

PRINTRONIX® PSA3

N7000 and N7000 H-Series

Cartridge Ribbon Printer User's Manual



READ THIS SOFTWARE LICENSE AGREEMENT BEFORE USING THIS PRINTER

Software License Agreement

CAREFULLY READ THE FOLLOWING TERMS AND CONDITIONS BEFORE USING THIS PRINTER. USING THIS PRINTER INDICATES YOUR ACCEPTANCE OF THESE TERMS AND CONDITIONS. IF YOU DO NOT AGREE TO THESE TERMS AND CONDITIONS, PROMPTLY RETURN THE PRINTER AND ALL ACCOMPANYING HARDWARE AND WRITTEN MATERIALS TO THE PLACE YOU OBTAINED THEM, AND YOUR MONEY WILL BE REFUNDED.

Definitions.

"Software" shall mean the digitally encoded, machine-readable data and program. The term "Software Product" includes the Software resident in the printer and its documentation. The Software Product is licensed (not sold) to you, and Printronix, Inc. either owns or licenses from other vendors who own, all copyright, trade secret, patent and other proprietary rights in the Software Product.

License.

1. Authorized Use. You agree to accept a non-exclusive license to use the Software resident in the printer solely for your own customary business or personal purposes.
2. Restrictions.
 - a. To protect the proprietary rights of Printronix, Inc., you agree to maintain the Software Product and other proprietary information concerning the typefaces in strict confidence.
 - b. You agree not to duplicate or copy the Software Product.
 - c. You shall not sublicense, sell, lease, or otherwise transfer all or any portion of the Software Product separate from the printer, without the prior written consent of Printronix, Inc.
 - d. You may not modify or prepare derivative works of the Software Product.
 - e. You may not transmit the Software Product over a network, by telephone, or electronically using any means; or reverse engineer, decompile or disassemble the Software.
 - f. You agree to keep confidential and use your best efforts to prevent and protect the contents of the Software Product from unauthorized disclosure or use.
3. Transfer. You may transfer the Software Product with the printer, but only if the recipient agrees to accept the terms and conditions of this Agreement. Your license is automatically terminated if you transfer the Software Product and printer.

Limited Software Product Warranty

Printronix, Inc. warrants that for ninety (90) days after delivery, the Software will perform in accordance with specifications published by Printronix, Inc. Printronix, Inc. does not warrant that the Software is free from all bugs, errors and omissions.

Remedy

Your exclusive remedy and the sole liability of Printronix, Inc. in connection with the Software is replacement of defective software with a copy of the same version and revision level.

Disclaimer of Warranties and Limitation of Remedies

1. THE PARTIES AGREE THAT ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE AND MERCHANTABILITY ARE EXCLUDED. Printronix, Inc. does not warrant that the functions contained in the Software will meet your requirements or that the operation of the Software will be uninterrupted or error free. Printronix, Inc. reserves the right to make changes and/or improvements in the Software without notice at any time.
2. IN NO EVENT WILL PRINTRONIX, INC. BE LIABLE FOR LOST PROFITS, LOST DATA, BUSINESS INTERRUPTIONS, OR ANY OTHER DIRECT, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OF OR INABILITY TO USE THIS PRODUCT, EVEN IF PRINTRONIX, INC. HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES, OR ANY DAMAGES CAUSED BY THE ABUSE OR MANIPULATION OF THE SOFTWARE. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF LIABILITY FOR CONSEQUENTIAL OR INCIDENTAL DAMAGES, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU.
3. Printronix, Inc. will not be liable for any loss or damage caused by delay in furnishing a Software Product or any other performance under this Agreement.
4. Our entire liability and your exclusive remedies for our liability of any kind (including liability for negligence except liability for personal injury caused solely by our negligence) for the Software Product covered by this Agreement and all other performance or nonperformance by us under or related to this Agreement are limited to the remedies specified by this Agreement.
5. California law governs this Agreement.

Termination of License Agreement

This License shall continue until terminated. This license may be terminated by agreement between you and Printronix, Inc. or by Printronix, Inc. If you fail to comply with the terms of this License and such failure is not corrected within thirty (30) days after notice. When this License is terminated, you shall return to the place you obtained them, the printer and all copies of the Software and documentation.

U.S. Government Restricted Rights

Use, duplication or disclosure by the Government is subject to restrictions as set forth in the Rights in Technical Data and Computer Software clause at FAR 242.227-7013, subdivision (b) (3) (ii) or subparagraph (c) (1) (ii), as appropriate. Further use, duplication or disclosure is subject to restrictions applicable to restricted rights software as set forth in FAR 52.227-19 (c) (2).

Acknowledgement of Terms and Conditions

YOU ACKNOWLEDGE THAT YOU HAVE READ THIS AGREEMENT, UNDERSTAND IT, AND AGREE TO BE BOUND BY ITS TERMS AND CONDITIONS. NEITHER PARTY SHALL BE BOUND BY ANY STATEMENT OR REPRESENTATION NOT CONTAINED IN THIS AGREEMENT. NO CHANGE IN THIS AGREEMENT IS EFFECTIVE UNLESS WRITTEN AND SIGNED BY PROPERLY AUTHORIZED REPRESENTATIVES OF EACH PARTY. BY USING THIS PRINTER, YOU AGREE TO ACCEPT THE TERMS AND CONDITIONS OF THIS AGREEMENT.

User's Manual

N7000 and N7000 H-Series Cartridge Ribbon Printers

PRINTRONIX® **PSA3**

This document contains proprietary information protected by copyright. No part of this document may be reproduced, copied, translated, or incorporated in any other material in any form or by any means, whether manual, graphic, electronic, mechanical, or otherwise, without the prior written consent of Printronix.

Printronix makes no representations or warranties of any kind regarding this material, including, but not limited to, implied warranties of merchantability and fitness for a particular purpose. Printronix shall not be held responsible for errors contained herein or any omissions from this material or for any damages, whether direct or indirect, incidental or consequential, in connection with the furnishing, distribution, performance, or use of this material. The information in this manual is subject to change without notice.

© 1997, 2013 PRINTRONIX, INC.

Trademark Acknowledgements

IBM, AS/400, and Proprinter are registered trademarks, and Intelligent Printer Data Stream and IPDS are trademarks of International Business Machines Corporation.

Printronix, PGL, LinePrinter Plus, and IGP are registered trademarks, and N7000, N705, N705ZT, N710, N710ZT, N715, N715ZT, N705Q, N710Q, N715Q, N7220Q, N738HQ, N738H, N738HZT, N768H, N768HZT, N780H, N768HQ, N780HQ, and SureStak are trademarks of Printronix, Inc.

ANSI is a registered trademark of the American National Standards Institute, Inc.

Centronics is a registered trademark of Genicom Corporation.

CSA is a registered certification mark of the Canadian Standards Association.

Dataproducts is a registered trademark of Dataproducts Corporation.

EIA is a registered service mark of the Electronic Industries Association.

Epson is a registered trademark of Seiko Epson Corporation.

Ethernet is a trademark of Xerox Corporation.

IEEE is a registered service mark of the Institute of Electrical and Electronics Engineers, Inc.

QMS is a registered trademark, and Code V is a trademark of Quality Micro Systems, Inc.

TUV is a registered certification mark of TUV Rheinland of North America, Inc.

UL is a registered certification mark of Underwriters Laboratories, Inc.

ENERGY STAR is a registered trademark of the United States Environmental Protection Agency. As an ENERGY STAR[®] Partner, Printronix has determined that this product meets the ENERGY STAR guidelines for energy efficiency.



Table of Contents

1	Introduction	9
	Printer Overview	9
	Printronix N7000 and N7000 H-Series	
	Cartridge Ribbon Printers (CRP) Series	9
	Consumable Monitoring with PrintNet Enterprise	11
	Graphics Enhancements	11
	Taking Care of Your Printer	11
	Conventions in this Manual	11
	Warnings and Special Information	12
	Related Documents	12
	Contact Information	13
	Printronix Customer Support Center	13
	Printronix Supplies Department	13
	Corporate Offices	14
2	Setting Up The Printer	15
	Before You Begin	15
	Power Requirements	15
	Select a Site	15
	Printer Dimensions	16
	Printer Component Locations	19
3	Operating The Printer	21
	Powering on the Printer	21
	Operating Modes	21
	The Control Panel	22
	Control Panel Keys	23
	Cancel a Print Job	26
	Operational Procedures	27
	Reload Paper	27
	Unload Paper	36
	Integrated Print Management System	39
	Output Darkness	39
	Loading a Used Ribbon Cartridge	40
	Lighter or Darker Print	40
	Changing Ribbon Cartridge	41

4	The Configuration Menus	45
	Configuration Overview	45
	Changing Parameter Settings	45
	Saving Parameter Settings	45
	Default and Custom Configurations	46
	Navigating the Menus	46
	Changing Parameters Example	47
	Auto Save Configuration	50
	Saving Your New Configuration	50
	Optimizing Print Quality (N7000 STD Only)	55
	Optimizing Print Speed (N7000 STD Only)	56
	Main Menu	57
	N7000 STD Firmware	58
	N7000 H-Series Firmware.....	59
	QUICK SETUP Menu Definitions	60
	CONFIG. CONTROL	64
	HOST INTERFACE	66
	Auto Switching Submenu	67
	Centronics (Parallel) Submenu	69
	Dataproducts Submenu	71
	Serial Submenu.....	74
	IEEE 1284 Parallel (Bidirectional) Submenu.....	79
	NETWORK SETUP Menu	81
	ETHERNET ADDRESS	81
	ETHERNET PARAMS.....	82
	ACTIVE IGP EMUL - (N7000 STD)	84
	EMULATION.....	84
	LinePrinter+ Emulation (N7000 STD)	85
	P-Series Emulation	91
	P-Series XQ Emulation	96
	Serial Matrix Emulation	98
	Proprinter XL Emulation	103
	Epson FX Emulation	106
	LinePrinter + Emulation (N7000 H-Series)	109
	LQ-1600K Menu	116
	OKI Menu	117
	IGP/PGL Emulation	120
	Features	120
	Configuring The Emulation With The Control Panel	121
	IGP/PGL Submenu	122

IGP/VGL Emulation	133
Features	133
Configuring the Emulation with the Control Panel.....	134
IGP/VGL Submenu	134
PRINTER CONTROL	145
ADVANCED USER.....	148
DIAGNOSTICS	155
PRINTER MGMT	158
5 Interfaces	159
Overview.....	159
Dataproducts Parallel Interface	160
Dataproducts Parallel Interface Signals	161
Centronics Parallel Interface.....	162
Centronics Parallel Interface Signals	163
IEEE 1284 Parallel Interface.....	164
Compatibility Mode.....	164
Nibble Mode	164
Byte Mode	164
Signals	165
Terminating Resistor Configurations.....	167
RS-232 and RS-422 Serial Interfaces	168
RS-232	169
RS-422	170
6 Reprogramming the Security Key.....	171
Reprogramming the Security Key.....	171
How to Program the Security Key	171
7 Troubleshooting.....	173
Cleaning Requirements	173
Exterior Cleaning.....	173
Interior Cleaning.....	174
Diagnosing Problems.....	176
Bar Code Verification	176
Printing a Hex Dump	177
Fault Messages	178
N7000 STD ASCII Printers Fault Messages	179
N7000 H-Series Printers Fault Messages	206

A	Printer Specifications	239
	Ribbon Cartridge Specifications	239
	Paper Specifications	239
	Labels	240
	Printer Weight and Dimensions	240
	Environmental Characteristics	240
	Acoustic Noise Level	241
	Energy Star	241
	Electrical Characteristics	242
	Interfaces	243
	Printing Rates	243
B	ASCII Character Set	245
C	Zero Tear Pedestal Printer	247
	Overview	247
	Operation	248
	Position the Paper Input and Adjust the Paper Guides	248
	Load Paper	250
	Position the Paper Out Sensor	252
	Set the Tear Bar Distance	253
	Set the Top of Form	254
	ZTP SETTINGS Menu	255
	Performance Limitations	256
D	Customer Support	259
	Printronix Customer Support Center	259
	Printronix Supplies Department	259
	Corporate Offices	260
E	Communication Notices	261
	Notices	261
	Energy Star	263
	Communication Statements	263
	Software License Agreement	264

1

Introduction

Printer Overview

This chapter provides a general overview of your printer and the conventions used within this manual.

Printronix N7000 and N7000 H-Series Cartridge Ribbon Printers (CRP) Series

Printronix® has been the global leader in industrial printing solutions for over 30 years, earning a reputation for designing and manufacturing leading edge products and delivering them to market with unsurpassed service and support.

The Printronix N7000™ Line Matrix Printing Platform extends the series of technology innovations that cement Printronix's leadership position. Line matrix printing is Printronix's flagship technology, and it remains the workhorse solution for supply-chain and back-office printing applications because of its reliability, lower cost of ownership and flexibility of printing applications.

- Most reliable printer ever – provides more up time and lower operating costs
- Ultra capacity ribbons – deliver darker image, last longer, and costs less to operate than other print technologies
- Integrated print management system – provides precise control over print quality, print costs, and job planning
- Cabinet or Pedestal styles – best user access and forms handling flexibility
- Unsurpassed ease of use – simplifies operation and enhances productivity

There are three printer configurations:

Enclosed Cabinet

- The enclosed cabinet models provide for near silent operation, making these printers perfectly suitable for use in the quietest of office environments.
- Provides the best paper handling for large print runs. All paper input and output is contained inside the cabinet and protected from bumping and contamination.
- Highly effective combination of moveable fences and chains allows for precise stacking all the way up to a full box of paper.
- For tougher forms that tend not to refold well, a SureStak power stacker option is available for the enclosed cabinet models.
- Available in the following print speeds:
 - **STD printers** – 500 line per minute (lpm), 1000 lpm, 1500 lpm, and 2000 lpm models.
 - **H-Series printers** – 300 line per minute (lpm), 600 lpm, and 800 lpm models.

Pedestal

- The pedestal model has a clamshell design that allows easy access to all controls providing faster ribbon replacements and easier paper loading
- Oversized casters are standard making movement easy.
- Versatility to configure the paper path for either top or rear exit.
- Using the top paper exit, this printer is ideal for short print runs and easy access to output
- Available in the following print speeds:
 - **STD printers** – 500 lpm, 1000 lpm, and 1500 lpm models.
 - **H-Series printers** – 300 lpm, 600 lpm, and 800 lpm models .

Zero Tear Pedestal

- Special push tractor configuration enables printing from the very first to the very last line of a form and then tear-off with no forms lost
- The elimination of wasted forms between jobs can yield significant savings.
- An ideal solution for supply-chain and back-office applications.
- Available in the following print speeds:
 - **STD printers** – 500 lpm, 1000 lpm, and 1500 lpm models.
 - **H-Series printers** – 300 lpm and 600 lpm models.

Consumable Monitoring with PrintNet Enterprise

The Integrated Print Management System works with PrintNet Enterprise (PNE). PNE allows a system administrator to remotely view the current consumable status of all printers. PNE can be configured to deliver alerts on all consumable warnings. When a ribbon reaches the low state, PNE notifies the system administrator remotely via an automated e-mail alert of the low condition. This allows corrective action to be taken before the ribbon reaches its end of life. If the ribbon is not changed, an alert will again be initiated once the ribbon reaches the 0% end point. Refer to your PrintNet Enterprise Remote Management Software manual for details.

Graphics Enhancements

The IGP/PGL and IGP/VGL emulations allow you to create and store forms, generate logos, bar codes, expanded characters, and create other graphics. Alphanumeric and bar code data are added as the form is printed.

These emulations are available as factory-installed or field-installed options. These emulations are not supported on H-Series printers. For more information, contact your authorized service representative.

Taking Care of Your Printer

Your printer will produce high print quality jobs if it is well taken care of. Periodic cleaning, handling the printer properly, and using the correct printer supplies such as ribbon and paper ensures optimum performance. Chapter 7 explains how to clean the printer, and printer supplies are listed in Appendix A.

Conventions in this Manual

All uppercase print indicates control panel keys.

Example: Press the CANCEL key, then press the ON LINE/CLEAR key.

Quotation marks (“ ”) indicate messages on the Liquid Crystal Display (LCD).

Example: Press the ON LINE/CLEAR key. “OFFLINE” appears on the LCD.

The + (plus) symbol represents key combinations.

Example: “Press△ + ▽” means press the △ (UP) key and the ▽ (DOWN) key at the same time.

Warnings and Special Information

Read and comply with all information highlighted under special headings:

WARNING A warning notice calls attention to a condition that could harm you.

CAUTION A caution notice calls attention to a condition that could damage the printer.

IMPORTANT Information vital to proper operation of the printer.

NOTE: A note gives you helpful tips about printer operation and maintenance.

Related Documents

- *Quick Reference Guide* — Explains how to set up the printer for basic operation (load ribbon cartridge and media, and clear paper jams).
- *Maintenance Manual* — Explains how to maintain and repair the line matrix printer at the field service level of maintenance.
- *Character Sets Reference Manual* — Information about and examples of the character sets available in line matrix printers.
- *IGP/PGL Programmer's Reference Manual* — Provides information used with the optional IGP Printronix emulation enhancement feature.
- *IGP/VGL Programmer's Reference Manual* — Provides information used with the optional Code V™ emulation enhancement feature.
- *Integrated Network Interface Card User's Manual* — Information about network protocols, configuration, and operation.
- *LinePrinter Plus Programmer's Reference Manual* — Covers the host control codes for the LinePrinter Plus emulation.
- *LQ-1600K Emulation Programmer's Reference Manual* — Defines the host control codes for the LQ-1600K emulation.
- *OKI Programmer's Reference Manual* — Defines the host control codes for the OKI emulation.

Contact Information

Printronix Customer Support Center

IMPORTANT

Please have the following information available prior to calling the Printronix Customer Support Center:

- Model number
- Serial number (located on the back of the printer)
- Installed options (i.e., interface and host type if applicable to the problem)
- Configuration printout (Press PRT CONFIG on the control panel, then press Enter)
- Is the problem with a new install or an existing printer?
- Description of the problem (be specific)
- Good and bad samples that clearly show the problem (faxing or emailing these samples may be required)

China (86) 800-999-6836

<http://www.printronix.com/public/servicessupport/default.aspx>

Printronix Supplies Department

Contact the Printronix Supplies Department for genuine Printronix supplies.

China (86) 400-886-5598

<http://www.printronix.com/public/supplies/default.aspx>

Corporate Offices

Printronix, Inc.
15345 Barranca Parkway
Irvine, CA 92618
U.S.A.
Irvine, CA 92623-9559
Phone: (714) 368-2300
Fax: (714) 368-2600

Printronix, Inc.
c/o Printronix Nederland BV
Bijsterhuizen 11-38
6546 AS Nijmegen
The Netherlands
Phone: (31) 24 6489489
Fax: (31) 24 6489499

Printronix Schweiz GmbH
42 Changi South Street 1
Changi South Industrial Estate
Singapore 486763
Phone: (65) 6542 0110
Fax: (65) 6546 1588

Printronix Commercial (Shanghai) Co. Ltd
22F, Eton Building East
No.555, Pudong Av.
Shanghai City, 200120, P R China
Phone: (86) 400 886 5598
Fax: (86-21) 5138 0564

Visit the Printronix web site at www.primtronix.com

2

Setting Up The Printer

Before You Begin

Read this chapter carefully before installing and operating the printer. The printer is easy to install. However, for your safety and to protect valuable equipment, perform all the procedures in this chapter in the order presented.

Power Requirements

The printer must be connected to a power outlet that supplies 88 to 270 volts AC. The printer automatically senses and adjusts itself to conform to the correct voltage range.

Primary circuit protection is provided by the power switch, which is also a circuit breaker. Consult an electrician if printer operation affects local electrical lines.

IMPORTANT Printer power should be supplied from a separate AC circuit protected at 10 amperes for 100 - 120 volts or 5 amperes for 200 - 240 volts at 50 or 60 Hertz.

Select a Site

Select a printer site that meets all of the following requirements:

- Permits complete opening of the printer cover and doors.
- For cabinet models, allows at least three feet of clearance behind the printer. (This permits air to circulate freely around the printer and provides access to the paper stacking area.)
- Has a standard power outlet that supplies 88-135 Volts AC or 178-270 Volts AC power, at 47 to 63 Hz.
- Is relatively dust-free.
- Has a temperature range of 10° C to 40° C (50° F to 104° F) and a relative humidity from 15% to 90% non-condensing.
- Is located within the maximum allowable cable length to the host computer. This distance depends on the type of interface you plan to use, as shown in Table 1.

Table 1. Maximum Interface Connection Cable Length

Interface Type	Maximum Cable Length
Centronics Parallel	5 meters (15 feet)
Dataproducts Parallel	12 meters (40 feet)
IEEE 1284 Parallel	10 meters (32 feet)
Serial RS-232	15 meters (50 feet)
Serial RS-422	1220 meters (4000 feet)
Twisted Pair / Type 3	300 meters (985 feet)
Ethernet 10/100Base-T	100 meters (328 feet)

Printer Dimensions

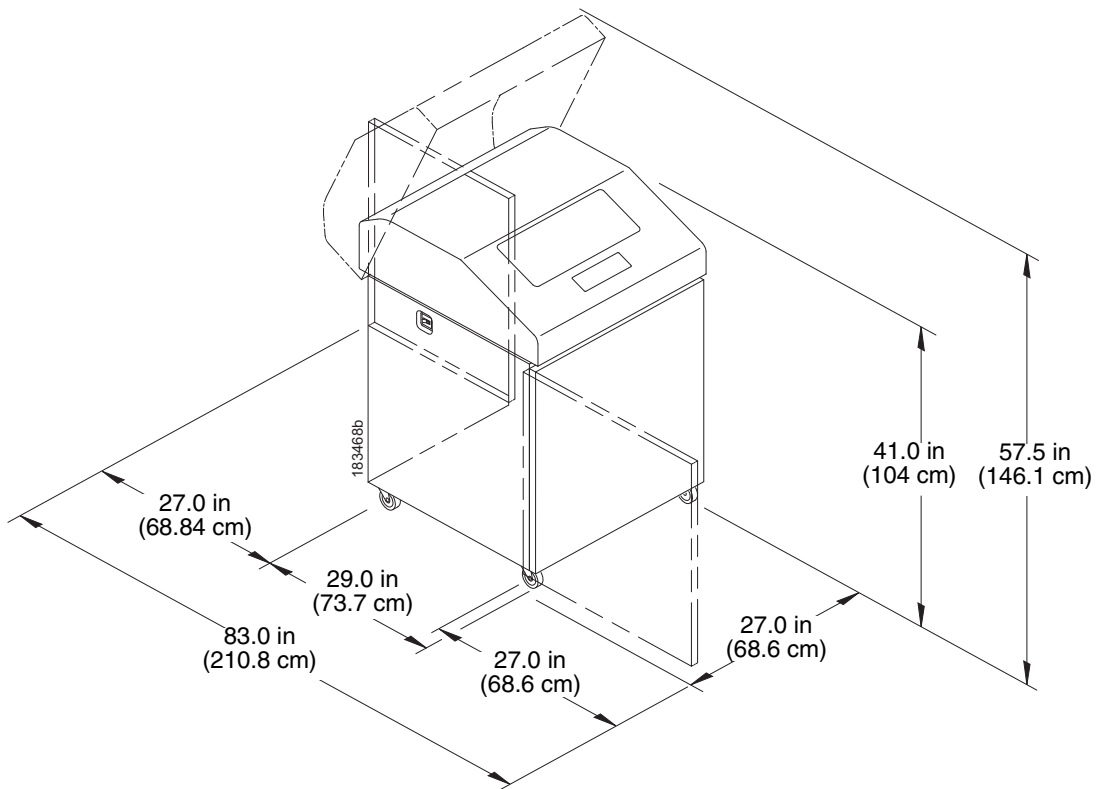


Figure 1. Printer Dimensions - Cabinet Model

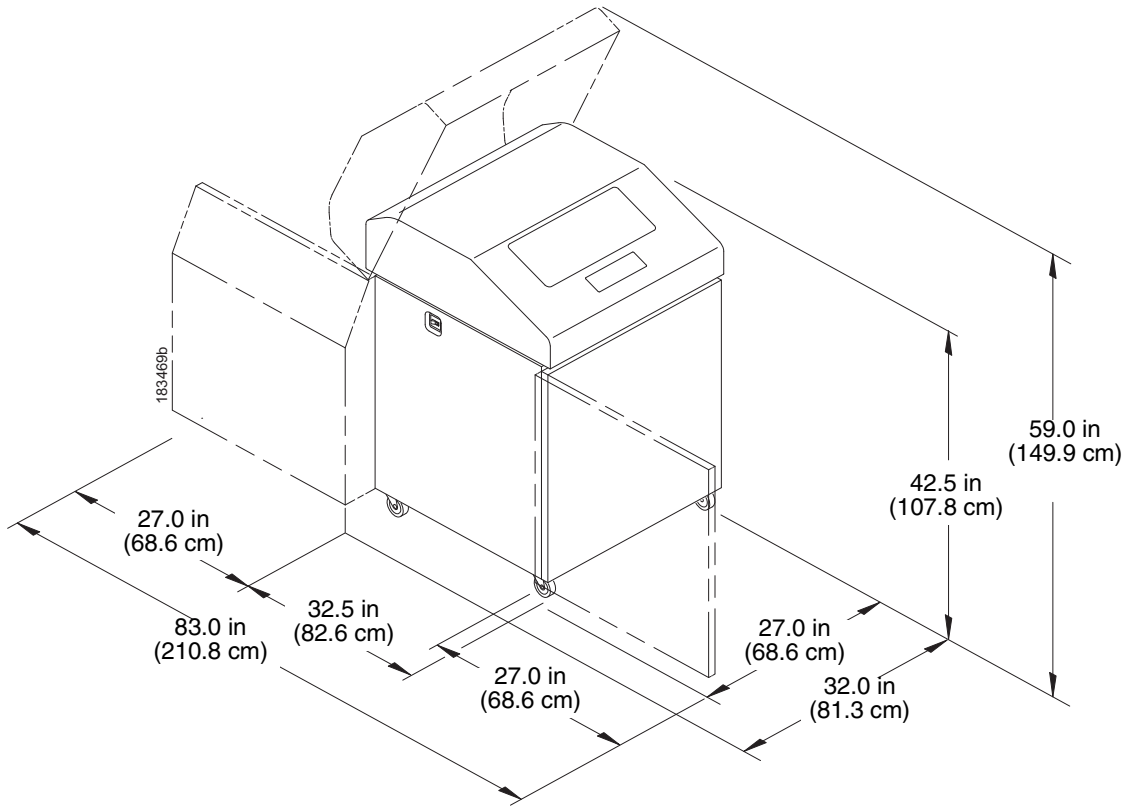


Figure 2. Printer Dimensions - Cabinet Model with Paper Stacker

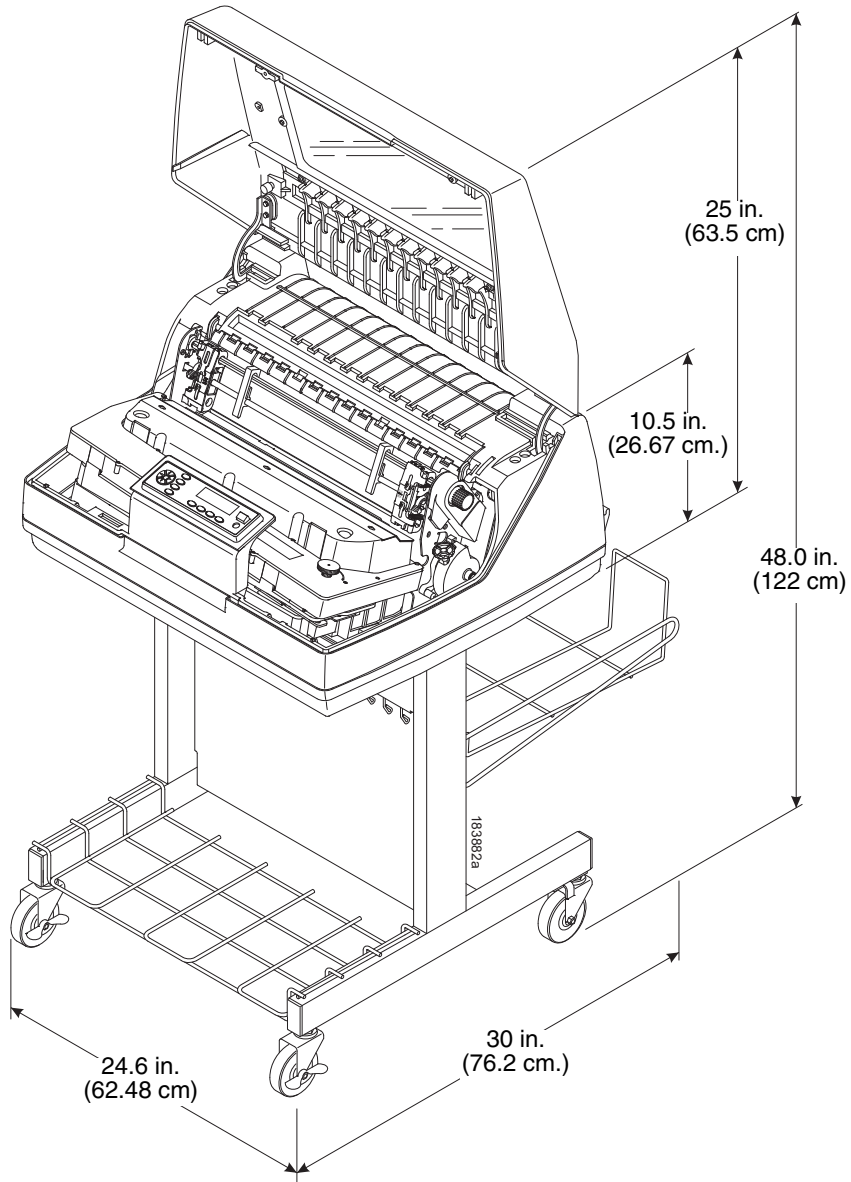


Figure 3. Printer Dimensions - Pedestal Model

Printer Component Locations

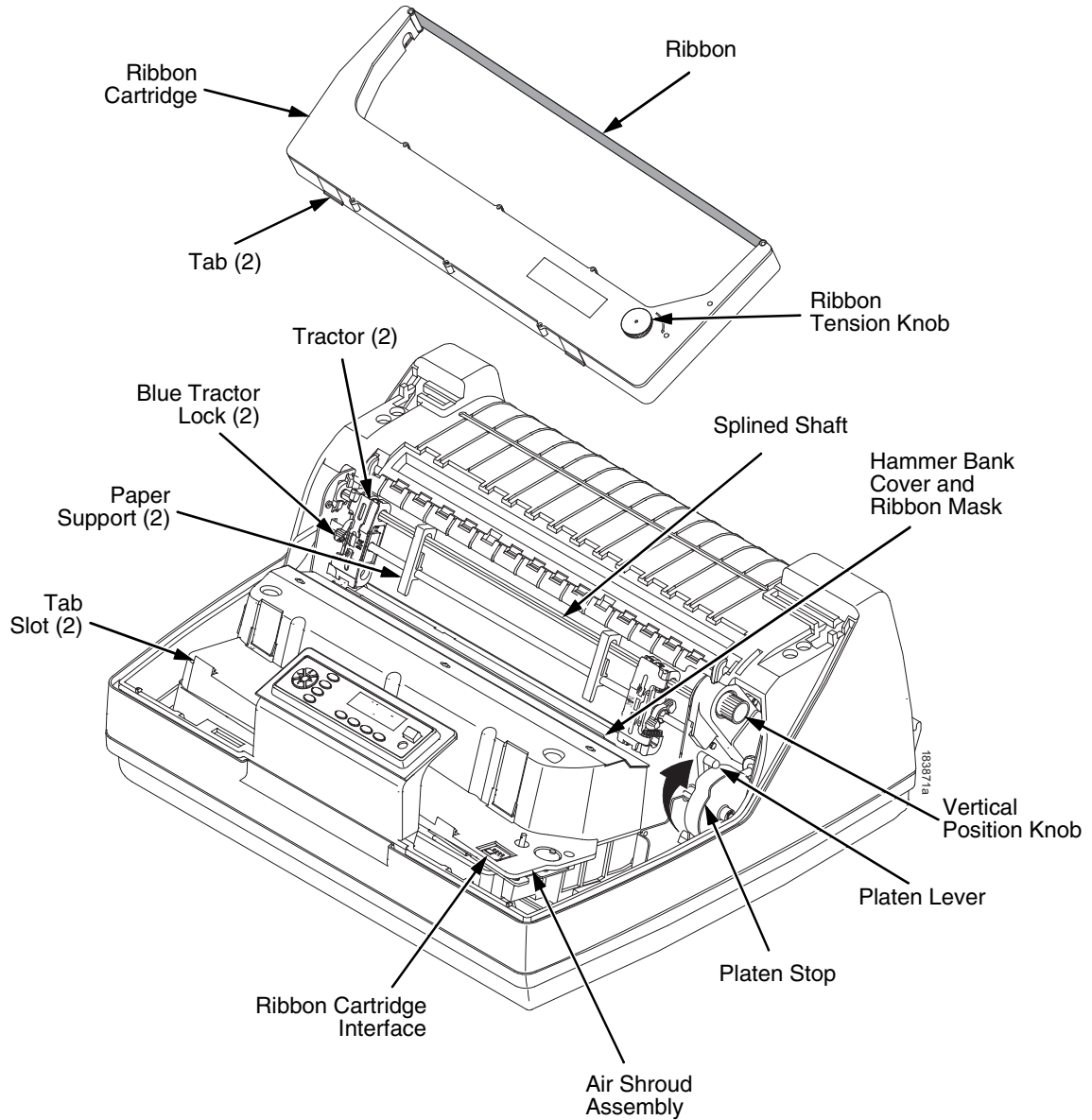


Figure 4. Printer Component Locations

3

Operating The Printer

Powering on the Printer

When you power on the printer, it executes a self-test. The default power-up state is online. When the self-test completes and the software has initialized successfully, the status indicator light turns on, indicating the printer is online. The default value of the type of emulation you have installed appears in the upper right corner of the display. The ribbon life remaining is shown on the second line.

If there is a fault during the self-test, the status indicator flashes and a specific fault message appears on the display (such as “LOAD PAPER”). The alarm also sounds if it is configured to do so. See “LCD Message Troubleshooting Table” on page 179 for information on fault messages and solutions.

Operating Modes

Online. In online mode, the printer can receive and print data sent from the host. Pressing the ON LINE key toggles the printer from online to offline mode. The status indicator is lit in online mode.

Offline. In offline mode, you can perform operator functions, such as loading paper and setting top-of-form. You can also move within the printer configuration menus. Pressing the ON LINE key toggles the printer from offline to online mode. The status indicator is off in offline mode.

Fault. In fault mode, a condition exists which must be cleared before printing can continue. The status indicator flashes, the alarm beeps (if configured to sound), and a descriptive fault message displays.

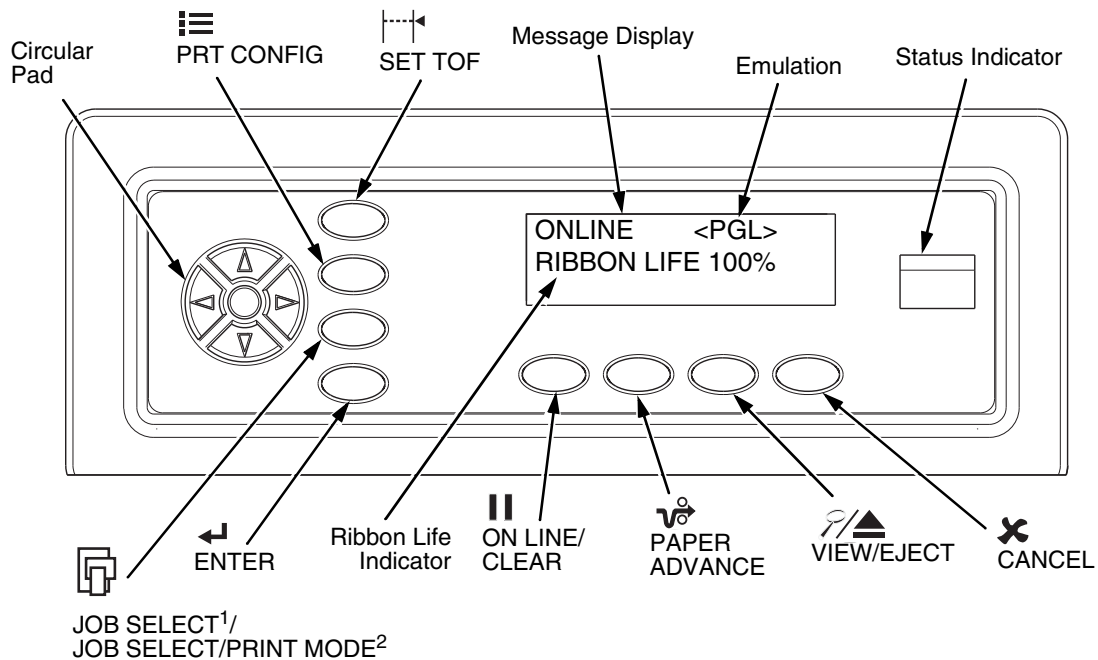
The current operating mode can be selected via control panel keys or can result from routine operations such as powering on the printer.

The Control Panel

Figure 5 shows the keys, displays, and indicators as they appear on the control panel. The following section provides the descriptions, and functions of the control panel keys.

Key combinations are indicated with the plus (+) sign. For example, “Press Δ + ∇ ” means to press the Δ key and the ∇ key at the same time.

N7000 and N7000 H-Series Printers



NOTE:

¹ For N7000 STD printers.

² For N7000 H-Series printers.

Figure 5. Control Panel

Control Panel Keys

ON LINE / CLEAR

Toggles the printer between online and offline modes. If a fault condition exists, pressing this key will clear the fault message and return the printer from fault mode to offline mode.

NOTE: If the fault condition is not corrected *before* pressing this key, the fault message will reappear when attempting to place the printer online.

PAPER ADVANCE

Performs advance to top-of-form, as defined by the current active form length. The key works both online and offline.

- If online with data in the printer buffer, the data will print and then the paper will move to the next top-of-form.
- In the fault state, PAPER ADVANCE will advance the paper. The first press moves to the top of the next available form. All subsequent presses advances one forms length as defined by the current active forms length.

VIEW / EJECT

When the printer is online or offline, pressing this key executes the view or eject function, depending on whether the printer is a cabinet or a pedestal (or zero tear pedestal).

If online with data in the printer buffer, the data prints and the key functions as described below.

If in a fault state, this key will be ignored.

- **View Function** — for cabinet models, pressing the VIEW/EJECT key moves the last data printed to the tractor area for viewing. While in the view state, the message "Printer in View" displays, pressing the UP or DOWN arrow keys moves the paper up or down in 1/72 inch increments. This is done to align the image within a pre-printed form, for example. Refer to the UP and DOWN key functions for additional details on the microstep feature. Pressing VIEW/EJECT a second time moves the paper back to the adjusted print position.
- **Eject Function** — for pedestal models, when the VIEW/EJECT key is pressed, the bottom of the last printed form will move to the tear bar position. The message "READY TO TEAR/EJECT To Return" displays. While in this position, pressing the UP or DOWN arrow keys moves the paper up or down in 1/72 inch increments. Refer to the Up and Down key functions for additional details on the microstep feature. When the VIEW/EJECT key is pressed a second time, the printer will move the paper to enable printing on the next available form.


CANCEL

In offline mode, this key cancels all data in the print buffer, if enabled in the “ADVANCED USER” menu (see page 148). The print buffer is cleared without printing any of the data and the current paper position is set as the top-of-form. If this function is disabled, the CANCEL key will be ignored.

NOTE: Use of this key will cause loss of data.


SET TOF

Sets the top-of-form on the printer. This key is active only when the printer is offline and will not operate if the printer is in a fault condition. The paper moves down to the print position and aligns to the top-of-form. Refer to the *Quick Setup Guide* for complete instructions on how to set the top-of-form.

NOTE: If there is any data in the buffer, the paper will move to the last print position.


PRT CONFIG

In offline mode, PRT CONFIG prints the current short configuration. This key requires a confirmation with the ENTER key; pressing any other key will exit from this function. See “The Configuration Menus” on page 45 for an explanation of configuration menus.


JOB SELECT or PRINT MODE

NOTE: For N7000 STD printers, the key is JOB SELECT.
For N7000 H-Series printers, the key is PRINT MODE.

In offline mode, this key allows for fast selection of any of the previously stored configurations. Pressing this key causes the printer to cycle through the following messages: Load Config., Factory Config, Load Config 1, Load Config 2, Load Config 3,...,Load Config 8.


ENTER

When navigating the configuration menus, ENTER selects the currently displayed option value as the active value. An asterisk (*) appears next to the active value on the display. ENTER is also used for starting and stopping printer tests and generating a configuration printout.

NOTE: The ENTER key must be unlocked in order to function.
See UP + DOWN, below.
The ENTER key lock and unlock function can be configured to be a key combination other than $\Delta + \nabla$ (see page 153).

UP or DOWN (Δ or ∇)

Moves up or down between levels in the configuration menus and makes vertical forms adjustment. After pressing VIEW, press Δ or ∇ to adjust the paper up or down in 1/72 inch increments for fine vertical forms alignment. When the printer is in offline mode, press Δ or ∇ to move through levels in the configuration menus.

UP + DOWN (Δ + ∇)

Locks and unlocks the ENTER key.

NOTE: The ENTER key lock and unlock function can be configured to be a key combination other than Δ + ∇ (see page 153).

PREV or NEXT (\triangleleft or \triangleright)

Moves between the options on the current level of configuration menu. In the configuration menu, press \triangleleft to scroll backward or press \triangleright to scroll forward through the menu selections on the same level.

PREV + NEXT (\triangleleft + \triangleright)

When both keys are pressed simultaneously, the printer will reset to the power-up configuration and reset its internal state (in offline mode).

Ribbon Life Indicator

The second line of the LCD displays the remaining life of the currently installed ribbon. The default settings for this feature should match the requirements for most applications; no special user setup is needed. If your particular application requires darker printing or can tolerate lighter printing, the ribbon end point can be adjusted as appropriate. Please refer "Ribbon End Point" on page 62.

Cancel a Print Job

The procedure to cancel a print job depends on the printer emulation and your application software. Contact your system administrator for additional information.

1. If the printer is online, press **||** (ON LINE/CLEAR) to place the printer in offline mode.
2. From the host system, stop the print job.

NOTE: If the print job is not stopped from the host system before pressing **X** (CANCEL), the print job continues with data missing when the printer returns to online mode. Exercise caution to prevent unwanted data loss occurrences, as this function deletes unprinted data in the printer. This function is active only in offline mode; the purpose of this function is to eliminate the necessity of printing unwanted data when print jobs are canceled.

3. Press **X** (CANCEL).

NOTE: You may need to enable the Cancel option on the front panel. See “ADVANCED USER” on page 148 for details.

4. Set the top-of-form. Refer to the *Quick Reference Guide*.

Operational Procedures

This section contains routine printer operating procedures on how to:

- reload paper
- unload paper

Reload Paper

Do this procedure when “LOAD PAPER” displays. (This message occurs when the last sheet of paper passes through the paper slot.) This procedure reloads paper without removing the last sheet of the old paper supply, while retaining the current top-of-form setting.

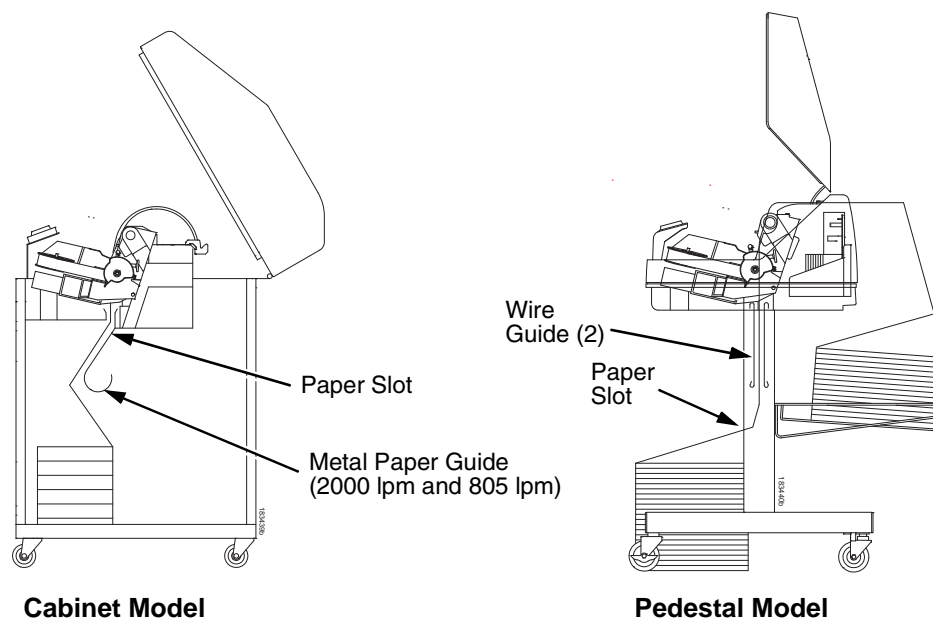


Figure 6. Paper Slot Location

1. Raise the printer cover. Raise the platen lever as far as it will go. (See Figure 4 on page 19 for the location of the lever.)
 2. Press **ON LINE/CLEAR** to turn off the alarm. Do not open the tractor doors or remove the existing paper.
 3. For cabinet models, open the front door. Align the paper supply with the label on the floor. Ensure the paper pulls freely from the box.
 4. Feed the paper up through the paper slot (see Figure 6). It may be easier to feed one corner of the new paper up through the slot first. When this corner can be grasped from the top, rotate the paper back to the normal position.
- NOTE:** If you are using thick, multi-part forms and are unable to load the new paper over the existing paper, go to step 15.
5. Hold the paper to prevent it from slipping down and through the paper slot.

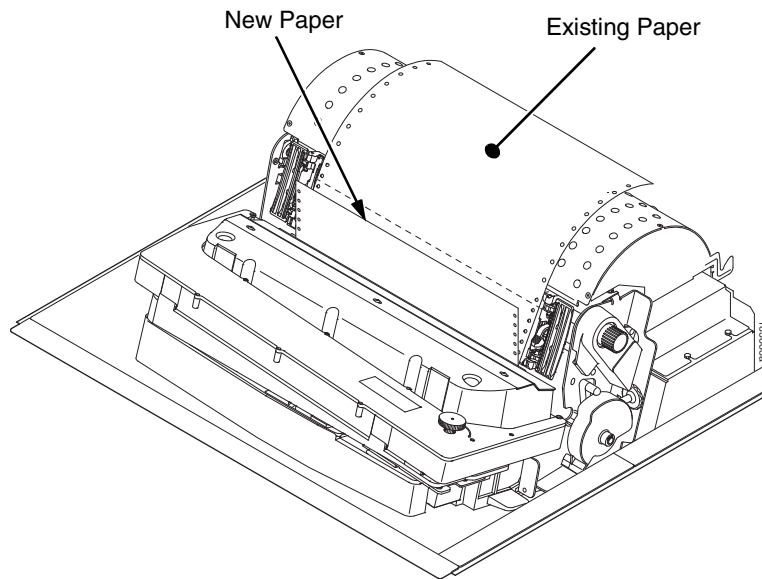


Figure 7. Loading New Paper into the Printer

6. Pull the new paper above and behind the ribbon mask, but in front of the existing paper. See Figure 4 on page 19 for the ribbon mask location. If necessary, gently press the existing paper back.
7. Align the top edge of the new paper with the top perforation of the existing paper.
8. Load the new paper over the existing paper. Open and load the tractors one at a time to prevent the paper from slipping.

NOTE: Make sure that the top edge of the new paper lines up with the top horizontal perforation of the last page.

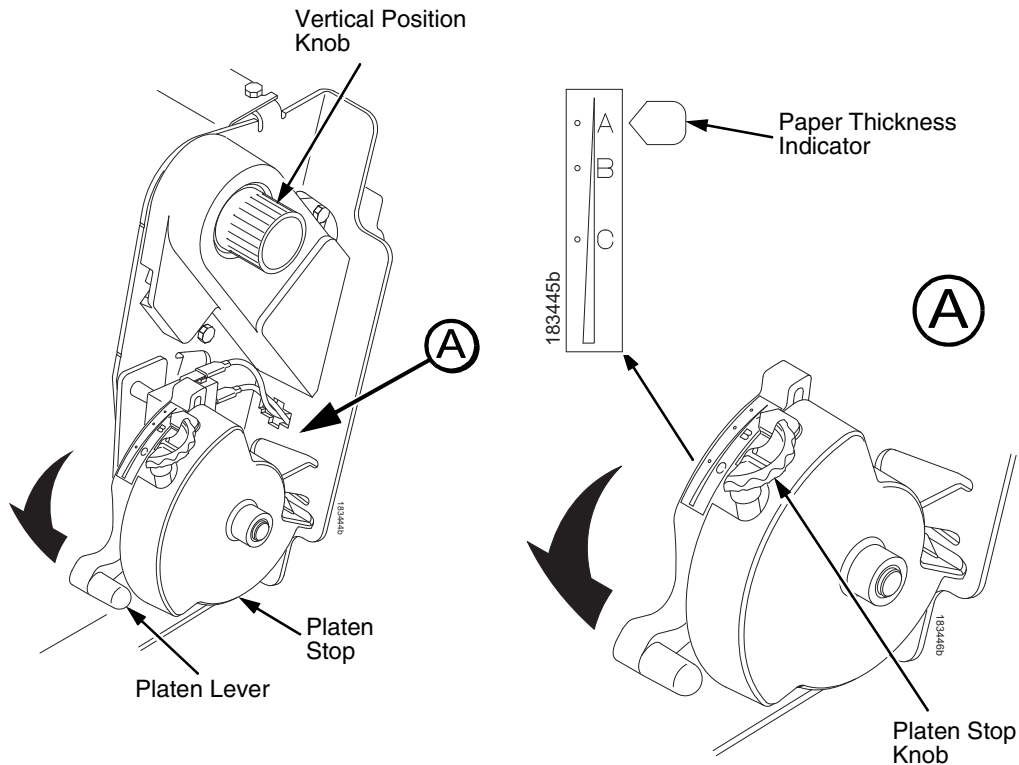


Figure 8. Setting the Platen Lever

9. Turn the platen stop knob clockwise or counterclockwise to match the paper thickness. (The A-B-C scale corresponds approximately to 1-, 3-, and 6-part paper thickness).

NOTE: If you are using the same thickness of paper, there is no need to readjust.

10. Lower the platen lever until it stops.
11. Press **ON LINE/CLEAR** to remove the “LOAD PAPER” fault message from the display.
12. Press **PAPER ADVANCE** several times to make sure the paper feeds properly beyond the tractors and over the lower paper guide. Feed sufficient paper to ensure the paper stacks correctly.
13. Close the printer top cover. Close the cabinet front door.
14. Press **ON LINE/CLEAR** to place the printer in online mode and resume printing.

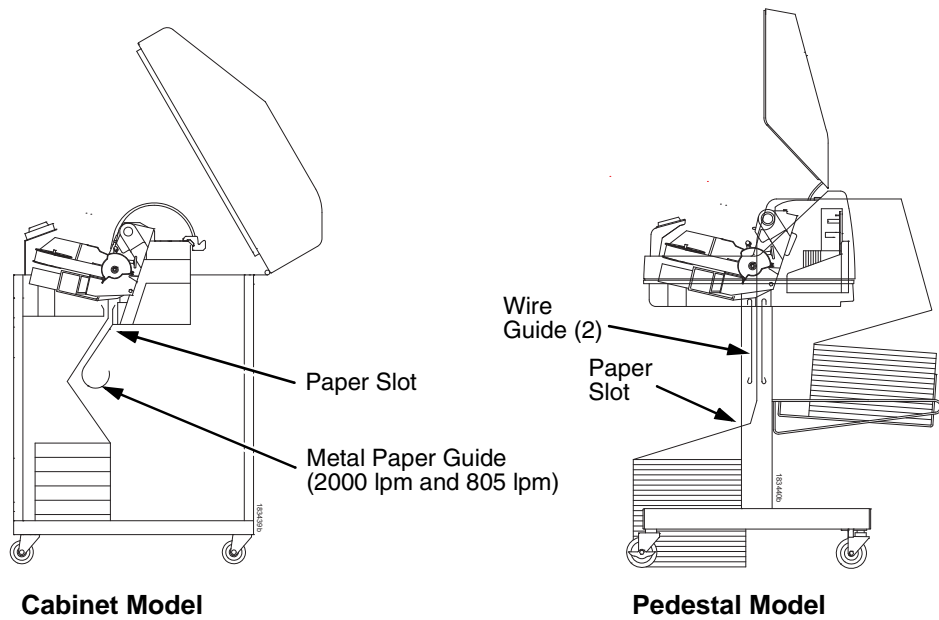


Figure 9. Paper Slots on the Printers

NOTE: Perform steps 15 to 32 only if you are unable to load the new paper over the existing paper.

15. Open both tractor doors.
16. Remove the old paper from the tractors. Allow the paper to fall into the paper supply area.
17. Feed the new paper up through the paper slot. Hold the paper to prevent it from slipping down through the paper slot.

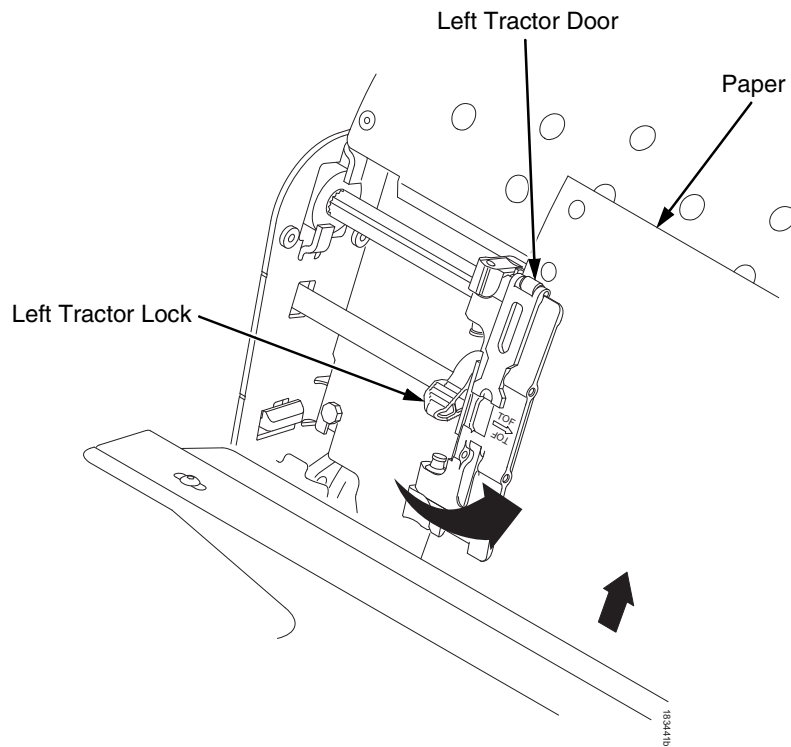


Figure 10. Loading Paper on the Left Tractor

18. Pull the paper above and behind the ribbon mask. See Figure 4 on page 19 for the ribbon mask location.
19. Load the paper on the left tractor.
20. Close the tractor door.

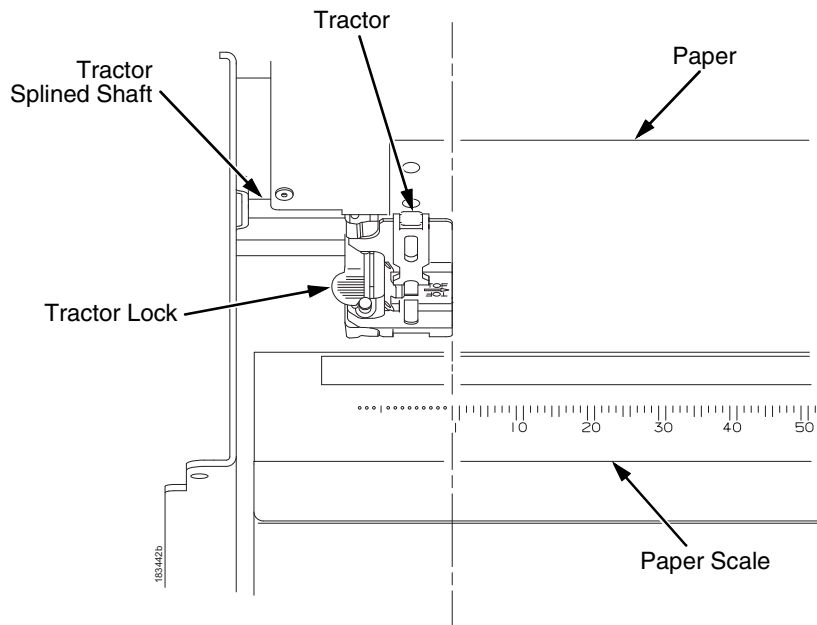


Figure 11. Positioning the Left Tractor to Avoid Damage

CAUTION To avoid damage to the printer caused by printing on the platen, always position the left tractor unit directly to the left of the “1” mark on the paper scale.

21. Normally, you should not need to adjust the position of the left tractor. If adjustment is necessary, unlock the left tractor by placing the tractor lock in the middle position. Slide the tractor until it is directly to the left of the number “1” on the paper scale and lock it. (You can also use the paper scale to count columns.)

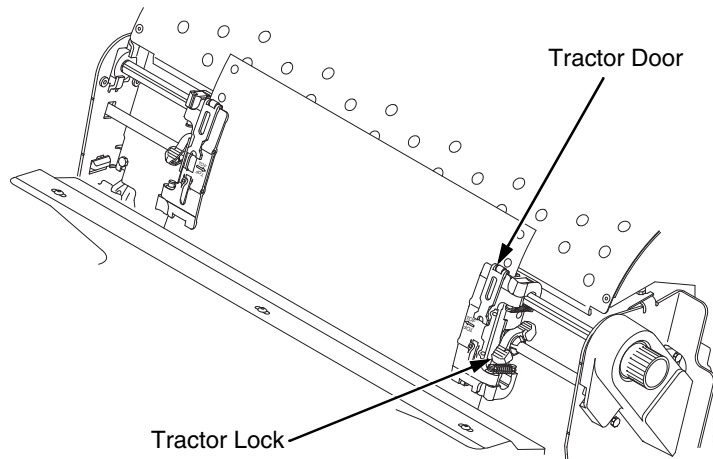


Figure 12. Loading Paper onto the Sprockets

22. Unlock the right tractor.
23. Load the paper onto the sprockets and close the tractor door.
If necessary, slide the right tractor to remove paper slack or to adjust for various paper widths. Then, lock the tractor.

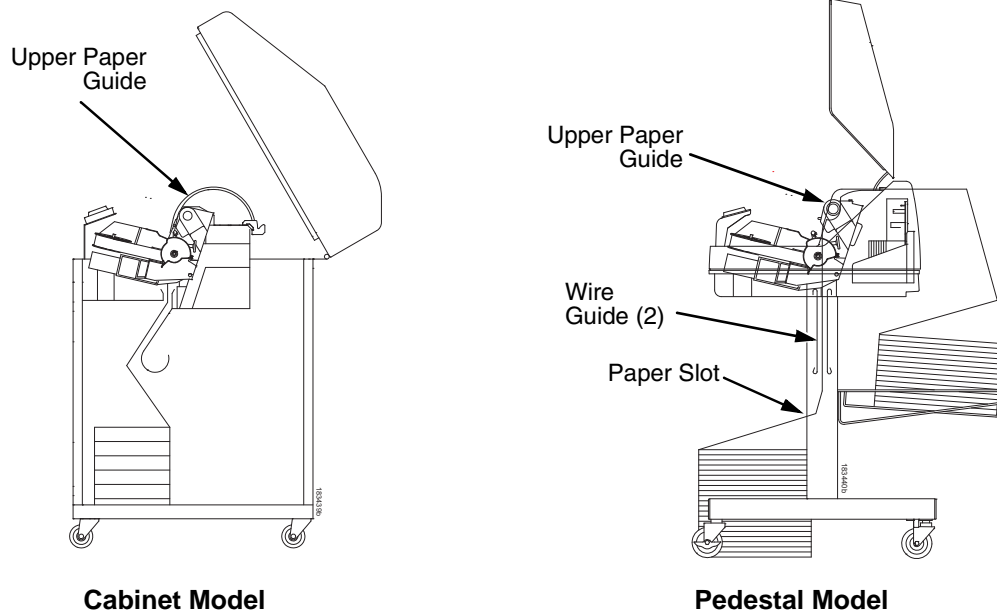


Figure 13. Using the Paper Guide to Orient the Paper

24. Pedestal models:

Using the vertical position knob to move the paper up, guide the paper over the upper paper guide and through the slot to the rear of the top cover. For pedestal models with the Quick Access Cover, refer to the *Quick Setup Guide* for paper exiting options.

25. Press **PAPER ADVANCE** several times to make sure the paper feeds properly beyond the tractors and over the lower paper guide. Feed sufficient paper to ensure the paper stacks correctly.

26. Cabinet models:

Open the cabinet rear door. Make sure the paper is aligned with the label in the output area (inside the cabinet). Close the front and rear doors.

