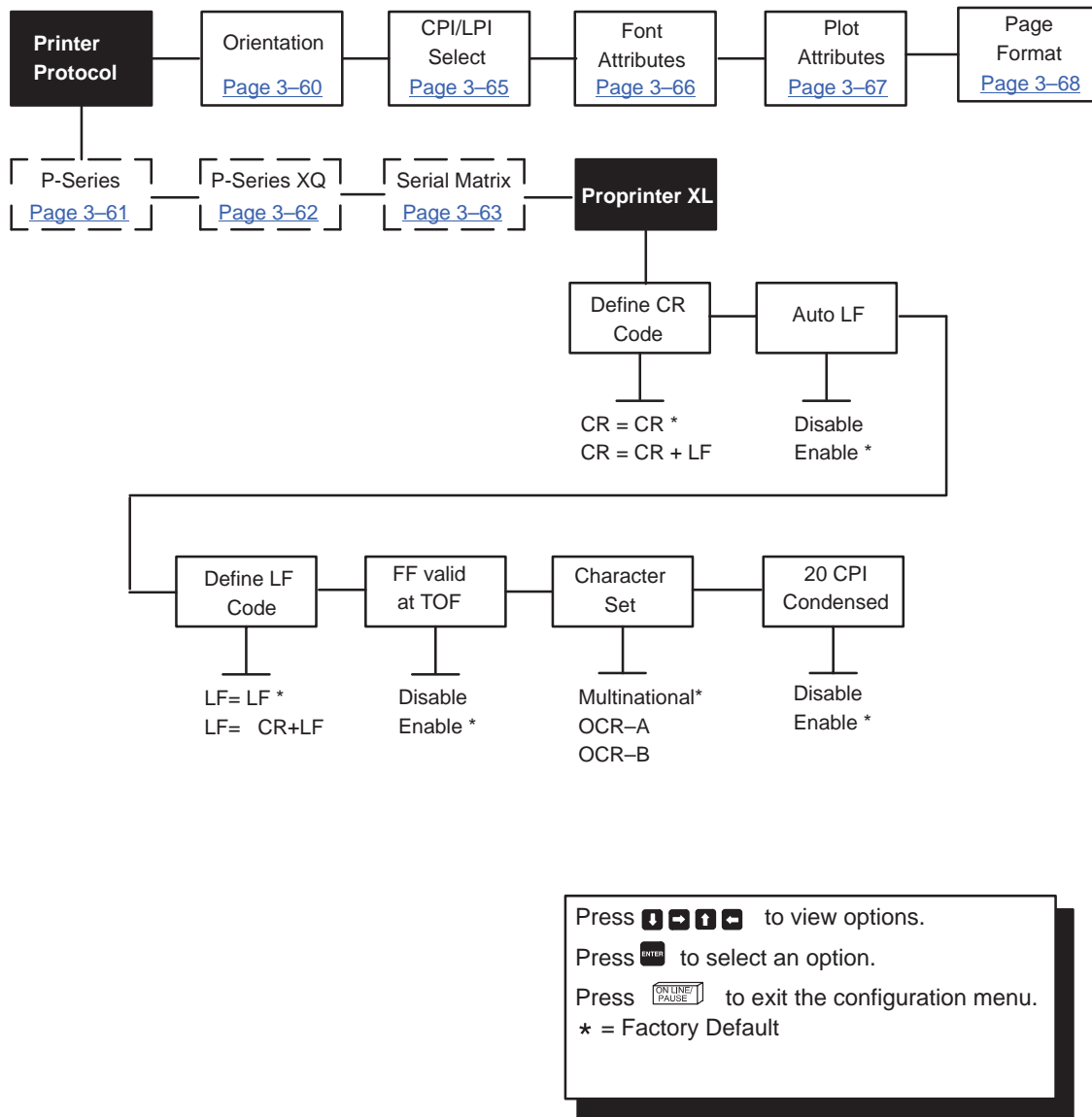


Figure 3-24. Proprinter XL Menu

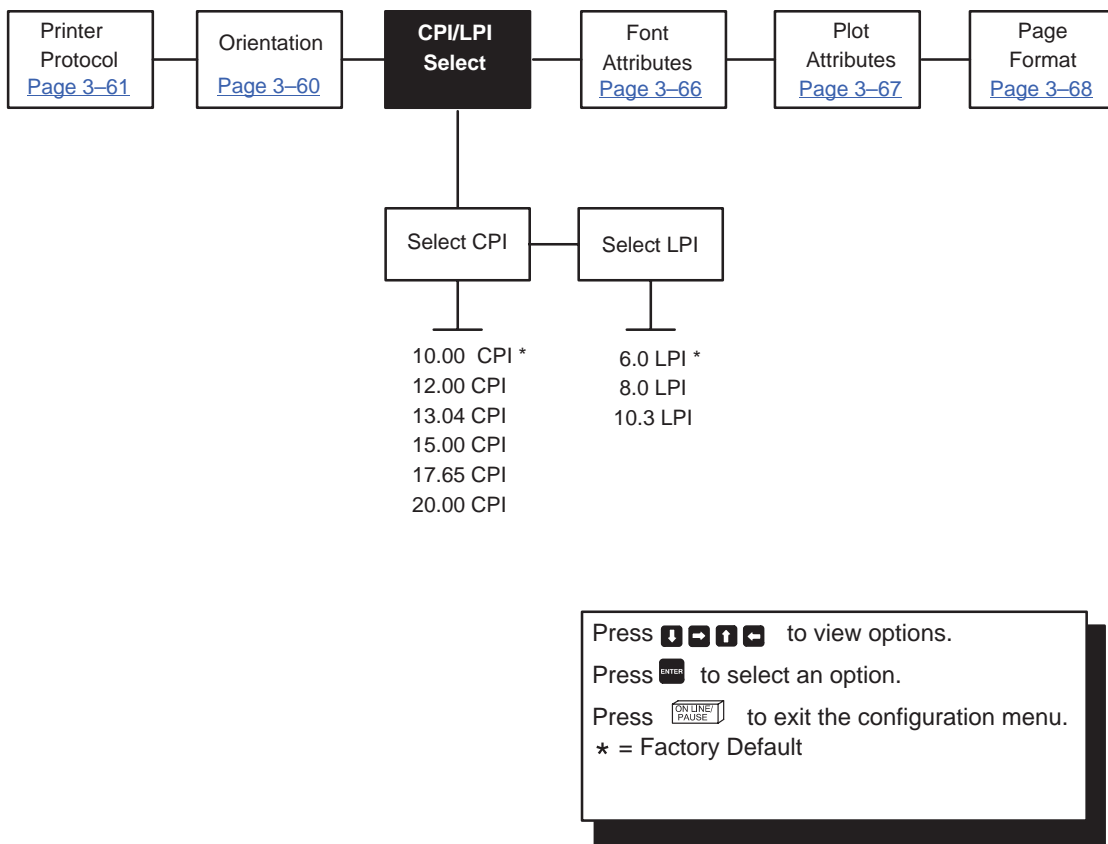
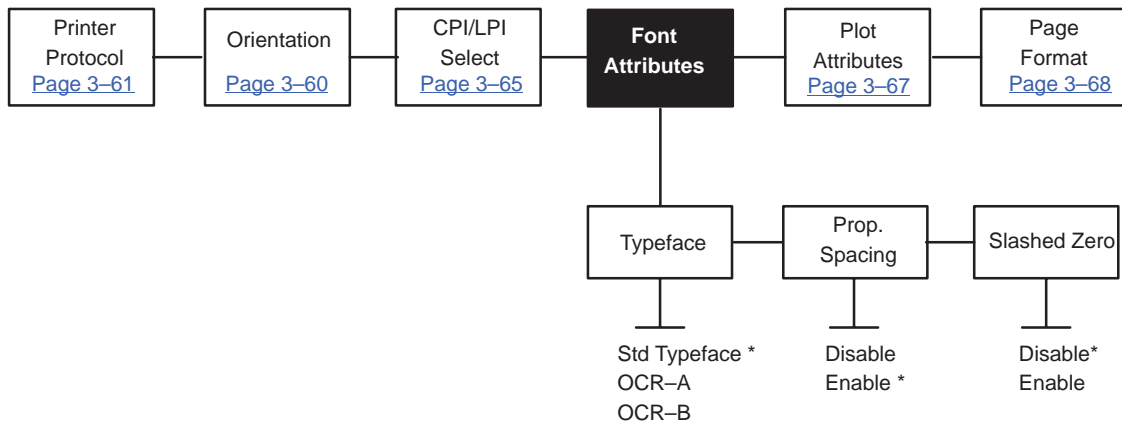
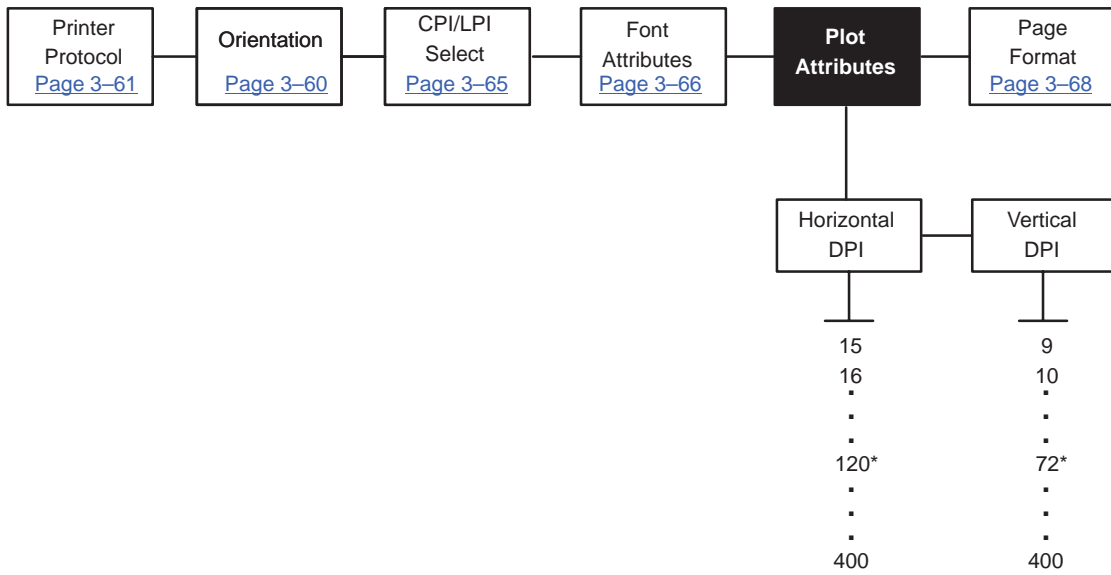


Figure 3-25. CPI/LPI Select Menu



Press to view options.  
 Press to select an option.  
 Press to exit the configuration menu.  
 \* = Factory Default

**Figure 3-26. Font Attributes Menu**



Press to view options.  
 Press to select an option.  
 Press to exit the configuration menu.  
 \* = Factory Default

