



Outperforming Expectations:
Brady Thermal Transfer Printers



Brady Tagus™ Printer

The Value of Versatility.

User Manual



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Part Number: Y98952 (old p/n 88-2313-01)

Revision: A

Agency Compliance and Approvals

 C US Listed	UL60950 Information Technology Equipment C22.2 No. 950-M93
 EN60950	<p><u>For 230 Volt Operation (Europe):</u> Use a cord set, marked "HAR," consisting of a min H05VV-F cord which has a minimum 0.75 square mm diameter conductors, provided with an IEC 320 receptacle and a male plug for the country of installation rated 6A, 250V.</p> <p><u>Für 230 Volt (Europa):</u> Benützen Sie ein Kabel, das mit "HAR" markiert ist, bestehend mindestens aus einem H05VV-F Kabel, das mindestens 0,75 Quadratmillimeter Drahtdurchmesser hat; sowie eine IEC320 Steckdose und einen für das Land geeigneten Stecker, 6A, 250 Volt.</p>
	<p>As an Energy Star Partner, the manufacturer has determined that this product meets the Energy Star guidelines for energy efficiency.</p>
	<p>The manufacturer declares under sole responsibility that this product conforms to the following standards or other normative documents:</p> <p>EMC: EN 55022 (1993) Class B EN 50024 (1998)</p> <p>Safety: This product complies with the requirements of EN 60950 /A11:1997.</p>
 BE01	Gost-R certification mark.
FCC:	This device complies with FCC CFR 47 Part 15 Class A.
	This device complies with NOM-019-SCFI-1998 (safety of data processing equipment) and is certified by NYCE or an equivalent certification body.
<input checked="" type="checkbox"/> Note:	This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instructions in this manual, it may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his/her own expense.
	In accordance with the European WEEE Directive, this device needs to be recycled in the European Union country in which it was purchased.

Important Safety Instructions

This printer has been carefully designed to provide many years of safe, reliable performance. As with all electrical equipment, there are a few basic precautions you should take to avoid hurting yourself or damaging the printer:

- Carefully read the installation and operating instructions provided with your printer.
- Read and follow all warning instruction labels on the printer.
- Place the printer on a flat, firm, solid surface.
- To protect your printer from overheating, make sure all openings on the printer are not blocked.
- Do not place the printer on or near a heat source.
- Do not use your printer near water, or spill liquid into it.
- Be certain that your power source matches the rating listed on your printer. If you are unsure, check with your dealer or with your local power company.
- Do not place the power cord where it will be walked on. If the power cord becomes damaged or frayed replace it immediately.
- Do not insert anything into the ventilation slots or openings on the printer.
- Only qualified, trained service technicians should attempt to repair your printer.

Contents

PRINTER OVERVIEW	1-1
Introduction.....	1-1
<i>About this Printer</i>	<i>1-2</i>
Standard Features	1-2
Optional Features	1-3
GETTING STARTED	2-1
Before Using the Printer	2-1
<i>Removing the Packaging</i>	<i>2-1</i>
Inspecting the Printer	2-2
Additional Requirements	2-2
SETTING UP THE PRINTER	3-1
Introduction.....	3-1
<i>Connecting the Printer</i>	<i>3-1</i>
Power Connection	3-1
Interface Connection	3-3
<i>Loading Media</i>	<i>3-4</i>
<i>Media Sensor Adjustment</i>	<i>3-7</i>
<i>Loading Ribbon</i>	<i>3-8</i>
Ribbon Routing (Coated Side Out)	3-10
USING THE FRONT PANEL (NON-DISPLAY PRINTERS).....	4-1
Introduction.....	4-1
<i>Lights</i>	<i>4-2</i>
<i>Buttons</i>	<i>4-2</i>
<i>Normal Mode - Button Functions</i>	<i>4-3</i>
<i>Express Setup Mode - Button Functions</i>	<i>4-4</i>
<i>Printer Setup Mode - Button Functions</i>	<i>4-5</i>
Printer Setup Menu List	4-6
Menu Items and Values	4-7
Step by Step Modification of the Printer Setup	4-10
<i>Label Alignment</i>	<i>4-12</i>
Label Alignment = YES	4-12
Label Alignment = AUTO	4-13
Label Alignment = NO	4-13
Label Alignment Troubleshooting	4-14
<i>Calibration Mode – Button Functions</i>	<i>4-16</i>
Auto Media Sensor Calibration	4-18
Manual Media Sensor Calibration	4-19
<i>Internal Labels</i>	<i>4-20</i>
Database Configuration and Test Labels	4-20
Test Label	4-22

USING THE FRONT PANEL (T300)	5-1
Introduction	5-1
Ready Mode: Normal Operation (Ready Light 'On')	5-2
Menu Mode: Configuration (Ready Light 'Flashing')	5-3
Quick Test Mode: Print Test Labels	5-4
Indicator Lights	5-5
LCD	5-5
<i>The Menu System</i>	5-6
Entrance and Exit Prompts	5-7
Media Settings	5-8
Print Control	5-10
Printer Options	5-11
System Settings	5-13
Communications	5-20
Diagnostics	5-24
MCL Options	5-25
<i>Display Messages</i>	5-27
User Prompts and Condition Messages	5-28
<i>Quick Test Mode</i>	5-29
Print Quality Label	5-29
Configuration Label	5-31
Quick Ribbon Test Label	5-32
Validation Label	5-33
Print Last Label	5-33
User Defined Label	5-34
Media Sensor Calibration	5-34
Quick Calibration	5-35
Standard Calibration	5-36
Advanced Entry Calibration	5-39

MAINTENANCE AND ADJUSTMENTS	6-1
Introduction	6-1
<i>Cleaning the Printhead</i>	6-2
<i>Media Width Adjustment</i>	6-4
<i>Printhead Burn Line Adjustment</i>	6-6
<i>BRADY T300 and Raised-Panel Labels</i>	6-7
<i>Print Head Leveling Adjustment</i>	6-11
<i>Printhead Pressure Adjustment</i>	6-14
<i>Ribbon Wrinkle Adjustment</i>	6-16
<i>Printhead Replacement</i>	6-19
<i>Darkness Adjustment (non-display printers only)</i>	6-20
<i>Resetting the Printer</i>	6-20
<i>Downloading Firmware and Fonts</i>	6-22
TROUBLESHOOTING	7-1
Problem Resolution	7-1
<i>Fault and Warning Messages (Display Printers Only)</i>	7-5
Fault Messages	7-5
Warning Messages	7-9
<i>Hex Dump Mode</i>	7-10
Non-display Printers	7-10
Display Printers	7-11
SPECIFICATIONS	8-1
APPENDIX A: ASCII CONTROL CHART	A-1
APPENDIX B: EMBEDDED FONTS AND BARCODES	B-1
APPENDIX C: OPTIONAL INTERNAL ETHERNET PRINTER DRIVER	C-1
APPENDIX D: MENU SYSTEM MULTI-LANGUAGE SUPPORT (DISPLAY PRINTERS ONLY)	D-1
APPENDIX E: SAVING A CONFIGURATION FILE (DISPLAY PRINTERS ONLY)	E-1
APPENDIX F: GPIO PORT DESCRIPTION	F-1
APPENDIX G: WARRANTY INFORMATION	G-1
GLOSSARY	GL-1



Printer Overview

1. Introduction



Congratulations on your purchase of a Brady Tagus printer. The Tagus family, hereafter referred to as ‘the printer,’ blends the rugged durability of die-cast construction with state-of-the-art electronics and user-friendly features to redefine the standard in industrial thermal printers. The printer, available in direct thermal transfer and optional configurations, uses unique front panel designs to simplify operation, while its USB, RS232 serial, IEEE 1284 compliant parallel and an optional internal print server (*T-300 only*) interface allow easy connection to your host system.

This manual provides all the information necessary to operate the printer.

To print labels or tags simply refer to the instructions included with the software you have chosen to create the labels.

A Windows™ printer driver can be found on our website (www.BradyID.com) or on the included CD-ROM.

1.1 About this Printer

This printer offers the following standard and optional features:

1.1.1 Standard Features

Printing

- Thermal Transfer Printing
- On Demand and Batch Printing
- 203 DPI (*T-200*) 300 DPI (*T-300*) Printhead
- Date and Time Stamp
- AGFA Scalable Font Engine
- 2 Resident Scaleable fonts, CG Triumvirate™ regular and bold-condensed (*T-300 only*)

Memory

- 2 MB FLASH Memory (*256K available to user, designated: Module B*)
- 4 MB DRAM Memory (*T-200*)
- 8 MB DRAM Memory (*T-300*)

Interfaces

- USB interface
- DB-9 RS-232 serial interface
- IEEE 1284 Centronics® parallel interface

Operational

- Simple Media Loading
- Media Tearbar
- Fan-fold media compatible from the bottom and rear of printer

1.1.2 Optional Features

FLASH Memory Expansion (requires new main PCB)

An optional main PCB assembly is available with 4MB (*T-200*) 8MB (*T-300*) Flash memory expansion for International Language Printing Capability (ILPC) and/or additional fonts and graphics.

ILPC

The International Language Print Capability consisting of one of the following:

- CG-Times (western European) Scalable font
- Kanji Gothic B Scalable font
- Simplified Chinese GB Scalable font
- Korean Hangul font

External Ethernet Connectivity (uses printer's parallel port)

The External Print Server is an external Network Interface Controller (NIC) that enables the printer to provide Ethernet® connectivity.

Internal Ethernet Connectivity (printers with front display only)

The Internal Ethernet Print Server is an internal Network Interface Controller (NIC) that enables the printer to provide Ethernet® connectivity. Features include:

- Automatic selection of 10BaseT (Thinnet) or 100BaseT Fast Ethernet connection.
- Integral HTTP Server to allow monitoring and management from a standard Web browser program.
- FTP printing to allow printing directly from a Web browser or other FTP client.
- LPR/LPD over TCP/IP for UNIX platforms and Microsoft's Windows.
- Raw sockets support over selectable TCP/IP port with filters for selected UNIX environment.
- IP SNMP support of MIB-2, proprietary NIC MIB and public and proprietary (private) Printer MIB.
- SNMP traps to alert administrators of printer errors (paper/ribbon out, head up, etc).
- DHCP, BootP, and RARP services supported

MCL (printers with front display only)

A software tool suite designed for data collection applications. Once enabled, the printer can accept input data from peripheral devices such as barcode scanners, weigh scales, and keyboards without the need of a host computer, requesting and sending data to locally resident lookup files or remote databases, enhancing communication capabilities within your system while reducing your hardware investment.



Getting Started

2. Before Using the Printer

2.1 Removing the Packaging

Inspect the shipping container(s) for damage; if damage is evident notify the shipping company to report the nature and extent of the damage.

The printer is carefully packaged to avoid any damage during transit. In order to operate the printer you will need to remove the packaging materials (i.e., tape and foam) that were placed in the printer for shipment. Complete the following steps prior to connecting power or attempting to load media.

- Ensure that the arrow on the box is pointing up, and then open the box.
- Remove the top piece of packing foam.
- Lift the printer from the box.
- Remove the printer from the plastic bag.
- Remove any tape or additional packing foam from the inside of the printer.

Note: It is a good idea to save all packaging materials in the event that shipping the printer is ever required.

2.1.1 Inspecting the Printer

After removing the printer from the packaging material, check the contents. The following items should be included:

- Printer
- Power Cord
- CD-ROM and Documentation
- Any special or additionally purchased items.



2.1.2 Additional Requirements

The following items are necessary for generating labels from your printer. Contact Brady customer support or sales representative for advice on which media and software may best be suited for your application.

- Serial, USB or Parallel cable
- Ethernet cable for optional LAN connectivity
- Applicable Brady Media
- Applicable Brady Software



Setting up the Printer

3. Introduction

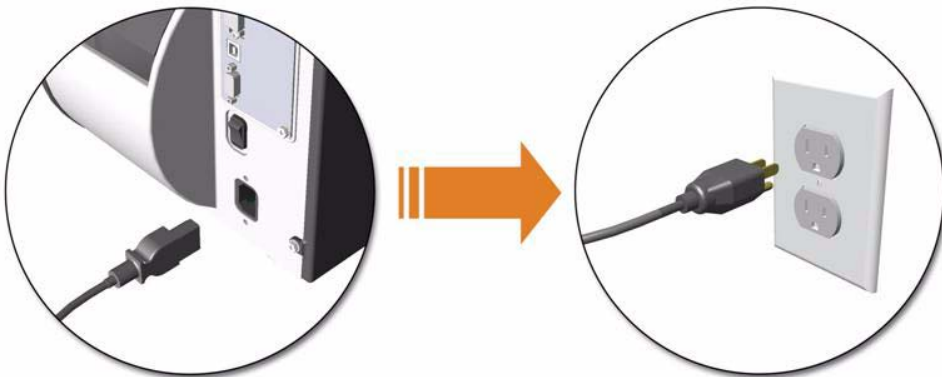
This chapter explains how to connect your printer, load media (and ribbon, if equipped for thermal transfer).

3.1 *Connecting the Printer*

3.1.1 Power Connection

Note: When connecting the AC Power Cord or interface cables to the printer, ensure the Power On/Off Switch is in the 'Off' position.

1. Place the printer on a firm, level surface.
2. Ensure that the Power Switch on the Printer is in the 'Off' position.
3. Connect the AC Power Cord to the receptacle on the back of the Printer, and then plug the AC Power Cord into a properly grounded outlet. (The power supply automatically detects and then adjusts to the applied line voltage; see Section 8.0 for the acceptable voltage ranges.)

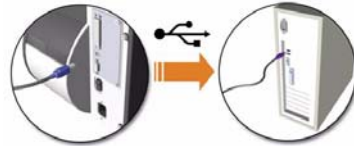


3.1.2 Interface Connection

The printer can be connected to the host via a USB, serial or parallel cable. The Printer will automatically connect to the first port (USB, serial or parallel) that transmits valid data. After this connection has been made, the printer's power must be cycled 'Off' and 'On' to change the interface connection.

USB Connection:

The USB Interface is supported in Windows[®]95 and greater. Depending upon the operating system of your host computer, installation may differ slightly.



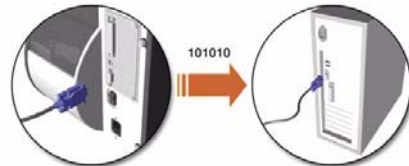
Parallel Connection:

The parallel interface requires a Centronics[®] IEEE 1284 cable with a 36 pin male connector. Bi-directional mode is IEEE 1284 Compliant, using forward and reverse channel communications. In this mode, data can be sent to the host provided it is also IEEE 1284 Compliant and has supporting software. Default is uni-directional, for printers with front display, see Chapter 5.



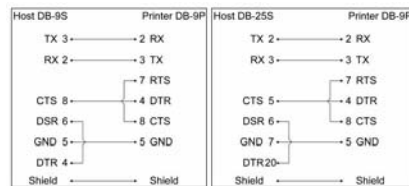
Serial Connection:

The serial interface supports RS-232C communications via a DB-9 connector. The following list of serial port settings is menu-selectable and must match the host computer's serial port settings; see Chapter 4, for non-display printers or Chapter 5 for display printers.



Baud Rate (Default 9600 bps)

Word Length (Default 8 bits) In addition to the port settings, the serial interface cable wiring must have specific connections (pin-outs) for proper data exchange between the host and printer. The different serial cable pin-outs and part numbers are in the following table (contact your reseller for ordering information).



Part # 32-2483-01

Part # 32-2301-01

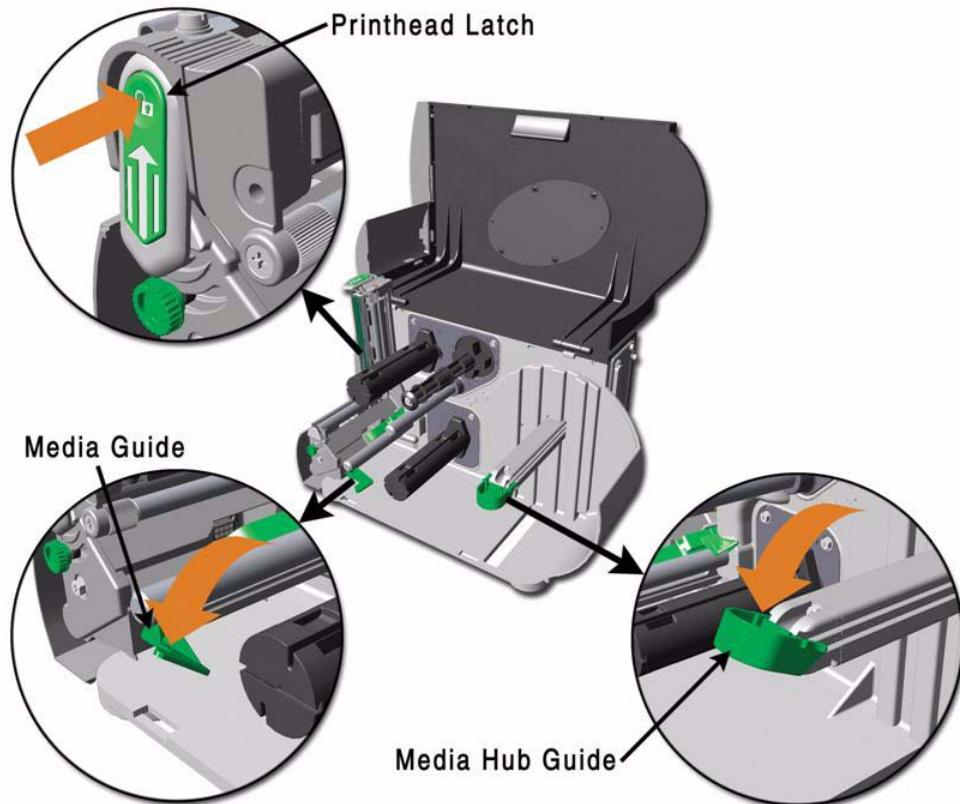
Optional Internal Ethernet Print Server: (printers with front display only)

The printer is available with an optional Internal Ethernet Print Server. When using this connection please refer to Appendix C or the instructions included with the option for proper setup and configuration.

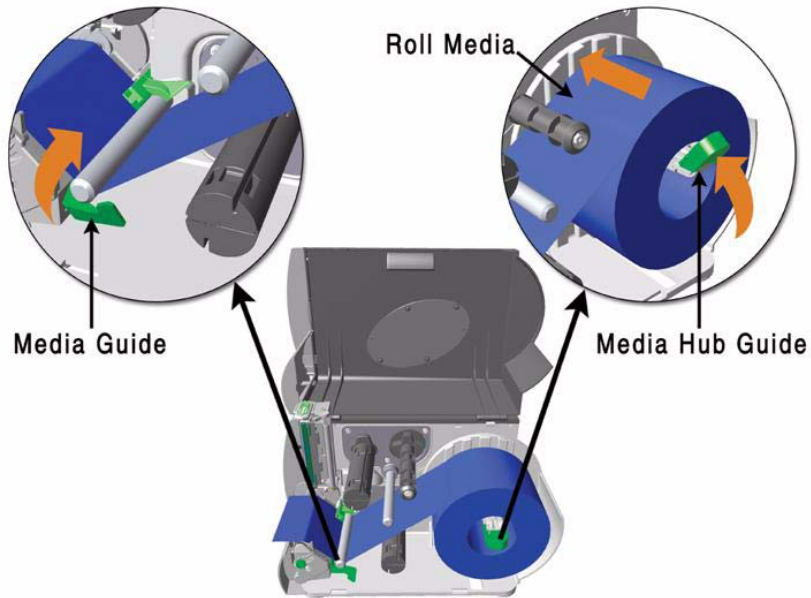
3.2 Loading Media

Load media into the printer as follows:

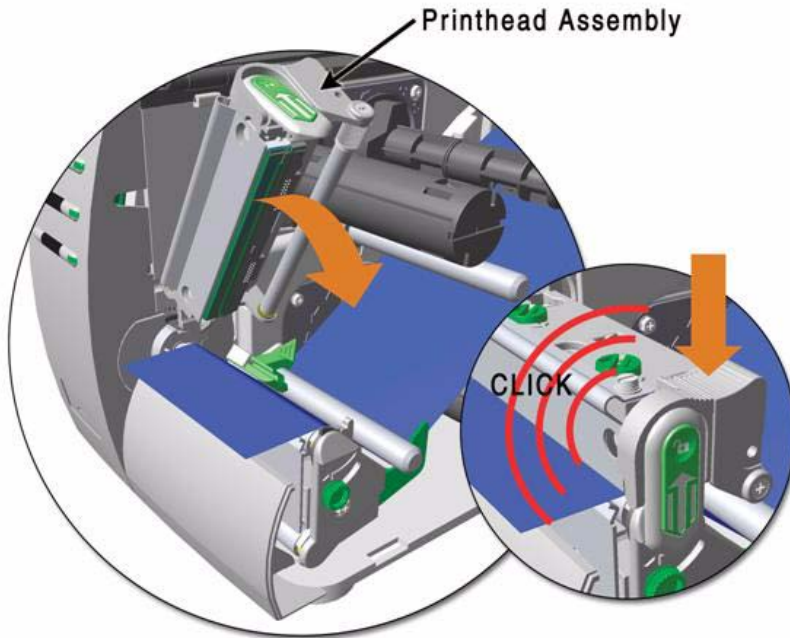
1. Open the media cover and lower the Media Hub Guide and Media Guide.
2. Press in on the Printhead Latch and raise the Printhead Assembly.





3. Slide the Roll Media onto the Media Hub and raise the Media Hub Guide. The Media Hub Guide should be pushed inward so that it is just touching the Roll Media.
4. Route the Media through the printer as shown. Raise the Media Guide. The Media Guide should be pushed inward so that it is just touching the edge of the Media.




5. Close the Printhead Assembly and press down until it locks into place.



6. Close the cover and press the  FEED button several times to position the media and ensure proper tracking.

If the printer does not correctly sense the top of each label, as denoted by the  ERROR light, it may be necessary to:

Printers without front display: Perform the Auto Media Sensor Calibration, see section 4.7.1.

Printers with front display: Press and hold the  FEED button until at least one label gap or mark is advanced then release. For additional calibration procedures, see section 5.4

Note: The printer is factory set to use 4-inch media (and ribbon, if thermal transfer equipped). When using a different media/ribbon width, please refer to section 6.2.

3.3 Media Sensor Adjustment

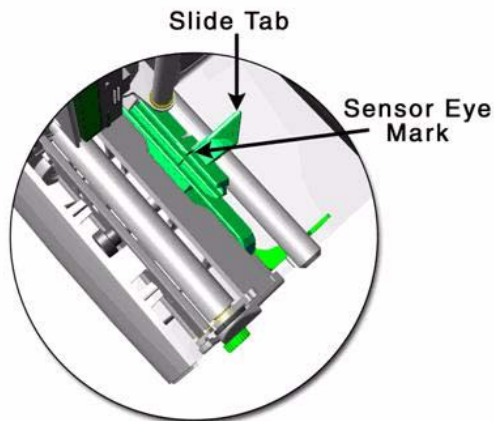
The Media Sensor needs to be positioned so that the printer can detect the presence of media and the top-of-form (except for continuous stock, where the TOF is set through the front panel).

To adjust:

1. With media loaded, as described in Section 3.2, grasp the Slide Tab and move the Sensor Eye Mark into position over media according to the table below.
2. If loading media, return to the media loading instructions.

Media Sensor Selection and Adjustment

Media Type	Sensor Eye Mark Position	Sensing Required*
Die-cut	Near the middle of the label	Gap
Notched	Centered over the notch	Gap
Continuous	Near the middle of the media	Continuous



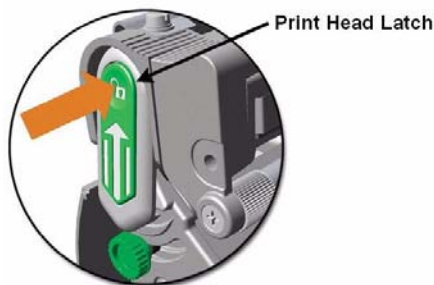
3.4 Loading Ribbon

Ribbon is required with thermal transfer media. It is recommended that the width of the ribbon be slightly wider than the media being used. The printer must use ribbons with the 'coating side out'.

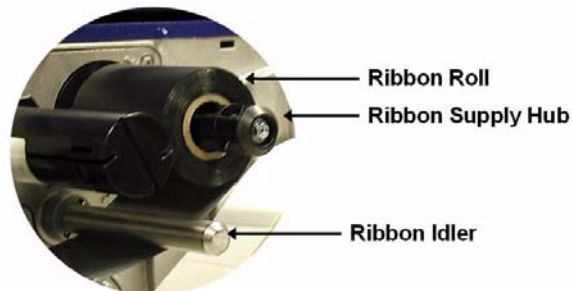
To load:

Note: Using a ribbon that is slightly wider than your media (and liner, if any) will help protect against printhead wear.

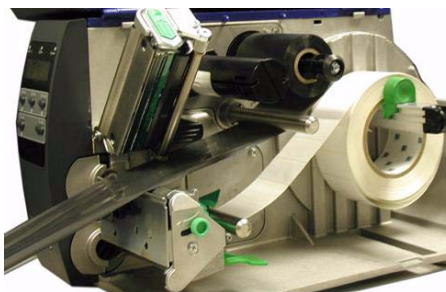
1. Open the media cover. Press in on the Printhead Latch and raise the printhead assembly.