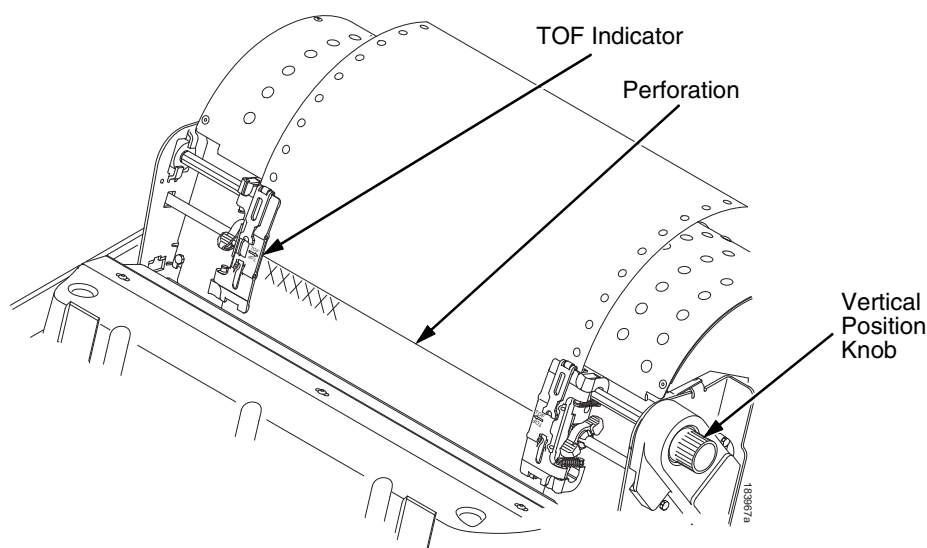


Figure 14. Aligning the Perforation with the TOF Indicator

27. Align the top of the first print line with the TOF indicator on the tractor by rotating the vertical position knob. For best print quality, it is recommended that the top-of-form be set at least one print line or more below the perforation.

NOTE: For exact positioning, press the **VIEW/EJECT** key to move the last data printed to the tractor area for viewing. While in View mode "Printer in View" displays. Press the Up or Down Arrow keys to move the paper vertically in small increments. Pressing the **VIEW/EJECT** key a second time moves the paper back to the adjusted print position. The key works both online and offline provided that the printer is in View mode. (This procedure is applicable for both the cabinet and pedestal models.)

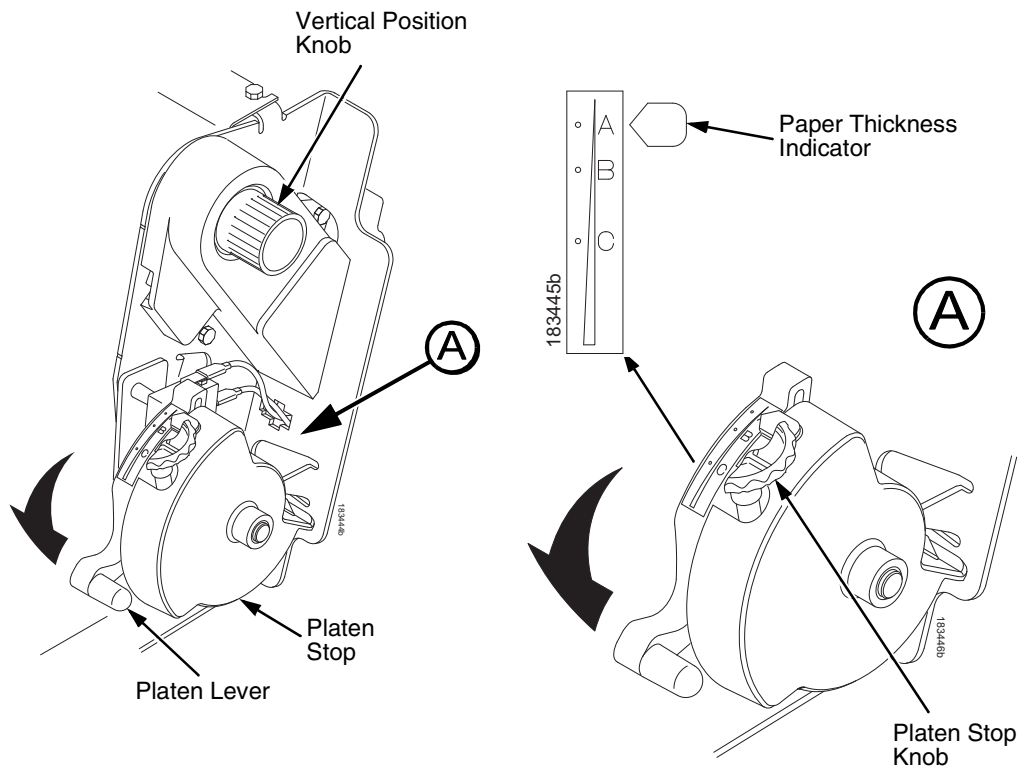


Figure 15. Adjusting the Platen Lever

28. Turn the platen stop knob clockwise or counterclockwise to match the paper thickness. (The A-B-C scale corresponds approximately to 1-, 3-, and 6-part paper thickness. Adjust until you have the desired print quality).

NOTE: The platen stop allows you to set an optimum and consistent thickness that is not affected when opening and closing the platen lever.

29. Lower the platen lever until it stops.

30. Press **ON LINE/CLEAR** to clear any fault messages (such as “LOAD PAPER”) from the LCD.

31. Press **SET TOF**. The top-of-form you have set moves down to the print position. If there is data in the buffer, the paper moves forward to the last print position on the next page.

32. Press **ON LINE/CLEAR** and close the printer cover.

Unload Paper

1. Press **ON LINE/CLEAR** to place the printer in offline mode and open the printer cover.
2. For cabinet models, open the cabinet rear door. For models with the power stacker installed, press the **STACKER UP** key on the rear control panel.

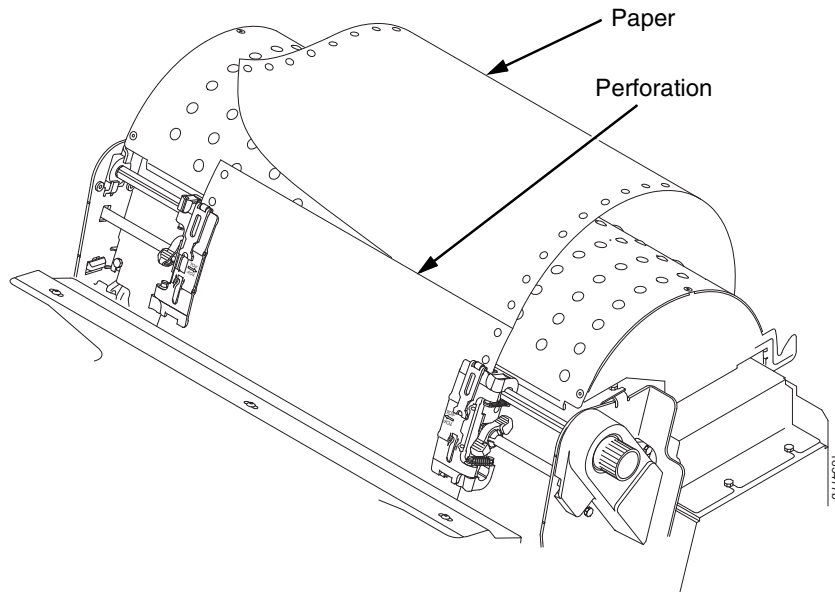


Figure 16. Unloading the Paper from the Printer

3. Tear off the paper at the perforation.
4. Allow the paper to fall to the back of the printer and into the paper stacking area.
5. For pedestal models, remove the stacked paper from the paper tray.

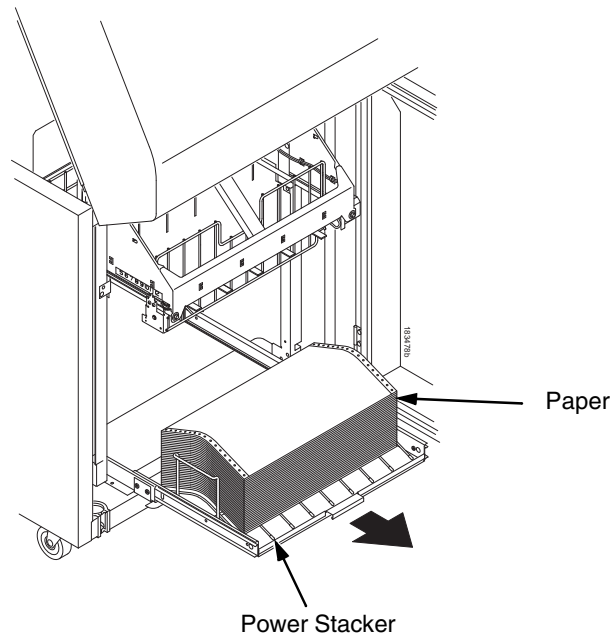


Figure 17. Removing Stacked Paper from the Printer

6. For cabinet models, remove the stacked paper from the rear cabinet floor. For cabinet models with the power stacker installed, remove the paper from the wire paper tent and press the **STACKER DOWN** key to lower the stacker mechanism.
7. Close the cabinet rear door.

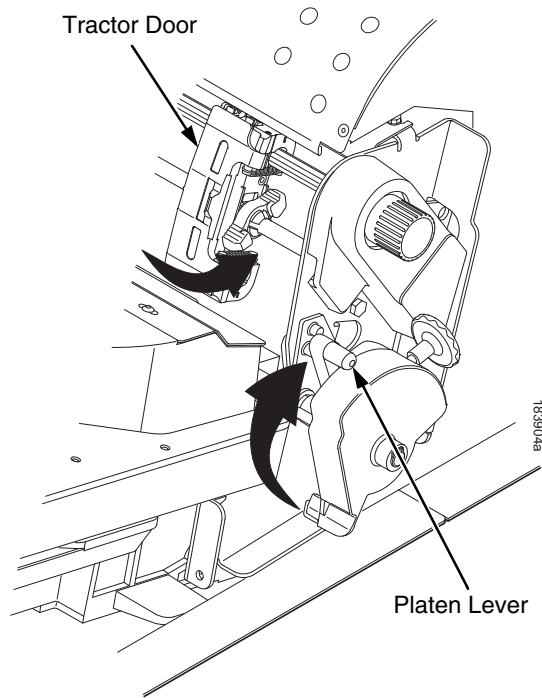


Figure 18. Completely Removing the Paper

8. To completely remove the paper from the printer:
 - a. Raise the platen lever as far as it will go and open both tractor doors.

CAUTION

Be careful when pulling any paper backward through the paper path, especially when using a label stock. If you are not careful, labels can detach and adhere to the printer within the paper path, where only an authorized service representative can remove them.

- b. Open the cabinet front door.
- c. Gently pull the paper down through the paper slot. Allow the paper to fall into the paper supply area.
- d. Remove the paper from the paper supply area.

Integrated Print Management System

The N7000 CRP has a new feature that automatically monitors and communicates the status of the ribbon life to help the operator know when to change ribbons. Using an ink delivery system called the Cartridge Ribbon System (CRS), the printer can automatically detect when a new or used ribbon is loaded, and all ribbon properties. The ribbon is contained in a plastic box (the cartridge) and feeds only in one direction. The CRS contains an interface board that allows communication between the printer and the cartridge. Using the CRS, the N7000 automatically detects when a new or used ribbon is installed and determines the ribbon's length, ink color, and expected yield. The ribbon life, starting from 100% when new and decreasing to 0% when depleted, is always displayed on the control panel. See Figure 5 on page 22.

When the ribbon life reaches 2%, a warning message "RIBBON UNDER 2%/Change RBN soon" appears on the control panel display. The control panel status indicator lamp flashes. The printer will continue printing in this condition until the ribbon life reaches 0% at which time, printing will stop. The ribbon may be changed at any time while the printer is in the "RBN END POINT/Change Ribbon" condition without losing data in the printer's buffer. If a new ribbon is loaded, the system automatically detects the change, clears the condition when the platen is closed, and restarts the life at 100%. If a partially used ribbon is loaded, the system continues the life at the percentage indicated for the used ribbon.

You may also resume printing for approximately two more minutes without changing the ribbon by pressing the ON LINE/CLEAR key twice. This may be done as many times as needed to complete the job in progress.

Ribbon usage information is calculated by maintaining a count of impressions (dots) that is stored on the ribbon cartridge and updated periodically so that the cartridge can be used on a different printer with the information intact. This allows the system administrator to have precise control over print quality and consumable costs. The accurate presentation of available ribbon life allows for efficient planning of print jobs. For example, if the displayed ribbon life were low, you can install a new ribbon before printing a large print job.

Output Darkness

By default the system is configured to meet most user requirements. However, some applications require that the output remains darker than the nominal set point while some applications are less critical and could tolerate a lighter final image. The system can easily adjust to this variability. A setting under the Printer Control menu is available that allows the user to adjust the final output. The range is as follows:

Normal (Default)
Darker +1 through +6
Lighter -1 through -10

The ribbon life indicator always cycles between 100% and 0%, but if a darker setting is selected, zero will be reached more quickly. If a lighter setting is selected, the system will extend the amount of printing it takes to reach zero.

Loading a Used Ribbon Cartridge

You can take the ribbon cartridge off the printer and reload it at a later time. The ribbon life gauge automatically updates to reflect the correct remaining capacity.

NOTE: Since the ribbon usage information is stored on the ribbon cartridge, you can reload a partially used cartridge onto a different printer.

Lighter or Darker Print

The ribbon life value as determined by the Integrated Print Management System is factory set so that the image quality at the end of the ribbon life is as good as it was when the ribbon was new. You may adjust the ribbon end point for a lighter or darker image as required for your printing needs. See "PRINTER CONTROL" on page 145.

Changing Ribbon Cartridge

Before changing the ribbon cartridge, determine whether at the end of ribbon life if you want to make the print lighter (extend the ribbon life) or darker (shorten the ribbon life). If you want to make the print lighter or darker, go to “Ribbon End Point” on page 145 and follow the procedures for adjusting the image density. If you are satisfied with the print darkness, continue with the following steps.

NOTE: Ribbon cartridge instructions and illustrations shown in the following section are for the pedestal model. Follow the same procedures for the cabinet model.

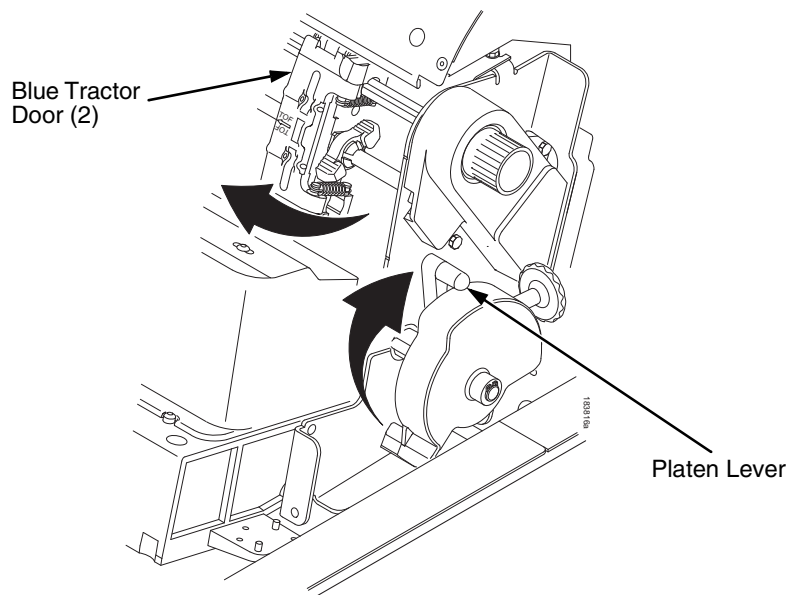


Figure 19. Preparing to Load the Ribbon

1. Open the printer cover.
2. Raise the platen lever as far as it will go.
3. Close the tractor doors.
4. Remove the old ribbon cartridge and discard properly.

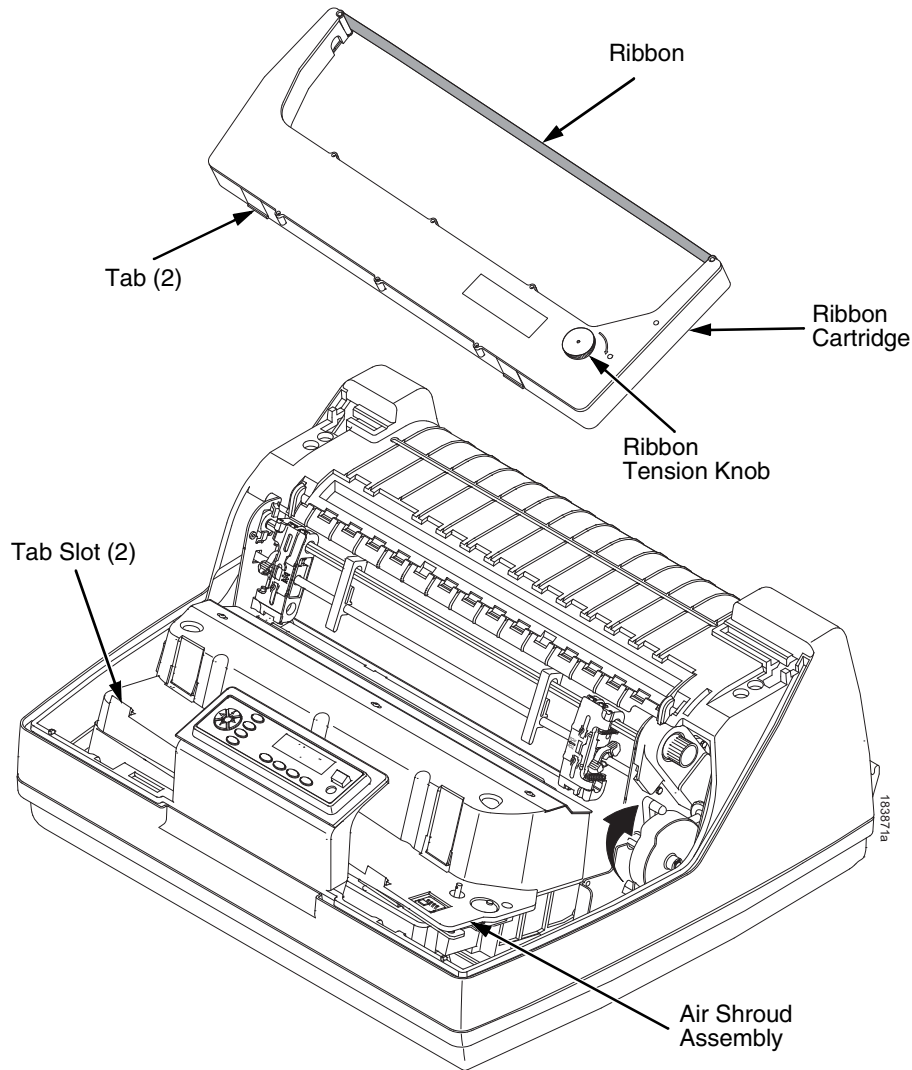


Figure 20. Installing the Ribbon Cartridge

5. Remove the ribbon slack on the new ribbon cartridge by turning the ribbon tension knob clockwise.

CAUTION Do not turn the ribbon tension knob counterclockwise. This could damage the ribbon cartridge.

6. Hold the cartridge at an angle, so that the rear side nearest you is lower than the side with the ribbon. Find the two tabs on the outside of the cartridge and place them into the corresponding slots on the air shroud assembly (see Figure 20).

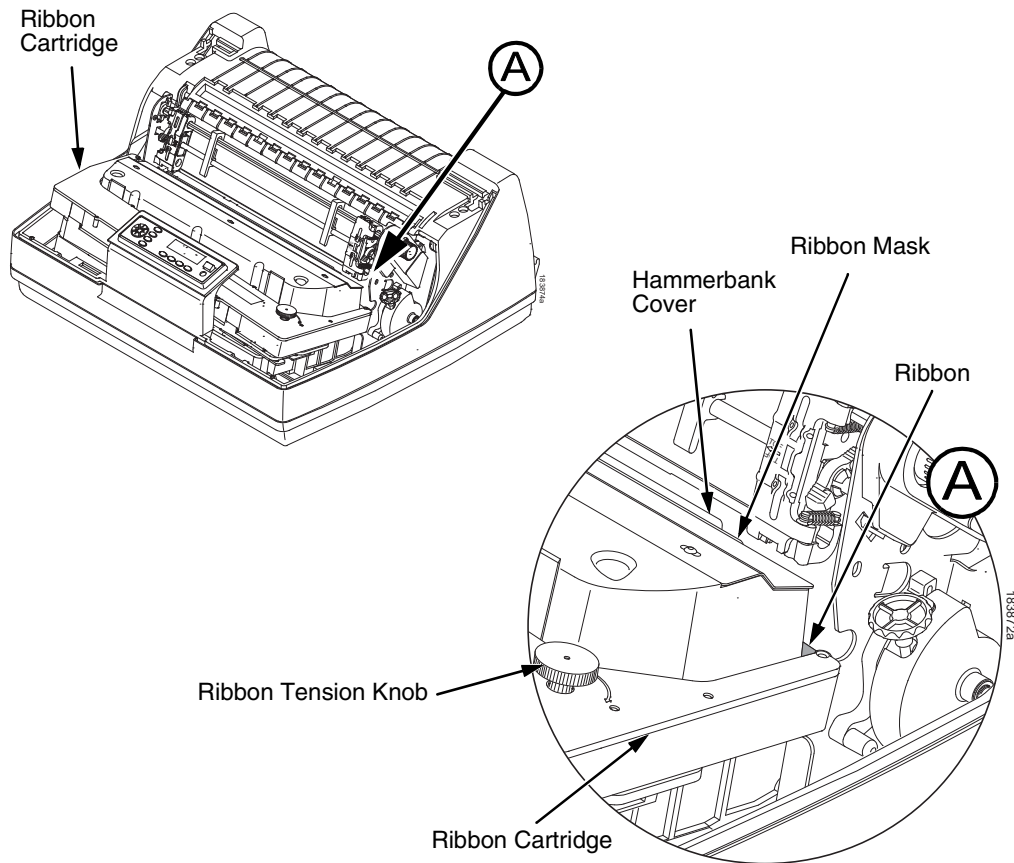


Figure 21. The Ribbon Cartridge Snapped in Place

7. Rock the cartridge downward, making sure that the ribbon goes between the guide and the mask (see Figure 21). You will feel it snap into place.

CAUTION Make sure that the ribbon does not twist or fold over.

8. Turn the ribbon tension knob clockwise a few times to make sure the ribbon tracks correctly in the ribbon path.
9. Close the platen lever.
10. Close the printer top cover.
11. Press the **||** (ON LINE/CLEAR) key twice to return the printer to operation.

4

The Configuration Menus

Configuration Overview

To print data, the printer must respond correctly to signals and commands received from the host computer. Configuration is the process of matching the printer's operating characteristics to those of the host computer and to specific tasks, such as printing labels or printing on different sizes of paper. The characteristics which define the printer's response to signals and commands received from the host computer are called configuration parameters.

You can configure the printer using the configuration menus and the control panel or by sending control codes in the data stream from a host computer attached to the printer. This chapter provides an introduction to configuring the printer and includes the configuration menus available (depending on which emulation you have installed in the printer).

IMPORTANT

Configuration directly affects printer operation. Do not change the configuration of your printer until you are thoroughly familiar with the procedures in this chapter.

Changing Parameter Settings

You may change a printer parameter setting, such as line spacing or forms length, either by pressing keys on the control panel or by sending emulation control codes in the data stream from a host attached to the printer. The control panel allows you to configure the printer's resident set of configuration menus. An example procedure for using the control panel to change parameter settings begins on page 47.

When control codes are sent from a host attached to the printer, they override control panel settings. For example, if you set the line spacing to 6 lpi with the control panel, and application software later changes this to 8 lpi with a control code, the control code overrides the control panel setting.

Saving Parameter Settings

The parameter settings that you have changed can be permanently stored in the printer's memory as a configuration. See "Auto Save Configuration" on page 50. and "Saving Your New Configuration" on page 50.

You may also save your new configurations using the PTX_SETUP command host control code. See your *LinePrinter Plus Programmer's Reference Manual* for details.

Default and Custom Configurations

A configuration consists of a group of parameter settings, such as line spacing, forms length, etc. Your printer provides a fixed default configuration and allows you to define several custom configurations for use with particular print jobs. The factory default configuration can be loaded, but it cannot be altered.

Eight configurations can be modified for unique print job requirements. The “Save Config.” option allows you to save eight groups of parameter settings in memory as custom configurations numbered from 1 through 8. An explanation on how to save a set of parameter values as a custom configuration using the “Save Config.” menu option begins on page 50.

Navigating the Menus

To manipulate configurations review the following instructions about navigating through the menus.

You must be offline to move within the menus.

ON LINE/CLEAR



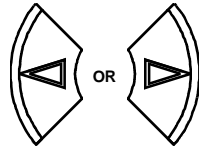
Press to toggle between ONLINE and OFFLINE. Menus are accessed with the printer offline.



OR



Press to move up or down through the menu levels.



OR

Press to scroll through the available choices on a chosen level.

ENTER



Press to confirm selection.



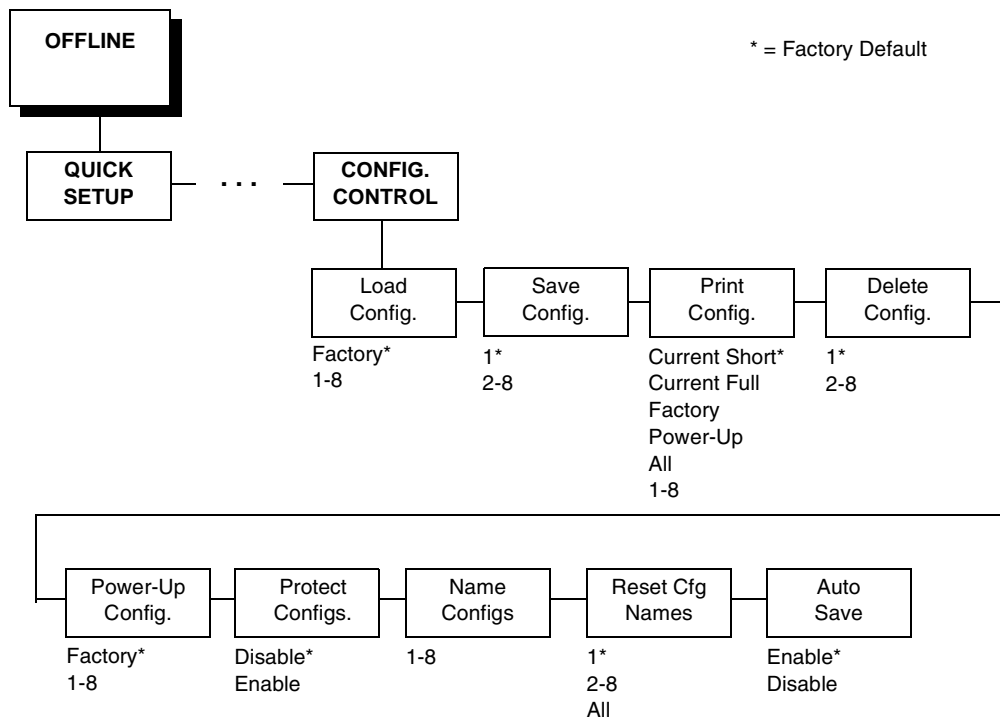
+



Press to lock and unlock the ENTER key. The ENTER key is locked by default to prevent you from accidentally changing the printer configuration. The lock and unlock function can be configured to be other than $\triangle + \nabla$ (See “Set Lock Key” on page 153.)

To experiment with navigating the menus, use the example on the next page as a tutorial.

Changing Parameters Example
















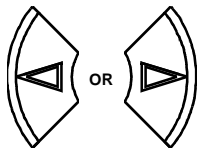







A configuration consists of several parameters. The default factory configuration has a starting set of parameters. In the configuration menu above, and in all the configuration menus in this chapter, the factory default values are indicated by an asterisk (*).

Your print jobs may require parameter values which vary from the default settings. This section provides an example procedure for changing individual parameter values.

The following procedure shows how to change and save the settings for the Barcode Quality and Language options. Use these guidelines to navigate the configuration menus and change other parameters.

NOTE: When changing Ribbon End Point parameters, all changes will apply to every configuration saved. Changes to Ribbon End Point cannot be saved to an individual configuration.

Step	Press	LCD	Notes	
1.	Make sure the printer is on.			
2.	ON LINE/CLEAR 	OFFLINE QUICK SETUP	Allows you to make configuration changes.	
3.	 + 	ENTER SWITCH UNLOCKED		
		OFFLINE QUICK SETUP		
4.	 UNTIL	OFFLINE PRINTER CONTROL		
5.		PRINTER CONTROL Ribbon End Point		
6.	 UNTIL	PRINTER CONTROL Barcode Quality		
7.		Barcode Quality Dark*		
8.	 OR 	Barcode Quality Draft		Cycle through the choices.
9.	ENTER 	Barcode Quality Draft*		The * indicates this choice is active.
10.		PRINTER CONTROL Barcode Quality		

Step	Press	LCD	Notes
11.	 UNTIL	PRINTER CONTROL Display Language	Press until the desired parameter displays.
12.		Display Language English*	
13.	 OR 	Display Language Simp. Chinese	
14.	ENTER 	Display Language Simp. Chinese	
15.	 + 	ENTER SWITCH LOCKED	Locks the ENTER key.
16.	ON LINE/CLEAR 	ENTER = Save ONLINE = No Save	Press ENTER to automatically save configuration changes. Press ONLINE to continue without saving.
17A.	ENTER 	Cfg = 1* = Power-Up Cfg	Configuration changes have been saved as Configuration 1, and will be set as the Power-Up config. The printer will then be brought online.
17B.	ON LINE/CLEAR 	ONLINE Ribbon Life = 100%	Places the printer online without permanently saving the configuration changes.
18.	The printer is ready for operation		

Auto Save Configuration

After any changes are made to the Factory Default configuration menu items, you will be prompted to save the changes to “Config #” when you place the printer online. “#” represents the next available unassigned configuration number. When prompted, press one of the following:

- **Enter.** Saves to Config 1 or the next available Config, and becomes the power-up config.
- **Online.** Changes will be implemented but saved only temporarily until deliberately saved as a new configuration or until you power off the printer. All changes will be lost when you power off the printer.

Saving Your New Configuration











The Save Config. option allows you to save up to eight custom configurations to meet different print job requirements. Once you have changed all of the necessary parameters, you may save them as a numbered configuration (Example 1 on page 51) or a named configuration (Example 2 on page 53) that can be stored and loaded later for future use. If you do not save your configuration using the Auto Save, or this option, all of your parameter changes will be erased when you power off the printer.










Once you have saved a custom configuration using this option, it will not be lost if you power off the printer. You can load a configuration for a specific print job (see “Load Config.” on page 64). You can also modify and resave it. You may want to print your configurations (see “Print Config.” on page 64) and store them in a safe place, such as inside the printer cabinet. If the Protect Configs. parameter is enabled and you try to resave an existing configuration, the new configuration will not be saved until the existing configuration has been deleted (see “Delete Config.” on page 65).

NOTE: Once you change active emulations, any changes to the previously selected emulation will be gone unless they have been saved.

Example 1











This example shows how to save a configuration as a numbered configuration, then later print it.












Step	Press	LCD	Notes
1.	Make sure the printer is on.		
2.	ON LINE/CLEAR 	OFFLINE QUICK SETUP	
3.	 + 	ENTER SWITCH UNLOCKED	Allows you to make configuration changes.
		OFFLINE QUICK SETUP	
4.	 UNTIL	OFFLINE CONFIG. CONTROL	
5.		CONFIG. CONTROL Load Config.	
6.	 UNTIL	CONFIG. CONTROL Save Config.	
7.		Save Config. 1*	
8.	 OR 	Save Config. 2	Cycle through the choices.
9.	ENTER 	Save Config. 2*	The * indicates this choice is active.






Step	Press	LCD	Notes
<p>NOTE: We recommend that you print the configuration. To print the configuration go to Step 9. To skip this procedure and resume printer operation, go to Step 14.</p>			
10.		CONFIG. CONTROL Save Config.	
11.	 UNTIL	CONFIG. CONTROL Print Config.	
12.		Print Config. Current	
13.	 OR 	Print Config. 2	Press until the desired parameter displays.
14.	ENTER 	OFFLINE CONFIG. CONTROL	The selected configuration is printed.
15.	 + 	ENTER SWITCH LOCKED	Locks the ENTER key.
16.	ON LINE/CLEAR 	ONLINE Ribbon Life = 100%	
17.	If you printed out the configuration, store it in a safe place. The printer is ready for operation.		

Example 2

This example shows how to save a configuration as a named configuration.

Step	Press	LCD	Notes
1.	Make sure the printer is on.		
2.	ON LINE/CLEAR 	OFFLINE QUICK SETUP	
3.	 + 	ENTER SWITCH UNLOCKED	Allows you to make configuration changes.
		OFFLINE QUICK SETUP	
4.	 UNTIL	OFFLINE CONFIG. CONTROL	
5.		CONFIG. CONTROL Load Config.	
6.	 UNTIL	CONFIG. CONTROL Name Configs.	
7.		Name Configs. 1	The LCD flashes.
8.	 UNTIL	Name Configs 2	You will rename config 2.
9.		2 2*	
10.	 UNTIL	2 T	Cycle through the choices until "T" displays.

Step	Press	LCD	Notes
11.		2 T_	Saves the first character.
12.	 UNTIL	2 TE	Cycle through the choices until "E" displays.
13.		2 TE_	Saves the second character.
14.	 UNTIL	2 TES	Cycle through the choices until "S" displays.
15.		2 TES_	Saves the third character.
16.	 UNTIL	2 TEST	Cycle through the choices until "T" displays.
17.		2 TEST_	Saves the fourth character.
18.	ENTER 	Name Configs TEST	The configuration is renamed TEST.
19.		CONFIG. CONTROL Name Configs	
20.	 UNTIL	CONFIG. CONTROL Save Config.	
21.		Save Config. 1*	

Step	Press	LCD	Notes
22.		Save Config. TEST	TEST now appears as one of configuration choices.
23.	ENTER 	Saving Configuration	
		Save Config. TEST*	Your configuration is saved as TEST.
24.	 + 	ENTER SWITCH LOCKED	Locks the ENTER key.
25.	ON LINE/CLEAR 	ONLINE Ribbon Life = 100%	

Now you have the saved configuration for later use if needed.

Optimizing Print Quality (N7000 STD Only)

LP+, IGP/PGL, and IGP/VGL Emulations

You can optimize print quality for darker and sharper barcodes and characters. Doing so, however, will decrease the printer speed.

To optimize print quality, you can change the values of the following configuration parameters:

- **Bar Code Quality (Printer Control menu):** Select “Dark” or “Draft.” Dark prints the darkest images, but at the slowest speed. Draft prints at a faster speed than Dark, but the characters are not as dark. (See page 146 for a written description of Bar Code Quality.)
- **Print Quality (IGP/PGL emulation):** Select “Best” or “High.” Best prints the darkest images, but at the slowest speed. High prints at a faster speed than Best, but the characters are not as dark. (See page 122 for the IGP/PGL Configuration Menu, and see page 130 for a written description of Print Quality.)
- **Print Quality (IGP/VGL emulation):** Select “High.” (See page 134 for the IGP/VGL Configuration Menu, and see page 138 for a written description of Print Quality.)

Optimizing Print Speed (N7000 STD Only)

LP+, IGP/PGL, and IGP/VGL Emulations

The printer has been configured at the factory for optimal print speed. To optimize print quality instead, you can change values for specific configuration parameters such as Barcode Quality and Print Quality. Doing so, however, will decrease the printer speed.

If you have optimized the printer for print quality, you can change it to optimal speed by selecting the values as follows:

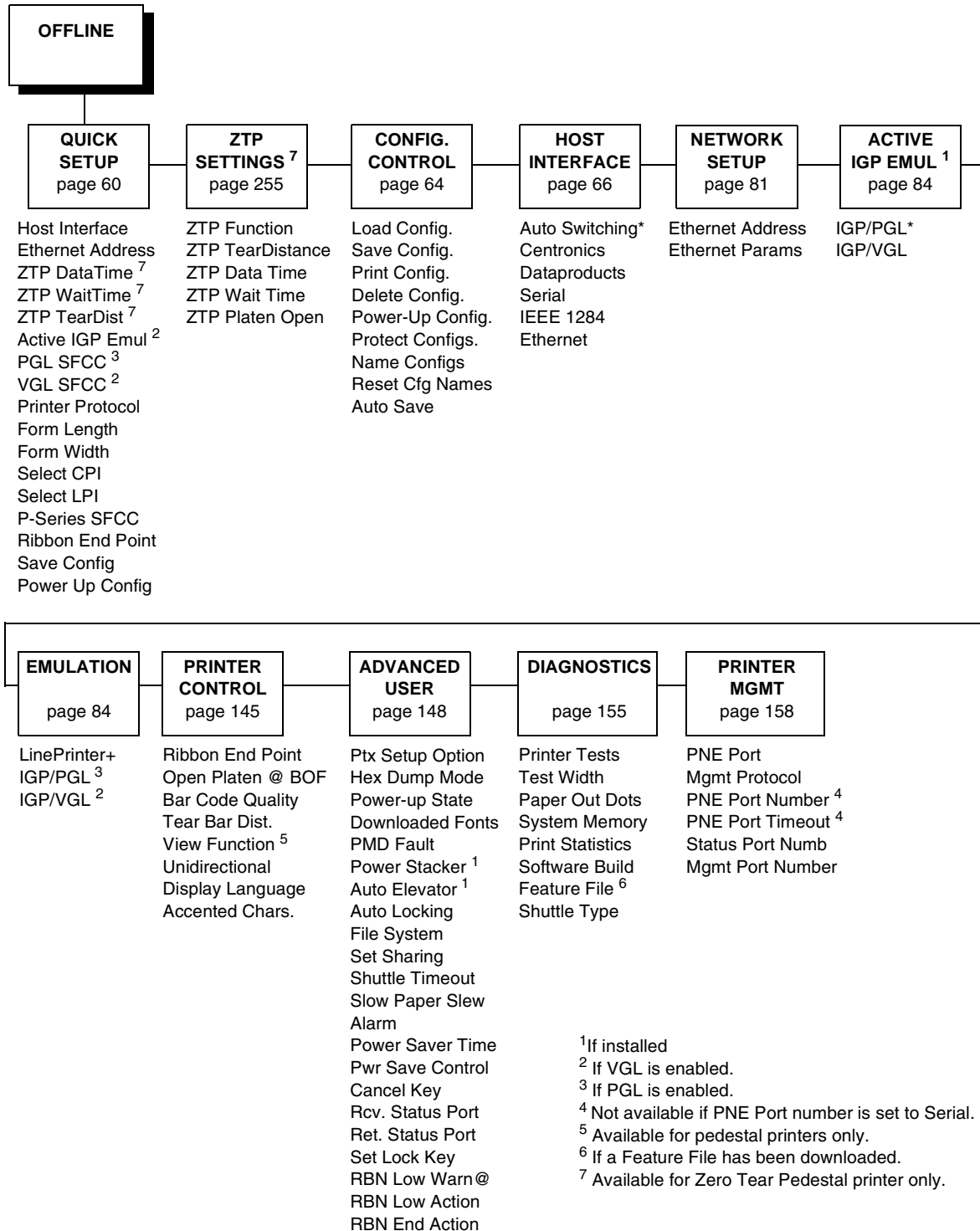
- **Bar Code Quality (Printer Control menu):** Select Draft. (See page 57 for the Configuration Main Menu, and see page 146 for a written description of Bar Code Quality.)
- **Print Quality (IGP/PGL emulation):** Select Dataprocessing. (See page 122 for the IGP/PGL Configuration Menu, and see page 130 for a written description of Print Quality.)
- **Print Quality (IGP/VGL emulation):** Select Dataprocessing. (See page 134 for the IGP/VGL Configuration Menu, and see page 138 for a written description of Print Quality.)

Main Menu

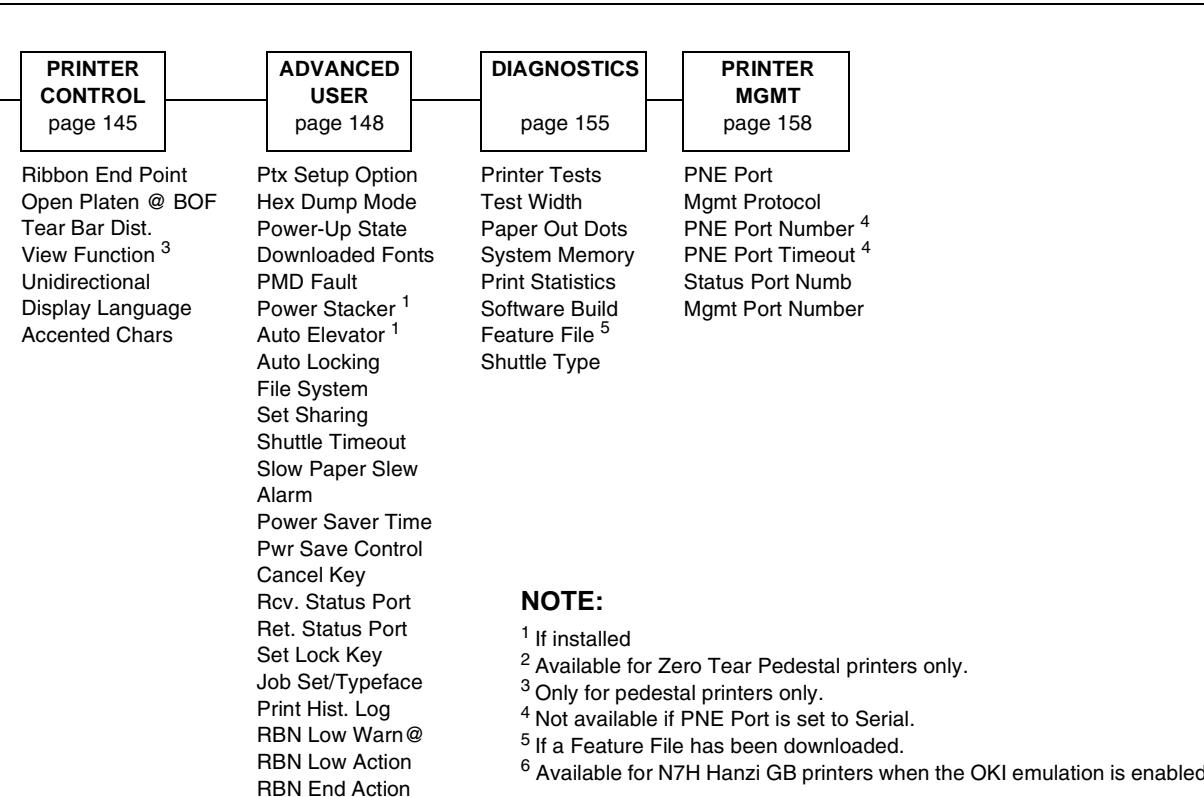
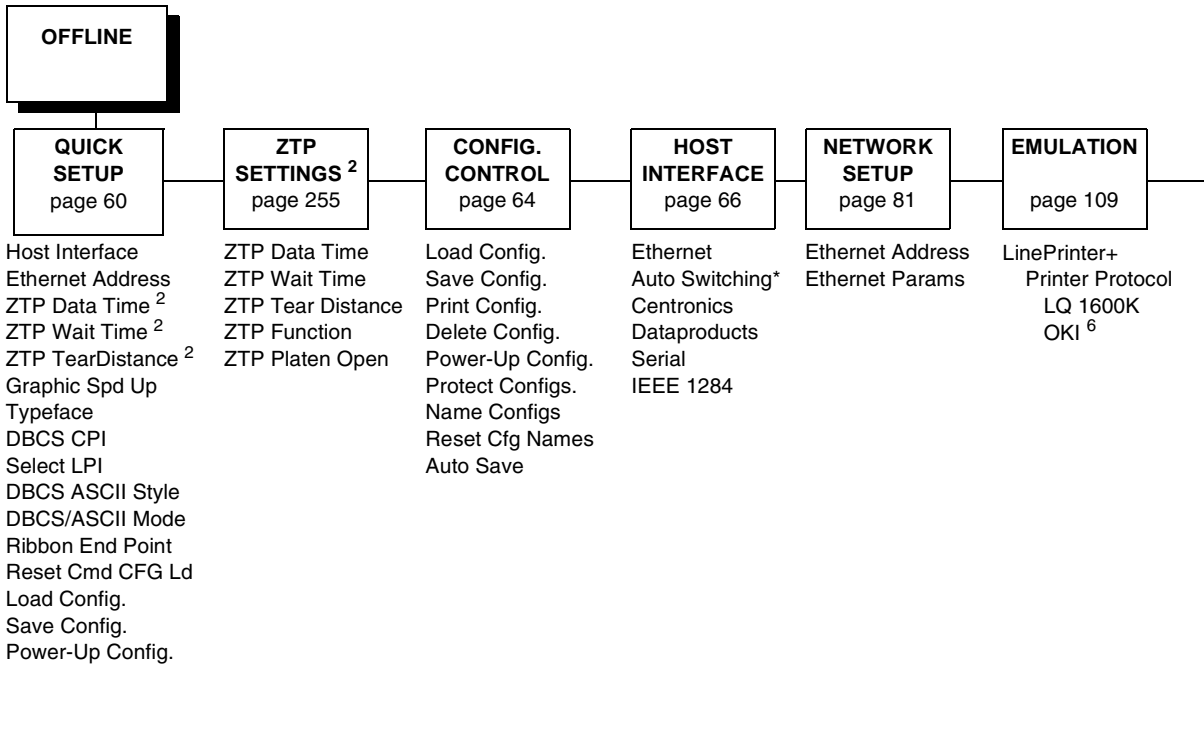
Brief descriptions follow for the first-level configuration menu options:

- **QUICK SETUP** — These options allow quick access to the most frequently changed or inputted parameters during the installation of the printer.
- **ZTP SETTINGS** These options allow you to set parameters for zero tear pedestal printers.
- **CONFIG. CONTROL** — These options allow you to save, print, load, delete, name, and reset entire sets of configuration parameters.
- **HOST INTERFACE** — These options allow you to select either the Serial RS-232, Serial RS-422, Centronics® parallel, Dataproducts® parallel and Long Lines, Ethernet™, IEEE® 1284 parallel, or Auto Switching for the printer. This menu also allows you to configure several parameters for each interface.
- **NETWORK SETUP** — This option allows you to select from Ethernet Address options and Ethernet Parameters options.
- **ACTIVE (IGP) EMUL** — This menu allows you to select the PGL or VGL emulation from the menu if IGP is installed.
- **EMULATION** — This menu allows you to configure the options which are available for the current operating (active) emulation. For example, if LinePrinter+ is the active emulation, then the LinePrinter+ emulation options can be configured using this menu.
- **PRINTER CONTROL** — This menu allows you to select parameters common to a general user, such as display language and Barcode quality.
- **ADVANCED USER** — This menu allows you to select several advanced operating parameters for the printer, such as the speed at which paper will advance when slewing.
- **DIAGNOSTICS** — This menu includes the diagnostic tests, system memory, software build part number, Feature File (if one exists), the shuttle type, and statistics of the printer.
- **PRINTER MGMT** — These options allow you to select the PNE port type, port number, port timeout period, status port number, and management port number.

N7000 STD Firmware



N7000 H-Series Firmware



QUICK SETUP Menu Definitions

Host Interface

The Host Interface menu enables you to select and configure interfaces between the printer and your host computer.

Ethernet Address

- **IP Address.** A numeric address such as 123.45.61.23 which identifies a printer or server in a LAN or WAN.
- **Subnet Mask.** A binary value used to divide IP networks into smaller subnetworks or subnets. This mask is used to help determine whether IP packets need to be forwarded to other subnets.
- **Gateway Address.** A gateway address is the IP address of a hardware device (gateway) that translates data between two incompatible networks, which can include protocol translation.
- **MAC Address.** This menu item is the Manufacturer's Assigned Number, and is unique for each printer. It is read-only.
- **DHCP.** You can enable/disable the DHCP protocol using this option, but consult your administrator for the appropriate setting.

ZTP DataTime

This option sets the pause time in the data stream that the ZTP requires before moving the form to the tear bar once a print job is completed. The values range from .5 to 15 seconds. The default is .5 seconds.

ZTP WaitTime

This option sets the minimum amount of time that the form stays at the tear bar. This allows you time to remove the form before the form is retracted to print the next form. The adjustable values range from 1 to 10 seconds in increments of 1 second. The default value is 2 seconds.

ZTP TearDist

This option sets the tear off distance from the current print position to the tear bar. Adjustable values in increments of 1/144th of an inch range from 200 to 2880. The up and down arrows adjust the display value. When you press the **Enter** key, the selected value is stored and a scale is printed to indicate the current tear off position. The default value is 1060.

NOTE: When a new value is selected, the printer will lose the current print position. You must reset the top of form to automatically save the new value.

Active IGP Emulation

The Active IGP Emulation menu enables you to activate either the PGL or VGL emulation (for the N7000 STD firmware only).

NOTE: Available for N7000 STD firmware only.

PGL SFCC

You can specify which hex code (1-FF) will be used as the Special Function Control Character (SFCC). The SFCC denotes that the following data is an IGP command.

- **7E** (the default)
- **1 – FF**

NOTE: Available for N7000 STD firmware only.

VGL SFCC

You can specify which hex code (1-FF) will be used as the Special Function Control Character (SFCC). The SFCC denotes that the following data is an IGP command.

- **5E** (default)
- **1 – FF**

NOTE: Available for N7000 STD firmware only.

Printer Protocol

Select the LinePrinter+ protocol you wish to use.

Form Length

Form length is the number of lines that can be printed on a page. You can set the form length in inches, millimeters (mm), or as a function of the current lpi (lines per inch).

Form Width

The form width can be specified in inches, millimeters, or as a function of the current cpi (characters per inch). The forms width set should not exceed the actual paper width.

Select CPI

This parameter allows you to specify the characters per inch (cpi) values. The options are 10.0, 12.0, 13.3, 15.0, 17.1, and 20.0. The factory default is 10.0 CPI.

NOTE: Values 13.3, 15.0, 17.1, and 20.0 are not available on N7H Hanzi GB printers with OKI selected.

Select LPI

This parameter allows you to specify the lines per inch (lpi) values. The options are 6.0, 8.0, and 10.3 LPI. The factory default is 6.0 LPI.

NOTE: 10.3 LPI is available on N7000 STD firmware only.

P-Series SFCC

This parameter allows you to select which ASCII codes will function as the Special Function Control Code (SFCC) command delimiter.

P-Series codes can use hex 00 through hex 7F. Options include the following:

- **SOH (hex 01)** (the default)
- **ESC (hex 1B)**
- **ETX (hex 03)**
- **CIRCUMFLEX (hex 5E)** – also called caret (^)
- **TILDE (hex 7E)** – (~)

NOTE: SOH, ETX, and ESC are non-printables. The characters (^) and (~) are printable; however, do not use them as printables in the host data stream if either is chosen as a delimiter because print errors will occur.

NOTE: Available for N7000 STD firmware only.

Ribbon End Point

This parameter adjusts the point at which the system will declare the ribbon as being expended. The life count will always be from 100% to 0%, but if a darker setting is selected 0% will be reached more quickly. If a lighter setting is selected, the system will extend the time it takes to reach 0%.

Save Config

This option allows you to save up to eight configurations to meet different print job requirements. This eliminates the need to change the parameter settings for each new job. The configurations are stored in memory and will not be lost if you turn off the printer. If the Protect Configs. parameter is enabled, the new configuration will not be saved unless the existing configuration has been deleted first. The factory default configuration cannot be changed. See “Saving Your New Configuration” on page 50 for details.

Power Up Config

This option allows you to specify which of the nine configurations (Factory or 1-8) will be the power-up configuration.

Graphics Spd-Up

This menu is used to increase (speed up) graphic printing speed by turning on Enhanced/Turbo/Match Typeface mode. See “Graphics Spd Up” in the LQ1600K Programmer’s Reference manual.

NOTE: Available for H-Series firmware only.

Typeface

Sets the typeface of the printer. This key requires confirmation with the ENTER key.

NOTE: Available for H-Series firmware only.

The factory default for Hanzi GB LP+ with LQ1600K selected is Near LQ.

The factory default for Hanzi Big5 LP+ and Hanzi GB LP+ with OKI selected is LQ.

DBCS CPI

Defines the default values for horizontal character spacing in DBCS mode. For the Hanzi LP+ printer, select from 5.0, 6.0, 6.7, 7.5, Others CPI, and Default (available for N7H Hanzi GB LP+ with OKI selected only). The factory default is 6.7 cpi for LQ1600K and Default for OKI.

NOTE: Available for H-Series firmware only.

DBCS ASCII Style

This option specifies the appearance of the single-byte numeric characters. For the Hanzi LP+ printer, select from Normal, Oversize and OCRB.

NOTE: Available for H-Series firmware only.

DBCS/ASCII Mode

This option specifies the operating mode of the Hanzi printer. Refer to “Font Attributes” in the *LQ1600K Programmer's Reference Manual* for more information.

NOTE: Available for H-Series firmware only.

Reset Cmd CFG Ld

When the printer receives a host data stream reset command (ESC @ ^{1,2}, ESC[K¹, or DLE B³) in addition to resetting printer variables, the selected configuration will be loaded.

- **Disable** (default). The active emulation parameters are loaded when the reset command is executed.
- **Power-Up Config**. The power-up configuration is loaded when the reset command is executed.
- **Current Config**. The currently selected configuration is loaded when the reset command is executed.
- **Factory Config**. The factory installed configuration is loaded when the reset command is executed.

NOTE: Available in the QUICK SETUP menu for H-Series firmware only.

NOTE 1: For N7 STD printer only.

NOTE 2: For N7H Hanzi GB LP+ with LQ1600K selected and Hanzi Big5 LP+ printer.

NOTE 3: For N7H Hanzi GB LP+ with OKI selected.

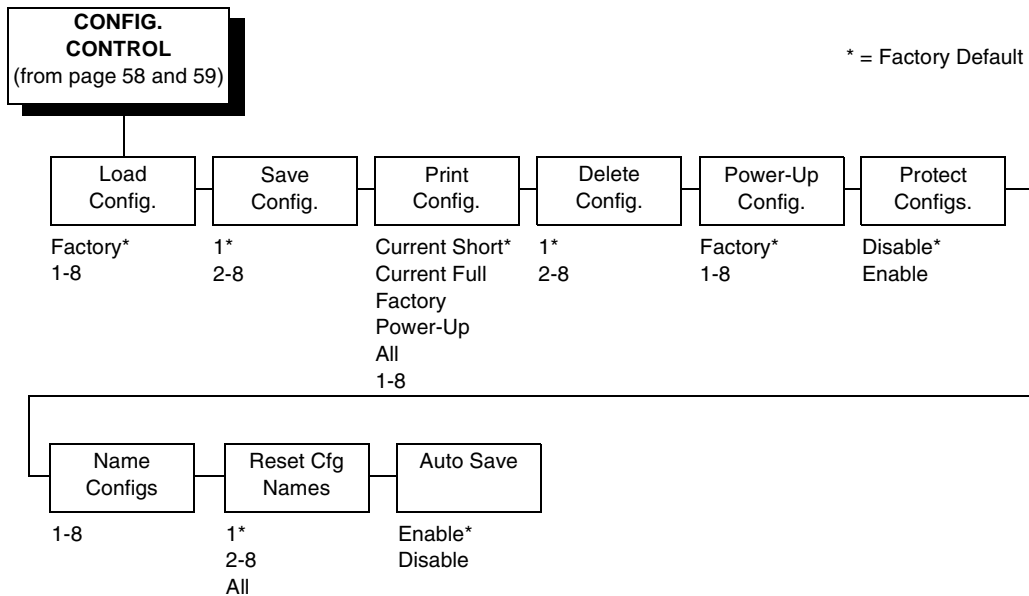
Load Config.

The printer can store numerous configurations in memory. This parameter allows you to select and load a specific configuration.

NOTE: Available in the QUICK SETUP menu for H-Series firmware only.

CONFIG. CONTROL

The CONFIG. CONTROL menu allows you to control your printer's configurations according to the specifications necessary for your print jobs.



Load Config.

The printer can store numerous configurations in memory. This parameter allows you to select and load a specific configuration.

Save Config.

This option allows you to save up to eight configurations to meet different print job requirements. This eliminates the need to change the parameter settings for each new job. The configurations are stored in memory and will not be lost if you turn off the printer. If the Protect Configs. parameter is enabled, the new configuration will not be saved unless the existing configuration has been deleted first. The factory default configuration cannot be changed. See "Saving Your New Configuration" on page 50 for details.

Print Config.

This option is used to print a listing of various stored printer configurations. Store printouts of your configurations in a safe place for quick referral.

Delete Config.

You can delete one or all of your eight customized configurations. The factory default configuration cannot be deleted.

Power-Up Config.

You can specify which of the nine configurations (Factory or 1-8) will be the power-up configuration.

Protect Configs.

You can specify whether or not a new configuration should overwrite an existing configuration when you activate the Save Configs. parameter. When disabled (default), the new configuration will overwrite the existing configuration. When enabled, the new configuration will *not* overwrite the existing configuration, and the message "CONFIG. EXISTS / Delete First" displays.

Name Configs

You may specify a 15-character name which can be used to refer to a configuration. The name you enter for a configuration will be used in the Load Config., Save Config., Print Config., Delete Config., and Power-Up Config. menus. The name can only be cleared by using the Reset Cfg Names menu.

When you move into the Name Configs. menu, the top line of the display shows the current configuration name. The second line of the display is initially the same as the top line. You can modify the second line of the display without affecting the top line until the ENTER key is pressed, which sets the modified name.

Press the UP or DOWN (▲ or ▼) keys to cycle through the values available for that character at the cursor location. Press the NEXT (▶) key to move to the next character to be modified. Press the PREV key (◀) to go back to a character you have already modified. Continue until you have entered the name you want to give to this configuration, then press ENTER to save. The name you entered will now represent this configuration on the printer's front panel. To exit this menu without saving, press any key other than the ENTER key. The configuration name will revert to the last saved value.

Reset Cfg Names

You can reset specific configuration names back to the default value of the configuration number.

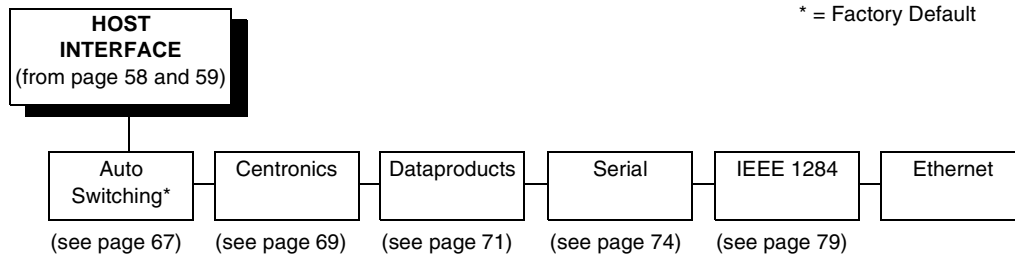
Auto Save

- **Enable** (default). When a change has been made to a Config. menu, this option automatically prompts the user to save or not save the change to a Config #.

If you are currently in the Factory Config. menus and make a change, pressing Enter saves to Config 1 or the next available Config. and becomes the Power-Up Config. If the Current Config is Config 1 and a menu change is made, pressing Enter will save the change to Config 1.

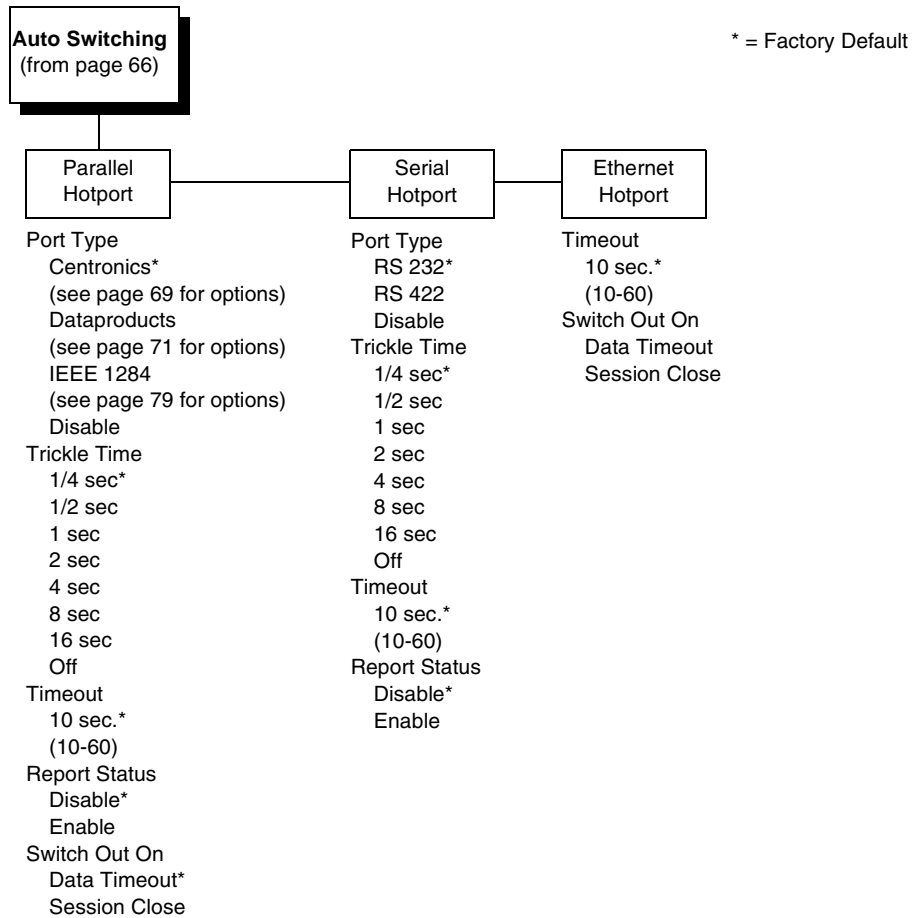
- **Disable**. The printer will not prompt you to save any changes made.

HOST INTERFACE



The Host Interface Menu enables you to select and configure one of many types of interfaces between the printer and your host computer. The currently selected interface is indicated with an asterisk on the control panel message display. Each interface has its own submenu with a set of interface parameters which can be configured.

Auto Switching Submenu



Auto Switching gives the printer the ability to handle multiple data streams sequentially. With Auto Switching, the printer can service hosts attached to the serial, parallel and Ethernet ports as if they were the only interface connected.