**Figure 3-27. Plot Attributes Menu**

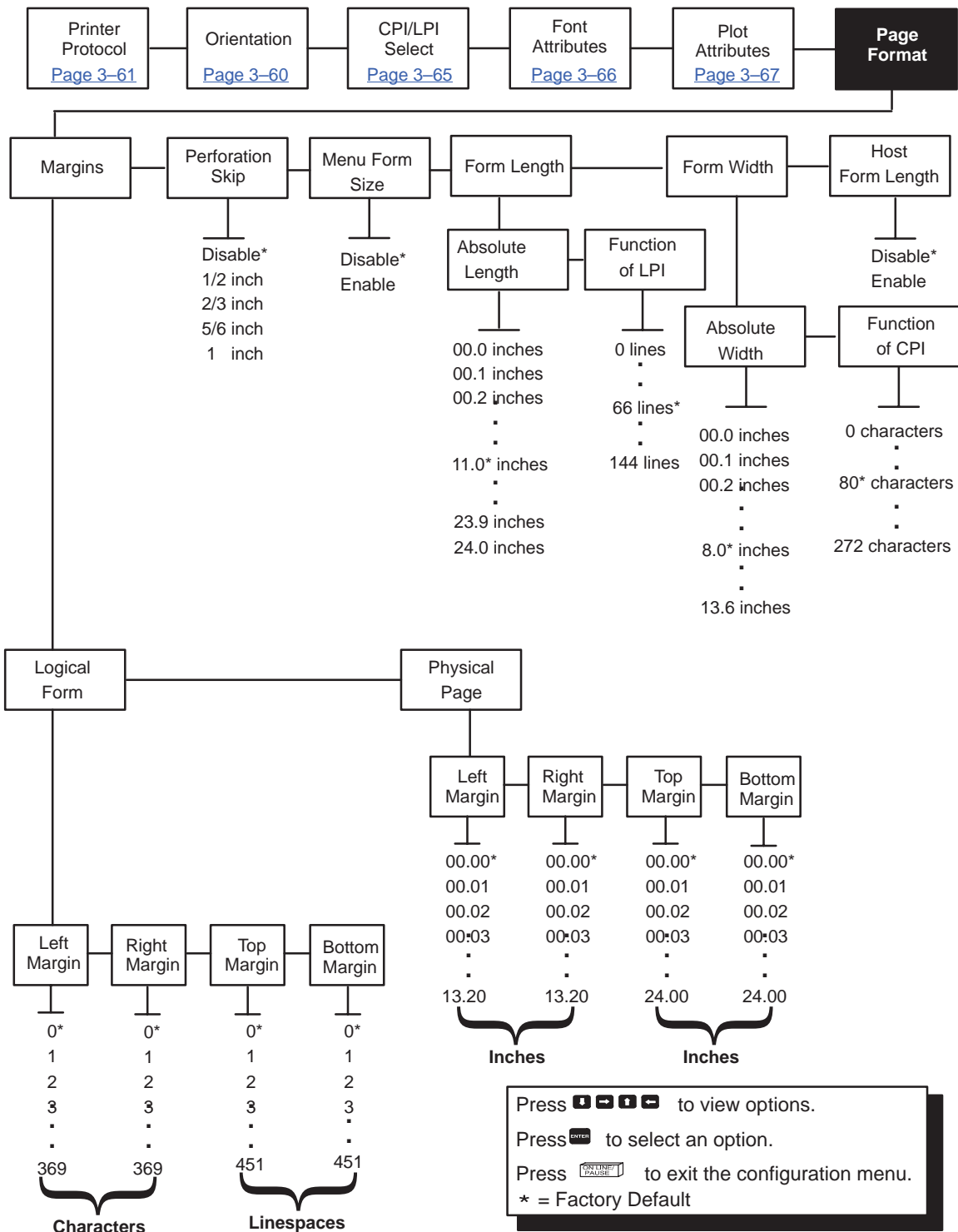


Figure 3-28. Page Format Menu



# 4

## Diagnostics and Troubleshooting

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Controlling Print Quality .....	<a href="#">4-5</a>
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Printer Alarms .....	<a href="#">4-7</a>

## Printer Self-Test

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A sequence of automatic tests is performed during printer power-up. If any faults are detected at that time, an error message will display (see [Table 4-2](#)).

Printer operation should also be verified before setting the printer for on-line operation. This is done by running the printer internal self-test diagnostic program, which will produce a selection of printed test labels. Refer to [Chapter 3](#), “Configuring the Printer,” for instructions.

The Test Print program can be enabled from the printer through the secondary operator panel diagnostics menu (a Service Menu selection only), and provides the capability for printing a selected number of checkerboard, grid or gray test pattern labels.

**NOTE:** Before attempting to print test labels, the printer must be properly setup for the type of media installed (see the Paper Control and Printer Control menu selections on [pages 3-25](#) through [3-33](#)).

### Printing Test Labels

The printer has a built-in function that prints a selected number of test labels using a checkerboard, grid or gray test pattern. The patterns are useful for isolating printer faults and checking print quality.

## Troubleshooting Common Situations

---

Occasionally, situations occur that require some troubleshooting skill. Possible problem situations and potential solutions are listed in this section. While not every conceivable situation is addressed here, you may find some of these tips helpful. Contact a qualified service technician for problems that persist or are not covered in this section.

### Improving Processing Time

Before looking at solutions for decreasing processing time and increasing throughput, it may help to understand what happens during processing. When the printer receives a format command, it enters the label formatting mode. Label formatting requires time to process the label data into the printer buffers.

The time required varies, depending on the complexity of the label format and on the size of the area being printed. Once the data has been mapped into memory, the printer will start printing as many labels as requested by the quantity command. In most cases, there is no delay between labels; however, there are certain situations that may cause delays between label printing:

- Using the cutter option  
The printer must stop and wait for the cutter to execute the cutting cycle.
- Using the Automatic Label Peel-Off option  
The printer stops between each label and waits for the label to be removed.

## Data Exchange

Many things can cause data loss or communications problems. This section suggests some ways to isolate these problems and determine their cause.

### Handshaking

Handshaking is the exchange of signals between two computers (or a computer and a peripheral input or output device) to indicate the status of the data being transferred. In the serial mode, the printer uses both hardware and software handshaking and transmits both forms simultaneously when the input buffer is full.

The printer can be used with either serial or parallel host interfaces. Parallel interfaces are usually straightforward, with no special settings required. Serial interfaces, however, have a variety of possible communication parameter settings. The two methods of handshaking that can be used, hardware and software, are explained below.

- Hardware Handshaking  
This electrical signal is controlled by the logic state on pin 20 of the serial interface connector J2 (at the back of the printer). The signal will go high when the printer is ready to receive data. The signal will go low when the printer is in the busy state, which indicates that the printer input buffer is full and can no longer receive data.
- Software Handshaking  
XON and XOFF are software signals that control serial data flow between the printer and the host system. When the printer input buffer is full, the printer transmits an XOFF (CTRL S) character that signals the host to stop sending data. When memory space becomes available in the input buffer, the printer sends an XON (CTRL Q) character, which tells the host that the printer is ready to receive more data.

If the printer appears to have communication problems, the self-test configuration test labels and character hex dump modes should be checked. The tests can help identify printer configuration errors that can cause problems.

Both of these test procedures are covered in this chapter. Configuration items to check include the following:

- Check that the data string being sent to the printer contains the correct information.
- Verify that the correct host interface port is being used and that the communication parameters match those of the host (i.e., baud rate, parity, etc.).
- Verify that the correct interface cable is installed between the host and the printer.

## Interfacing

The printer will not function properly with an incorrectly wired cable or the wrong interface cable installed. If the cable is suspect, contact Printronix or your authorized service representative.

When the printer is first powered up, it will reset itself to the communication default parameters. The parameters are listed in Table 4–1.

**Table 4–1. Printer Default Communication Parameters**

PARAMETER	DEFAULT VALUE
Baud	9600
Data Bits	8
Parity	NONE
Stop Bits	1

The printer configuration settings may be entered through the main menu HOST INTERFACE function, which is accessed through the secondary control panel. (Refer to Chapter 3, “Configuring the Printer,” [page 3–35](#), for complete instructions.)