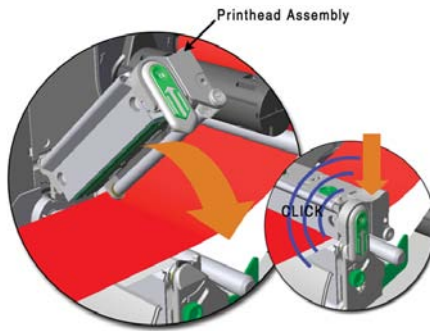
2. Slide the Ribbon Roll onto the Ribbon Supply Hub until it rests against the hub's flange. Ensure the ribbon unwinds correctly, so the ribbon flows off the roll in a clockwise direction.



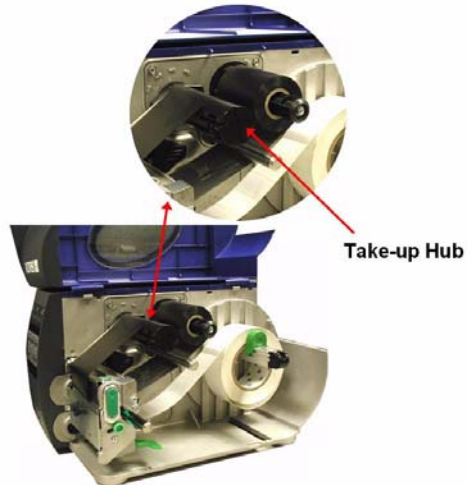
3. Route the ribbon under the Ribbon Idler and then out the front of the printer approximately 12 inches.




4. Close the Printhead Assembly and press down until it locks into place.



5. Route the ribbon up and then around to the Ribbon Take-Up Hub, winding it several times in a clockwise direction to secure it in place.



6. Close the cover and press the  FEED button several times to position the ribbon and ensure proper tracking.
7. The 'Media Type' setting within the printer's setup must be set to 'Thermal Transfer' to print using a ribbon;

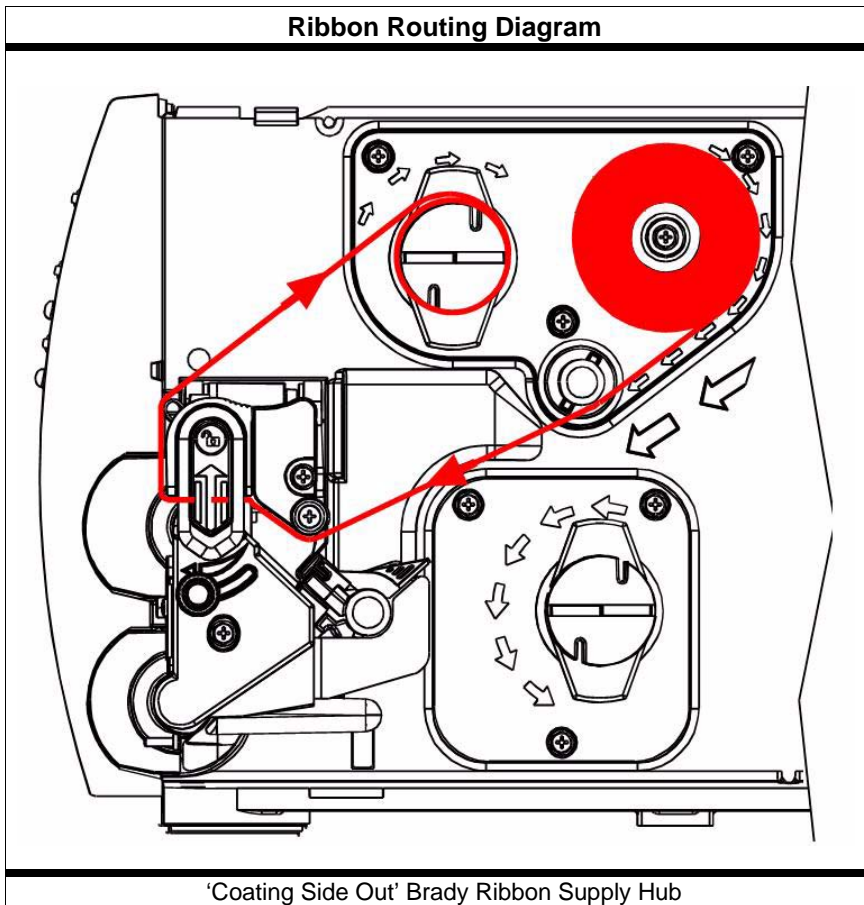
Printers without front display: See section 4.5.2

Printers with front display: See section 5.1.2

3.4.1 Ribbon Routing (Coated Side Out)

Note: Directional Arrows near the Ribbon Supply Hub indicate the correct ribbon route. Ribbon types are available with the ink (coating) layer wound 'in' or 'out'. These types are NOT interchangeable for use with the printer.

Note: Ensure the inked side of the ribbon faces the media and NOT the printhead.



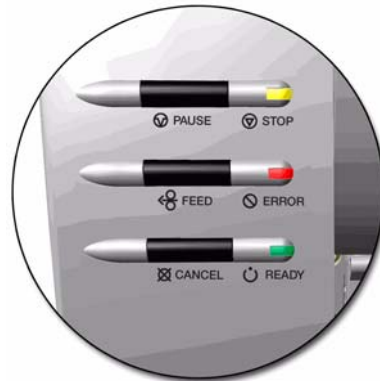


Using the Front Panel

(non-display printers)

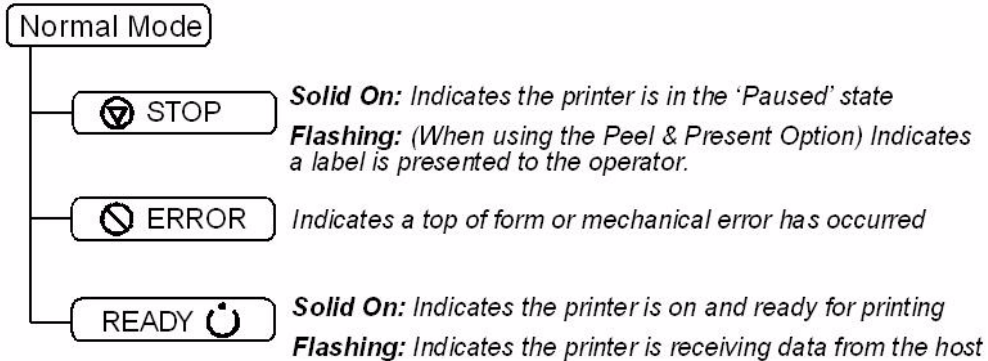
4. Introduction

The Front Panel consists of three indicator lights and three function buttons. The functions of these lights and controls are listed in the following sections.






4.1 Lights

(Normal power-up)



- Both the **READY**  and **STOP**  Lights will be on during power-up initialization and a warm reset.

4.2 Buttons

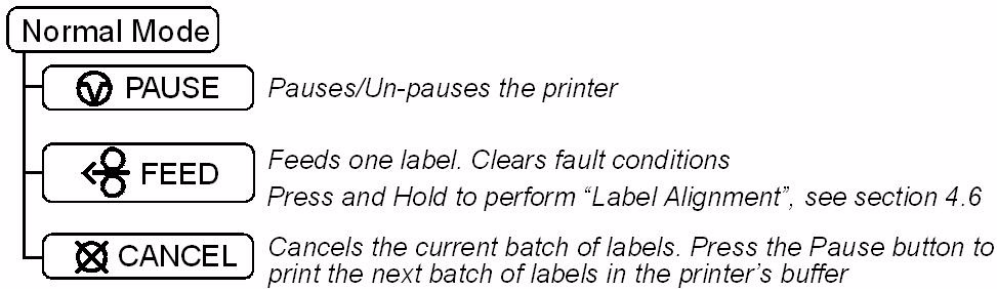
The three buttons, **PAUSE** , **FEED** , and **CANCEL**  perform different functions based on the printer's operational mode. The printer operates in one of the following modes:

- Normal:** Normal printer functions. See Section 4.3.
- Express Setup:** Allows quick access to the most common printer settings, (Sensor Type, Media Type, and Option Control. See Section 4.4.
- Printer Setup:** Allows changes to the printer's operational settings. See Section 4.5.
- Calibration:** Allows the 'calibration' of the media being used for the correct sensing of the top of form. See Section 4.7.

4.3 Normal Mode - Button Functions

In 'Normal' mode, the printer's buttons control normal operations such as pause, feed, and cancel, as well as the test and reset functions by using button combinations as detailed below.

(Normal power-up)









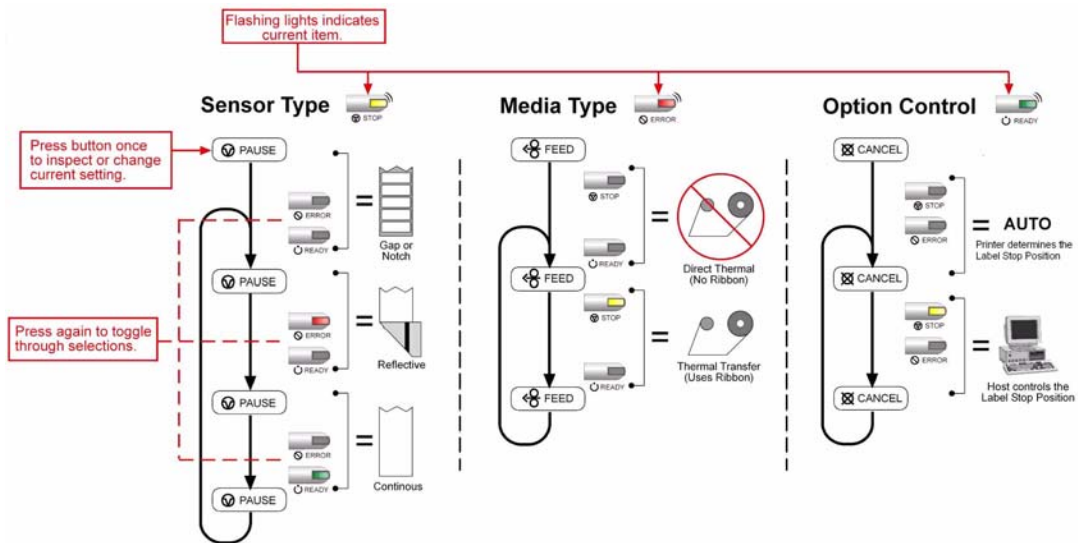
Button Combinations (push buttons simultaneously)

PAUSE	+	FEED	Prints the Test Label, see Section 4.8.2.
PAUSE	+	CANCEL	Performs a warm reset and returns to the Normal Mode of operation.
FEED	+	CANCEL	Produces Database Configuration and Test Labels, see Section 4.8.1

4.4 Express Setup Mode - Button Functions

The Express Setup is a unique printer feature that allows users quick access to the most commonly used printer settings. The selected setting is represented by a specific combination of the printer's indicator lights for each of the three items, (Sensor Type, Media Type, and Option Control). To enter the Express Setup:

- Press and hold the  PAUSE &  FEED buttons and turn the printer ON. 
- Continue to hold the buttons, release when all lights flash, approx 17 seconds.
- Use the , , and  CANCEL buttons for setup.



Turn the printer OFF to save settings.

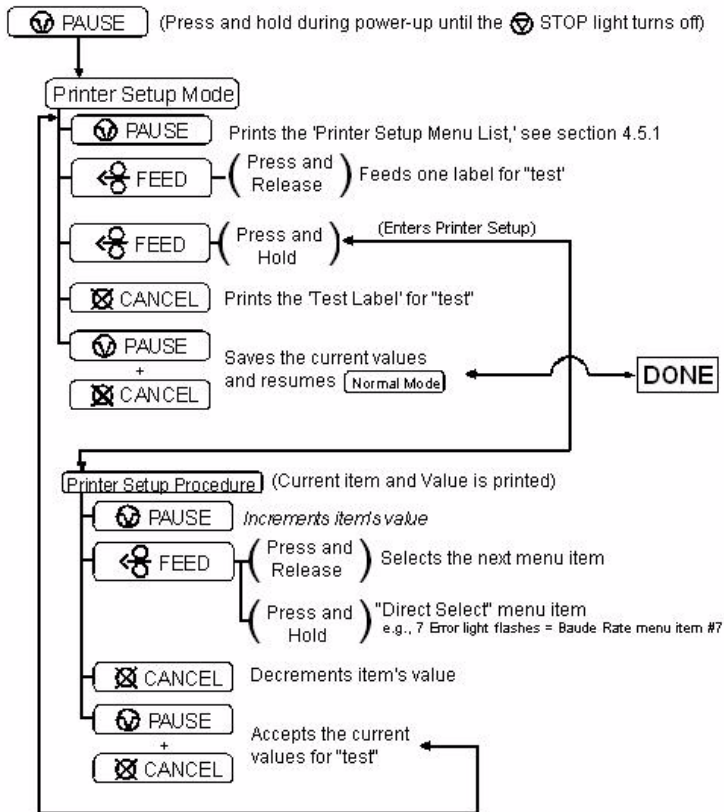
4.5 Printer Setup Mode - Button Functions

In 'Printer Setup' mode, the buttons control the setting of the printer's operational items such as media settings, communications, and options as detailed below.

Notes:

- Printer and cutter faults are disabled during Printer Setup Procedure, but can still occur while printing "test" labels.
 - If at any time you want to discard your changes and revert back to the previous values, simply turn off power to the printer.
 - If you wish to restore Factory Defaults see Section 6.7.
-

To change Printer Setup:





4.5.1 Printer Setup Menu List

The Printer Setup Menu List label, shown below, contains the printer's current values for each menu item that can be modified via the front panel (see Section 4.5.2 for a detailed item description.)

The Menu Item Numbers correspond to the item's position in the Menu List for selection

when pressing the  FEED button during the Printer Setup Procedure (see Section 4.5). For

example to "Direct Select" the BAUD RATE Menu Item press and hold the  FEED button

for 7 flashes of the  ERROR light and then release or for the TOF GAIN item hold  FEED for 12 flashes, etc..

Menu Item Numbers	Values	Menu Items
1)	DIRECT	= MEDIA TYPE
2)	EDGE	= SENSOR TYPE
3)	NO	= PRESENT SENSOR
4)	NO	= CUTTER EQUIPPED
5)	127	= SOP ADJUST, 0.005 in.
6)	127	= PRESENT ADJUST, 0.005 in.
7)	9600	= BAUD RATE, bps
8)	8	= DATA BITS
9)	STD	= CONTROL CODES
10)	100	= CONT FORM LENGTH, 0.01 in.
11)	3	= OOS MAXVOLT, 0.1 Volts
12)	12	= TOF GAIN
13)	10	= TOF DELTA, 0.1 Volts
14)	0	= TOF LOW, 0.1 Volts
15)	426	= LABEL WIDTH, 0.01 in.
16)	64	= SCALABLE FONT, 4KB
17)	128	= INTERNAL MODULE, 4KB
18)	NO	= LABEL ALIGNMENT
19)	100	= ALIGNMENT LENGTH, 0.01 in.
20)	AUTO	= OPTION CONTROL
21)	DPL	= INPUT MODE
22)	STANDARD	= DPL EMULATION
23)	10	= HEAT
24)	NO	= EXACT TIME
25)	NO	= GPIO
26)	NO	= NO REPRINT

Note: When using narrow media, the 'Menu Items' column may be truncated.

4.5.2 Menu Items and Values

The table below details the Printer Setup Menu List items with a brief description of the item's function, and the possible values. A "*" indicates the default setting.

<p>1) MEDIA TYPE</p> <p>Sets printing for direct thermal (no ribbon) or thermal transfer (ribbon) media.</p> <p><i>Possible Values:</i></p> <ul style="list-style-type: none"> • *DIRECT THERMAL • THERMAL TRANSFER 	<p>2) SENSOR TYPE</p> <p>Selects the sensor type used to detect the media's Top Of Form (TOF) mark.</p> <p><i>Possible Values:</i></p> <ul style="list-style-type: none"> • *EDGE: gap / notch TOF marks • REFL (Reflective): black marks • CONT (Continuous): no TOF marks 	<p>3) PRESENT SENSOR</p> <p>Enables/Disables the optional Present Sensor feature.</p> <p><i>Possible Values:</i></p> <ul style="list-style-type: none"> • *AUTO • NO • YES
<p>4) CUTTER EQUIPPED</p> <p>Enables/Disables the optional Media Cutter feature.</p> <p><i>Possible Values:</i></p> <ul style="list-style-type: none"> • *AUTO • NO • YES 	<p>5) SOP ADJUST</p> <p>Sets the start of print (SOP) location, relative to the top of form.</p> <p><i>Possible Values:</i></p> <ul style="list-style-type: none"> • Range: 0 – 255; nominal = *128 <p>(0 = close to edge; 255 = farthest from edge)</p>	<p>6) PRESENT ADJUST</p> <p>Specifies an additional amount to feed the label after printing.</p> <p><i>Possible Values:</i></p> <ul style="list-style-type: none"> • Range: 0 – 255; nominal = *128 <p>(0 = close to edge; 255 = farthest from edge)</p>
<p>7) BAUD RATE</p> <p>Sets the serial port baud rate. (Must match the host setting).</p> <p><i>Possible Values:</i></p> <ul style="list-style-type: none"> • 600 to 38.4k; default = *9600 BPS 	<p>8) DATA BITS</p> <p>Sets the serial data word length (Must match the host setting).</p> <p><i>Possible Values:</i></p> <ul style="list-style-type: none"> • *8 • 7 	<p>9) CONTROL CODES</p> <p>Allows code selection listed in Programmer's manual.</p> <p><i>Possible Values:</i></p> <ul style="list-style-type: none"> • *(STD) Standard Codes • (ALT) Alternate Codes

<p>10) CONT FORM LENGTH</p> <p>Sets the page (label) size when the 'SENSOR TYPE' is set to continuous media.</p> <p><i>Possible Values:</i></p> <ul style="list-style-type: none"> • Range: 0 – 9999; default = *100 (Units = .01 inch) 	<p>11) OOS MAXVOLT</p> <p>Sets the media sensor level for the Out Of Stock condition.</p> <p><i>Possible Values:</i></p> <ul style="list-style-type: none"> • Range: 0 – 16; nominal = *2 (Units = .1 volt) 	<p>12) TOF GAIN</p> <p>Sets media sensor Top of Form gain value.</p> <p><i>Possible Values:</i></p> <ul style="list-style-type: none"> • Range: 0 – 15; nominal = *10
<p>13) TOF DELTA</p> <p>Sets the minimum media sensor change required to signify a label gap or mark.</p> <p><i>Possible Values:</i></p> <ul style="list-style-type: none"> • Range: 0 – 50; nominal = *10 (Units = .1 volt) 	<p>14) TOF LOW</p> <p>Sets the minimum media sensor reading for paper (gap/notch) or mark (reflective).</p> <p><i>Possible Values:</i></p> <ul style="list-style-type: none"> • Range: 0 – 50; nominal = *0 (Units = 0.1 volt) 	<p>15) LABEL WIDTH</p> <p>Sets the label width.</p> <p><i>Possible Values:</i></p> <ul style="list-style-type: none"> • Range: 75 – 426; default = *426 (Units = .01 inch)
<p>16) SCALABLE FONT</p> <p>Sets the number of memory blocks to allocate for scalable fonts.</p> <p><i>Possible Values:</i></p> <ul style="list-style-type: none"> • Range: 0 – 128; default = *64 (Units = 4K Bytes) 	<p>17) INTERNAL MODULE</p> <p>Sets the number of memory blocks to allocate for the internal RAM module.</p> <p><i>Possible Values:</i></p> <ul style="list-style-type: none"> • Range: 0 – 128; default = *128 (Units = 4K Bytes) 	<p>18) LABEL ALIGNMENT</p> <p>Sets the label alignment method (see Section 4.6).</p> <p><i>Possible Values:</i></p> <ul style="list-style-type: none"> • YES (user manually determines 'ALIGN LENGTH') • AUTO (printer determines 'ALIGN LENGTH') • *NO (no Label Alignment used)
<p>19) ALIGN LENGTH</p> <p>Leading edge distance of two successive labels. Must be entered if 'LABEL ALIGNMENT' is set to Yes (see Section 4.6).</p> <p><i>Possible Values:</i></p> <ul style="list-style-type: none"> • 0 – 999; default =100* (Units = .01 inch) 	<p>20) OPTION CONTROL</p> <p>Sets label stopping (and in certain cases the starting) location for different printer configurations.</p> <p><i>Possible Values:</i></p> <ul style="list-style-type: none"> • * AUTO (Automatically sets the stop location. Installed options will be 'auto-sensed' and the appropriate stop position will automatically be set. Host commands are ignored.) • HOST (Sets stop position according to options installed. If no options are installed the printer sets stop location to the next label's start of print. Host commands will override.) 	





<p>21) INPUT MODE</p> <p>Selects between the standard or template interpretation of incoming data.</p> <p><i>Possible Values:</i></p> <ul style="list-style-type: none"> • * DPL (printer constructs the label using the standard DPL commands) • LINE (printer constructs the label using a preloaded template form) 	<p>22) DPL EMULATION</p> <p>This instructs the firmware to process specific DPL data (Start of Print, DPI, and Imaging function) according to the selected printer emulation.</p> <p><i>Possible Values:</i></p> <ul style="list-style-type: none"> • *STANDARD • ALLEGRO (Allegro Emulation) • P PLUS (Prodigy Plus Emulation) • PRODIGY (Prodigy Emulation)
<p>23) HEAT</p> <p>Controls the 'burn-time' of the printhead. This is the equivalent of Heat Setting on most label software programs.</p> <p><i>Possible Values:</i></p> <ul style="list-style-type: none"> • Range: 0 – 30; default = *10 	<p>24) EXACT TIME</p> <p>Instructs the printer to wait until the system is idle before the next label's data and time fields are formatted to eliminate any discrepancy between the buffered and printed times.</p> <p><i>Possible Values:</i></p> <ul style="list-style-type: none"> • YES or NO; default = *NO
<p>25) GPIO</p> <p>Sets the printer's option port to function for GPIO applications, (see Appendix F for more information).</p> <p><i>Possible Values:</i></p> <ul style="list-style-type: none"> • YES or NO; default = *NO 	<p>26) NO REPRINT</p> <p>When a fault condition is detected, printing stops and the ERROR light turns on. After the problem is corrected, the FEED Key must be pressed to clear the fault. The label in process is not reprinted.</p> <p><i>Possible Values:</i></p> <ul style="list-style-type: none"> • YES or NO; default = *NO • (NO = NO REPRINT" disabled, reprinting will occur.)

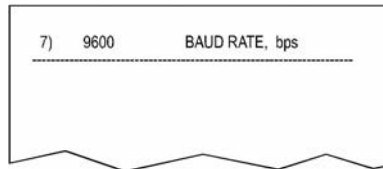
Note: All of the menu items listed in the previous section are stored in non-volatile memory.

4.5.3 Step by Step Modification of the Printer Setup


The following is an example of Printer Setup modification. Although this example will detail how to modify the serial Baud Rate, the same method can be used to change any of the printer's menu item settings.

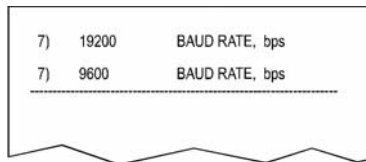
Note: It is recommended that the Printer Setup Mode not be entered while in Peel Mode or with the optional Present Sensor enabled. Depending on label size this can cause unpredictable results.

1. With printer 'Off' and properly loaded with media, press and hold the  PAUSE button while powering 'On' the printer. Continue to hold the button until the  STOP light turns off, then release it.
2. Press and hold the  FEED button and count 7 flashes of the  ERROR light, then release it. The following printout should be produced:






7) 9600 BAUD RATE, bps




3. Press the  PAUSE button one time to increment to the 19200 bps value. The following printout should be produced:





7) 19200 BAUD RATE, bps
7) 9600 BAUD RATE, bps

4. At this point you will accept the current values for "test" and exit the Printer Setup Procedure by simultaneously and briefly pressing the  PAUSE +  CANCEL buttons. Wait until the  STOP light goes off.

Note: If you want to discard your changes and revert back to the previous values simply turn off power to the printer before Step 5.

5. Now you can save your changes and resume **Normal Mode** by simultaneously and briefly pressing the  PAUSE +  CANCEL buttons. Wait until the  STOP light goes off.

6. To confirm that your changes have been made press the  FEED +  CANCEL buttons simultaneously, this will print the Database Configuration Label. The label should show the new Baud Rate value of 19200.