For example, if the host computer sends one print job to the RS-232 serial port and a separate print job to the IEEE 1284 parallel port, the printer's Auto Switching is able to handle both jobs, in the order they were received. The user does not have to reconfigure the selected interface between jobs.

Port Type

Select the types of parallel and serial interfaces which are connected to the printer. For example, if your printer is attached to one host with a Centronics connection and a second host with an RS-422 serial connection, you would select Centronics under the Parallel Hotport menu, and RS-422 under the Serial Hotport menu.

Trickle Time

When the printer is printing data from a host and a second job is received by the printer from a different host, Trickle Time prevents the second host from timing out while it is waiting for its data to be printed. In order to support this feature, the port has to be able to accept data from the host and store it for future use.

For example, if the printer is printing a job from the serial port, and then receives a second print job from the parallel port, the data from the parallel port will “trickle” bit by bit into the printer buffer to prevent a timeout error from being sent back to the host connected to the parallel port.

The selected value is the time that the printer waits before getting the next byte of data from the host. The Trickle Time value should be less than the host time out value, but not too much shorter or else the printer fills up its buffer too fast.

Timeout

This is the value used by the printer to time out from the current port and check the other selected port types for data to print. When the printer has not received data from the host after a certain period of time, it needs to timeout in order to service the other ports.

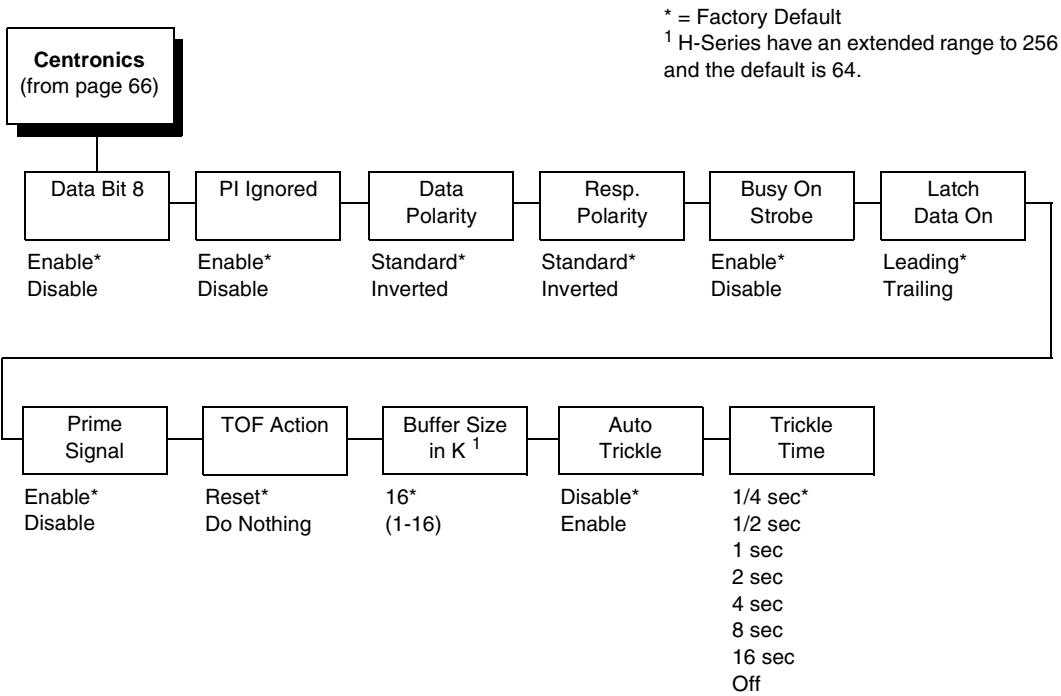
Report Status

- **Disable** (default). When a fault occurs on the printer, only the active port reports the fault to the host.
- **Enable**. The port will report any fault even when it is not the current active port.

Switch Out On

- **Data Timeout** (default). Allows Autoswitching when no data has been received for the selected Time Out period.
- **Session Close**. Allows Autoswitching only when the Network Socket is closed. If the Ethernet option is not installed the Network Socket is always reported as closed and this menu option is ignored.

Centronics (Parallel) Submenu



Data Bit 8

- **Enable** (default). Allows access to the extended ASCII character set.
- **Disable**. The printer interprets bit 8 of each incoming data character as a zero, regardless of its actual setting.

PI Ignored

The PI (Paper Instruction) signal is used to control vertical paper motion.

- **Enable** (default). Ignores the PI signal and treats the data as characters or control codes.
- **Disable**. Causes the printer to interpret the eight data lines as VFU commands when the PI signal is true.

Data Polarity

The Data Polarity parameter must be set to match the data polarity of your host computer.

- **Standard** (default). Does not expect the host computer to invert the data.
- **Inverted**. Expects the data received on the data lines from the host computer to be inverted. Ones become zeros, and vice versa.

Resp. Polarity

The Resp. Polarity parameter must be set to match the response polarity of your host computer.

- **Standard** (default). Does not invert the response signal.
- **Inverted**. Inverts the response signal sent to the host computer.

Busy On Strobe

- **Enable** (default). Asserts a busy signal after each character is received.
- **Disable**. Asserts a busy signal only when the print buffers are full.

Latch Data On

Specifies whether the data is read on the leading or trailing edge of the data strobe signal. The default is leading.

Prime Signal

- **Enable** (default). The parallel port will perform a warm start (reboot) if the host asserts the prime signal.
- **Disable**. The parallel port will not perform a warm start (reboot) if the host asserts the prime signal.

TOF Action

- **Reset** (default). A form feed is performed before a warm start when the prime signal is asserted from the host. This setting is used only if the prime signal parameter is enabled.
- **Do Nothing**. Nothing occurs before a warm start when the prime signal is asserted from the host.

Buffer Size in K

Configures the amount of memory allocated for the Centronics parallel port buffer. You can specify between 1 and 16 Kbytes, in 1-Kbyte increments. The default is 16K.

NOTE: H-Series products have a range of 1 to 256 and a default of 64K.

Auto Trickle

Auto Trickle is used to prevent a host computer from timing out because the parallel interface was busy for too long. When Auto Trickle is enabled and the printer's buffers are almost full, the printer will begin to trickle data in (at the rate set in the Trickle Time menu) until the buffers start to empty out.

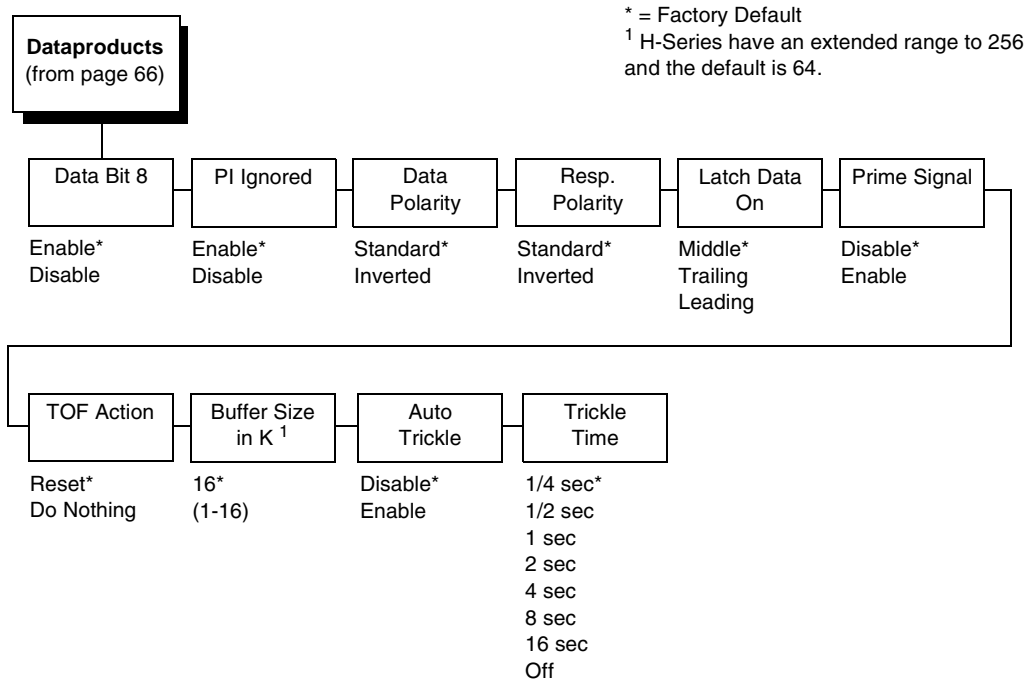
Trickle Time

When the printer is printing data from a host and a second job is received by the printer from a different host, Trickle Time prevents the second host from timing out while it is waiting for its data to be printed. In order to support this feature, the port has to be able to accept data from the host and store it for future use.

For example, if the printer is printing a job from the serial port, and then receives a second print job from the parallel port, the data from the parallel port will “trickle” bit by bit into the printer buffer to prevent a timeout error from being sent back to the host connected to the parallel port.

The selected value is the time that the printer waits before getting the next byte of data from the host. The Trickle Time value should be less than the host time out value, but not too much shorter or else the printer fills up its buffer too fast. This function is not applicable for C/T hotport.

Dataproducts Submenu



Data Bit 8

- **Enable** (default). Allows access to the extended ASCII character set.
- **Disable**. The printer interprets bit 8 of each incoming data character as a zero, regardless of its actual setting.

PI Ignored

The PI (Paper Instruction) signal is used to control vertical paper motion.

- **Enable** (default). Causes the printer to interpret the eight data lines as DVFU commands when the PI signal is true.
- **Disable**. Ignores the PI signal and treats the data as characters or control codes.

Data Polarity

The Data Polarity parameter must be set to match the data polarity of your host computer.

- **Standard** (default). Does not expect the host computer to invert the data.
- **Inverted**. Expects the data received on the data lines from the host computer to be inverted. Ones become zeros, and zeros become ones.

Resp. Polarity

The Response Polarity parameter must be set to match the response polarity of your host computer.

- **Standard** (default). Does not invert the response signal.
- **Inverted**. Inverts the response signal sent to the host computer.

Latch Data On

Specifies whether the data is read on the leading, middle, or trailing edge of the data strobe signal. The default is Middle.

Prime Signal

- **Disable** (default). The parallel port will not perform a warm start (reboot) if the host asserts the prime signal.
- **Enable**. The parallel port will perform a warm start (reboot) if the host asserts the prime signal.

TOF Action

- **Reset** (default). A form feed is performed before a warm start when the prime signal is asserted from the host. This setting is used only if the prime signal parameter is enabled.
- **Do Nothing**. Nothing occurs before a warm start when the prime signal is asserted from the host.

Buffer Size in K

Configures the amount of memory allocated for the Dataproducts parallel port buffer. You can specify between 1 and 16 Kbytes, in 1-Kbyte increments. The default is 16K.

NOTE: H-Series products have a range of 1 to 256 and a default of 64K.

Auto Trickle

Auto Trickle is used to prevent a host computer from timing out because the parallel interface was busy for too long. When Auto Trickle is enabled and the printer's buffers are almost full, the printer will begin to trickle data in (at the rate set in the Trickle Time menu) until the buffers start to empty out.

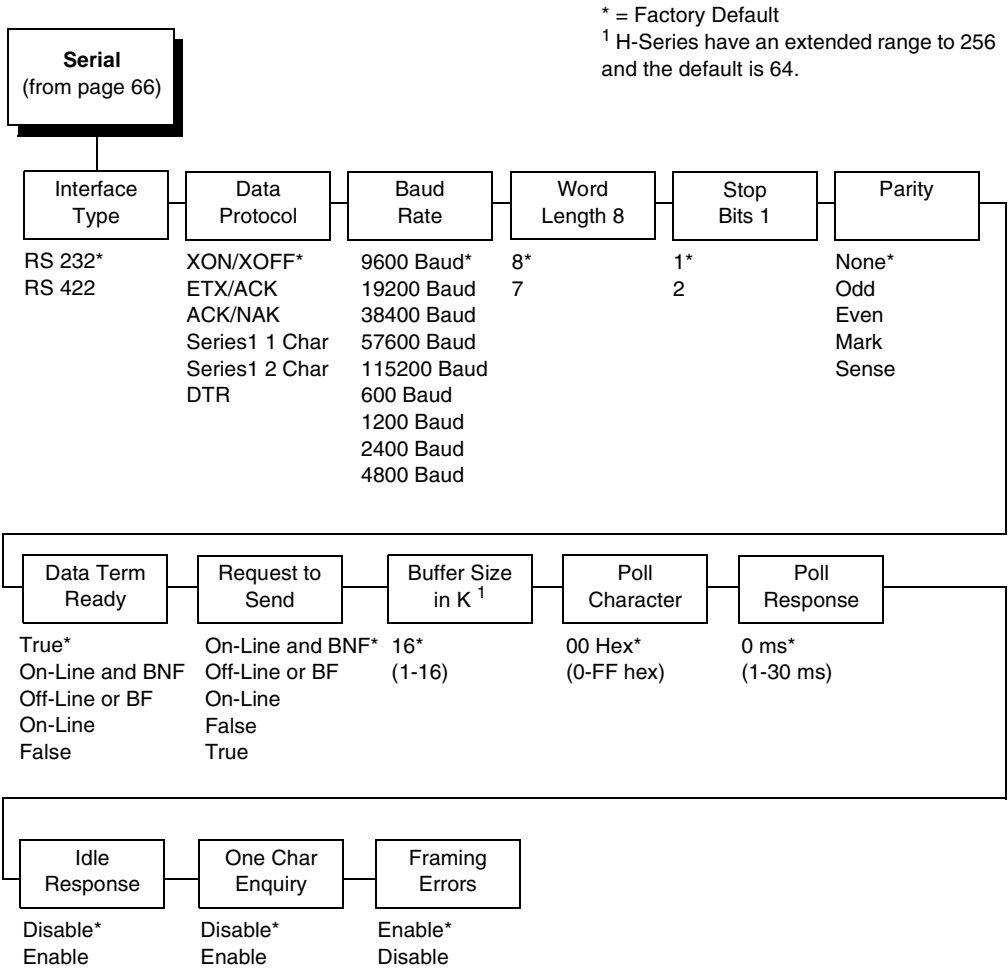
Trickle Time

When the printer is printing data from a host and a second job is received by the printer from a different host, Trickle Time prevents the second host from timing out while it is waiting for its data to be printed. In order to support this feature, the port has to be able to accept data from the host and store it for future use.

For example, if the printer is printing a job from the serial port, and then receives a second print job from the parallel port, the data from the parallel port will "trickle" bit by bit into the printer buffer to prevent a timeout error from being sent back to the host connected to the parallel port.

The selected value is the time that the printer waits before getting the next byte of data from the host. The Trickle Time value should be less than the host time out value, but not too much shorter or else the printer fills up its buffer too fast.

Serial Submenu



Interface Type

This parameter allows you to select either the RS-232 or RS-422 serial port interface. The default is RS-232.

Data Protocol

You can select one of the following serial interface protocols to meet the host interface requirements.

- **XON / XOFF** (default). The printer controls the flow of communication from the host by turning the transmission on and off. In some situations, such as when the buffer is full or the timing of signals is too slow or too fast, the printer will tell the host to stop transmission by sending an XOFF character. An XOFF character is sent when the number of empty bytes in the buffer is less than or equal to 25 percent of the buffer size. If the host keeps sending data after an XOFF is sent, the printer firmware will continue to send an XOFF for every 16 characters received. When cleared, the printer will resume receiving data (XON). The data does not have any End of Text codes; XON / XOFF is a non-block protocol.
- **ETX / ACK**. End of Text / Acknowledge. The host controls the flow of communication to the printer by sending a block of data and ending the block with an End of Text (ETX) signal. When the printer receives the ETX signal, it will acknowledge the ETX, thereby acknowledging it has received the entire block of data.
- **ACK / NAK**. ACK means acknowledge; the device acknowledges it has accepted a transmission. NAK means negative acknowledge; the device did not receive the transmission.
- **SERIES1 1 CHAR**. The printer controls the flow of communication from the host by turning the transmission on and off using response characters sent to the host. If the number of valid bytes in the buffer reaches 75 percent of the buffer size, the online or offline and buffer full response character is sent. If the buffer is completely full, an online or offline buffer full response is sent every time a character is sent from the host. Whenever the printer state changes to online or offline, the appropriate response character is sent. If the idle response option is enabled, the printer will send a response character every two seconds while the number of valid bytes in the buffer is less than 75 percent of the buffer size. If a poll character is received (configurable from the Poll Character xx Hex option on the front panel from hex 0 through FF), the printer will send a response character *n* milliseconds later (configurable from the Poll Character xx MS on the front panel from 0 through 30). This *n* milliseconds is called the poll delay. The poll character will be removed from the input data stream and will not be processed. This may cause problems with the transmission of binary data (e.g., control codes, bit image, etc.). If a poll delay is started due to the receipt of a poll character and another poll character is received, the second poll character has no effect and is removed from the input data stream. If a transition (from buffer full to empty or online to offline) occurs during a poll delay, the new printer state will be sent at the end of the poll delay.

The response characters are described in Table 2.

Table 2. Series1 1 Char Response Characters

Printer State	Response
Online and Buffer Empty	CR
Online and Buffer Full	3
Offline and Buffer Empty	0
Offline and Buffer Full	2

- **SERIES1 2 CHAR.** This protocol behaves exactly the same as the Series1 Char except there is a two-character response to the host. The response characters are described in Table 3.

Table 3. Series1 2 Char Response Characters

Printer State	Response
Online and Buffer Empty	1 CR
Online and Buffer Full	3 CR
Offline and Buffer Empty	0 CR
Offline and Buffer Full	2 CR

- **DTR.** The printer controls the data flow by sending this hardware signal to the host. If there is enough room in the printer buffer, the printer will send a high signal; if the buffer is full, the printer will send a low signal. DTR tells the host if it is safe to send more data. (If the host sends data during an unsafe condition, data will be lost.) DTR is not available when RS-422 is selected.

Baud Rate

Sets the baud rate of the serial interface in the printer. Baud rate is the speed at which serial data is transferred between the host computer and the printer. The choices for the RS-232 and RS-422 interfaces are 600, 1200, 2400, 4800, 9600, 19200, 38400, 57600, and 115200 Baud. The default is 9600 Baud.

NOTE: If you select a baud rate that is greater than 19200, you may need to use RS-422 or select a lower baud rate to prevent data loss. You also may need to increase the Buffer Size in K parameter to improve performance.

Word Length

Sets the length of the serial data word. The length of the data word can be set to 7 or 8 bits, and must match the corresponding data bits setting in the host computer.

Stop Bits 1

Sets the number of stop bits in the serial data word. Either one or two stop bits can be selected. The setting must match the corresponding stop bit setting in the host computer.

Parity

Set for odd parity, even parity, mark, sense, or no parity. The setting must match the corresponding parity setting in the host computer.

Data Term Ready

This configuration is part of hardware flow control and determines when the Data Terminal Ready (DTR) signal is generated. This signal indicates if the printer is ready to receive data.

- **True** (default). Continuously asserts the DTR signal.
- **On Line and BNF (buffer not full)**. Asserts the DTR signal when the printer is online and the internal serial buffer is not full.
- **Off Line or BF (buffer full)**. Asserts the DTR signal when the printer is offline or the internal serial buffer is full.
- **On Line**. Asserts the DTR signal when the printer is online.
- **False**. Never asserts the DTR signal.

Request To Send

This configuration is part of hardware flow control and determines when the Request to Send (RTS) signal is generated. This signal indicates whether or not the printer is ready to receive data.

- **On Line and BNF** (default). Asserts the RTS signal when the printer is online and the internal serial buffer is not full.
- **Off Line or BF**. Asserts the RTS signal when the printer is offline or the internal serial buffer is full.
- **On Line**. Asserts the RTS signal when the printer is online.
- **False**. Never asserts the RTS signal.
- **True**. Continuously asserts the RTS signal.

Buffer Size in K

This option configures the amount of memory allocated for the serial port buffer. You may specify between 1 and 16 Kbytes, in 1-Kbyte increments. The default is 16K.

NOTE: H-Series products have a range of 1 to 256 and a default of 64K.

If you select a baud rate that is 19200 or greater, you may need to increase the Buffer Size in K parameter to improve performance.

Poll Character

This option is for the Series1 protocol. Whenever the printer receives this character, it sends a response to the host indicating the current state of the printer (see Series1 protocol). It may be configured from 0 through FF hexadecimal.

Poll Response

This option is for the Series1 protocol. After receiving a poll character, the printer will wait the poll response time in milliseconds before sending the response. It may be configured from 0 through 30.

Idle Response

This option is for the Series1 protocol.

- **Disable** (default)
- **Enable.** The printer will send a response character every two seconds while the number of valid bytes in the buffer is less than 75 percent of the buffer size.

One Char Enquiry

The One Char Enquiry mode uses the Poll Character to detect a request from the host and sends a response back to the host. This option also allows you to turn on and off this feature.

Table 4. One Char Enquiry Response Characters

Printer State	Response (hex)
Online and Buffer Not Full	22
Online and Buffer Full	23
Offline and Buffer Not Full	20
Offline and Buffer Full	21

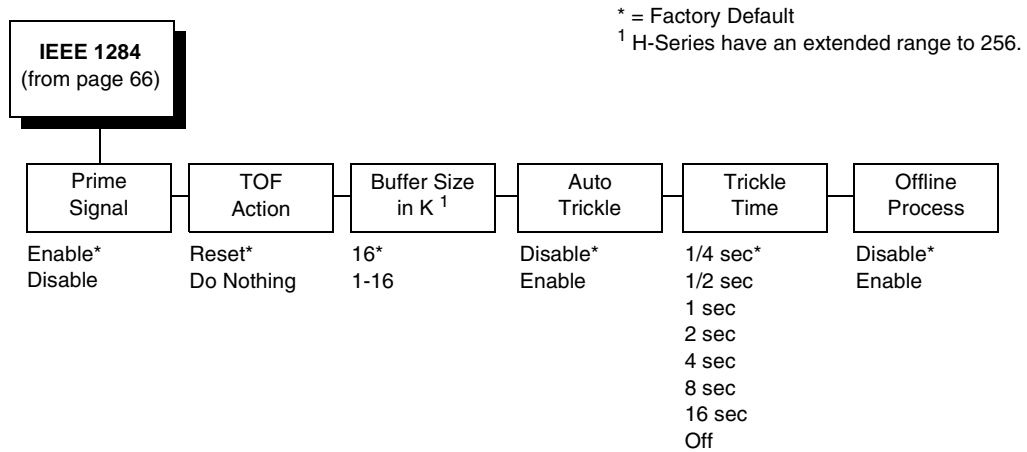
The Poll Character is removed from the data stream. If the Data Protocol is set to ETX/ACK, ACK/NAK, or Series 1, One Char Enquiry is automatically disabled.

Framing Errors

Possible errors that can occur when the printer's serial interface settings do not match those of the host computer.

- **Enable** (default). If a framing error occurs, a fault message will display on the control panel.
- **Disable**. If a framing error occurs, a fault message will not display on the control panel.

IEEE 1284 Parallel (Bidirectional) Submenu



The IEEE 1284 interface is faster and more versatile than Centronics and supports bidirectional communication. Configuration of this interface is controlled from the host. Refer to "IEEE 1284 Parallel Interface" on page 164 more details about the available modes (Compatibility, Nibble, and Byte).

Prime Signal

- **Enable** (default). The parallel port will perform a warm start (reboot) if the host asserts the prime signal.
- **Disable**. The parallel port will not perform a warm start (reboot) if the host asserts the prime signal.

TOF Action

- **Reset** (default). A form feed is performed before a warm start when the prime signal is asserted from the host. This setting is used only if the prime signal parameter is enabled.
- **Do Nothing**. Nothing occurs before a warm start when the prime signal is asserted from the host.

Buffer Size in K

This option configures the amount of memory allocated for the IEEE 1284 parallel port buffer. You can specify between 1 and 16 Kbytes, in 1-Kbyte increments. The default is 16K.

NOTE: H-Series products have a range of 1 to 256 and a default of 64K.

Auto Trickle

Auto Trickle is used to prevent a host computer from timing out because the parallel interface was busy for too long. When Auto Trickle is enabled and the printer's buffers are almost full, the printer will begin to trickle data in (at the rate set in the Trickle Time menu) until the buffers start to empty.

Trickle Time

When the printer is printing data from a host and a second job is received by the printer from a different host, Trickle Time prevents the second host from timing out while it is waiting for its data to be printed. In order to support this feature, the port has to be able to accept data from the host and store it for future use.

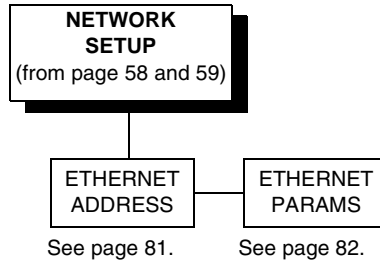
For example, if the printer is printing a job from the serial port, and then receives a second print job from the parallel port, the data from the parallel port will "trickle" bit by bit into the printer buffer to prevent a timeout error from being sent back to the host connected to the parallel port.

The selected value is the time that the printer waits before getting the next byte of data from the host. The Trickle Time value should be less than the host time out value, but not too much shorter or else the printer fills up its buffer too fast.

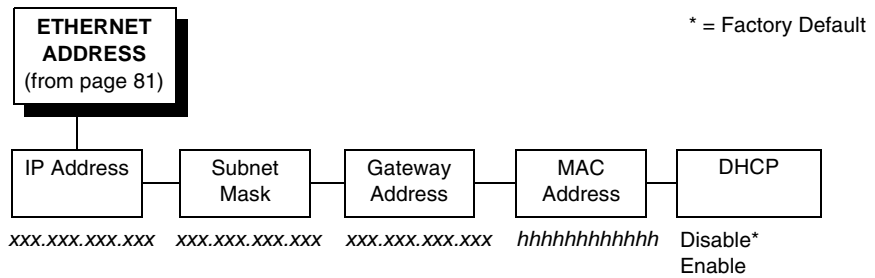
Offline Process

- **Disable** (the default). When set to disable, the printer does not process parallel/network data while offline.
- **Enable**. When set to enable, the printer continues to process (but not print) the current network/parallel job while the printer is offline until the printer's buffer is full.

NETWORK SETUP Menu



ETHERNET ADDRESS



IP Address

A numeric address such as 123.45.61.23 which identifies a printer or server in a LAN or WAN.

Subnet Mask

A binary value used to divide IP networks into smaller subnetworks or subnets. This mask is used to help determine whether IP packets need to be forwarded to other subnets.

Gateway Address

A gateway address is the IP address of a hardware device (gateway) that translates data between two incompatible networks, which can include protocol translation.

MAC Address

This menu item is the Manufacturer's Assigned Number, and is unique for each printer. It is read-only.

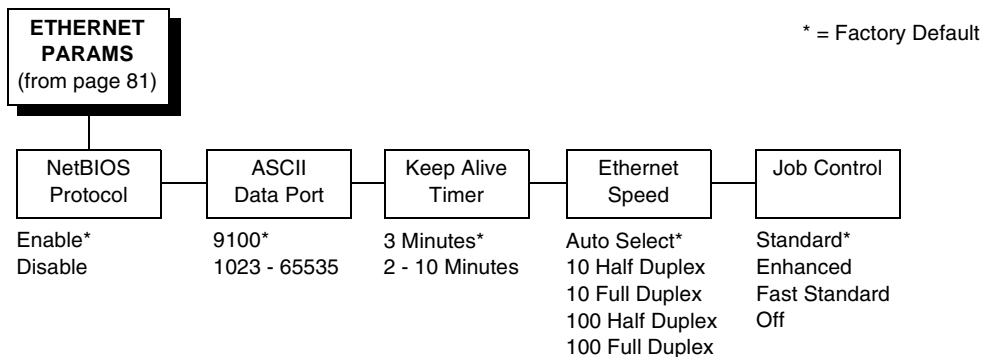
DHCP

You can enable/disable the DHCP protocol using this option, but consult your administrator for the appropriate setting.

The options include:

- **Disable** (default)
- **Enable**.

ETHERNET PARAMS



The ETHERNET PARAMS menu helps your printer communicate on a network.

For information on assigning the IP Address, Gateway Address, Subnet Mask, and MAC Address, refer to the *Network Interface Card User's Manual*.

NetBIOS Protocol

This option determines whether the NetBIOS protocol will be available. The selections are as indicated below:

- **Enable** (default). Makes the NetBIOS protocol available with the ethernet installed.
- **Disable**. Makes the NetBIOS protocol unavailable during printer operation.

ASCII Data Port

This option sets the port number for ASCII print jobs. The data port number needs to match your host system setting.

- **9100** (default)
- **1023 - 65535**

Keep Alive Timer

This is the time that the Keep Alive Timer will run. With the Keep Alive Timer on, the tcp connection will stay connected even after the print job has terminated.

- **3 Minutes** (default)
- **2 - 10 Minutes**

Ethernet Speed

This menu option only appears if a 10/100Base-T network interface card (NIC) is installed. The Ethernet Speed menu allows compatibility with different systems and networks. The factory default is Auto Select.

- **Auto Select.** (default) This setting tells the 10/100Base-T NIC to perform an auto detection scheme and configure itself to be 10 Half Duplex, 10 Full Duplex, 100 Half Duplex, or 100 Full Duplex.
- **10 Half Duplex.** Tells the 10/100Base-T NIC to communicate at 10 Megabits per second using half duplex.
- **10 Full Duplex.** Tells the 10/100Base-T NIC to communicate at 10 Megabits per second using full duplex.
- **100 Half Duplex.** Tells the 10/100Base-T NIC to communicate at 100 Megabits per second using half duplex.
- **100 Full Duplex.** Tells the 10/100Base-T NIC to communicate at 100 Megabits per second using full duplex.

Job Control

The job control mode has three options:

- **Standard** (default). The NIC waits for the printer to finish receiving the current job before sending another job. The status line shows “done” when the job is completely received by the NIC. This is the default.
- **Enhanced.** The NIC waits for the printer to finish receiving the current job before sending another job. The status line shows “done” when the job is fully printed.
- **Fast Standard.** The EOJ (End of Job) packet is acknowledged immediately. Use this selection if the job is timed out due to a delay in the acknowledgement of the EOJ packet because of the amount of data being printed.
- **Off.** No job synchronization between the NIC and the printer.

ACTIVE IGP EMUL - (N7000 STD)



* = Factory Default

IGP/PGL*
IGP/VGL

This ACTIVE IGP EMUL function allows you to activate the desired emulation. There are two methods for selecting the desired emulation. The first is by selecting the emulation directly from the printer menu. The second is by sending a host command which will switch the emulation automatically (see the appropriate Programmer's Reference Manual for details).

When changing from one emulation to the other, the printer will load the power-up configuration and the new emulation parameters. Any configuration settings performed before selecting these emulations that are not saved in NVRAM will be lost.

IMPORTANT To configure an IGP emulation, the IGP emulation must be selected in the ACTIVE IGP EMUL menu. The IGP emulation that is not selected will not appear in the EMULATION menu (see "Main Menu" on page 57).

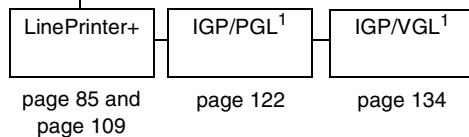
EMULATION

The EMULATION menu allows you to select the emulation to be used with your printer. The Proprinter XL, Epson FX, P-Series, P-Series XQ, and Serial Matrix emulations are all part of LinePrinter+. You can configure options for the active emulation via the EMULATION menu. Emulation options are further described in their corresponding Programmer's Reference Manual.



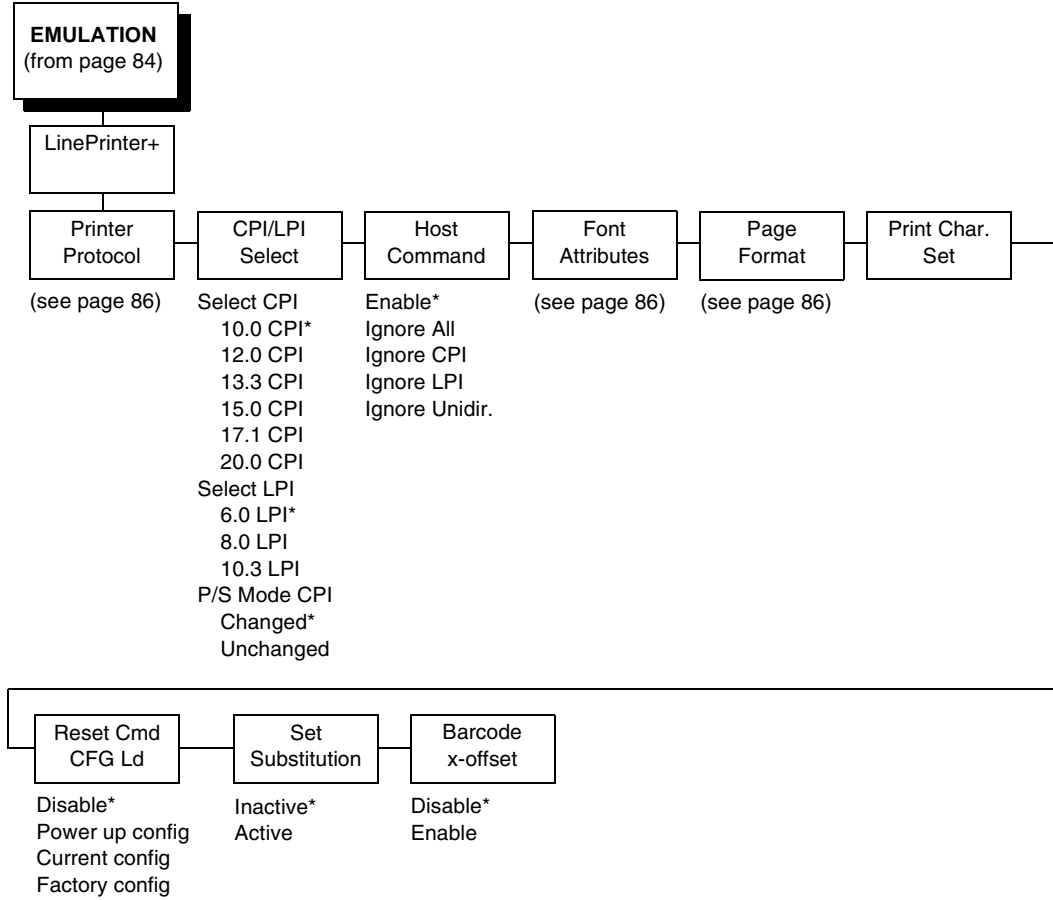
* = Factory Default

¹ Optional Emulation with N7000 STD

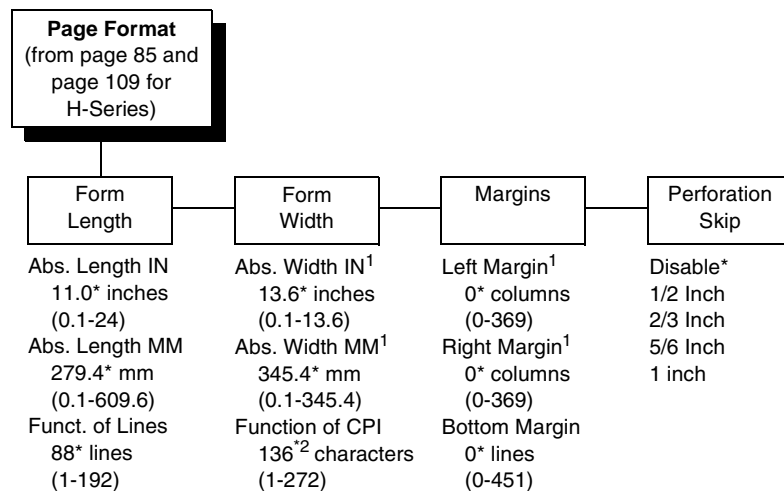
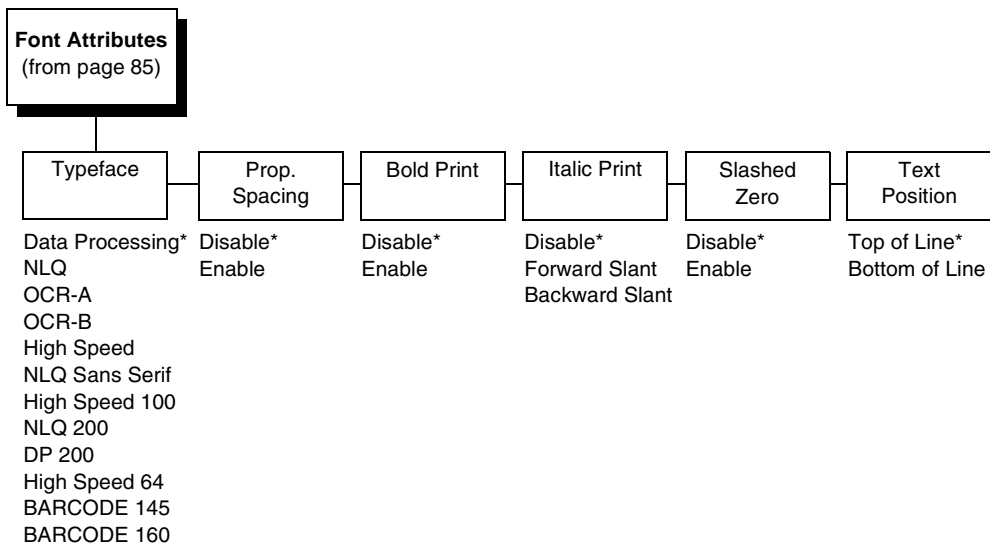
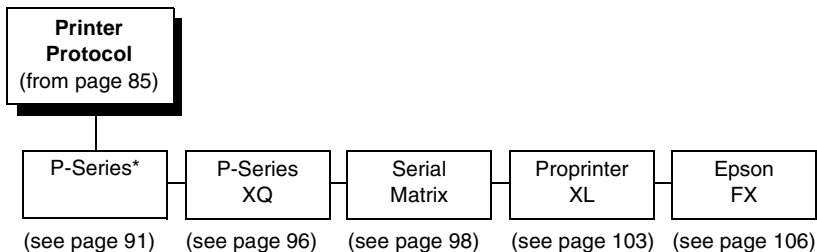


LinePrinter+ Emulation (N7000 STD)

* = Factory Default



* = Factory Default



Printer Protocol

Select the LinePrinter+ protocol you wish to use. Refer to the *LinePrinter Plus Programmer's Reference Manual* for more information.

CPI/LPI Select

This parameter lets you specify the characters per inch (cpi) and lines per inch (lpi) values.

Host Command

This parameter allows you to block certain host commands from being acknowledged by the printer.

- **Enable** (default). All host commands are acknowledged by the printer.
- **Ignore All**. All host commands are ignored by the printer.
- **Ignore CPI**. All CPI commands sent by the host are ignored by the printer.
- **Ignore LPI**. All LPI commands sent by the host are ignored by the printer.
- **Ignore Unidir**. All Unidirectional commands sent by the host are ignored by the printer.

Font Attributes

Typeface

- **Data Processing** (default). A general purpose font printing out at 120 dpi horizontally and 72 dpi vertically. The width of the font will vary with each cpi.
- **NLQ**. A high quality font printing at 180 dpi horizontally and 96 dpi vertically. This font has serifs and the width of the font varies with the cpi.
- **OCR-A / OCR-B**. Optical character recognition fonts printing at 120 dpi horizontally and 144 dpi vertically. Both fonts print only at 10 cpi.
- **High Speed**. A draft quality font printing at 120 dpi horizontally and 48 dpi vertically. The width of the font varies with the cpi.
- **NLQ Sans Serif**. A high quality font printing at 180 dpi horizontally and 96 dpi vertically. This font prints without serifs. The width of the font varies with the cpi.
- **High Speed 100**. A draft quality font printing at 100 dpi horizontally and 48 dpi vertically. When chosen from the front panel, it defaults to 10 cpi. The cpi can then be varied, but the width will not change.
- **NLQ 200**. This NLQ font prints at 200 dpi horizontally and 96 vertically. When chosen from the front panel, it defaults to 12 cpi. The cpi can then be varied, but the width will not change.
- **DP 200**. This Data Processing font prints at 200 dpi horizontally and 72 vertically. When chosen from the front panel, it defaults to 12 cpi. The cpi can then be varied, but the width will not change.

- **High Speed 64.** This font prints at 120 dpi horizontally and 64 vertically. When chosen from the front panel, it defaults to 10 cpi. The cpi can then be varied, but the width will not change.
- **BARCODE 145.** This Data Processing font prints at 145 dpi horizontally and 72 vertically. When chosen from the front panel, it defaults to 12 cpi. The cpi can then be varied, but the width will not change.
- **BARCODE 160.** This Data Processing font prints at 160 dpi horizontally and 72 vertically. When chosen from the front panel, it defaults to 13 cpi. The cpi can then be varied, but the width will not change.

Prop. Spacing (Proportional Spacing)

Each printed character is contained inside a character cell. The width of the character cell includes the character and the space around the character.

- **Disable** (default). Each character cell is printed with the same width. Each column in the printed text will line up.

```
This example is printed with
proportional spacing disabled.
```

- **Enable.** The width of each character cell varies with the width of the character. For example, [i] takes less space to print than [m]. Using proportional fonts generally increases the readability of printed documents, which gives text a typeset appearance.

```
This example is printed with
proportional spacing enabled.
```

Bold Print

- **Disable** (default). Text is printed normally.
- **Enable.** Text is printed with a heavy line thickness.

Italic Print

- **Disable** (default). Text is printed normally.
- **Forward Slant.** Text is printed with a forward slant.
- **Backward Slant.** Text is printed with a backward slant.

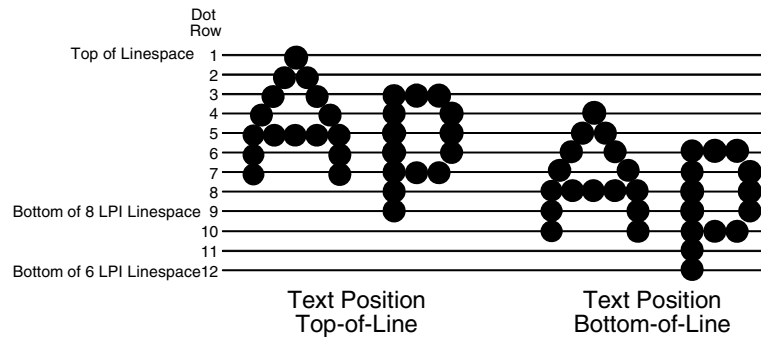
Slashed Zero

This parameter allows you to print the numeral “0” with or without the slash. This option applies to all character sets except OCR-A and OCR-B.

- **Disable** (default). Zero is printed without a slash.
- **Enable.** Zero is printed with a slash.

Text Position

Specifies where the text will be positioned in the line space. When set to Top-of-Line, text will be positioned at the top of the line space. When set to Bottom-of-Line, the text will be positioned as if it were at the bottom of a 6 lpi line space. The following example shows both Top-of-Line and Bottom-of-Line text positions:



Page Format

Form Length

Form length is the number of lines that can be printed on a page. You can set the form length in inches, millimeters (mm), or as a function of the current lpi (lines per inch).

Form Width

The form width can be specified in inches, millimeters, or as a function of the current cpi (characters per inch). The form width set should not exceed the actual paper width.

Margins

- **Left Margin.** Set in columns. Column zero is defined as the far left edge of the page, and column numbering increments from left to right.
- **Right Margin.** Set in columns. Column zero is defined as the far right edge of the page, and column numbering increments from right to left.
- **Bottom Margin.** Defined in lines, starting from line zero at the bottom of the page and incrementing from the bottom up.

Perforation Skip

- **Disable** (default). Allows printing on page perforation.
- **1/2 inch, 2/3 inch, 5/6 inch, 1 inch.** You may set up a skip-over margin of 1/2 inch, 2/3 inch, 5/6 inch, or 1 inch. For example, a skip-over margin of 1 inch allows a 1 inch margin at the bottom of the page.

Print Char. Set

When this selection is displayed and the ENTER key is pressed, the current character set is printed.

Reset Cmd CFG Ld

When the printer receives a host data stream reset command (ESC @ or ESC[K) in addition to resetting printer variables, the selected configuration is loaded.

- **Disable** (default). The active emulation parameters are loaded when the reset command is executed.
- **Power-Up Config**. The power-up configuration is loaded when the reset command is executed.
- **Current Config**. The currently selected configuration is loaded when the reset command is executed.
- **Factory Config**. The factory installed configuration is loaded when the reset command is executed.

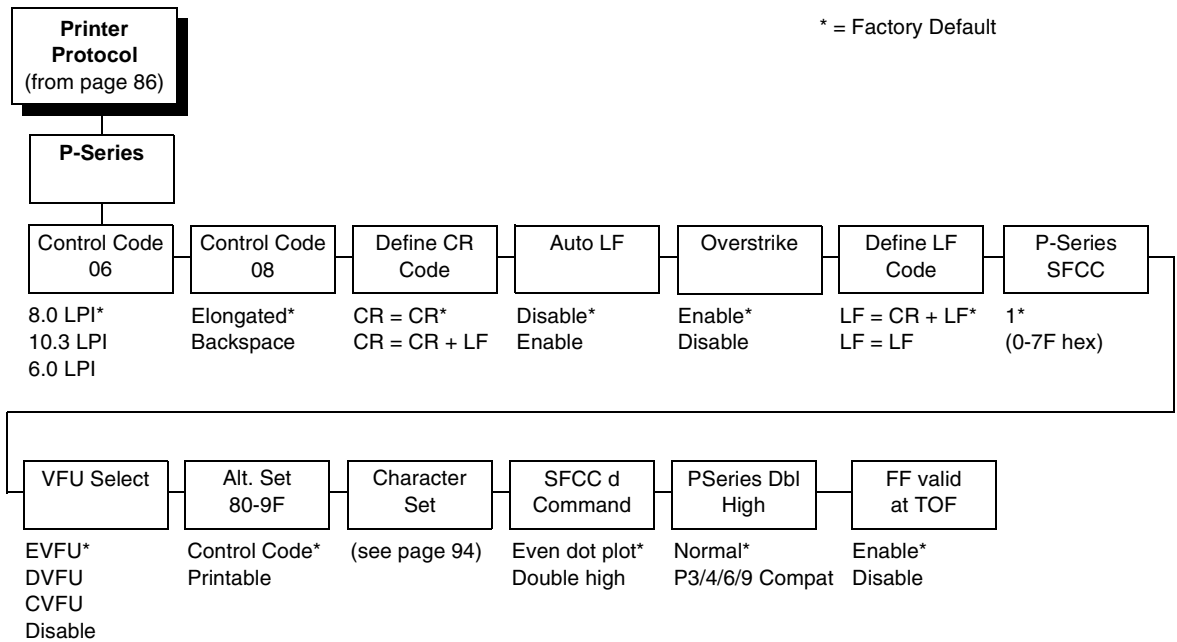
Set Substitution

When this option is activated, the character set overlay in RAM is activated. This can also be accomplished through a host command of **SFCC RX**. In either case, a flag is set indicating that the substitution table is active. If the power-up configuration has Ld Set at Pwrup and Set Substitution both enabled, the character set overlay is automatically activated at power-up or during a soft reset. See the *LinePrinter Plus Programmer's Reference Manual* for more information.

Barcode x-Offset

- **Disable** (default)
- **Enable**. Allows text to print next to a barcode when xxxx and yyyy are not set to the origin.

P-Series Emulation



Control Code 06

Control Code 06 defines the function of ASCII code hex 06 (ACK). You can select an alternate line spacing of 6, 8, or 10.3 LPI.

Control Code 08

Control Code 08 defines the function of ASCII code hex 08 (BS). You can define the code to output the following character:

- **Elongated** (default).
- **Backspace**.

Define CR Code

This option controls the action of the printer when it receives a Carriage Return code (hex 0D) from the host computer. If this feature is enabled, each time the printer receives a carriage return, it inserts an additional Line Feed code (hex 0A) into the data stream. Do not use this feature if the host computer sends Line feeds to the printer.

- **CR = CR** (default). Does not insert an extra line feed after each carriage return.
- **CR = CR + LF**. Inserts an extra line feed after each carriage return. The next print position will be print position 1 of the next line.

Auto LF

This option defines the printer action when print data is received past the forms width setting.

- **Disable** (default). Discards any data past the forms width.
- **Enable**. Performs an automatic carriage return and line feed when data is received past the forms width, causing the excess text to print on the next line.

Overstrike

This option enables you to print bold characters.

- **Enable** (disable). Turns on bold print. When enabled, overstrike printing slows down the printer.
- **Disable**. Turns off bold print.

Define LF Code

- **LF = CR + LF** (default). Forces an automatic carriage return with each line feed command. The next print position is print position 1 of the next line.
- **LF = LF**. Does not perform an automatic carriage return. The next print position will be the current print position of the next line.

P-Series SFCC

This parameter allows you to select which ASCII codes will function as the Special Function Control Code (SFCC) command delimiter.

P-Series codes can use hex 00 through hex 7F. Options include the following:

- ESC (hex 1B)
- SOH (hex 01)
- ETX (hex 03)
- CIRCUMFLEX (hex 5E)—also called caret (^)
- TILDE (hex 7E)—(~)

NOTE: SOH, ETX, and ESC are non-printables. The characters (^) and (~) are printable; however, do not use them as printables in the host data stream if either is chosen as a delimiter because print errors will occur.

VFU Select

Controls how the printer handles vertical formatting.

- **EVFU** (default). Enables the VFU and selects P-Series compatible Electronic Vertical Format Unit (EVFU).
- **DVFU**. Enables the VFU and selects the Dataproducts compatible Direct Access Vertical Format Unit (DVFU).
- **CVFU**. Enables the VFU and selects the Centronics compatible Direct Access Vertical Format Unit (CVFU).
- **Disable**. Disables all VFU processing.

Alt. Set 80-9F

Determines whether the printer processes ASCII codes hex 80 through hex 9F as control codes or as printable characters. The options include:

- **Control Code** (default)
- **Printable**.

Character Set

Specifies a character set as shown in the “P-Series Character Set Menu” on page 94. To use one of these sets, choose the desired group heading (such as European Sets) and press ENTER. Then choose the desired set within that group (such as Roman 8) and press ENTER. Both the group and the desired set will be starred to indicate your selection. The UTF-8 selection allows printing of UTF-8 encoded Unicode™. Character sets are shown in detail in the *Character Sets Reference Manual*.

SFCC d Command

- **Even dot plot** (default). This option interprets SFCC d Command as even dot plot.
- **Double High**. This option interprets SFCC d Command as double high. Select this option for backward compatibility.

PSeries Dbl High

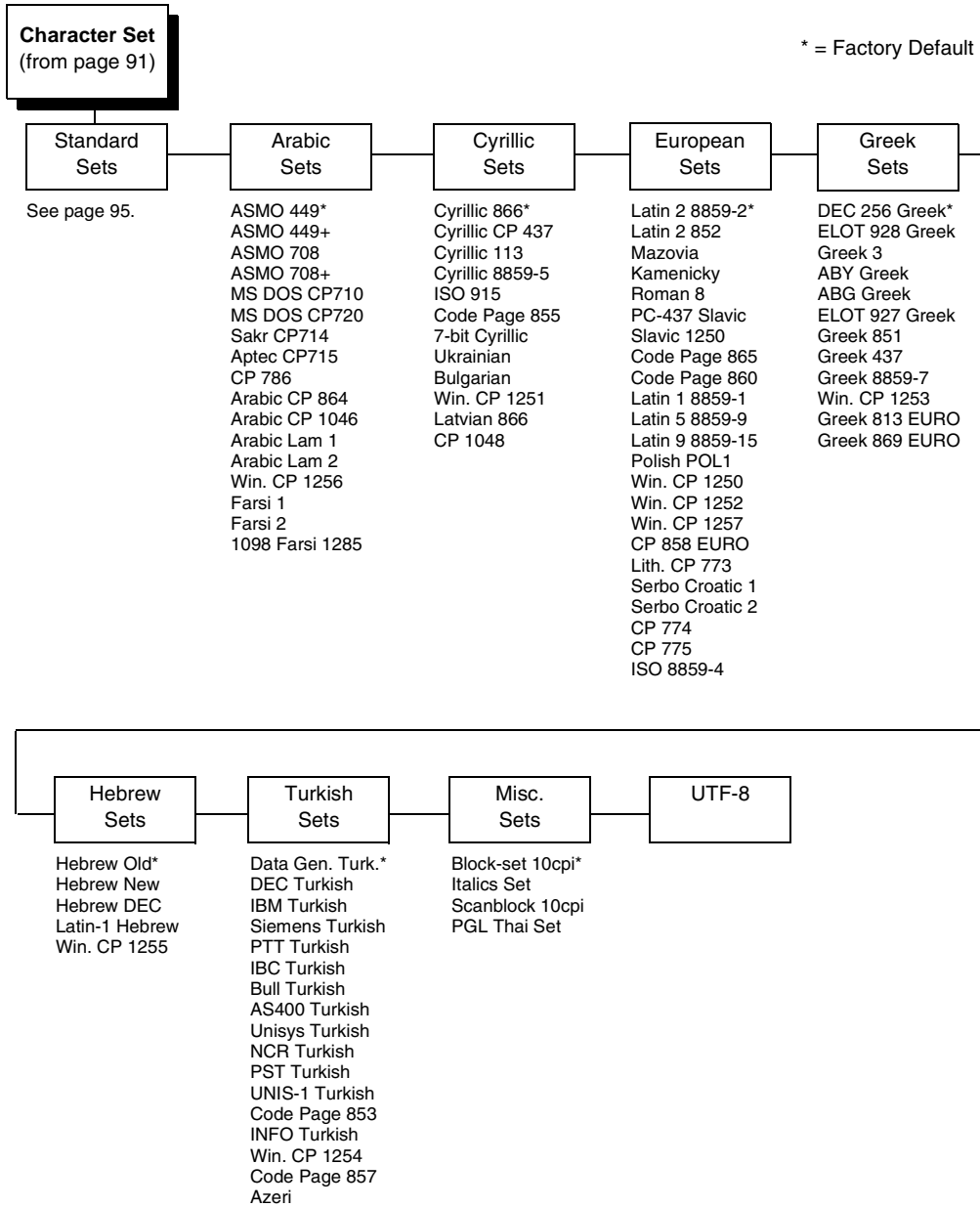
Allows printing compatibility between current and older model printers.

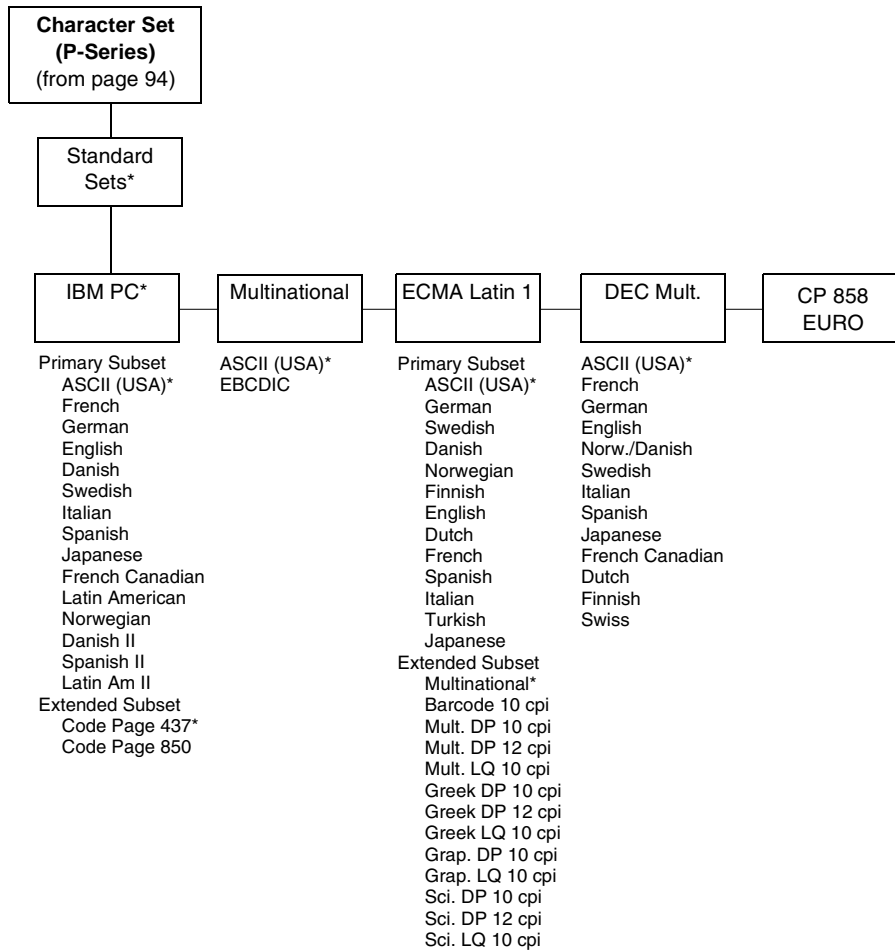
- **Normal** (default). This is normal, double-high printing for current model printers.
- **P3/4/6/9 Compat**. Where older printers print two dot rows higher, this option allows for compatibility by raising the print two dot rows to match the current models dot row value (two dot rows lower).

FF Valid at TOF

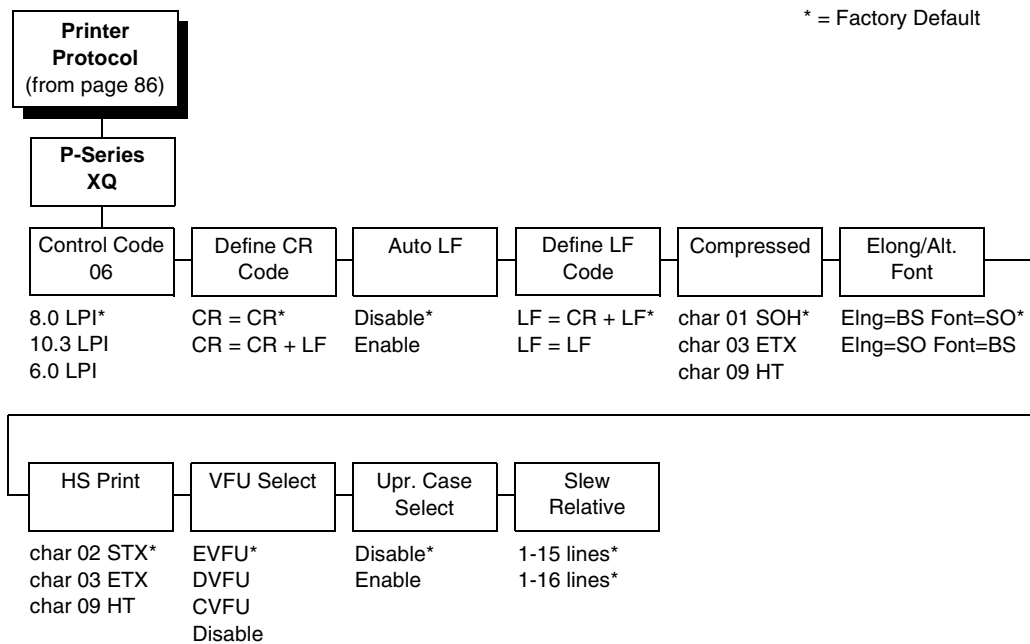
- **Enable** (default). Performs a form feed when the host sends a Form Feed command and the printer is at the top of form.
- **Disable**. Will not perform a form feed when the host sends a Form Feed command and the printer is at the top of form.

P-Series Character Set Menu





P-Series XQ Emulation



Control Code 06

Control Code 06 defines the function of ASCII code hex 06 (ACK). You can select an alternate line spacing of 6, 8, or 10.3 LPI.

Define CR Code

This option controls the action of the printer when it receives a Carriage Return code (hex 0D) from the host computer. If this feature is enabled, each time the printer receives a Carriage Return, it inserts an additional Line Feed code (hex 0A) into the data stream. Do not use this feature if the host computer sends line feeds to the printer.

- **CR = CR** (default). Does not insert an extra line feed after each carriage return.
- **CR = CR + LF**. Inserts an extra line feed after each carriage return. The next print position will be print position 1 of the next line.

Auto LF

This option defines the printer action when print data is received past the forms width setting.

- **Disable** (default). Discards any data past the forms width.
- **Enable**. Performs an automatic carriage return and line feed when data is received past the forms width.

Define LF Code

- **LF = CR + LF** (default). Forces an automatic carriage return with each line feed command received. The next print position is print position 1 of the next line.
- **LF = LF**. Does not perform an automatic carriage return when a line feed command is received. The next print position will be the current print position of the next line.

Compressed Print

Controls which host command sets compressed printing.

- **Char 01 SOH** (default)
- **Char 03 ETX**
- **Char 09 HT**

Elong/Alt. Font

Controls which host command sets elongated (double high) fonts and extended character set.

- **EIng=BS Font=SO** (default)
- **EIng=SO Font=BS**

HS Print (High Speed Print)

Controls which host command sets high speed printing.

- **Char 02 STX** (default)
- **Char 03 ETX**
- **Char 09 HT**

VFU Select

Controls how the printer handles vertical formatting. The choices are:

- **EVFU** (default). Enables the VFU and selects P-Series compatible Electronic Vertical Format Unit (EVFU).
- **DVFU**. Enables the VFU and selects the Dataproducts compatible Direct Access Vertical Format Unit (DVFU).
- **CVFU**. Enables the VFU and selects the Centronics compatible Direct Access Vertical Format Unit (CVFU).
- **Disable**. Disables all VFU processing.

Upr. Case Select

Controls how the printer handles lowercase characters it receives from the host computer. When enabled, all characters will be printed in uppercase.

- **Disable** (default). Prints lowercase characters received from the host computer as lowercase, and prints uppercase characters received from the computer as uppercase.
- **Enable**. Prints lowercase characters received from the host computer as their corresponding uppercase equivalents; uppercase characters received from the computer print as uppercase.