## Controlling Print Quality

The following two factors have the greatest effect on print quality:

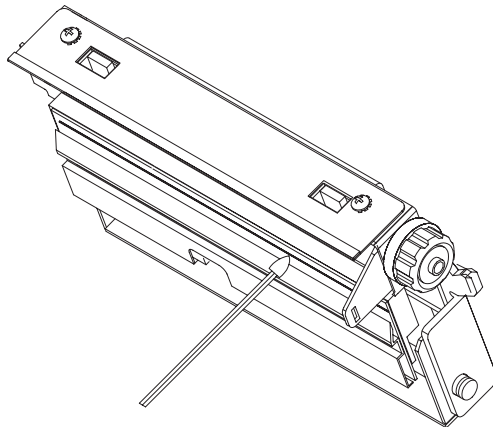
- The amount of heat applied by the printhead
- The location of the printhead in relation to the label

For example, low-cost direct thermal media often have very high *reaction temperatures*, which means that it takes a great deal of heat to make a clear image. Resin ribbons and film media may require higher print intensity for a quality image.

The printer provides four ways to increase the heat:

- Running the printer slower
- Using the Print Intensity host command
- Setting the print intensity to a higher value with the Print Intensity function, accessed via the host or through the secondary operator panel. This causes more heat to be transferred into the media, thereby generating a darker image.
- Adjusting the printhead position. This adjustment may be required if the media thickness is changed substantially from the factory default setting (4 mils).

Also, the printhead should be cleaned frequently to ensure that foreign material does not accumulate on the printhead and interfere with heat transfer. If smears, voids or white lines appear in the printed form, the printhead should be cleaned with a cotton swab moistened with anhydrous alcohol (see Figure 4–1).



**Figure 4–1. Cleaning the Printhead**

## Other Printer Problems

### Smears or voids in printed image

Possible causes include the following:

- Dirty printhead. Clean the printhead, as described in the previous section.
- Printhead temperature too high. Use software control to adjust the heat setting. Change the setting through the main menu PRINTER CONTROL function, which is accessed through the secondary control panel. (Refer to Chapter 3, "Configuring the Printer," [page 3-28](#), for complete instructions.)
- Incorrect ribbon/media combination being used. Be sure to use the correct ribbon type.
- Ribbon has crease or fold across surface. Smooth out ribbon to remove crease. Reduce print speed. Change the setting through the main menu PRINTER CONTROL function, which is accessed through the secondary control panel. (Refer to Chapter 3, "Configuring the Printer," [page 3-28](#), for complete instructions.)

### Advances several labels when FEED button is pressed

Possible causes include the following:

- Labels loaded incorrectly. See loading instructions on the inside cover of the printer, or refer to the [Operator's Guide](#).
- Media sensor out of adjustment or defective. Call your authorized Printronix service representative.

### Prints strange characters instead of the correct label format

Possible causes include the following:

- Printer serial baud rate setting does not match the host baud rate. Reset the printer via software, or turn the printer off and then on.
- Printer serial host interface set for 8 data bits but the transmitting device is set for 7 data bits (or vice-versa). The current setting may be viewed on the front-panel message display and new settings may be entered through the main menu HOST INTERFACE function, which is accessed through the secondary control panel. (Refer to Chapter 3, "Configuring the Printer," [page 3-35](#), for complete instructions.)

### **Printer advances media, but ribbon does not advance**

Possible causes include the following:

- Ribbon installed incorrectly. Make sure the dull side (inked side) of the ribbon is facing the media.
- Bad ribbon/media combination, resulting in insufficient friction between media and ribbon. Verify that the correct ribbon is being used.

### **Print quality is good but printer skips every other label**

A possible cause is that the label is formatted too close to the top edge of the form. Leave white space equal to eight dot rows at the top of the label.

### **Print is light on right side of label**

Possible causes include the following:

- Media width adjustment cam is set for a narrower width than the width of the media being used.
- Printhead is adjusted for thick media or card stock.
- Printhead misaligned.

### **Printer fails to turn on.**

Possible causes include the following:

- Blown fuse. Call your authorized Printronix service representative.
- Faulty AC cord.
- Bad printer power switch. Call your authorized Printronix service representative.
- Faulty AC wall outlet.

### **Power indicator on but nothing in display**

Possible causes include:

- Contrast set too low. Turn contrast adjustment clockwise until the display appears.
- Faulty display. Call your authorized service representative.

## **Printer Alarms**

The printer has built in alarms that monitor printer status and media stock conditions. Alarm messages display indicating the present status of the printer and media stock levels. The alarms also indicate if the printer electronics detects an error condition. Refer to [Table 4-2](#), on [page 4-8](#).

**Table 4–2. Printer Alarm LCD Messages**

LCD ALARM	ALARM DESCRIPTION
PROM FAULT	Power up initialization test detected a PROM failure. Call your authorized service representative.
RAM FAULT	Power up initialization test detected a RAM failure. Call your authorized service representative.
PRINTHEAD CONTROL FAIL	Thermal printhead control circuit failed. Call your authorized service representative.
A-D CONVERTER FAIL	Analog-to-digital converter failed. Call your authorized service representative.
PAPER JAM	Printer failed to find the top-of-form position. Possible causes: 1. Paper jam. 2. Maximum label length is set to a size smaller than three times the page length setting. Check the secondary operator panel setting and any software commands that affect label length.
PRINTHEAD OPEN	Printhead is in the up position.
PAPER EMPTY	Printer is out of media stock.
MEDIA FAULT	The ribbon system detected a fault. Possible causes: 1. Out of ribbon. 2. Ribbon motion was stopped. 3. Obstructions in the media movement. 4. Paper motion was stopped.
CUTTER FAULT	The cutter operation failed. Possible causes: 1. Cutter is jammed. 2. Defective cutter hardware.
RIBBON SAVER FAULT	Ribbon saver operation failed. Possible causes: 1. Obstruction in ribbon area. 2. Defective ribbon saver hardware.
PRINTHEAD TEST FAIL	Printhead dot failure detected.