Label 1

```

WED NOVEMBER 10, 2003 21:41:31
323
VER: T-200 - 05.08 11/07/03      COUNTER INFORMATION
BOOT 83-2383-05E                ABSOLUTE VALUES 7-16-2003
CODE 83-2385-05H                LENGTH_____ 773 INCHES
FPGA 83-2384-05B                TIME_____ 20 HOURS
FONT 83-2460-01C                RESETTABLE VALUES 7-16-2003
UMOD 83-2472-01A                LENGTH_____ 969 INCHES
 256K FLASH MODULE B           TIME_____ 56 HOURS
SYSTEM FLASH SIZE_____2 MBYTES
SYSTEM RAM CHECKS_____GOOD
SYSTEM RAM SIZE_____4096 KBYTES
SYSTEM RAM AVAIL_____3180 KBYTES

MEMORY CONFIGURATION
INTERNAL MODULE A_____128
SCALABLE FONTS_____64
LABEL SIZE 0426:10912

AUTO DETECTION
CUTTER_____NOT DETECTED IN
PRESENT SENSOR_____NOT DETECTED
CURRENT STOP LOC___TEAR

EXPRESS SETUP
MEDIA SENSOR_____EDGE
PRINT METHOD_____TRANSFER
OPTION CONTROL___AUTO

INPUT VALUES
PAPER_____207
POT_____33
TRAN_____157
REFL_____0
RIBN_____237
TEMP_____64
VOLT_____218
PRESENT SENSOR_____0

```

Label 2

```

CONFIGURATION
SERIAL PORT SELECTED
19.2; 8BITS
EDGE
MEDIA TYPE_____TRANSFER
CONT FORM LENGTH_____0
PRESENT ADJUST_____128
SOP ADJUST_____128
TOF LOW_____0 0
TOF DELTA_____10 10
TOF GAIN_____7 5
OOS MAXVOLT_____3 2
LABEL ALIGNMENT_____AUTO
ALIGN LENGTH_____611
OPTION CONTROL_____AUTO
INPUT MODE_____DPL
DPL EMULATION_____STANDARD
HEAT_____10
EXACT TIME_____NO
GPIO_____NO
NO REPRINT_____NO
SYMBOL SET_____PM
FONT SUBSTITUTION_ NONE

IGNORE COMMANDS
SYMBOL SET SELECT_ NO
CNTRL CODES_____NO
HEAT_____NO
SPEED_____NO
SOP OFFSET_____NO

```

4.6 Label Alignment

The Label Alignment function is intended for use when the label length is less than the distance between the printhead and the media sensor or where label waste at power-up is a concern. Label Alignment (see table below) is not recommended for label lengths greater than 6.5 inches or for media containing 2 or more form lengths.


Label Stock	Label Alignment Setting
Continuous	NO
6.5 inches or less	YES or AUTO
6.5 inches or more	NO
Multiple length labels	NO

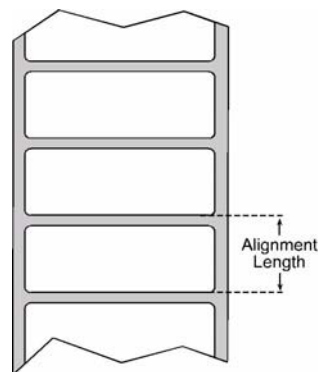
The Label Alignment function is chosen via the menu system (see Section 4.5) or by host commands. The three possible modes, YES, AUTO, and NO, are detailed in the following sections.

4.6.1 Label Alignment = YES

In this mode, the operator must supply an 'ALIGN LENGTH' value. This value must be physically measured from leading edge to leading edge of two successive labels, as shown. The measurement must be as accurate as possible. For very short labels, errors as small as 0.01" can result in noticeable print variations on the labels between the media sensor and the printhead.

The measured value must be sent to the printer via the host computer or entered using the Printer Setup Mode (see Section 4.5).


Then, in Normal Mode, press and hold the  FEED button (about 4 seconds). The printer will align the label to the top of form position.



Note: If media with a different label length is subsequently loaded, the 'ALIGN LENGTH' must be recalculated and re-entered.

4.6.2 Label Alignment = AUTO

In this mode, the printer automatically calculates the 'ALIGN LENGTH' thus eliminating the need to physically measure the label. This mode is usually preferred in applications that require frequent media changes to labels of different lengths.




To perform an Auto Alignment, in Normal Mode press and hold the  FEED button (about 4 seconds). The printer will feed labels to calculate the label length. Following the calculation, the printer will save the measurement and align to the top of form position. Auto Alignment can result in wasted labels during the measurement process (the longer the label length the greater the waste).






4.6.3 Label Alignment = NO

When Label Alignment is not enabled (i.e., set to NO), printing begins at the current label position without alignment, assuming the label is at the start of print position. Additionally, if the label length is short, labels between the printhead and the media sensor may be unused.

4.6.4 Label Alignment Troubleshooting

If you experience label alignment problems, the following table offers possible causes and solutions.

Problem	Possible Cause	Solution
<p>Attempting to perform Label Alignment results in no paper movement.</p>	<p>With the Present Sensor enabled, Label Alignment cannot be performed without a Label Length.</p>	<ul style="list-style-type: none"> • Set Label Alignment to AUTO, press and hold  FEED until media moves for the automatic length measurement. <li style="text-align: center;">- OR - • Re-measure the Label Alignment Length. Use Printer Setup mode to enter the new length. Print a Database Configuration label to ensure the new length has been set.
<p>First label is wasted during alignment. All labels thereafter print to the correct start of print position.</p>	<p>Alignment Length is too long.</p> <p style="text-align: center;">- OR -</p> <p>For labels whose length and stop position cause them to stop between labels on the media sensor, the alignment function can result in wasted labels.</p>	<ul style="list-style-type: none"> • Set Label Alignment to AUTO, press and hold  FEED until paper moves for automatic Label Alignment length measurement. <li style="text-align: center;">- OR - • Re-measure Label Alignment Length, use Menu Setup to set new length, ensure desired length has been set. • Obtain a slightly different label Alignment Length measurement. Using the Label Alignment AUTO mode, hold the  FEED button to force an alignment and label measurement. Ensuring slack in the label stock may result in a slightly different measurement. The Alignment Length may also be set manually via the Setup Menu. Increasing or decreasing the value by 1 or 2 units (in./100) may help to prevent the wasted labels; however, this may result in incorrect print positions for labels that are short in length.

<p>Label Alignment is incorrect. Pressing  FEED successively results in a short label length, one-inch.</p>	<p>Label Alignment Length is not correct. The default Label Alignment Length is 1.00", and will result in this behavior when any larger label length is used without setting the appropriate length.</p>	<ul style="list-style-type: none"> • Set Label Alignment to AUTO. Press and hold  FEED until paper moves for automatic Label Alignment Length measurement. - OR - • Measure the label length and use the Setup Menu to set the new length. Print a Database Configuration label to ensure the new length has been set.
<p>Label Alignment is incorrect. Pressing  FEED successively results in a label length longer than actual, one-inch.</p>	<p>Label Alignment Length is not correct. The default Label Alignment Length is 1.00", and will result in this behavior when any larger label length is used without setting the appropriate length</p>	<ul style="list-style-type: none"> • Set Label Alignment to AUTO. Press and hold  FEED until paper moves for automatic Label Alignment length measurement. - OR - • Measure the label length and use the Setup Menu to set the new length. Print a Database Configuration label to ensure the new length has been set.
<p>Tear Mode is selected but the label stop position (present position) is not far enough forward.</p>	<p>Another present position has been determined. Enabling the Present Sensor causes the label stop position (present position) to be approximately 0.1" behind the peel bar.</p> <p>- OR -</p> <p>The Present Adjust value is not correct.</p>	<ul style="list-style-type: none"> • Disable the Present Sensor. - OR - • Ensure the host computer is not providing a Present Distance shorter than is required for the Tear Bar. • Use the Setup Menu to modify the Present Adjust value.
<p>Tear Mode is selected but the label stop position (present position) is too far forward.</p>	<p>Another present position has been determined.</p> <p>- OR -</p> <p>The Present Adjust value is not correct.</p>	<ul style="list-style-type: none"> • Ensure the host computer is not providing a Present Distance longer than is required for the Tear Bar. • Use the Setup Menu to modify the Present Adjust value.
<p>The  ERROR light illuminates during label alignment.</p>	<p>The label supply is empty</p>	<ul style="list-style-type: none"> • Load media.

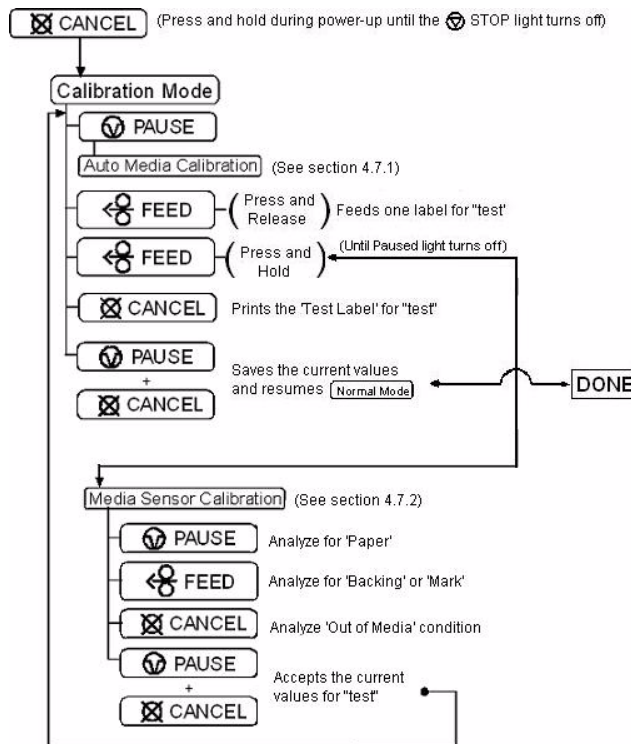
4.7 Calibration Mode – Button Functions

In ‘Calibration’ mode, the buttons allow the printer to adjust to the media being used. Calibration can be performed either automatically or manually, as detailed below.

Notes:

- Before calibrating, ensure that the Printhead Carrier Assembly is latched down, that the cover is closed, and that the media sensor has been set for the appropriate media type, see Section 4.5.2.
 - Printer and cutter faults are disabled during **Auto Media Calibration** and **Media Sensor Calibration**, but can still occur while printing “test” labels.
 - If at any time you wish to discard your changes and revert back to the previous calibration simply turn off power to the printer. Also, Factory Defaults can be restored, see Section 6.7
-

To perform Calibration:








4.7.1 Auto Media Sensor Calibration


Auto Media Sensor Calibration automatically establishes the optimum sensing values for the media you are using in the printer.

Note: Before calibrating, be sure the media sensor is set for the appropriate media type, see Section 4.5.2; also, ensure that the Printhead Carrier Assembly is latched down and the cover is closed.

To automatically calibrate the media sensor:

1. With the desired media loaded, hold the  CANCEL button while powering up the printer. Continue to hold the button until the  STOP light turns off then release it.
2. Next press the  PAUSE button. *The printer will feed approximately ten inches of media to calculate the TOF Delta and Low values to be used.*
3. Upon completion, one of the following lights will flash five times to denote the result of the auto calibration attempt:
 -  STOP light = Successful calibration. Proceed to Step 4.
 -  ERROR light = Unsuccessful calibration, try again. If the calibration continues to fail proceed to Section 4.7.2.

Note: If you wish to discard the changes and revert back to the previous calibration simply turn off the printer before Step 4.

















4. Now save the changes and resume Normal Mode by pressing the  PAUSE +  CANCEL buttons simultaneously and briefly. Wait until the  STOP light goes off.

4.7.2 Manual Media Sensor Calibration




The Manual Media Sensor Calibration procedure should be used in cases where the printer continues to suffer from media sensing problems after performing or attempting to perform the Auto Media Sensor Calibration (see Section 4.7.1).

Note: Before calibrating, set the media sensor for the appropriate media type, see Section 4.5.2; also, latch the Printhead Carrier Assembly and close the cover.

To manually calibrate the media sensor:

1. Hold the  CANCEL button and power-up the printer. Continue to hold the button until the  STOP light turns off; then release the button. Next, press and hold the  FEED button, continue to hold the button until the  STOP light turns on; then release the button.
2. Remove all the material from the media sensor, (see Section 3.3 for the sensor's location), close the Printhead Carrier Assembly, and then press the  CANCEL button. *The printer will flash the  ERROR light as it analyzes the no media condition.*
3. Position the backing material in the media sensor, close the Printhead Carrier Assembly, and then press the  FEED button. *The printer will flash the  ERROR light as it analyzes the top of form mark.*
4. Place the media with the backing attached (if any) in the media sensor, close the Printhead Carrier Assembly, and then press the  PAUSE button. *The printer will flash the  ERROR light as it analyzes the material.*
5. Simultaneously and briefly press the  PAUSE +  CANCEL buttons to accept the calibration for “test” and exit the Media Sensor Calibration. One of the following lights will flash five times to denote the result of the manual calibration attempt:
 -  STOP light = Successful calibration. Proceed to Step 6.
 -  ERROR light = Unsuccessful calibration. Retry the procedure beginning at Step 1.
6. Use the  FEED button (feeds a label), and the  CANCEL button (prints a test label) to test the current calibration.

Note: To discard the changes and revert back to the previous calibration, turn off the printer before Step 7.

7. Now save the changes and resume Normal Mode by pressing the  PAUSE +  CANCEL buttons simultaneously and briefly. Wait until the  STOP light goes off.



4.8 Internal Labels

The following section details the printer's internally generated configuration and test labels.

4.8.1 Database Configuration and Test Labels

The Database Configuration Label provides valuable printer information including the firmware version, memory allocations, enabled options, and label-counter data.

To print the Database Configuration and Test Labels:

With the printer on, loaded with media (at least 4 inches wide) and ribbon (if printing with thermal transfer media), press the  FEED +  CANCEL buttons simultaneously. The first label printed will be the Database Configuration Label.

Label 1

```
WED NOVEMBER 10, 2003 21:41:31
323
VER: T-200 - 05.08 11/07/03
BOOT 83-2383-05E
CODE 83-2385-05H
FPGA 83-2384-05B
FONT 83-2460-01C
UMOD 83-2472-01A
  256K FLASH MODULE B
SYSTEM FLASH SIZE___2 MBYTES
SYSTEM RAM CHECKS___GOOD
SYSTEM RAM SIZE___4096 KBYTES
SYSTEM RAM AVAIL___3180 KBYTES

AUTO DETECTION
  CUTTER___NOT DETECTED
  PRESENT SENSOR___NOT DETECTED
CURRENT STOP LOC___TEAR

EXPRESS SETUP
  MEDIA SENSOR___EDGE
  PRINT METHOD___TRANSFER
  OPTION CONTROL___AUTO

INPUT VALUES
PAPER___207
POT___33
TRAN___157
REFL___0
RIBN___237
TEMP___64
VOLT___218
PRESENT SENSOR___0

COUNTER INFORMATION
ABSOLUTE VALUES 7-16-2003
LENGTH___773 INCHES
TIME___20 HOURS
RESETTABLE VALUES 7-16-2003
LENGTH___969 INCHES
TIME___56 HOURS

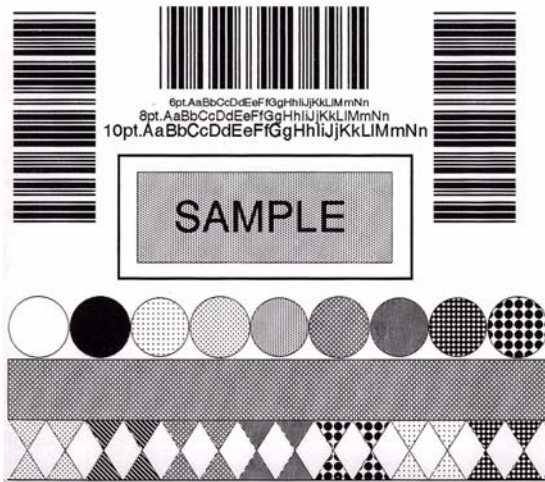
MEMORY CONFIGURATION
INTERNAL MODULE A___128
SCALABLE FONTS___64
LABEL SIZE 0426:10912 IN
```

Label 2

```
CONFIGURATION
SERIAL PORT SELECTED
19.2; 8BITS
EDGE
MEDIA TYPE___TRANSFER
CONT FORM LENGTH___0
PRESENT ADJUST___128
SOP ADJUST___128
TOF LOW___0 0
TOF DELTA___10 10
TOF GAIN___7 5
OOS MAXVOLT___3 2
LABEL ALIGNMENT___AUTO
ALIGN LENGTH___611
OPTION CONTROL___AUTO
INPUT MODE___DPL
DPL EMULATION___STANDARD
HEAT___10
EXACT TIME___NO
GPIO___NO
NO REPRINT___NO
SYMBOL SET___PM
FONT SUBSTITUTION___NONE

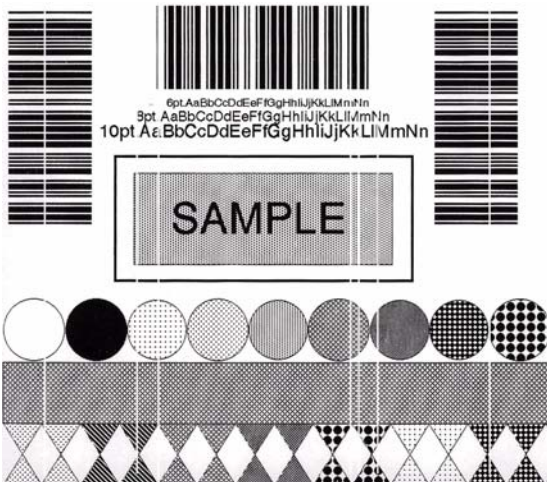
IGNORE COMMANDS
SYMBOL SET SELECT___NO
CNTRL CODES___NO
HEAT___NO
SPEED___NO
SOP OFFSET___NO
```

The second label printed is the Test Label. This label is used to test the condition of the printhead, as shown below:



Good Print Quality Label:

Even pattern consistency indicates correct printhead operation.





Faulty Print Quality Label:

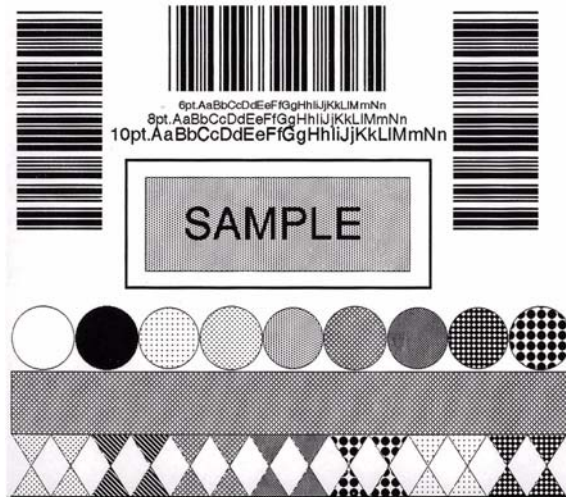
Streaks indicate a dirty or faulty printhead. See Section 6.1 for cleaning instructions.

4.8.2 Test Label

The Test Label is used to evaluate the current printer setup for print quality, label tracking, and print positioning.

To print the Test Label:

With the printer loaded with media (at least 4 inches wide), and ribbon (if printing with thermal transfer media), simultaneously press the  PAUSE +  FEED buttons.






Using the Front Panel (T300)

5. Introduction

5.1 Controlling Printer Settings with Internal Print Server

If your printer is equipped with the optional Internal Print server , many of the printer's setting and parameters can be modified and controlled via the built-in HTML pages resident in the printer. These pages can be accessed using any web browser by simply entering the IP address in the URL bar.

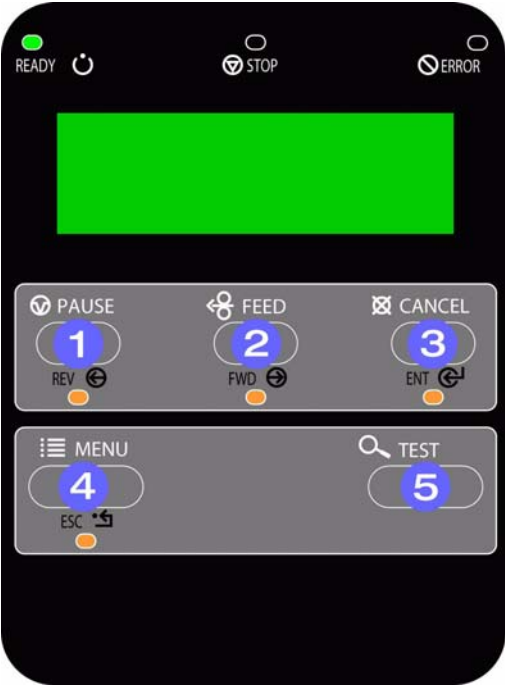
The front panel is comprised of three indicator lights, a Liquid Crystal Display and five mode-dependant keys. The selectable modes (Ready, Menu and Quick Test) and the related functions of the printer keys are detailed below.

Note: To Adjust the LCD contrast, press and hold the  MENU key for 10 to 20 seconds to modify the LCD contrast level.

5.1.1 Ready Mode: Normal Operation (Ready Light 'On')

	<ol style="list-style-type: none">1 PAUSE The PAUSE Key temporarily suspends printing. Pressing it again will return the printer to normal operation.2 FEED The FEED Key advances one label, and clears any corrected faults. Pressing and holding causes the printer to perform a Quick Media Calibration; see Section 5.4.1.3 CANCEL The CANCEL Key 'pauses' the printer and then prompts you for confirmation. If yes, the current job is cancelled. The printer remains paused. Pressing and holding four seconds will reset the printer and clear temporary host settings (soft reset).4 MENU The MENU Key toggles between the Ready and Menu Modes. In the Ready Mode, pressing and holding four seconds will change the display contrast.5 TEST The TEST Key enters (or exits) the Quick Test Menu.
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5.1.2 Menu Mode: Configuration (Ready Light 'Flashing')



1 REV ←

The LEFT ARROW Key scrolls to the previous menu item on the same menu level. It also decrements numerical values in most menu selections.

2 FWD →

The RIGHT ARROW Key scrolls to the next menu item. It also increments numerical values in most menu selections.

3 ENT ↵

The ENTER Key selects the function, item or displayed value. It also moves between selections within multiple parameter fields.

4 ESC ↵

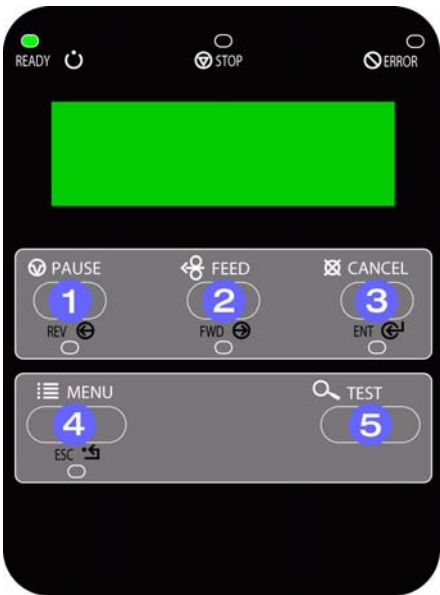





The ESCAPE Key moves to the previous menu level, and finally back to the Ready Mode.

5 TEST

When a print job is in progress, pressing the TEST Key will terminate the job. The printer will prompt you for confirmation; if 'Yes,' the current job is cancelled and then Menu Mode is restored.

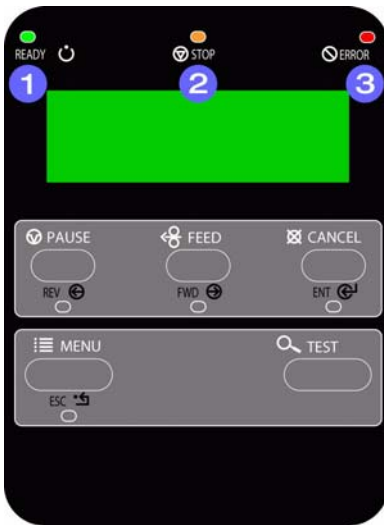
5.1.3 Quick Test Mode: Print Test Labels

Note: The Quick Test Mode functions are disabled while processing data from communications interfaces until the Host Timeout value expires.

	<ol style="list-style-type: none">1 REV  The LEFT ARROW Key scrolls to the previous test function.2 FWD  The RIGHT ARROW Key scrolls to the next test function.3 ENT  The ENTER Key will change the selected test label quantity of 2, 100, 1000, or 9999 (except the 'Configuration Label', quantity of one). Holding down the key scrolls quantities.4 ESC  The ESCAPE Key will exit the Quick Test Mode without printing.5 TEST  The TEST Key will print the selected test label at the selected quantity. During test label printing, this key also functions as a cancel key (the printer will prompt you for confirmation before cancellation occurs).
---	---

F You can program a time delay between the printing of test labels using the 'Print Test Rate' feature; see Section 5.1.7

5.1.4 Indicator Lights



1 READY

- 'On' indicates that the printer is powered 'On' and, after initialization, it indicates the Ready Mode.
- 'Slow Flashing' indicates Menu Mode.
- 'Fast Flashing' indicates data is being received and processed.

2 STOP

- 'On' indicates a 'Paused' condition.

3 ERROR

- 'Slow Flashing' indicates a Warning.
- 'Fast Flashing' indicates a Fault. See Section 7.1 for a listing of associated messages.

5.1.5 LCD



1 Liquid Crystal Display

The display provides several types of information:

- Following a brief power-up sequence (initialization), the 'Ready' message.
- The time and date, if the printer has received it from one of the following: the host, the front panel setting, or the Time and Date option.
- A label counter during a batch print job.
- The Menu System when in Menu Mode.
- Any prompt, condition, downloading, warning, or fault message.

5.2 The Menu System

Printer operation can be controlled through the user interface, allowing the operator access to these six menu system branches:


- Media Settings
- Print Control
- Printer Options
- System Settings
- Communications
- Diagnostics

While in the menu system, the current selection is indicated with an asterisk (*) next to the displayed item on the LCD. Selections designated with a section symbol (§) will require a printer reset before becoming effective. A reset will be automatically invoked when exiting the menu system and answering 'Yes' to the 'Save Changes' prompt. Changes made will be saved. When power is removed, the new settings will be restored upon power-up.