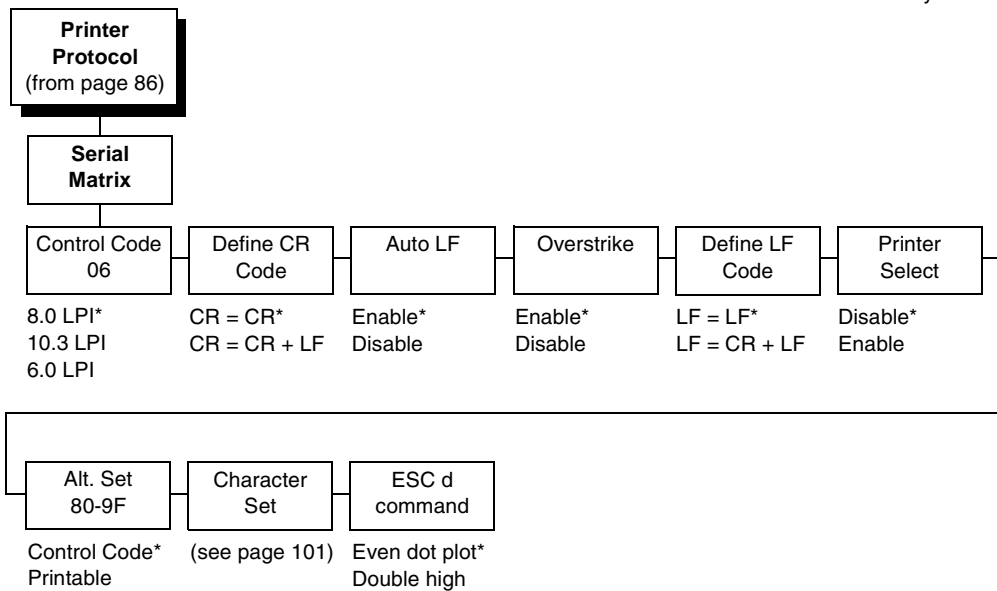
Slew Relative

“Slewing” is rapid vertical paper movement. This parameter determines the number of lines slewed (either 1-15 lines or 1-16 lines) when an EVFU Slew Relative command is received. The options include:

- **1-15 Lines** (default)
- **1-16 Lines**

Serial Matrix Emulation

* = Factory Default



Control Code 06

Control Code 06 defines the function of ASCII code hex 06 (ACK). You can select an alternate line spacing of 6, 8, or 10.3 LPI.

Define CR Code

This option controls the action of the printer when it receives a Carriage Return code (hex 0D) from the host computer. If this feature is enabled, each time the printer receives a Carriage Return, it inserts an additional Line Feed code (hex 0A) into the data stream. Do not use this feature if the host computer sends line feeds to the printer.

- **CR = CR** (default). Does not insert an extra line feed after each carriage return.
- **CR = CR + LF**. Inserts an extra line feed after each carriage return. The next print position will be print position 1 of the next line.

Auto LF

The Auto LF option defines the printer action when print data is received past the forms width setting.

- **Enable** (default). Performs an automatic carriage return and line feed when data is received past the forms width.
- **Disable**. Discards any data past the forms width.

Overstrike

This option enables you to print bold characters.

- **Enable** (default). Turns on bold print. When enabled, overstrike printing slows down the printer.
- **Disable**. Turns off bold print.

Define LF Code

- **LF = LF** (default). Does not perform an automatic carriage return when a line feed command is received. The next print position will be the current print position of the next line.
- **LF = CR + LF**. Forces an automatic carriage return with each line feed command received. The next print position is print position 1 of the next line.

Printer Select

- **Disable** (default). Ignores the ASCII DC1 and DC3 control codes.
- **Enable**. Disables the printer when a DC1 control code is received, and enables the printer when a DC3 control code is received.

Alt. Set 80-9F

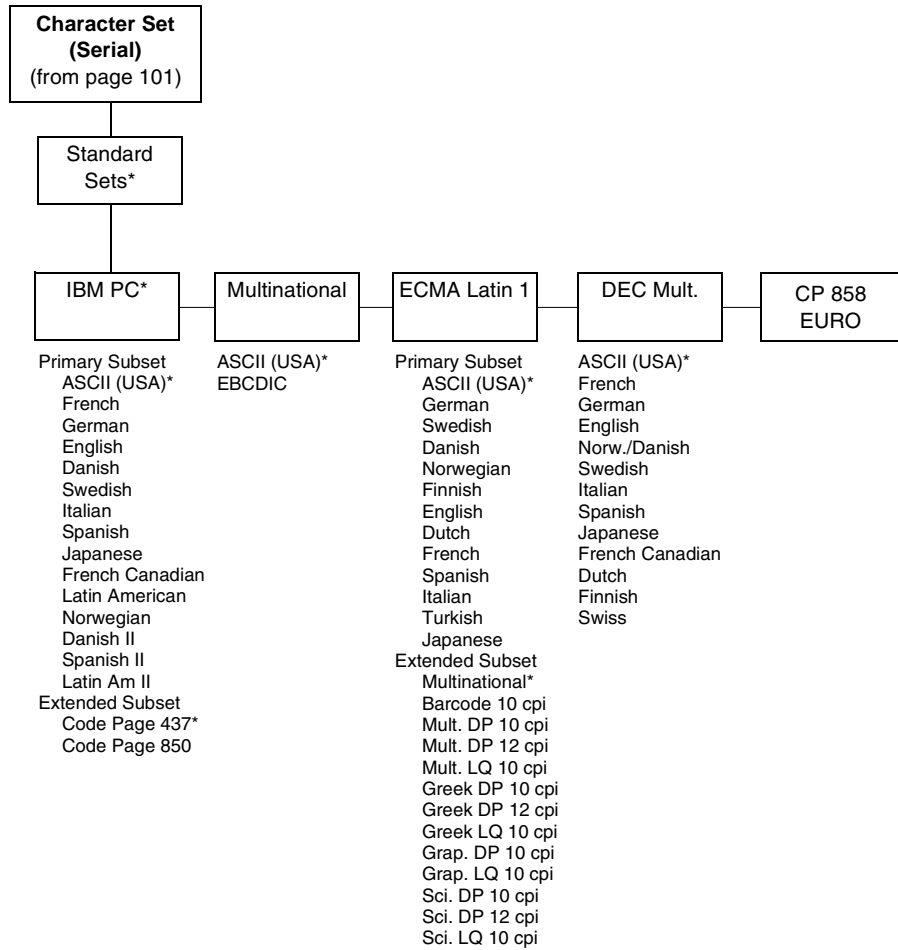
- **Control Code** (default). Interprets data in the range of hex 80 through hex 9F as a control code.
- **Printable**. Prints data in the range of hex 80 through hex 9F.

Character Set

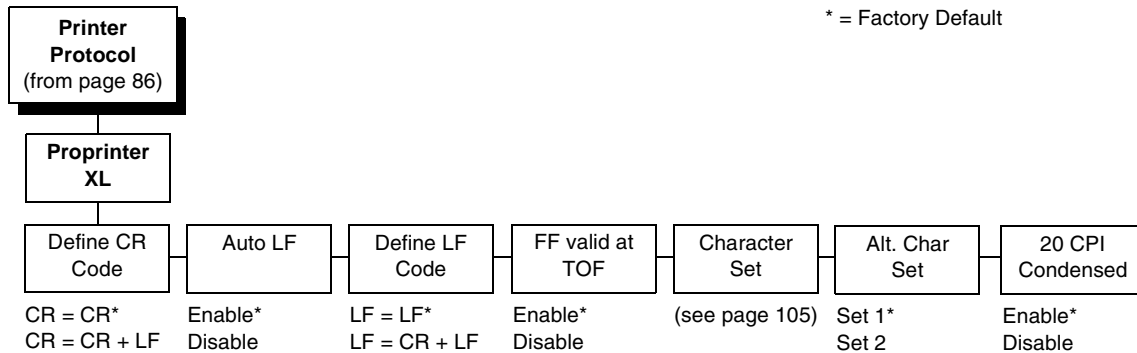
Specifies a character set as shown in the “Serial Matrix Character Set Menu” on page 101. To use one of these sets, choose the desired group heading (such as European Sets) and press ENTER. Then choose the desired set within that group (such as Roman 8) and press ENTER. Both the group and the desired set will be starred to indicate your selection. Character sets are shown in detail in the *Character Sets Reference Manual*.

ESC d command

- **Even dot plot** (default). Interprets the ESC d command as even dot plot.
- **Double high**. Interprets the ESC d Command as double high. Select this option for backward compatibility.



Proprinter XL Emulation



Define CR Code

This option controls the action of the printer when it receives a Carriage Return code (hex 0D) from the host computer. If this feature is enabled, each time the printer receives a Carriage Return, it inserts an additional Line Feed code (hex 0A) into the data stream. Do not use this feature if the host computer sends line feeds to the printer.

- **CR = CR** (default). Does not insert an extra line feed after each carriage return.
- **CR = CR + LF**. Inserts an extra line feed after each carriage return.

Auto LF

This option defines the printer action when print data is received past the forms width setting.

- **Enable** (default). Performs an automatic carriage return and line feed when data is received past the forms width.
- **Disable**. Discards any data past the forms width.

Define LF Code

- **LF = LF** (default). Does not perform an automatic carriage return when a Line Feed command is received. The next print position will be the current print position of the next line.
- **LF = CR + LF**. Forces an automatic carriage return with each Line Feed command received. The next print position is print position 1 of the next line.

FF Valid at TOF

- **Enable** (default). Performs a form feed when the host sends a Form Feed command and the printer is at the top of form.
- **Disable**. Will not perform a form feed when the host sends a Form Feed command and the printer is at the top of form.

Character Set

Specifies a character set as shown in the “Proprinter XL Character Sets Menu” on page 105. To use one of these sets, choose the desired group heading (such as European Sets) and press ENTER. Then choose the desired set within that group (such as Roman 8) and press ENTER. Both the group and the desired set will be starred to indicate your selection. The UTF-8 selection allows printing of UTF-8 encoded Unicode™. Character sets are shown in detail in the *Character Sets Reference Manual*.

Alt. Char Set

This option determines if data in the range of hex 80 through hex 9F should be interpreted as a control code or as a printable character.

- **Set 1** (default). Interprets data in the range of hex 80 through hex 9F as a control code.
- **Set 2**. Prints data for the characters at hex locations 03, 04, 05, 06, 15, and 80 through 9F.

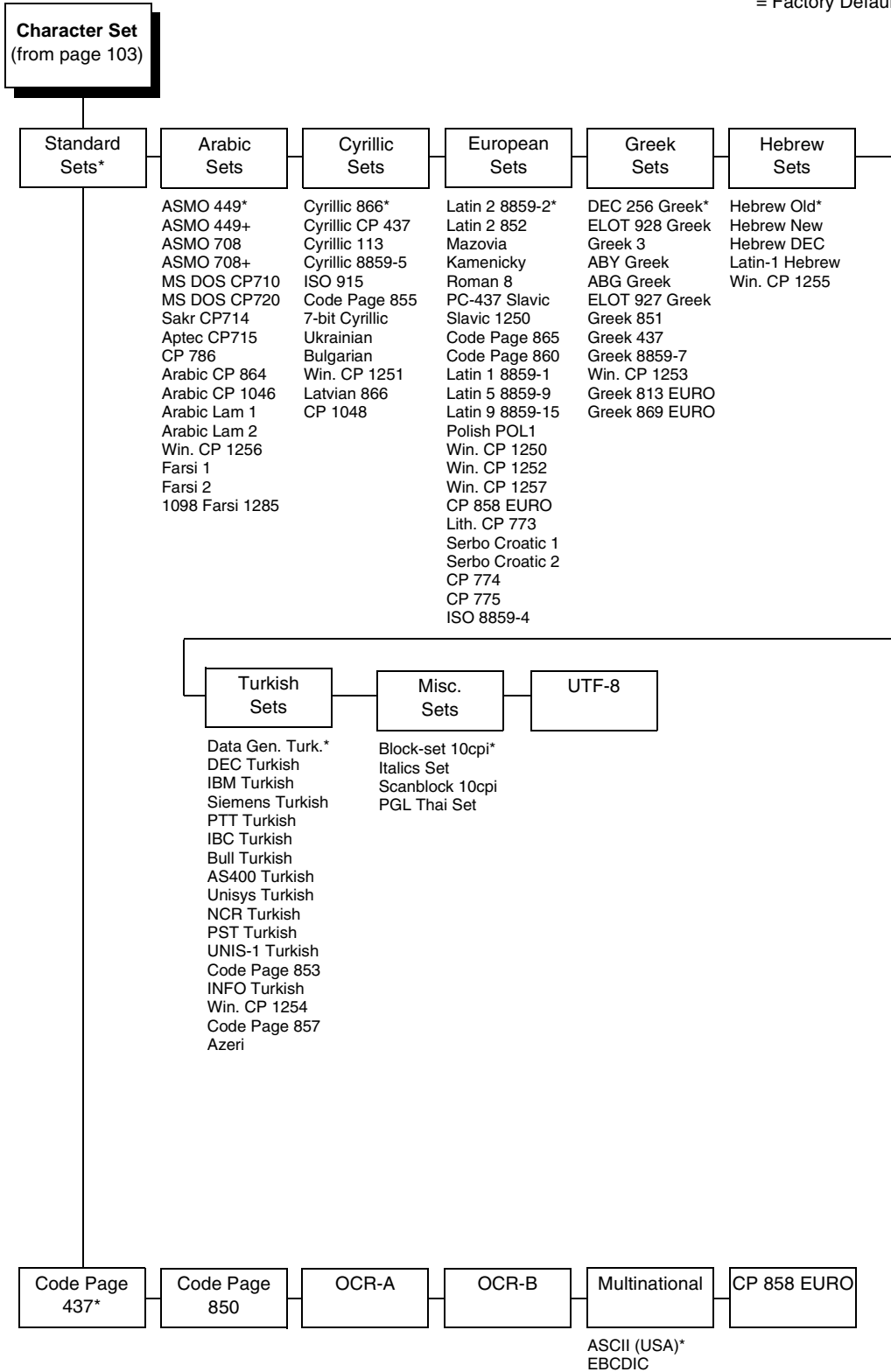
20 CPI Condensed

Compressed print characters are narrower than the normal character set. This is helpful for applications where you need to print the maximum amount of information on a page.

- **Enable** (default). Prints characters about 60 percent the width of normal characters when compressed print is chosen by the host computer.
- **Disable**. Does not compress print widths, even if condensed print is chosen by the host.

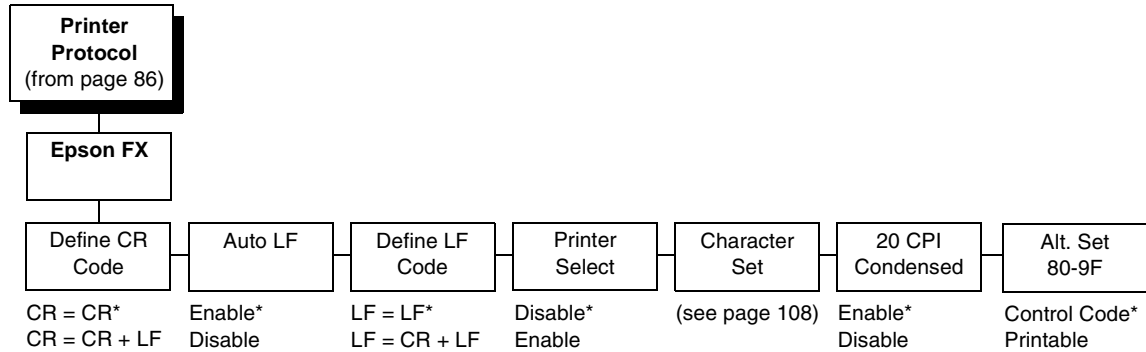
Proprinter XL Character Sets Menu

* = Factory Default



Epson FX Emulation

* = Factory Default



Define CR Code

The Define CR Code option controls the action of the printer when it receives a Carriage Return code (hex 0D) from the host computer. If this feature is enabled, each time the printer receives a carriage return, it inserts an additional Line Feed code (hex 0A) into the data stream. Do not use this feature if the host computer sends line feeds to the printer.

- **CR = CR** (default). Does not insert an extra line feed after each carriage return.
- **CR = CR + LF**. Inserts an extra line feed after each carriage return.

Auto LF

This option defines the printer actions when print data is received past the forms width setting.

- **Enable** (default). Performs an automatic carriage return and line feed when data is received past the forms width.
- **Disable**. Discards any data past the forms width.

Define LF Code

The Define LF Code option controls the action of the printer when it receives a Line Feed code (hex 0A) from the host computer. If this feature is enabled, each time the printer receives a Line Feed, it inserts an additional Carriage Return code (hex 0D) into the data stream. This feature is required if the host computer does not send carriage returns to the printer.

- **LF = LF** (default). Does not add a carriage return with a line feed.
- **LF = CR + LF**. Adds an extra carriage return with each line feed.

Printer Select

- **Disable** (default). Ignores the ASCII DC1 and DC3 control codes.
- **Enable**. Disables the printer when a DC1 control code is received, and enables the printer when a DC3 control code is received.

Character Set

This parameter selects a character set for the Epson emulation, as shown in the “Epson FX Character Set Menu” on page 108. Note that when OCR-A or OCR-B is selected as the print language, the Font Attribute Typeface option under the LinePrinter Plus menu (page 87) is changed to OCR-A or OCR-B, respectively.

To use one of these sets, choose the desired group heading (such as European Sets) and press ENTER. Then choose the desired set within that group (such as Roman 8) and press ENTER. Both the group and the desired set will be starred to indicate your selection. The UTF-8 selection allows printing of UTF-8 encoded Unicode™. Character sets are shown in detail in the *Character Sets Reference Manual*.

20 CPI Condensed

Compressed print characters are narrower than the normal character set. This is helpful for applications where you need to print the maximum amount of information on a page.

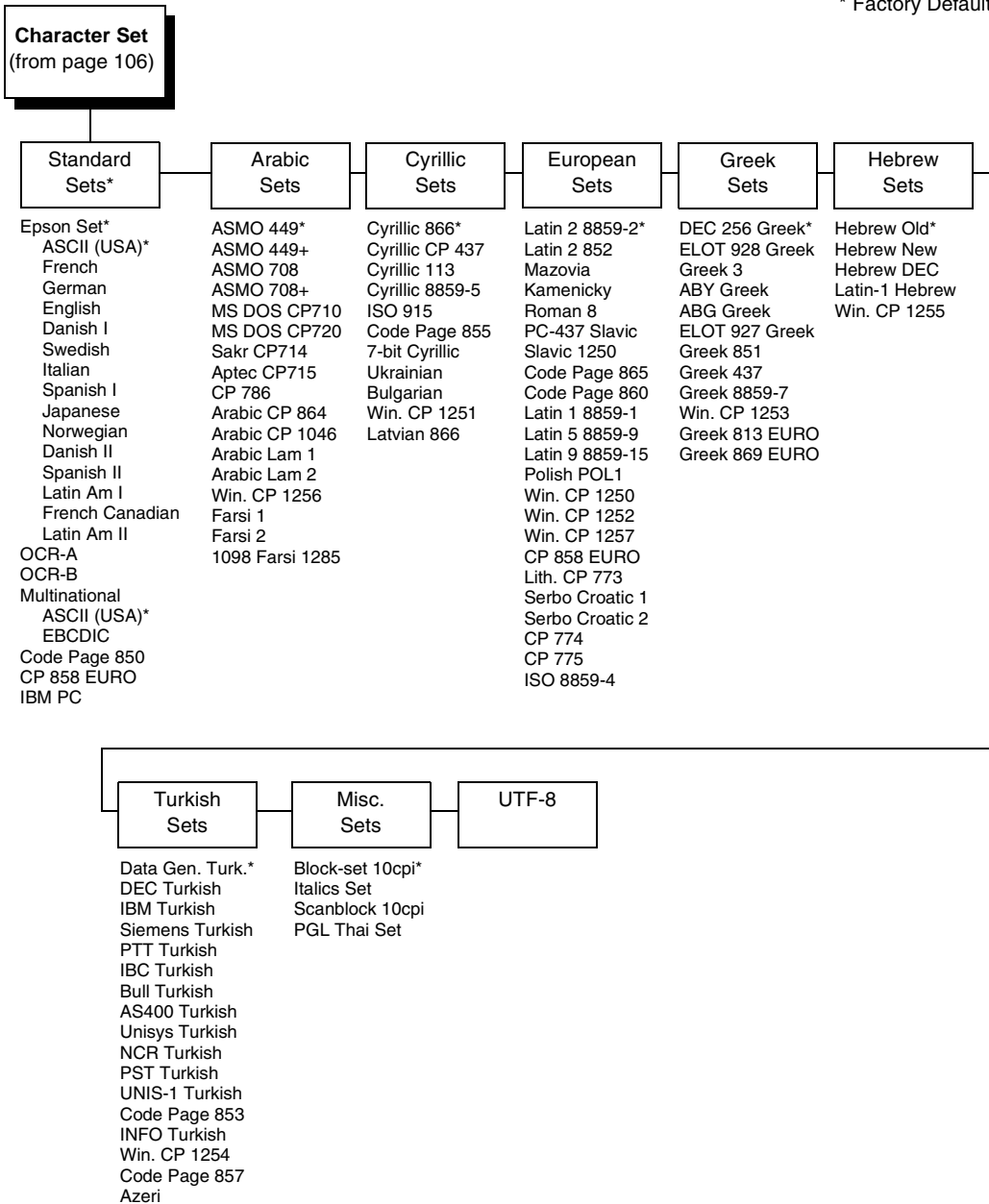
- **Enable** (default). Prints about 60 percent of the width of normal characters when compressed print is chosen by the host computer. For example, a 12 CPI Draft font will compress to 20 CPI.
- **Disable**. Does not compress print widths, even if condensed print is chosen by the host.

Alt. Set 80-9F

- **Control Code** (default). Interprets data in the range of hex 80 through hex 9F as a control code.
- **Printable**. Prints data in the range of hex 80 through hex 9F.

Epson FX Character Set Menu

* Factory Default



LinePrinter + Emulation (N7000 H-Series)

The EMULATION menu allows you to select the emulation to be used with your printer. You can configure options for the active emulation via the EMULATION menu. Emulation options are further described in their corresponding Programmer's Reference Manual.

EMULATION
(from page 59)

LinePrinter+

Printer Protocol

CPI/LPI Select

Host Command

Font Attributes

LQ-1600K* (see page 116)	Select CPI	Ignore All	Typeface	DBCS ASCII STYLE
OKI ¹ (see page 117)	10.0 CPI*	Disable*	LQ	Normal*
	12.0 CPI	Enable	Near LQ*	Oversize
	13.3 CPI	Ignore CPI	Normal	OCRB
	15.0 CPI	Disable*	Hi-Speed	Text Position
	17.1 CPI	Enable	Super Hi-Speed	Bottom of Line*
	20.0 CPI	Ignore LPI	Ultra Hi-Speed	Top of Line
	Select LPI	Disable*	Styling Type	Compressed Mode
	6.0 LPI*	Enable	SONG*, ¹	Disable*
	8.0 LPI	Ignore Unidir	MING ²	Enable
	DBCS CPI	Enable*	High Density	DBCS Compressed
	5.0 CPI	Disable	Disable*	Disable*
	6.0 CPI		Enable	Enable
	6.7 CPI*		Prop. Spacing	Encoding
	7.5 CPI		Disable*/Enable	Address Table*
	Others CPI		Bold Print	UTF-8
			Disable*/Enable	Taller 15 CPI
			Italic Print	Disable*
			Disable*	Enable
			Forward Slant	Horizontal Expnd
			Backward Slant	24* pt size
			Slashed Zero	(24 - 72) pt size
			Disable*/Enable	Vertical Expnd
			DBCS/ASCII Mode	24* pt size
			DBCS Mode*	(24 - 72) pt size
			ASCII Mode	

NOTE: This menu displays when LQ-1600K is selected under Printer Protocol.

* = Factory Default

¹ Available for GB firmware when the OKI emulation is enabled.

² Available with BIG5 firmware.

Graphics Spd Up

Normal*
Enhanced
Turbo
Match Typeface

Page Format

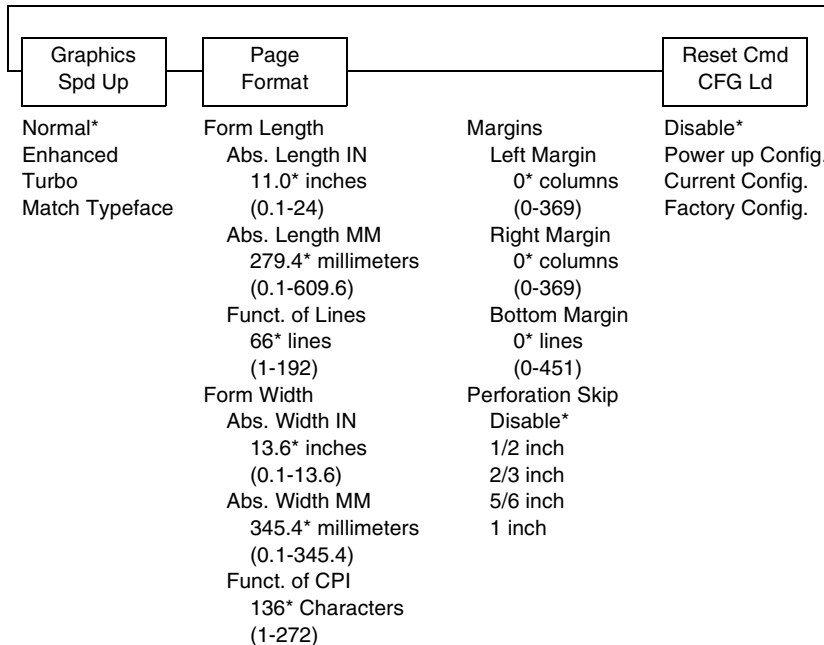
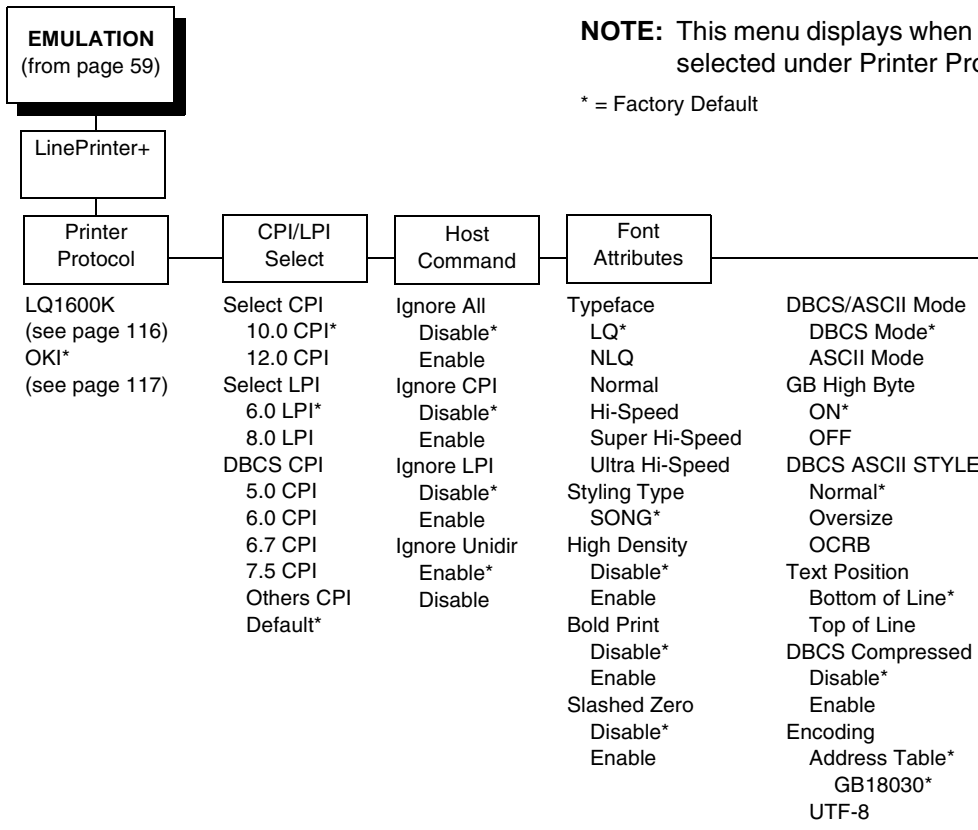
See page 86.

Reset Cmd CFG Ld

Disable*
Power up Config.
Current Config.
Factory Config.

Error Handling

Illegal Code Pt.
Normal*
As Space
As Square²



Printer Protocol

For the Hanzi LP+ printer, refer to the the LQ-1600K Programmer's Reference Manual and OKI Programmer's Reference Manual for details.

CPI/LPI Select

This parameter lets you specify the characters per inch (cpi) and lines per inch (lpi) values. For the Hanzi LP+ printer, if LQ1600K is selected, the default values of Select CPI, Select LPI, and DBCS CPI are 10 cpi, 6 lpi, and 6.7 cpi. If OKI is selected, the default values of Select CPI, Select LPI, and DBCS CPI are 10 cpi, 6 lpi, and Default.

Host Command

- **Ignore All.** When set to Enable, this function ignores all host commands. The default is Disable.
- **Ignore CPI.** When set to Enable and if LQ1600K emulation is selected, this function ignores the CPI selection commands ESC M, ESC P, and ESC g. If OKI emulation is selected, this function ignores the CPI selection commands ESC N, ESC H, ESC B, and ESC E. The default is Disable.
- **Ignore LPI.** When set to Enable and if LQ1600K emulation is selected, this function ignores the LPI selection commands ESC 2 and ESC 0. If OKI emulation is selected, this function ignores the LPI selection commands ESC 6 and ESC 8. The default is Disable.
- **Ignore Unidir.** When set to Enable, all unidirectional commands sent by the host are ignored by the printer. The default is Enable.

Font Attributes

Typeface

This parameter allows you to select the typeface for printing in the emulation.

- **LQ.** Default value for Hanzi Big5 and the Hanzi GB printer with OKI selected.
- **Near LQ.** Default value for Hanzi GB printer with LQ1600K selected.
- **Normal.**
- **Hi-Speed**
- **Super Hi-Speed**
- **Ultra Hi-Speed**

Styling Type

- **SONG.** Only for Hanzi GB printer.
- **MING.** Only for Hanzi Big5 printer.

High Density

- **Disable** (default)
- **Enable**. Allows the LQ typeface to print in higher print density, and it will not take effect when other typefaces are selected.

Prop. Spacing

Each printed character is contained inside a character cell. The width of the character cell includes the character and the space around the character. This parameter only works in ASCII mode.

- **Disable** (default). Each character cell is printed with the same width.
- **Enable**. The width of each character cell varies with the width of the character.

NOTE: This parameter is not available for Hanzi GB printers with OKI selected.

Bold Print

- **Disable** (default). Text is printed normally.
- **Enable**. Text is printed with a heavy line thickness.

Italic Print

- **Disable** (default). Text is printed normally.
- **Forward Slant**. Text is printed with a forward slant.
- **Backward Slant**. Text is printed with a backward slant.

NOTE: This parameter is not available for Hanzi GB printers with OKI selected.

Slashed Zero

This parameter allows you to print the number “0” with or without the slash.

- **Disable** (default). Zero is printed without a slash.
- **Enable**. Zero is printed with a slash.

DBCS/ASCII Mode

- **DBCS Mode** (default). The printer is in DBCS mode. It can print double-byte characters as well as a limited number of single-byte characters.
- **ASCII Mode**. The printer is in ASCII mode. It can only print single-byte characters.

GB High Byte

This parameter takes effect when the printer is in DBCS mode. It determines whether the printer accepts GB data with MSB bit on or off. The values are set to ON or OFF by the ESC k and ESC \$@ commands.

- **ON** (default). The printer accepts GB18030 data, the first byte below 0x80, which is a single byte ASCII character. The first byte, 0x80 and above, is a Chinese character.
- **OFF**. The printer accepts data ranging from 0x20 to 0x7F. Code points from 0x80 and above is ignored. When DBCS Half Width mode is set by the CEX r command, a single byte ASCII character prints. When DBCS Half Width mode is cancelled by the CEX s command, a double byte GB characters prints.

NOTE: This parameter is only available for Hanzi GB printers with OKI selected.

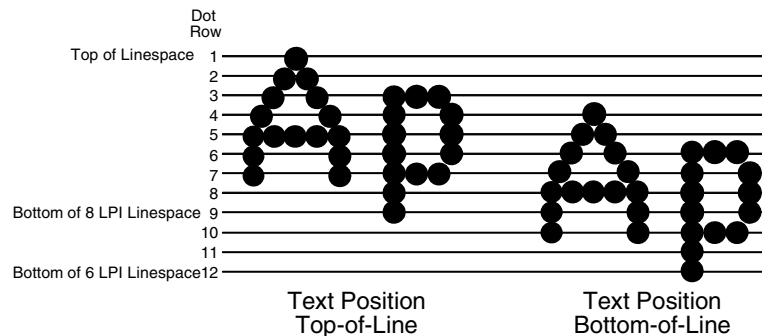
DBCS ASCII Style

This parameter allows you to specify the appearance of the single-byte alphanumeric characters in DBCS mode.

- **Normal** (default).
- **Oversize**. The alphanumeric characters will appear larger than normal single-byte characters. For example, the appearance of character “8” will be changed to “8”.
- **OCRB**. The alphanumeric characters will print in OCRB style. It only takes effect on LQ typeface.

Text Position

Specifies where the text will be positioned in the line space. When set to Top of Line, text will be positioned at the top of the line space. When set to Bottom of Line, the text will be positioned as if it was at the bottom of a 6 lpi line space. The following example shows both Top-of-Line and Bottom-of-Line text positions:



Compressed Mode

This parameter allows you to specify the appearance of ASCII/DBCS characters in ASCII mode.

- **Disable** (default)
- **Enable**. Prints out ASCII mode ASCII characters and half-width DBCS characters.

NOTE: This parameter is not available for Hanzi GB printers with OKI selected.

DBCS Compressed

This parameter allows you to specify the appearance of ASCII/DBCS characters in DBCS mode.

- **Disable** (default)
- **Enable**. Both the DBCS and ASCII characters will be printed as half-width of their original size.

Encoding

- **Address Table** (default). Specifies the address table supported.
GB18030 is for Hanzi GB printer.
BIG5 (default), **CNS**, **TCA**, **ETEN**, **IBM5550**, **TELETEXT**, **BIG5+**, **BIG5E**, and **HKSCS** are for Hanzi Big5 printer.
- **UTF-8**. The printer takes in UTF-8 data stream and prints out according to Unicode format.

Taller 15 CPI

This parameter allows you to specify the appearance of ASCII characters as 15 CPI in ASCII mode.

- **Disable** (default). The characters in 15 CPI appear shorter than other CPIs such as 10 CPI.
- **Enable**. The height of 15 CPI characters is the same as other CPIs such as 10 CPI.

NOTE: This parameter is not available for Hanzi GB printers with OKI selected.

Horizontal Expnd

This parameter allows you to specify dot character horizontal expansion for both ASCII and DBCS characters in DBCS mode.

NOTE: This parameter is not available for Hanzi GB printers with OKI selected.

Vertical Expnd

This parameter allows you to specify dot character vertical expansion for both ASCII and DBCS characters in DBCS mode.

NOTE: This parameter is not available for Hanzi GB printers with OKI selected.

Graphics Spd Up

This menu is used to increase (speed up) graphic printing speed by turning on the Enhanced/Turbo/Match Typeface mode.

- **Normal** (the default). The printer prints at the given input graphics resolution.
- **Enhanced**. The printer provides first-level speed up, which means the speed is faster than Normal mode.
- **Turbo**. The printer provides second-level speed up, which means the speed is faster than Enhanced mode.
- **Match Typeface**. The input 180x180 dpi graphics resolution will drop-dot to the resolution which matches the typeface selected.

Page Format

See page 89 for menu definitions.

Reset Cmd CFG Ld

When the printer receives a host data stream reset command (ESC @ for LQ1600K selected and DLE B for OKI selected) in addition to resetting printer variables, the power-up configuration will be loaded.

- **Disable** (the default). The active emulation parameters are loaded when the reset command is executed.
- **Power-Up Config**. The power-up configuration is loaded when the reset command is executed.
- **Current Config**. The currently selected configuration is loaded when the reset command is executed.
- **Factory Config**. The factory installed configuration is loaded when the reset command is executed.

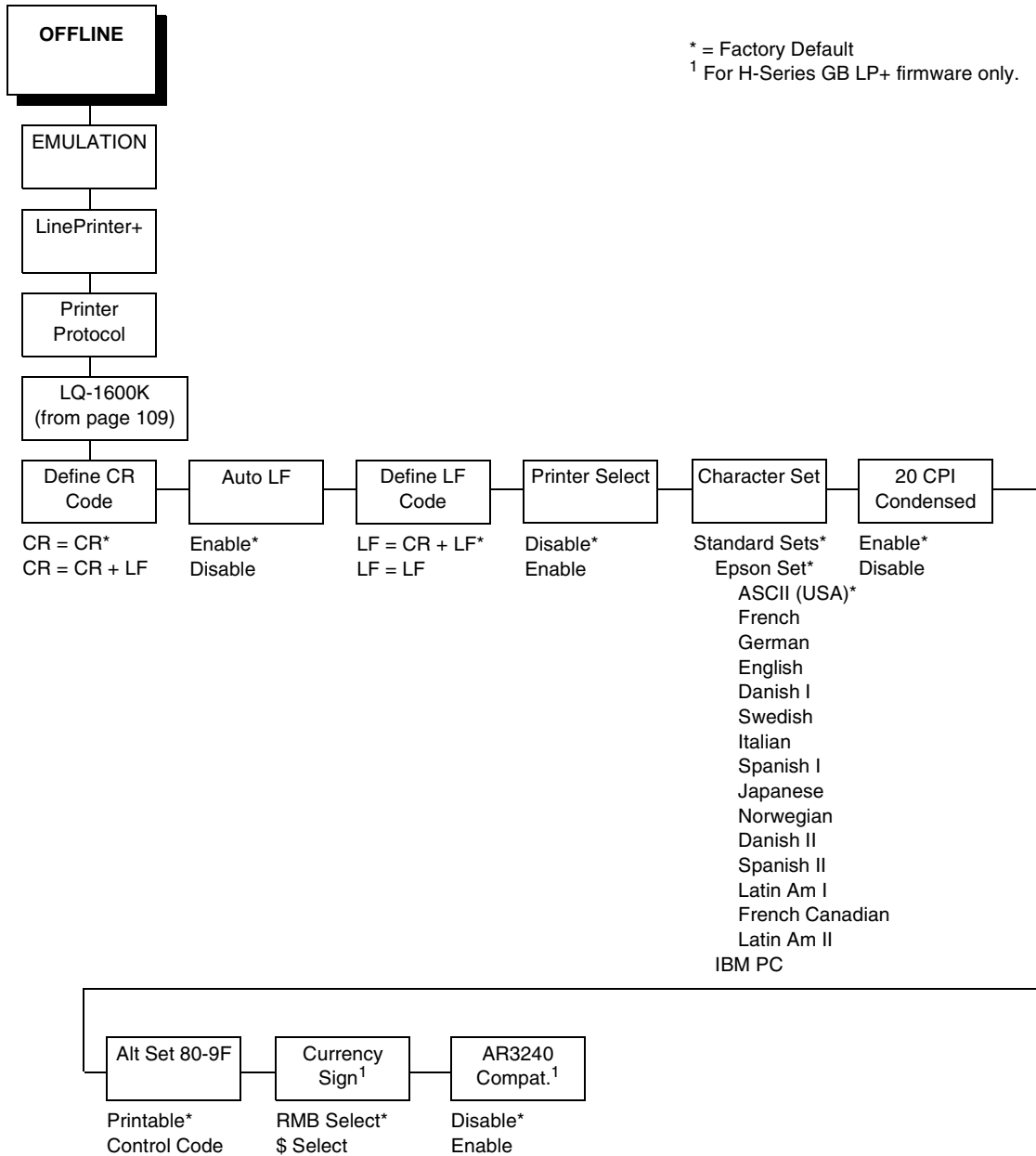
Error Handling

This command determines the way illegal DBCS characters are processed:

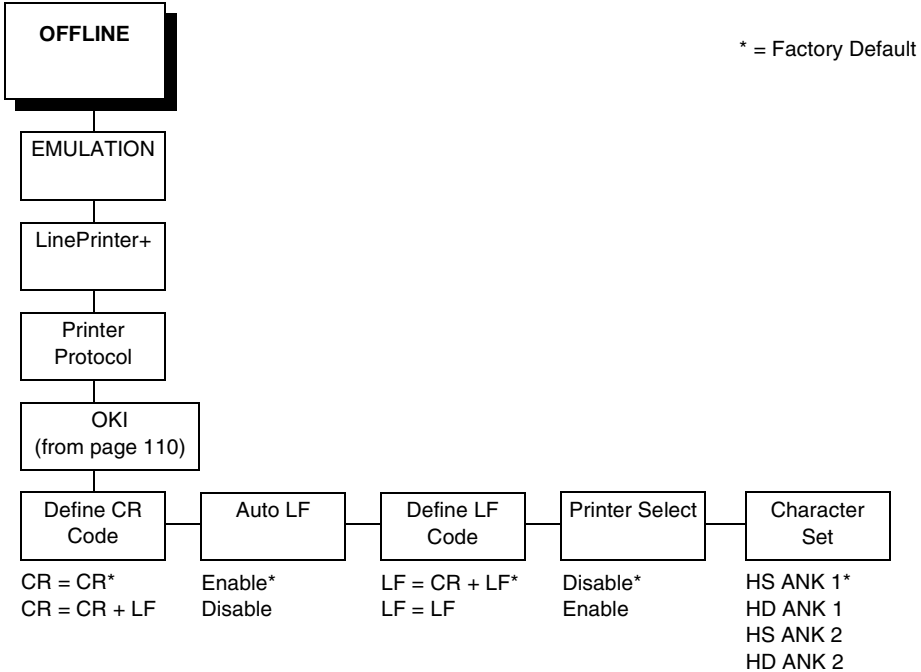
- **Normal** (the default). Will ignore illegal DBCS characters.
- **As Space**. Will insert two space characters (0X20, 0X20) when the data stream contains the illegal DBCS character.
- **As Square**. Will insert a black square (0xA1BD) when the data stream contains the illegal DBCS character. This is applicable for the Hanzi Big5 build only.

NOTE: This parameter is not available for Hanzi GB printers with OKI selected.

LQ-1600K Menu



OKI Menu



Define CR Code

The Define CR Code option controls the action of the printer when it receives a Carriage Return code (hex 0D) from the host computer. If this feature is enabled, each time the printer receives a Carriage Return, it inserts an additional Line Feed code (hex 0A) into the data stream. Do not use this feature if the host computer sends Line Feeds to the printer.

- **CR = CR.** Does not insert an extra Line Feed after each Carriage Return.
- **CR = CR + LF.** Inserts an extra Line Feed after each Carriage Return.

Auto LF

This option defines the printer actions when print data is received past the forms width setting.

- **Enable.** Performs an automatic carriage return and line feed when data is received past the forms width.
- **Disable.** Discards any data past the forms width.

Define LF Code

The Define LF Code option controls the action of the printer when it receives a Line Feed code (hex 0A) from the host computer. If this feature is enabled, each time the printer receives a Line Feed, it inserts an additional Carriage Return code (hex 0D) into the data stream. This feature can be used in most installations, but it is required if the host computer does not send Carriage Returns to the printer.

- **LF = CR + LF.** Adds an extra Carriage Return with each Line Feed.
- **LF = LF.** Does not add a Carriage Return with a Line Feed.

Printer Select

- **Disable.** Ignores the ASCII DC1 and DC3 control codes.
- **Enable.** Disables the printer when a DC1 control code is received, and enables the printer when a DC3 control code is received.

Character Set

This parameter selects a character set for the Epson® emulation when LQ1600K is selected and for OKI emulation when OKI is selected.

20 CPI Condensed

Compressed print characters are narrower than the normal character set. This is helpful for applications for which you need to print the maximum amount of information on a page.

- **Enable.** Prints about 60 percent of the width of normal characters when compressed print is chosen by the host computer. For example, a 12 CPI Draft font will compress to 20 CPI.
- **Disable.** Does not compress print widths, even if condensed print is chosen by the host.

NOTE: This parameter is not available for Hanzi GB printers with OKI selected.

Alt. Set 80-9F

- **Control Code.** Interprets data in the range of hex 80 through hex 9F as a control code.
- **Printable.** Prints data in the range of hex 80 through hex 9F.

NOTE: This parameter is not available for Hanzi GB printers with OKI selected.

Currency Sign

- **RMB Select.** The ASCII code hex 24 is printed as a RMB “¥” character in DBCS mode. Default for GB.
- **\$ Select.** The ASCII code hex 24 is printed as a dollar “\$” character in DBCS mode.

NOTE: Available for H-Series GB firmware with LQ1600K selected only.

AR3240

- **Disable.** AR3240 emulation does not take effect. Default.
- **Enable.** AR3240 takes effect, SUB (0x1A) is used as another SFCC. The listed commands will take effect and turn the extending table character on.

NOTE: Available for H-Series GB firmware with LQ1600K selected only.

IGP/PGL Emulation

The PGL emulation is the software based Intelligent Graphics Processor (IGP) for the line matrix family of printers. It is based upon, and is compatible with, the IGP-100/200/400 board using the PGL. The IGP graphics processing features are detailed below.

Features

On-Line Form and Label Generation makes it easy to create forms or labels with a “preprinted” look for each application. IGP programs control all graphic functions, dramatically reducing host computer programming and processing time.

Graphic capabilities include boxes, vertical and horizontal lines with user-selectable thickness, logos, and special alphanumeric print features. Forms and graphic designs can be duplicated horizontally and vertically.

Alphanumeric data can appear as prepositioned “fixed” information (entered when the form is created), be overlaid onto the form (positioned in a specific location after the form is created), or can be dynamically merged with the form.

Selectable Barcodes provide you with the appropriate barcode for your application using standard wide-to-narrow ratios. A wide selection of barcodes is available: Code 39, Interleaved 2 of 5, UPC-A, UPC-E, MSI A through D, Code 128 Subset A, B, and C, EAN/UCC-128, EAN 8, EAN 13, POSTNET, PostBar, Royal Mail, and PDF417. UPC and EAN barcodes can specify add-on data.

Expanded and Compressed Character Print attract attention where needed. Alphanumeric height and width are controlled independently for a wide range of character sizes up to 113 times the standard character size (up to 11.3 inches wide and tall). Compressed print sizes of 10, 12, 13, 15, 17, and 20 characters per inch (cpi) are available.

Logos are created using alphanumeric commands and add many print and shading features for a “customized” appearance to forms, reports, and labels.

Rotated Alphanumerics permit new concepts in form design. Normal, expanded, and compressed character strings can be rotated 90 degrees clockwise or counterclockwise, or they can be printed upside down.

Reversed Print permits highlighting and contrasting by printing white characters on a dark background.

Automatic Increment/Decrement Capability allows batch form processing. Individual alphabetic, numeric, and barcode data fields can be identified and automatically incremented or decremented by any amount, beginning from a specified reference point.

Scaling Capability permits graphic elements, such as corners or boxes, to retain their physical shapes and sizes when printed in a horizontal and vertical density other than the base density of 60 x 72 dpi.

Multinational Character Sets provide many international character sets, each 96 characters in length. This feature also allows you to create your own character sets using characters defined and stored in memory.

Extended Character Sets provide 33 extended character sets, also containing 96 characters in length. These are also stored in memory.

Configuring The Emulation With The Control Panel

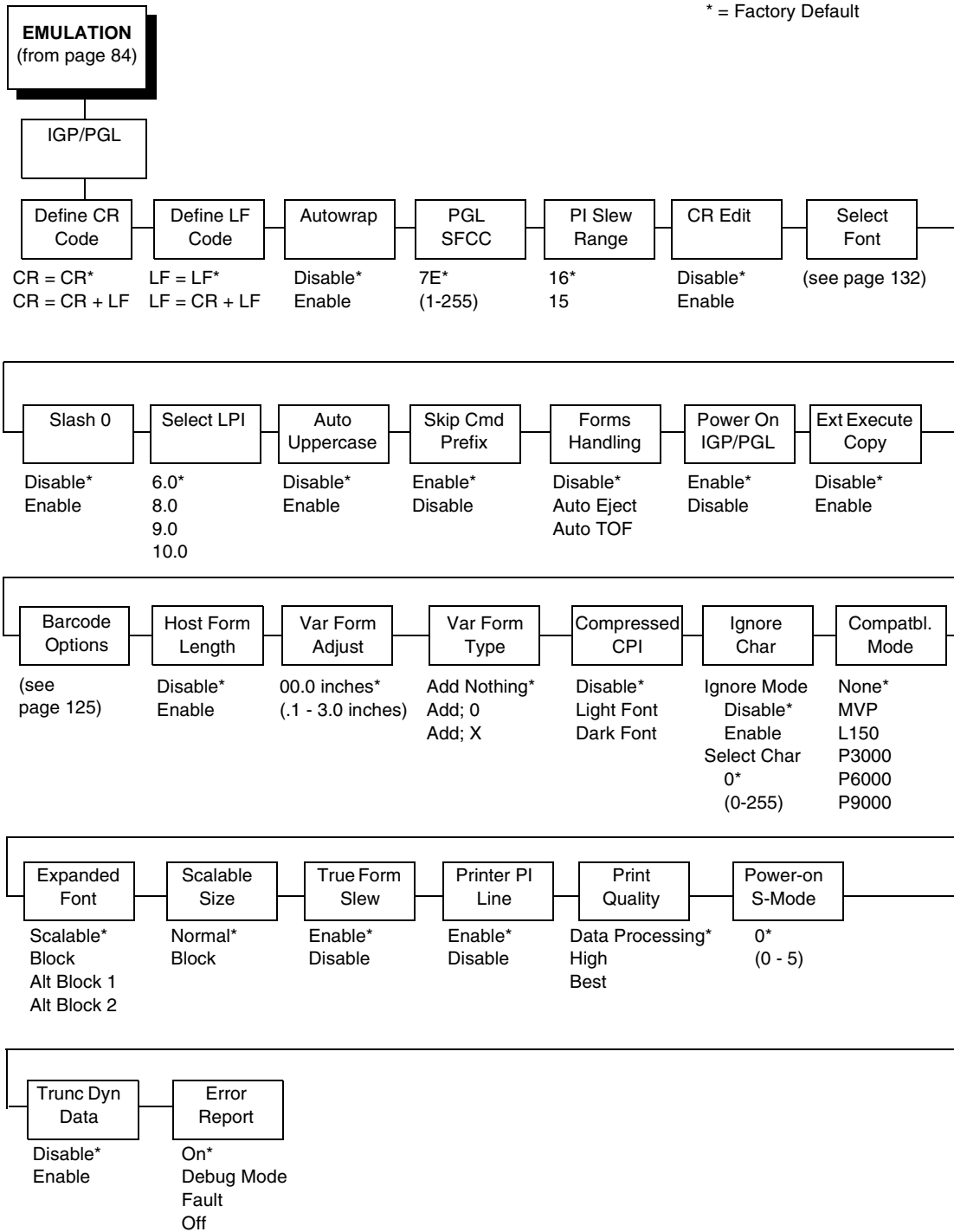
You can select PGL default parameters directly from the control panel or by control codes as explained in the *IGP/PGL Programmer's Reference Manual*. The PGL parameters are described on the following pages. Parameters marked with an asterisk (*) indicate the default value. The printer must be offline 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. Configure the IGP/PGL according to your specific requirements.

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

IGP/PGL Submenu

* = Factory Default



Define CR (Carriage Return) Code

This parameter forces the printer to insert an automatic Line Feed code into the data stream whenever a Carriage Return code occurs. This is to be used only if the host computer does not send line feeds to the printer.

- **CR = CR** (default). Does not perform a line feed. The next print position will be print position 1 of the current line.
- **CR = CR + LF**. Performs an automatic line feed. The next print position will be print position 1 of the next line.

Define LF (Line Feed) Code

This parameter forces the printer to insert an automatic Carriage Return code into the data stream whenever a Line Feed code occurs. This can be used in most installations, but it is required if the host computer does not send carriage returns to the printer.

- **LF = LF** (default). Does not perform an automatic carriage return. The next print position will be the current print position of the next line.
- **LF = CR + LF**. Performs an automatic carriage return. The next print position will be print position 1 of the next line.

Autowrap

This parameter determines if text will wrap to the next line when the line of text exceeds the right margin.

- **Disable** (default). Truncates the text beyond the right margin until a CR or CR + LF is received.
- **Enable**. Automatically inserts a CR + LF after a full print line.

PGL SFCC

You can specify which hex code (1-255) will be used as the Special Function Control Code (SFCC). The factory default setting is 126. The SFCC denotes that the following data is a PGL command.

PI Slew Range

You can specify how many lines the paper will feed.

- **16** (default). A paper slew of 0-15 will move 1-16 lines.
- **15**. A paper slew of 1-15 will move 1-15 lines. A paper slew of 0 will move 1 line.

CR Edit

This parameter determines if a carriage return will be followed by a line feed.

- **Disable** (default). The printer ignores all carriage returns that are not followed by line feeds.
- **Enable**. The printer processes all carriage returns, even for those that are not followed by line feeds.

Select Font

Select Font specifies which language is currently selected for use with the PGL. Refer to “IGP/PGL Font Set Menu” on page 132 for available selections.

Slash 0

This parameter allows you to print the numeral “0” with or without the slash. This option applies to all character sets except OCR A and OCR B.

- **Disable** (default). Zero is printed without a slash.
- **Enable**. Zero is printed with a slash.

Select LPI

This is the number of lines to be printed per inch. For example, at 6 lpi there is 1/6 inch from the top of one print line to the top of the next print line. The options are:

- **6.0** (default)
- **8.0**
- **9.0**
- **10.0**

Auto Uppercase

This parameter enables the printer to print text in all uppercase when using the ALPHA command.

- **Disable** (default). The printer will print text in upper and lowercase.
- **Enable**. The printer will print text in uppercase only.

Skip Cmd Prefix

This parameter determines if the printer will print any data before a PGL command is received.

- **Enable** (default). The printer ignores all data on the current line before an IGP command.
- **Disable**. The printer will print all data on the current line before an IGP command.

Forms Handling

This submenu allows the user to handle the form in the following ways:

- **Disable** (the default). No effect.
- **Auto Eject**. Automatically ejects a page at the end of the job to spill out the last page.
- **Auto TOF**. Automatically does a form feed (FF) at the end of each form to the next top of form.

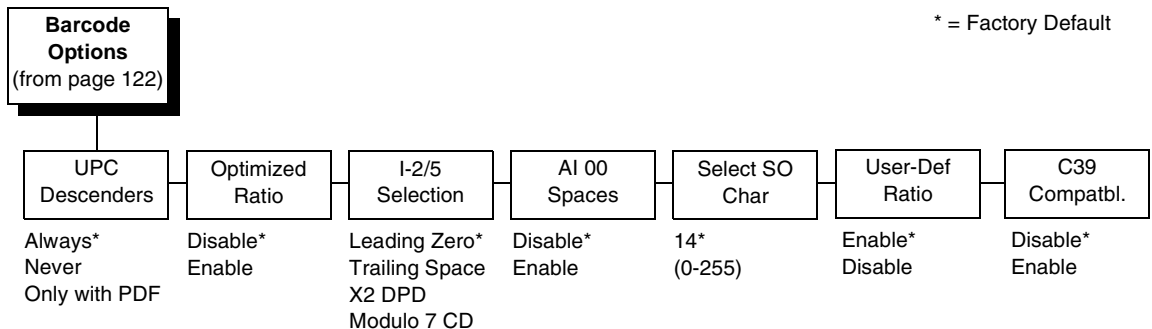
Power On IGP/PGL

You can set the IGP feature so that it is enabled or disabled when the printer is powered on.

- **Enable** (default). The PGL is enabled when the printer is powered on. (The PGL feature is initialized in the Normal mode.)
- **Disable**. The PGL is disabled when the printer is powered on. (The PGL feature is initialized to the Quiet mode.)

Ext Execute Copy

- **Disable** (default). Dynamic data and overlay data are not allowed if the optional Form Count parameter (number of forms to print) is specified as part of the Execute command. (This setting is IGP-100 compatible.)
- **Enable**. Only dynamic data is 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 the Form Count. However, incremental data is not incremented since the page that is printing is exactly the same. Also, each form is printed on a separate page.



Barcode Options

The following sub-options help define specific options regarding barcode printing.

UPC Descenders

This parameter allows you to print barcode descenders when human readable data is not present in the UPC/EAN barcodes.

- **Always** (default). UPC/EAN barcodes are printed with descenders, even if there is no human readable data.
- **Never**. UPC/EAN barcodes are printed without descenders if there is no human readable data.
- **Only with PDF**. UPC/EAN barcodes are printed with descenders only when the PDF command is present.

Optimized Ratio

This option selects different barcode ratios for certain barcodes including Code 39 and I-2/5. It is included for compatibility with the IGP-X00 printers.

- **Disable** (default). Use standard barcode ratios.
- **Enable**. Select the alternate barcode ratios.

I-2/5 Selection

This option is added to be compatible with a special IGP-X00 customization. Usually, if I-2/5 barcodes have an odd number of digits, a leading zero is inserted in front of the data. However, this special IGP-X00 customization gives you the option of adding a space character at the end of the barcode instead.

- **Leading Zero** (default). A leading zero is inserted in front of the printable data field.
- **Trailing Space**. A space is inserted at the end of the printable data field and a zero is encoded with the corresponding space in the end of the barcode.
- **X2 DPD**. When selected, an I-2/5 barcode with an X2 magnification will use the specially configured ratios 3:3:6:5 rather than 3:6:9:12 for compatibility issues.
- **Modulo 7 CD**. The I-2/5 barcode uses a modulo 7 check digit instead of the default modulo 10 check digit.

AI 00 Spaces

This option is designated for EAN/UCC-128 barcodes whose application identifier (AI) is 00.

- **Disable** (default). The printable data field is printed with the AI enclosed in parentheses. This is the standard EAN/UCC-128 format.
- **Enable**. The printable data field is printed with the UCC fields separated by spaces. This option is IGP-X00 compatible.

Select SO Char

Allows you to specify a decimal code from 0 through 255 to be used in place of SO (Shift Out) as the control code. This allows access for the alternate set of control function characters. See the description of the Code 128 barcodes in the *IGP/PGL Programmer's Reference Manual* for details.

User-Def Ratio

- **Enable** (default). User-defined ratios are accepted for barcodes. This is the default.
- **Disable**. User-defined ratios are ignored and the magnification X1 is used in its place.

C39 Compatbl.

This menu makes the old method of decoding C39 alternative character set compatible with the new.

- **Disable** (default) Uses the current way of decoding.
- **Enable**. Matches the old method of decoding.

Host Form Length

Determines whether the form length specified in the CREATE command changes the form length designated in the LP+ menu when the form is printed by the EXECUTE command.

- **Disable** (default). The LP+ form length is unaffected by the form being printed.
- **Enable**. The LP+ form length changes to match the length of the PGL form being printed.

Var Form Adjust

(Ranges from 0 - 30). Default is 0. This menu value is tenths of inches. The value of this menu specifies the amount of distance to add to PGL forms that have variable form lengths. Variable length forms are forms that are defined by using a “;0” in the CREATE statement: ~CREATE;FORM;0. Variable form lengths are defined by the contents within the form - the form is only as long as necessary to print the form. Changing this menu value adds additional lengths to the form (in tenths of inches). Again, this only applies to forms that use the “;0” variable length forms.

Var Form Type

This menu option applies only to the host command, CREATE;NAME or CREATE;NAME;DISK. The host command CREATE;NAME followed by ;0, ;X or a form length number will always override the menu option.

- **Add Nothing** (default). No action.
- **Add; 0**. When selected, the form length ends at the longest printed element. Same as CREATE;NAME;0.
- **Add; X**. When selected, the form length is the same as the physical page length.

Compressed CPI

This parameter allows you to choose a compressed character (60% shorter) for 17 or 20 cpi instead of the normal height character.

- **Disable** (default). The PGL does not use compressed 17 or 20 cpi font.
- **Light Font**. Uses the standard compressed 17 or 20 cpi font.
- **Dark Font**. Uses a darker compressed 17 or 20 cpi font compatible with the IGP-X00 printers.

Ignore Char

- **Ignore Mode**

This parameter instructs the PGL to ignore the character selected under the Select Character menu.

- **Disable** (default). The PGL does not ignore any characters.
- **Enable**. The PGL ignores the characters specified in the Select Character menu.
- **Select Char**

Instructs the PGL which decimal character (0-255) to ignore from the host.

Compatbl. Mode

This option instructs the PGL to behave similarly to older versions of the IGP with respect to certain commands.

All new users with new applications should select the “None” option. Selecting this mode insures the printer will behave as described in this manual.

When replacing an older product operating with an existing application, especially those using the PMODE and SMODE commands, you may need to select a compatibility mode. In this case, select the printer model number option that most closely matches the printer being replaced. The Compatibility Mode options include:

- **None** (default)
- **MVP**
- **L150**
- **P3000**
- **P6000**
- **P9000**

Expanded Font

This option defines the type of expanded characters the PGL will select:

- **Scalable** (default). These expanded characters have rounded edges.
- **Block**. These are block characters compatible with the IGP-X00 printers.
- **Alt Block 1 / Alt Block 2**. Reserved block sets used only for compatibility purposes.

Scalable Size

- **Normal** (default). Controls the size of scalable characters to be either normal size (as set by the user) or adjusted to match the size of block fonts. This is the default.
- **Block**. Adjusts the size of scalable characters to exactly match its block font alternative.

True Form Slew

This option is related to slewing within forms when using the PMODE command. Customers with new applications are advised to keep this option enabled.

- **Enable** (default). Form length is accurate according to the form length parameter in the CREATE command.
- **Disable**. Form length is IGP-X00 compatible when using PMODE.

Printer PI Line

This option enables the IGP to send PI instructions to the printer to slew the form.

- **Enable** (default). Send the PI instructions to the printer (LinePrinter Plus) during form slew. This is IGP-X00 compatible.
- **Disable**. Do not send PI instructions to the printer. LFs are sent instead.