# A Specifications

## Printing

Type:	Direct thermal or thermal transfer
Resolution:	300 dots per inch (11.8 dots/mm)
Print Speed:	<b>T3306</b> – 2.0 in (50.8 mm) to 8.0 in (203.2 mm) per second <b>T3308</b> – 2.0 in (50.8 mm) to 5.0 in (127.0 mm) per second
Bar Code Modulus:	3.3 mil to 110 mil “X” dimension in picket or ladder orientation
Maximum Print Width:	<b>T3306</b> – 6.4 in (162.6 mm) <b>T3308</b> – 8.5 in (215.9 mm)
Maximum Print Length:	<b>T3306</b> – 7.5 in (191 mm) with standard memory, expandable to 24 in (610 cm) with optional memory expansion <b>T3308</b> – 24 in (609.6 mm) with standard memory.
Minimum Print Length:	0.5 in. (12.7 mm)
White Space Slew Rate:	<b>T3306</b> – 2.0 in (50.4 mm) per second to 10.0 in (254 mm) per second <b>T3308</b> – 2.0 in (50.4 mm) per second to 5.0 in (127.0 mm) per second
Minimum Dot Size:	0.0033 in (0.083 mm) square
Label Backfeed:	For use with optional cutter

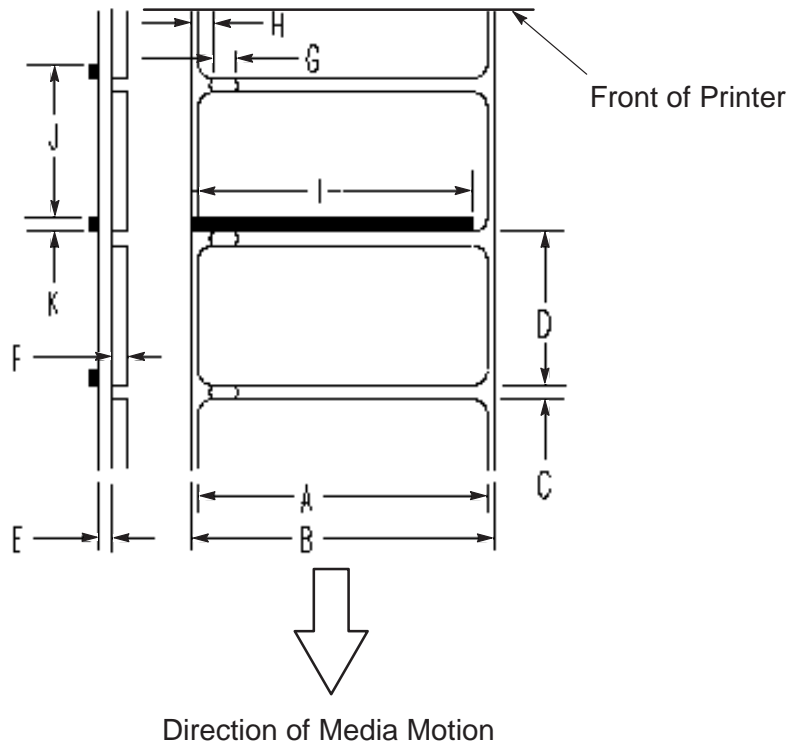
## Fonts

Resident Fonts:	Courier and Letter Gothic scaleable outline fonts and bit-mapped OCR-A, OCR-B.
Optional Fonts:	A wide selection of scaleable outline proportional and monospace fonts is available
Font Expansion	All fonts expandable vertically and horizontally.
Bar Codes:	Code 39, Interleaved 2 of 5, Code 128 (subsets A, B, and C), Codabar, UPC-A, UPC-E, UPC 2- & 5-digit addendums, EAN-8, EAN-13, EAN 2- & 5-digit addendums, Code 93, MSI Plessey, UPCSHIP (IGP/VGL only), UCC 128, Postnet, PDF 417 (IGP/PGL only), FIM

## Media

Type:	Roll-fed, die-cut continuous or fan-fold labels, tags or tickets; most direct thermal or thermal transfer materials
Supply Roll:	8 in (203 mm) maximum diameter on 3-in (76 mm) diameter cores
Optional Internal Rewind:	Accepts full 8 in roll of label or label backing. Rewind spindle accepts 1.5-in or 3-in diameter cores
Label Material:	Thermal transfer plain-coated papers, vinyl, Mylar, metallized paper, non-woven fabric, fine woven fabric, thermal-visible light scannable paper, infrared scannable paper, thermal ticket/tag stock, thermally sensitive plastic stock
Thermal Transfer Ribbons:	Standard widths are: <b>T3306</b> – 60 mm, 80 mm, 110 mm, 130 mm; 145 mm, and 165 mm ; 1476 ft. (450 m) in length <b>T3308</b> – 80 mm, 110 mm, 130 mm, 145 mm, 165 mm, 190 mm and 217 mm; 1476 ft (450 m) in length
Media Sensing:	Moveable “see-through” for die-cut labels and reflective for tags with black striping <b>NOTE:</b> The reflective sensor mark must be carbon based. The sensor is infrared and will not reflect off of a plain black mark.

## Label/Tag Media Specifications



	DESCRIPTION	T3306		T3308	
		Max(in.)	Min(in.)	Max(in.)	Min(in.)
A	Label width	6.700	2.000	9.000	3.000
B	Backing width	6.700	2.000	9.000	3.000
C	Gap between labels	99.99	0.100	99.99	0.100
D	Label length	24.00	0.500	24.00	0.500
E+F	Media thickness	0.010	0.0046	0.010	0.0046
G	Width of sensor opening	0.500	0.200	0.500	0.200
H	Edge of media to edge of sensor opening distance	3.250	0.200	3.250	0.200
I	Reflective sensor mark width	4.00	1.000	4.00	1.000
J	Distance between reflective mark	99.99	0.250	99.99	0.250
K	Reflective sensor mark length	99.99	0.100	99.99	0.100

## Lists of Approved Media

For a current list of approved standard media for use in Printronix thermal and thermal transfer label printers, please call Printronix at (800) 733-1900 or FAX (714) 476-2135. Further information can be obtained by calling the Printronix Thermaline Help Desk at (714) 221-2488 or from the Printronix Web Page at <http://www.primtronix.com>.

## Indicators and Switches

Indicator Lights:	POWER, RIBBON/MEDIA, ON LINE/PAUSE
Switches:	POWER
Keys:	ON LINE/PAUSE, FEED, CANCEL
Message Display:	32 characters for error messages, print status, and recalling stored formats

## Host Interfacing

- (1) Serial RS-232 or RS-422 at 300, 600, 1200, 2400, 4800, 9600, or 19,200 baud.
- (2) Parallel (Centronics compatible).
- (3) Coax/Twinax optional.