The same functional commands from your host computer may, in some cases, override the printer's menu settings. In addition, as a security feature for the prevention of accidental or unauthorized changes, the menu system has a password protection feature.

Note: In the following subsections, the factory default settings are denoted with the '✧' symbol. Selections denoted with a diamond (◆) can only be changed through the menu system - all other selections can be overridden by host software commands.

5.2.1 Entrance and Exit Prompts

With 'Ready' displayed on the LCD, press the  **MENU** Key to enter Menu Mode.

Note: While in Menu Mode, the printer will stop processing new DPL (or bitmapped) data.

MENU MODE	Depending upon the configuration of the printer, the following Entrance and Exit Prompts may be displayed when accessing or leaving the Menu System.
ENTER PASSWORD 0 0 0 0	You are attempting to enter Menu Mode. Security has been enabled and now the correct user-definable password is required before accessing the Menu Mode functions.
KEEP HOST CHANGES? ENTER = YES	You are now entering Menu Mode. Existing Host commands have affected the configuration of the printer. Pressing ENTER will save these changes; otherwise, the printer will revert to previously saved settings.
SAVE CHANGES? ENTER = YES	You are now exiting Menu Mode, but have made changes to the printer's settings. Pressing ENTER will reconfigure your printer according to these changes; otherwise, the printer will revert to previously saved settings. <div data-bbox="467 841 1116 930" style="border: 1px solid black; padding: 5px;">Note: If changes have been made that require a reset, the printer will automatically invoke that reset.</div>

5.2.2 Media Settings

MEDIA TYPE	Selects the printing method.
DIRECT THERMAL	For use with heat sensitive media.
◇THERMAL TRANSFER	For use with media requiring a ribbon to create an image.
SENSOR TYPE	Selects the top-of-form (TOF) sensing method for the media.
◇GAP	The printer recognizes the TOF by sensing gaps in the media.
CONTINUOUS	No TOF sensing. The LABEL LENGTH setting determines the length.
REFLECTIVE	The printer recognizes the TOF by sensing reflective (black) marks on the media.
LABEL LENGTH ◇04.00in (0-99.99)	When the Sensor Type is set to Continuous, this value is used to determine the TOF.
MAXIMUM LABEL LENGTH ◇16.00in (0-99.99)	Sets the maximum length between TOF marks (gap or reflective). If this limit is exceeded, a top of form fault is declared.
PAPER OUT DISTANCE ◇00.25in (0-99.99)	Sets the length of travel before an out of stock condition is declared.
LABEL WIDTH 203DPI > ◇04.26in (.75-4.26) 300DPI > ◇04.16in (.75-4.16)	Sets the maximum limit for the printable width. Objects extending beyond this limit will be clipped off and not printed.
RIBBON LOW DIAMETER ◇1.38 in (1.00-2.00)	Sets the threshold for a low ribbon indication.
SENSOR CALIBRATION	Adjusts the printer to sense your media.
PERFORM CALIBRATION	The user follows steps to allow the printer to calculate the empty, gap (or mark), and paper values to set the media sensor.
ADVANCED ENTRY	The user directly inputs the best values to adjust the media sensor.
SENSOR LEVELS	Sets threshold values for the media sensor parameters. Manual entry for paper, gap (or mark), and empty thresholds.
SENSOR GAIN	Observe A/D reading and set SENSOR GAIN. Adjusts the sensitivity of the sensor for custom label stock.

PRINthead CLEANING	Controls the printhead cleaning routine.
CLEAN HEAD SCHEDULE 000 in. (* 1000)	<p>Specifies the inch (or centimeter) count to reach before prompting a printhead cleaning. If the number specified is exceeded three times, the printer will fault until cleaning is initiated.</p> <hr/> <p><input checked="" type="checkbox"/> Notes: The default value (zero) disables this function. Also, the number specified is multiplied by one thousand.</p>
CLEAN HEAD COUNTER 0 in.	Indicates the number of inches (or centimeters) since printhead cleaning was last initiated.
RESET COUNTER	Allows the clean head counter to be set to zero
CLEAN HEAD NOW	<p>Initiates printhead cleaning and resets the Clean Head Counter.</p> <hr/> <p><input checked="" type="checkbox"/> Notes:</p> <ul style="list-style-type: none"> • Remove ribbon, if installed. • Enter Menu Mode / Media Settings / Media Type and set the printer for Direct Thermal. • Ensure that full width media is installed. • See Section 6.1 for detailed instructions.

5.2.3 Print Control

HEAT ↕10 (0-30)	Controls the 'burn-time' of the printhead. This is the equivalent of Heat Setting on most label software programs.
PRINT SPEED T-200 > ↕6 in/s (2-6) T-300 > ↕6 in/s (2-6)	Controls the rate of label movement during the printing process.
FEED SPEED T-200 > ↕6 in/s (2-6) T-300 > ↕6 in/s (2-6)	Controls the rate of label when the FEED Key is pressed.
REVERSE SPEED T-200 > ↕4 in/s (2-5) T-300 > ↕4 in/s (2-5)	Controls the rate of label movement during backup positioning for start of print, cutting or present distance.
ROW OFFSET ↕00.00in (0-99.99)	Shifts the vertical start of print position. This is the user setting for row adjustment.
COLUMN OFFSET ↕00.00in (0-99.99)	Shifts the horizontal, left-justified start of print position to the right <u>without</u> shifting the Label Width termination point to the right. This is the user setting for Column Adjust.
PRESENT DISTANCE ↕0.00in (0-4.00)	Sets the label stop position past the start of print. When the next label format is received, the printer will automatically backfeed to the start position. If the present distance is set to zero, the printer will operate without reversing.
CUSTOM ADJUSTMENTS ♦	These factory adjustments independently change the listed parameters to finely tune the printer and compensate for slight mechanical differences sometimes evident if multiple printers share label formats.
DARKNESS ↕32 (1-64)	Controls the printhead strobe time to fine-tune the HEAT setting.
CONTRAST ↕32 (1-64)	It allows relative print edge (gray) adjustment for the print quality, which allows fine-tuning for specific media/ribbon mix.
ROW ADJUST ↕000 DOTS (-150 -150)	Shifts the vertical start of print position in dots upward or downward to fine-tune the ROW OFFSET setting.
COLUMN ADJUST ↕000 DOTS (0-128)	Shifts both the horizontal start of print position and the LABEL WIDTH termination point to the right in dots to fine-tune the COLUMN OFFSET setting.
PRESENT ADJUST ↕064 DOTS (0-128)	Adjusts the label stopping position in dots to fine-tune the PRESENT DISTANCE setting.

5.2.4 Printer Options

MODULES	Memory available for user storage of graphics, fonts and label formats. (The physical presence of the respective memory module must be detected to show the function selections in the menu system.
PRINT DIRECTORY	Prints a label directory of selected, or of all available modules, the available space on these modules, the files present, and the type of module and files.
PRINT FILE	The user may select from a list of available files for sample printing.
FORMAT MODULE	The user may select from a list of available modules for formatting – all data will be erased.
DELETE FILE	The user may select from a list of available files for deleting (protected modules will not appear). Bytes will not be retrieved until the module that contained the deleted file is packed.
PACK MODULE	Packing the module removes files marked as deleted and defragments existing file structures to recover space.
PRESENT SENSOR	Used for on-demand label dispensing, where a printed label blocking the sensor will inhibit further printing until removed. (The physical presence of the Present Sensor must be detected to show the ENABLE/DISABLE selections, else NOT INSTALLED will be displayed momentarily).
MODE	Sets Present Sensor to desired mode of operation.
◇AUTO	Enables the present sensor when option is installed – present sensor or peel and present mechanism. Stop location (present distance is automatically set appropriately for the installed hardware.
ENABLED	<i>Enables the sensor for on-demand printing.</i> Stop location (present distance is automatically set appropriately for the installed hardware.
DISABLED	<i>Disables the sensor.</i>
RETRACTION DELAY ◇070 x 10mS (1-255)	Time delay prior to moving label to next start of print in milliseconds.
CUTTER	Used to cut media into separate labels. (<i>The physical presence of a device must be detected to show the ENABLE/DISABLE selections, else NOT INSTALLED will be displayed momentarily.</i>)
◇AUTO	Enables the cutter when option is installed. Stop location (present distance is automatically set appropriately for the installed hardware.
ENABLED	Enables cutting.
DISABLED	Disables cutting.

GPIO PORT ♦	Used to interface the printer to external controlling devices (see Appendix D).
GPIO DEVICE	Sets the GPIO Port to work with a specific type of device.
♦DISABLED	Disables the GPIO Port.
APPLICATOR	Enables the GPIO for a label applicator.
BARCODE VERIFIER	Enables the GPIO for a bar code verifier.
START OF PRINT	Programmable signal input that controls the Start of Print (SOP) process.
♦ACTIVE HIGH	SOP signal must go 'high' for at least 50 milliseconds to initiate printing.
ACTIVE LOW	SOP signal must go 'low' for at least 50 milliseconds to initiate printing.
END OF PRINT	Programmable signal output that signifies the End of Print (EOP) process.
♦LOW PULSE	Outputs a low pulse (approximately 30 milliseconds long) following printing.
HIGH PULSE	Outputs a high pulse (approximately 30 milliseconds long) following printing.
ACTIVE LOW	Outputs a logic 'low' following printing.
ACTIVE HIGH	Outputs a logic 'high' following printing.

5.2.5 System Settings

CONFIGURATION FILE ♦	Options for storage and recall of printer configuration files. See Appendix E for details.
RESTORE AS CURRENT	Provides a list of available configuration files. Selecting a file from the list causes a printer reset; afterward, the printer is configured according to the activated file.
SAVE SETTING AS	Saves the entire effective configuration of the printer to a file. Unique names with up to nineteen characters are possible.
DELETE FILE	Provides a list of available configuration files. Files selected are immediately removed, freeing the module. <input checked="" type="checkbox"/> Note: A currently activated file can not be deleted.
FACTORY SETTING FILE	Provides a list of available configuration files. The selected file will be restored whenever a Level 1 reset is performed; see Section 6.7.
INTERNAL MODULE D ♦1024 KB (100-5120)	Sets the number of 1K blocks allocated for the internal RAM 'D' module.
DEFAULT MODULE ♦D	Sets the default module used to store files when no other module is specified. Available choices are G=FLASH memory or D=RAM memory
SCALEABLE FONT CACHE ♦0312 KB (100-5120)	Sets the number of 1K blocks allocated for the scaleable font engine. Available memory dependent upon model.
SINGLE BYTE SYMBOLS	Selects the code page used to print single byte fonts unless otherwise specified in DPL.
♦PC_850 MULTILINGUAL	One of many selectable standard sets; see the Programmer's Manual for details.
DOUBLE BYTE SYMBOLS	When equipped with the ILPC option, this selects the code page used to print double byte fonts unless otherwise specified in DPL; see the Programmer's Manual.
♦UNICODE	Unicode (including Korean)
GB	Government Bureau Industry Standard; Chinese (PRC)
BIG 5	Taiwan encoded
JIS	Japanese Industry Standard
SHIFT JIS	Shift Japanese Industry Standard
EUC	Extended UNIX Code
TIME AND DATE	Allows the user to set the time and date.

System Settings (continued)

MEDIA COUNTERS ♦	Internal record of inches printed and time of use.
ABSOLUTE COUNTER	Shows the number of inches printed since being set at the factory. Not resettable.
RESETTABLE COUNTER	The number of inches printed since the last reset. User may reset.
RESET COUNTER	Resets the Resettable Counter to zero.
PRINT CONFIGURATION	<p>Prints the effective configuration of the system. In addition, if settings were changed that require a reset to become effective, this will be indicated with the '\$' symbol.</p> <p>A bulleted item (●) indicates that it was changed via the host, but not saved in non-volatile memory.</p>
CONFIGURATION LEVEL ♦	To upgrade the application program (resident software) version of the printer, the hardware and software compatibility levels must match for the update to be accepted. This information is displayed here; it is also printed on a configuration label.
PRINTER KEY	<p>Each printer has a unique Key number in the following form:</p> <p style="text-align: center;">vvvv-cwxx-yyyyyy-zzz</p> <p>Where:</p> <p>vvvv – represents the model number of the application loaded.</p> <p>csxx – represents the hardware / software feature level, where:</p> <p style="padding-left: 20px;">c – represents the printer class.</p> <p style="padding-left: 20px;">w – represents hardware feature level of the main board.</p> <p style="padding-left: 20px;">xx – represents the software feature level:</p> <p style="padding-left: 40px;">10 = Standard DPL</p> <p style="padding-left: 40px;">20 = Internal CG Times Font</p> <p style="padding-left: 40px;">Software feature levels are accepted up to the 'xx' value (increases beyond this level require an authorization code).</p> <p>yyyyyy – is a manufacturing date code</p> <p>zzz – is a unique time stamp</p>
APPLICATION VERSION	Displays the Application version of the printer's firmware.
BOOT LOADER	Displays the Boot Loader version of the printer's firmware.
UPGRADE PRINTER CODE	This function is used to upgrade the software feature level of the printer. Brady authorization is required.
UNLOCK FEATURE	This function is used to unlock the additional optional features within the printer. Brady authorization is required.

System Settings (continued)

SET FACTORY DEFAULTS	Parameters in this menu listing with the '↵' symbol are the designated defaults.
SET FACTORY DEFAULTS	Overwrite the current settings with the factory default settings or, if selected, will restore the Factory Setting File. ☑ Note: The reset will be automatic. If no Factory Setting File is used, all menu settings will be restored except CUSTOM ADJUSTMENTS, and the media and ribbon sensor calibrations.
FORMAT ATTRIBUTES	Affects the manner in which overlapping text and graphics are treated as the label is printed. Consult the <i>Class Series Programmer's Manual</i> for details.
↵XOR	Intersecting text strings, images, and bar codes print on top of one another.
OPAQUE	Intersecting text strings, images, and bar codes are obliterated by those formatted last. Each character cell is treated as opaque.
TRANSPARENT	Intersecting text strings, images, and bar codes will not be printed. (An odd number of overlapping objects will print.)
LABEL ROTATION ◆	Instructs the printer to rotate the label format 180 degrees before printing.
ENABLED	Label formats are flipped top to bottom.
↵DISABLED	Label formats are printed normally.
IMAGING MODE ◆	Instructs the printer whether to pre-image the label format. ☑ Note: This selection can affect the accuracy of time-stamped labels and label throughput.
↵MULTIPLE LABEL	The printer images multiple labels as memory permits, achieving the fastest throughput; however, if time-stamping, the time will reflect the moment the label is imaged rather than when actually printed.
SINGLE LABEL	The printer images the next label only after the previous label has been successfully printed. Single processing provides time-stamps that are more accurate, but it slows label throughput time.
PAUSE MODE	When enabled, suspends printing between each label until the PAUSE Key is pressed.
ENABLED	Requires an operator press the PAUSE Key after each label.
↵DISABLED	The printer completes label batch without pausing between labels.

System Settings (continued)

PEEL MODE	Specifies that a Feed operation be prevented when the label is presented and not removed, or if the printer is to wait for the GPIO start of print signal.
ENABLED	Feed is inhibited according to the above criteria.
◇DISABLED	Feed is always enabled.
SECURITY ♦	Provides the user with the ability to password-protect all settings available through the User Interface. Default password is: 1 2 3 4
SELECT SECURITY	Enable or disable the security feature of the User Interface.
MENU AND TEST	The Menu and Test areas will require a password before access is granted.
SECURE MENU	The Menu area will require a password before access is granted.
◇DISABLED	All menu items are accessible without protection.
MODIFY PASSWORD	Modify the numeric password required to access the menu system when security is enabled.
UNITS OF MEASURE	Selects the measurement system in which the system's settings are represented in the menu system and on configuration labels.
◇IMPERIAL	Inch standard: lengths and counters given in inches.
METRIC	Metric standard: lengths given in millimeters and counters in centimeters.
INPUT MODE ♦	Defines the type of printer language.
◇DPL	Standard DPL processing.
LINE	Standard DPL processing with addition Line mode Template processing enabled. Line Mode exacts data terminated by a carriage return to be inserted in a DPL template and printed.

System Settings (continued)

DPL EMULATION ♦ <i>(not available with T-300)</i>	Determines SOP Emulation (start of print (<STX>O)) see above, Column Emulation (see above), positions barcodes as does selected printer.
♦STANDARD	Start of print 220; <i>the below exceptions are disabled.</i>
ALLEGRO	<p>Allegro, Prodigy Plus, and Prodigy emulations enabled:</p> <ul style="list-style-type: none"> • Data Terminator – I 2 of 5 Barcodes (IDs D, J, and L), the first non-numeric character processed will terminate the barcode data field. • Bar Size – I 2 of 5 Barcode (ID L), when the bar size is specified greater than P (25), the size is automatically decreased to 10. • Human Readable Fonts – The EAN and UPC barcodes (IDs B, C, F, G, M, and N) print a fixed font size. • Lines and boxes: Rotations 2 and 4 are affected by the vertical multiplication factor defined in the DPL Dxx command. • Column positions greater than the printhead width are adjusted back to the printable area and printed. • Barcodes (rotation 3, upside down / right to left) with row position less than barcode height result in row position equal to barcode height, that is, barcodes falling off label leading edge are pushed back onto the label. • <STX>L (Label Command) followed by no printable fields result in no paper movement. (When disabled a blank label is printed). <p>Allegro Only: The row position is calculated based on 194 DPI.</p>
PRODIGY PLUS	
PRODIGY	
COLUMN EMULATION ♦ <i>* Not available in T-300</i>	Compensation for location of column position 0 via columnar dots per inch (dpi) emulation
♦203 in (180 - 250)	Dpi emulation, smaller numbers shrink text from right to left.

System Settings (continued)

SOP EMULATION ♦	Enables the <STX>O and <STX>f print positioning commands to allow backward compatibility with label formats designed for other printers.
110 (PRODPLUS)	Emulates the Prodigy Plus® printer.
220 (ALLEGRO)	Emulates the Allegro® printer.
250 (PRODIGY)	Emulates the Prodigy™ printer.
↔DISABLED	No emulation: natural start of print position. (System Commands <STX>O and <STX>f are ignored).
BACK AFTER PRINT	When the present distance is set with the GPIO enabled, this determines the timing of the label back up.
ENABLED	Commands the printer to immediately back up the label after the applicator issued start of print signal is received for faster throughput.
↔DISABLED	The printer will not initiate repositioning until the next label is ready to print. May help prevent the curling of the label edge.
FONT EMULATION ♦	The selected font is substituted for all Brady internal fonts. This function provides the printer to define a new default font without changing the host DPL data streams.
↔STANDARD FONTS	
CG TIMES	
USER ID S50	
MENU LANGUAGE ♦	Selects the language in which the menu system messages and configuration label are shown. Only languages that are resident will be available.
↔ENGLISH	English
FRANCAIS	French
ITALIANO	Italian
DEUTSCH	German
ESPAÑOL	Spanish
USER DEFINED	User defined, downloaded language(s). (Displayed only if a download file is present).

System Settings (continued)

FAULT HANDLING♦	When a fault condition (ribbon out, media out, etc.) is detected, this setting determines the level of intervention and the disposition of the label being printed at the time the fault occurred.
LEVEL	Selects the printer's action, the action required by the operator, and the label's reprint status.
♦STANDARD	Printing stops and a fault message is displayed. After the problem is corrected, the FEED Key must be pressed to clear the fault. The label in process is reprinted.
VOID AND RETRY	<p>Depending upon the RETRY COUNT, one of the following actions when faulted:</p> <ul style="list-style-type: none"> • If the Retry Count setting has not been exceeded, 'VOID' is printed on the label in process and reprinting occurs automatically; • If the Retry Count has been exceeded, printing stops and a fault message is displayed. After the problem is corrected, the FEED Key must be pressed to clear the fault. The label in process is reprinted; or, • If the CANCEL Key is pressed the operator now has the option of canceling the reprint: <p>To allow the reprint, press the ESCAPE Key or to cancel the reprint, press the ENTER Key (the operator now has the option of canceling the entire label batch by pressing the ENTER Key again.)</p> <p>☑ Note: VOID will not be printed when insufficient space exists for the height of the text (see VOID DISTANCE, below) or if the fault occurred after the entire label was completed (i.e., when the label reaches its Present Distance at or above the TOF).</p>
NO REPRINT	Printing stops and a fault message is displayed. After the problem is corrected, the FEED Key must be pressed to clear the fault. The label in process is <i>not</i> reprinted.
VOID DISTANCE ↔0.50 in (.10-2.00)	Sets the distance to backup the faulted label to print 'VOID' on its trailing edge, which also indirectly establishes the font size of the void message.
RETRY COUNT ↔1 (0-3)	Establishes the number of times the printer will attempt to reprint a label. If the last label printed in this count has been voided, the printer will stop and display a fault message.

5.2.6 Communications

SERIAL PORT A ♦	Controls the communications settings for Serial Port A.
BAUD RATE	Determines the serial communication rate.
38400	38400 bits per second
28800	28800 bits per second
19200	19200 bits per second
♦9600	9600 bits per second
4800	4800 bits per second
2400	2400 bits per second
1200	1200 bits per second
PROTOCOL	Sets the data flow control (handshaking) method.
♦BOTH	Uses both handshaking methods.
SOFTWARE	XON/XOFF
HARDWARE	CTS/DTR
NONE	No flow control is used.
PARITY	Sets Word parity
♦NONE	No parity
ODD	Odd parity
EVEN	Even parity
DATA BITS	Sets Word length
7	Seven bit Word length
♦8	Eight bit Word length
STOP BITS	Sets the number of stop bits
♦1	One stop bit
2	Two stop bits
PARALLEL PORT A ♦	Controls the communications settings for Parallel Port A.
PORT DIRECTION	Determines if data is sent from the printer to the host via the parallel port.
♦UNI-DIRECTIONAL	One-way printer communication.
BI-DIRECTIONAL	Enables IEEE 1284 back-channel operation.

Communications (continued)

NIC ADAPTER ♦		Network Interface Card Adapter (optional). If not present, this displays 'NOT INSTALLED' when accessed. After making changes to these parameters, save the changes, exit the menu system, the printer will then reset for the changes to take effect.
IP ADDRESS*		The static IP address of the NIC Adapter. This is in standard dotted-decimal format.
SUBNET MASK*		The static subnet assigned to the NIC Adapter.
GATEWAY*		Specifies the network gateway address the NIC Adapter should use.
SNMPTRAP DESTINATION		Selects the Network IP address where all SNMP Traps will be sent. If zeroed, no traps are sent. The Receiver must have SNMP service installed.
IP DISCOVERY		This is the address discovery method used by the NIC Adapter if a static address is not utilized. If no server for any of the discovery methods is found, the static value specified is used. <input checked="" type="checkbox"/> Note: For faster NIC Adapter boot times, disable any discovery methods not used.
♦ENABLED		Default. Modifications to IP, Subnet Mask, or Gateway addresses will not be allowed. WARNING! An IP Address assigned by a server has precedence over any static IP Address stored in the NIC Adapter.
DISABLED		Disables IP Discovery. <input checked="" type="checkbox"/> Note: Select this option to ensure that any stored static IP is used by the NIC Adapter.
SET FACTORY DEFAULTS		Resets all of the network parameters to factory default settings, including some parameters that are not accessible through the printer's menu.
HOST SETTINGS ♦		Settings which affect all communications with a host.
HOST TIMEOUT ♦10 SEC (1-60)		The number of seconds a communications port must be idle before the printer may process data from a different port. This value is also used to "timeout" an image / label format download (i.e., if, at any time, data flow stops before a complete label format is received, the data will be ignored).
* Not available when "IP Discovery" is enabled.		

Communications (continued)

CONTROL CODES	Allows the operator to change the prefix of the software commands interpreted by the printer.
✧STANDARD CODES	Hex 01 = SOH command; Hex 02 = STX command; count-by = ^; Hex 1B = ESC; Hex 0x0D = Carriage Return
ALTERNATE CODES	Hex 5E = SOH command; Hex 7E = STX command; count-by = @; Hex 1B = ESC; Hex 0x0D = Carriage Return
ALTERNATE CODES 2	Hex 5E = SOH command; Hex 7E = STX command; count-by = @; Hex 1B = ESC; Hex 0x7C = Carriage Return
CUSTOM CODES	Each DPL command (SOH, STX, CR, and count-by) may be selected by entering the desired Hex code. (The ↑ and ↓ Keys will scroll the characters, while the ENTER Key selects character and then advances the cursor.)
FEEDBACK CHARACTERS	Returns a Hex 1E, [RS], after each label successfully prints, and a Hex 1F, [US], after each batch of labels is printed.
ENABLED	Feedback characters are sent to the host.
✧DISABLED	No feedback characters are sent.
ESC SEQUENCES	Allows data containing invalid ESC control code sequences to be processed, helpful because some systems send a “banner” to the printer.
✧ENABLED	Normal printer operating mode.
DISABLED	ESC sequences are ignored and the data is processed. Bitmapped font downloads are disabled in this mode.
HEAT COMMAND	Allows the user to disable the DPL Heat Command, providing compatibility with other BRADY printers.
✧ENABLED	Normal printer operating mode.
DISABLED	DPL Heat commands are ignored. The heat value is controlled via the menu setting; see Section 5.1.3.
SPEED COMMANDS	Allows the user to disable the DPL speed commands (Print, Feed, Slew, and Reverse).
✧ENABLED	Normal printer operating mode.
DISABLED	DPL speed commands are ignored. The speeds are controlled via the menu setting; see Section 5.1.3.
TOF SENSING COMMANDS	Allows the user to disable the DPL Top of Form commands (Gap, Continuous, and Reflective).
✧ENABLED	Normal printer operating mode.
DISABLED	DPL TOF commands are ignored. The TOF is controlled via the menu setting; see Section 5.1.2.