Print Quality

- **Data Processing** (default). The emulation prints at 60 x 72 dpi and lets you choose between normal alphanumerics and barcodes and dark mode alphanumerics and barcodes. This mode should be set if you want the highest speed.
- **High**. The emulation prints at 120 x 72 dpi, but all alphanumerics and barcodes are automatically printed in dark mode.
- **Best**. The emulation prints at 120 x 144 dpi and dark mode, which produces a higher resolution, better-looking print image.

Power-on S-Mode

This option instructs the PGL to behave similarly to older versions of the IGP with respect to certain commands.

All new users with new applications should select “0,” the default option. Selecting this mode insures the printer will behave as described in this manual.

Power on S-Mode sets the printer in an SMODE compatibility state at power-up. The default is 0 (disabled, no power-on mode). To use this feature, select a mode from 1 through 5, which puts IGP/PGL in an SMODE state according to the compatibility mode set. If the compatibility mode set is None, then MVP is assumed by default.

For more information, see the *IGP/PGL Programmer's Reference Manual*.

Trunc Dyn Data

This submenu allows the user to truncate the dynamic data up to the maximum data length specified in Create Mode.

- **Disable** (default). If the dynamic data exceeds the maximum data length, an error will report.
- **Enable**. If the dynamic data exceeds the maximum data length, the data truncates.

Error Report

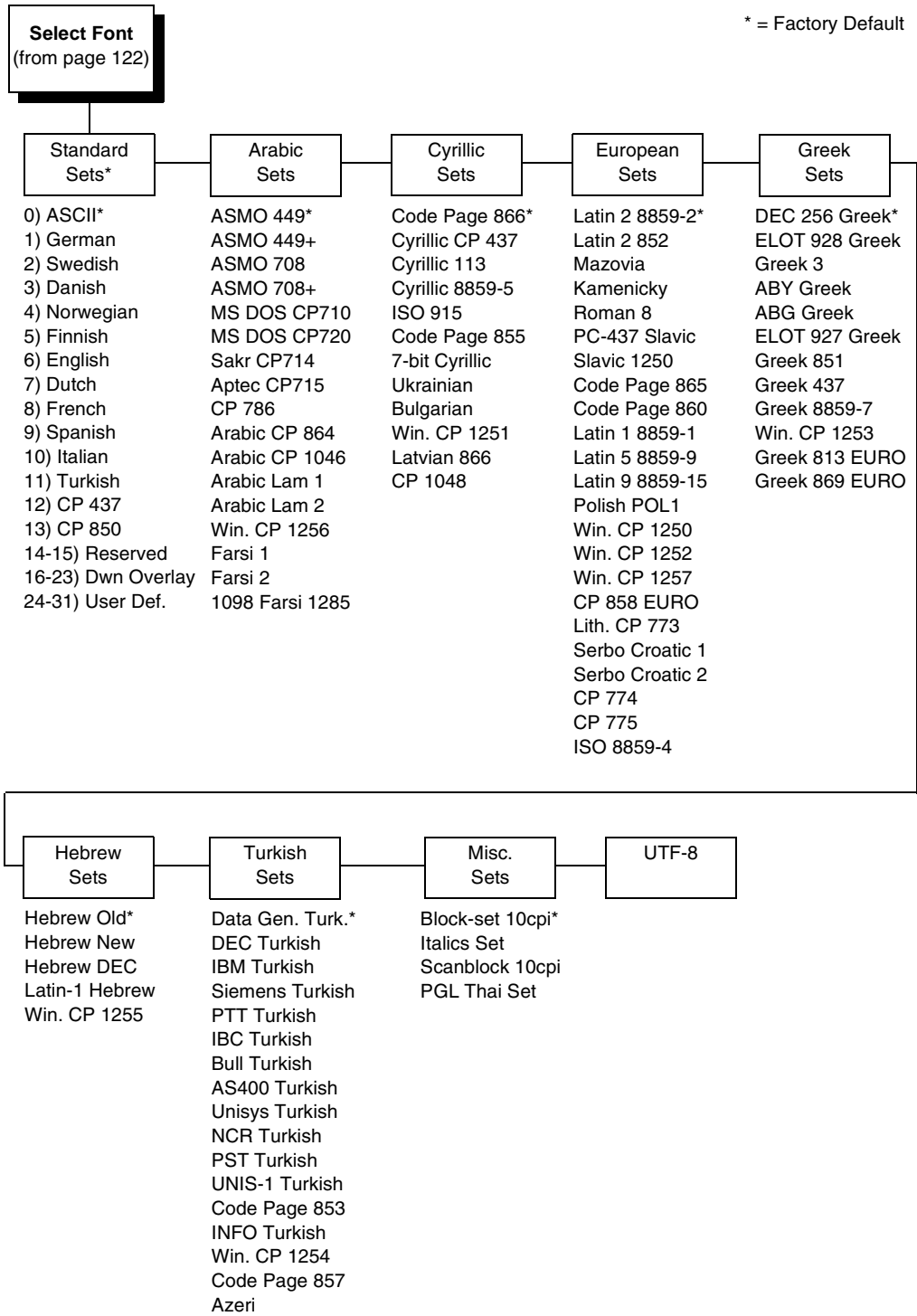
Sets the error reporting capability for IGP/PGL forms.

- **On** (default). Form boundary error checking reported. Any element which falls off the current page is reported as an error.
- **Debug Mode**. The printer is put in debug mode whenever a form is defined in Create Form mode. Each line of the Create Form is printed along with an error if one occurred. This is the same functionality as if there were a slash (/) entered before the Create Form Name.
- **Fault**. When an error occurs, the error is printed and the message "IGP/PGL ERROR" appears on the printer front panel. The printer then stops printing and goes offline. The error must be cleared before the printer can resume normal operation.
- **Off**. No form boundary checking. Graphic elements appear clipped if they are beyond the page boundaries.

Select Font

Allows you to choose from various character sets, including IGP/PGL Standard sets, 256 character multinational sets, and UTF-8 encoded Unicode™.

IGP/PGL Font Set Menu



IGP/VGL Emulation

Code V Graphics language (VGL) is an Intelligent Graphics Printing (IGP) software emulation designed for your Line Matrix printer. The IGP Code V emulation of the QMS[®] Code V Version II programming language produces online forms, barcodes, and alphanumeric text-generation. The graphics processing features are detailed below.

Features

OnLine Form and Label Generation makes it easy to create forms or labels with the “preprinted” look for each application. VGL programs control all graphics functions, dramatically reducing host computer programming and processing time. Graphics capabilities include boxes, vertical and horizontal, solid and dashed lines with a variety of thickness, logos, and special alphanumeric print features.

Variable Barcodes allow the barcode for your application to print with standard or user-defined ratios in vertical or horizontal orientations. Available barcodes are Codabar, Code 39, Code 93, Code 128 with Subsets A, B, and C, and Code EAN/UCC 128, EAN 8, EAN 13, Interleaved 2 of 5, MSI, UPC-A, UPC-E, POSTNET, PostBar, Royal Mail, and UPC Shipping. POSTNET is available only in the horizontal direction. A dark print mode is included for darker, high-contrast barcodes. The IBARC barcode command prints barcodes in four orientations: horizontal, rotated 90, rotated 180, or rotated 270 degrees.

Expanded and Compressed Print draws attention where needed. Alphanumeric height and width are controlled independently for a tremendous range of character sizes up to 9.9 inches wide and tall. Several compressed print sizes are available: 12, 13.33, 15, 17.65, and 20 (dpi), permitting up to 170 columns in an 8.5 inch printed area (20 dpi).

Rotated Alphanumerics permit new concepts in form design. Normal, expanded, and compressed character strings can be rotated 90 degrees clockwise, counterclockwise, or printed upside down.

Logos are easily created using alphanumeric commands and a variety of print and shading features, which provides a “customized” appearance for forms, reports, and labels. The registered trademark, copyright, TUV[®], GS-Mark, UL[®], and CSA[®] symbols are provided as standard designs on the VGL, and you can also define custom symbols.

Reverse and Shaded Print permit highlighting and contrasting by printing white characters on a dark background or white characters on a gray, shaded background. Various levels or patterns of gray shading and reverse printing may combine with the many other print features to create distinctive designs.

Automatic Increment/Decrement Capability allows batch form processing. Individual alphabetic, numeric, and barcode data fields can be identified and automatically incremented or decremented by any amount, beginning from a specified reference point.

Standard Character Sets provide you with many different character sets. Based on the Multinational Character Set, you can create your own character sets using characters defined and stored in flash memory.

Configuring the Emulation with the Control Panel

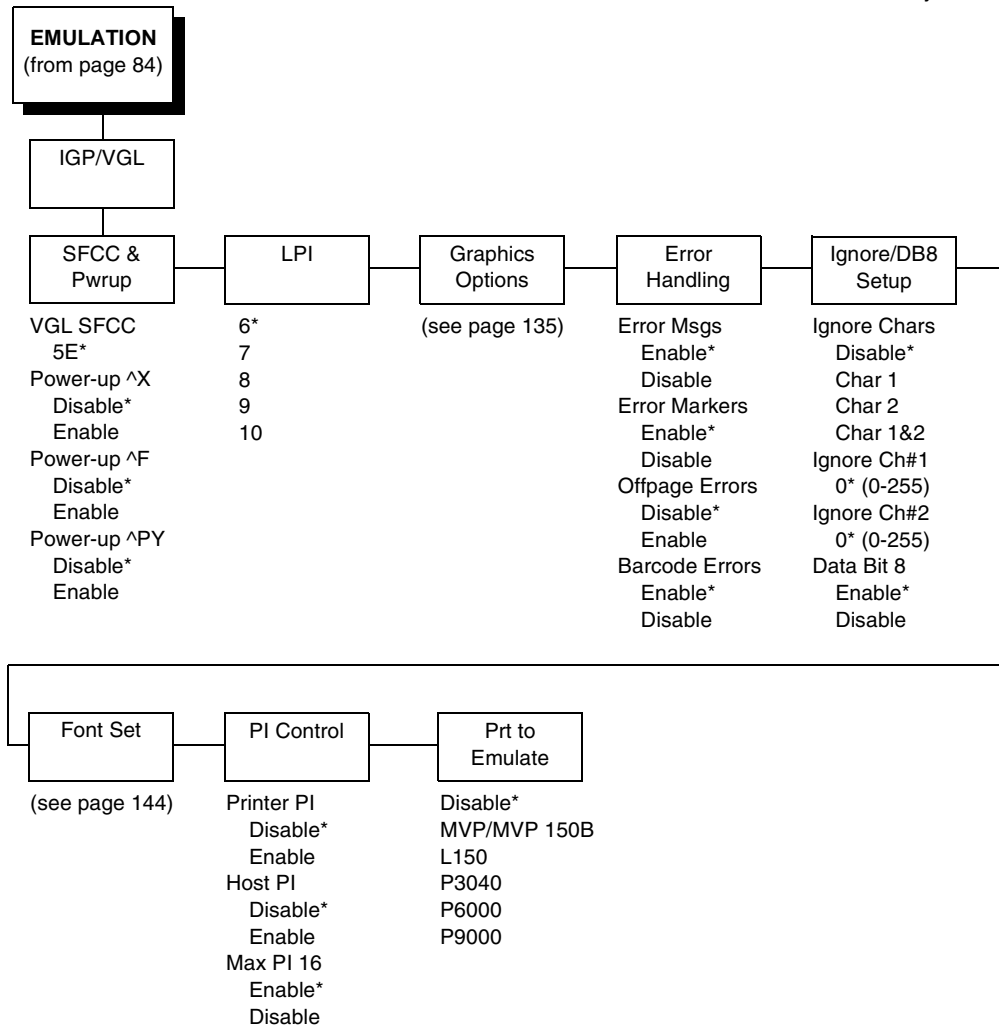
You can select VGL default parameters directly from the control panel or by control codes as explained in the *IGP/VGL Programmer's Reference Manual*. The VGL parameters are described on the following pages. Parameters marked with an asterisk (*) indicate the default value. The printer must be offline to enter the configuration structure.

IMPORTANT BEFORE you reconfigure the IGP/VGL, print a configuration sheet to see all of the current settings.

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

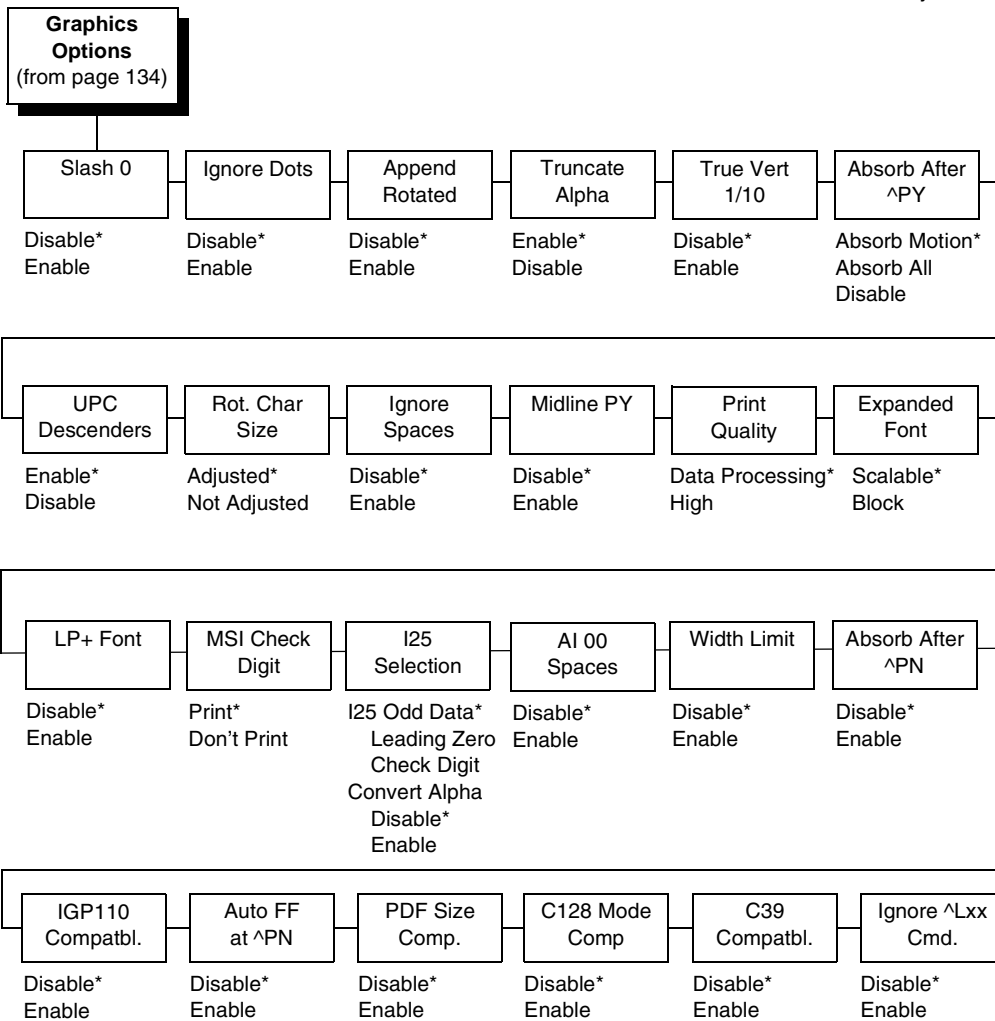
IGP/VGL Submenu

* = Factory Default



IGP/VGL Graphics Options Submenu

* = Factory Default



SFCC & Pwrap

This option has several sub-options which define the SFCC and power-up configuration used with VGL.

VGL SFCC

This option selects the Special Function Control Code. The default value 5E. Run a configuration printout to determine the currently selected VGL SFCC.

Power Up ^X

- **Disable** (default).
- **Enable**. Selects the ignore mode as the power-up default and selects the graphics mode ^PY as the power-up default. All characters are ignored until a ^A command is received.

Power Up ^F

- **Disable** (default).
- **Enable**. Selects free format mode as the power-up default and selects the graphics mode ^PY as the power-up default. Free format causes the VGL to ignore carriage returns, line feeds, and all characters below hex 20 sent from the host.

Power Up ^PY

- **Disable** (default).
- **Enable**. Selects the graphics mode ^PY as the power-up default.

LPI

The number of lines to be printed per inch. For example, at 6 lpi there is 1/6 inch from the top of one print line to the top of the next print line.

Graphics Options

The following are several options which configure printing output.

Slash 0

This parameter allows you to print the numeral "0" with or without the slash. This option applies to all character sets except OCR-A and OCR-B.

- **Disable** (default). Zero is printed without a slash.
- **Enable**. Zero is printed with a slash.

Ignore Dots

- **Disable** (default).
- **Enable**. Causes the VGL to expect position values to be specified in only 1/10ths of an inch. If the dot position is also given, it is treated as text.

Append Rotated

- **Disable** (default). Logos and alphanumeric strings are treated as separate elements.
- **Enable**. Appends logos to an alphanumeric string rotated in a clockwise, counterclockwise, or inverted orientation.

Truncate Alpha

When enabled, this parameter prevents the printing of Error 48 (Element Off Page Error) if alphanumeric data, including spaces, extends beyond the right side of the form. The options include:

- **Enable** (default)
- **Disable**

True Vert 1/10

- **Disable** (default). A vertical 1/10 of an inch parameter is used as 7/72 of an inch. The absolute move is slightly smaller than expected. For example, a one-inch move would be 70/72 of an inch. Vertical moves that have the same value are identical in length.
- **Enable**. A vertical 1/10 inch parameter is used as 1/10 inch. Rounding occurs to the nearest 1/72 inch. This can cause vertical moves that have the same value to differ by $\pm 1/72$ inch.

Absorb After ^PY

- **Absorb Motion** (default). The first paper motion following a ^PY command is ignored.
- **Absorb All**. The system ignores all the data and terminator until a host generated motion terminator is detected.
- **Disable**. System terminators following a graphics command are sent to the printer and result in paper motion.

UPC Descenders

- **Enable** (default). UPC/EAN barcodes are printed with descenders, even if there is no human readable data.
- **Disable**. UPC/EAN barcodes are printed without descenders if there is no human readable data.

Rot. Char Size

- **Adjusted** (default). Rotated (clockwise/counterclockwise), expanded characters have a different size than an unrotated character with the same size parameters.
- **Not Adjusted**. Rotated, expanded characters are the same size as unrotated characters with the same size parameters.

Ignore Spaces

- **Disable** (default). Trailing spaces are not deleted from the last alphanumeric element in a graphics pass.
- **Enable**. Trailing spaces are deleted from the last alphanumeric element in a graphics pass.

Midline PY (includes ^PN)

- **Disable** (default). The Graphics mode Enable command, ^PY, must be the first three characters of a line.
- **Enable**. The ^PY or ^PN can occur anywhere in a line.

Print Quality

- **Data Processing** (default). ALPHA text and barcodes are printed in normal mode at 60 x 72 dpi. This mode should be set if the highest speed is desired.
- **High**. ALPHA text and barcodes are printed in dark mode at 120 x 72 dpi.

Expanded Font

- **Scalable** (default). These expanded characters have rounded edges.
- **Block**. These are block characters compatible with IGP-X10 printers.

LP+ Font

- **Disable** (default). The IGP/VGL uses its default half-dot font, which is slightly different from the standard bitmap font used by LP+ at 12, 13, 15 and 17 cpi.
- **Enable**. The IGP/VGL uses the same font as used by LP+ at all cpi.

MSI Check Digit

- **Print** (default). The check digit is appended at the end of the printable data field for MSI barcodes.
- **Don't Print**. The check digit for MSI barcodes does not print.

I25 Selection

- **I25 Odd Data** (default). When an odd number of data is provided, the default setting, Leading Zero, will add a zero to the beginning of the bar code data. The setting, Check Digit, will add a check digit to the end of the bar code data so that the results add up to an even number of data.
- **Convert Alpha**. Disable is the default. When enabled, each non-digit I25 bar code character will convert to "0."

NOTE: If you use an Interleaved 2/5 barcode that automatically adds the check digit (type code k or l, IBARC type code INT2/5CD or INT2/5CDA), the check digit is added regardless of how this parameter is set.

AI 00 Spaces

This option is designated for EAN/UCC-128 barcodes whose application identifier (AI) is 00.

- **Disable** (default). The printable data field is printed with the AI enclosed in parentheses. This is the standard EAN/UCC-128 format.
- **Enable**. The printable data field is printed with the UCC fields separated by spaces. This option is IGP-X00 compatible.

Width Limit

- **Disable** (default).
- **Enable**. The system will limit the length and width for expanded characters to a limit shown in Table 5, which displays the maximum width allowed for a specific height in the range of 00 through 40 (0.0 through 4.0 inches).

Table 5. Width Limit Table

Height Param.	Max. Width Allowed	Height Param.	Max. Width Allowed
00	99	21	51
01	99	22	53
02	3	23	56
03	6	24	58
04	8	25	61
05	11	26	63
06	13	27	66
07	16	28	68
08	18	29	71
09	21	30	73
10	23	31	76
11	26	32	78
12	28	33	81
13	31	34	83
14	33	35	86
15	36	36	88
16	38	37	91
17	41	38	93
18	43	39	96
19	46	40	98
20	48		

Absorb After ^PN

- **Disable** (default). All line terminators that follow the ^PN command are sent to the printer and processed.
- **Enable**. The first motion line terminator that follows the ^PN command is ignored.

IGP110 Compatbl.

This option instructs the VGL to behave similarly to the IGP-10 with respect to certain commands. All new users with new applications should select the “Disable” option. Selecting this mode insures the printer will behave as described in this manual.

- **Disable** (default). The IGP does not emulate the IGP-10 mode.
- **Enable**. The IGP emulates the IGP-10 version.

Auto FF at ^PN

- **Disable** (default). A form feed will not be generated automatically when the ^PN command is encountered.
- **Enable**. A form feed will be generated automatically to slew to the top of the next form when the ^PN command is encountered and when the current vertical position is not at top of form.

PDF Size Comp.

This option is for compatability of the font size of the barcode printable data field on the old build.

- **Disable** (default). Uses the normal font size.
- **Enable**. Matches the font size of the old build.

C128 Mode Comp

The menu is for compatibility of the old build in auto mode switch.

- **Disable** (default). Uses auto mode switch.
- **Enable**. Matches the old build on the auto mode switch.

C39 Compatbl.

This menu makes the old method of decoding C39 alternative character set compatible with the new.

- **Disable** (disable). Uses the current way of decoding.
- **Enable**. Matches the old method of decoding.

Ignore ^Lxx Cmd.

- **Disable** (default).
- **Enable**. The ^Lxx command will always be ignored.

Error Handling

Following are several options which define how errors are reported.

Error Msgs

- **Enable** (default). Command syntax is checked and error messages printed when command parameters are incorrect.
- **Disable**. Error checking and error messages are suppressed.

Error Markers

- **Enable** (default). Prints the following error markers for those elements that print beyond the page boundaries:
 - >> for elements that begin off the right side of the page;
 - << for elements that begin at the indicated position but end off the page;
 - ◆ for elements where the starting position of the command contains an error other than an off-page error.

Offpage Errors

- **Disable** (default). Does not report errors for elements that start or end beyond the right edge of the page.
- **Enable**. Reports errors for elements that start or end beyond the right edge of the page.

Barcode Errors

- **Enable** (default). An error message will print when invalid barcode data is encountered.
- **Disable**. VGL will not print an error for illegal barcode data; the barcode will be skipped.

NOTE: When the Barcode Errors option is disabled, the VGL emulation will try to make the best use of invalid data by either truncating extra digits or adding zeros to the end of barcode data to meet minimum data length requirements for some barcodes. Not all errors will be corrected.

Ignore / DB8 Setup

Following are several options which define character filtering and Data Bit 8.

Ignore Chars

- **Disable** (default). Character filtering is not enabled.
- **Char 1**. Character 1 will be filtered. Select the option "Ignore CH#1" to specify character 1.
- **Char 2**. Character 2 will be filtered. Select the option "Ignore CH#2" to specify character 2.
- **Char 1 & 2**. Characters 1 & 2 will be filtered. Select the options "Ignore CH#1" and "Ignore CH#2" to specify values for these characters.

Ignore CH#1

Specifies character 1 for the character filtering option. Valid decimal values are from 0 through 255.

Ignore CH#2

Specifies character 2 for the character filtering option. Valid decimal values are from 0 through 255.

Data Bit 8

- **Enable** (default). The PI line is not passed directly from host to printer; all 8 bits are used for data bits, and characters in the hex 80-FF range can be accessed.
- **Disable**. When the host PI line is enabled, Data Bit 8 internally indicates PI line status. To use the PI line, disable Data Bit 8, and enable the Host PI configuration option (under the PI Control option, below).

NOTE: Data Bit 8 is interpreted as either Data Bit 8 or PI signal, but never both. When enabled as Data Bit 8, Data Bit 8 has priority over the PI signal, and all data above hex 7F is used to access character data and not to interpret PI line data.

Conversely, when Data Bit 8 is disabled and the PI signal is used, Data Bit 8 of the data is reserved for use as the PI function, and you cannot access characters in the hex 80-FF range. Therefore, to access characters in the hex 80-FF range, Data Bit 8 must be enabled.

Font Set

The Font Set specifies which language is currently selected for use with the VGL. Refer to “IGP/VGL Font Set Menu” on page 144 for available selections.

PI Control

Printer PI

- **Disable** (default). The ASCII emulation is configured with the PI line disabled.
- **Enable**. The ASCII emulation is configured with the PI line enabled.

Host PI

- **Disable** (default). The host does not send PI signals.
- **Enable**. The host sends PI signals. The Data Bit 8 configuration option must be disabled to transmit the PI line to the printer.

Max PI 16

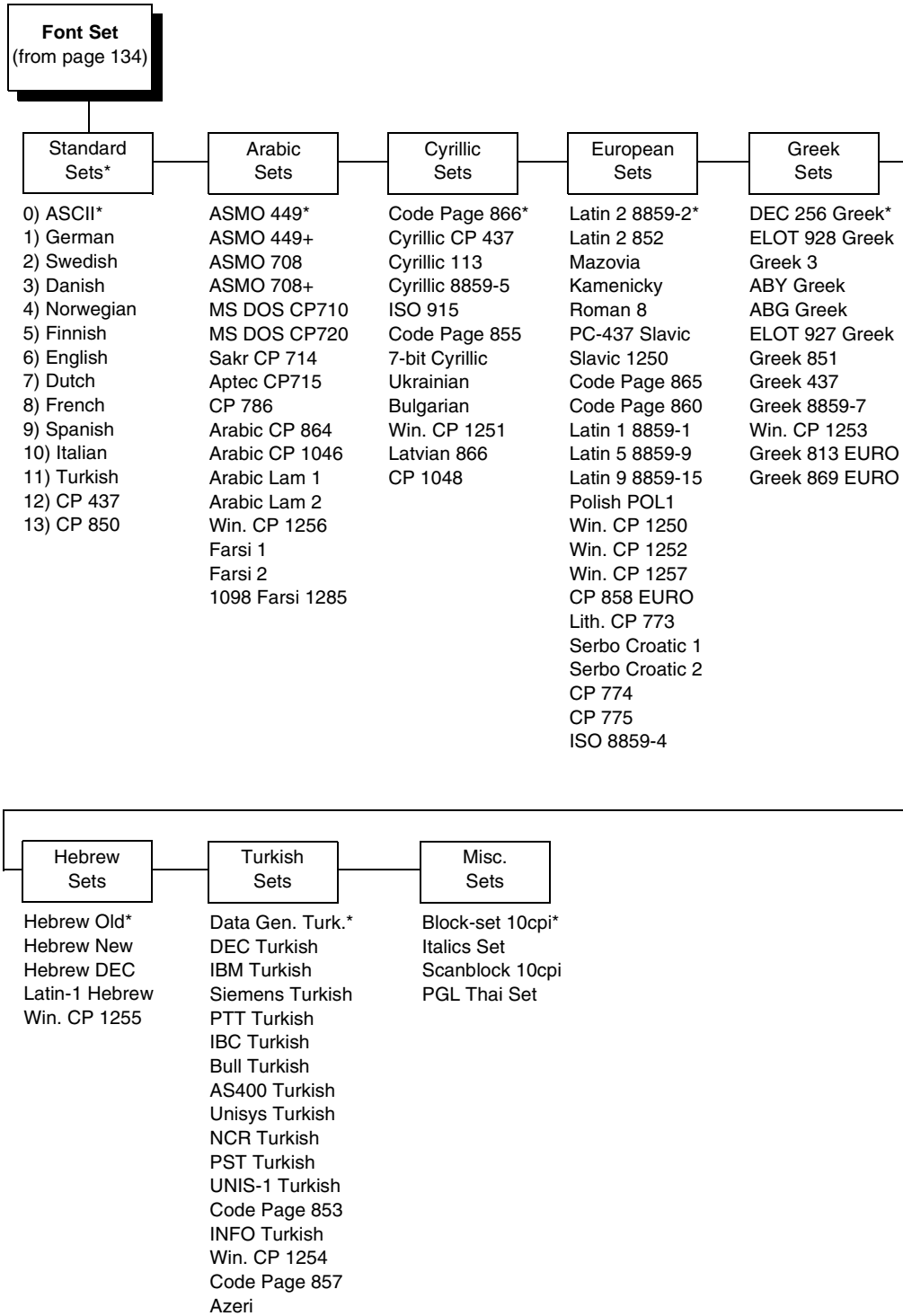
- **Enable** (default). A paper slew of 0-15 will move 1-16 lines.
- **Disable**. A paper slew of 1-15 will move 1-15 lines. A paper slew of 0 will always move 1 line.

Prt To Emulate

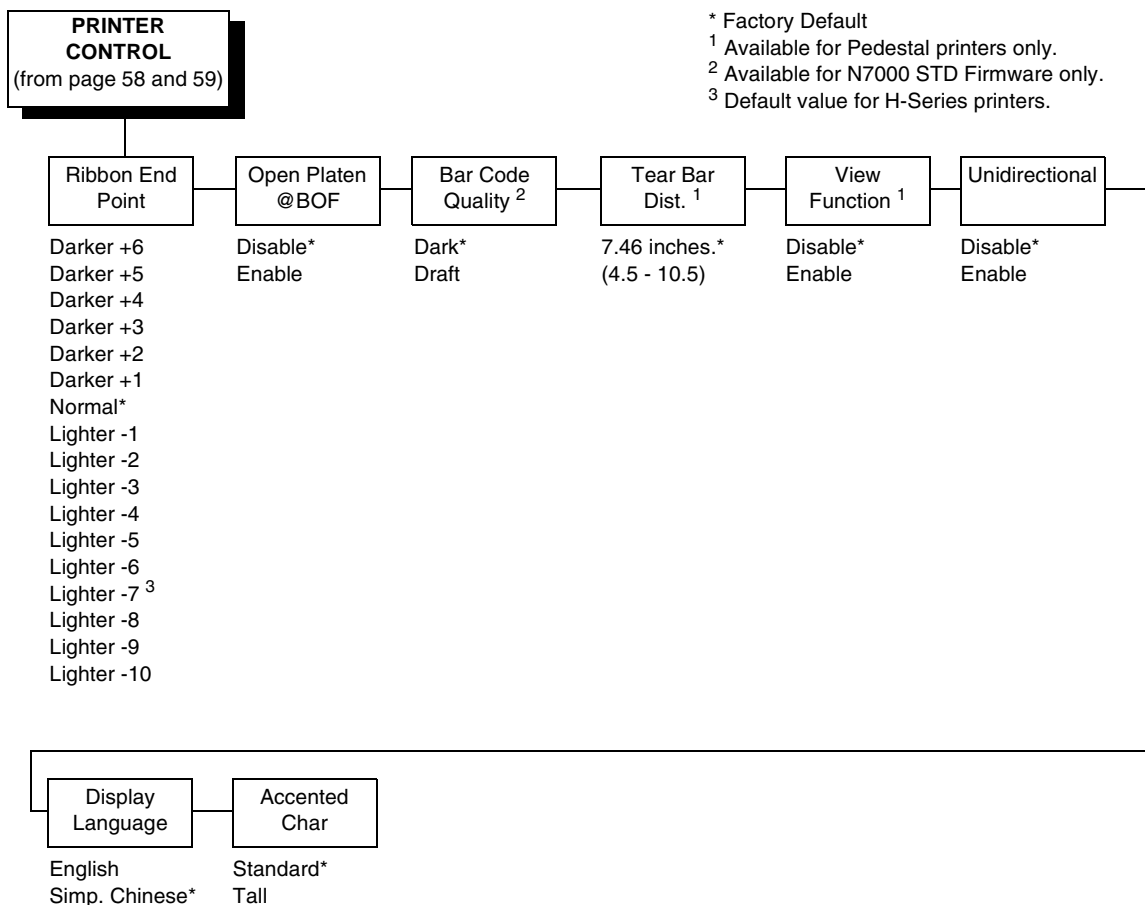
This option allows you to select an earlier model printer/IGP board combination to emulate. When a printer emulation is selected, the scaling command causes the printer to generate a graphic image in the same density as the printer emulation chosen. Five types of printers can be emulated: MVP or MVP 150B, L150, P3040, P6000, and P9000. Once a printer emulation is selected, it remains active until the printer is turned off or another printer emulation is selected. All new users with new applications should select the "Disable" option, which insures the printer behaves as described in this manual. The other compatibility modes are required to emulate the behaviors of older printers which may be inconsistent with the documented VGL functionality. Proper use of this feature requires the printer to be equipped with high resolution hammer bank tips (12 mil).

IGP/VGL Font Set Menu

* = Factory Default



PRINTER CONTROL



Ribbon End Point

This parameter adjusts the point at which the system will declare the ribbon as being expended. The life count will always be from 100% to 0%, but if a darker setting is selected 0% will be reached more quickly. If a lighter setting is selected, the system will extend the time it takes to reach 0%. The range of values are as follows:

- **Normal** (default)
- **Darker +1 through Darker +6**
- **Lighter -1 through Lighter -10**

NOTE: This value can be adjusted at any time and the display will automatically adjust to show the correct percentage relative to the new end point.

Open Platen @ BOF (Bottom of Form)

Some special forms have perforation areas that are too thick to pass through the print station. This parameter, when enabled, opens and closes the platen when the perforations move across the platen. When enabling this parameter, you must set the forms length to match the physical distance between perforations.

Bar Code Quality

Determines the bar code resolution for all emulations.

- **Dark** (default). Bar code resolution is set at 120 x 72.
- **Draft**. Bar code resolution is set at 60 x 72.

Tear Bar Dist. (Distance)

Allows fine and course adjustment of the tear bar position. For a pedestal model printer using the top paper exit, the default (7.46 inches) is used. You can specify 4.5 to 10.5 inches in .01 inch increments to accommodate variations in cover and form design.

View Function

- **Disable** (default). Disables the View Function which allows you to press the VIEW/EJECT key to move the last data printed to the tractor area for viewing.
- **Enable**. Enables the View Function.

NOTE: Default setting is Enable for Indian language printers.

Unidirectional

The Unidirectional feature affects both print quality and printing speed. By setting this feature, you can configure the printer to print in both directions of the shuttle sweep (bidirectional), or to print in one direction only (unidirectional).

- **Disable** (default). The printer will print all data in both directions of the shuttle sweep (bidirectional printing). This choice produces higher printing speed.
- **Enable**. The printer will print all data in only one direction of the shuttle sweep (unidirectional printing). Although enabling this feature reduces print speed, it enhances the vertical alignment of dots and produces cleaner, sharper barcodes and text.

Display Language

This parameter chooses the language that will appear on the LCD: English or Simplified Chinese. The factory default is Simp. Chinese.

Accented Char

Selects whether the accented characters are standard or tall. See Figure 22 for an example. Selecting tall will slow print speed and may cause the printer to back up during printing.

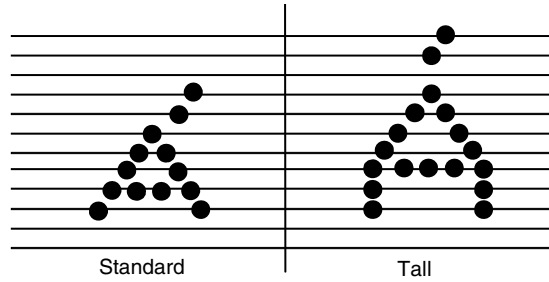
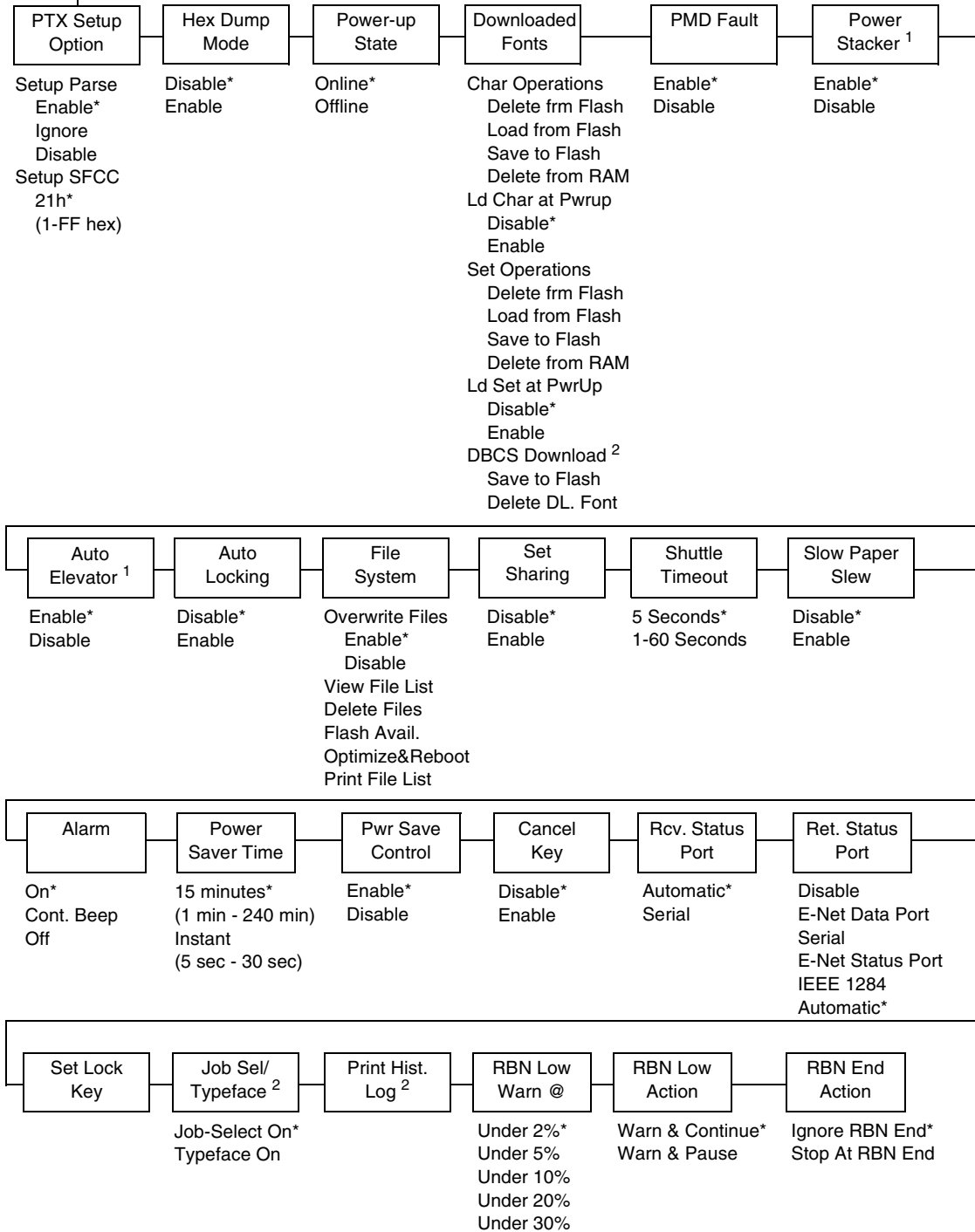


Figure 22. Accented Characters

ADVANCED USER

ADVANCED USER
(from page 58 and 59)

* = Factory Default
 1 If installed.
 2 Available for N7000 H-Series Firmware only.



PTX Setup Option

Selects the Special Function Control Code for the PTX_SETUP command and functions.

- **Setup Parse.** Disables or enables the PTX_SETUP command.
- **Setup SFCC.** Allows you to choose the hex value of the ASCII character you wish to use as the SFCC for the PTX_SETUP command. Valid hex values are 01-FF. The default value is hex 21, which corresponds to the “!” character.

Hex Dump Mode

A hex code printout (or hex dump) translates all incoming data to hexadecimal equivalents. A hex dump lists each ASCII data character received from the host computer, together with its corresponding two-digit hexadecimal code. Hex dumps can be used to troubleshoot some types of printer data reception problems. The options include:

- **Disable** (default)
- **Enable**

Figure 26 on page 177 shows a hex dump sample.

Power-Up State

- **Online** (default). The printer powers up in the online state.
- **Offline.** The printer powers up in the offline state.

Downloaded Fonts

Allows you to download a substitution table to replace any character in the current character set with a different character in the same font.

- **Char Operations.** Allows you to delete a character from flash, load a character from flash, save a character to flash, and delete a character from RAM.
- **Ld Char at Pwrup.** Allows you to disable or enable loading a character at power up.
- **Set Operations.** Allows you to delete a character set from flash, load a character set from flash, save a character set to flash, and delete a character set from RAM.
- **Ld Set at PwrUp.** Allows you to disable or enable loading a character set at power up.

PMD (Paper Motion Detection) Fault

- **Enable** (default). In the event of a paper jam, an audible alarm beeps, “CLEAR PAPER JAM” appears on the message display, and the printer stops printing.
- **Disable**. You should disable PMD only if special paper requires it.

CAUTION

Once PMD is disabled, paper motion is not monitored. If a paper jam occurs, the printer ignores the condition and continues to print, possibly causing damage to the printer.

Power Stacker

This parameter allows you to enable or disable the power paper stacker (provided this option is installed).

Auto Elevator

This parameter exists only on printers with the power paper stacker installed. The power stacker has a sensor which detects paper movement and raises the stacker as the printed paper stack grows. If the printer has been printing for three minutes continually and the sensor has not detected any growth in the paper stack, the stacker raises itself 1/4 inch automatically.

- **Enable** (default). The automatic elevator on the power stacker operates normally.
- **Disable**. The stacker does not raise automatically every three minutes and is entirely dependent on the sensor. Disable is used with extremely high-quality print jobs that take a long time to print.

Auto Locking

- **Disable** (default). The ENTER key must be locked manually.
- **Enable**. The printer automatically locks the ENTER key five minutes after the last front panel key press.

File System

- **Overwrite Files**. Allows you to prevent files from being overwritten by disabling the overwrite function.
- **View File List**. Displays the list of files in the file system. Pressing the DOWN key displays the file size.
- **Delete Files**. Displays the list of files in the file system. Pressing the ENTER key deletes the file displayed on the front panel.
- **Flash Avail**. The amount of flash available for the user to save or download files into flash.
- **Optimize&Reboot**. Reclaims flash space from deleted flash files. After pressing ENTER, wait for the printer to reboot.

NOTE: When the Optimize&Reboot option is executed, the message, “Optimizing Flash Files” does not display before printer rebooting takes place.

- **Print File List.** Prints a summary of the files stored in flash memory and several statistics on File System usage.

IMPORTANT

Do not turn the printer off until it has completely rebooted and is either back online or offline.

Set Sharing

This option allows character sets to be shared between the active LP+ protocol and the active IGP emulation.

Changing characters sets in LP+ causes the active IGP to change to the same character set if the selected set exists in IGP. If the active IGP has no access to the selected set, no changes are made. Selecting a new character set in the active IGP causes the LP+ to change to the same character set if the selected character set exists in the active LP+ protocol. Not all sets are shared between emulations in the Standard group of character sets. As a result, selecting a set in the Standard group of LP+ or IGP emulation may or may not cause the other emulation to have the same set.

NOTE: The Set Sharing front panel option has no effect on the LP+ builds. The option only applies to the builds with IGP.

Shuttle Timeout

The amount of time the shuttle continues moving after no data is received. If your host is slow, setting the number to a higher value will prevent the printer from spending time shuttling up and down between data bursts.

Slow Paper Slew

- **Disable** (default). The paper will slew and stack paper at maximum speed.
- **Enable.** Causes the paper to stack at a slower rate. This ensures that certain forms will stack neatly.

Alarm

- **On** (default). An audible alarm sounds (3 beeps) when a fault occurs, such as a paper jam.
- **Cont. Beep.** A continuous audible alarm sounds when a fault occurs, which can be stopped by pressing CLEAR.
- **Off.** No audible alarm will sound.

Power Saver Time

The time interval you specify for this parameter sets the amount of idle time before the printer goes into Power Saver mode. When Instant is chosen, the printer goes into Power Saver mode as soon as it is able to stop the shuttle properly. The time allotted to perform this function depends upon the shuttle timeout value which can be set in the menu.

NOTE: Power Saver Mode will not be shown on the control panel even though the function still exists. Sending a print job to the printer will turn off Power Saver mode.

Pwr Save Control

Allows you to enable or disable the Power Save (Energy Star) mode.

- **Enable** (default). Allows you to enable the Power Save (Energy Star) mode.
- **Disable**. Allows you to disable the Power Save (Energy Star) mode.

Cancel Key

- **Disable** (default)
- **Enable**. The CANCEL key may be used to clear all data in the print buffer without printing any of the data.

Rcv. Status Port

This option defines the interface being used to receive the emulation status command.

- **Automatic** (default). When selected, the status command is sent to the printer with the print data through the active host interface.
- **Serial**. When selected, the status command is sent to the printer through the serial interface regardless of the active host interface.

Ret. Status Port

This option selects the port for the Return Status Commands (i.e., ~STATUS (PGL) and ~HS (ZGL)) to send the status data back to the Host.

The options are Automatic (factory default), Serial, E-NET Stat Port, IEEE 1284, Disable, and E-NET Data Port.

Set Lock Key

Normally, to lock or unlock the printer menu, the UP and DOWN keys are pressed at the same time. The Set Lock Key parameter lets you choose different keys to lock or unlock the printer menu. You may choose almost any group of keys as the new lock and unlock keys. You cannot use the ENTER key or any key combinations which are already used for another function. There is no limit to how many keys you can select.

To set the new lock key, follow these steps:

1. Work your way through the configuration menu until the display reads "Set Lock Key" (follow the menu structure on page 148).
2. Press ENTER. The display reads, "Select a new lock key."
3. Press the combination of keys you want to be the new lock key. Make sure you press all keys selected at the same time.
4. If the selection is valid, the display will read, "Enter the new lock key again." If the selection is invalid, the display will read, "Invalid key selection." Return to step 2 and start over.
5. Press the same combination of keys a second time. If the new lock key combination is entered again correctly, the display will read, "Lock key has been changed." If it was entered incorrectly, the display will read "Verification failed." Start over at step 2.
6. After entering the new lock combination successfully, press the ON LINE key to put the printer back online.

NOTE: The new lock combination will remain even if the printer is powered off and back on.

Job Sel/Typeface On

Allows you to customize this key to either function as Job Select or Typeface Select.

- **Job-Select On** (default). In offline mode, JOB SELECT allows you to change the active configuration without having to navigate the configuration menu. When pressed, the display reads "Load Config" with the name or number of the currently loaded configuration. Press JOB SELECT again until the configuration you want to load displays. Press ENTER and "Loading Saved Configuration" displays. The selected configuration is loaded into memory and becomes the active configuration. Press ON LINE to return to online mode.
- **Typeface On**. Sets the typeface of the printer. This key requires confirmation with the ENTER key.

Print Hist. Log

Prints the "Font File Log Report" if a custom font is downloaded.

RBN Low Warn @

This option allows the user to select the Ribbon Life value at which point the printer will declare a ribbon low condition and display the "RIBBON UNDER XX% / Change RBN Soon" warning message. The default is Under 2%. See "RBN Low Action" below for details of how the printer behaves once a ribbon low condition is reached.

The values are Under 2% (default), Under 5%, Under 10%, Under 20%, and Under 30%.

RBN Low Action

This menu determines how the printer behaves once a ribbon low condition is reached.

- **Warn & Continue** (default). Once a ribbon low condition is reached the printer beeps and displays the "RIBBON UNDER XX% / Change RBN Soon" warning message. Printing will continue without interruption. The warning message can be cleared by pressing the ONLINE/Clear button, however the message will persist again in two minutes. This action will continue until a ribbon out (ribbon life reaches 0%) condition occurs.
- **Warn & Pause**. This setting is similar to the Warn & Continue selection with one exception. When a ribbon low condition is reached the printer will still display the "RIBBON UNDER XX%/Change RBN Soon" warning message, however the printer will stop printing. This is meant to get the user's attention. To resume printing the user must press the ONLINE/Clear key.

NOTE: Printing will only stop on the first occurrence of a ribbon low condition. Once the user clears the warning message, subsequent warnings will display the warning message but printing will continue.

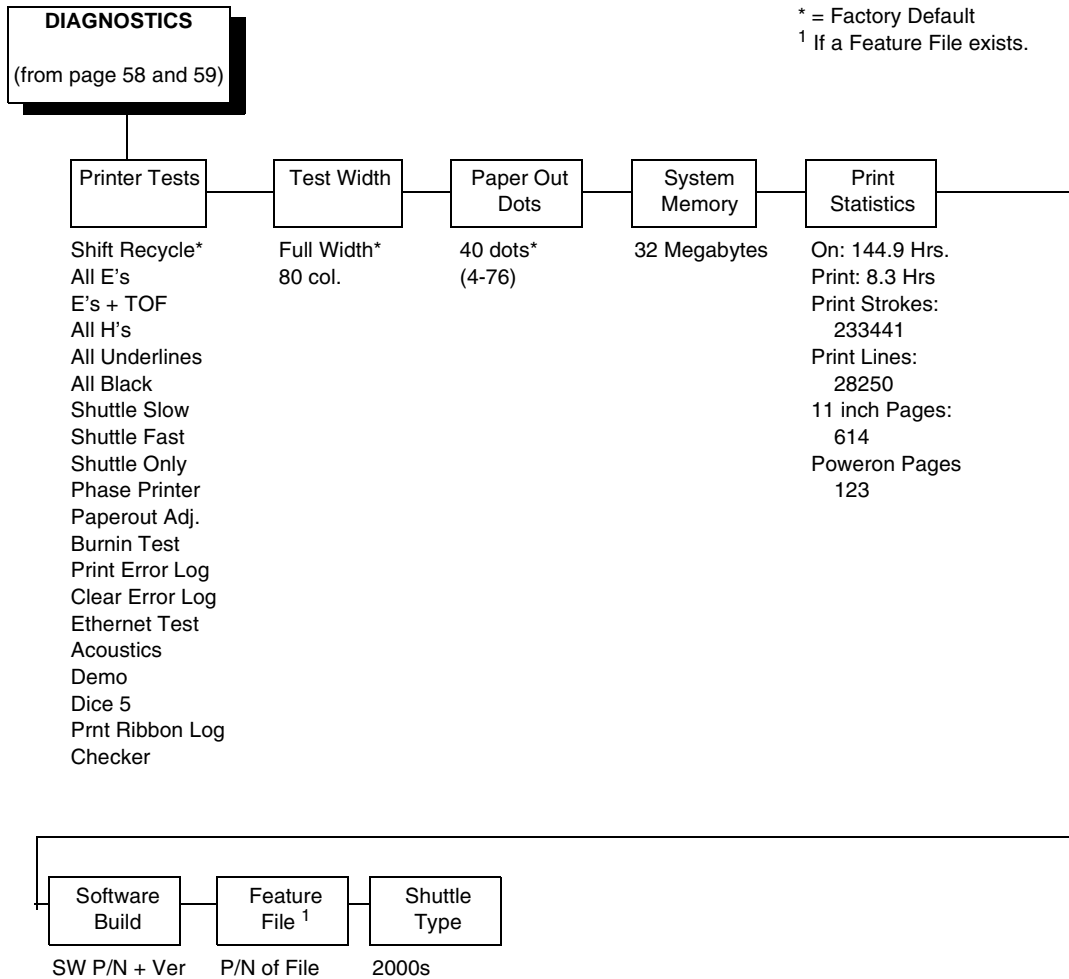
RBN End Action

This menu allows the user to override the normal ribbon low warning and ribbon out conditions.

- **Stop At RBN End** (default). When this factory default option is selected the printer displays a warning message when a ribbon low condition is reached and displays a ribbon out fault when ribbon life reaches 0%.
- **Ignore RBN End**. When this menu option is selected it overrides the ribbon low and ribbon out conditions, i.e. no warning or fault messages is displayed and printing continues even after ribbon life reaches 0%. However, once the ribbon life reaches an excess wear condition as indicated by the fault message "EXCESS RBN WEAR / Install New RBN", printing will stop and the user must install a new ribbon before printing can resume.

NOTE: The excess ribbon wear is set to print for longer than the "Lighter -10" Ribbon End Point setting.

DIAGNOSTICS



Printer Tests

These tests are used to check the print quality and operation of the printer.

NOTE: Your authorized service representative will typically run the tests. They are described in more detail in the *Maintenance Manual*.

- **Shift Recycle.** A sliding alphanumeric pattern which identifies missing or malformed characters, improper vertical alignment, or vertical compression.
- **All E's.** A pattern of all uppercase E's which identifies missing characters, misplaced dots, smeared characters, improper phasing problems, or light/dark character variations.
- **E's + TOF.** A pattern of all E's followed by a form feed to the next page top-of-form, which identifies paper motion or feeding problems.

- **All H's.** A pattern of all uppercase H's used to detect missing characters, misplaced dots, smeared characters, or improper phasing.
- **All Underlines.** An underline pattern useful for identifying hammer bank misalignment.
- **All Black.** A condition where all dot positions are printed, creating a solid black band.
- **Shuttle Slow.** Verifies proper operation by exercising shuttle and ribbon motion at low speed.
- **Shuttle Fast.** Verifies proper operation by exercising shuttle and ribbon motion at fast speed.
- **Shuttle Only.** Exercises only the shuttle at fast speed.
- **Phase Printer.** Checks for wavy print. The initial phase value is set in the factory. Run the test and check the quality. (The phase value prints on the left margin.) If the print looks too wavy, change the Phase Value parameter while the test is running. While the phase printer test runs, press the DOWN key. To change the value, press the PREV or NEXT key until the desired value displays and then press ENTER.
- **Paperout Adj..** Verifies the current Paper Out Dots setting, which determines where the last line of text will print when there is a paper out condition. Setting this parameter correctly prevents printing on the platen.
- **Burnin Test.** Reserved for factory use.
- **Print Error Log.** Prints the current log of errors. Most non-routine faults (ribbon stall, voltage faults) are stored in the error log.
- **Clear Error Log.** Clears entries in the error log.
- **Ethernet Test.** Prints the Ethernet statistics stored on the Ethernet.
- **Acoustics.** A particular test pattern that is used to measure acoustics.
- **Demo.** Demonstration of various print attributes.
- **Dice 5.** Pattern used to measure print density.
- **Prnt Ribbon Log.** Prints log of cartridge installed in the printer.
- **Checker.** For factory use. This pattern helps identify marginal printhead elements, quality of edge sharpness, and uneven print quality.

Test Width

Set this parameter to run the self-tests at full width or 80 columns.

Paper Out Dots

CAUTION Only authorized service representatives should set this parameter.

This parameter is used to adjust the paper out distance from the perforation; you can specify where the last line on the page will print when there is a paper out condition. Setting this parameter correctly prevents printing on the platen.

System Memory

Displays the amount of RAM installed.

Print Statistics

You can view various printer statistics and refer to them for preventive maintenance purposes. Printer statistics accumulate continuously; they do not reset when you turn off the printer. All of the printer statistics are set to zero at the factory after burn-in testing.

- **On.** The cumulative time in hours the printer has been powered on. The range is 0 to 30,000 hours.
- **Print.** The cumulative time in hours the printer has actually been printing. The range is 0 to 30,000 hours.
- **Print Strokes.** The cumulative number of back-and-forth shuttle strokes the printer has printed during normal printer operation. The range is 0 to 2,147,483,647 shuttle strokes.
- **Print Lines.** The cumulative number of lines the printer has printed. The range is 0 to 2,147,483,647 print lines.
- **11 inch Pages.** The cumulative number of pages the printer has printed. The range in print pages is 0 to 2,147,483,647 total inches of paper movement divided by 11.
- **Poweron Pages.** The number of pages printed since power up.

Software Build

Displays the part number and version of the printer firmware.

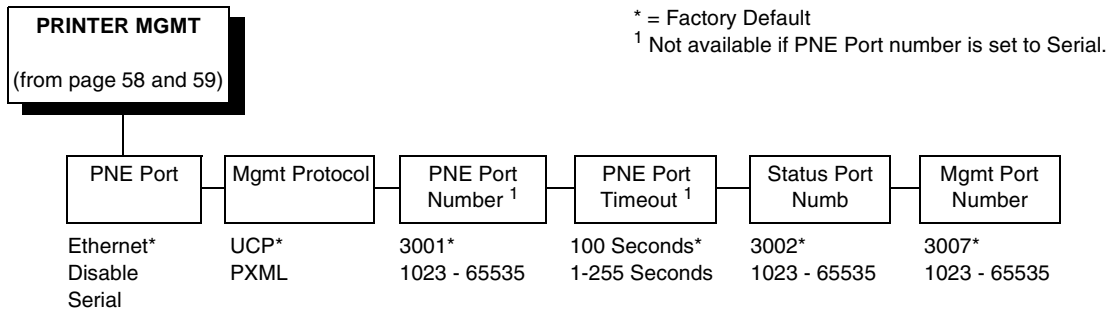
Feature File

Displays the part number of the file if one has been downloaded to the printer.

Shuttle Type

Displays the type of shuttle installed, i.e. 2000s, 1500, 1000, 500, 300H, 600H, or 800H.

PRINTER MGMT



PNE Port

This menu selects which port the printer expects PNE to connect to, via Ethernet or Serial. The factory default is Ethernet.

Mgmt Protocol

Since PXML and UCP management protocols share the same Ethernet Port, only one can be active at a time. This menu selects the active Management Protocol Interface, either PXML or UCP. The factory default is UCP.

PNE Port Number

This menu selects the port number the printer expects the PNE to connect through. The factory default is 3001 and the range is from 1023 to 65535.

PNE Port Timeout

If the PNE has not communicated to the printer within a timeout period, the PNE session closes. The factory default is 100 seconds. The range is from 1 to 255 seconds.

Status Port Numb

This menu selects the port number the printer sends the emulation status. The factory default is 3001 and the range is from 1023 to 65535.

Mgmt Port Number

This menu selects the port number the printer expects the PXML or UCP to connect through. The factory default is 3007 and the range is from 1023 to 65535.

5

Interfaces

Overview

This chapter describes the host interfaces provided with the printer. The printer interface is the point where the data line from the host computer plugs into the printer. The interface processes all communications signals and data to and from the host computer. Plus, with the Auto Switching feature, you can configure the printer to accept several interfaces at the same time (see “Auto Switching Submenu” on page 67).

IMPORTANT

To comply with Electromagnetic Compatibility (EMC) regulatory requirements all electrical signal interface cables connected to this printer must be of a minimal quality level, be of the correct length, and be properly installed.

The RS-232 port and parallel port interface cables must meet the following specifications:

- **The cable design must be double shielded with a copper braid over an aluminum mylar foil and not just a conductive foil spiral wrapped around a drain wire.**
- **The shield must terminate coaxially (360 degrees) to a metal connector housing and not be terminated by just a simple wire lead.**
- **The cable length, including connectors, must be 3 meters or less.**
- **The cable connector anchor screws must be securely seated into the printer receptor hardware.**

For reference purposes only, two specific Centronics parallel port cables that have been tested and found to comply with these requirements are Belkin® part number F2A046-10 and Primelogic® part number PLU 2823224. Other electrically equivalent cables are acceptable.

This chapter describes the interfaces provided with the printer.

Standard Host Interfaces:

- Centronics parallel
- IEEE 1284 parallel bidirectional
- High Speed Serial Port (RS-232)
- Ethernet 10/100BaseT

Optional Host Interfaces:

- Dataproducts parallel
- RS-422

In addition to descriptions for the multi-line interfaces, this chapter also provides instructions for configuration of terminating resistors for the parallel interfaces.

Dataproducts Parallel Interface

**Table 6. Dataproducts Parallel Interface Connector Pin Assignments
(with a 50-pin AMP HDH-20 Data Cable Connector)**

Input Signals		Output Signals		Miscellaneous	
Signal	Pin	Signal	Pin	Signal	Pin
DATA LINE 1	19	READY	22	CABLE VERIFY	45, 46
Return	3	Return	6		
DATA LINE 2	20	ONLINE	21	GROUND	39
Return	4	Return	5		
DATA LINE 3	1	DEMAND/DATA REQ.	23		
Return	2	Return	7		
DATA LINE 4	41	PARITY ERROR	27		
Return	40		11		
DATA LINE 5	34				
Return	18				
DATA LINE 6	43				
Return	42				
DATA LINE 7	36				
Return	35				
DATA LINE 8	28				
Return	44				
DATA STROBE	38				
Return	37				
PAPER INSTRUCTION	30				
Return	14				
BUFFER CLEAR	31				
Return	15				

NOTE: Pins not listed are not connected.

The length of the data cable from the host computer to the printer must not exceed 40 feet (12 meters).

Dataproducts Parallel Interface Signals

Data Lines 1 through 8. Provides eight standard or inverted levels from the host that specify character data, plot data, or a control code. Data Line 8 allows access to the extended ASCII character set. You can enable or disable this line via the Data Bit 8 parameter on the Dataproducts submenu (see page 71).

Data Strobe. Carries a high true pulse from the host when data is ready. The data strobe remains high until the Data Request line goes false. The active edge of the strobe signal can be configured as leading, middle (default), or trailing.

Paper Instruction (PI). Carries a DVFU signal from the host with the same timing and polarity as the data lines.