The RS-232 and RS-422 host interfaces shall have the following characteristics:

Character Set:	ANSI ASCII character set
Word Length:	Selectable 7-bit or 8-bit data format
Handshaking:	XON/XOFF (in receive mode only) and CTS/DTR
Input Buffer:	Approximately 7000 bytes. XOFF is transmitted and DTR goes low when 750 bytes are available in the buffer. XON is transmitted and DTR goes high when 750 bytes are left in the buffer. Characters are transmitted with no parity from the printer

## Electrical

Power Source:	115/230 VAC 50/60Hz Auto-ranging, switching power supply
Circuit Protection:	Two 8-amp, 250V slo-blo fuses
Grounding:	Unit must be connected to a properly grounded receptacle

## Environmental

Operating:	40° F to 100° F (4° C to 38° C)
Storage Temperature:	–40° F to 150° F (–40° C to 60° C)
Humidity:	10% to 95%, non-condensing
Ventilation:	Forced air movement
Dust:	Non-conducting, non-corrosive

## Physical

Dimensions:	<b>T3306</b> – 14.4 in H x 12.3 in W x 18.9 in D (365 mmH x 312 mmW x 480 mmD) <b>T3308</b> – 15.0 in H x 15.0 in W x 18.9 in D (381 mmH x 381 mmW x 480 mmD)
Weight:	<b>T3306</b> – Approximately 55 lbs. (24.8 kg) <b>T3308</b> – Approximately 65 lb (29.5 kg)

## Options

Internal Rewind:	8 in (203 mm) maximum O.D. capacity (full Supply: roll)
Cutter:	Maximum thickness of 0.010 in (0.254 mm). (Certain types of media are excluded.)
Ribbon Saver:	Automatically saves ribbon for blank media areas greater than 1.0 inch in length
Memory Expansion:	4 MB (T3306 only) and 16 MB additional DRAM
Plug-In Font Memory Modules:	(pre-loaded from Printronix font library)
Plug-In Application Memory Modules:	1 MB and 4 MB, used for permanent storage of custom fonts, graphics and formats
Label Present Sensor:	Detects when a printed label is at the printer exit throat
Automatic Label Peel-Off:	Peels and presents labels to the operator, one at a time
Coax/Twinax Interface:	Provides protocol converter functionality and connectivity for IBM coax/twinax host interfaces



# B Printer Options

A comprehensive series of options is offered with the printer to enhance its capabilities and to provide a large degree of application flexibility. A description of the option complement is given below. For field-installable options, installation instructions are provided with each option.

## Memory Options

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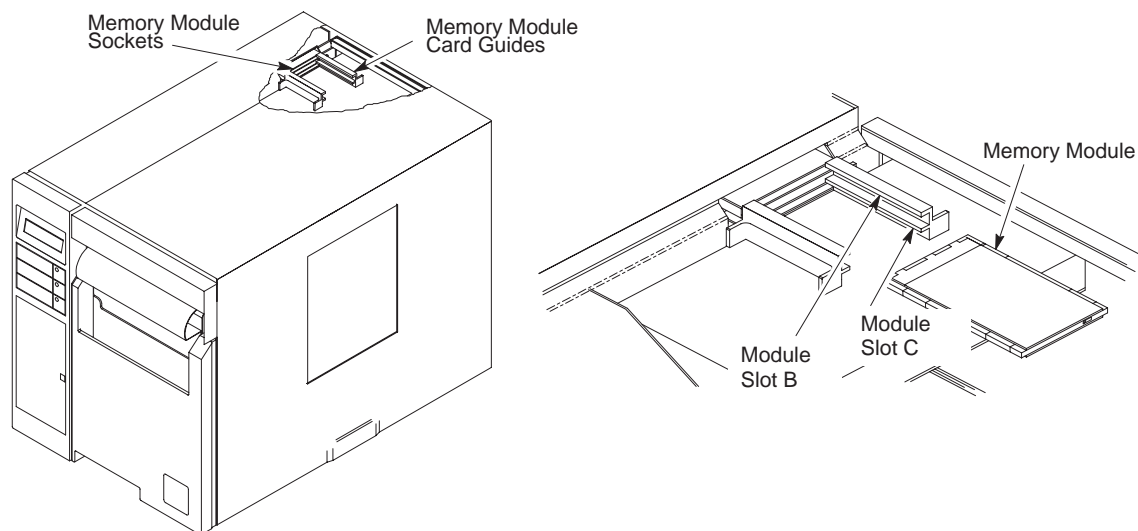
Available memory options include internal and external expansions. Both are described in the following paragraphs.

### External Memory Modules

The printer has two standard Printronix external memory module slots. The slots are located toward the rear of the printer and may be accessed from the stock door side (see Figure B-1). External memory modules are used to expand the printer's built-in capabilities.

There are three primary uses for the modules:

- Storing graphic images
- Storing of additional fonts
- Storing label formats that can be recalled by host computers



**Figure B-1. Memory Module Connector Location and Installation**

To install a module, turn the printer off, and raise the printer stock door. With the module label facing up, carefully seat the module firmly into one of the module slots, taking care not to bend the pins in the connector (see [Figure B-1](#)). The upper module slot is B and the lower is C. The printer will sense the presence of a module in slot B, in C, or in both.

The external memory modules come in two different types:

- Plug-In Application Memory Modules (1 MB and 4 MB)
- Fixed Font Memory Modules

### **Plug-In Application Memory Modules (1 and 4 MB)**

These are the most flexible of the memory options. They provide virtually permanent storage of custom fonts, graphics data and the formats used in label format printing. Each module holds up to 1 or 4 MB of font, graphic image or label format data.

**NOTE:** 8 MB is possible only when two 4-MB memory modules are installed.

Fonts can be loaded into the modules by most programs that are capable of transmitting fonts in the HP PCL-4 format, which is the format used to load fonts to the HP LaserJet II printer.

Graphics can be loaded by using programs with an image download function. Loading images can also be done with minimal programming on most host computers, since the printer accepts the commonly used .PCX and .TIFF file formats. Application memory modules can also store and recall label formats.

**NOTE:** Single font bitmaps, images or formats cannot be deleted individually. The entire module must be cleared and the data reloaded. When data is downloaded with a previously existing name, the printer deletes the existing name but will not free up the space.

A write-protect switch on the FLASH module can protect stored data from being overwritten or erased.

### **Fixed Font Memory Modules**

Fixed font memory modules provide permanent storage for a selection of pre-programmed bit-mapped and proportional fonts.

### **Internal Memory Expansion**

The DRAM memory in the printer can be expanded to 5 (T3306 only) or 17 MB. Additional memory allows for larger label formats to be loaded into the printer memory, thereby making it possible to print long labels. This option should be installed only by an authorized service representative.



## Hardware Options

---

### Media Rewind Hub

When large quantities of labels must be printed as single batches for later use, the printer may be equipped with a rewind hub that will automatically roll up the label media for convenient handling. The rewind hub is also used in conjunction with the peel-and-present option to roll up the used media backing after labels have been peeled off. Location of the media rewind hub is shown in Figure B-2. The media rewind hub is a factory-installed option only. To use the media rewind hub, refer to [page 2-11](#).