Communications (continued)

SYMBOL SET COMMAND	Allows the user to disable the DPL Single and Double Symbol Set selection commands.
↷ENABLED	Normal printer operating mode.
DISABLED	DPL Symbol Set commands are ignored. The Symbol Set selection is controlled via the menu setting; see Section 5.1.5.
CNTRL-CODES (DATA)	Allows the user to remove control codes (data < 20 Hex) from the data fields. The selected line terminator is processed.
↷ENABLED	Normal printer operating mode.
DISABLED	DPL Control Code (SOH, STX, CR, ESC, and ^) functions are ignored.
STX-V SW SETTINGS	Allows the user to disable DPL software switch settings commands.
↷ENABLED	Normal printer operating mode.
DISABLED	DPL option-enable command (<STX>V) is ignored.

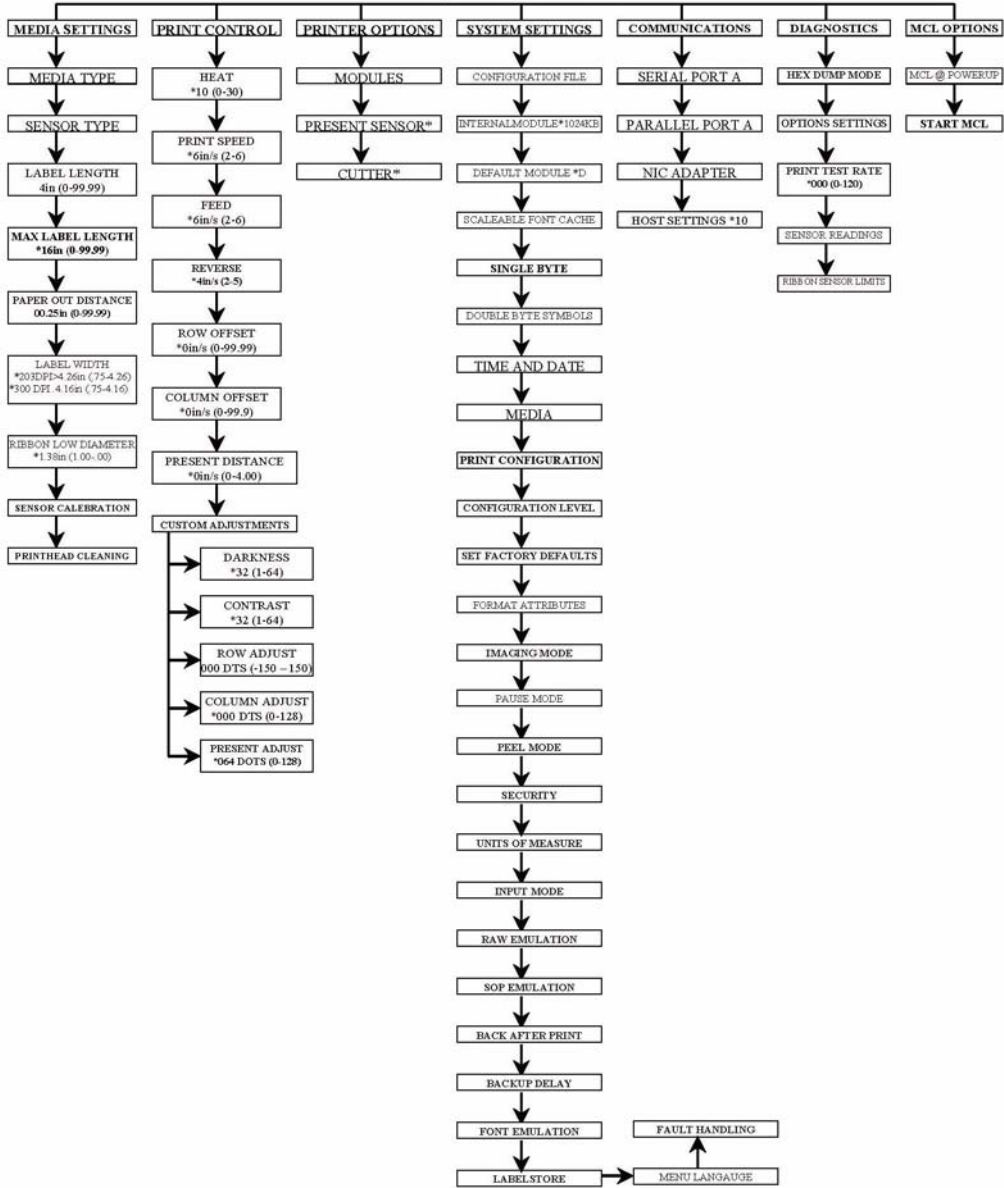
5.2.7 Diagnostics

HEX DUMP MODE ♦	Most commonly used for troubleshooting. Prints data and instructions received from the host rather than interpreting them as label formats; see Section 7.2.
ENABLED	Prints raw ASCII data received from the host rather than executing the commands.
♦DISABLED	Executes and prints label formats (normal operating mode).
OPTIONS TESTING ♦	Allows or performs diagnostics of specific options within the printer.
TEST PRESENT SENSOR	Performs a functional test of the present sensor.
TEST CUTTER	Performs a functional test of the cutter.
PERFORM TEST 1 TIME	The test will cycle the selected number of times (1, 10, or 100) with the results displayed following each attempt.
PRINT TEST RATE (min) ♦ ↔000 (0-120)	The number of minutes to delay between the printing of batches of Quick Test Labels.
SENSOR READINGS ♦	Analog Sensor readings are displayed.
THR TRAN RIBM 24V PS HD RANK 255 255 255 255 255 255 255	Live sensor values are displayed. Maximum values are shown in this example, where: THR = thermistor sensor; TRAN = transmissive (gap) media sensor (REFL is shown if the SENSOR TYPE is set to 'reflective'); RIB M = ribbon motion sensor; 24V = 24 volt DC power supply sensor; PS = Present sensor; HD = head-down sensor; and, RANK = the value of the printhead ranking resistor.
RIBBON SENSOR LIMITS ♦	Displays ribbon sensor ADC low and high values used for motion detection.
RIBBON ADC LOW HIGH 070 164	Approximate default values are shown here (actual values will vary).

5.2.8 MCL Options

MCL AT POWER-UP ♦	MCL (Macro Command Language) is tool suite designed for data collection applications. The printer will accept input data from peripheral devices and the application can request and send data to locally resident lookup files or remote databases.
ENABLED	After power to the printer is turned 'Off' and 'On,' MCL will be started. The printer is now ready to accept input data from peripheral devices such as barcode scanners, weigh scales, and keyboards without the need of a host computer.
↔DISABLED	Normal printer functions.
START MCL ♦	MCL will be started after exiting from the menu (see menu, next page).

Tagus T300 Menu Tree










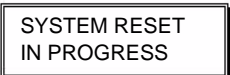


5.3 *Display Messages*

The printer displays several different types of information (if not in the menu system or Quick Test Mode):


- User Prompts and Condition Messages (also see Section 5.1.1 for a listing of the Enter/Exit Prompts)
- Application and Boot Loader Updating Messages (see Section 6.8)
- Fault and Warning Messages (see Section 7.1)

5.3.1 User Prompts and Condition Messages



User Prompts alert the operator to a required action. Condition Messages are used to indicate an operational state.

User Prompts and Condition Messages		
Displayed Message	Description	Condition(s)
	The printer is trying to clear a fault condition.	Occurs when the FEED Key is pressed after the correction of a fault.
	A media calibration is being performed.	The FEED Key was pressed and held.
	The CANCEL or TEST Key was pressed during the fault handling process.	The faulted label will be cancelled if ENTER is pressed, then the remaining labels in the batch will be printed.
	The CANCEL or TEST Key was pressed during a batch job.	The current print batch will be cancelled if ENTER is pressed; the remaining labels will not be printed.
	The printer is paused or offline.	The printer is in a paused condition.
	Ready Mode.	Normal operating mode. The printer is ready to receive and process label formats.
	Normal power-up and soft reset condition.	Follows the 'SYSTEM RESET IN PROGRESS' message after a reset or power-up.
	Normal power-up and soft reset condition.	Occurs when the user resets the printer via the host or Front Panel.
	The media calibration is not set.	Perform calibration; see Section 5.4.
	The print job is being processed.	Batch status indication, updated with each label printed.

5.4 Quick Test Mode

This section explains the functions of the resident Quick Tests, accessible by pressing the  TEST Key on the Front Panel.





Notes:

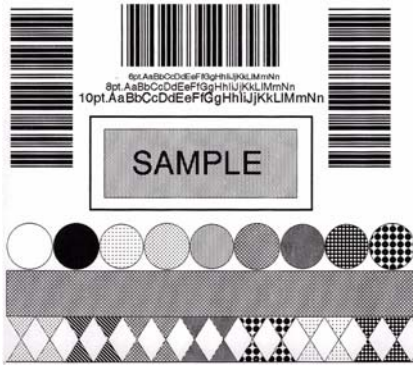
- With the exception of the Configuration Label, all Quick Test labels require 4-inch (102mm) wide media to print the entire format. If using narrower media, change the Label Width setting (Section 5.1.2) to match your media's width to avoid printing on the platen.
 - During any Quick Test, press the  TEST Key or the  ESC Key to stop printing.
 - Using the 'Print Test Rate' feature (Section 5.1.7), a time delay can be set for printing labels in Quick Test Mode.
-

5.4.1 Print Quality Label

The Print Quality Label provides an indication of overall print quality at a pre-selected heat and speed setting. This format consists of compliant bar codes in fence and ladder orientations, assorted font sizes, and graphic fill patterns. These can be used to ensure conformance, as well as aesthetics.

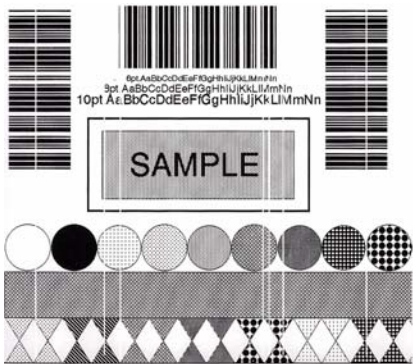
To print a Print Quality Label:

- 1 Press the  TEST Key.
- 2 Use the  FWD Key to scroll to 'Print Quality Label'.
- 3 Use the  ENT Key to select a quantity; see Section 5.0.3.
- 4 Press the  TEST Key to start printing.



Good Print Quality Label:

Even pattern consistency indicates correct printhead operation.






Faulty Print Quality Label:

Streaks indicate a dirty or faulty printhead. See Section 6.1 for cleaning instructions.

5.4.2 Configuration Label

The Configuration Label provides printer valuable database information, as detailed in Section 5.1.

To print a Configuration Label:

- 1 Press the  TEST Key.
- 2 Use the  FWD Key to scroll to 'Print Configuration'.
- 3 Press the  TEST Key to print.





Note: The contents of this label may vary with the application version and printer model and equipped options. To capture all the information, use media at least 2 inches wide (51mm) with the Label Width setting matched accordingly (see Section 5.1.2).

```

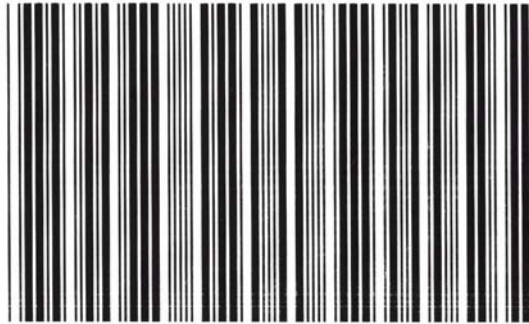
CONFIGURATION
FIRMWARE: 21M0V2003
PRINTER KEY:
APPLICATION VERSION:
MCL Version: 1.03
BOOT LOADER:
SYSTEM INFORMATION
PRINT BUFFER SIZE:
FLASH SIZE:
RAM TEST:
OPTICAL LANGUAGES:
CONFIGURATION FILE:
MEDIA SETTINGS
MEDIATYPE:
SENSOR TYPE:
LABEL LENGTH:
MAXIMUM LABEL LENGTH:
PAPER OUT DISTANCE:
LABEL WIDTH:
RIBBON LOW DIAMETER:
SENSOR CALIBRATION:
CAP SENSOR LEVEL:
TRAN SENSOR LEVEL:
REFL WAVEC LEVEL:
MAIN SENSOR LEVEL:
REFL SENSOR LEVEL:
EMPTY SENSOR LEVEL:
CLEAN HEAD SCHEDULE:
CLEAN HEAD COUNTER:
PRINT CONTROL
HEAT:
PRINT SPEED:
FEED SPEED:
REVERSE SPEED:
ROW OFFSET:
COLUMN OFFSET:
PRESENT DISTANCE:
CUSTOM ADJUSTMENTS:
DARKNESS:
CONTRAST:
ROW ADJUST:
COLUMN ADJUST:
PRESENT ADJUST:
PRINTER OPTIONS
MODELS:
PRESENT SENSOR:
CUTTER:
SYSTEM SETTINGS
FACTORY SETTING FILE:
INTERMODULE:
DEFAULT MODULE:
SCALE LABEL FONT CACHE:
SINGLE BYTE SYMBOLS:
DOUBLE BYTE SYMBOLS:
MEDICAL COUNTERS:
RESETTABLE COUNTERS:
FORMAT ATTRIBUTES
LABEL ROTATION:
IMAGING MODE:
PAUSE MODE:
PEEL MODE:
SECURITY:
UNITS OF MEASURE:
INPUT MODE:
DPLEMULATION:
COLUMN EMULATION:
COP EMULATION:
BACK AFTER PRINT:
FONT EMULATION:
MENU LANGUAGE:
FAULT HANDLING:
COMMUNICATIONS
SERIAL PORTA:
BAUD RATE:
PROTOCOL:
PARITY:
DATA BITS:
STOP BITS:
USB PORT:
PARALLEL PORTA:
PORT DIRECTION:
NIC ADAPTER:
MAC ADDRESS:
IP ADDRESS:
SUBNET MASK:
GATEWAY:
SNMP TRAP DESTINATION:
IP DISCOVERY:
HOST SETTINGS:
HOST TIMEOUT:
CONTROL CODES:
FEEDBACK CHARACTERS:
EBC SEQUENCE:
HEAT COMMAND:
SPEED COMMANDS:
TO F SENDING COMMANDS:
SYMBOL SET COMMAND:
CONTROL CODE (DATA):
STY-COPY SETTINGS:
DIAGNOSTICS
HEX DUMP MODE:
PRINT TEST RATE (mm):
SENSOR READINGS:
RIBBON SENSOR LIMITS:
MCL OPTIONS
MCL AT POWER-UP:
  
```

5.4.3 Quick Ribbon Test Label

The Quick Ribbon Test Label features a compliant picket-fence bar code that can be used to verify thermal transfer and print quality functions. To print a Quick Ribbon Test Label:





- 1 Press the  TEST Key.
- 2 Use the FWD  Key to scroll to 'Print Quality Label'.
- 3 Use the ENT  Key to select a quantity; see Section 5.0.3.
- 4 Press the  TEST Key to start printing.

Quick Ribbon Test



5.4.4 Validation Label

The Validation Label is another useful tool for evaluating overall print quality. To generate a Validation Label:

- 1 Press the  TEST Key.
- 2 Use the  FWD Key to scroll to 'Print Quality Label'.
- 3 Use the  ENT Key to select a quantity; see Section 5.0.3.
- 4 Press the  TEST Key to start printing.





5.4.5 Print Last Label

Print Last Label reprints the last label format printed. The format can be any of the Test Labels, a label from the host, or one recalled from memory.

Note: If a job was cancelled prior to its completion, or if power has been removed since the last print job and the request for this label, this selection will print a 'VOID' message.

5.4.6 User Defined Label

The User Defined Label reprints from a list of previously printed label formats. Use the FWD  Key to scroll through the listing, then use the  TEST Key to select and print the label.

Note: If a job was cancelled prior to its completion, or if power has been removed since the last print job and the request for this label, 'NO FILES AVAILABLE' will be displayed and no printing will occur.


5.4.7 Media Sensor Calibration

In addition to the Sensor Type selection, Media Sensor calibration ensures that each label is detected correctly and reliably. Perform calibration when the 'Uncalibrated' message is displayed. Three different methods are available to calibrate the printer: Quick, Standard, and Advanced Entry.

5.4.8 Quick Calibration

F When 'Uncalibrated' is displayed, follow the Media Sensor Calibration procedure in Section 5.4.2.

At the factory, the printer is calibrated to sense a wide range of media types. Quick Media Calibration fine-tunes the media sensor for your gap, notch or reflective media application. Note that this is not required if you are using continuous media. Perform this calibration during initial set-up or after changing your media type. To calibrate:


- 1 Ensure that media is loaded (see Section 3.2), that the Media Sensor is adjusted (see Section 3.3), and that the printer is idle.
- 2 Press and hold the  FEED Key. The printer will begin advancing media; allow at least one label gap (or mark) to advance under the sensor before releasing the button.

Upon successful completion, the 'Calibration Completed' message will flash; the printer will feed to the next label TOF and 'Ready' will be displayed. (A 'Warning Low Backing' message may appear if using notched media or media on a transparent liner; however, the calibration was successful).

Note: Media containing large gaps may require a change in the 'Paper Out Distance' setting; see Section 5.1.2.

Calibration Hints:

In certain cases, the printer may have trouble differentiating between the label and liner. If the printer stops feeding in the middle of a label or if 'Cannot Calibrate' is displayed, try calibrating over a longer distance:

- Press and hold the  FEED Key to allow two or more gaps (or marks) to advance under the sensor.








If this method fails, see Standard Calibration (Section 5.4.2).



5.4.9 Standard Calibration



Standard Calibration is appropriate for most media types. During the process, the printhead assembly can be raised for visual access to the media and media sensor. In addition, displayed sensor readings can be used to indicate the best position over the media, which is helpful when using small, position-critical TOF notches or marks. Three readings are required:

Empty:	No media in the sensor.
Gap (or Mark):	Only the backing, notch, or reflective mark in the sensor.
Paper:	The label (with the liner attached) in the sensor.

To perform a Standard Calibration:

Step	Operator Action	Displayed Message	Comment
1	(Media should be loaded and the appropriate Sensor Type selected.) Turn 'On' the printer.	UNCALIBRATED	Wait until the printer initializes (about six seconds).
2	<ul style="list-style-type: none"> Press the  MENU Key. Raise the printhead assembly. 	MENU MODE MEDIA SETTINGS	You are entering Menu Mode.
3	Press the ENT  Key to enter the Media Settings menu.	MEDIA SETTINGS MEDIA TYPE	See Section 5.1.2 for menu layout.
4	Press the FWD  Key and scroll to 'Sensor Calibration'.	MEDIA SETTINGS SENSOR CALIBRATION	Press the ESC  Key to abort this procedure.
5	Press the ENT  Key.	SENSOR CALIBRATION PERFORM CALIBRATION	You are beginning the standard calibration procedure.
6	<ul style="list-style-type: none"> Press the ENT  Key. Remove the media from the Media Sensor then the ESC  key. 	REMOVE LABEL STOCK PRESS ESC KEY <YYY>	<p>This sets the parameter for the 'empty' value.</p> <p>Where 'yyy' is a numerical value representing the current sensor reading.</p>

Step	Operator Action	Displayed Message	Comment
7	<p>Proceed according to your media type:</p> <p>Die-cut stock: strip the media from the backing and then reinsert it into the sensor; adjust the Sensor Eye Mark over the center of the backing.</p> <p>Notched stock: adjust the Sensor Eye Mark over the center of the notch.</p> <p>Continuous stock: go to Step 8.</p> <p>Press the ESC  key to continue.</p>	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: auto;"> SCAN BACKING PRESS ESC KEY <YYY> </div>	<p>This sets the parameter for the 'gap' or 'mark' value.</p> <p>Where 'yyy' is a numerical value representing the current sensor reading: useful in locating the best sensor position.</p> <hr/> <p>Note: Never position the sensor over a perforation when recording a sensor reading.</p>
<p>Note: Do NOT move the position of the Media Sensor after it has been adjusted.</p>			
8	<p>Position the label (and backing, if any) under the Sensor Eye Mark.</p> <hr/> <p>Note: If using preprinted media, ensure the label area under the sensor is free of preprinted text, graphics or borders.</p> <hr/> <p>Press the ESC  key to continue.</p>	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: auto;"> SCAN PAPER PRESS ESC KEY <YYY> </div>	<p>This sets the parameter for the 'paper' value.</p> <p>Where 'yyy' is a numerical value representing the current sensor reading.</p>
9	<p>Observe the display.</p>	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: auto;"> GAP MODE CALIBRATION COMPLETE </div> <p>Or, for reflective media:</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: auto;"> REFLECTIVE MODE CALIBRATION COMPLETE </div> <p>Or, for continuous media:</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: auto;"> CONTINUOUS MODE CALIBRATION COMPLETE </div>	<p>The calibration was successful. See note below if another message was displayed.</p>

Step	Operator Action	Displayed Message	Comment
10	<p>Exit upon successful calibration: Back out of the menu tree by repeatedly pressing the ESC  Key.</p> <p>If using gap or reflective media, press and hold the  FEED Key.</p> <p>The printer will begin advancing media; allow at least one label gap (or mark) to advance under the sensor.</p>	<div style="border: 2px solid black; padding: 5px; text-align: center;"> <p>THU 11:34 a 25 MAR 2007 READY</p> </div>	<p>The printer is now ready to begin printing.</p> <p>If this calibration was unsuccessful, go to Section 5.4.3.</p>

Note: A 'Warning Low Backing' message indicates that the calibration was successful with notched media or media on a transparent liner; see Section 7.1 for details on this and other possible messages.







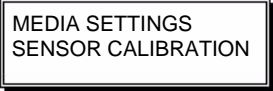





5.4.10 Advanced Entry Calibration







Advanced Entry Calibration is the alternate method for special-case media types. The procedure has two parts:

1. You must list the sensor readings for the label and TOF values using different algorithms.
2. From your list the best algorithm is chosen, new readings taken and those values entered.

F Advanced Entry Calibration will override all previous calibration settings; this method should be used only when Standard Calibration has failed.

To perform an Advanced Entry Calibration:





Step	Operator Action	Displayed Message	Comment
1	(Media should be loaded and the appropriate Sensor Type selected.) Turn 'On' the printer.		Wait until the printer initializes (about six seconds).
2	<ul style="list-style-type: none"> • Press the  MENU Key. • Raise the printhead assembly. 		You are entering Menu Mode.
3	Press the ENT  Key to enter the Media Settings menu.		See Section 5.1.2 for menu layout.
4	Press the FWD  Key and scroll to 'Sensor Calibration'.		Press the ESC  Key to abort this procedure.
5	Press the ENT  Key.		You are beginning the calibration subment.
6	Press the FWD  Key to scroll to 'Advanced Entry'.		You are entering Advanced Entry Calibration.





Step	Operator Action	Displayed Message	Comment
7	Press the ENT  Key.	<div style="border: 1px solid black; padding: 5px; text-align: center;"> ADVANCED ENTRY SENSOR LEVELS </div>	Press the ESC  Key to abort this procedure.
8	Press the FWD  Key.	<div style="border: 1px solid black; padding: 5px; text-align: center;"> ADVANCED ENTRY SENSOR GAIN </div>	You are beginning the Advanced Entry Calibration.
9	<p>Press the ENT  Key.</p> <p>Place the label under the Sensor Eye Mark and lower the printhead assembly.</p>	<div style="border: 1px solid black; padding: 5px; text-align: center;"> GAIN TRAN <yyy> *00 <0 - 31> </div> <p style="text-align: center;">- OR -</p> <div style="border: 1px solid black; padding: 5px; text-align: center;"> GAIN RFL <yyy> *00 <0 - 31> </div>	If using preprinted media, ensure the label area under the sensor is free of preprinted text, graphics or borders.
11	<p>Proceed according to your media type:</p> <ul style="list-style-type: none"> • Die-cut stock: strip media from the backing and then reinsert it into the sensor; adjust Sensor Eye Mark over center of backing. • Notched stock: adjust Sensor Eye Mark over center of notch. • Reflective stock: Adjust the Sensor Eye Mark over the center of the facedown black mark. <p>1. Press the ENT  Key to select the setting and then record the sensor reading in a table similar to the one shown after Step 12, as a TOF Value.</p> <p>2. Next, press the FWD  Key to increment the Gain Number.</p> <p>3. Repeat for each of the Gain Numbers (00-32).</p>	<div style="border: 1px solid black; padding: 5px; text-align: center;"> GAIN TRAN <yyy> *00 <0 - 31> </div> <p>Or for reflective media:</p> <div style="border: 1px solid black; padding: 5px; text-align: center;"> GAIN RFL <yyy> *00 <0 - 31> </div>	<p>Where 'yyy' is a numerical value representing the current sensor reading; useful in locating the best sensor position.</p> <hr/> <p>Note: Never position the sensor over a perforation when recording a sensor reading.</p>
<p>Note: Do NOT move the position of the Media Sensor after it has been adjusted.</p>			



Step	Operator Action	Displayed Message	Comment
12	<p>From the data collected in Steps 10 and 11, where both the sensor readings are above 20, subtract each Label Value from the corresponding TOF Value. These are the Difference Values.</p> <p>From the resulting list, find the largest Difference Value (see example below). Its associated Gain Number will provide the best algorithm for your media.</p>	<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;">GAIN TRAN <yyy> *00 <0 - 31></div> <p>Or for reflective media:</p> <div style="border: 1px solid black; padding: 5px;">GAIN RFL <yyy> *00 <0 - 31></div>	Both sensor readings must be <u>above 20</u> .