Ready. Carries a high true signal from the printer when AC power and DC voltages are present, paper is loaded properly, and the printer is not in a check condition.

Online. Carries a high true signal from the printer when the Ready Line is true and the ON LINE key on the control panel has been pressed. When the printer is in online mode, it may accept data from the host.

Demand/Data Request. Carries a high true signal from the printer when the printer is ready to accept character data from the host. This signal changes to false shortly after the leading edge of the data strobe signal.

Cable Verify. Two pins on the interface connector are jumpered together to allow the user to verify proper installation of the interface connector.

Buffer Clear. A high true level from the host to indicate the printer should perform a reboot.

Parity Error. Always carries a low false signal from the printer indicating there is no parity error.

Centronics Parallel Interface

Table 7. Centronics Interface Connector Pin Assignments

Input Signals		Output Signals		Miscellaneous	
Signal	Pin	Signal	Pin	Signal	Pin
DATA LINE 1	2	ACKNOWLEDGE	10	CHASSIS GROUND	17
Return	20	Return	28		
DATA LINE 2	3	ONLINE	13	GROUND	30
Return	21	Return	28		
DATA LINE 3	4	FAULT	32	Spares	14
Return	22	Return	29		
DATA LINE 4	5	PAPER EMPTY	12	No Connection	34,35,
Return	23	Return	28		36
DATA LINE 5	6	BUSY	11	+5 Volts	18
Return	24	Return	29		
DATA LINE 6	7				
Return	25				
DATA LINE 7	8				
Return	26				
DATA LINE 8	9				
Return	27				
DATA STROBE	1				
Return	19				
PAPER INSTRUCTION	15				
Return	29				
PRIME	31				
Return	30				

The length of the data cable from the host computer to the printer must not exceed 15 feet (5 meters).

Centronics Parallel Interface Signals

Data Lines 1 through 8. Provides eight standard or inverted levels from the host that specify character data, plot data, or a control code. Data Line 8 allows access to the extended ASCII character set. You may enable or disable this line via the Data Bit 8 parameter on the Centronics submenu (see page 69).

Data Strobe. Carries a low true, 100 ns minimum pulse from the host that clocks data into the printer.

Acknowledge. A low true pulse from the printer indicating the character or function code has been received and the printer is ready for the next data transfer.

Online. A high true level from the printer to indicate the printer is ready for data transfer and the ON LINE key on the control panel has been activated. When the printer is in online mode, it may accept data from the host.

Paper Empty (PE). A high true level from the printer to indicate the printer is in a paper empty or paper jam fault.

Busy. A high true level from the printer to indicate the printer cannot receive data.

Prime. A high true level from the host to indicate the printer should perform a warm start (printer is reset to the power-up configuration values).

Paper Instruction (PI). Carries a CVFU signal from the host with the same timing and polarity as the data line.

Fault. A low true level from the printer indicates a printer fault.

IEEE 1284 Parallel Interface

The 1284 supports three operating modes, which are determined by negotiation between the printer and the host.

Compatibility Mode

This mode provides compatibility with Centronics-like host I/O (see Table 8). Data is transferred from the host to the printer in 8-bit bytes over the data lines.

Compatibility Mode can be combined with Nibble and Byte Modes to provide bidirectional communication.

Nibble Mode

Eight bits equals one byte. When a byte of data is sent to the printer, the eight bits are sent over eight data lines.

Some devices cannot send data over their eight data lines. To bypass this, the 1284 permits data to be sent as half a byte over four status lines. (Half a byte equals one nibble.) Two sequential four-bit nibbles are sent over the lines.

Data is transferred from printer to host in four-bit nibbles over the status lines, and the host controls the transmission.

Byte Mode

The printer and host send data to each other along eight data lines (one bit per line).

If bidirectional communication is supported by the printer and the host, the host will take control of the data transfer.

Signals

Table 8 lists each of the signals associated with the corresponding pins on the 1284 interface. Descriptions of the signals follow.

Table 8. 1284 Signals

Pin	Source of Data	Type of Mode		
		Compatible	Nibble	Byte
1	Host	nStrobe	HostClk	Host/Clk
2	Host/Printer	Data 1 (LSB)		
3	Host/Printer	Data 2		
4	Host/Printer	Data 3		
5	Host/Printer	Data 4		
6	Host/Printer	Data 5		
7	Host/Printer	Data 6		
8	Host/Printer	Data 7		
9	Host/Printer	Data 8 (MSB)		
10	Printer	nAck	PtrClk	PtrClk
11	Printer	Busy	PtrBusy	PtrBusy
12	Printer	PError	AckDataReq	AckDataReq
13	Printer	Select	Xflag	Xflag
14	Host	nAutoFd	Host Busy	HostAck
15		Not Defined		
16		Logic Grid		
17		Chassis Grid		
18	Printer	Peripheral Logic High		
19		Signal Ground (nStrobe)		
20		Signal Ground (Data 1)		
21		Signal Ground (Data 2)		
22		Signal Ground (Data 3)		
23		Signal Ground (Data 4)		
24		Signal Ground (Data 5)		
25		Signal Ground (Data 6)		

Table 8. 1284 Signals (continued)

Pin	Source of Data	Type of Mode		
		Compatible	Nibble	Byte
26		Signal Ground (Data 7)		
27		Signal Ground (Data 8)		
28		Signal Ground (PErrror, Select, nAck)		
29		Signal Ground (Busy, nFault)		
30		Signal Ground (nAutoFd, nSelectIn, nInit)		
31	Host	nInit		
32	Printer	NFault	nDataAvail	aDataAvail
33		Not Defined		
34		Not Defined		
35		Not Defined		
36	Host	nSelectIn	1284 Active	1284 Active

NOTE: The length of the data cable from the host computer to the printer should not exceed 32 feet (10 meters).

Host Clock / nWrite. Driven by host. Data transferred from host to printer. When printer sends data, two types are available. If Nibble mode, signal is set high. If Byte mode, signal is set low.

Data 1 through Data 8. These pins are host-driven in Compatibility mode and bidirectional in Byte mode. They are not used in Nibble mode. Data 1 is the least significant bit; Data 8 is the most significant bit.

Printer Clock / Peripheral Clock / Interrupt. Driven by the printer. A signal from the printer indicating the character or function code has been received and the printer is ready for the next data transfer.

Printer Busy / Peripheral Acknowledge / nWait. Driven by the printer. Indicates the printer cannot receive data. (Data bits 4 and 8 in Nibble mode.)

Acknowledge Data Request / nAcknowledge Reverse. Driven by the printer. Indicates the printer is in a fault condition. (Data bits 3 and 7 in Nibble mode.)

Xflag. Driven by the printer. A high true level indicating the printer is ready for data transfer and the printer is on line. (Data bits 2 and 6 in Nibble mode.)

Host Busy / Host Acknowledge / NDStrobe. Driven by the host. Activates auto-line feed mode.

Peripheral Logic High. Driven by the printer. When the line is high, the printer indicates all of its signals are in a valid state. When the line is low, the printer indicates its power is off or its signals are in an invalid state.

nReverse Request. Driven by the host. Resets the interface and forces a return to Compatibility mode idle phase.

nData Available / nPeripheral Request. Driven by the printer. Indicates the printer has encountered an error. (Data bits 1 and 5 in Nibble mode.)

1284 Active / nAStrobe. Driven by the host. A peripheral device is selected.

Host Logic High—Driven by the host. When set to high, the host indicates all of its signals are in a valid state. When set to low, the host indicates its power is off or its signals are in an invalid state.

nInit —Resets init interface from the host.

Terminating Resistor Configurations

V6 Controller Board

For parallel interface configurations, the printer is equipped with 470 Ohm and 1K Ohm terminating resistors on the controller board. These are suitable for most applications. See Figure 23.

If the standard terminating resistor pack is not compatible with the particular interface driver requirements of the host computer, other RP1 and RP2 values may be required. 220 Ohm and 330 Ohm alternate terminating resistors are provided with the printer. If you install the 220 Ohm resistor, you must also install the 330 Ohm resistor. Possible terminating resistor combinations are shown below.

Configuration	RP1	RP2
Factory Default	470 Ohm	1K Ohm
Alternate	220 Ohm	330 Ohm

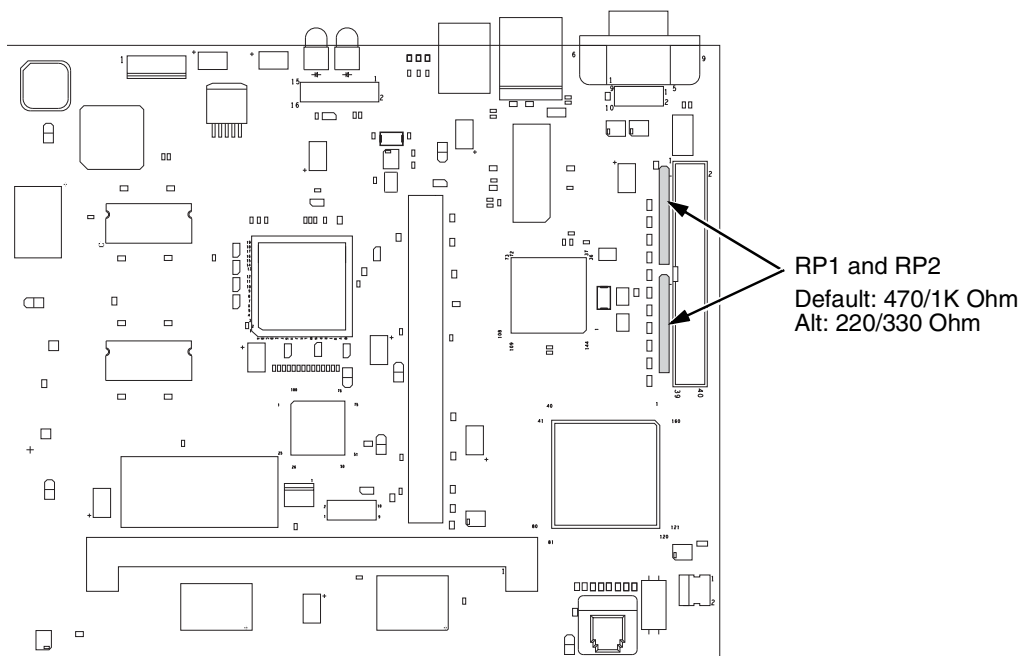


Figure 23. Terminating Resistors, V6 Controller Board

Removal And Installation

The procedure for removing and installing terminating resistors is provided in your *Maintenance Manual*.

CAUTION This is an involved maintenance procedure. To avoid damage to the equipment, only a trained technician should perform this procedure.

RS-232 and RS-422 Serial Interfaces

NOTE: The RS-232 and RS-422 serial interface circuit characteristics are compatible with the Electronic Industry Association Specifications EIA-232-E and EIA-422-B.

The RS-232 and RS-422 serial interfaces enable the printer to operate with bit serial devices that are compatible with an RS-232 controller. The input serial data transfer rate (in baud) is selectable from the printer's control panel. Baud rates of 600, 1200, 2400, 4800, 9600, 19200, 38400, 57600, and 115200 baud rates are available.

NOTE: If you select a baud rate that is greater than 19200, you may need to use RS-422 to prevent data loss.

The length of the data cable from the host computer to the printer must not exceed 50 feet (15 meters) for RS-232 or 4000 feet (1220 meters) for RS-422. (A copper conductor, twisted-pair telephone cable with a shunt capacitance of 16 pF/foot [52.5 pF/meter] terminated in a 100 ohm resistive load must be used for the RS-422.)

RS-232

**Table 9. Standard 500, 1000, 1500, and 2000 lpm Models
RS-232 Serial Interface Connector Pin Assignments**

Input Signals		Output Signals		Miscellaneous	
Signal	Pin	Signal	Pin	Signal	Pin
Receive Data (RD)	3	Transmit Status & Control Data (TD)	2	Chassis Ground	1
Clear To Send (CTS)	5	Request To Send (RTS)	4	Signal Ground	7
Data Set Ready (DSR)	6	Data Terminal Ready (DTR)	20		
Data Carrier Detect (DCD)	8				

Table 10. RS-232 Serial Interface Connector Pin Assignments

Input Signals		Output Signals		Miscellaneous	
Signal	Pin	Signal	Pin	Signal	Pin
Receive Data (RD)	2	Transmit Status & Control Data (TD)	3	Chassis/Signal Ground	5
Clear To Send (CTS)	8	Request To Send (RTS)	7		
Data Set Ready (DSR)	6	Data Terminal Ready (DTR)	4		
Data Carrier Detect (DCD)	1				

Receive Data (RD). Serial data stream to the printer.

Transmit Data (TD). Serial data stream from the printer for transmitting status and control information to the host. Subject to protocol selection.

Request To Send (RTS). Control signal from the printer. Subject to configuration.

Clear To Send (CTS). Status signal to the printer indicating the host is ready to receive data/status signals from the printer.

Data Set Ready (DSR). Status signal to the printer indicating the host is in a ready condition.

Data Carrier Detect (DCD). Status signal to the printer. The ON condition is required for the printer to receive data.

Data Terminal Ready (DTR). Control signal from the printer. Subject to configuration.

RS-422

Table 11. PSA3 RS-422 Serial Interface Connector Pin Assignments

Input Signals		Output Signals		Miscellaneous	
Signal	Pin	Signal	Pin	Signal	Pin
- Receive Data (-RD)	1	- Transmit Data (-TD)	3	Chassis/Signal Ground	5
+ Receive Data (+RD)	6	+ Transmit Data (+TD)	8		

+RD, -RD.Serial data stream differentially received by printer.

+TD, -TD.Differentially driven serial data stream for transmitting status and control information to the host. Subject to protocol selection.

NOTE: \pm RD and \pm TD form signal and return paths of a differential line signal.

6

Reprogramming the Security Key

Reprogramming the Security Key

The security key on the PSA3 controller board can be reprogrammed with a Software Program Exchange (SPX) module. The SPX is an intelligent module that plugs into the debug port on the back of printers equipped with the PSA3 "Hurricane" controller board. The SPX is used only once; it automatically overwrites itself after successfully reprogramming a security key. This allows the end user or a service technician to enable features such as new emulations without having to remove covers and install a new security key on the controller board.

The SPX is used at power-up only and is not left in the printer during normal operation. Because it is a single-use disposable item the user is not required to return it to the vendor or manufacturer.

How to Program the Security Key

1. Power off the printer.
2. On cabinet models, open the rear door. On pedestal models, refer to Figure 24 to locate the debug port at the rear of the printer.
3. Insert the SPX into the debug port as shown.

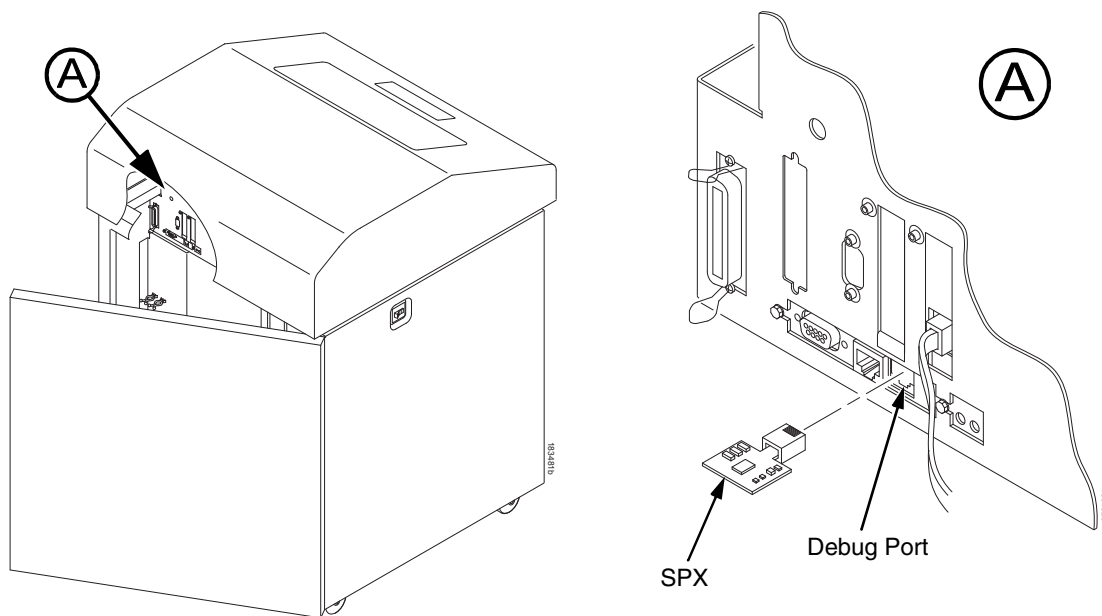


Figure 24. Inserting The SPX into the Debug Port

4. Power on the printer. The printer will begin its boot-up sequence.
5. When the printer detects a valid SPX, the control panel displays: “NEW SPX DETECTED
PRESS ENTER”

NOTE: If an error message displays, find the message in the Message List in Chapter 7 and follow the troubleshooting instructions.

6. Press the **ENTER** key to activate the reprogramming sequence. The display will read:
“PROGRAMMING. PLEASE WAIT.”
7. When the security key is reprogrammed, the display will read:
“REMOVE USED SPX
THEN PRESS ENTER”
8. Remove the SPX from the debug port at the rear of the printer.
9. Press the **ENTER** key. The printer will reboot itself and you may resume normal printing.
10. You may need to download a new program file to use the new feature.
11. You may need to set additional menu parameters for any new features that have been added or enabled.

7

Troubleshooting

Cleaning Requirements

Clean the printer every six months or after every 1000 hours of operation, whichever occurs first. If the printer is located in a dusty area or is used for heavy duty printing, clean it more often.

WARNING

Disconnect the power source before cleaning the printer.

Vor dem Säubern des Druckers ist die Netzverbindung zu unterbrechen.

Débranchez l'alimentation avant de nettoyer l'imprimante.

Desconecte la fuente de energía antes de limpiar la impresora.

Staccare la fonte di energia prima della pulitura della stampante.

Exterior Cleaning

Clean the outside of the cabinet with a soft, lint-free cloth and mild detergent soap. (Dishwashing liquid works well.) Do not use abrasive powders or chemical solvents. Clean the windows with plain water or mild window cleaner. Always apply the cleaning solution to the cloth; never pour cleaning solution directly onto the printer.

Interior Cleaning

Over time, particles of paper and ink accumulate inside the printer. This is normal. Paper dust and ink build-up must be periodically removed to avoid degraded print quality. Most paper dust accumulates around the ends of the platen and ribbon path.

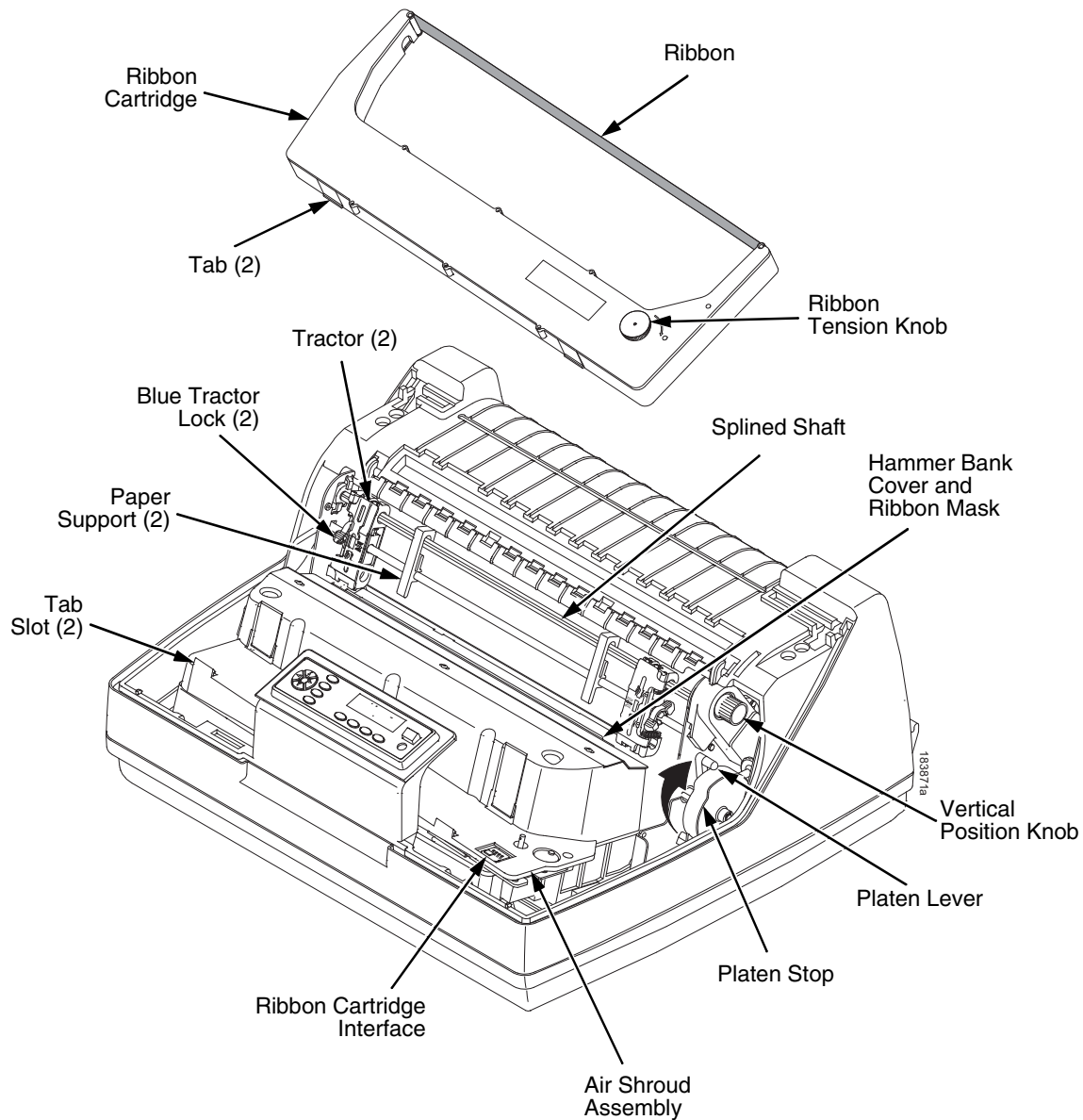


Figure 25. Interior Printer Components

To clean the interior of the printer perform the following steps.

1. Power off the printer and unplug the printer power cord.
2. Open the printer cover.
3. Fully raise the platen lever.
4. Unload the paper.
5. Remove the ribbon cartridge.
6. Lift the ribbon out of the ribbon path.
7. Brush the paper dust and ribbon lint off the tractors, shuttle cover assembly, and base casting with a soft-bristled, non-metallic brush (such as a toothbrush). Vacuum up the residue.

CAUTION Vacuum carefully around the hammer bank and surrounding area to avoid damage. To avoid corrosion damage, use only alcohol when cleaning the printer mechanical elements. Solutions used to clean mechanical elements must contain no water.

8. Wipe the splined shaft with a soft cloth.
9. Check the ribbon mask and hammer bank cover for bits of torn paper or ribbon lint.
10. Remove dust and ink from the platen using a soft cloth lightly moistened with anhydrous alcohol. (The platen is the thick silver bar behind the hammer bank cover that rotates when the platen lever is rotated.)

CAUTION When cleaning the platen, be very careful not to get any alcohol in the hammer bank, because alcohol will cause severe damage to the hammer bank. Only a trained service technician should clean the shuttle assembly.

11. Brush and vacuum the accumulated dust or residue inside the lower cabinet.
12. Wipe the lower cabinet interior with a clean, lint-free cloth dampened (not wet) with water and mild detergent or window cleaning solution. Dry the lower cabinet interior by wiping it down with a clean, lint-free cloth.
13. Install the ribbon and load paper.

Diagnosing Problems

This section is designed to help you fix problems which may arise with normal printer operation.

Bar Code Verification

The most important consideration when printing a bar code is to ensure that the bar code will be scanned properly. Incorporating a bar code quality procedure in the printing process is the best way to ensure that bar codes are being printed correctly. A properly implemented verification procedure will increase overall bar code quality, reduce waste from misprinted bar codes, and achieve high first-time read rates. A high first-time read rate is an increasingly important factor in newer, more efficient systems where manually entered data is not acceptable as a backup function. Verification also minimizes the costs of returned products due to poor reading or unaccountable bar codes.

Printing a Hex Dump

A hex code printout (or hex dump) is a translation of all host interface data to its hexadecimal equivalent, listing all ASCII character data received from the host computer with their corresponding two-digit hexadecimal codes. Hex dumps are used to troubleshoot printer data reception problems.

Printable characters print as the assigned symbol; nonprintable characters are indicated by a period (.).

Figure 26 shows an example of a hex dump.

!"#\$%&'()*+,-./	20	21	22	23	24	25	26	27	28	29	2A	2B	2C	2D	2E	2F
0123456789;<=>?	30	31	32	33	34	35	36	37	38	39	3A	3B	3C	3D	3E	3F
@ABCDEFGHIJKLMNO	40	41	42	43	44	45	46	47	48	49	4A	4B	4C	4D	4E	4F
PQRSTUVWXYZ[\]^_`	50	51	52	53	54	55	56	57	58	59	5A	5B	5C	5D	5E	5F
abcdefghijklmnopqrstuvwxyz{|}~	60	61	62	63	64	65	66	67	68	69	6A	6B	6C	6D	6E	6F
!"#\$%&'()*+,-./0	70	71	72	73	74	75	76	77	78	79	7A	7B	7C	7D	7E	7F
123456789;<=>?@	80	81	82	83	84	85	86	87	88	89	8A	8B	8C	8D	8E	8F
ABCDEFGHIJKLMN	90	91	92	93	94	95	96	97	98	99	9A	9B	9C	9D	9E	9F
OPQRSTUVWXYZ[\]^_`	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F
abcdefghijklmnopqrstuvwxyz{|}~	10	11	12	13	14	15	16	17	18	19	1A	1B	1C	1D	1E	1F
!"#\$%&'()*+,-./0	20	21	22	23	24	25	26	27	28	29	2A	2B	2C	2D	2E	2F
123456789;<=>?@	30	31	32	33	34	35	36	37	38	39	3A	3B	3C	3D	3E	3F
ABCDEFGHIJKLMN	40	41	42	43	44	45	46	47	48	49	4A	4B	4C	4D	4E	4F
OPQRSTUVWXYZ[\]^_`	50	51	52	53	54	55	56	57	58	59	5A	5B	5C	5D	5E	5F
abcdefghijklmnopqrstuvwxyz{|}~	60	61	62	63	64	65	66	67	68	69	6A	6B	6C	6D	6E	6F
!"#\$%&'()*+,-./0	70	71	72	73	74	75	76	77	78	79	7A	7B	7C	7D	7E	7F
123456789;<=>?@	80	81	82	83	84	85	86	87	88	89	8A	8B	8C	8D	8E	8F
ABCDEFGHIJKLMN	90	91	92	93	94	95	96	97	98	99	9A	9B	9C	9D	9E	9F
OPQRSTUVWXYZ[\]^_`	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F
abcdefghijklmnopqrstuvwxyz{|}~	10	11	12	13	14	15	16	17	18	19	1A	1B	1C	1D	1E	1F
!"#\$%&'()*+,-./0	20	21	22	23	24	25	26	27	28	29	2A	2B	2C	2D	2E	2F
123456789;<=>?@	30	31	32	33	34	35	36	37	38	39	3A	3B	3C	3D	3E	3F
ABCDEFGHIJKLMN	40	41	42	43	44	45	46	47	48	49	4A	4B	4C	4D	4E	4F
OPQRSTUVWXYZ[\]^_`	50	51	52	53	54	55	56	57	58	59	5A	5B	5C	5D	5E	5F
abcdefghijklmnopqrstuvwxyz{|}~	60	61	62	63	64	65	66	67	68	69	6A	6B	6C	6D	6E	6F
!"#\$%&'()*+,-./0	70	71	72	73	74	75	76	77	78	79	7A	7B	7C	7D	7E	7F
123456789;<=>?@	80	81	82	83	84	85	86	87	88	89	8A	8B	8C	8D	8E	8F
ABCDEFGHIJKLMN	90	91	92	93	94	95	96	97	98	99	9A	9B	9C	9D	9E	9F
OPQRSTUVWXYZ[\]^_`	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F
abcdefghijklmnopqrstuvwxyz{|}~	10	11	12	13	14	15	16	17	18	19	1A	1B	1C	1D	1E	1F

Figure 26. Hex Dump Sample

Fault Messages

If a fault condition occurs in the printer, the status indicator on the control panel flashes on and off, and the message display indicates the specific fault. Fault messages are summarized in Table 12.

Displayed faults fall into one of two categories:

- Operator correctable
- Field service required

For the operator-correctable faults, follow the suggested solution in Table 12. After correcting the displayed fault, press the CLEAR key to clear the error message and status indicator and resume printing. If the fault message reappears, contact your authorized service representative.

NOTE: The *Maintenance Manual* provides more detailed information and procedures for resolving fault conditions. However, many of the procedures described there must be performed only by your authorized service representative.

Fault Messages Requiring Field Service Attention

If a fault is not correctable by the operator, the fault message is followed by an asterisk (*). This usually indicates that an authorized service representative is needed. You may try two steps to clear the fault before calling your authorized service representative:

1. Set the printer power switch to O (Off), wait 15 seconds, then turn the printer on again. Run your print job again. If the message does not appear, it was a false indication and no further attention is required.
2. If the message reappears, press the CLEAR key. If the message disappears, it was a false indication and no further attention is required. If the message reappears, call your authorized service representative.

N7000 STD ASCII Printers Fault Messages

Table 12. N7000 STD ASCII LCD Fault Messages Troubleshooting

Displayed Message	Can User Correct?	Explanation	Solution
8.5V PWR FAIL*	No	8.5 Volt power failed. Internal power failure.	Contact your authorized service representative. ¹
15V CTL FAIL*	No	Controller voltage failure.	Contact your authorized service representative. ¹
23.5V CTL FAIL*	No	23.5 Volt Controller failed: a voltage failure on the controller board.	Contact your authorized service representative. ¹
48V CIRCUIT* See User Manual	No	Either the power supply is not generating a proper 48 Volts or the controller board is not detecting a 48 Volt output from the power supply board.	Contact your authorized service representative. ¹
48V PWR FAIL*	No	Internal power failure.	Contact your authorized service representative. ¹
A TO D OVERUN*	No	Analog to Digital Overrun. The analog-to-digital converter overflowed.	Contact your authorized service representative. ¹
ACCESS NULL PTR*	No	Access Null Pointer: The processor tried to access a pointer that contains nothing (null).	Contact your authorized service representative. ¹
B00 STATUS: SDRAM DETECTION 166MHZ	No	Status message: the printer has begun its boot-up routines and is checking for the presence of SDRAM.	No action required.
B01 STATUS: 8245 SDRAM TEST 32MB	No	Status message: printer boot-up routines are testing SDRAM.	No action required.
B10 ERROR: NO DRAM DETECTED*	No	SDRAM DIMM may not be properly installed. Boot-up routines did not detect the presence of the SDRAM DIMM.	Cycle power to see if the message clears, if not, contact your authorized service representative. ¹

Table 12. N7000 STD ASCII LCD Fault Messages Troubleshooting

Displayed Message	Can User Correct?	Explanation	Solution
B11 ERROR: RAM TEST FAILED*	No	SDRAM failed the boot initialization test. SDRAM DIMM may not be properly installed.	Cycle power to see if the message clears, if not, contact your authorized service representative. ¹
B12 ERROR: PROGRAM MISSING*	Yes	The printer does not see a program in flash memory.	There is no program in printer memory. Download an emulation.
B13 ERROR: NOT COMPATIBLE*	No	Attempting to download a program that is not compatible with the printer.	Cycle power to see if the message clears, if not, contact your authorized service representative. ¹
B19 ERROR: DC RETURNED*	No	The message indicates an incorrectly assembled and tested machine.	Cycle power to see if the message clears, if not, contact your authorized service representative. ¹
B20 STATUS :00% DOWNLOAD MODE	No	Status message informing the operator that software is being downloaded. Percentage figure indicates approximate amount loaded into the printer.	No action is required.
B21 STATUS: PRINTER RESET	No	Status message informing the operator that the printer is undergoing a system reset.	No action is required.
B22 ERROR: DECOMPRESS SIZE*	No	FLASH memory has not passed boot initialization tests.	Cycle power to see if the message clears, if not, contact your authorized service representative. ¹
B23 ERROR: DECOMPRESS CKSUM*	No	FLASH memory has not passed boot initialization tests.	Cycle power to see if the message clears, if not, contact your authorized service representative. ¹
B30 STATUS: INITIALIZING...	N/A	Status message: the printer is running its initialization routines after startup and successful memory tests.	No action is required.

Table 12. N7000 STD ASCII LCD Fault Messages Troubleshooting

Displayed Message	Can User Correct?	Explanation	Solution
B35 STATUS: WAITING FOR EC STATUS	N/A	Status message: the DC on the controller board is waiting for communication with the EC. If this message does not clear within a few seconds there is an electrical or electronic problem on the controller board.	Cycle power to see if the message clears, if not, contact your authorized service representative. ¹
B40 ERROR: SDRAM EEPROM CKSUM BAD*	No	Flash memory has not passed boot initialization tests.	Cycle power to see if the message clears, if not, contact your authorized service representative. ¹
B41 ERROR: DIM MEMORY NOT SDRAM*	No	The DRAM DIMM installed on the controller board is not Synchronous DRAM (SDRAM).	Cycle power to see if the message clears, if not, contact your authorized service representative. ¹
B42 ERROR: SDRAM ROWS NOT ALLOWED*	No	Printer boot initialization tests detect incorrect SDRAM.	Cycle power to see if the message clears, if not, contact your authorized service representative. ¹
B43 ERROR: SDRAM TOO MANY BANKS*	No	Printer boot initialization tests detect incorrect SDRAM.	Cycle power to see if the message clears, if not, contact your authorized service representative. ¹
B44 ERROR: SDRAM NOT 64 BITS WIDE*	No	Printer boot initialization tests detect incorrect SDRAM.	Cycle power to see if the message clears, if not, contact your authorized service representative. ¹
B45 ERROR: SDRAM IS WRONG VOLTAGE*	No	Printer boot initialization tests detect incorrect SDRAM.	Cycle power to see if the message clears, if not, contact your authorized service representative. ¹
B46 ERROR: SDRAM HAS MIXED SIZES*	No	Printer boot initialization tests detect incorrect SDRAM.	Cycle power to see if the message clears, if not, contact your authorized service representative. ¹
B47 ERROR: SDRAM LARGER THAN 256M*	No	Printer boot initialization tests detect incorrect SDRAM.	Cycle power to see if the message clears, if not, contact your authorized service representative. ¹
B49 ERROR: SDRAM # LOGICAL BANKS*	No	Printer boot initialization tests detect incorrect SDRAM.	Cycle power to see if the message clears, if not, contact your authorized service representative. ¹
B50 ERROR: SDRAM LOGIC COMB BANKS*	No	SDRAM DIMM is not compatible with the computer. SDRAM DIMM may not be properly installed.	Cycle power to see if the message clears, if not, contact your authorized service representative. ¹

Table 12. N7000 STD ASCII LCD Fault Messages Troubleshooting

Displayed Message	Can User Correct?	Explanation	Solution
B50 STATUS: XX% CLEAR FLASH	No	Emulation software successfully loaded in RAM. Old program being deleted from flash memory.	No action is required.
B51 STATUS: XX% LOADING...	No	Status message: printer boot-up routines are loading printer system software into flash memory and SDRAM.	No action required.
B53 ERROR: 12C NO ARBITRATION	No	There is a problem on the I ² C bus which allows the SDRAM DIMM to communicate with the GPIO interface.	Cycle power to see if the message clears, if not, contact your authorized service representative. ¹
B54 ERROR: SDA LINE STUCK LOW	No	The SDRAM or a PCI card is shorting out the serial data bus on the controller board.	Cycle power to see if the message clears, if not, contact your authorized service representative. ¹
B55 STATUS: SEND PROGRAM TO EC	No	EC program downloaded and being programmed in EC.	No action is required.
BUFFER OVERRUN	Yes	The print buffer has overflowed on a serial interface. The printed output may contain random * (asterisk) characters. Make a configuration printout.	Verify that the printer matches the host serial interface configuration settings for Data Protocol, Baud Rate, Data Bits, Stop Bits, Parity, Data Terminal Ready, and Request to Send. Set printer serial interface parameters to match those of the host.
CLEAR PAPER JAM	Yes	No paper motion.	Clear jam and reload paper. If this message recurs, contact your authorized service representative. ¹
CLEARING PROGRAM FROM FLASH	No	Status message: emulation software successfully loaded into printer RAM and the checksum matched. The old program is now being deleted from flash memory.	No action is required.
CLOSE PLATEN	Yes	The platen lever is open.	Close the platen lever.
COIL HOT	No	One or more hammer coils are overheating.	Contact your authorized service representative. ¹

Table 12. N7000 STD ASCII LCD Fault Messages Troubleshooting

Displayed Message	Can User Correct?	Explanation	Solution
CRTG COMM ERR See User Manual	No	The hardware cannot communicate properly with the cartridge.	<ol style="list-style-type: none"> 1. Make sure the ribbon cartridge is seated properly. 2. Remove and replace the ribbon cartridge if necessary. 3. Contact your authorized service representative.¹
CRTG MISSING Install new RBN	Yes	The ribbon cartridge is missing or installed improperly.	<ol style="list-style-type: none"> 1. Make sure a ribbon cartridge is installed in the printer. 2. Make sure the ribbon cartridge is seated properly. 3. Remove and replace the cartridge if necessary. 4. Contact your authorized customer service representative.¹
CRTG NOT SETx Re-install RBN	Yes	The ribbon cartridge is not properly positioned.	<ol style="list-style-type: none"> 1. Make sure a ribbon cartridge is installed in the printer. 2. Make sure the ribbon cartridge is seated properly. 3. Remove and replace the cartridge if necessary. 4. Contact your authorized customer service representative.¹
CTL VOLT FAIL*	No	Controller Voltage Failure. 15 V failure on the controller board.	Contact your authorized service representative. ¹
D50 Status %XX Clearing Flash	No	Status message: The printer is clearing its flash memory, where %XX represents the percentage completed.	No action is required.
D51 Status %XX Programming...	No	Status message: The printer is loading firmware, where %XX represents the percentage completed.	No action is required.
D55 Status: Send Program to EC	No	Status message: The printer is loading the engine controller program into the engine controller (EC).	No action is required.

Table 12. N7000 STD ASCII LCD Fault Messages Troubleshooting

Displayed Message	Can User Correct?	Explanation	Solution
DIAGNOSTIC PASSED	No	Status message: the printer passed its memory and hardware initialization tests.	No action is required.
DO NOT POWER OFF	No	Status message: The printer is performing an operation that must be completed before you can cycle power.	No action is required, but do not power off the printer until the operation is complete.
DP FIFO Busy*	Yes	There is a timing problem in the Engine Controller firmware.	<ol style="list-style-type: none"> 1. Cycle power. Run the print job again. If the message appears, download the emulation software again. 2. Cycle power. Run the print job again. If the message appears again, contact your authorized service representative.¹
DRVR CIR BAD*	No	Driver Circuit Bad. The hammer coil count test failed.	Contact your authorized service representative. ¹
E00 EXE @ ADDR0 See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.
E01A TYPE 0x40 See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.

Table 12. N7000 STD ASCII LCD Fault Messages Troubleshooting

Displayed Message	Can User Correct?	Explanation	Solution
E01B TYPE 0x60 See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.
E02 MACHINE CHK See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.
E03A DSI HASH L See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.
E03B DSI HASH S See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.
E03C DSI BAT PL See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.

Table 12. N7000 STD ASCII LCD Fault Messages Troubleshooting

Displayed Message	Can User Correct?	Explanation	Solution
E03D DSI BAT PS See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.
E03E DSI CXIWX See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.
E03F DSI CXOWX See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.
E03G DSI ECXIWX See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.
E03H DSI ECXOWX See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.

Table 12. N7000 STD ASCII LCD Fault Messages Troubleshooting

Displayed Message	Can User Correct?	Explanation	Solution
E04A ISI NO TRA See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.
E04B ISI DIRECT See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.
E04C ISI PROTEC See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.
E06 NOT ALIGNED See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.
E07 ILLEGAL INS See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.

Table 12. N7000 STD ASCII LCD Fault Messages Troubleshooting

Displayed Message	Can User Correct?	Explanation	Solution
E08 FLOATINGPNT See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.
E12 SYSTEM CALL See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.
E13 TRACE INT See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.
E16 ITRANS MISS See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.
E17 DLOAD MISS See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.

Table 12. N7000 STD ASCII LCD Fault Messages Troubleshooting

Displayed Message	Can User Correct?	Explanation	Solution
E18 DSTORE MISS See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.
E19 BREAKPOINT See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.
E20 SYS MANAGE See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.
E30 DEBUGGER See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.
E31A EVENT O BP See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.

Table 12. N7000 STD ASCII LCD Fault Messages Troubleshooting

Displayed Message	Can User Correct?	Explanation	Solution
E31B EVENT 1 BP See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.
E31C EVENT 2 BP See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.
E31D EVENT 3 BP See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.
E31E EVENT 4 BP See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.
E31F EVENT 5 BP See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.

Table 12. N7000 STD ASCII LCD Fault Messages Troubleshooting

Displayed Message	Can User Correct?	Explanation	Solution
E31G EVENT 6 BP See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.
E31H EVENT 7 BP See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.
E32A CND 0 BP See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.
E32B CND 1 BP See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.
E32C CND 2 BP See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.

Table 12. N7000 STD ASCII LCD Fault Messages Troubleshooting

Displayed Message	Can User Correct?	Explanation	Solution
E32D CND 3 BP See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.
E32E CND 4 BP See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.
E32F CND 5 BP See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.
E32G CND 6 BP See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.
E32H CND 7 BP See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.

Table 12. N7000 STD ASCII LCD Fault Messages Troubleshooting

Displayed Message	Can User Correct?	Explanation	Solution
E33 WRITE BP See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.
E34 TRACE CMPLT See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.
E99 UNKNOWN INT See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.
ERROR OCCURRED FLUSHING QUEUES*	Yes	An interim message that displays while the printer discards host data it cannot use because a fault condition exists. While this message displays, the asterisk (*) rotates.	Wait. When the asterisk (*) stops rotating, a different fault message will appear: troubleshoot the final message.
ERROR: CPLD NOT PROGRAMMED	No	The Complex Programmable Logic Device (CPLD) on the controller board is not programmed. The EC cannot read the version bits in the CPLD which tell the EC which configuration version is installed.	Contact your authorized service representative. ¹

Table 12. N7000 STD ASCII LCD Fault Messages Troubleshooting

Displayed Message	Can User Correct?	Explanation	Solution
ERROR: PROGRAM NEEDS MORE DRAM	No	The printer requires more DRAM to run the downloaded program.	Contact your authorized service representative. ¹
ERROR: PROGRAM NEEDS MORE FLASH	No	The printer requires more flash memory to run the downloaded program	Contact your authorized service representative. ¹
ERROR: PROGRAM NOT COMPATIBLE	Yes	The printer is not compatible with the downloaded program.	Use the correct emulation software options(s) for this printer model.
ERROR: PROGRAM NOT VALID	Yes	The printer does not see a program in flash memory.	There is no program in printer memory. Download the emulation.
ERROR: SECURITY KEY NOT DETECTED	No	The security key is not present or failed.	Contact your authorized service representative. ¹
ERROR: SHORT AT ADDRESS XXXX	No	Hardware failure in SDRAM or controller circuitry.	Contact your authorized service representative. ¹
ERROR: WRITING TO FLASH	No	Hardware or software fault in flash memory.	Contact your authorized service representative. ¹
ERROR: WRONG CHECKSUM	No	The printer received the complete program but the checksum did not match. The data may have been corrupted during downloading.	Contact your authorized service representative. ¹
ERROR: WRONG OEM	No	The SPX inserted in the debug port is not intended for this model printer or this OEM.	Contact your authorized service representative. ¹
ERROR: WRONG PRINTER TYPE	No	The SPX inserted in the debug port is not intended for this model printer or this OEM.	Contact your authorized service representative. ¹
ETHERNET DETECTED	N/A	Status message indicating that the Network Interface Card has established connection.	No action is required.

Table 12. N7000 STD ASCII LCD Fault Messages Troubleshooting

Displayed Message	Can User Correct?	Explanation	Solution
ETHERNET INITIALIZING	No	Status message: the internal Network Interface Card is processing the boot procedure. (May occur with older versions of microcode.)	No action is required.
EXCESS RBN WEAR Install New RBN	Yes	Status message that displays when ribbon reaches end of life, whether the Integrated Print Management System is enabled or not.	Install a new ribbon.
EXHAUST FAN FLT (Cabinet model only)	Yes	Sensors cannot detect current in fan circuit.	Power off the printer and remove the paper path (see <i>Maintenance Manual</i>). Check that the fan cable connector is connected. Check for obstruction of vents and fan airway, and remove any obstructions. Check for items beneath the printer blocking cabinet vents. Power back on the printer. If this message appears again, contact your authorized service representative. ¹
FIRMWARE ERROR*	No	Application software tried to perform an illegal printer function or damaged memory detected on the controller board.	Contact your authorized service representative. ¹
FRAMING ERROR	Yes	The printed output may contain random ! (exclamation point) characters.	Make a configuration printout. Set printer serial interface parameters to match host configuration settings for Data Protocol, Baud Rate, Data Bits, Stop Bits, Parity, Data Terminal Ready, and Request to Send.
H00: PCI SLOT ? See User Manual	No	The controller board is not communicating with a PCI card. This could indicate a bad PCI card, poor connection, or problem in the PCI bus.	Contact your authorized service representative. ¹

Table 12. N7000 STD ASCII LCD Fault Messages Troubleshooting

Displayed Message	Can User Correct?	Explanation	Solution
H01: PCI J12 See User Manual	No	The controller board is not communicating with the PCI card in PCI slot J12. This could indicate a bad PCI card, poor connection, or problem in the PCI bus.	Contact your authorized service representative. ¹
H02: PCI J13 See User Manual	No	The controller board is not communicating with the PCI card in PCI slot J13. This could indicate a bad PCI card, poor connection, or problem in the PCI bus.	Contact your authorized service representative. ¹
<Online, etc...> Half Speed Mode	No	Status message: The controller samples the operating temperature of key components of the print mechanism. When higher than normal temperatures are sensed, the print speed is automatically reduced by 50% and the message sent the LCD. When the components cool down, the print speed returns to 100% and the message clears.	No action is required. If the message appears often, contact your authorized service representative. ¹
HAM. COIL OPEN*	No	Hammer Coil Open. Electrical malfunction of one or more hammer coils.	Contact your authorized service representative. ¹
HAMMER COIL BAD* #, #, #, ...etc	No	Hammer coil # failed current test at power up.	Contact your authorized service representative. ¹
HAMMER SHORT* See User Manual	No	Electrical malfunction of one or more hammer coils.	Contact your authorized service representative. ¹
HB NOT INSTALLD*	No	Hammer Bank Not Installed. Self-test routines do not detect hammer coils at printer start-up.	Contact your authorized service representative. ¹

Table 12. N7000 STD ASCII LCD Fault Messages Troubleshooting

Displayed Message	Can User Correct?	Explanation	Solution
HMR BANK FAN FLT	Yes	Sensors cannot detect current in fan circuit.	Check that fan cable is connected. Check for obstruction of vents and fan airway; remove any obstructions. Check for items beneath the printer blocking cabinet vents. Power back on the printer. If this message recurs, contact your authorized service representative. ¹
ILL EXT BUS ACC*	No	Illegal External Bus Access. Firmware error on the controller board.	Contact your authorized service representative. ¹
ILL INST ACCSS*	No	Illegal Instruction Accessed. Firmware error on the controller board.	Contact your authorized service representative. ¹
ILLGL OPR ACCSS*	No	Illegal Operand Accessed. Firmware error on controller board.	Contact your authorized service representative. ¹
INCOMPAT E-NET Remove NIC	Yes	Incompatible network interface card (NIC) is installed.	Install a compatible NIC to the printer then reboot. If this message still appears, contact your authorized service representative. ¹
INTAKE FAN FAULT	Yes	Sensors cannot detect current in fan circuit.	Cycle power. If the message appears, press CLEAR. If the message does not clear, contact your authorized service representative. ¹
INTERRUPT UNUSED VECTOR 00	No	The controller board receives an interrupt it does not understand. The problem can be created by electrical noise, by a software problem, or by a hardware problem.	Cycle power. If this message occurred once and never again, you can ignore it. If the message reappears or appears consistently, contact your authorized service representative. ¹
LO DRV. SHORT*	No	Lower Driver Short. Circuit(s) on the hammer bank or in the hammer bank power cable shorted to ground.	Contact your authorized service representative. ¹
LOAD PAPER	Yes	Printer is out of paper.	Load paper and press CLEAR.

Table 12. N7000 STD ASCII LCD Fault Messages Troubleshooting

Displayed Message	Can User Correct?	Explanation	Solution
LOADING PROGRAM FROM PORT XX%	No	Status message: the new emulation program is loading into printer RAM. XX% indicates how much of the program has loaded.	No action is required.
LOADING PROGRAM INTO FLASH	No	The printer has deleted the previous program from flash memory and is loading the new program into flash memory.	No action is required.
NEW SPX DETECTED PRESS ENTER	No	The printer detects an SPX installed at the debug port and the SPX is valid for the printer.	Contact your authorized service representative. ¹
NON VOLATILE MEMORY FAILED	No	Large emulations reduce the amount of space available for saving configurations, which means that sometimes fewer than eight configurations can be saved.	Contact your authorized service representative. ¹
ON LINE	N/A	Printer state message: printer is online and in communication with host.	No action is required.
PAP BAD TABLE*	No	Paper Bad Table. The paper feed process on the controller board has a corrupted table.	Contact your authorized service representative. ¹
PAP BSY TOO LNG*	No	Paper Busy Too Long. Firmware error on controller board.	Contact your authorized service representative. ¹
PAP FD DRVR CIR* See Manual	No	Paper Feed Driver Circuit. The paper feed driver circuit on the controller board is drawing too much current.	Contact your authorized service representative. ¹
PAP FIFO OVERFL*	No	Paper First In First Out Overflow. Firmware error on controller board.	Contact your authorized service representative. ¹
PAP FIFO UNDRFL*	No	Paper First In First Out Underflow. Firmware error on controller board.	Contact your authorized service representative. ¹

Table 12. N7000 STD ASCII LCD Fault Messages Troubleshooting

Displayed Message	Can User Correct?	Explanation	Solution
PAP ILLGL ST*	No	Paper Illegal State. Firmware error on controller board.	Contact your authorized service representative. ¹
PAP INCMPL ENER*	No	Paper Incompletely Energized. Firmware error on controller board.	Contact your authorized service representative. ¹
PAP INVLD CMD*	No	Paper Invalid Command. Firmware error on controller board.	Contact your authorized service representative. ¹
PAP INVLD PARM*	No	Paper Invalid Parameter. Firmware error on controller board.	Contact your authorized service representative. ¹
PAP NOT SCHED*	No	Paper Not Scheduled. The paper feed process is not scheduling on the controller board, and the printer cannot feed paper.	Contact your authorized service representative. ¹
PAP NT AT SPEED*	No	Paper Not At Speed. Firmware error on controller board.	Contact your authorized service representative. ¹
PAP UNEXP INT*	No	Paper Unexpected Interrupt. Firmware error on controller board.	Contact your authorized service representative. ¹
PARITY ERROR	Yes	The printed output may contain a random ? (question mark) characters.	Check your printer serial interface parameter settings; if necessary, adjust them so that they match the settings of the attached host.
PLAT INV CMD*	No	Platen Invalid Command. Firmware error on controller board.	Contact your authorized service representative. ¹
PLAT INV PARM*	No	Platen Invalid Parameter. Firmware error on controller board.	Contact your authorized service representative. ¹
PLAT INV STATE*	No	Platen Invalid State. Firmware error on controller board.	Contact your authorized service representative. ¹
PLEASE WAIT... RESET IN PROGRESS	N/A	Status message: the printer finished loading the program into flash memory and is automatically resetting itself.	No action is required.

Table 12. N7000 STD ASCII LCD Fault Messages Troubleshooting

Displayed Message	Can User Correct?	Explanation	Solution
POWER SUPPLY HOT	Yes	Power supply sensors report high temperatures.	Check printer environment. If hot or dusty, relocate printer. Contact your authorized service representative if this occurs frequently. ¹
PRINTER HOT	Yes	This message indicates internal temperatures over 60° Celsius (140° Fahrenheit).	Check printer environment. If hot or dusty, relocate printer. Contact your authorized service representative if this occurs frequently. ¹
PRINTER UNDER REMOTE CONTROL	No	Status message: The printer is under the control of PrintNet Enterprise (PNE) remote management software.	No action is required.
PROTECTED INSTR*	No	Protected Instruction. Firmware error on controller board.	Contact your authorized service representative. ¹
PWR SUPP VOLT *	No	Power Supply Voltage. The power supply has failed.	Replace power supply board.
RBN AT END POINT Change Ribbon	Yes	Integrated Print Management System software has determined that the ribbon is out of ink.	Install a new ribbon.
REGIONx MISMATCH Use Correct RBN	Yes	The incorrect cartridge type is being used for the printer. "X" indicates the region of the printer.	Install Region X ribbon cartridge in the printer. NOTE: Specify the region of the printer when ordering ribbons.
REMOVE USED SPX THEN PRESS ENTER	No	Status message: An SPX is depleted because it has successfully reprogrammed the security key on the controller board.	Contact your authorized service representative. ¹
RESTORING BOOT CODE	No	Normal download initialization message.	No action is required.
RIB INVLD CMD* See User Manual	Yes	Ribbon Invalid Command. Firmware error on the controller board.	Cycle power. Run the print job again. If the message appears, download the emulation software again. If the message appears again, contact your authorized service representative. ¹

Table 12. N7000 STD ASCII LCD Fault Messages Troubleshooting

Displayed Message	Can User Correct?	Explanation	Solution
RIBBON DRIVE	No	The controller board does not detect a ribbon drive motor.	Contact your authorized service representative. ¹
RIBBON STALL	Yes	The controller board does not detect ribbon movement.	Check the ribbon path for jams. Turn the Ribbon Tension Knob clockwise a few rotations. If necessary, install a new ribbon.
RIBBON UNDER 2% Change RBN Soon	Yes	Status message indicating the Integrated Print Management System is enabled and ribbon ink level is 2%.	Install a new ribbon.
RWP DOWNLOAD Please Wait	No	Status message indicating the software in the cartridge is being updated. The user must wait for the update to complete.	No action is required.
SECURITY VIOLATION*	No	Security code of PAL on controller board does not match code of firmware on the controller board.	Contact your authorized service representative. ¹
SECURITY KEY NOT DETECTED	No	The security key is not present or has failed.	Contact your authorized service representative. ¹
SENDING PROGRAM TO EC PROCESSOR	No	Status message: the printer is loading the engine controller program into the engine controller.	No action is required.
SHTL MISMATCH Use Correct RBN	Yes	This message displays when an Extended Life Ribbon is mounted on a 500 lpm printer.	Install Standard Life Ribbon.
SHUT DRVR CIR* See User Manual	No	The shuttle driver circuit on the controller board is drawing too much current.	Contact your authorized service representative. ¹
SHUTL INV CMD*	No	Shuttle Invalid Command. Firmware error on controller board.	Contact your authorized service representative. ¹
SHUTL INV PARM*	No	Shuttle Invalid Parameter. Firmware error on controller board.	Contact your authorized service representative. ¹

Table 12. N7000 STD ASCII LCD Fault Messages Troubleshooting

Displayed Message	Can User Correct?	Explanation	Solution
SHUTL OVR SPEED*	No	The shuttle is oscillating too rapidly.	Contact your authorized service representative. ¹
SHUTTLE JAM	Yes	No shuttle movement or shuttle moving at the wrong speed.	Check for obstruction to shuttle, a twisted ribbon, or platen lever closed too tightly. If fault source is not apparent, contact your authorized service representative. ¹
SHUTTLE STALL	Yes	The shuttle is not moving. See "SHUTTLE JAM" on page 203.	Set the platen lever to match the thickness of paper, but not too tightly. Check and adjust the platen gap. Inspect the ribbon mask for deformation that snags and interferes with shuttle movement. If fault source is not apparent, contact your authorized service representative. ¹
SHUTTLE TYPE NOT SUPPORTED*	No	The shuttle type was not detected at power-up or the shuttle installed in the printer is not supported by the firmware.	Contact your authorized service representative. ¹
SOFTWARE ERROR* CYCLE POWER	No	Application software tried to perform illegal printer function, or damaged logic circuits found on controller board.	Contact your authorized service representative. ¹
SPX FOUND, ERROR: KEY NOT DETECTED	No	The controller board does not have a security key.	Contact your authorized service representative. ¹
SPX NOT NEEDED OPTIONS ENABLED	No	The user has attempted to use the SPX to turn on printer options that are already enabled.	Contact your authorized service representative. ¹
STACK OVERFLOW*	No	Firmware error on controller board.	Contact your authorized service representative. ¹
STACK UNDERFLOW*	No	Firmware error on the controller board.	Contact your authorized service representative. ¹
STACKER FAULT	Yes	Stacker is not functioning correctly.	Check for obstructions in the stacker area. If fault persists, contact your authorized service representative. ¹
STACKER FULL	Yes	Status message: the power paper stacker is full of paper.	Unload the stacker. If fault persists, contact your authorized service representative. ¹

Table 12. N7000 STD ASCII LCD Fault Messages Troubleshooting

Displayed Message	Can User Correct?	Explanation	Solution
STACKER JAM	Yes	This message is triggered if there is paper inside the throat of the stacker elevator, but the elevator is not moving.	1. Open the cabinet rear door and check for obstructions preventing elevator movement. Remove any obstructions. 2. Run the print job again. If the message appears again, contact your authorized service representative. ¹
TABLE MISMATCH DOWNLOAD AGAIN	No	Indicates that the software update has failed and should be reloaded.	Contact your authorized service representative. ¹
TCB CORRUPTED*	No	Task Control Block Corrupted. Firmware error on controller board.	Contact your authorized service representative. ¹
TCP PORT BUSY	Yes	Error message reported by the Printer Manager when ethernet interface option is installed. The network address given in the printer properties was reached, but the printer port is busy.	Refer to the <i>Printronix N7000 Maintenance Manual</i> .
TIP MISMATCH Use Correct RBN	Yes	The incorrect cartridge type is being used for the printer.	Install the correct ribbon cartridge type in the printer.
UNDEF INTERRUPT*	No	Undefined Interrupt. Firmware error on controller board.	Contact your authorized service representative. ¹
UNDFNED OPCODE*	No	Undefined Opcode. Firmware error on controller board.	Contact your authorized service representative. ¹
UNKNOWN RBN1 Install New RBN	Yes	The sensor detects a bar code, but the ribbon model is not permitted on this printer.	Install a new ribbon.
UP DRV. SHORT*	No	Upper Driver Short. Hammer driver circuits on the boards shorted to ground.	Cycle power to see if the message clears, if not, contact your authorized service representative. ¹
WELD NOT DETECT See User Manual	No	The cartridge weld was not detected.	Clear fault and continue printing. If error occurs again, contact your authorized service representative.

Table 12. N7000 STD ASCII LCD Fault Messages Troubleshooting

Displayed Message	Can User Correct?	Explanation	Solution
WELD RESET ERROR See User Manual	No	The cartridge weld circuitry lost power.	Contact your authorized service representative. ¹
WELD SNSR MISSING See User Manual	Yes	Weld sensor cannot be detected by the system.	<ol style="list-style-type: none"> 1. Make sure that weld sensor is installed correctly. 2. Contact your authorized service representative.¹
<p>¹ Before contacting an authorized service representative, power off the printer, wait 15 seconds, then power it back on and rerun your print job. If the message reappears, press CLEAR. If the fault message still displays, then contact your authorized service representative.</p>			

N7000 H-Series Printers Fault Messages

Table 13. N7000 H-Series Fault Messages Troubleshooting

Displayed Message	Can User Correct?	Explanation	Solution
000:SHUTTLE TYPE NOT SUPPORTED*	No	The shuttle type was not detected at power-up or the shuttle installed in the printer is not supported by the firmware.	Contact your authorized service representative. ¹
104:POWER SUPPLY HOT	Yes	Power supply sensors report high temperatures.	Check printer environment. If hot or dusty, relocate printer. Contact your authorized service representative if this occurs frequently. ¹
105:PRINTER HOT	Yes	This message indicates internal temperatures over 60° Celsius (140° Fahrenheit).	Check printer environment. If hot or dusty, relocate printer. Contact your authorized service representative if this occurs frequently. ¹
401:BUFFER OVERRUN	Yes	The print buffer has overflowed on a serial interface. The printed output may contain random * (asterisk) characters. Make a configuration printout.	Verify that the printer matches the host serial interface configuration settings for Data Protocol, Baud Rate, Data Bits, Stop Bits, Parity, Data Terminal Ready, and Request to Send. Set printer serial interface parameters to match those of the host.
402:CLEAR PAPER JAM	Yes	No paper motion.	Clear jam and reload paper. If this message recurs, contact your authorized service representative. ¹
403:CLOSE PLATEN	Yes	The platen lever is open.	Close the platen lever.
409:FRAMING ERROR	Yes	The printed output may contain random ! (exclamation point) characters.	Make a configuration printout. Set printer serial interface parameters to match host configuration settings for Data Protocol, Baud Rate, Data Bits, Stop Bits, Parity, Data Terminal Ready, and Request to Send.
410:LOAD PAPER	Yes	Printer is out of paper.	Load paper and press CLEAR.