### Cutter

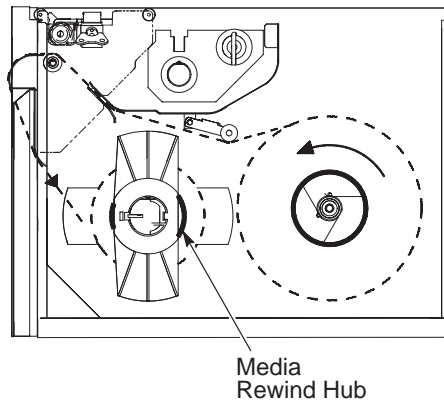
The printer may be ordered with a cutter mechanism installed (for cutting tags and labels), or the option can be installed by the user at a later date. The cutter option attaches to the printer using the same method as for tear-off assembly installation. When properly installed, and the CUTTER function within the printer menu system is set to ENABLE, the cutter is automatically activated by the printer.

### Label Present Sensor

This option provides the means to detect the presence of a label at the exit throat of the printer. It is normally used to detect the following:

- A label has been manually removed using the tear bar
- A label has been manually removed using the peel-and-present option

The sensor is included with the automatic label peel-off dispenser kit.



**Figure B-2. Media Rewind Hub Location**

## **Automatic Label Peel-Off Dispenser**

The printer can be ordered with an optional automatic label peel-off dispenser kit, or the option can be purchased and installed at a later date. The dispenser mechanism attaches to the printer using the same method as with the tear-off assembly and allows the printer to be configured for “one up” printing. In this mode, the printer will not print the next label in the internal buffer until the last label printed has been removed from the printer.

## **Ribbon Saver**

The Ribbon Saver (a factory-installed option only) raises the printhead off the output platen and stops the ribbon when the printer is feeding white space.

Since the ribbon does not move while the printhead is raised, ribbon that would have been wasted while the printer moved media through a non-printing area is now saved.

## **Interface Options**

---

### **Coax/Twinax Host Interface**

The coax/twinax host interface option functions as a protocol converter to allow the direct connection of the printer to an IBM host computer that uses either a coax or a twinax data interface. This option should be installed only by an authorized service representative.

## **Software Options**

---

The optional Label Matrix for Printronix label generation software package is available for creating, storing and printing label formats with IBM PCs or compatibles. This optional bar code generation package is available for use with PCs working in a Windows-based operating environment.

# C

## Setting the Page Length

The following considerations should be observed when you set the page length.

- In the default case any form or page length sent from an emulation (the ^L or ^H command in VGL and the length defined within the ~CREATE statement in PGL) will be used to force the page length.
- The label gap sensor does *not* measure the label length and, instead, continues to use the page length from the secondary control panel or a HOST FORM LENGTH value. Therefore, you *must* set the form length properly, either through the secondary control panel or through the host, even if the gap sensor is enabled.

Note that when the gap sensor is used, it will still control physical paper motion; it does not just control the logical form length that the printer is using. Therefore, if the page length you have selected (either from the secondary control panel or through the host) does not match the physical page length, then the printer will attempt to map the logical page onto the physical page.

If the user-selected page length is shorter than the physical page size, the printer will leave white space at the end of the label so that the next logical page will start at the beginning of the next physical page. If the user-selected page length is greater than the physical page length, the printer will clip the page to fit onto the physical page.

The following recommendations indicate how best to set up the printer and use the gap sensor.

- If the application sends the form length to the host, then there is probably nothing to change in the setup (other than to enable the proper gap sensor). The printer will use it for the logical form length, and the application will also be using it. As long as the label length is really the same as the form length (which it should be), the printer will operate normally.
- If the application sends the form length to the printer but it is inaccurate (e.g., you wish to fit two logical forms onto one physical page), then you *must* change HOST FORM LENGTH to DISABLED and must also set the page length in the secondary control panel to the physical label length.
- If the application does *not* send the form length to the printer, then you *must* select the form length from the secondary control panel. This value must be accurate, both in terms of what the application expects and the physical page length. If it does not match the physical page length, then there will be clipping or extra white space.

Table C–1 shows the maximum label lengths for the T3306 and T3308 printers, given different memory configurations. Note that these are worst-case measurements.

Depending upon the complexity of the label, you may be able to get longer label lengths than those listed in the table. In addition, the table figures assume you are using full width pages. If the actual pages printed are narrower than the maximum width (and you have adjusted the page width accordingly in the secondary control panel), then longer labels may be printed.

The table also indicates the maximum label length for running at full and half speed, assuming that the label is not too complex to run at full speed, because of controller/processing limitations.

The table values presume that only memory limitations are keeping the printer from running at full speed. In addition, the table includes sections for the default and minimum font cache sizes. Adjusting the cache size will affect the memory available for labels and also affect the speed at which the printer can generate labels.

**Table C–1. Printer Memory Requirements**

Memory/Font Cache Installed	Maximum Label Length (inches)			
	T3306		T3308	
	Full Speed	Half Speed	Full Speed	Half Speed
1 MB, Default Font Cache	3.25	6.5	2.25	4.5
2 MB, Default Font Cache	10	20	7	14
5 MB, Default Font Cache	24	24	22	24
1 MB, Minimum Font Cache	3.75	7.5	2.5	5
2 MB, Minimum Font Cache	10.5	21	7.5	15
5 MB, Minimum Font Cache	24	24	22.5	24