For example, if your compiled data had the values shown in this table, Gain Number 8 would be chosen because it has the highest Difference Value (146) where both the Label Value and the TOF Value are above 20.

Gain Number	Label Value	TOF Value	Difference Value
00	255	254	1
01	251	240	11
02	241	213	28
03	231	182	49
04	219	150	69
05	212	119	93
06	200	88	112
07	189	58	131
08	178	32	146
09	167	19	N/A
10	156	17	N/A
11	146	16	N/A
12	136	15	N/A
...
31	116	14	N/A
32	112	14	N/A

Step	Operator Action	Displayed Message	Comment
13	<p>Using the FWD  Key, select the Gain Number determined in Step 12. Press the ENT  Key to select the setting.</p>	<div data-bbox="596 185 870 282" style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> GAIN TRAN <yyy> *00 <0 - 31> </div> <p>Or for reflective media:</p> <div data-bbox="596 358 870 456" style="border: 1px solid black; padding: 5px;"> GAIN RFL <yyy> *00 <0 - 31> </div>	<p>Selection is denoted with an '**'.</p>
14	<p>Place the media in the Media Sensor. Record the sensor reading and label it 'P' (paper).</p> <p>Place the backing, mark, or notch in the Media Sensor. Record the sensor reading and label it 'G' or 'M' (Gap or Mark).</p> <p>Remove all media. Record the sensor reading and label it 'E' (Empty).</p>	<div data-bbox="596 578 870 675" style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> GAIN TRAN <yyy> *08 <0 - 31> </div> <p>Or for reflective media:</p> <div data-bbox="596 751 870 849" style="border: 1px solid black; padding: 5px;"> GAIN RFL <yyy> *08 <0 - 31> </div>	<p>Where 'yyy' is a numerical value representing the current sensor reading.</p>
15	<p>Press the ESC  Key. Then press the FWD  Key.</p>	<div data-bbox="596 976 870 1073" style="border: 1px solid black; padding: 5px;"> ADVANCED ENTRY SENSOR LEVEL </div>	<p>The sensor readings must be manually entered into the printer now.</p>

Step	Operator Action	Displayed Message	Comment
16	<p>Press the ENT  Key.</p> <p>Using the FWD  or the REV  Key, set the 'Paper' level to the value determined in the previous step. Press the ENT  Key to set the entry (indicated by the '*') and advance the menu.</p> <p>Repeat for the 'Gap' and 'Empty' level.</p>	<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> PAPER SENSOR LEVEL P* 198 G* 084 E*014 </div> <p style="text-align: center;">↓</p> <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> GAP SENSOR LEVEL P* 198 G* 084 E*014 </div> <p style="text-align: center;">↓</p> <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> EMPTY SENSOR LEVEL P* 198 G* 084 E*014 </div> <p style="text-align: center;"><i>Or, for reflective media:</i></p> <p style="text-align: center;">↓</p> <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> PAPER SENSOR LEVEL P* 015 G* 181 E*213 </div> <p style="text-align: center;">↓</p> <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> MARK SENSOR LEVEL P* 015 G* 181 E*213 </div> <p style="text-align: center;">↓</p> <div style="border: 1px solid black; padding: 5px;"> EMPTY SENSOR LEVEL P* 015 G* 181 E*213 </div>	<p>The selection will flash and the display heading will change to indicate the item for entry.</p>

Step	Operator Action	Displayed Message	Comment
17	After all entries have been made, press the ESC  Key to back out of the menu and then press the ENT  Key to save the settings and return to the Ready Mode.	<div style="border: 2px solid black; padding: 5px; text-align: center;"> SAVE CHANGES? ENTER KEY = YES </div>	From 'Ready', press the FEED Key to advance to the next label TOF.
<p>Note: If the Advanced Entry Calibration fails, try the following procedure.</p> <ul style="list-style-type: none"> - Re-enter Media Settings / Calibration / Advanced Entry / Sensor Gain and lower the selected Gain Setting number by one (to make the sensor less sensitive). - Select the new Gain Setting, save the changes, exit the menu, and then test your media. - Repeat the procedure until a usable media setting is obtained. 			




Maintenance and Adjustments

6. Introduction

This chapter details the cleaning, adjusting, and troubleshooting tips for the printer. The following table outlines the recommended maintenance schedule for the various printer parts.

Area	Method	Interval
Printhead	Turn off the printer before cleaning the printhead. Use solvent* on a cotton swab to clean the printhead from end to end.	After every roll of media.
Platen Roller	Turn the power off. Rotate the platen roller and clean it thoroughly with solvent* and a cotton swab.	After every roll of media.
Peel-Off Roller	Rotate the peel-off roller and clean it thoroughly with solvent* and a cotton swab.	After every roll of media.
Media Path	Solvent*	After every roll of media.
Peel/Tear Bar	Solvent*	As needed
Media Sensor	Air blow	Monthly
Exterior	Mild detergent or desktop cleaner.	As needed
Interior	Brush or vacuum cleaner	As needed.

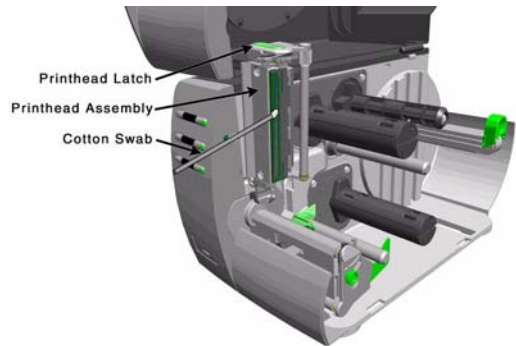
* It is recommended that a solvent containing isopropyl alcohol be used.

 Warning	ISOPROPYL ALCOHOL IS A FLAMMABLE SOLVENT, ALWAYS TAKE THE PROPER PRECAUTIONS WHEN USING THIS SUBSTANCE.
---	--

6.1 Cleaning the Printhead

If print quality declines (symptoms include non-compliant bar codes, print dropouts, streaks), the typical cause is debris build-up on the printhead. Furthermore, when the build-up is not removed it may lead to element failure, greatly reducing the life of the printhead. To clean the printhead:

1. Turn 'Off' and unplug the printer.
2. Open the cover. Unlock the Printhead Latch and raise the Printhead Assembly. **Allow the printhead to cool before proceeding.**
3. Move media and ribbon away from the printhead as necessary.
4. Using a Cotton Swab moistened, not soaked, with isopropyl alcohol gently wipe away any build-up on the printhead surface, paying close attention to the Burn Line. Allow the printhead to dry.
5. Replace the ribbon and media. Lower the Printhead Assembly back to the locked position.
6. Close the cover. Plug in and turn 'On' the printer. Feed several labels to normalize tracking.





6.1.1 Automated Printhead Cleaning

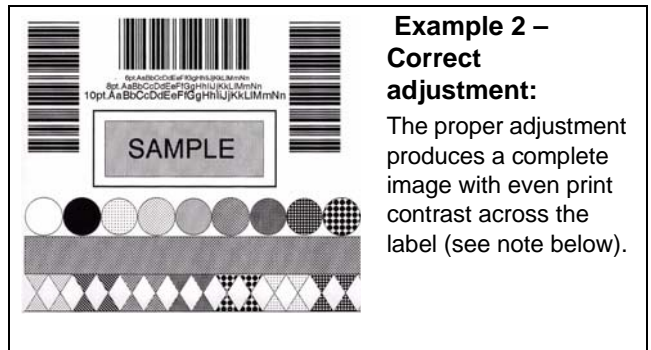
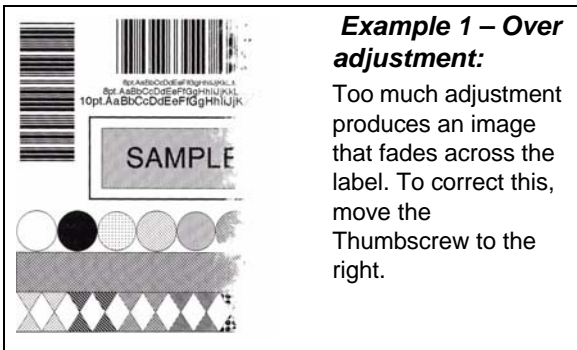
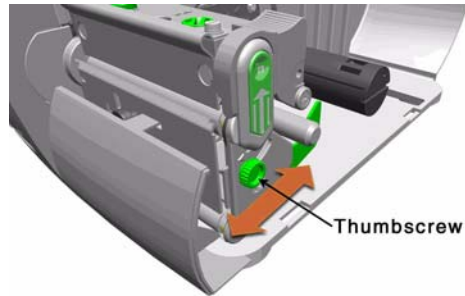
Note: This procedure is only for *printers with a display*.

1. Remove media and ribbon.
2. Place a Brady Cleaning Card, P/N 70-2013-01 under the printhead. Lower and lock the printhead. Ensure that the Leveling Cam is not engaged (in left-most position).
3. Press and hold the TEST Key for approximately four seconds.
The printer will begin the cleaning routine.
4. In cases of heavy build-up, or if high heat values are typically used for printing, flip the card over and repeat Step 3.
5. Reinstall your ribbon and media (if necessary, readjust the Leveling Cam, see Section 6.2). Lower and lock the printhead. Close the cover.

6.2 Media Width Adjustment

When printing on less than full width media, the printer has a printhead-leveling cam to adjust the right side of the printhead for even pressure distribution. To adjust the leveling cam:

1. With media loaded in the printer, print a label and examine it:
Non-display printers: Simultaneously press the  PAUSE +  FEED buttons.
Display printers: See Section 5.3.1
2. While observing the printed labels, loosen the Thumbscrew and move it to the left most position. (see Example 1, below).
3. Next, move the Thumbscrew to the right until the printed labels contain a complete, even image (see Example 2). Tighten the Thumbscrew.



When changing to a different width of label, readjust the Leveling Cam.

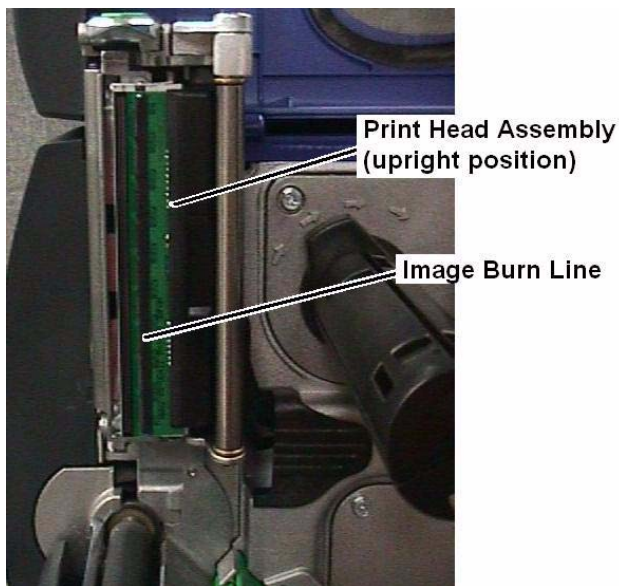
Note: Under-adjustment of the Leveling Cam: Problems can include ribbon wrinkling, label tracking, and platen roller and printhead wear.

6.3 Printhead Burn Line Adjustment

To ensure print quality across a majority of media types, the burn line is adjusted at the factory using 6.5-mil (.0065 inch) media. In extreme cases, if media of a different thickness or rigidity is used (e.g., heavy tag stock), print quality can change.

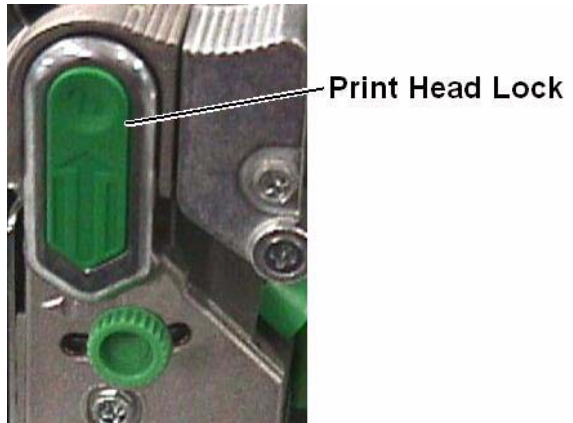


If you have questions, contact a qualified technician or Brady Technical Support before proceeding.

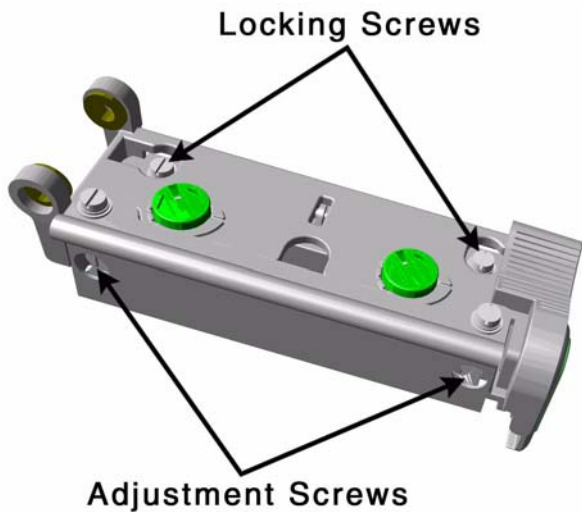


To adjust the burn line:

1. Release the print head by pressing the print-head lock.



2. Remove media and ribbon. Do not lock the print head into place.
3. Loosen the two print-head **locking screws** approximately $\frac{1}{4}$ -turn **counter-clockwise**.



4. To position the burn line, make **equal** adjustments of ¼ turn (or a 1/8 turn for finer adjustments) to each adjustment screw in the appropriate direction:

Note: Typically, thick media requires a slight backward adjustment and thin media requires a slight forward adjustment.

- Position burn line **backward:** turn each adjustment screw **clockwise**.
 - Position burn line **forward:** turn each adjustment screw **counter-clockwise**
5. Tighten the locking screws, and then lock the print head in place.
 6. Load media and ribbon.
 7. Print a label and examine the print quality.

Note: It may be necessary to adjust the print head leveling cam, heat and/or print head pressure to get an acceptable printed image.

8. If the label does not produce an acceptable image, unlock the print head and repeat Steps 2-7 until an acceptable printed image is obtained.

Note: If print quality is noticeably worse after making the adjustment to the burn line position, turn the adjustment screws in the opposite direction.

6.4 **BRADY T300 and Raised-Panel Labels**

CAUTION: Before performing these procedures, replace the Ribbon Spindle with the new design.

Use the following printer settings to ensure quality print performance and label registration for all Brady Raised Panel labels:

Note: Changes to these driver settings will become the default for all future labels. The settings are saved with the file.

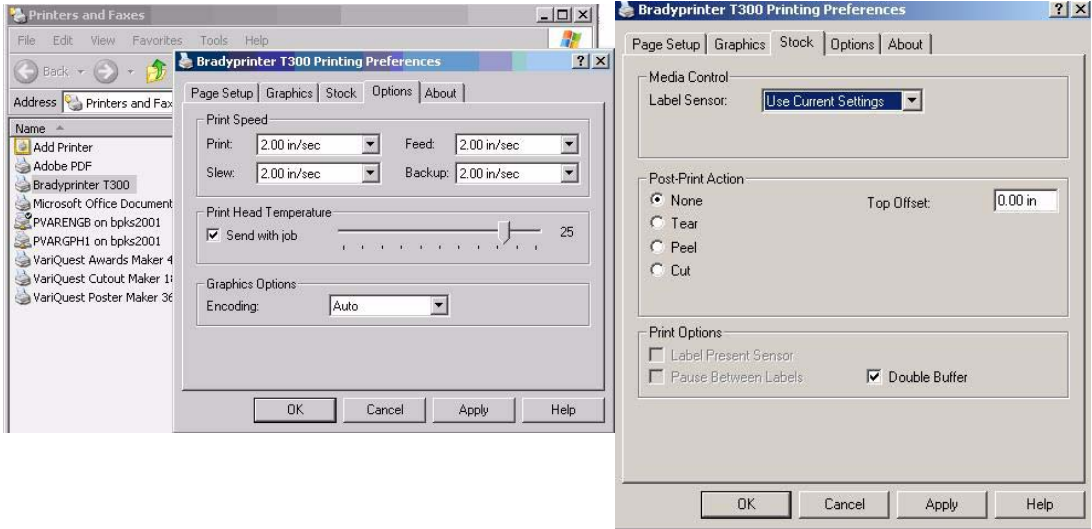
If you are using LabelMark or Bradysoft software, you must make these same changes to the driver settings for that software (i.e., File > Print Setup).

1. Edit the print driver properties (this example uses LabelMark software):
 - a. Select **Start > Settings > Printers and Faxes**.
 - b. In the *Printers and Faxes* window, right click on the **Brady printer T300** print driver and select **Printing Preferences**.
 - c. On the *Options* tab, set **Print, Slew, Feed,** and **Backup** speeds to **2 in/sec** (inches per second).
 - d. Check the box **Send with Job**.

- e. Move the *Print Head Temperature* slide bar to: **25**

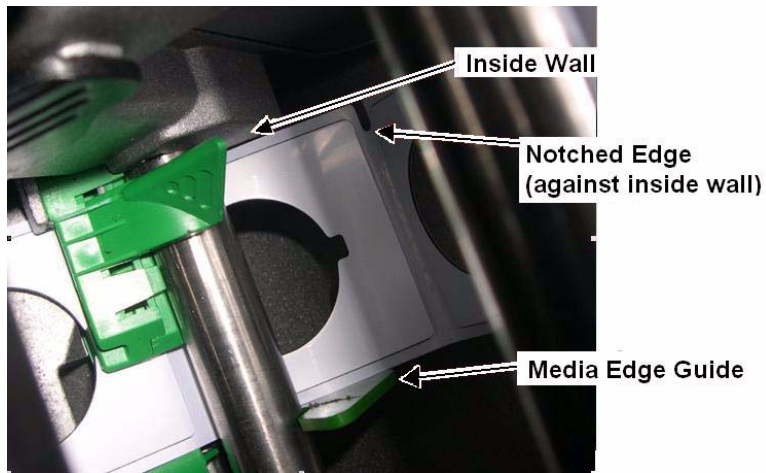
Note: The heat setting may require an adjustment higher or lower depending on the quality of the printed image.

- f. Select the *Stock* tab and check **None** in the *Post Print Action* box.



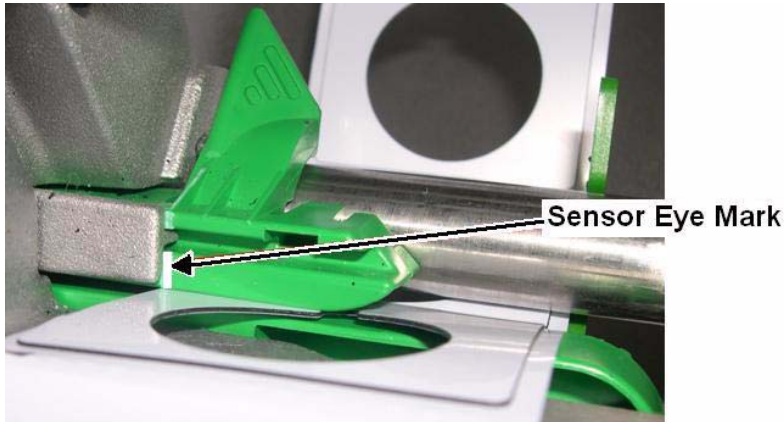
2. Load labels with the **notched side** against the inside wall of the printer.

3. Position the green media edge guide against the outside edge of the media so that it touches but does not fold or bend the liner.



4. Slide the sensor eye mark (media sensor) into position over the center of the notch.

Note: The sensor eye mark may be indicated with either a groove or a white, vertical line.



5. Calibrate the printer:
 - a. Hold the **FEED** button down until media begins advancing from the printer. The printer is correctly calibrated if the message “**Warning Low Backing**” displays.
 - b. If the following error messages display, perform a full calibration: **Cannot Calibrate, Top of Form** or **Position Fault**.

Note: If the label registration continues to drift, try placing the sensor eye mark in the center of the media to register the label correctly (except for labels with a die-cut hole in the center).

6. Press **FEED** a few times to advance the media.

6.5 Print Head Leveling Adjustment

When printing on a variety of media sizes and materials, adjustments to the print head may be needed. Use the print-head-leveling cam to adjust the print head for even pressure distribution.



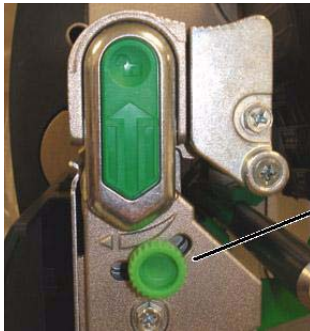
CAUTION!

Incorrectly adjusting the leveling cam can result in problems such as ribbon wrinkling, label tracking, platen roller and print head wear.

This procedure assumes that media is loaded and that the printer has just been calibrated. The following label is located on the inside of the printer. Use these *recommended* settings as a starting point when printing with **B593** media.

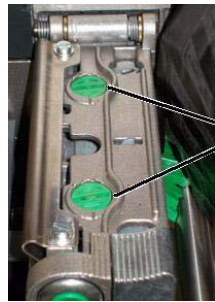
Recommended Settings for B593 Media

Cam Position (Center)



Cam
(center position)

Head Pressure Adjustment Screws (Lowest position)



Head Pressure
Adjustment Screws
(lowest position)

Instructions:

Print a new label and adjust as needed:

- **Fading:** from right, move cam to right
- **Fading:** from left, move cam to left
- **Skewing:** See User Guide for instructions.

Note: There are three positions for adjusting the Print Head Pressure adjustment screws: Above (no pressure), Flush and Below (full pressure).

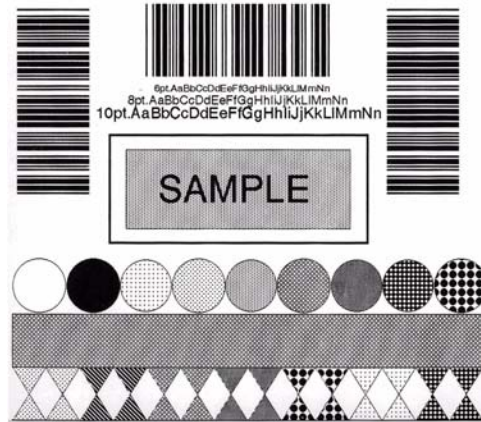
Instructions:

Print a new label and adjust as needed:

- **Inconsistent contrast:** adjust one (or both) adjustment screws 1 click and try again.
- **Ribbon wrinkle:** adjust one (or both) adjustment screws 1 click and try again.

To adjust the leveling cam:

1. **Print a label and examine the media.** A correctly adjusted print head should produce an image with consistent contrast across the label.



Correct Adjustment

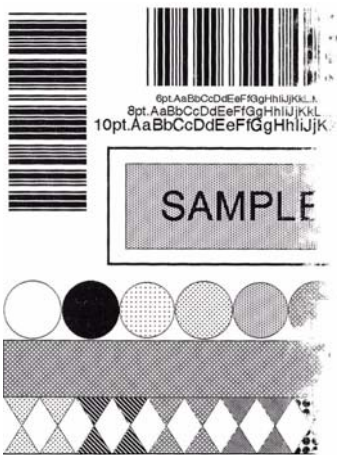


Image Fades from Right

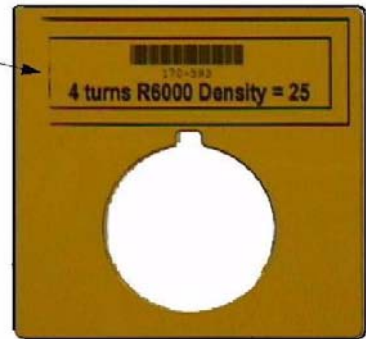


Image Fades from Left

2. If the printed label does not contain a consistent image, adjust the **cam** as follows:
- **Image fades from right:** move cam to the right.
 - **Image fades from left:** move cam to the left.

Note: To prevent over adjustment, move the cam in small increments.

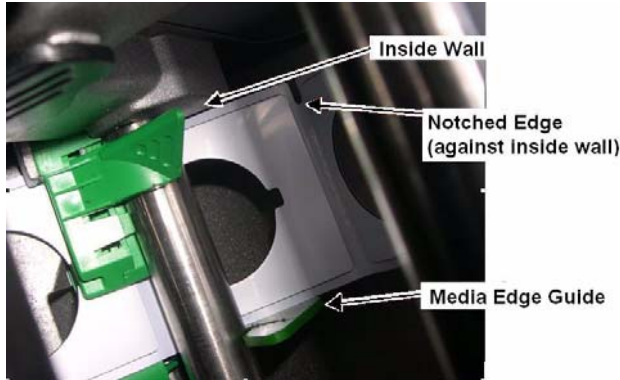


3. Repeat Steps 2 and 3 until the print head is correctly adjusted (label contains a consistent image).

Note: If printed image quality is still not acceptable, it may be necessary to adjust the heat, print speed, print pressure or print head burn line.