Table 13. N7000 H-Series Fault Messages Troubleshooting

Displayed Message	Can User Correct?	Explanation	Solution
411:PARITY ERROR	Yes	The printed output may contain a random ? (question mark) characters.	Check your printer serial interface parameter settings; if necessary, adjust them so that they match the settings of the attached host.
414:RIBBON STALL	Yes	The controller board does not detect ribbon movement.	Check the ribbon path for jams. Turn the Ribbon Tension Knob clockwise a few rotations. If necessary, install a new ribbon.
415:SHUTTLE JAM	Yes	No shuttle movement or shuttle moving at the wrong speed.	Check for obstruction to shuttle, a twisted ribbon, or platen lever closed too tightly. If fault source is not apparent, contact your authorized service representative. ¹
416:STACKER FULL	Yes	Status message: the power paper stacker is full of paper.	Unload the stacker. If fault persists, contact your authorized service representative. ¹
417:STACKER JAM	Yes	This message is triggered if there is paper inside the throat of the stacker elevator, but the elevator is not moving.	1. Open the cabinet rear door and check for obstructions preventing elevator movement. Remove any obstructions. 2. Run the print job again. If the message appears again, contact your authorized service representative. ¹
418:RBN INK LOW Change RBN Soon	Yes	Status message indicating the Integrated Print Management System is enabled and ribbon ink level is 2%.	Install a new ribbon.
419:RBN INK OUT Install New RBN	Yes	Integrated Print Management System software has determined that the ribbon is out of ink.	Install a new ribbon.
420:EXC RBN WEAR Install New RBN	Yes	Status message that displays when ribbon reaches end of life, whether the Integrated Print Management System is enabled or not.	Install a new ribbon.
423:OLD RIBBON Install New RBN	Yes	The sensor detects a ribbon that was previously declared to be at the end of its service life.	Install a new ribbon.

Table 13. N7000 H-Series Fault Messages Troubleshooting

Displayed Message	Can User Correct?	Explanation	Solution
424:UNKNOWN RBN1 Install New RBN	Yes	The sensor detects a bar code, but the ribbon model is not permitted on this printer.	Install a new ribbon.
425:UNKNOWN RBN2 Install New RBN	Yes	The sensor detects a bar code, but the region code does not match the printer.	Install a new ribbon.
427:CRTG MISSING Install new RBN	Yes	The ribbon cartridge is missing or installed improperly.	<ol style="list-style-type: none"> 1. Make sure a ribbon cartridge is installed in the printer. 2. Make sure the ribbon cartridge is seated properly. 3. Remove and replace the cartridge if necessary. 4. Contact your authorized customer service representative.
428:CRTG COMM ER See User Manual	No	The hardware cannot communicate properly with the cartridge.	<ol style="list-style-type: none"> 1. Make sure the ribbon cartridge is seated properly. 2. Remove and replace the ribbon cartridge if necessary. 3. Contact your authorized service representative.
432:CRT NOT SET	Yes	The ribbon cartridge is not correctly positioned.	<ol style="list-style-type: none"> 1. Make sure a ribbon cartridge is installed in the printer. 2. Make sure the ribbon cartridge is seated properly. 3. Remove and replace the cartridge if necessary. 4. Contact your authorized customer service representative.
435:NO WELD See User Manual	No	The cartridge weld was not detected.	Clear fault and continue printing. If error occurs again, contact your authorized service representative.

Table 13. N7000 H-Series Fault Messages Troubleshooting

Displayed Message	Can User Correct?	Explanation	Solution
437:REG MISSING Use Correct RBN	Yes	The incorrect cartridge type is being used for the printer.	Install region X ribbon cartridge in the printer. NOTE: Specify the region of the printer when ordering ribbons.
438:TIP MISMATCH Use Correct RBN	Yes	The incorrect cartridge type is being used for the printer.	Install the correct ribbon cartridge type in the printer.
439:SHTL MISMATCH Use Correct RBN	Yes	This message displays when an Extended Life Ribbon is mounted on a 3H printer.	Install Standard Life Ribbon.
440:RWP DOWNLOAD Please Wait	No	Status message indicating the software in the cartridge is being updated. The user must wait for the update to complete.	No action is required.
601:15V CTL FAIL *	No	Controller voltage failure.	Contact your authorized service representative. ¹
602:23.5V CTL FAIL *	No	23.5 Volt Controller failed: a voltage failure on the controller board.	Contact your authorized service representative. ¹
604:48V CIRCUIT* See User Manual	No	Either the power supply is not generating a proper 48 Volts or the controller board is not detecting a 48 Volt output from the power supply board.	Contact your authorized service representative. ¹
605:48V PWR FAIL *	No	Internal power failure.	Contact your authorized service representative. ¹
606:Power 8.5V CHECK	No	8.5 Volt power failed. Internal power failure.	Contact your authorized service representative. ¹
607:CTL VOLT FAIL *	No	Controller Voltage Failure. 15 V failure on the controller board.	Contact your authorized service representative. ¹
608:DRIVER CIRCUIT BAD	No	Driver Circuit Bad. The hammer coil count test failed.	Contact your authorized service representative. ¹

Table 13. N7000 H-Series Fault Messages Troubleshooting

Displayed Message	Can User Correct?	Explanation	Solution
609:EXHAUST FAN CHECK (Cabinet model only)	Yes	Sensors cannot detect current in fan circuit.	Power off the printer and remove the paper path (see <i>Maintenance Manual</i>). Check that the fan cable connector is connected. Check for obstruction of vents and fan airway, and remove any obstructions. Check for items beneath the printer blocking cabinet vents. Power back on the printer. If this message appears again, contact your authorized service representative. ¹
613: HAM. COIL BAD #, #, #, ...etc	No	Hammer coil # failed current test at power up.	Contact your authorized service representative. ¹
614:HAMMER BANK* NOT INSTALLED	No	Hammer Bank Not Installed. Self-test routines do not detect hammer coils at printer start-up.	Contact your authorized service representative. ¹
615:HAMMER FAN CHECK	Yes	Sensors cannot detect current in fan circuit.	Check that fan cable is connected. Check for obstruction of vents and fan airway; remove any obstructions. Check for items beneath the printer blocking cabinet vents. Power back on the printer. If this message recurs, contact your authorized service representative. ¹
617:LOWER DRIVER SHORT*	No	Lower Driver Short. Circuit(s) on the hammer bank or in the hammer bank power cable shorted to ground.	Contact your authorized service representative. ¹
619:PAPER FEED DRIVER CIRCUIT* See Manual	No	Paper Feed Driver Circuit. The paper feed driver circuit on the controller board is drawing too much current.	Contact your authorized service representative. ¹
620:POWER VOLT CHECK*	No	Power Supply Voltage. The power supply has failed.	Replace power supply board.
622:SHUTTLE DRIVER CIRCUIT*	No	The shuttle driver circuit on the controller board is drawing too much current.	Contact your authorized service representative. ¹

Table 13. N7000 H-Series Fault Messages Troubleshooting

Displayed Message	Can User Correct?	Explanation	Solution
623:STACKER FAULT	Yes	Stacker is not functioning correctly.	Check for obstructions in the stacker area. If fault persists, contact your authorized service representative. ¹
624:UPPER DRIVER SHORT*	No	Upper Driver Short. Hammer driver circuits on the boards shorted to ground.	Cycle power to see if the message clears, if not, contact your authorized service representative. ¹
625:WRONG E-NET Remove NIC	Yes	Incompatible network interface card (NIC) is installed.	Install a compatible NIC to the printer then reboot. If this message still appears, contact your authorized service representative. ¹
700:A TO D OVERUN*	No	Analog to Digital Overrun. The analog-to-digital converter overflowed.	Contact your authorized service representative. ¹
701:ACCESS NULL POINTER*	No	Access Null Pointer: The processor tried to access a pointer that contains nothing (null).	Contact your authorized service representative. ¹
702:FIRMWARE ERROR*	No	Application software tried to perform an illegal printer function or damaged memory detected on the controller board.	Contact your authorized service representative. ¹
703:ILLEGAL EXTERNAL BUS ACC*	No	Illegal External Bus Access. Firmware error on the controller board.	Contact your authorized service representative. ¹
704:ILLEGAL INSTRUCTION ACC*	No	Illegal Instruction Accessed. Firmware error on the controller board.	Contact your authorized service representative. ¹
705:ILLEGAL OPERAND ACCESS*	No	Illegal Operand Accessed. Firmware error on controller board.	Contact your authorized service representative. ¹
706:PAP BAD TABLE*	No	Paper Bad Table. The paper feed process on the controller board has a corrupted table.	Contact your authorized service representative. ¹
707:PAPER BUSY TOO LONG*	No	Paper Busy Too Long. Firmware error on controller board.	Contact your authorized service representative. ¹

Table 13. N7000 H-Series Fault Messages Troubleshooting

Displayed Message	Can User Correct?	Explanation	Solution
708:PAPER FIFO OVERFLOW*	No	Paper First In First Out Overflow. Firmware error on controller board.	Contact your authorized service representative. ¹
709:PAPER FIFO UNDERFLOW*	No	Paper First In First Out Underflow. Firmware error on controller board.	Contact your authorized service representative. ¹
710:PAP ILLGL ST*	No	Paper Illegal State. Firmware error on controller board.	Contact your authorized service representative. ¹
711:PAP INCMPL ENER*	No	Paper Incompletely Energized. Firmware error on controller board.	Contact your authorized service representative. ¹
712:PAP INVLD CMD*	No	Paper Invalid Command. Firmware error on controller board.	Contact your authorized service representative. ¹
713:PAP INVLD PARM*	No	Paper Invalid Parameter. Firmware error on controller board.	Contact your authorized service representative. ¹
714:PAP NOT SCHED*	No	Paper Not Scheduled. The paper feed process is not scheduling on the controller board, and the printer cannot feed paper.	Contact your authorized service representative. ¹
715:PAP NT AT SPEED*	No	Paper Not At Speed. Firmware error on controller board.	Contact your authorized service representative. ¹
716:PAP UNEXP INT*	No	Paper Unexpected Interrupt. Firmware error on controller board.	Contact your authorized service representative. ¹
717:PLAT INV CMD*	No	Platen Invalid Command. Firmware error on controller board.	Contact your authorized service representative. ¹
718:PLAT INV PARM*	No	Platen Invalid Parameter. Firmware error on controller board.	Contact your authorized service representative. ¹
719:PLAT INV STATE*	No	Platen Invalid State. Firmware error on controller board.	Contact your authorized service representative. ¹
720:PROTECTED INSTRUCTION*	No	Protected Instruction. Firmware error on controller board.	Contact your authorized service representative. ¹

Table 13. N7000 H-Series Fault Messages Troubleshooting

Displayed Message	Can User Correct?	Explanation	Solution
721:RIB INVLD CMD* See User Manual	Yes	Ribbon Invalid Command. Firmware error on the controller board.	Cycle power. Run the print job again. If the message appears, download the emulation software again. If the message appears again, contact your authorized service representative. ¹
723:SHUTL INV CMD*	No	Shuttle Invalid Command. Firmware error on controller board.	Contact your authorized service representative. ¹
724 SHUTL INV PARM*	No	Shuttle Invalid Parameter. Firmware error on controller board.	Contact your authorized service representative. ¹
725:SHUTL OVER SPEED*	No	The shuttle is oscillating too rapidly.	Contact your authorized service representative. ¹
727:SOFTWARE ERROR*	No	Application software tried to perform illegal printer function, or damaged logic circuits found on controller board.	Contact your authorized service representative. ¹
728:STACK OVERFLOW*	No	Firmware error on controller board.	Contact your authorized service representative. ¹
729:STACK UNDERFLOW*	No	Firmware error on the controller board.	Contact your authorized service representative. ¹
730:TCB CORRUPTED*	No	Task Control Block Corrupted. Firmware error on controller board.	Contact your authorized service representative. ¹
731:UNDEFINED INTERRUPT*	No	Undefined Interrupt. Firmware error on controller board.	Contact your authorized service representative. ¹
732:UNDEFINED OPCODE	No	Undefined Opcode. Firmware error on controller board.	Contact your authorized service representative. ¹

Table 13. N7000 H-Series Fault Messages Troubleshooting

Displayed Message	Can User Correct?	Explanation	Solution
733 DP FIFO Busy*	Yes	There is a timing problem in the Engine Controller firmware.	<ol style="list-style-type: none"> 1. Cycle power. Run the print job again. If the message reappears, download the emulation software again. 2. Cycle power. Run the print job again. If the message reappears, contact your authorized service representative.¹
B00 STATUS: SDRAM DETECTION 166MHZ	No	Status message: the printer has begun its boot-up routines and is checking for the presence of SDRAM.	No action required.
B01 STATUS: 8245 SDRAM TEST 32MB	No	Status message: printer boot-up routines are testing SDRAM.	No action required.
B10 ERROR: NO DRAM DETECTED*	No	SDRAM DIMM may not be properly installed. Boot-up routines did not detect the presence of the SDRAM DIMM.	Cycle power to see if the message clears, if not, contact your authorized service representative. ¹
B11 ERROR: RAM TEST FAILED*	No	SDRAM failed the boot initialization test. SDRAM DIMM may not be properly installed.	Cycle power to see if the message clears, if not, contact your authorized service representative. ¹
B12 ERROR: PROGRAM MISSING*	Yes	The printer does not see a program in flash memory.	There is no program in printer memory. Download an emulation.
B13 ERROR: NOT COMPATIBLE*	No	Attempting to download a program that is not compatible with the printer.	Cycle power to see if the message clears, if not, contact your authorized service representative. ¹
B19 ERROR: DC RETURNED*	No	The message indicates an incorrectly assembled and tested machine.	Cycle power to see if the message clears, if not, contact your authorized service representative. ¹
B20 STATUS :00% DOWNLOAD MODE	No	Status message informing the operator that software is being downloaded. Percentage figure indicates approximate amount loaded into the printer.	No action is required.

Table 13. N7000 H-Series Fault Messages Troubleshooting

Displayed Message	Can User Correct?	Explanation	Solution
B21 STATUS: PRINTER RESET	No	Status message informing the operator that the printer is undergoing a system reset.	No action is required.
B22 ERROR: DECOMPRESS SIZE*	No	FLASH memory has not passed boot initialization tests.	Cycle power to see if the message clears, if not, contact your authorized service representative. ¹
B23 ERROR: DECOMPRESS CKSUM*	No	FLASH memory has not passed boot initialization tests.	Cycle power to see if the message clears, if not, contact your authorized service representative. ¹
B30 STATUS: INITIALIZING...	N/A	Status message: the printer is running its initialization routines after startup and successful memory tests.	No action is required.
B35 STATUS: WAITING FOR EC STATUS	N/A	Status message: the DC on the controller board is waiting for communication with the EC. If this message does not clear within a few seconds there is an electrical or electronic problem on the controller board.	Cycle power to see if the message clears, if not, contact your authorized service representative. ¹
B40 ERROR: SDRAM EEPROM CKSUM BAD*	No	Flash memory has not passed boot initialization tests.	Cycle power to see if the message clears, if not, contact your authorized service representative. ¹
B41 ERROR: DIM MEMORY NOT SDRAM*	No	The DRAM DIMM installed on the controller board is not Synchronous DRAM (SDRAM).	Cycle power to see if the message clears, if not, contact your authorized service representative. ¹
B42 ERROR: SDRAM ROWS NOT ALLOWED*	No	Printer boot initialization tests detect incorrect SDRAM.	Cycle power to see if the message clears, if not, contact your authorized service representative. ¹
B43 ERROR: SDRAM TOO MANY BANKS*	No	Printer boot initialization tests detect incorrect SDRAM.	Cycle power to see if the message clears, if not, contact your authorized service representative. ¹

Table 13. N7000 H-Series Fault Messages Troubleshooting

Displayed Message	Can User Correct?	Explanation	Solution
B44 ERROR: SDRAM NOT 64 BITS WIDE*	No	Printer boot initialization tests detect incorrect SDRAM.	Cycle power to see if the message clears, if not, contact your authorized service representative. ¹
B45 ERROR: SDRAM IS WRONG VOLTAGE*	No	Printer boot initialization tests detect incorrect SDRAM.	Cycle power to see if the message clears, if not, contact your authorized service representative. ¹
B46 ERROR: SDRAM HAS MIXED SIZES*	No	Printer boot initialization tests detect incorrect SDRAM.	Cycle power to see if the message clears, if not, contact your authorized service representative. ¹
B47 ERROR: SDRAM LARGER THAN 256M*	No	Printer boot initialization tests detect incorrect SDRAM.	Cycle power to see if the message clears, if not, contact your authorized service representative. ¹
B49 ERROR: SDRAM # LOGICAL BANKS*	No	Printer boot initialization tests detect incorrect SDRAM.	Cycle power to see if the message clears, if not, contact your authorized service representative. ¹
B50 ERROR: SDRAM LOGIC COMB BANKS*	No	SDRAM DIMM is not compatible with the computer. SDRAM DIMM may not be properly installed.	Cycle power to see if the message clears, if not, contact your authorized service representative. ¹
B51 STATUS: XX% LOADING...	No	Status message: printer boot-up routines are loading printer system software into flash memory and SDRAM.	No action required.
B53 ERROR: 12C NO ARBITRATION	No	There is a problem on the I ² C bus which allows the SDRAM DIMM to communicate with the GPIO interface.	Cycle power to see if the message clears, if not, contact your authorized service representative. ¹
B54 ERROR: SDA LINE STUCK LOW	No	The SDRAM or a PCI card is shorting out the serial data bus on the controller board.	Cycle power to see if the message clears, if not, contact your authorized service representative. ¹
CLEARING PROGRAM FROM FLASH	No	Status message: emulation software successfully loaded into printer RAM and the checksum matched. The old program is now being deleted from flash memory.	No action is required.

Table 13. N7000 H-Series Fault Messages Troubleshooting

Displayed Message	Can User Correct?	Explanation	Solution
D50 Status %XX Clearing Flash	No	Status message: The printer is clearing its flash memory, where %XX represents the percentage completed.	No action is required.
D51 Status %XX Programming...	No	Status message: The printer is loading firmware, where %XX represents the percentage completed.	No action is required.
D55 Status: Send Program to EC	No	Status message: The printer is loading the engine controller program into the engine controller (EC).	No action is required.
DIAGNOSTIC PASSED	No	Status message: the printer passed its memory and hardware initialization tests.	No action is required.
DO NOT POWER OFF	No	Status message: The printer is performing an operation that must be completed before you can cycle power.	No action is required, but do not power off the printer until the operation is complete.
E00 EXE @ ADDR0 See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.
E01A TYPE 0x40 See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.

Table 13. N7000 H-Series Fault Messages Troubleshooting

Displayed Message	Can User Correct?	Explanation	Solution
E01B TYPE 0x60 See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.
E02 MACHINE CHK See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.
E03A DSI HASH L See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.

Table 13. N7000 H-Series Fault Messages Troubleshooting

Displayed Message	Can User Correct?	Explanation	Solution
E03B DSI HASH S See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.
E03C DSI BAT PL See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.
E03D DSI BAT PS See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.

Table 13. N7000 H-Series Fault Messages Troubleshooting

Displayed Message	Can User Correct?	Explanation	Solution
E03E DSI CXIWX See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.
E03F DSI CXOWX See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.
E03G DSI ECXIWX See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.

Table 13. N7000 H-Series Fault Messages Troubleshooting

Displayed Message	Can User Correct?	Explanation	Solution
E03H DSI ECXOWX See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.
E04A ISI NO TRA See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.
E04B ISI DIRECT See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.

Table 13. N7000 H-Series Fault Messages Troubleshooting

Displayed Message	Can User Correct?	Explanation	Solution
E04C ISI PROTEC See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.
E06 NOT ALIGNED See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.
E07 ILLEGAL INS See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.

Table 13. N7000 H-Series Fault Messages Troubleshooting

Displayed Message	Can User Correct?	Explanation	Solution
E08 FLOATINGPNT See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.
E12 SYSTEM CALL See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.
E13 TRACE INT See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.

Table 13. N7000 H-Series Fault Messages Troubleshooting

Displayed Message	Can User Correct?	Explanation	Solution
E16 ITRANS MISS See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.
E17 DLOAD MISS See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.
E18 DSTORE MISS See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.

Table 13. N7000 H-Series Fault Messages Troubleshooting

Displayed Message	Can User Correct?	Explanation	Solution
E19 BREAKPOINT See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.
E20 SYS MANAGE See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.
E30 DEBUGGER See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.

Table 13. N7000 H-Series Fault Messages Troubleshooting

Displayed Message	Can User Correct?	Explanation	Solution
E31A EVENT 0 BP See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.
E31B EVENT 1 BP See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.
E31C EVENT 2 BP See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.

Table 13. N7000 H-Series Fault Messages Troubleshooting

Displayed Message	Can User Correct?	Explanation	Solution
E31D EVENT 3 BP See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.
E31E EVENT 4 BP See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.
E31F EVENT 5 BP See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.

Table 13. N7000 H-Series Fault Messages Troubleshooting

Displayed Message	Can User Correct?	Explanation	Solution
E31G EVENT 6 BP See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.
E31H EVENT 7 BP See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.
E32A CND 0 BP See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.

Table 13. N7000 H-Series Fault Messages Troubleshooting

Displayed Message	Can User Correct?	Explanation	Solution
E32B CND 1 BP See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.
E32C CND 2 BP See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.
E32D CND 3 BP See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.

Table 13. N7000 H-Series Fault Messages Troubleshooting

Displayed Message	Can User Correct?	Explanation	Solution
E32E CND 4 BP See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.
E32F CND 5 BP See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.
E32G CND 6 BP See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.

Table 13. N7000 H-Series Fault Messages Troubleshooting

Displayed Message	Can User Correct?	Explanation	Solution
E32H CND 7 BP See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.
E33 WRITE BP See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.
E34 TRACE CMPLT See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.

Table 13. N7000 H-Series Fault Messages Troubleshooting

Displayed Message	Can User Correct?	Explanation	Solution
E99 UNKNOWN INT See User Manual	Yes	An illegal or unsupported instruction was attempted in the application program.	<ol style="list-style-type: none"> 1. Cycle Power. Run the print job again. If the message appears, load the latest emulation software. 2. Cycle power. Run the print job again. If the message appears, record the display message and send it to your next higher support facility.
ERROR: CPLD NOT PROGRAMMED	No	The Complex Programmable Logic Device (CPLD) on the controller board is not programmed. The EC cannot read the version bits in the CPLD which tell the EC which configuration version is installed.	Contact your authorized service representative. ¹
ERROR: DC PROGRAM NOT VALID	Yes	The printer cannot find the data controller program or the validation checksum is corrupt.	Download the program again. If the message appears, contact your authorized service representative. ¹
ERROR: DRAM AT ADDRESS XXXXXXXX	Yes	The printer cannot find the engine controller program or the validation checksum is corrupt.	Download the program again. If the message appears, contact your authorized service representative. ¹
ERROR: EC PROGRAM NOT VALID		The printer cannot find the engine controller program or the validation checksum is corrupt.	Download the program again. If the message occurs again, contact your authorized service representative. ¹
ERROR: EC STOPPED AT STATE XXXX	No	XXXX is a number from 0000 to 0010. The Engine Controller has stopped and is in the state identified by the number displayed.	Contact your authorized service representative. ¹
ERROR: FLASH DID NOT PROGRAM	Yes	The printer encountered an error trying to program flash memory.	Download the program again. If the message displays again, contact your authorized service representative. ¹
ERROR: FLASH NOT DETECTED	No	The printer could not find flash memory.	Contact your authorized service representative. ¹

Table 13. N7000 H-Series Fault Messages Troubleshooting

Displayed Message	Can User Correct?	Explanation	Solution
ERROR: LOCKED SN=nnnnnnnnnnnnnnnnnn nnnnnn	No	nnnnnnnnnnnnnnnnnn is the serial number of the printer's security key. The SPX serial number does not match the printer's serial number and cannot be used with the printer.	Contact your authorized service representative. ¹
ERROR: NO DRAM DETECTED	No	The printer could not find any DRAM.	Contact your authorized service representative. ¹
ERROR: NVRAM FAILURE	No	The non-volatile SRAM on the controller board has failed.	Contact your authorized service representative. ¹
ERROR OCCURRED FLUSHING QUEUES*	No	An interim message that displays while the printer discards host data it cannot use because a fault condition exists.	Wait. When the asterisk (*) stops rotating, a different fault message will appear: troubleshoot the final message.
ERROR: PROGRAM NEEDS MORE DRAM	No	The printer requires more DRAM to run the downloaded program.	Contact your authorized service representative. ¹
ERROR: PROGRAM NEEDS MORE FLASH	No	The printer requires more flash memory to run the downloaded program	Contact your authorized service representative. ¹
ERROR: PROGRAM NOT COMPATIBLE	Yes	The printer is not compatible with the downloaded program.	Use the correct emulation software options(s) for this printer model.
ERROR: PROGRAM NOT VALID	Yes	The printer does not see a program in flash memory.	There is no program in printer memory. Download the emulation.
ERROR: SECURITY KEY NOT DETECTED	No	The security key is not present or failed.	Contact your authorized service representative. ¹
ERROR: SHORT AT ADDRESS XXXX	No	Hardware failure in SDRAM or controller circuitry.	Contact your authorized service representative. ¹
ERROR: WRITING TO FLASH	No	Hardware or software fault in flash memory.	Contact your authorized service representative. ¹
ERROR: WRONG CHECKSUM	No	The printer received the complete program but the checksum did not match. The data may have been corrupted during downloading.	Contact your authorized service representative. ¹

Table 13. N7000 H-Series Fault Messages Troubleshooting

Displayed Message	Can User Correct?	Explanation	Solution
ERROR: WRONG OEM	No	The SPX inserted in the debug port is not intended for this model printer or this OEM.	Contact your authorized service representative. ¹
ERROR: WRONG PRINTER TYPE	No	The SPX inserted in the debug port is not intended for this model printer or this OEM.	Contact your authorized service representative. ¹
ETHERNET DETECTED	N/A	Status message indicating that the Network Interface Card has established connection.	No action is required.
ETHERNET INITIALIZING	No	Status message: the internal Network Interface Card is processing the boot procedure. (May occur with older versions of microcode.)	No action is required.
H00: PCI SLOT ? See User Manual	No	The controller board is not communicating with a PCI card. This could indicate a bad PCI card, poor connection, or problem in the PCI bus.	Contact your authorized service representative. ¹
H01: PCI J12 See User Manual	No	The controller board is not communicating with the PCI card in PCI slot J12. This could indicate a bad PCI card, poor connection, or problem in the PCI bus.	Contact your authorized service representative. ¹
H02: PCI J13 See User Manual	No	The controller board is not communicating with the PCI card in PCI slot J13. This could indicate a bad PCI card, poor connection, or problem in the PCI bus.	Contact your authorized service representative. ¹

Table 13. N7000 H-Series Fault Messages Troubleshooting

Displayed Message	Can User Correct?	Explanation	Solution
<Online, etc...> Half Speed Mode	No	Status message: The controller samples the operating temperature of key components of the print mechanism. When higher than normal temperatures are sensed, the print speed is automatically reduced by 50% and the message sent the LCD. When the components cool down, the print speed returns to 100% and the message clears.	No action is required. If the message appears often, contact your authorized service representative. ¹
610:HAMMER COIL CHECK	No	Hammer Coil Open. Electrical malfunction of one or more hammer coils.	Contact your authorized service representative. ¹
616:INTAKE FAN CHECK	Yes	Sensors cannot detect current in fan circuit.	Cycle power. If the message appears, press CLEAR. If the message does not clear, contact your authorized service representative. ¹
INTERRUPT UNUSED VECTOR 00	No	The controller board receives an interrupt it does not understand. The problem can be created by electrical noise, by a software problem, or by a hardware problem.	Cycle power. If this message occurred once and never again, you can ignore it. If the message reappears or appears consistently, contact your authorized service representative. ¹
LOADING PROGRAM FROM PORT XX%	No	Status message: the new emulation program is loading into printer RAM. XX% indicates how much of the program has loaded.	No action is required.
LOADING PROGRAM INTO FLASH	No	The printer has deleted the previous program from flash memory and is loading the new program into flash memory.	No action is required.
NEW SPX DETECTED PRESS ENTER	No	The printer detects an SPX installed at the debug port and the SPX is valid for the printer.	Contact your authorized service representative. ¹

Table 13. N7000 H-Series Fault Messages Troubleshooting

Displayed Message	Can User Correct?	Explanation	Solution
NON VOLATILE MEMORY FAILED	No	Large emulations reduce the amount of space available for saving configurations, which means that sometimes fewer than eight configurations can be saved.	Contact your authorized service representative. ¹
ON LINE	N/A	Printer state message: printer is online and in communication with host.	No action is required.
PLEASE WAIT... RESET IN PROGRESS	N/A	Status message: the printer finished loading the program into flash memory and is automatically resetting itself.	No action is required.
PRINTER UNDER REMOTE CONTROL	No	Status message: The printer is under the control of PrintNet Enterprise (PNE) remote management software.	No action is required.
REMOVE USED SPX THEN PRESS ENTER	No	Status message: An SPX is depleted because it has successfully reprogrammed the security key on the controller board.	Contact your authorized service representative. ¹
RESTORING BOOT CODE	No	Normal download initialization message.	No action is required.
SECURITY VIOLATION*	No	Security code of PAL on controller board does not match code of firmware on the controller board.	Contact your authorized service representative. ¹
SECURITY KEY NOT DETECTED	No	The security key is not present or has failed.	Contact your authorized service representative. ¹
SENDING PROGRAM TO EC PROCESSOR	No	Status message: the printer is loading the engine controller program into the engine controller.	No action is required.
SPX FOUND, ERROR: KEY NOT DETECTED	No	The controller board does not have a security key.	Contact your authorized service representative. ¹
SPX NOT NEEDED OPTIONS ENABLED	No	The user has attempted to use the SPX to turn on printer options that are already enabled.	Contact your authorized service representative. ¹

Table 13. N7000 H-Series Fault Messages Troubleshooting

Displayed Message	Can User Correct?	Explanation	Solution
TCP PORT BUSY	Yes	Error message reported by the Printer Manager when ethernet interface option is installed. The network address given in the printer properties was reached, but the printer port is busy.	Refer to the <i>Printronix N7000 Maintenance Manual</i> .
<p>¹ Before contacting an authorized service representative, power off the printer, wait 15 seconds, then power it back on and rerun your print job. If the message reappears, press CLEAR. If the fault message still displays, then contact your authorized service representative.</p>			

A

Printer Specifications

Ribbon Cartridge Specifications

P/N	
255048 Ext Life ASCII	(-404) 4-Pack (-104) 1-Pack
255049 Std Life ASCII	(-104) Single
255050 Ext Life HANZI	(-404) 4-Pack (-104) 1-Pack
255051 Std life HANZI	(-104) Single

Paper Specifications

Type:	Edge-perforated, fan-fold, 3 to 17 inches (7.62 to 43.18 cm) wide, 2 to 12 inches (5.08 to 30.48 cm) long. SureStak Power Stacker option works with forms 5 to 12 inches (12.7 to 30.48 cm) long and up to 16 inches (41 cm) wide without the paper tent or 15.5 inches (39.5 cm) wide with the paper tent installed.
Thickness:	Single-part: 15 to 100 pound (6.80 to 45.36 kg) stock; Multi-part: 1- to 6-part forms (maximum 12 lb [5.44 kg] ply of upper plies)
Sheet Thickness:	0.025 inch (0.064 cm) maximum
Drive:	Adjustable tractors (6-pin engagement)

Labels

On Backing: One-part continuous perforated fanfold back form. Labels must be placed at least 1/6 inch (0.42 cm) from the fan-fold perforation. Backing adhesive must not be squeezed out during printing.

Sheet Size: 3 to 17 inches (7.62 to 43.18 cm) wide, including the two standard perforated tractor feed strips. A maximum sheet length of 16 inches (40.64 cm) between top and bottom perforations.

NOTE: A 16 inch rear door is needed for the cabinet model. Power Paper Stacker option is 5 to 12 inches (12.7 to 30.48 cm) long.

Thickness: Not to exceed 0.025 inch (0.064 cm) (including backing sheet)

Printer Weight and Dimensions

Cabinet Type	Dimensions			Weight	
	Height	Width	Depth	Unpacked	Packaged
Floor Cabinet	42.5 inches	27 inches	29 inches*	225 lbs.	285 lbs.*
Pedestal	35 inches**	26 inches	21 inches	105 lbs.**	115 lbs.**

* With a power stacker, the weight increases by 21 lbs. and the depth increases by 4.75 inches for a deeper rear door.

** With the ZTP option, the weight increases by 12 lbs. and the height is increased by 7 inches.

Environmental Characteristics

Temperature:

Operating: 50° to 104° F (10° to 40° C) up to 5000 feet (1524 meters)
50° to 90° F (10° to 32° C) up to 8000 feet (2438 meters)

Storage: -40° to 158° F (- 40° to 70° C)

Relative Humidity

Operating: 15% to 80% (noncondensing)

Storage: 15% to 90% (noncondensing)

Acoustic Noise Level

Acoustic Noise Levels per ISO 9296	Cabinet Models	Pedestal Models
Printing	50 dB (500 lpm/1000 lpm) 52 dB (1500 lpm) 55 dB (2000 lpm)	65 dB 65 dB NA
	6.8 Bel	8.0 Bel
Standby	48 dB	50 dB
	6.3 Bel	6.5 Bel

Energy Star

The printers described in this *User's Manual* comply with the requirements of the ENERGY STAR[®] Office Equipment Program of the U.S. Environmental Protection Agency.

Electrical Characteristics

Model	Style	Voltage (+/-10%)	Freq (+/-10%)	Amps	Watts	BTU/Hr
N7000	365H	AC 200-240V	50-60 Hz	1.6A	300W	1025
N7000	365HZT	AC 200-240V	50-60 Hz	1.6A	300W	1025
N7000	500	AC 100-120V	50-60 Hz	1.5V	275W	940
N7000	500ZT	AC 100-120V	50-60 Hz	1.5A	275W	940
N7000	650H	AC 200-240V	50-60 Hz	1.9A	430W	1469
N7000	650HZT	AC 200-240V	50-60 Hz	1.9A	430W	1469
N7000	805H	AC 200-240V	50-60 Hz	2.1A	540W	1844
N7000	1000	AC 100-120V	50-60 Hz	1.6A	300W	1025
N7000	1000ZT	AC 100-120V	50-60 Hz	1.6A	300W	1025
N7000	1500	AC 100-120V	50-60 Hz	1.9A	430W	1469
N7000	1500ZT	AC 100-120V	50-60 Hz	1.9A	430W	1469
N7000Q	365H	AC 200-240V	50-60 Hz	1.6A	350W	1195
N7000Q	500	AC 100-120V	50-60 Hz	1.6A	350W	1195
N7000Q	650H	AC 200-240V	50-60 Hz	2A	460W	1571
N7000Q	805H	AC 200-240V	50-60 Hz	2.1A	540W	1844
N7000Q	1000	AC 100-120V	50-60 Hz	1.6A	350W	1195
N7000Q	1500	AC 100-120V	50-60 Hz	2A	460W	1571
N7000Q	2000	AC 100-120V	50-60 Hz	2.1A	540W	1844

The above values are calculated while printing 136 column, all upper case high speed "E's". The stand-by (Energy Saver mode) wattage is 28W (96 BTU/Hr) for all models.

Interfaces

Type:	Standard:	IEEE 1284 Parallel, Centronics Parallel, RS-232 serial, Dataproducts Parallel, Ethernet 10/100Base-T
	Optional:	RS-422 serial
Logic Levels:		TTL/EIA [®] -232E/EIA-422B
Transfer Rates:		Up to 200 Kilobytes on parallel interface. Up to 19.2K baud on RS-232 serial interface. Up to 115.2K baud on RS-422 serial interface

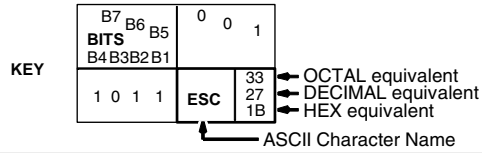
Printing Rates

The printing speed of text is measured in lines per minute (lpm) and is a function of the selected font and the vertical dot density. Printing speed is independent of the number of characters configured in the character set repertoire. Print rates for lines containing attributes such as bold or emphasized printing, superscripts, subscripts, or elongated attributes will decrease to not less than half the rates of the font without such attributes. The exact print rate of lines containing these attributes depends on the specific print job, but software maximizes the throughput by dynamically determining which dot rows contain adjacent dots and must be printed in two strokes.

The reverse paper feed capability allows the printing of multiple densities on a single line. This is useful in printing forms and text together or in mixing different fonts on a print line. Use of multiple densities and reverse paper feed also affects throughput.

B

ASCII Character Set



B7 B6 B5		0	0	0	0	0	1	0	1	0	1	1	0	0	1	1	0	1	1	1		
BITS		COLUMN			2			3			4			5			6			7		
B4	B3	B2	B1	ROW	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15		
0	0	0	0	0	NUL	DLE	SP	0	@	P	\	p	160	112	70							
0	0	0	1	1	SOH	DC1 (XON)	!	1	A	Q	a	q	161	113	71							
0	0	1	0	2	STX	DC2	"	2	B	R	b	r	162	114	72							
0	0	1	1	3	ETX	DC3 (XOFF)	#	3	C	S	c	s	163	115	73							
0	1	0	0	4	EOT	DC4	\$	4	D	T	d	t	164	116	74							
0	1	0	1	5	ENQ	NAK	%	5	E	U	e	u	165	117	75							
0	1	1	0	6	ACK	SYN	&	6	F	V	f	v	166	118	76							
0	1	1	1	7	BEL	ETB	'	7	G	W	g	w	167	119	77							
1	0	0	0	8	BS	CAN	(	8	H	X	h	x	170	120	78						
1	0	0	1	9	HT	EM	)	9	I	Y	i	y	171	121	79						
1	0	1	0	10	LF	SUB	*	:	J	Z	j	z	172	122	7A							
1	0	1	1	11	VT	ESC	+	;	K	[	k	{	173	123	7B						
1	1	0	0	12	FF	FS	,	<	L	\	l	|	174	124	7C							
1	1	0	1	13	CR	GS	-	=	M	]	m	}	175	125	7D						
1	1	1	0	14	SO	RS	.	>	N	^	n	~	176	126	7E							
1	1	1	1	15	SI	US	/	?	O	_	o	DEL	177	127	7F							

C

Zero Tear Pedestal Printer

Overview

The N7000 Zero Tear Pedestal (ZTP) printer can print a form and present it for tear off without losing a form between print jobs. The printer automatically presents the current print line to the tear bar when it finishes printing and no data are being sent to the printer. When it receives more data from the host computer, the printer pulls the form down to the print station and resumes printing.

The ZTP printer is available in the following configurations:

- 500 lpm, 1000 lpm, 1500 lpm standard ASCII models.
- 300 lpm and 600 lpm H-Series models.

Operation

Position the Paper Input and Adjust the Paper Guides

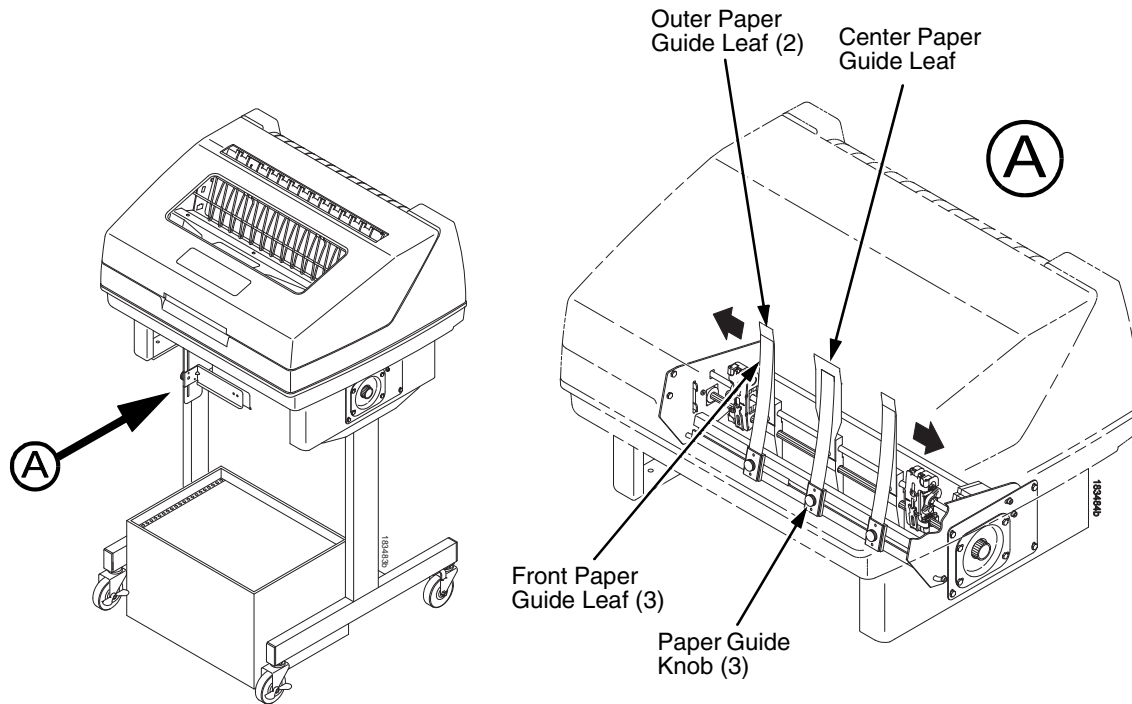


Figure 27. Adjusting The Paper Guides

NOTE: Ensure that the paper guides are not damaged.

1. Remove the left paper guide knob and the left, front paper guide leaf. (See Figure 27.)
2. Remove the right paper guide knob and the right, front paper guide leaf.
3. Remove the center paper guide knob and the center, front paper guide leaf.

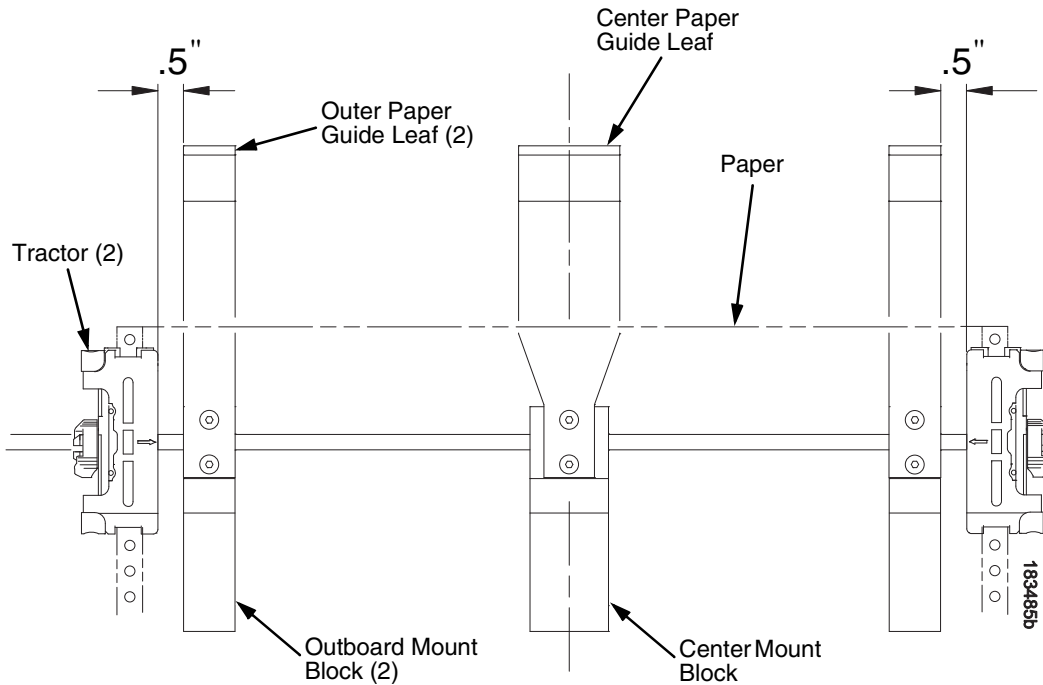


Figure 28. Adjusting Paper Guide Leaves

4. Slide the left outboard mount block so that the left outer paper guide leaf is .5 inches from the left tractor. (See Figure 28).
5. Slide the right outboard mount block so that the right outer paper guide leaf is .5 inches from the right tractor.
6. Slide the center mount block so that the center paper guide leaf is centered between the left and right outer paper guide leaves.
7. Install the paper guide knobs and front paper guide leaves. (See Figure 27.)

Load Paper

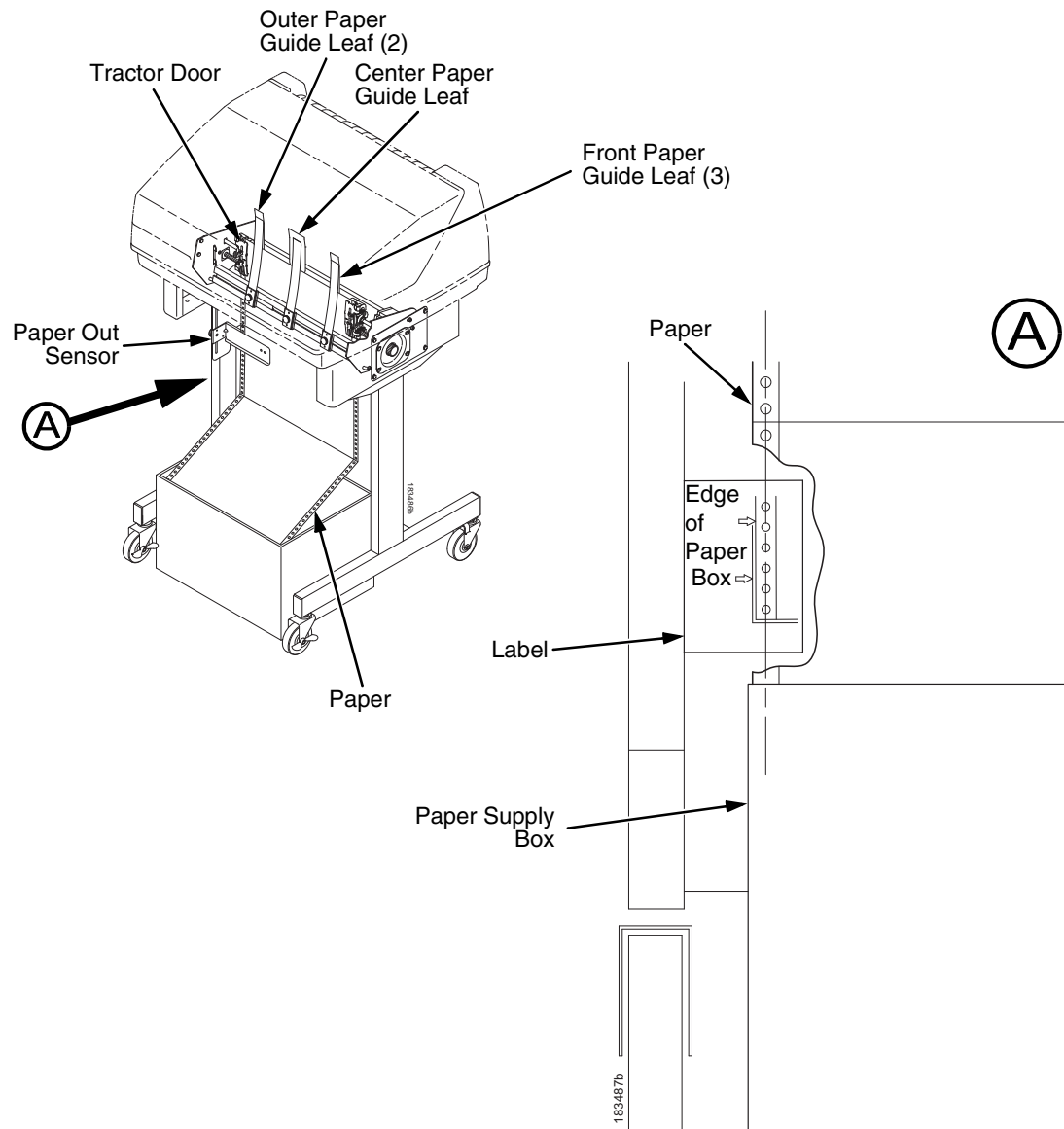


Figure 29. Loading Paper Onto The Printer

1. Align the paper supply box with the label on the bottom left side of the modesty panel. (See Figure 29 on page 250.)
2. Unlock and open the tractor doors and slide the paper from below, through the black paper out sensor slot on the left side, and up between all front and rear paper guides.
3. Load the paper on the left tractor sprockets and close the tractor door.
4. Load the paper onto the right tractor sprockets and close the tractor door.

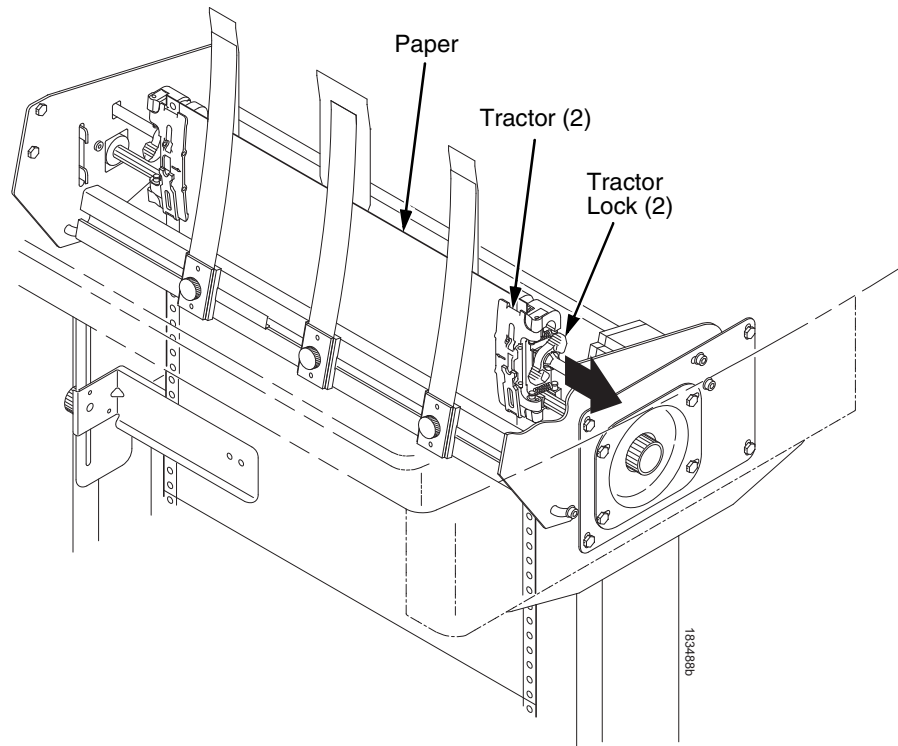


Figure 30. Adjusting the Horizontal Paper Tension

5. Adjust the paper web tightness by sliding the right tractor to remove slack or to adjust for various paper widths. (See Figure 30.)
6. Lock the tractors in position by pressing down on the tractor locks.

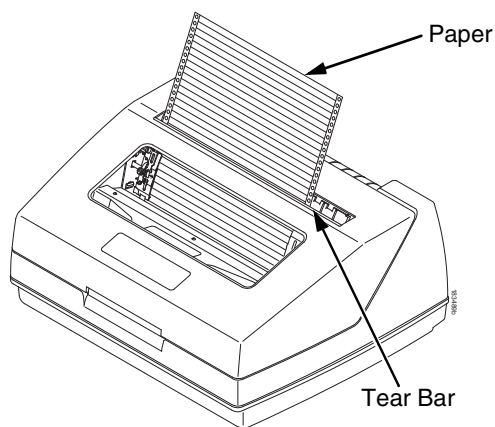


Figure 31. Paper Exiting the Top of the Printer

Position the Paper Out Sensor

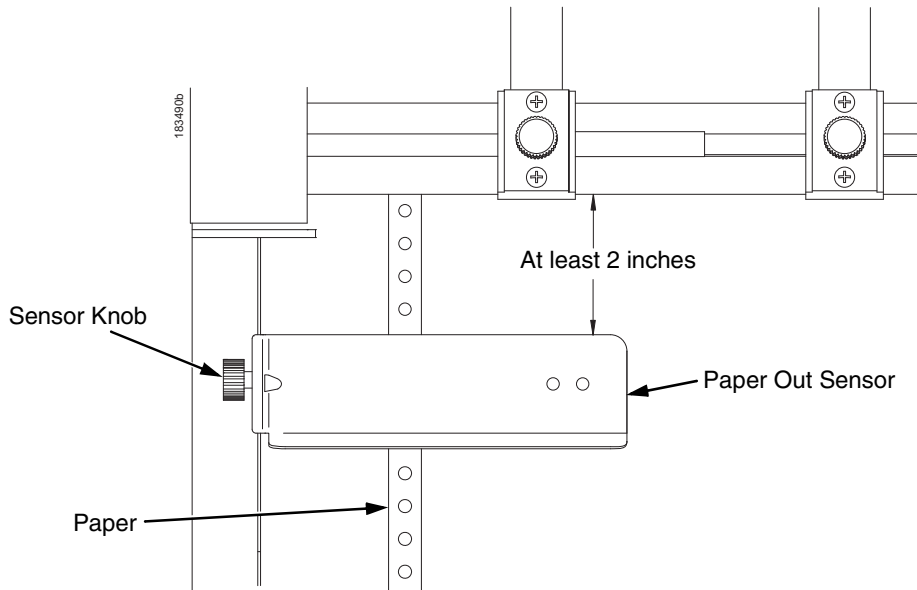


Figure 32. The Paper Out Sensor

The paper out sensor indicates when the printer runs out of paper. (The sensor does not work with black backed forms.) Unlike the standard pedestal printer, the ZT printer requires you to load the paper through the paper out sensor slot (Figure 29 and Figure 32). Correct positioning of the paper out sensor ensures that the last form the printer prints will be properly presented to the tear bar. To position the paper out sensor, do the following:

1. Position the paper properly at the tear bar (page 254).
2. Loosen the paper out sensor by turning the sensor knob counterclockwise.
3. Position the paper out sensor so that there are at least 2 inches between the bottom of the aluminum extrusion bar and the top of the paper out sensor.

IMPORTANT

For optimal performance, 2 inches is recommended for 11 inch forms. For shorter forms, position the paper out sensor so that there are at least 2 inches between a perforation and the top of the paper out sensor.

4. Tighten the paper out sensor by turning the sensor knobs clockwise.
5. Press **ON LINE/CLEAR**. When the first print job is sent to the printer, the paper is drawn into the printer, the top of form aligns with the print station, and the print job begins.

Set the Tear Bar Distance

To set the tear bar distance, do the following steps:

1. Make sure the printer is offline.
2. Press **ENTER** key to enter the menu.
3. Press the right arrow \triangleright until "OFFLINE/ZTP Menu" displays.
4. Press the down arrow ∇ . "ZTP Data Time" displays.
5. Press the right arrow \triangleright until "ZTP TearDistance" displays.
6. Press the down arrow ∇ . "ZTP TearDistance/xx/144 Inch" displays.
7. Press the left arrow \triangleleft or right arrow \triangleright to decrease or increase the tear bar distance in increments of 1/144th of an inch.
8. Press **ENTER** to select the desired value. An asterisk appears next the selected value and a scale prints to indicate the tear bar distance in relation to the tear bar. For correct tear bar distance, the zero should align with the tear bar. See Figure 33.

NOTE: The Tear Distance value must be changed to print the scale.

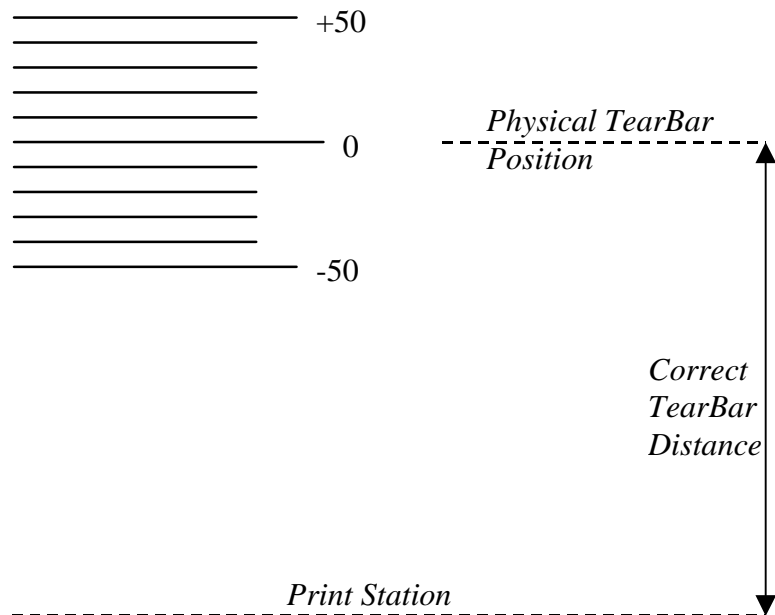


Figure 33. Correct Tear Bar Distance

NOTE: When a new ZTP Tear Bar Dist value is selected, the printer will lose the current print position until you reset the top of form to automatically save the new value.

9. Reset the top of form using the procedure on page 254.

Set the Top of Form

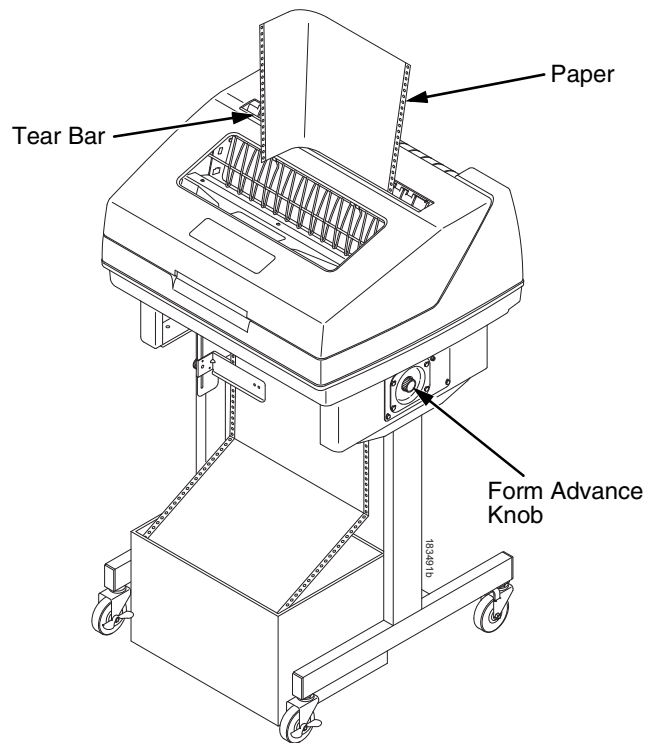


Figure 34. Setting The Tear Off Position

The ZT printer uses the tear bar as the reference point for setting the tear off position. To set the position of the forms perforation to the tear bar, use the **SET TOF** button as follows:

1. Make sure the paper guides are adjusted correctly and the paper is properly loaded.
2. Press the **SET TOF** button on the control panel. The printer display will read "Align at TearBar/Then Press TOF".
3. Use the form advance knob to move the top of the form to the tear off bar.
4. Position the perforation so it aligns with the tear off bar.

NOTE: This is easily done by advancing one complete sheet above the tear off bar and folding it over at the perforation.

5. Position the fold exactly at the tear bar.
6. Tear the sheet off to ensure proper positioning.

NOTE: If you do not want to lose a form, position the top of the form at the tear bar. Run a finger along the back of the form along the tear bar to ensure the perforation is presented at the tear off point.

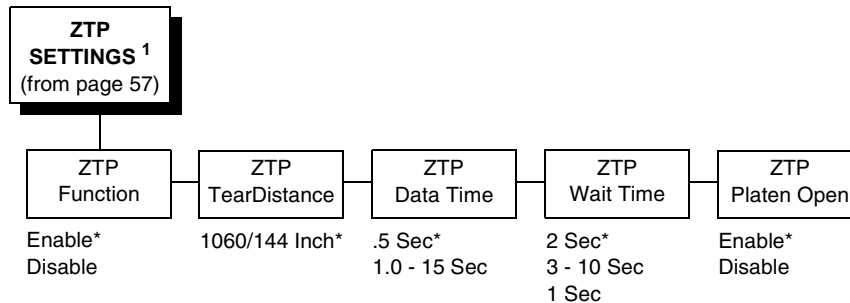
7. Press the **SET TOF** button again. The printer display will read "Top Of Form Set/Press ONLINE". The printer will then be brought OFFLINE and the top of form will be set.
8. Press the **ON LINE/CLEAR** key to bring the printer online.

ZTP SETTINGS Menu

The ZTP SETTINGS menu includes the ability to enable and disable features unique to the Zero Tear printer (ZTP), set the tear bar distance, set the auto present data time, and set the auto present wait time. This section defines these options.

* = Factory Default

¹ Available for Zero Tear Pedestal printers only.



ZTP Function

This option enables or disables all unique ZTP functions. The default is Enable.

NOTE: When the ZTP Function is enabled, the View/Eject key is disabled and Slow Paper Slew is enabled.

ZTP TearDistance

This option sets the tear off distance from the current print position to the tear bar. Adjustable values in increments of 1/144th of an inch range from 200 to 2880. The up and down arrows adjust the display value. When you press the **Enter** key, the selected value is stored and a scale is printed to indicate the current tear off position. The default value is 1060.

NOTE: When a new value is selected, the printer will lose the current print position. You must reset the top of form to automatically save the new value.

ZTP Data Time

This option sets the pause time in the data stream that the ZTP requires before moving the form to the tear bar once a print job is completed. The values range from .5 to 15 seconds. The default is .5 seconds.

ZTP Wait Time

This option sets the minimum amount of time that the form stays at the tear bar. This allows you time to remove the form before the form is retracted to print the next form. The adjustable values range from 1 to 10 seconds in increments of 1 second. The default value is 2 seconds.

ZTP Platen Open

This option allows the user to have the platen open whenever forms are reversed. Enabled is the default, used for most papers and labels. The feature can be disabled as required by some multi-part forms.

Performance Limitations

Forms Type

The paper feed tractors on the ZT printer push the paper up through the print station instead of pulling it through, as in the standard pedestal printer. This limits the variety of forms the ZT printer can use. If the forms do not fall within the range specified in Table 14, dot compression and line separation may occur. The user should match the media to the application to ensure acceptable print quality. Also, because paper is pushed from below the print station, the last form in the tractors may not print fully or may not be presented to the printer exit for retrieval.