# D

## ASCII Control Codes Chart

Char	Dec	Hex	Char	Dec	Hex	Char	Dec	Hex	Char	Dec	Hex
NUL	0	00		32	20	@	64	40	`	96	60
SOH	1	01	!	33	21	A	65	41	a	97	61
STX	2	02	Ò	34	22	B	66	42	b	98	62
EXT	3	03	#	35	23	C	67	43	c	99	63
EOT	4	04	\$	36	24	D	68	44	d	100	64
ENQ	5	05	%	37	25	E	69	45	e	101	65
ACK	6	06	&	38	26	F	70	46	f	102	66
BEL	7	07	Ô	39	27	G	71	47	g	103	67
BS	8	08	(	40	28	H	72	48	h	104	68
HT	9	09	)	41	29	I	73	49	i	105	69
LF	10	0A	*	42	2A	J	74	4A	j	106	6A
VT	11	0B	+	43	2B	K	75	4B	k	107	6B
FF	12	0C	,	44	2C	L	76	4C	l	108	6C
CR	13	0D	-	45	2D	M	77	4D	m	109	6D
SO	14	0E	.	46	2E	N	78	4E	n	110	6E
SI	15	0F	/	47	2F	O	79	4F	o	111	6F
DLE	16	10	0	48	30	P	80	50	p	112	70
DC1	17	11	1	49	31	Q	81	51	q	113	71
DC2	18	12	2	50	32	R	82	52	r	114	72
DC3	19	13	3	51	33	S	83	53	s	115	73
DC4	20	14	4	52	34	T	84	54	t	116	74
NAK	21	15	5	53	35	U	85	55	u	117	75
SYN	22	16	6	54	36	V	86	56	v	118	76
ETB	23	17	7	55	37	W	87	57	w	119	77
CAN	24	18	8	56	38	X	88	58	x	120	78
EM	25	19	9	57	39	Y	89	59	y	121	79
SUB	26	1A	:	58	3A	Z	90	5A	z	122	7A
ESC	27	1B	;	59	3B	[	91	5B	{	123	7B
FS	28	1C	<	60	3C	\	92	5C		124	7C
GS	29	1D	=	61	3D	]	93	5D	}	125	7D
RS	30	1E	>	62	3E	^	94	5E	~	126	7E
US	31	1F	?	63	3F	_	95	5F		127	7F

Char	Dec	Hex	Char	Dec	Hex	Char	Dec	Hex	Char	Dec	Hex
Ç	128	80	á	160	A0		192	C0	Ó	224	E0
ü	129	81	í	161	A1		193	C1	ß	225	E1
é	130	82	ó	162	A2		194	C2	Ô	226	E2
â	131	83	ú	163	A3		195	C3	Ò	227	E3
ä	132	84	ñ	164	A4		196	C4	ö	228	E4
à	133	85	Ñ	165	A5		197	C5	Õ	229	E5
â	134	86	ª	166	A6	ã	198	C6		230	E6
ç	135	87	º	167	A7	Ã	199	C7	þ	231	E7
ê	136	88	¿	168	A8		200	C8	ƒ	232	E8
ë	137	89	®	169	A9		201	C9	Ú	233	E9
è	138	8A		170	AA		202	CA	Û	234	EA
ï	139	8B	1/2	171	AB		203	CB	Ü	235	EB
î	140	8C	1/4	172	AC		204	CC	ý	236	EC
ì	141	8D	¡	173	AD		205	CD	Ý	237	ED
Ä	142	8E		174	AE		206	CE		238	EE
Å	143	8F		175	AF		207	CF		239	EF
É	144	90		176	B0	ð	208	D0		240	F0
æ	145	91		177	B1	Ð	209	D1	±	241	F1
Æ	146	92	²	178	B2	Ê	210	D2		242	F2
ô	147	93	³	179	B3	Ë	211	D3	3/4	243	F3
ö	148	94		180	B4	È	212	D4		244	F4
ò	149	95	Á	181	B5		213	D5		245	F5
û	150	96	Â	182	B6	Í	214	D6	÷	246	F6
ù	151	97	À	183	B7	Î	215	D7		247	F7
ÿ	152	98	©	184	B8	Ï	216	D8	°	248	F8
Ö	153	99	¹	185	B9		217	D9	´	249	F9
Ü	154	9A		186	BA		218	DA	¨	250	FA
ø	155	9B	»	187	BB		219	DB		251	FB
£	156	9C		188	BC		220	DC		252	FC
Ø	157	9D	¢	189	BD		221	DD		253	FD
x	158	9E	¥	190	BE	ì	222	DE		254	FE
_	159	9F		191	BF		223	DF		255	FF

**NOTE:** For the hardware handshake XON/XOFF commands:

XON = Ctrl Q (DC1)

XOFF = Ctrl S (DC3)

# Glossary

Baud (rate)	Baud Rate is the number of information bits that can be transmitted between the printer and the computer in one second. For example, one baud equals one bit per second in a series of binary signals. Both the printer and the computer must be configured to the same baud rate.
BIT	Binary digIT. A digit in the binary number system, represented by a 0 or a 1. A bit is the smallest unit of storage in a digital computer.
Boot-up	The start-up procedure which causes a computer operating system to be loaded into main memory.
Buffer	An area of storage into which data are read or written temporarily during data transfers.
Coax	Coaxial cable. A type of cable with a single wire surrounded by insulation and a braided shield.
Configuration	Refers to the operating properties that define how the printer responds to signals and commands received from the host computer at the printer interface. These properties are called configuration parameters and are set to match the operating characteristics of the host computer system.
Controller	An independent functional logic unit in a data processing system that controls data paths between one or more units of peripheral equipment.
Data Bits	Binary information sent to the printer; a character set grouping containing letters, digits, and punctuation marks to be printed.
Default	A value, parameter, attribute, or option that is assigned by a program or system when another has not been specified by the user.
Diagnostic	Pertaining to the detection and isolation of a printer malfunction or mistake.
DRAM	Dynamic Random Access Memory. Can be read from or written to at any time. DRAM is volatile: Whatever is in DRAM is lost when power is turned off.

EPRROM	Eraseable Programmable Read Only Memory. Programs, instructions, and routines permanently stored in the printer that cannot be written to. Files in EPRROM are not lost when power is turned off. (Resident fonts are fonts permanently stored in EPRROM and available at any time, via software commands.)
Host Computer	The computer that stores, processes, and sends data to be printed, which communicates directly with the printer. The term "host" is used to indicate the controlling computer, since modern printers are themselves microprocessor-controlled computer systems.
Interface	The hardware component used to link two devices by common physical interconnection, signal, and functional characteristics.
Parity (check)	Parity checking is the addition of a non-data bit to data, resulting in the number of "1 bits" being either always even or always odd. Parity is used to detect transmission errors. Parity represents value in the check digit of the received or transmitted data.
PCBA	Printed Circuit Board Assembly. A PCB with components (ICs, resistors, capacitors, etc.) installed.
Port	A data channel used for receiving data from or transmitting data to one or more external devices.
Protocol	The rules and conventions that govern communication between a printer and a host computer. A protocol includes codes for printing text and graphics and codes instructing the printer to perform special operations.
Resolution	A measure expressing the number of component units in a given range used to create an image; in printing, expressed as the number of dots per inch (dpi) horizontally and vertically.
Stop Bits	The signal which indicates the end of a character or element.
Twinax	Twinaxial. A type of cable with two wires surrounded by insulation and a braided shield.



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