4. If image is skewed, check the following:

- **Media:** Labels are loaded with the inner edge of the media against the inside wall of the printer. Position the green media edge guide against the outer edge of the media so that it touches the liner but does not folder it over.



- **Skew:** Media is straight (parallel to the print head) when locking the print head into position.



- **Cam position:** Set to center position.
- **Print Head Pressure:** Set to the minimum amount required to achieve an acceptable image (See **Section 6.6: Printhead Pressure Adjustment**).

6.6 Printhead Pressure Adjustment

The pressure applied by the print-head assembly is adjustable to accommodate a variety of media thicknesses. To achieve consistent print across the label, print head pressure may need to be adjusted by turning the pressure adjustment screws located on the top of the print head.

CAUTION: The print-head pressure is factory set to work with most media types. Perform this adjustment only after attempting to improve print quality through the use of the heat and/or print speed.

Note: When adjusting, use the minimum pressure necessary for better imaging. Excessive pressure can reduce the service life of the print head and platen roller. Unequal pressure may cause ribbon and label tracking problems.

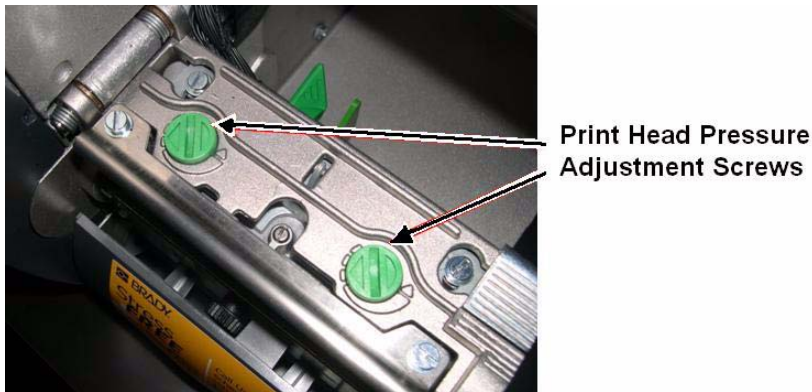
To adjust the print head pressure:

1. Load media and ribbon in the printer and calibrate the printer.
2. Ensure the print-head leveling cam is correctly adjusted. See [Print Head Leveling](#).
3. Print a label and examine the printed image.

Note: There are three positions for adjusting the Print Head Pressure adjustment screws: High (no pressure), Medium and Low (full pressure). The pressure adjustment screws can be continuously rotated in a CCW direction from one setting to the next.

- Adjust the applied pressure by turning the print-head pressure adjustment screws to achieve a consistent print contrast across the media.

Note: To avoid removing the ribbon, carefully pull slack in the ribbon and move it out of the way to reach the pressure adjustment screws.



Note: To prevent ribbon smudging when using narrow media, it may be necessary to increase the pressure on the inner (closest to center plate) print-head pressure adjustment screw.

- Print a label and examine the printed image.
- Press the **FEED** button until the label registers with the gap just forward of the print head.

Note: When changing label sizes, the printer may need to feed 2-4 labels to register correctly.

- Print another label. If the problem persists, readjust the print head leveling.
- If the heat setting, print head leveling (cam) and/or print head pressure adjustments do not result in consistent print across the label, it may be necessary to adjust the Print Head Burn Line. See **Section 6.3: Printhead Burn Line Adjustment**.
- If ribbon wrinkle persists, the ribbon idler may require adjusting. See **Section 6.7: Ribbon Wrinkle Adjustment**.

6.7 Ribbon Wrinkle Adjustment

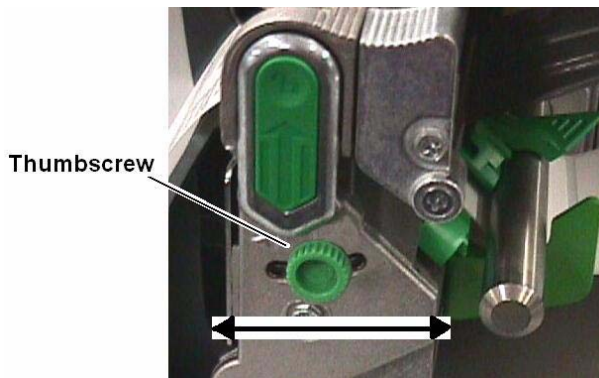
Correct ribbon alignment ensures a smooth, taut ribbon flow during the print process. On thermal transfer-equipped models, irregular voids that extend diagonally through the printed images may be a sign of ribbon overlapping (wrinkling).

CAUTION: Do not perform this procedure until the following adjustments and checks have been completed:

- Print Head Pressure Adjustment
 - Print Head Burn Line Adjustment
 - Platen Roller examined for signs of wear
 - Debris buildup and excessive side-to-side play.
-

To adjust ribbon wrinkle:

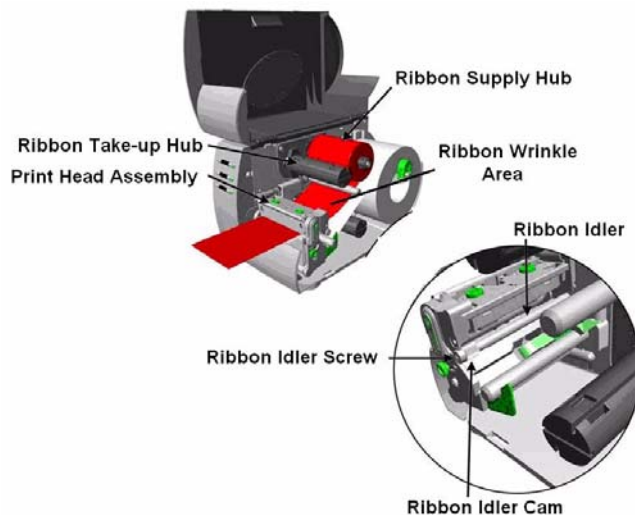
1. Verify that the following adjustments and checks have been completed:
 - **Print Head Leveling Adjustment**
 - **Printhead Pressure Adjustment**
 - **Printhead Burn Line Adjustment**
 - Platen Roller examined for signs of wear, debris buildup and excessive side-to-side play.
2. Load 4 in. (102 mm) media.
3. Load 4 in. ribbon, and secure it to the ribbon take-up hub. Allow the media and ribbon to feed together from the printer.
4. Move the print head leveling cam (green knob) to its **right-most** position.



5. Press the **FEED** button several times to normalize the ribbon and media tracking.

Note: Continuous excessive side-to-side [lateral] movement of the labels must be corrected before continuing this procedure. Typical causes include uneven print head pressure, worn platen roller, or worn platen bearings.

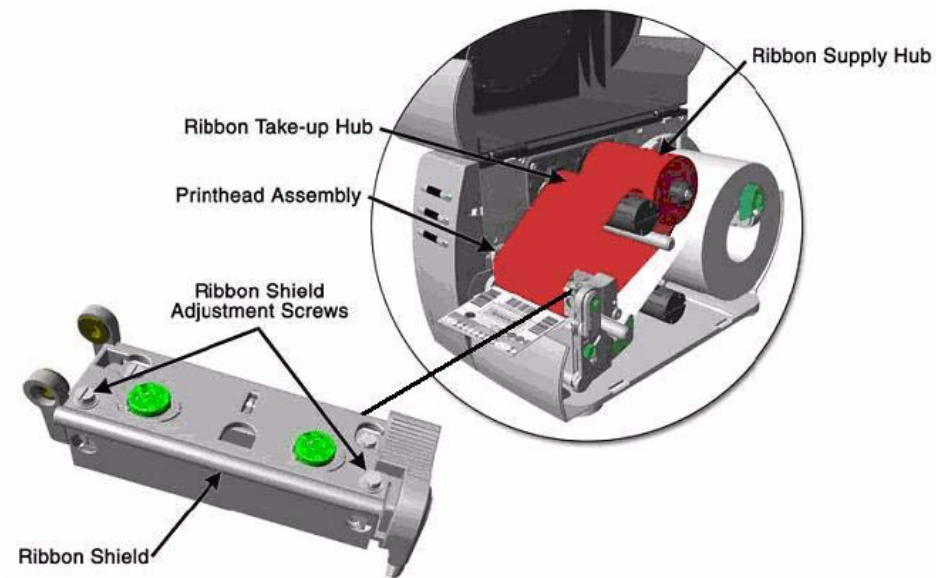
6. Observe the ribbon for rippling and bagging as it travels from the ribbon supply hub and under the print head assembly. If the travel is smooth, continue to the next step; otherwise:
 - a. Loosen the ribbon idler screw.
 - b. While repeatedly pressing the FEED key, slowly turn the ribbon idler cam until the ribbon is dispensed smoothly from the ribbon supply hub to the print head assembly.
 - c. Carefully tighten the ribbon idler screw.
 - d. Feed several more labels to verify adjustment.
 - e. Repeat this step, if necessary.
7. Continue according to printer type:
 - *Non-Display models:* Simultaneously press the **PAUSE + FEED** buttons.
 - *Display-equipped models:* Select a quantity of **Quick Ribbon Test** labels
8. Check for ribbon wrinkle. If the ribbon travel is smooth, skip to Step 10. Otherwise, continue to the next step.



9. Fine-tune using the ribbon shield:

Note: The ribbon does not need to be removed to perform this adjustment.

- a. Slightly loosen the ribbon shield adjustment screws.
- b. Move either side of the ribbon shield 'in' or 'out' to smooth the ribbon and remove any wrinkle-related voids from the printed labels.
- c. Carefully tighten the ribbon shield adjustment screws.
- d. Print several labels.
- e. Verify the adjustment corrected the problem and repeat this step, if necessary.



10. Install the operating media and adjust the media width, if necessary.

Note: The operating media is the actual labeling material you will print on.

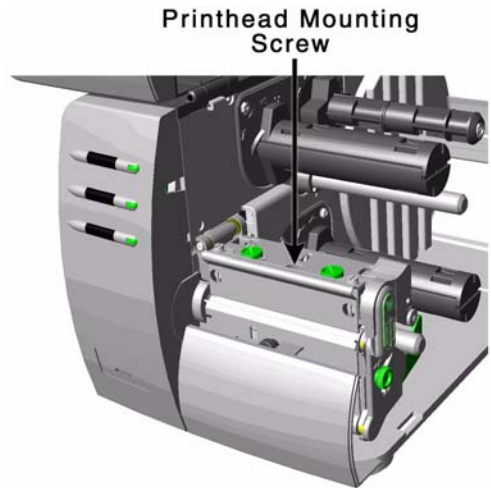
11. Print and examine a label.
12. Readjust the ribbon shield slightly, if needed.

6.8 Printhead Replacement

Removal:

Note: Printheads are fragile; use extreme care when handling and never use a sharp object on the surface. If you have questions, contact a qualified technician or Brady Technical Support before proceeding.

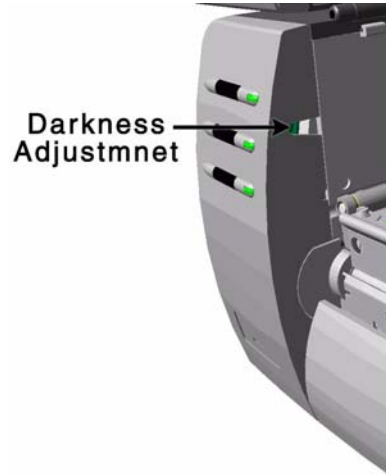
1. Touch a bare metal part of the printer's frame to discharge any static electricity that may be present on your body.
2. Turn 'Off' and unplug the printer. Open the cover; if ribbon is installed, remove it.
3. With the printhead locked in the down position, loosen the Printhead Mounting Screw (it will remain in the assembly).
4. Unlatch the Printhead Assembly. While holding the Printhead, raise the assembly. Disconnect the two cables and then remove the old Printhead.
5. While carefully holding the new Printhead, connect both cables.
6. Position the Printhead onto the Locating Pins in the Printhead Assembly and secure in place with the Printhead Mounting Screw (do not over-tighten).
7. Clean the Printhead (see Section 6.1).
8. Reload ribbon (if removed), lower the printhead assembly, and rotate the printhead latch back, into the locked position.
9. Use the Darkness Adjustment to match the print contrast of the new printhead to that of the old printhead; (for non-display printers see Section 6.6 for display printers see Section 5.1.3).



6.9 *Darkness Adjustment (non-display printers only)*


The Darkness Adjustment allows the operator to match the print contrast following a printhead replacement. Turning the Darkness Adjustment clockwise will darken the print, while turning it counterclockwise will lighten the print. Compare a label printed with the old printhead and make this adjustment so that the new printhead matches the darkest portion of that label.

Note: Large increases in the 'Darkness Adjustment' can shorten printhead life. If you need to increase the darkness of the printed labels, try increasing the Heat value and/or slow the Print Speed using your software program or via DPL commands.



6.10 *Resetting the Printer*

Non-Display Printers:

With the printer power 'Off,' press and hold all three buttons while turning 'On' the printer. Continue to hold the buttons down until the  STOP light turns off (approximately 17 seconds). The printer will now be set to the 'Factory Defaults.' See Section 4.5.1 for a listing of the factory default settings.

Display Printers:

Depending upon the method used, there are three reset levels possible:

Soft Reset

To reset the printer and clear any temporary host settings:

- With the printer 'On', press and hold the CANCEL Key for approximately four seconds.

Level One Reset

To return the printer to the factory default settings or, if saved, to restore the Factory Setting File:

- ❶ Turn 'Off' the printer.
- ❷ Press and hold the PAUSE and CANCEL Keys while turning 'On' the printer; continue to depress the keys until the 'READY' message appears.

Note: This reset has the same effect as the System Settings / Set Factory Defaults selection in the menu system. (See Section 5.1 for a listing of the factory default settings and Section 5.1.5 for information about the Factory Setting File.)

Level Two Reset

To return the printer to the factory default settings, and clear all the calibration and adjustment parameters:

- ❶ Turn 'Off' the printer.
- ❷ Press and hold the PAUSE, FEED, and CANCEL Keys while turning 'On' the printer; continue to depress the keys until the 'READY' message appears.

Note: After executing a Level 2 Reset, the media calibration must be performed; see Section 5.4. A listing of the factory default settings is located in Section 5.1.






6.11 Downloading Firmware and Fonts

The operating programs and fonts for the printer are stored in Flash memory on the Main PCB. When program updates and/or new features are added, they can be downloaded to the printer as follows:

1. Identify the new version for your model of printer from the Brady Web site at www.BradyID.com and download it onto your computer's hard drive or a floppy disk.
2. Ensure that the printer is connected to the host, (via parallel port only) and that the power is 'On.' Using the DOS copy command enter:

```
copy filename.dlf lpt1/b      (non-display printer firmware is .dlf extension)
copy filename.zs lpt1/b       (display printer firmware is .zs extension)
```

Note: Other programs (e.g., hyper-terminal and certain Windows® Driver programs) may also be used to download this file.

3. The READY  light will flash during the download.
4. **Following a successful download**, the  STOP Light will illuminate then the printer will perform a 'cold reset.' The previous printer setup will not be affected unless substantial firmware data structure changes have occurred. Print a Database Configuration Label to verify your new firmware version.
 - **Following an unsuccessful download**, the  ERROR Light will illuminate then the printer will perform a 'warm reset' (both the READY  and  STOP lights will be on during power-up initialization). The original firmware will remain operational. If the printer fails to reset, toggle the power 'Off' and 'On.'

Try re-sending the file to the printer. If the failure continues, check the following possible causes:

- An invalid or corrupted file is being downloaded - Ensure the file being downloaded is correct and applicable for your printer model.
- Possible communications error - Check the cable connection between the host and printer and ensure that a quality, shielded cable is used.
- Possible Flash memory problem - Call for service.




Troubleshooting

7.1 Problem Resolution

Should a problem arise, the information in this section will help you resolve it. The following table lists problems that will not necessarily generate an error message. (For printers equipped with a display, see Section 7.1. for information on displayed messages.) Items denoted with an ‘*’ are for printers with displays only.



If you have questions, or if problems persist, contact a qualified technician or Brady Technical Support at (800) 643-8766.

If experiencing this problem...	Try this solution...
Cannot communicate through the parallel port:	Observe the Ready Indicator as the format is sent to the printer. If it does not flash, check the parallel cable type. Also check the protocol and port settings of the printer and host.
Cannot load media through the optional cutter:	Use extreme care. Turn ‘Off’ and unplug the printer before proceeding. Ensure that the cutter is properly installed. Plug in and turn ‘On’ the printer. You should hear the cutter blade rotate and position itself properly. However, if the problem continues call for service.
*The LCD is blank, but the Ready Indicator is ‘On’:	The display contrast may set too low. Press and hold the MENU Key for 10 seconds or until the display reappears.
Erratic feeding:	The printer may require Calibration; <ul style="list-style-type: none">• <i>Printers <u>without</u> front display:</i> Perform the Calibration Procedure, see section 4.7.1.• <i>Printers <u>with</u> front display:</i> Press and hold the  FEED button until at least one label gap or mark is advanced.
Erratic printing (instead of the label format, strange characters are printed):	<ul style="list-style-type: none">• The printer may be in Hex Dump Mode; see Section 7.2.• If using the serial port for communicating, check both the host and printer port settings; the printer may be set to eight data bits while the host is set to 7 (or vice versa).
Intellifont™ will not print:	Intellifont™ format is Little/Big Endian specific. The printer uses Big Endian. Refer to your font supplier for information.

If experiencing this problem...	Try this solution...
Light print on the right side (facing the printer) of the label:	<ul style="list-style-type: none"> • The Printhead Leveling Cam may be incorrectly adjusted; see Section 6.2. • The Printhead or Platen Roller may be dirty or worn; clean or call for service.
Missing information in the printed label:	<ul style="list-style-type: none"> • Check the label format for character placement outside the dimensions of the label; all row/column values must allow enough space for the height/length of the characters and bar codes to be printed within the format size. • The available memory may have been exceeded by the memory requirement of the label format. Try reducing the memory allocated to either the internal module or scaleable font caches; <i>non-display printers</i> see Section 4.5.2, <i>display printers</i> see Section 5.1.5 • If using serial communications, ensure that the interface cable meets the requirements found in Section 3.1.2.
Missing print on left or right side of the label:	Information may be formatted outside the label dimensions. Check your software program label size. For display printers also check the values in the menu for Print Control / Column Offset and Print Control / Custom Adjustments / Column Offset; see Section 5.1.3.
No power (all indicator lights are 'Off'):	<ul style="list-style-type: none"> • Verify that the AC power cord connection has been made at both the outlet and the printer; also, ensure the power switch is 'On'. • Verify that the AC outlet is functioning, or try moving the printer to another AC circuit. • The AC cord may be damaged; replace it. • The line fuse may be blown; call for service.

If experiencing this problem...	Try this solution...
Nothing is printing (labels advance normally, but no image is printed):	<p>Examine the used ribbon for an image:</p> <ul style="list-style-type: none"> • If there is an image on the used ribbon: <i>Verify that the ribbon was properly loaded per Section 3.4. If properly loaded, the wrong coating configuration was used. (To verify the inked side, press the adhesive backing of a label against the ribbon surface. Ink will only lift from the coated side of the ribbon.) Clean the printhead (see Section 6.1); then replace the ribbon with the correct type for the printer, Section 3.4.</i> • If there is no image on the used ribbon: <i>Print any Internal Test Label; non-display printers see Section 4.8, display printers see Section 5.3. If an image printed, then check the protocol and port settings for both the printer and host. These must match.</i> • The heat setting may be too low. Make an adjustment in the software program or through the Front Panel. • The media/ribbon combination may be incorrect. Contact a Media Representative. • The printhead or printhead cable(s) may be loose; power 'Off' the printer then reconnect.
Nothing happens when trying to print using a software program:	<ul style="list-style-type: none"> • Ensure that the printer is at READY. • Observe the Front Panel, if the READY light does not flash as you send the format check the protocol and port settings between the printer and host. • Ensure the interface cable meets the requirements found in Section 3.1.2.
Poor print quality:	<ul style="list-style-type: none"> • The printhead may need cleaning; see Section 6.1 <i>Adjust the Heat and Print Speed settings through the Front Panel or by host commands; non-display printers see Section 4.5.2, display printers see Section 5.1.3.</i> • The media/ribbon combination may not be compatible; contact Brady Technical Support. • The Printhead Leveling Cam may be incorrectly adjusted; see Section 6.2. • The Platen Roller may be dirty or worn; clean or call for service. • The Printhead Burn Line may need adjusting; see Section 6.3.

If experiencing this problem...	Try this solution...
Skips labels when printing:	<ul style="list-style-type: none"> • Media Calibration may be needed; non-display printers see Section 4.7, display printers see Section 5.4 • The Media Sensor may be out of position; readjust the position; see Section 3.3. • The format may be within 1/8 inch of the label's trailing edge. Try reducing or moving the format slightly.
Unable to print rotated text:	The characters may be formatted outside the label dimensions. Ensure the row/column values provide enough room for the height of the characters or bar code to be printed.

7.2 **Fault and Warning Messages** (Display Printers Only)

All printer functions are internally monitored. If a problem (Fault) or a potential problem (Warning) is detected, the Error Indicator will be illuminated. A corresponding message will be displayed. These messages, along with possible solutions, are described below.

Fault Messages: Fault Messages receive the highest display priority. If more than one fault is detected the display will cycle between messages.

Note: To return to normal operation after the printer enters a fault condition, the fault must be corrected and then the FEED Key must be pressed to clear the condition.

7.2.1 **Fault Messages**

Printer Fault Messages		
Displayed Message	Description	Possible Solution(s)
24V OUT OF TOLERANCE	The printer has detected a drop in the 24-volt power supply.	Try cycling the printer power 'Off' and 'On'. If the fault does not clear, call for service.
ADC FAULT	The printer has detected an analog to digital circuit converter failure.	Try cycling the printer power 'Off' and 'On'. If the fault does not clear, call for service.
CUTTER FAULT	The printer has detected a cutter mechanism fault.	Use extreme care. Turn 'Off' and unplug the printer before proceeding. Examine the cutter for obstructions and ensure that the cutter cable is properly installed. Plug in and turn 'On' the printer. Press the FEED Key. If the fault does not clear, call for service.
DMA FAULT	The printer has detected a Direct Memory Access failure.	Try cycling the printer power 'Off' and 'On'. If the fault does not clear, call for service.
GAP MODE CANNOT CALIBRATE	Consistently low sensor readings were detected.	Press any key to continue. Ensure that media was inserted in the media sensor during the appropriate calibration step; also ensure that the sensor is free of debris. Retry the calibration. If the problem persists, try the 'Advanced Entry Calibration'; see Section 5.4.3.










Printer Fault Messages		
Displayed Message	Description	Possible Solution(s)
GAP MODE FAULTY SENSOR	Consistently high sensor readings were detected.	Press any key to continue. Ensure that media was removed from the media sensor during the appropriate calibration steps; also ensure that no labels are stuck in the media sensor. Retry the calibration. If the problem persists, call for service.
OUT OF STOCK	The printer cannot detect media.	Try the following: Load media. Readjust the Media Sensor over the TOF mark; see Section 3.3. If using media with large gaps, adjust the Paper Out Distance; see Section 5.1.2. Calibrate the printer; see Section 5.4. Ensure that the labels are passing through the Media Sensor.
POSITION FAULT	Two possible causes: <ul style="list-style-type: none"> • (1) The printer was powered-off or reset during a ribbon, out of stock or TOF fault; or • (2) the printer was unable to complete the Media Calibration. 	Depending upon the cause: <ul style="list-style-type: none"> • (1) Press the FEED Key in an attempt to identify and then clear the related fault condition; or • (2) if necessary, calibrate the printer; see Section 5.4.
PRINT ENGINE FAULT	The printer has detected a problem within the print logic.	Try cycling the printer power 'Off' and 'On'. If the fault does not clear, call for service.
RAM FAULT	The system has detected a RAM failure.	Try cycling the printer power 'Off' and 'On'. If the fault does not clear, call for service.
REFLECTIVE MODE CANNOT CALIBRATE	Consistently low sensor readings were detected.	Press any key to continue. Ensure that the reflective mark was inserted facedown in the media sensor during the appropriate calibration step; also, ensure that the reflective mark is made of carbon based ink, and that the sensor is free of debris. Retry calibration. If the problem persists, try an 'Advanced Entry Calibration'; see Section 5.4.3.

Printer Fault Messages		
Displayed Message	Description	Possible Solution(s)
REFLECTIVE MODE FAULTY SENSOR	Consistently high sensor readings were detected.	Press any key to continue. Ensure that media was removed from the media sensor during the appropriate calibration steps; also ensure that no labels are stuck in the media sensor. Retry the calibration. If the problem persists, call for service.
RIBBON FAULT	The ribbon sensor values have changed, or the printer detects no or only sporadic ribbon supply hub movement.	Try the following: <ul style="list-style-type: none"> • Ensure that ribbon is correctly loaded and that the printhead assembly is latched. • Check the ribbon supply and ribbon take up hubs for obstructions that may be stopping movement. • Ensure that the ribbon core fits snugly on the ribbon supply hub. • Ensure that the media and paper combination is not slipping (usually caused by an incorrect match).
TEMPERATURE FAULT	The printer has shutdown to allow the printhead temperature to cool.	Turn 'Off' the printer until cool to prevent permanent damage due to an excessive printhead temperature.