All paper used in the ZT printer requires standard half inch spaced tractor feed holes. Cut sheet and continuous friction fed paper is not supported. The forms specified in Table 14 can have no more than one form per page horizontally.

Table 14. Forms Type

Description	Length	Width (edge to edge)
One to three part, continuous, with carbon, fan-folded, edge-perforated paper forms	3 to 12 inches	7 to 16.5 inches
One to four part, continuous, with carbon, fan-folded, edge-perforated paper forms	3 to 12 inches	7 to 12 inches
One to four part, continuous, carbonless, fan-folded, edge-perforated paper forms	3 to 12 inches	7 to 16.5 inches
One to six part, continuous, carbonless, fan-folded, edge-perforated paper forms	3 to 12 inches	7 to 12 inches
Forms with a paper weight of 20 to 100 pounds and a maximum thickness of 0.025 inches	3 to 12 inches	7 to 16.5 inches
Forms with a paper weight of 18 to 100 pounds and a maximum thickness of 0.025 inches	3 to 12 inches	7 to 12 inches
Forms with all approved types of interleaf edge attachment except those using metallic or other hard devices		

NOTE: If you use forms outside these limits, the print quality may not be optimum, the printer may lose top-of-form, or the frequency of paper jams will increase.

Paper Jams

Printer jams can occur if you tear off the form incorrectly. If you experience two or more paper jams per box of forms, follow these guidelines to help reduce jams:

- Position the lower paper guides properly
- Align the paper web tightness properly
- Position the form perforation against the tear bar
- Time the tear, while the paper is not moving
- Direct the tear force toward the user and across the tear bar, not upward.

To Clear Paper Jams

1. Raise the platen lever to open the platen.
2. Open the left and right tractor doors.
3. Pull the paper upward through the top of the printer.

NOTE: DO NOT pull the paper downwards from the bottom. This could cause the paper guides to bend.

4. Reload the paper (see page 250).

D

Customer Support

Printronix Customer Support Center

IMPORTANT Please have the following information available prior to calling the Printronix Customer Support Center:

- Model number
- Serial number (located on the back of the printer)
- Installed options (i.e., interface and host type if applicable to the problem)
- Configuration printout:
Line Matrix Printer
Press PRT CONFIG on the control panel, then press Enter.
- Is the problem with a new install or an existing printer?
- Description of the problem (be specific)
- Good and bad samples that clearly show the problem (faxing or emailing these samples may be required)

China (86) 800-999-6836

<http://www.primtronix.com/support.aspx>

Printronix Supplies Department

Contact the Printronix Supplies Department for genuine Printronix supplies.

China (86) 400-886-5598

<http://www.primtronix.com/supplies-parts.aspx>

Corporate Offices

Printronix, Inc.
15345 Barranca Parkway
Irvine, CA 92618
U.S.A.
Irvine, CA 92623-9559
Phone: (714) 368-2300
Fax: (714) 368-2600

Printronix, Inc.
c/o Printronix Nederland BV
Bijsterhuizen 11-38
6546 AS Nijmegen
The Netherlands
Phone: (31) 24 6489489
Fax: (31) 24 6489499

Printronix Schweiz GmbH
42 Changi South Street 1
Changi South Industrial Estate
Singapore 486763
Phone: (65) 6542 0110
Fax: (65) 6546 1588

Printronix Commercial (Shanghai) Co. Ltd
22F, Eton Building East
No.555, Pudong Av.
Shanghai City, 200120, P R China
Phone: (86) 400 886 5598
Fax: (86-21) 5138 0564

Visit the Printronix web site at www.primtronix.com

E

Communication Notices

Notices

This information was developed for products and services offered in the U.S.A.

Printronix may not offer the products, services, or features discussed in this document in other countries. Consult your Printronix representative for information on the products and services currently available in your area. Any reference to an Printronix product, program, or service is not intended to state or imply that only that Printronix product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any Printronix intellectual property rights may be used instead. However, it is the user's responsibility to evaluate and verify the operation of any non-Printronix product, program, or service.

Printronix may have patents or pending patent applications covering subject matter described in this document. The furnishing of this document does not give you any license to these patents. You can send license inquires, in writing, to:

Printronix, Inc.
15345 Barranca Parkway
Irvine, CA 92618 U.S.A.

The following paragraph does not apply to the United Kingdom or any other country where such provisions are inconsistent with local law:

PRINTRONIX PROVIDES THIS PUBLICATION "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Some states do not allow disclaimer of express or implied warranties in certain transactions, therefore, this statement may not apply to you.

This information could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of the publication. Printronix may make improvements and/or changes in the product(s) described in this publication at any time without notice.

Any references in this information to non-Printronix Web sites are provided for convenience only and do not in any manner serve as an endorsement of those Web sites. The materials at those Web sites are not part of the materials for this Printronix product and use of those Web sites is at your own risk.

Any performance data contained herein was determined in a controlled environment. Therefore, the results obtained in other operating environments may vary significantly. Some measurements may have been made on development-level systems and there is no guarantee that these measurements will be the same on generally available systems. Furthermore, some measurement may have been estimated through extrapolation. Actual results may vary. Users of this document should verify the applicable data for their specific environment.

Information concerning non-Printronix products was obtained from the suppliers of those products, their published announcements or other publicly available sources. Printronix has not tested those products and cannot confirm the accuracy of performance, compatibility or any other claims related to non-Printronix products. Questions on the capabilities of non-Printronix products should be addressed to the suppliers of those products.

Printronix encourages owners of information technology (IT) equipment to responsibly recycle their equipment when it is no longer needed. Printronix offers a variety of programs and services to assist equipment owners in recycling their IT products. Information on these product recycling offerings can be found on Printronix's Internet site at <http://www.primtronix.com>.

Note!

Before using this information and the product it supports, read the information and Communication Statements on page 263.

If you are viewing this information softcopy, the photographs and color illustrations may not appear.

For online versions of this book, we authorize you to:

- Copy, modify, and print the documentation contained on the media, for use within your enterprise, provided you reproduce the copyright notice, all warning statements, and other required statements on each copy or partial copy.
- Transfer the original unaltered copy of the documentation when you transfer the related Printronix product (which may be either machines you own, or programs, if the program's license terms permit a transfer). You must, at the same time, destroy all other copies of the documentation.

You are responsible for payment of any taxes, including personal property taxes, resulting from this authorization.

Your failure to comply with the terms above terminates this authorization. Upon termination, you must destroy your machine readable documentation.

Energy Star



The Environmental Protection Agency ENERGY STAR® Computers program is a partnership effort with manufacturers of data processing equipment to promote the introduction of energy-efficient personal computers, monitors, printers, fax machines, and copiers to help reduce air pollution and global warming caused by electricity generation.

Printronix participates in this program by introducing printers that reduce power consumption when they are not being used. As an ENERGY STAR® Partner, Printronix has determined that this product meets the ENERGY STAR® guidelines for energy efficiency.

NOTE: The ENERGY STAR® emblem does not represent EPA endorsement of any product or service.

Communication Statements

China

Declaration:

This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may need to perform practical actions.

声 明

此为 A 级产品, 在生活环境中,
该产品可能会造成无线电干扰。
在这种情况下, 可能需要用户对其
干扰采取切实可行的措施。

海拔高度和非热带性气候声明



仅适用于海拔 2000M 以下地区安全使用



仅适用于非热带气候条件下安全使用

CAUTION:

This product is equipped with a 3-wire power cord and plug for the user's safety. Use this power cord in conjunction with a properly grounded electrical outlet to avoid electrical shock.

Software License Agreement

Your printer contains, among other software, Printronix operating software including, but not limited to the Embedded Configurable Operating System (the "eCos Software") as embedded software. The terms of this Agreement apply only to the eCos Software, and all other embedded software supplied with the printer. You accept the terms of this Agreement by your initial use of your printer.

eCos License

This file is part of eCos, the Embedded Configurable Operating System.

Copyright (C) 1998, 1999, 2000, 2001, 2002 Red Hat, Inc.

eCos is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 or (at your option) any later version.

You should have received a copy of the GNU General Public License along with eCos; if not, write to the Free Software Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA.

eCos is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

As a special exception, if other files instantiate templates or use macros or inline functions from this file, or you compile this file and link it with other works to produce a work based on this file, this file does not by itself cause the resulting work to be covered by the GNU General Public License. However the source code for this file must still be made available in accordance with section (3) of the GNU General Public License.

This exception does not invalidate any other reasons why a work based on this file might be covered by the GNU General Public License.

Alternative licenses for eCos may be arranged by contacting Red Hat, Inc. at <http://sources.redhat.com/ecos/ecos-license/>

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputation.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution, and modification follow.

GNU GENERAL PUBLIC LICENSE

TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION, AND MODIFICATION

This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:
 - a. You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.

-
- b. You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
 - c. If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:
 - a. Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
 - b. Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
 - c. Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.
5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.
6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.
7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.
9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING,

REPAIR OR CORRECTION

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

Index

A

- A TO D OVERUN * message, 179
- Absorb After ^PN, 139
- Absorb After ^PY, 137
- Accented Char, PRINTER CONTROL, 147
- ACCESS NULL PTR * message, 179
- Acknowledge, Centronics Parallel Interface Signals, 163
- Acoustic noise level, 241
- ACTIVE IGP EMUL menu, 84
- Active IGP Emulation, 61
- ADVANCED USER menu, 148
 - Alarm, 151
 - Auto Elevator, 150
 - Auto Locking, 150
 - Cancel Key, 152
 - Downloaded Fonts, 149
 - File System, 150
 - Job Sel/Typeface On, 153
 - PMD (Paper Motion Detection) Fault, 150
 - Power Saver Time, 152
 - Power Stacker, 150
 - Print Hist. Log, 153
 - Pwr Save Control, 152
 - Rcv. Status Port, 152
 - Ret. Status Port, 152
 - Set Lock Key, 153
 - Set Sharing, 151
 - Shuttle Timeout, 151
 - Slow Paper Slew, 151
- AI 00 Spaces, 126, 139
- Alarm, ADVANCED USER menu, 151
- Alt. Char Set, Proprinter XL Emulation, 104
- Alt. Set 80-9F, 93, 118
 - Epson FX Emulation, 107
 - Serial Matrix Emulation, 100
- Append Rotated, 137
- AR3240, 119
- ASCII Character Set, 245
- ASCII data port, Ethernet Parameters menu, 82
- Auto Elevator, ADVANCED USER menu, 150
- Auto FF at ^PN, 140
- Auto LF, 92, 117
 - Epson FX Emulation, 106
 - Proprinter XL Emulation, 103
 - P-Series XQ Emulation, 96
 - Serial Matrix Emulation, 99
- Auto Locking, ADVANCED USER menu, 150
- Auto Save Configuration, 50
- Auto Save CONFIG. CONTROL menu
 - Auto Save, 66
- Auto Switching submenu, 67
 - Auto Switching submenu, 67
 - Port Type, 68
 - Report Status, 68
 - Switch Out On, 68
 - Timeout, 68
 - Trickle Time, 68
- Auto Trickle
 - Centronics (Parallel) submenu, 70
 - Dataproducts submenu, 73
 - IEEE 1284 Parallel (Bidirectional) Submenu, 80
- Auto Uppercase, 124

B

Bar Code Quality, PRINTER CONTROL, 146
Bar Code Verification, 176
Barcode Errors, 141
Barcode Options, 126
 AI 00 Spaces, 126
 C39 Compatbl., 127
 I 2/5 Selection, 126
 Optimized Ratio, 126
 Select SO Char, 127
 UPC Descenders, 126
 User-Def Ratio, 127
Baud Rate, Serial submenu, 76
Buffer Clear, Dataproducts Parallel Interface Signals, 161
BUFFER OVERRUN message, 182
Buffer Size in K
 Centronics (Parallel) submenu, 70
 Dataproducts submenu, 72
 IEEE 1284 Parallel (Bidirectional) Submenu, 80
 Serial submenu, 78
Busy On Strobe, Centronics (Parallel) submenu, 70
Busy, Centronics Parallel Interface Signals, 163
Byte Mode, IEEE 1284 Parallel Interface, 164
B00 STATUS SDRAM DETECTION 166MHZ message, 179, 214
B01 STATUS 8245 SDRAM TEST 32MB message, 179, 214
B10 ERROR NO DRAM DETECTED* message, 179, 214
B11 ERROR RAM TEST FAILED* message, 180, 214
B12 ERROR PROGRAM MISSING* message, 180, 214
B13 ERROR NOT COMPATIBLE* message, 180, 214
B19 ERROR DC RETURNED* message, 180, 214
B20 STATUS 00% DOWNLOAD MODE message, 180, 214
B21 STATUS PRINTER RESET message, 180, 215

B22 ERROR DECOMPRESS SIZE* message, 180, 215
B23 ERROR DECOMPRESS CKSUM* message, 180, 215
B30 STATUS INITIALIZING, 180, 215
B35 WAITING FOR EC STATUS, 181, 215
B40 ERROR PROM CKSUM BAD* message, 181, 215
B41 ERROR DIM MEMORY NOT SDRAM* message, 181, 215
B42 ERROR SDRAM ROWS NOT ALLOWED* message, 181, 215
B43 ERROR SDRAM TOO MANY BANKS* message, 181, 215
B44 ERROR SDRAM NOT 64 BITS WIDE* message, 181, 216
B45 ERROR SDRAM IS WRONG VOLTAGE* message, 181, 216
B46 ERROR SDRAM HAS MIXED SIZES* message, 181, 216
B47 ERROR SDRAM LARGER THAN 256M* message, 181, 216
B49 ERROR SDRAM # LOGICAL BANKS* message, 181, 216
B50 ERROR SDRAM LOGIC COMB BANKS* message, 181, 216
B50 XX% CLEAR FLASH, 182
B51 XX% LOADING, 182, 216
B53 ERROR 12C NO ARBITRATION, 182, 216
B54 ERROR SDA LINE STUCK LOW, 182, 216
B55 STATUS SEND PROGRAM TO EC, 182

C

Cable Verify, Dataproducts Parallel Interface Signals, 161
Cancel a print job, 26
CANCEL key, 24
Cancel Key, ADVANCED USER menu, 152
Cartridge Ribbon System (CRS), 39
Centronics Parallel Interface, 162

Centronics Parallel Interface Signals, 163
 Acknowledge, 163
 Busy, 163
 Data Lines 1 through 8, 163
 Data Strobe, 163
 Fault, 163
 Online, 163
 Paper Empty (PE), 163
 Paper Instruction (PI), 163
 Prime, 163

Centronics (Parallel) submenu, 69
 Auto Trickle, 70
 Buffer Size in K, 70
 Busy On Strobe, 70
 Data Bit 8, 69
 Data Polarity, 69
 Latch Data On, 70
 PI Ignored, 69
 Prime Signal, 70
 Resp. Polarity, 70
 TOF Action, 70
 Trickle Time, 71

Changing parameter settings, 45

Changing parameters, example, 47

Changing Ribbon Cartridge, 41

Character Set, 93, 118
 ASCII, 245
 Epson FX Emulation, 107
 Proprinter XL Emulation, 104
 Serial Matrix Emulation, 100

Characteristics, environmental, 240

Cleaning
 exterior, 173
 interior, 174

Cleaning requirements, 173

CLEAR key, 23

CLEAR PAPER JAM message, 182

Clear to Send (CTS), RS-232, 169

CLEARING PROGRAM FROM FLASH message, 182, 216

CLOSE PLATEN message, 182

COIL HOT message, 182

Compatbl. Mode, 129

Compatibility Mode, IEEE 1284 Parallel Interface, 164

Compliance, Energy Star, 241

Component locations, printer, 19

Compressed CPI, 128

Compressed Print, P-Series XQ Emulation, 97

Configurations
 custom, 46
 default, 46
 overview, 45
 saving, 50

Configuration, Auto Save, 50

CONFIG. CONTROL menu, 64
 Delete Config., 65
 Load Config., 64
 Name Configs, 65
 Power-Up Config., 65
 Print Config., 64
 Protect Configs., 65
 Reset Cfg Names, 65
 Save Config., 64

Contact information, 13

Control Code 06, 91
 P-Series XQ Emulation, 96
 Serial Matrix Emulation, 99

Control Control Code 08, 91

Control panel, 22

Control panel keys
 CANCEL, 24
 CLEAR, 23
 ENTER, 24
 JOB SELECT, 24
 ON LINE, 23
 PAPER ADVANCE, 23
 PREV or NEXT, 25
 PREV + NEXT, 25
 PRINT MODE, 24
 PRT CONFIG, 24
 SET TOF, 24
 UP or DOWN, 25

UP + DOWN, 25
VIEW/EJECT key, 23
Conventions, manual, 11
CPI/LPI Select, 87
 Hanzi LP+ Emulation, 111
CR Edit, 124
CRTG COMM ERR message, 183
CRTG MISSING message, 183
CRTG NOT SETx message, 183
CTL VOLT FAIL * message, 183
Currency Sign, 119
Custom configurations, 46
Customer Support Center, 13, 259
C128 Mode Comp, 140
C39 Compatbl., 127, 140

D

Darker print, Integrated Print Management System, 40
Data Bit 8, 142
 Centronics (Parallel) submenu, 69
 Dataproducts submenu, 71
Data Carrier Detect (DCD), RS-232, 169
Data Lines 1 through 8
 Centronics Parallel Interface Signals, 163
 Dataproducts Parallel Interface Signals, 161
Data Polarity
 Centronics (Parallel) submenu, 69
 Dataproducts submenu, 72
Data Protocol, Serial submenu, 75
Data Set Ready (DSR), RS-232, 169
Data Strobe
 Centronics Parallel Interface Signals, 163
 Dataproducts Parallel Interface Signals, 161
Data Term Ready, Serial submenu, 77
Data Terminal Ready (DTR), RS-232, 169
Dataproducts Parallel Interface, 160
Dataproducts Parallel Interface Signals, 161
 Buffer Clear, 161
 Cable Verify, 161
 Data Lines 1 through 8, 161
 Data Strobe, 161
 Demand/Data Request, 161

Online, 161
Paper Instruction (PI), 161
Parity Error, 161
Ready, 161
Dataproducts submenu, 71
 Auto Trickle, 73
 Buffer Size in K, 72
 Data Bit 8, 71
 Data Polarity, 72
 Latch Data On, 72
 PI Ignored, 72
 Prime Signal, 72
 Resp. Polarity, 72
 TOF Action, 72
 Trickle Time, 73
DBCS ASCII Style, 63
DBCS CPI, 63
DBCS/ASCII Mode, 63
Default configurations, 46
Define CR Code, 91, 117, 123
 Epson FX Emulation, 106
 Proprinter XL Emulation, 103
 P-Series XQ Emulation, 96
 Serial Matrix Emulation, 99
Define LF Code, 92, 118, 123
 Epson FX Emulation, 106
 Proprinter XL Emulation, 103
 P-Series XQ Emulation, 97
 Serial Matrix Emulation, 99
Delete Config., 65
Demand/Data Request, Dataproducts Parallel Interface Signals, 161
DHCP
 Ethernet Address menu, 82
DIAGNOSTIC PASSED message, 184, 217
DIAGNOSTICS menu, 155
 Feature File, 157
 Paper Out Dots, 156
 Print Statistics, 157
 Printer Tests, 155
 Shuttle Type, 157
 Software Build, 157

ETHERNET ADDRESS menu, 81
 DHCP, 82
 Gateway address, 81
 IP address, 81
 MAC address, 81
 Subnet mask, 81
 ETHERNET DETECTED message, 195, 234
 ETHERNET INITIALIZING message, 196, 234
 ETHERNET PARAMETERS menu
 ASCII data port, 82
 Ethernet speed, 83
 Job Control, 83
 Keep alive timer, 83
 NetBIOS protocol, 82
 ETHERNET PARAMS menu, 82
 Ethernet speed, Ethernet Parameters menu, 83
 EXCESS RBN WEAR message, 196
 EXHAUST FAN FLT message, 196
 Expanded Font, 129, 138
 Ext Execute Copy, 125
 Exterior cleaning, 173
 E00 EXE @ ADDR0 message, 184, 217
 E01A TYPE 0x40 message, 184, 217
 E01B TYPE 0x60 message, 185, 218
 E02 MACHINE CHK message, 185, 218
 E03A DSI HASH L message, 185, 218
 E03B DSI HASH S message, 185, 219
 E03C DSI BAT PL message, 185, 219
 E03D DSI BAT message, 186, 219
 E03E DSI CXIWX message, 186, 220
 E03F DSI CXOWX message, 186, 220
 E03G DSI ECXIWX message, 186, 220
 E03H DSI ECXOWX message, 186, 221
 E04A ISI NO TRA message, 187, 221
 E04B ISI DIRECT message, 187, 221
 E04C ISI PROTEC message, 187, 222
 E06 NOT ALIGNED message, 187, 222
 E07 ILLEGAL INS message, 187, 222
 E08 FLOATINGPNT message, 188, 223
 E12 SYSTEM CALL message, 188, 223
 E13 TRACE INT message, 188, 223
 E16 ITRANS MISS message, 188, 224

E17 DLOAD MISS message, 188, 224
 E18 DSTORE MISS message, 189, 224
 E19 BREAKPOINT message, 189, 225
 E20 SYS MANAGE message, 189, 225
 E30 DEBUGGER message, 189, 225
 E31A EVENT 0 BP message, 189, 226
 E31B EVENT 1 BP message, 190, 226
 E31C EVENT 2 BP message, 190, 226
 E31D EVENT 3 BP message, 190, 227
 E31E EVENT 4 BP message, 190, 227
 E31F EVENT 5 BP message, 190, 227
 E31G EVENT 6 BP message, 191, 228
 E31H EVENT 7 BP message, 191, 228
 E32A CND 0 BP message, 191, 228
 E32B CND 1 BP message, 191, 229
 E32C CND 2 BP message, 191, 229
 E32D CND 3 BP message, 192, 229
 E32E CND 4 BP message, 192, 230
 E32F CND 5 BP message, 192, 230
 E32G CND 6 BP message, 192, 230
 E32H CND 7 BP message, 192, 231
 E33 WRITE BP message, 193, 231
 E34 TRACE CMPLT message, 193, 231
 E99 UNKNOWN INT message, 193, 232

F

Fault Messages

N7000 H-Series, 206
 N7000 STD ASCII, 179

Fault messages, 178

A TO D OVERUN *, 179
 ACCESS NULL PTR *, 179
 BUFFER OVERRUN, 182
 B00 STATUS SDRAM DETECTION
 166MHZ, 179, 214
 B01 STATUS 8245 SDRAM TEST
 32MB, 179, 214
 B10 ERROR NO DRAM
 DETECTED*, 179, 214
 B11 ERROR RAM TEST FAILED*, 180, 214
 B12 ERROR PROGRAM MISSING*, 180, 214
 B13 ERROR NOT COMPATIBLE*, 180, 214
 B19 ERROR DC RETURNED*, 180, 214

B20 STATUS 00% DOWNLOAD
 MODE, 180, 214
 B21 STATUS PRINTER RESET, 180, 215
 B22 ERROR DECOMPRESS SIZE*, 180, 215
 B23 ERROR DECOMPRESS
 CKSUM*, 180, 215
 B30 STATUS INITIALZING, 180, 215
 B35 STATUS WAITING FOR
 EC STATUS, 181, 215
 B40 ERROR SDRAMEE PROM CKSUM
 BAD*, 181, 215
 B41 ERROR DIM MEMORY NOT
 SDRAM*, 181, 215
 B42 ERROR SDRAM ROWS NOT
 ALLOWED*, 181, 215
 B43 ERROR SDRAM TOO MANY
 BANKS*, 181, 215
 B44 ERROR SDRAM NOT 64 BITS
 WIDE*, 181, 216
 B45 ERROR SDRAM IS WRONG
 VOLTAGE*, 181, 216
 B46 ERROR SDRAM HAS MIXED
 SIZES*, 181, 216
 B47 ERROR SDRAM LARGER
 THAN 256M*, 181, 216
 B49 ERROR SDRAM # LOGICAL
 BANKS*, 181, 216
 B50 ERROR SDRAM LOGIC COMB
 BANKS*, 181, 216
 B50 XX% CLEAR FLASH, 182
 B51 XX% LOADING, 182, 216
 B53 ERROR 12C NO ARBITRATION, 182, 216
 B54 ERROR SDA LINE STUCK LOW, 182, 216
 B55 STATUS SEND PROGRAM TO EC, 182
 CLEAR PAPER JAM, 182
 CLEARING PROGRAM FROM
 FLASH, 182, 216
 CLOSE PLATEN, 182
 COIL HOT, 182
 CRTG COMM ERR, 183
 CRTG MISSING, 183
 CRTG NOT SETx, 183
 CTL VOLT FAIL *, 183
 DIAGNOSTIC PASSED, 184, 217
 DO NOT POWER OFF, 184, 217
 DP FIFO Busy*, 184
 DRVR CIR BAD *, 184
 D50 STATUS%XX Clearing Flash, 183, 217
 D51 STATUS%XX Programming, 183, 217
 D55 STATUS Send Program to EC, 183, 217
 ERROR CPLD NOT
 PROGRAMMED, 193, 232
 ERROR DC PROGRAM NOT VALID, 194, 232
 ERROR DRAM AT ADDRESS
 XXXXXXXX, 194, 232
 ERROR EC PROGRAM NOT VALID, 194, 232
 ERROR EC STOPPED AT
 STATE XXXX, 194, 232
 ERROR FLASH DID NOT
 PROGRAM, 194, 232
 ERROR FLASH NOT DETECTED, 194, 232
 ERROR LOCKED
 SN=nnnnnnnnnnnnnnnnnnnnnnnnnnnn, 194,
 233
 ERROR NO DRAM DETECTED, 194, 233
 ERROR NVRAM FAILURE, 194, 233
 ERROR OCCURRED FLUSHING
 QUEUES*, 193, 194, 233
 ERROR PRINTER TYPE, 195, 234
 ERROR PROGRAM NEEDS MORE
 DRAM, 195, 233
 ERROR PROGRAM NEEDS
 MORE FLASH, 195, 233
 ERROR PROGRAM NOT
 COMPATIBLE, 195, 233
 ERROR PROGRAM NOT VALID, 195, 233
 ERROR SECURITY KEY
 NOT DETECTED, 195, 233
 ERROR SHORT AT ADDRESS
 XXXX, 195, 233
 ERROR WRITING TO FLASH, 195, 233
 ERROR WRONG CHECKSUM, 195, 233
 ERROR WRONG OEM, 195, 234
 ETHERNET DETECTED, 195, 234

ETHERNET INITIALIZING, 196, 234
EXCESS RBN WEAR, 196
EXHAUST FAN FLT, 196
E00 EXE @ ADDR0, 184, 217
E01A TYPE 0x40, 184, 217
E01B TYPE 0x60, 185, 218
E02 MACHINE CHK, 185, 218
E03A DSI HASH L, 185, 218
E03B DSI HASH S, 185, 219
E03C DSI BAT PL, 185, 219
E03D DSI BAT, 186, 219
E03E DSI CXIWX, 186, 220
E03F DSI CXOWX, 186, 220
E03G DSI ECXIWX, 186, 220
E03H DSI ECXOWX, 186, 221
E04A ISI NO TRA, 187, 221
E04B ISI DIRECT, 187, 221
E04C ISI PROTEC, 187, 222
E06 NOT ALIGNED, 187, 222
E07 ILLEGAL INS, 187, 222
E08 FLOATINGPNT, 188, 223
E12 SYSTEM CALL, 188, 223
E13 TRACE INT, 188, 223
E16 ITRANS MISS, 188, 224
E17 DLOAD MISS, 188, 224
E18 DSTORE MISS, 189, 224
E19 BREAKPOINT, 189, 225
E20 SYS MANAGE, 189, 225
E30 DEBUGGER, 189, 225
E31A EVENT 0 BP, 189, 226
E31B EVENT 1 BP, 190, 226
E31C EVENT 2 BP, 190, 226
E31D EVENT 3 BP, 190, 227
E31E EVENT 4 BP, 190, 227
E31F EVENT 5 BP, 190, 227
E31G EVENT 6 BP, 191, 228
E31H EVENT 7 BP, 191, 228
E32A CND 0 BP, 191, 228
E32B CND 1 BP, 191, 229
E32C CND 2 BP, 191, 229
E32D CND 3 BP, 192, 229
E32E CND 4 BP, 192, 230
E32F CND 5 BP, 192, 230
E32G CND 6 BP, 192, 230
E32H CND 7 BP, 192, 231
E33 WRITE BP, 193, 231
E34 TRACE CMPLT, 193, 231
E99 UNKNOWN INT, 193, 232
FIRMWARE ERROR, 196
FRAMING ERROR, 196
HAMER COIL CHECK, 235
HAMMER COIL BAD, ###, 197
HAM. COIL OPEN *, 197
HB NOT INSTALLD *, 197
HMR BANK FAN FLT, 198
H00: PCI SLOT ?, 196, 234
H01: PCI J12, 197, 234
H02: PCI J13, 197, 234
ILL EXT BUS ACC *, 198
ILLGL OPR ACCSS *, 198
INCOMPAT E-NET, 198
INTAKE FAN CHECK, 235
INTAKE FAN FAULT, 198
INTERRUPT UNUSED VECTOR 00, 198, 235
LO DRV. SHORT *, 198
LOAD PAPER, 198
LOADING PROGRAM FROM
 PORT XX%, 199, 235
LOADING PROGRAM INTO FLASH, 199, 235
NEW SPX DETECTED, 199, 235
NON VOLATILE MEMORY FAILED, 199, 236
ON LINE, 199, 236
PAP BAD TABLE *, 199
PAP BSY TOO LNG *, 199
PAP FIFO OVERFL *, 199
PAP FIFO UNDRFL *, 199
PAP ILLGL ST *, 200
PAP INCMPL ENER *, 200
PAP INVLD CMD *, 200
PAP INVLD PARM *, 200
PAP NOT SCHED *, 200
PAP NT AT SPEED *, 200
PAP UNEXP INT *, 200
PARITY ERROR, 200

PLAT INV CMD *, 200
PLAT INV PARM *, 200
PLAT INV STATE *, 200
PLEASE WAIT...RESET IN
 PROGRESS, 200, 236
POWERSUPPLY HOT *, 201
PRINTER HOT *, 201
PRINTER UNDER REMOTE
 CONTROL, 201, 236
PROTECTED INSTR *, 201
PWRSUPP VOLT *, 201
RBN AT END POINT, 201
REGIONx MISMATCH, 201
REMOVE USED SPX, 201, 236
RESTORING BOOT CODE, 201, 236
RIB INVLD CMD*, 201
RIBBON DRIVE, 202
RIBBON STALL, 202
RIBBON UNDER 2%, 202
RWP DOWNLOAD, 202
SECURITY KEY NOT DETECTED, 202, 236
SECURITY VIOLATION, 202, 236
SENDING PROGRAM TO
 EC PROCESSOR, 202, 236
SHTL MISMATCH, 202
SHUTL INV CMD *, 202
SHUTL INV PARM *, 202
SHUTL OVR SPEED*, 203
SHUTTLE JAM, 203
SHUTTLE STALL, 203
SHUTTLE TYPE NOT SUPPORTED*, 203
SOFTWARE ERROR* CYCLE POWER, 203
SPX FOUND, ERROR KEY
 NOT DETECTED, 203, 236
SPX NOT NEEDED OPTIONS
 ENABLED, 203, 236
STACK OVERFLOW*, 203
STACK UNDERFLOW*, 203
STACKER FAULT, 203
STACKER FULL, 203
STACKER JAM, 204
TABLE MISMATCH DOWNLOAD AGAIN, 204
TCB CORRUPTED*, 204
TCP PORT BUSY, 204, 237
TIP MISMATCH, 204
UNDEF INTERRUPT*, 204
UNDFNED OPCODE*, 204
UNKNOWN RBN1, 204
UP DRV. SHORT*, 204
WELD NOT DETECT, 204
WELD RESET ERROR, 205
WELD SNSR MISSING, 205
000 SHUTTLE TYPE NOT SUPPORTED*, 206
104 POWERSUPPLY HOT*, 206
105 PRINTER HOT*, 206
15V PWR FAIL *, 179
23.5V PWR FAIL *, 179
401 BUFFER OVERRUN, 206
402 CLEAR PAPER JAM, 206
403 CLOSE PLATEN, 206
409 FRAMING ERROR, 206
410 LOAD PAPER, 206
411 PARITY ERROR, 207
414 RIBBON STALL, 207
415 SHUTTLE JAM, 207
416 STACKER FULL, 207
417 STACKER JAM, 207
418 RBN INK LOW, 207
419 RBN INK OUT*, 207
420 EXC RBN WEAR, 207
423 OLD RIBBON, 207
424 UNKNOWN RBN1, 208
425 UNKNOWN RBN2, 208
427 CRTG MISSING, 208
428 CRTG COMM ER, 208
432 CRT NOT SET, 208
435 NO WELD, 208
437 REG MISSING, 209
438 TIP MISMATCH, 209
439 SHTL MISMATCH, 209
440 RWP DOWNLOAD, 209
48V CIRCUIT*, 179
48V PWR FAIL *, 179
601 15V PWR FAIL *, 209

602 23.5V PWR FAIL *, 209
604 48V CIRCUIT*, 209
605 48V PWR FAIL *, 209
606 Power 8.5V CHECK, 209
607 CTL VOLT FAIL *, 209
608 DRIVER CIRCUIT BAD, 209
609 EXHAUST FAN CHECK, 210
613 HAM. COIL BAD, 210
614 HAMMER BANK* NOT INSTALLED, 210
615 HAMMER FAN CHECK, 210
617 LOWER DRIVER SHORT*, 210
619 PAPER FEED DRIVER CIRCUIT*, 210
620 POWER VOLT CHECK*, 210
622 SHUTTLE DRIVER CIRCUIT*, 210
623 STACKER FAULT, 211
624 UPPER DRIVER SHORT*, 211
625 WRONG E-NET, 211
700 A TO D OVERUN *, 211
701 ACCESS NULL POINTER*, 211
702 FIRMWARE ERROR, 211
703 ILLEGAL EXTERNAL BUS ACC *, 211
704 ILLEGAL INSTRUCTION ACC*, 211
705 ILLEGAL OPERAND ACCESS *, 211
706 PAP BAD TABLE*, 211
707 PAPER BUSY TOO LONG*, 211
708 PAPER FIFO OVERFLOW*, 212
709 PAPER FIFO UNDERFLOW*, 212
710 PAP ILLGL ST*, 212
711 PAP INCMPL ENER*, 212
712 PAP INVLD CMD*, 212
713 PAP INVLD PARM*, 212
714 PAP NOT SCHED*, 212
715 PAP NT AT SPEED*, 212
716 PAP UNEXP INT*, 212
717 PLAT INV CMD*, 212
718 PLAT INV PARM*, 212
719 PLAT INV STATE*, 212
720 PROTECTED INSTRUCTION*, 212
721 RIB INVLD CMD*, 213
723 SHUTL INV CMD*, 213
724 SHUTL INV PARM*, 213
725 SHUTL OVER SPEED*, 213

727 SOFTWARE ERROR*, 213
728 STACK OVERFLOW*, 213
729 STACK UNDERFLOW*, 213
730 TCB CORRUPTED*, 213
731 UNDEFINED INTERRUPT*, 213
732 UNDEFINED OPCODE, 213
733 DP FIFO Busy*, 214
8.5V PWR FAIL *, 179

Fault, Centronics Parallel Interface Signals, 163
Feature File, DIAGNOSTICS, 157
Features, printer, 9
FF Valid at TOF, Proprinter XL Emulation, 103
File System, ADVANCED USER menu, 150
FIRMWARE ERROR message, 196
Font Attributes, 87
 Hanzi LP+ Emulation, 111
Font Set, 142
Form Length, 61
Form Width, 61
Forms Handling, 125
FRAMING ERROR message, 196
Framing Errors, Serial submenu, 79

G

Gateway address
 Ethernet Address menu, 81
Graphics enhancement, 11
Graphics Options, 136
 Absorb After ^PN, 139
 Absorb After ^PY, 137
 All 00 Spaces, 139
 Append Rotated, 137
 Auto FF at ^PN, 140
 C128 Mode Comp, 140
 C39 Compatbl., 140
 Expanded Font, 138
 Ignore Dots, 136
 Ignore Spaces, 138
 Ignore ^Lxx Cmd., 140
 IGP110 Compatbl., 140
 I25 Selection, 138
 LP+ Font, 138
 Midline PY (includes ^PN), 138

- MSI Check Digit, 138
- PDF Size Comp., 140
- Print Quality, 138
- Rot. Char Size, 137
- Slash 0, 136
- True Vert 1/10, 137
- Truncate Alpha, 137
- UPC Descenders, 137
- Width Limit, 139

Graphics Spd Up

- Hanzi LP+ Emulation, 115

Graphics Speed-Up, 62

H

HAMMER COIL BAD, ### Message, 197

HAMMER COIL CHECK message, 235

HAM. COIL OPEN * message, 197

Hanzi LP+ Emulation

- CPI/LPI Select, 111

- Error Handling, 115

- Font Attributes, 111

- Graphics Spd Up, 115

- Host Command, 111

- Page Format, 115

- Printer Protocol, 111

- Reset Cmd CFG Ld, 115

HB NOT INSTALLD * message, 197

Hex Dump Mode, MAINT/MISC menu, 149

Hex Dump, printing, 177

HMR BANK FAN FLT Message, 198

Host Command, 87

- Hanzi LP+ Emulation, 111

Host Form Length, 127

Host Interface, 60

HOST INTERFACE menu, 66

Host PI, 142

HS Print (High Speed Print), P-Series XQ

Emulation, 97

H00: PCI SLOT ? message, 196, 234

H01: PCI J12 message, 197, 234

H02: PCI J13 message, 197, 234

I

I 2/5 Selection, 126

Idle Response, Serial submenu, 78

IEEE 1284 Parallel Interface, 164

- Byte Mode, 164

- Compatibility Mode, 164

- Nibble Mode, 164

- Signals, 165

IEEE 1284 Parallel (Bidirectional) Submenu, 79

- Auto Trickle, 80

- Buffer Size in K, 80

- Offline Process, 80

- Prime Signal, 79

- TOF Action, 79

- Trickle Time, 80

Ignore Char, 128

Ignore Chars, 141

Ignore CH#1, 142

Ignore CH#2, 142

Ignore Dots, 136

Ignore Spaces, 138

Ignore ^Lxx Cmd., 140

Ignore/DB8 Setup, 141

- Data Bit 8, 142

- Ignore Chars, 141

- Ignore CH#1, 142

- Ignore CH#2, 142

IGP/PGL Emulation, 120

- configuring with the control panel, 121

IGP/PGL submenu, 122

- Auto Uppercase, 124

- Autowrap, 123

- Barcode Options, 126

- Compatbl. Mode, 129

- Compressed CPI, 128

- CR Edit, 124

- Define CR (Carriage Return) Code, 123

- Define LF (Line Feed) Code, 123

- Error Report, 131

- Expanded Font, 129

- Ext Execute Copy, 125

- Forms Handling, 125

Host Form Length, 127
 Ignore Char, 128
 PGL SFCC, 123
 PI Slew Range, 123
 Power On IGP/PGL, 125
 Power on S-Mode, 130
 Print Quality, 130
 Printer PI Line, 130
 Scalable Size, 129
 Select Font, 124, 131
 Select LPI, 124
 Skip Cmd Prefix, 124
 Slash 0, 124
 True Form Slew, 129
 Trunc Dyn Data, 130
 Var Form Adjust, 127
 Var Form Type, 128
 IGP/PGL, Font Set menu, 132
 IGP/VGL Emulation, 133
 configuring with the control panel, 134
 IGP/VGL Font Set Menu, 144
 IGP/VGL submenu, 134
 Error Handling, 141
 Font Set, 142
 Graphics Options, 136
 Ignore/DB8 Setup, 141
 LPI, 136
 PI Control, 142
 Prt to Emulate, 143
 SFCC & Pwrup, 136
 IGP110 Compatbl., 140
 ILL EXT BUS ACC * message, 198
 ILLGL OPR ACCSS * message, 198
 INCOMPAT E-NET message, 198
 INTAKE FAN CHECK message, 235
 INTAKE FAN FAULT message, 198
 Integrated Print Management System, 39
 Darker Print, 40
 Lighter Print, 40
 Interface Type, Serial submenu, 75

Interfaces
 printer, 159
 specifications, 243
 Interior cleaning, 174
 INTERRUPT UNUSED VECTOR 00
 message, 198, 235
 IP address
 Ethernet Address menu, 81
 I25 Selection, 138

J

Job Control, Ethernet Parameters menu, 83
 JOB SELECT key, 24
 Job Sel/Typeface On, ADVANCED USER
 menu, 153

K

Keep alive timer, Ethernet Parameters menu, 83

L

Label specifications, 240
 Latch Data On
 Centronics (Parallel) submenu, 70
 Dataproducts submenu, 72
 Lighter print, Integrated Print Management
 System, 40
 LinePrinter Plus Emulation submenu
 Barcode x-Offset, 90
 CPI/LPI Select, 87
 Font Attributes, 87
 Host Command, 87
 Page Format, 89
 Print Char. Set, 90
 Printer Protocol, 87
 Reset Cmd CFG Ld, 90
 Set Substitution, 90
 LinePrinter+ Emulation
 N7000 H-Series, 109
 LO DRV. SHORT * message, 198
 Load Config., 64
 LOAD PAPER message, 198
 LOADING PROGRAM FROM PORT XX%
 message, 199, 235

LOADING PROGRAM INTO FLASH

message, 199, 235

Loading Used Ribbon, 40

LPI, 136

LP+ Font, 138

LQ-1600K Menu

Alt. Set 80-9F, 118

AR3240, 119

Auto LF, 117

Character Set, 118

Currency Sign, 119

Define CR Code, 117

Define LF Code, 118

Printer Select, 118

20 CPI Condensed, 118

M

MAC address

Ethernet Address menu, 81

Main Menu

N7000 H-Series Firmware, 59

N7000 STD Firmware, 58

Main menu, 57

Maintenance, 11

MAINT/MISC menu

Hex Dump Mode, 149

Power-Up State, 149

PTX Setup Option, 149

Manual

conventions, 11

related documents, 12

special information, 12

warnings, 12

Max PI 16, 143

Menu

ACTIVE IGP EMUL, 84

ADVANCED USER, 148

CONFIG. CONTROL, 64

DIAGNOSTICS, 155

EMULATION, 84

HOST INTERFACE, 66

IGP/PGL Font Set, 132

LQ-1600K, LQ-1600K Menu, 116

navigating, 46

NETWORK SETUP, 81

OKI, OKI Menu, 117

PRINTER CONTROL, 145

PRINTER MGMT, 158

Mgmt Port Number, PRINTER MGMT, 158

Mgmt Protocol, PRINTER MGMT, 158

Midline PY (includes ^PN), 138

MSI Check Digit, 138

N

Name Configs, 65

Navigating the menus, 46

NetBIOS protocol, Ethernet Parameters menu, 82

NETWORK SETUP menu, 81

ETHERNET ADDRESS, 81

ETHERNET PARAMS, 82

NEW SPX DETECTED message, 199, 235

Nibble Mode, IEEE 1284 Parallel Interface, 164

noise level, acoustic, 241

NON VOLATILE MEMORY FAILED

message, 199, 236

N7000 H-Series Firmware

Main Menu, 59

N7000 H-Series, Fault Messages, 206

N7000 H-Series, LinePrinter + Emulation, 109

N7000 STD ASCII, Fault Messages, 179

N7000 STD Firmware

Main Menu, 58

O

Offline Process

IEEE 1284 Parallel (Bidirectional) Submenu, 80

Offpage Errors, 141

ON LINE key, 23

ON LINE message, 199, 236

One Char Enquiry, Serial submenu, 78

Online

Centronics Parallel Interface Signals, 163

Dataproducts Parallel Interface Signals, 161

Open Platen @ BOF (Bottom of Form)

PRINTER CONTROL, 146

Operating modes, 21

Operational procedures

- cancel a print job, 26
- reload paper, 27
- unload paper, 36

Optimized Ratio, 126

Optimizing print quality, 55

Optimizing print speed, 56

Output Darkness, 39

Overstrike, 92

- Serial Matrix Emulation, 99

Overview, printer models, 9

P

Page Format, 89

- Hanzi LP+ Emulation, 115

PAP BAD TABLE * message, 199

PAP BSY TOO LNG * message, 199

PAP FIFO OVERFL * message, 199

PAP FIFO UNDRFL * message, 199

PAP ILLGL ST * message, 200

PAP INCMPL ENER * message, 200

PAP INVLD CMD * message, 200

PAP INVLD PARM * message, 200

PAP NOT SCHED * message, 200

PAP NT AT SPEED * message, 200

PAP UNEXP INT * message, 200

Paper

- reload, 27
- unload, 36

PAPER ADVANCE key, 23

Paper Empty (PE)

- Centronics Parallel Interface Signals, 163

Paper Instruction (PI)

- Centronics Parallel Interface Signals, 163
- Dataproducts Parallel Interface Signals, 161

Paper Out Dots, DIAGNOSTICS, 156

Paper specifications, 239

Parallel Interface

- Centronics, 162
- Dataproducts, 160

Parameter settings

- changing, 45
- saving, 45

Parameters, changing, example, 47

Parity Error

- Dataproducts Parallel Interface Signals, 161

PARITY ERROR message, 200

Parity, Serial submenu, 77

PDF Size Comp., 140

PGL SFCC, 61, 123

PI Control, 142

- Host PI, 142
- Max PI 16, 143
- Printer PI, 142

PI Ignored

- Centronics (Parallel) submenu, 69
- Dataproducts submenu, 72

PI Slew Range, 123

PLAT INV CMD * message, 200

PLAT INV PARM * message, 200

PLAT INV STATE * message, 200

PLEASE WAIT...RESET IN PROGRESS message, 200, 236

PMD (Paper Motion Detection) Fault, ADVANCED USER, 150

PNE Port Number, PRINTER MGMT, 158

PNE Port Timeout, PRINTER MGMT, 158

PNE Port, PRINTER MGMT, 158

Poll Character, Serial submenu, 78

Poll Response, Serial submenu, 78

Port Type, Auto Switching submenu, 68

Power Consumption, 242

Power On IGP/PGL, 125

Power requirements, 15

Power Saver Time, ADVANCED USER, 152

Power Stacker, ADVANCED USER menu, 150

POWER SUPPLY HOT * message, 201

Power Up ^ F, 136

Power Up ^ X, 136

Power Up ^PY, 136

Powering on the printer, 21

Power-on S-Mode, 130

Power-Up Config, 62
 Power-Up Config., 65
 Power-Up State, MAINT/MISC menu, 149
 PREV or NEXT key, 25
 PREV + NEXT key, 25
 Prime Signal
 Centronics (Parallel) submenu, 70
 Dataproducts submenu, 72
 IEEE 1284 Parallel (Bidirectional) Submenu, 79
 Prime, Centronics Parallel Interface Signals, 163
 Print Char. Set, 90
 Print Config., 64
 Print Hist. Log, ADVANCED USER, 153
 Print job, cancel, 26
 PRINT MODE key, 24
 Print Quality, 130, 138
 optimizing, 55
 Print speed, optimizing, 56
 Print Statistics, DIAGNOSTICS, 157
 Printer
 component locations, 19
 control panel, 22
 dimensions, 16, 240
 exterior cleaning, 173
 features, 9
 interior cleaning, 174
 maintenance, 11
 models, 9
 operating modes, 21
 powering on, 21
 site requirements, 15
 weight, 240
 PRINTER CONTROL menu, 145
 Accented Char, 147
 Bar Code Quality, 146
 Display Language, 146
 Open Platen @ BOF (Bottom of Form), 146
 RBN End Action, 154
 RBN Low Action, 154
 RBN Low Warn @, 154
 Ribbon End Point, 145
 Tear Bar Dist. (Distance), 146
 Unidirectional, 146
 View Function, 146
 PRINTER HOT * message, 201
 Printer interfaces, 159
 PRINTER MGMT menu, 158
 Mgmt Port Number, 158
 Mgmt Protocol, 158
 PNE Port, 158
 PNE Port Number, 158
 PNE Port Timeout, 158
 Status Port Numb, 158
 Printer PI, 142
 Printer PI Line, 130
 Printer Protocol, 61, 87
 Hanzi LP+ Emulation, 111
 Printer Select, 118
 Epson FX Emulation, 107
 Serial Matrix Emulation, 100
 Printer Tests, DIAGNOSTICS, 155
 PRINTER UNDER REMOTE CONTROL
 message, 201, 236
 Printing rates, 243
 Printing, Hex Dump, 177
 PrintNet Enterprise, consumable monitoring, 11
 Proprinter XL Character Set menu, 105
 Proprinter XL Emulation, 103
 Alt. Char Set, 104
 Auto LF, 103
 Character Set, 104
 Define CR Code, 103
 Define LF Code, 103
 FF Valid at TOF, 103
 20 CPI Condensed, 104
 Protect Configs., 65
 PROTECTED INSTR * message, 201
 PRT CONFIG key, 24
 Prt to Emulate, 143
 P-Series Character Set menu, 94
 PSeries Dbl High, 93
 P-Series Emulation, 91
 Alt. Set 80-9F, 93
 Auto LF, 92

Character Set, 93
Control Code 06, 91
Control Code 08, 91
Define CR Code, 91
Define LF Code, 92
FF Valid at TOF, 93
Overstrike, 92
P-Series Dbl High, 93
P-Series SFCC, 92
SFCC d Command, 93
VFU Select, 93

P-Series SFCC, 62, 92
P-Series XQ Emulation, 96

Auto LF, 96
Compressed Print, 97
Control Code 06, 96
Define CR Code, 96
Define LF Code, 97
Elong/Alt. Font, 97
HS Print (High Speed Print), 97
Slew Relative, 98
Upr. Case Select, 98
VFU Select, 97

PTX Setup Option, MAINT/MISC menu, 149

Pwr Save Control, ADVANCED USER, 152

PWRSUPP VOLT * message, 201

Q

QUICK SETUP menu

Active IGP Emulation, 61
DBCS ASCII Style, 63
DBCS CPI, 63
DBCS/ASCII Mode, 63
Ethernet Address, 60
Form Length, 61
Form Width, 61
Graphics Speed-Up, 62
Host Interface, 60
Load Config., 64
PGL SFCC, 61
Power-Up Config, 62
Printer Protocol, 61
P-Series SFCC, 62

Reset Cmd CFG Ld, 63
Ribbon End Point, 62
Save Config, 62
Select CPI, 61
Select LPI, 62
Typeface, 63
ZTP DataTime, 60
ZTP TearDist, 60
ZTP WaitTime, 60

R

RBN AT END POINT message, 201

RBN End Action, PRINTER CONTROL, 154

RBN Low Action, PRINTER CONTROL, 154

RBN Low Warn @, PRINTER CONTROL, 154

Rcv. Status Port, ADVANCED USER menu, 152

Ready, Dataproducts Parallel Interface

Signals, 161

Receive Data (RD), RS-232, 169

REGIONx MISMATCH message, 201

Reload paper, 27

REMOVE USED SPX message, 201, 236

Report Status, Auto Switching submenu, 68

Request to Send

RS-232, 169

Serial submenu, 77

Requirements

power, 15

printer site, 15

Reset Cfg Names, 65

Reset Cmd CFG Ld, 63, 90

Hanzi LP+ Emulation, 115

Resistor configurations, terminating, 167

Resistors

installation, 168

removal, 168

Resistors, terminating

location of, 168

Resp. Polarity

Centronics (Parallel) submenu, 70

Dataproducts, 72

RESTORING BOOT CODE message, 201, 236

Ret. Status Port, ADVANCED USER menu, 152

RIB INVLD CMD* message, 201
Ribbon Cartridge, changing, 41
RIBBON DRIVE message, 202
Ribbon End Point, 62
Ribbon End Point, PRINTER CONTROL, 145
RIBBON STALL message, 202
RIBBON UNDER 2% message, 202
Rot. Char Size, 137
RS-232, 169
 Clear to Send (CTS), 169
 Data Carrier Detect (DCD), 169
 Data Set Ready (DSR), 169
 Data Terminal Ready (DTR), 169
 Receive Data (RD), 169
 Request to Send (RTS), 169
 Transmit Data (TD), 169
RS-232 Serial Interfaces, 168
RS-422, 170
RS-422 Serial Interfaces, 168
RWP DOWNLOAD message, 202

S

Save Config, 62, 64
Save, Auto, 50
Saving new configurations, 50
Saving parameter settings, 45
Scalable Size, 129
SECURITY KEY NOT DETECTED
message, 202, 236
SECURITY VIOLATION message, 202, 236
Select CPI, 61
Select Font, 124, 131
Select LPI, 62, 124
Select SO Char, 127
SENDING PROGRAM TO EC PROCESSOR
message, 202, 236
Serial Interfaces
 RS-232, 168
 RS-422, 168
Serial Matrix Character Set menu, 101
Serial Matrix Emulation, 98
 Alt. Set 80-9F, 100
 Auto LF, 99

Character Set, 100
Control Code 06, 99
Define CR Code, 99
Define LF Code, 99
ESC d command, 100
Overstrike, 99
Printer Select, 100
Serial submenu, 74
 Baud Rate, 76
 Buffer Size in K, 78
 Data Protocol, 75
 Data Term Ready, 77
 Framing Errors, 79
 Idle Response, 78
 Interface Type, 75
 One Char Enquiry, 78
 Parity, 77
 Poll Character, 78
 Poll Response, 78
 Request to Send, 77
 Stop Bits 1, 77
 Word Length, 77
Set Lock Key, ADVANCED USER menu, 153
Set Sharing, ADVANCED USER menu, 151
SET TOF key, 24
SFCC d Command, 93
SFCC & Pwrap, 136
 Power Up ^ F, 136
 Power Up ^ PY, 136
 Power Up ^ X, 136
 VGL SFCC, 136
SHTL MISMATCH message, 202
SHUTL INV CMD * message, 202
SHUTL INV PARM * message, 202
SHUTL OVR SPEED* message, 203
SHUTTLE JAM message, 203
SHUTTLE STALL message, 203
Shuttle Timeout, ADVANCED USER menu, 151
SHUTTLE TYPE NOT SUPPORTED*
message, 203
Shuttle Type , DIAGNOSTICS, 157

Signals

- Centronics Parallel Interface, 163
- Dataproducts Parallel Interface, 161
- IEEE 1284 Parallel Interface, 165
- Site requirements, 15
- Skip Cmd Prefix, 124
- Slash 0, 124, 136
- Slew Relative, P-Series XQ Emulation, 98
- Slow Paper Slew, ADVANCED USER menu, 151
- Software Build, DIAGNOSTICS, 157
- SOFTWARE ERROR* CYCLE POWER message, 203
- Special information, 12
- Specifications
 - interfaces, 243
 - label, 240
 - paper, 239
- Speed print, 243
- SPX FOUND, ERROR KEY NOT DETECTED message, 203, 236
- SPX NOT NEEDED OPTIONS ENABLED message, 203, 236
- STACK FAULT message, 203
- STACK OVERFLOW* message, 203
- STACK UNDERFLOW* message, 203
- STACKER FULL message, 203
- STACKER JAM message, 204
- Status Port Numb, PRINTER MGMT, 158
- Stop Bits 1, Serial submenu, 77
- Submenu
 - IGP/PGL, 122
 - IGP/VGL, 134
- Subnet mask
 - Ethernet Address menu, 81
- Supplies Department, 13, 259
- Switch Out On, Auto Switching submenu, 68
- System Memory, DIAGNOSTICS, 156

T

- TABLE MISMATCH DOWNLOAD AGAIN message, 204
- TCB CORRUPTED* message, 204
- TCP PORT BUSY message, 204, 237
- Tear Bar Dist. (Distance), PRINTER CONTROL, 146
- Terminating resistor configurations, 167
- Terminating resistors
 - location of, 168
- Test Width, DIAGNOSTICS, 156
- Timeout, Auto Switching submenu, 68
- TIP MISMATCH message, 204
- TOF Action
 - Centronics (Parallel) submenu, 70
 - Dataproducts submenu, 72
 - IEEE 1284 Parallel (Bidirectional) Submenu, 79
- Transmit Data (TD), RS-232, 169
- Trickle Time
 - Centronics (Parallel) submenu, 71
 - Dataproducts submenu, 73
 - IEEE 1284 Parallel (Bidirectional) Submenu, 80
- Trickle Time, Auto Switching submenu, 68
- True Form Slew, 129
- True Vert 1/10, 137
- Trunc Dyn Data, 130
- Truncate Alpha, 137
- Typeface, 63

U

- UNDEF INTERRUPT* message, 204
- UNDFNED OPCODE* message, 204
- Unidirectional, PRINTER CONTROL, 146
- UNKNOWN RBN1 message, 204
- Unload paper, 36
- UP DRV. SHORT* message, 204
- UP or DOWN key, 25
- UP + DOWN key, 25
- UPC Descenders, 126, 137
- Upr. Case Select, P-Series XQ Emulation, 98
- User-Def Ratio, 127
- UTF-8, 132

V

Var Form Adjust, 127
Var Form Type, 128
VFU Select, 93
VFU Select, P-Series XQ Emulation, 97
VGL SFCC, 136
View Function, PRINTER CONTROL, 146
VIEW/EJECT key, 23
Voltage, 242

W

Warnings, 12
Weight, printer, 240
WELD NOT DETECT message, 204
WELD RESET ERROR message, 205
WELD SNSR MISSING message, 205
Width Limit, 139
Word Length, Serial submenu, 77

Z

Zero Tear Pedestal (ZTP)
 adjust paper guides, 248
 clear paper jams, 257
 forms type, 256
 load paper, 250
 menu, 255
 overview, 247
 paper jams, 257
 position paper, 248
 position paper out sensor, 252
 set tear bar distance, 253
 set top of form, 254
 ZTP Data Time, 255
 ZTP Function, 255
 ZTP Platen Open, 256
 ZTP TearDistance, 255
 ZTP Wait Time, 255
ZTP Data Time, 255
ZTP DataTime, 60
ZTP Function, 255
ZTP Platen Open, 256
ZTP TearDist, 60

ZTP TearDistance, 255
ZTP Wait Time, 255
ZTP WaitTime, 60
000 SHUTTLE TYPE NOT SUPPORTED*
message, 206
104 POWER SUPPLY HOT* message, 206
105 PRINTER HOT* message, 206
15V PWR FAIL * message, 179
20 CPI Condensed, 118
 Epson FX Emulation, 107
 Proprinter XL Emulation, 104
23.5V PWR FAIL * message, 179
401 BUFFER OVERRUN message, 206
402 CLEAR PAPER JAM message, 206
403 CLOSE PLATEN message, 206
409 FRAMING ERROR message, 206
410 LOAD PAPER message, 206
411 PARITY ERROR message, 207
414 RIBBON STALL message, 207
415 SHUTTLE JAM message, 207
416 STACKER FULL message, 207
417 STACKER JAM message, 207
418 RBN INK LOW message, 207
419 RBN INK OUT* message, 207
420 EXC RBN WEAR message, 207
423 OLD RIBBON message, 207
424 UNKNOWN RBN1 message, 208
425 UNKNOWN RBN2 message, 208
427 CRTG MISSING message, 208
428 CRTG COMM ER message, 208
432 CRT NOT SET message, 208
435 NO WELD message, 208
437 REG MISSING message, 209
438 TIP MISMATCH message, 209
439 SHTL MISMATCH message, 209
440 RWP DOWNLOAD message, 209
48V CIRCUIT* message, 179
48V PWR FAIL * message, 179
601 15V PWR FAIL * message, 209
602 23.5V PWR FAIL * message, 209
604 48V CIRCUIT* message, 209
605 48V PWR FAIL * message, 209

606 Power 8.5V CHECK message, 209
607 CTL VOLT FAIL * message, 209
608 DRIVER CIRCUIT BAD message, 209
609 EXHAUST FAN CHECK message, 210
613 HAM. COIL BAD Message, 210
614 HAMMER BANK NOT INSTALLED
message, 210
615 HAMMER BANK CHECK Message, 210
617 LOWER DRIVER SHORT* message, 210
619 PAPER FEED DRIVER CIRCUIT*
message, 210
620 POWER VOLT CHECK* message, 210
622 SHUTTLE DRIVER CRCUIT* message, 210
623 STACK FAULT message, 211
624 UPPER DRIVER SHORT* message, 211
625 WRONG E-NET message, 211
700 A TO D OVERUN * message, 211
701 ACCESS NULL POINTER* message, 211
702 FIRMWARE ERROR message, 211
703 ILLEGAL EXTERNAL BUS ACC *
message, 211
704 ILLEGAL INSTRUCTION ACC* message, 211
705 ILLEGAL OPERAND ACCESS * message, 211
706 PAP BAD TABLE* message, 211
707 PAPER BUSY TOO LONG* message, 211
708 PAPER FIFO OVERFLOW* message, 212
709 PAPER FIFO UNDERFLOW* message, 212
710 PAP ILLGL ST* message, 212
711 PAP INCMPL ENER* message, 212
712 PAP INVLD CMD* message, 212
713 PAP INVLD PARM* message, 212
714 PAP NOT SCHED* message, 212
715 PAP NT AT SPEED* message, 212
716 PAP UNEXP INT* message, 212
717 PLAT INV CMD* message, 212
718 PLAT INV PARM* message, 212
719 PLAT INV STATE* message, 212
720 PROTECTED INSTRUCTION* message, 212
721 RIB INVLD CMD* message, 213
723 SHUTL INV CMD* message, 213
724 SHUTL INV PARM* message, 213
725 SHUTL OVER SPEED* message, 213
727 SOFTWARE ERROR* message, 213
728 STACK OVERFLOW* message, 213
729 STACK UNDERFLOW* message, 213
730 TCB CORRUPTED* message, 213
731 UNDEFINED INTERRUPT* message, 213
732 UNDEFINED OPCODE message, 213
733 DP FIFO Busy* message, 214
8.5V PWR FAIL * message, 179



256169-001C