Printer Fault Messages		
Displayed Message	Description	Possible Solution(s)
TOP OF FORM FAULT	<p>The printer could not find the TOF mark within the maximum label length setting or it found a TOF in an unexpected place.</p> <p><input checked="" type="checkbox"/> Note: When the printer is set for reflective media, this fault is given for an out of stock condition.</p>	<p>If media is moving:</p> <ol style="list-style-type: none"> 1. Press the FEED Key. It may be necessary to re-calibrate the printer; see Section 5.4. 2. The Media Sensor may be out of position. Readjust it; see Section 3.3. 3. The media may not be properly loaded. Reload media, also ensure that the Media Guide is positioned properly; see Section 3.2. 4. The Leveling Cam may be improperly adjusted; see Section 6.2. 5. The label may be longer than the default value for maximum length. Check the Media Settings / Maximum Label Length; see Section 5.1.2. 6. The Media Sensor may be obstructed. Check and carefully remove any obstruction (labels, paper dust, adhesive, etc). <p>If media is not moving: The printhead assembly may not be latched; close it.</p>

7.2.2 Warning Messages

Warning Messages are displayed for a period of five seconds. If multiple warnings are detected, the display will reflect the highest priority message.




Printer Warning Messages		
Displayed Message	Description	Action(s)
	The printer has detected defective printhead elements.	Contact Brady Technical Support.
	The printer measured only a small difference between the 'empty' and 'gap' sensor readings.	Transparent backing or notched media typically gives this indication. In this case, there may be a slight delay in the 'Out of Stock' indication, after the media supply is emptied; no action is required.
	Power has been removed and shutdown is in progress.	The printer power switch was turned 'Off', the line fuse has blown, or AC line voltage has been lost.
	The host has pending configuration changes that will not take effect until a 'host reset command' is issued.	To save changes, send a host reset command, or to discard changes perform a Soft Reset, see Section 6.7.
	The printer has detected a low operating voltage.	Possible low or fluctuating line voltage level. Try moving the printer to another outlet. When more than 50% black is being printed, try reducing the Heat Value or the size of the black image. If the condition persists, call for service.
	The printer was unable to find a PCB.	Possible faulty Main PCB. If the condition persists, call for service.
	The printer was unable to find a DHCP server.	This message does not effect the operation of the printer and can be cleared from the display by pressing the  FEED button. To stop this from reoccurring be sure the menu item 'IP DISCOVERY' is set to 'DISABLED', see Section 5.1.6.
	A high printhead temperature has been detected.	No action required. Printing will resume after the printhead cools.

7.3 Hex Dump Mode

The Hex Dump Mode is a useful tool for diagnosing problems, including communication and DPL™ syntax errors, allowing a comparison of input strings (sent by host) to output data (received by printer). This output can be used for debugging the label format. In addition, by repeatedly sending a format, this mode can uncover handshaking problems (if they exist). Handshaking problems are identified by sections of missing data in the character string.

7.3.1 Non-display Printers

To print the Hex Dump Label:

1. With the printer on, loaded with media (at least 4 inches wide) and ribbon (if printing with thermal transfer media), press and hold the  FEED button while turning on the printer.
2. Continue holding the  FEED button until the  STOP light turns off. Now, all data received by the printer will be output in hexadecimal code, along with the printable ASCII equivalents, as shown below. To exit Hex Dump Mode turn the printer off and then back on.

7.3.2 Display Printers

To print the Hex Dump Label:

1. To begin, go to the Diagnostics menu and enable Hex Dump Mode; see Section 5.1.7.
2. Exit the menu and save the changes. 'HEX DUMP MODE' will be indicated by the display and all data sent to the printer will now be output in hexadecimal code, along with the printable ASCII equivalents, as shown below.

Note: The figure below is a sample Hex Dump Label. After sending a label format to the printer, the hex code output will be immediate. As a final note, many software programs use bit mapping to construct the label, making diagnosis difficult. Contact Brady Technical Support with any questions.

```
0000 02 4C 00 44 31 31 00 31 ^L.D11.1
0008 36 31 31 30 30 30 30 33 61100003
0010 32 30 30 30 31 30 46 4F 200010F0
0018 4E 54 20 36 3A 20 41 4C NT 6: AL
0020 4C 20 56 41 4C 49 44 20 L VALID
0028 20 20 20 20 20 20 20 20
0030 20 20 20 00 31 36 31 31 .1611
0038 30 30 30 30 32 38 30 30 00002800
0040 30 31 30 20 20 20 20 20 010
0048 20 20 20 43 48 41 52 41 CHARA
0050 43 54 45 52 53 3A 00 31 CTERS: .1
0058 36 31 31 30 30 30 30 32 61100002
0060 34 30 30 30 31 30 23 24 400010#$
0068 25 26 28 29 2A 2B 2E 2D %&()*+.-
```

Note: To return to Ready Mode, re-enter the Diagnostics Menu and disable the Hex Dump Mode, exit the menu, then save the changes.



Specifications

Mechanical

Width	9.8" (24.9 cm)
Depth	18.06" (45.9 cm)
Height	10.3" (26.2 cm)
Weight	21.5 lbs. (9.77 kg)
Operating Temperature	40° F to 95° F (4° C to 35° C)
Humidity	10% – 95% non-condensing
AC Input Voltage	115/230 VCA Q 50/60 Hz

Printing

Print Method	Thermal Transfer
Print Speed	2 - 6 IPS (50 - 152 mm/s)
Resolution	203 dpi (8 dots/mm) <i>T-200</i> 300 dpi (11.8 dots/mm) <i>T-300</i>
Tear Bar	Tear Down
DRAM Memory	4MB <i>T-200</i> <i>T-300</i>
FLASH Memory	2MB

Media/Ribbon

Media Types:	Roll-Fed, Die-Cut, Continuous, Fan-Fold
Max. Media Width:	4.65" (118 mm)
Min. Media Width:	1" (25.4 mm)
Max. Print Width:	4.25" (108 mm) T-200 4.16" (106 mm) T-300
Print Length Range:	.25 - 99" (6 - 2475 mm)
Media Thickness Range:	.0025 - .01" (.064 mm - .254 mm)
Media Supply Roll Capacity:	8" (203 mm) O.D. on 1.5 - 3.0" (38 - 76.2 mm) cores
Ribbon Width Range:	1.0 - 4.5" (25 - 114 mm)
Ribbon Roll Capacity:	Matched to media: approx. 1476' (450 m) long
Ribbon Core:	1.010" ± .006" (25.6 mm ± .2 mm) inner diameter.

Communications

Interface:	USB, RS-232 (DB-9), and IEEE 1284 Compliant Centronics Parallel
Baud Speed:	600 to 38,400 bits per second (BPS)
Handshaking:	Xon/Xoff, CTS, DTR
Parity:	Even, Odd, or None
Stop Bits:	1 or 2
Data Bits:	7 or 8

Fonts

Non-display printers	Display Printers
<ul style="list-style-type: none">• 9 Bit Map Fonts; rotated 0, 90, 180, 270 degrees.• 10 smooth bitmap fonts 6pt – 48pt	<ul style="list-style-type: none">• 9 Bit Map Fonts; rotated 0, 90, 180, 270 degrees• 10 smooth bitmap fonts 6pt – 48pt• AGFA Scalable Font Engine featuring CG Triumvirate™ regular and bold-condensed scalable fonts with dynamic font attributes.

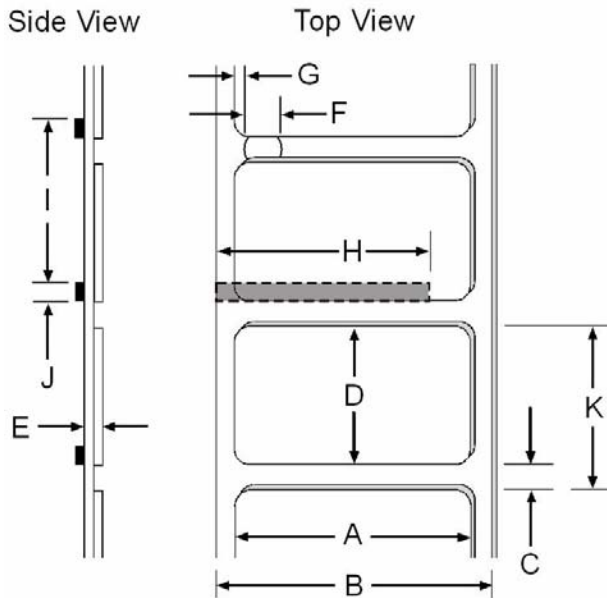
Embedded Bar Codes

The printer is equipped with the most popular industry barcodes, see Appendix B for a full listing and detailed information.

Approved Media

To achieve optimum print quality and maximum printhead life, Brady specifies the use of **BRADY®** brand media and ribbons. These supplies are specially formulated for use in our printers; use of non-Brady supplies may affect the print quality, performance, and life of the printer or its components.

For a current list of approved media and ribbons for use in direct thermal and thermal transfer applications, please contact a Customer Service Representative at (800) 643-8766.



Media Dimensions			
Designator	Description	Maximum ^[1]	Minimum^[1]
A	label width	4.65	1.00
B	liner width	4.65	1.00
C	gap (or notch) between labels ^[2]	.25	.100
D	label length ^[2]	–	.250
E	media thickness	.0100	.0025
F	notch opening width	.500	.200
G	distance from the media's edge to the media sensor aperture (left justified)	2.250	.200
H	reflective mark width	4.65	.500
I	distance between reflective marks ^[2]	–	.500
J	reflective mark length ^[2]	–	.100
K	label repeat distance ^[2]	–	.350
<p>^[1] Units of measure given in inches.</p> <p>^[2] The maximum allowable length of the combined label and gap (or mark) measurement cannot exceed 99.99 inches.</p>			



Appendix A

A. ASCII Control Chart

	Char	Dec	Hex	Char	Dec	Hex	Char	Dec	Hex	Char	Dec	Hex
Ctrl @	NUL	0	00		32	20	@	64	40	`	96	60
Ctrl A	SOH	1	01	!	33	21	A	65	41	a	97	61
Ctrl B	STX	2	02	"	34	22	B	66	42	b	98	62
Ctrl C	EXT	3	03	#	35	23	C	67	43	c	99	63
Ctrl D	EOT	4	04	\$	36	24	D	68	44	d	100	64
Ctrl E	ENQ	5	05	%	37	25	E	69	45	e	101	65
Ctrl F	ACK	6	06	&	38	26	F	70	46	f	102	66
Ctrl G	BEL	7	07	'	39	27	G	71	47	g	103	67
Ctrl H	BS	8	08	(	40	28	H	72	48	h	104	68
Ctrl I	HT	9	09	)	41	29	I	73	49	i	105	69
Ctrl J	LF	10	0A	*	42	2A	J	74	4A	j	106	6A
Ctrl K	VT	11	0B	+	43	2B	K	75	4B	k	107	6B
Ctrl L	FF	12	0C	,	44	2C	L	76	4C	l	108	6C
Ctrl M	CR	13	0D	-	45	2D	M	77	4D	m	109	6D
Ctrl N	SO	14	0E	.	46	2E	N	78	4E	n	110	6E
Ctrl O	SI	15	0F	/	47	2F	O	79	4F	o	111	6F
Ctrl P	DLE	16	10	0	48	30	P	80	50	p	112	70
Ctrl Q	DC1	17	11	1	49	31	Q	81	51	q	113	71
Ctrl R	DC2	18	12	2	50	32	R	82	52	r	114	72
Ctrl S	DC3	19	13	3	51	33	S	83	53	s	115	73
Ctrl T	DC4	20	14	4	52	34	T	84	54	t	116	74
Ctrl U	NAK	21	15	5	53	35	U	85	55	u	117	75
Ctrl V	SYN	22	16	6	54	36	V	86	56	v	118	76
Ctrl W	ETB	23	17	7	55	37	W	87	57	w	119	77
Ctrl X	CAN	24	18	8	56	38	X	88	58	x	120	78
Ctrl Y	EM	25	19	9	57	39	Y	89	59	y	121	79
Ctrl Z	SUB	26	1A	:	58	3A	Z	90	5A	z	122	7A
Ctrl [	Esc	27	1B	;	59	3B	[	91	5B	{	123	7B
Ctrl \	FS	28	1C	<	60	3C	\	92	5C	|	124	7C
Ctrl]	GS	29	1D	=	61	3D	]	93	5D	}	125	7D
Ctrl ^	RS	30	1E	>	62	3E	^	94	5E	~	126	7E
Ctrl _	US	31	1F	?	63	3F	_	95	5F		127	7F

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

Notes: For the hardware handshake XON/XOFF commands:

XON =Ctrl Q (DC1)

XOFF =Ctrl S (DC3)

- The Euro € character has been added to the table above at 255 (FF) as a Brady standard for resident bit-mapped fonts 0,1,2,3,4,5,6, and 9 (CG Triumvirate).
-



Appendix B

B. Embedded Fonts and Barcodes

All character fonts and barcodes available with the printer are described in this section. Each font and barcode has a name associated with it for use in programming. Human-readable fonts have numeric names while barcode fonts have alpha names.

B.1 Fonts

Fonts 0 through 8 use the slash zero (Ø) conventions for distinguishing between the zero and the alphabetic O. The slash can be removed with the label formatting command z. These fonts are non-proportional (monospaced): all of the characters take up the same amount of space when printed.

The Triumvirate font number 9 is a proportional font; each character will take up a different amount of space when printed.

Font	Valid ASCII Characters (decimal)	Use with Record Structure Type
0	32-127,255	Internal Bit-Mapped Fonts
1	32-168, 171, 172, 225,255	
2	32-168, 171, 172, 225,255	
3	32, 35-38, 40-58, 65-90, 128, 142-144, 146, 153, 154, 156, 157, 165, 168, 225,255	
4	32, 35-38, 40-58, 65-90, 128, 142-144, 146, 153, 154, 156, 157, 165, 168, 225,255	
5	32, 35-38, 40-58, 65-90, 128, 142-144, 146, 153, 154, 156, 157, 165, 168, 225,255	
6	32, 35-38, 40-58, 65-90, 128, 142-144, 146, 153, 154, 156, 157, 165, 168, 225,255	
7	32-126	
8	32, 48-57, 60, 62, 67, 69, 78, 83, 84, 88, 90	Smooth Font
9	32-126, 128-169, 171-173, 181-184, 189, 190, 198, 199, 208-216, 222, 224-237, 241, 243, 246-250,255	
*9	Dependent upon selected symbol set; see the Programmers Manual.	Downloadable Scalable Font

**Not available on non-display printers*

Font 4 62-character
alphanumeric, uppercase.

FONT 4:
#%&()*+,-./0123456789:
ABCDEFGHIJKLMNORSTUVWXYZ
ÇÀÁÊÛÜ£ØÑ¿ß

Font 5 62-character
alphanumeric, uppercase.

FONT 5:
#%&()*+,-./0123456789:
ABCDEFGHIJKLMNORSTUVWXYZ
ÇÀÁÊÛÜ£ØÑ¿ß

Font 6 62-character alphanumeric, uppercase.

FONT 6:
#%&()*+,-./
0123456789:
ABCDEFGHIJKL
MNOPQRSTUVWXYZ
ÇÀÁÊÛÜ£ØÑ¿ß

Font 7 OCR-A, size I.

Font 7:
!~#%&'()*+,-./
0123456789:;<=>?@
ABCDEFGHIJKLMNO
PQRSTUVWXYZ[\]^_`
abcdefghijklmnop
pqrstuvwxyz{|}~

Font 8 OCR-B, size III.

Font 8:
0123456789
<>CENSTXZI

Font 9 Internal Triumvirate font.

Point sizes are selected by the number in the barcode height.

Larger point sizes can be obtained by increasing the height and width multipliers, 48pt and 72pt fonts are generated by doubling the 24pt and 36pt fonts respectively (see the *Programmer's Manual* for more information).

6 pt ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789
8 pt ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz
10 pt ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz
12 pt ABCDEFGHIJKLMNOPQRSTUVWXYZabc
14 pt ABCDEFGHIJKLMNOPQRSTUVWXYZ
18 pt ABCDEFGHIJKLMNOPQR
24 pt ABCDEFGHIJKLM
30 pt ABCDEFGHIJ
36 pt ABCDEFG
48 pt ABCD

B.2 Barcodes

Bar Code fonts have alpha names (left column in the table below). Uppercase alpha names will print barcodes with human-readable interpretations. Lowercase alpha names will print barcodes only. The table is followed by visual samples.

Barcode ID	Type	Length	Check-sum	Valid ASCII Characters, decimal value representation
A / a	Code 39	Varies	No	32, 36, 37, 42, 43, 45-57, 65-90
B / b	UPC-A (regular)	11	Yes	48-57 Numeric only Option V used in the 6th & 7th position
C / c	UPC-E (zero suppression)	6	Yes	48-57 Numeric only
D / d	Interleaved 2 of 5 (I 2 of 5)	Varies	No	48-57 Numeric only
E / e	Code 128	Varies	M-103	32-127
F / f	EAN-13	12	Yes	48-57 Numeric only. Option V used in the 7th & 8th position
G / g	EAN-8	7	Yes	48-57 Numeric only
H / h	Health Industry Bar Code (Code 39 Mod and 43 checksum)	Varies	M-43	32, 36-39, 42, 43, 45-57, 65-90
I / i	Codabar	Varies	No	36, 43, 45-58, 65-68
J / j	I 2 of 5 with modulo 10 checksum	Varies	M-10	48-57 Numeric only
K / k	Plessey	Up to 14	M-10	48-57 Numeric only. Option + is Last Character for Second M-11 checksum
L / l	ITF SCC-14/ I 2 of 5 Shipping Container Code	13	M-10	48-57 Numeric only
M / m	2 digit UPC addendum	2	Yes	48-57 Numeric only
N / n	5 digit UPC addendum	5	Yes	48-57 Numeric only
O / o	Code 93	Varies	No	35-38, 42-58, 65-90, 97-122
p	Postnet	Varies	Yes	48-57 Numeric only
Q / q	SSCC-18/Serial Shipping Container Code	19	Yes	48-57 Numeric only
R / r	UCC/EAN Code 128 K-Mart NON EDI bar code	18	Yes	48-57 Numeric only
S / s	UCC/EAN 128 Random Weight	34 +	Yes	48-57 Numeric only
T / t	Telepen	Varies	Yes	Alphanumeric

U	UPS MaxiCode	84	Yes	Alphanumeric
u	UPS MaxiCode with Byte Count	Specified	Yes	Alphanumeric
v	FIM	1	No	A, B, C, D
z	PDF417	Varies	Yes	All
Z	PDF417 with Byte Count	Specified	Yes	All
W1c	DataMatrix	Varies	Yes	All 8-bit values
W1C	DataMatrix with Byte Count	Specified	Yes	All 8-bit values
W1d	QR Code – Auto format	Varies	Yes	Alphanumeric
W1D	QR Code – Manual format	Varies	Yes	Single-byte or Kanji double-byte
W1f	Aztec	Varies	Yes	All 8-bit values
W1F	Aztec with Byte Count	Specified	Yes	All 8-bit values
*W1g	USD-8 (Code 11) – Non-Human Readable	Varies	Yes, C&K	0 through 9 and “-“
*W1G	USD-8 (Code 11) - Human Readable	Varies	Yes, C&K	0 through 9 and “-“
*WI	EAN128 (Code 128 with Auto Subset Switching between B/C)	Varies	Yes	Alphanumeric
*WJ	Code 128 Auto	Varies	Yes	Alphanumeric
*W1k	Reduced Space Symbology (RSS); (<i>RSS-14, Truncated, Stacked, Stacked Omni-directional, and Limited</i>)	13	Yes	0 through 9
	<i>RSS Expanded</i>	Varies	Yes	Subset of ISO646 including Alphanumeric
W1T	TCIF Linked Barcode 3 of 9 (TLC39)	Varies	No	Alphanumeric
W1z	MicroPDF417	Varies	Yes	All 8-bit values
W1Z	MicroPDF417 with Byte Count	Specified	Yes	All 8-bit values

* Not available on non-display printers

Barcode A Code 39



Barcode B UPC-A (regular)



Barcode C UPC-E (zero suppression)



Barcode D Interleaved 2 of 5



Barcode E Code 128



Barcode F EAN-13



Barcode G EAN-8



Barcode H Health Industry Bar Code
(Code 39 Mod and 43 checksum)



Barcode I Codabar



Barcode J Interleaved 2 of 5 w/module 10 checksum



Barcode K Plessey



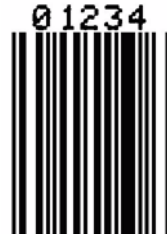
Barcode L ITF SCC-14/ I 2 of 5 Shipping Container Code



Barcode M 2 Digit UPC addendum



Barcode N 5 Digit UPC addendum



Barcode O Code 93



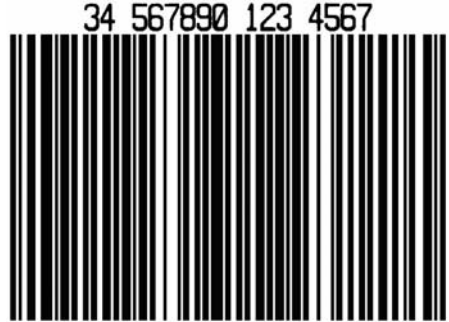
Barcode p Postnet



Barcode Q SSCC-18/Serial Shipping Container Code



Barcode R UCC/EAN Code 128 KMART NON EDI



Barcode S UCC/EAN 128 Random Weight



Barcode T Telepen



Barcode U UPS MaxiCode



Barcode v FIM



Barcode z PDF417



Barcode W1c DataMatrix



Barcode W1d QR Code



Barcode W1f Aztec



Barcode W1g USD8 (Code 11)



Barcode WI EAN 128

(Code 128 with Auto Subset Switching between B/C)



Barcode WJ Code 128 Auto



Barcode W1k RSS

(Reduced Space Symbology)



Barcode W1z MicroPDF417



Barcode W1T TCIF Linked Barcode 3 of 9 (TLC39)





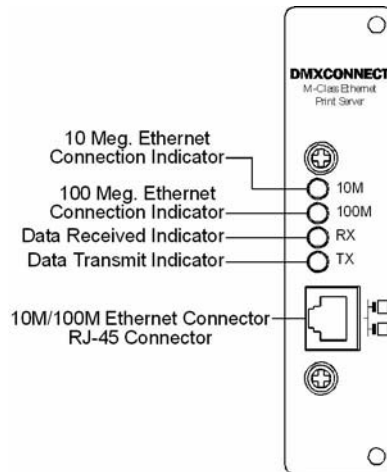
Appendix C

C. Optional Internal Ethernet Printer Driver

Note: This procedure is only for printers with a display.

C.1 Indicators and Connector

- 10M** Indicates a valid 10-megabit Ethernet connection is present when lit.
- 100M** Indicates a valid 100-megabit Ethernet connection is present when lit.
- RX** Flashes when data is being received by the print server .
- TX** Flashes when data is being transmitted by the print server.



C.2 Setup and Configuration

The Internal Ethernet Print Server can be configured in one of two ways:

- Using 'IP Discovery' (DHCP)
- - OR -
- Using a static IP set using the printer's front panel.

Note: The factory default has IP Discovery 'Enabled'. If you do not wish to use the IP Discovery function be sure to set it to 'Disable' using the printers front panel before connecting and powering on the printer.

Configuration Using IP Discovery (DHCP, BootP, and RARP)




Once the Ethernet Print Server has been installed and connected, plug in the power cord and Ethernet cable then turn the printer's power switch 'On'.

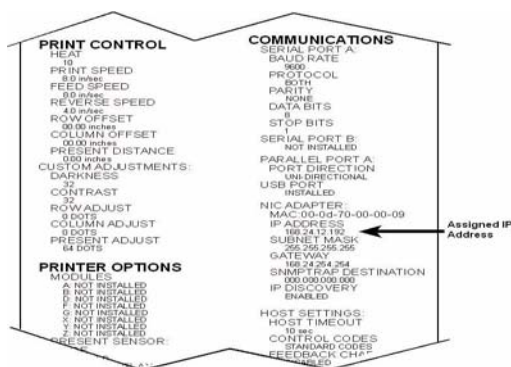
DHCP, BootP, and RARP are server services that provide a method for assigning and maintaining IP addresses. The Print Server obtains IP information from this service.

The factory default has IP Discovery enabled. The Print Server makes IP requests at power-up. If using this method of discovery, after the connection is established print a Configuration Label (see below) from the printer to obtain the IP Address and then use it to install your printer port and driver to complete your setup.

Note: Depending upon your server, you may have to wait a minute or two for the assigned IP Address to appear on the Configuration Label.

To print a configuration label:

1. With the printer on, loaded with media (at least 4 inches wide) and ribbon (if printing with thermal transfer media).
2. Press the  **TEST** button once, then use the **FWD**  button scroll to 'PRINT CONFIGURATION' and press the  **TEST** button again to print.

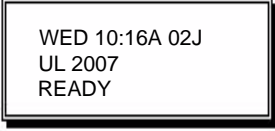


Once you have obtained the assigned IP from the configuration label you can then install the port and printer driver using the Windows® 'Add a Printer Wizard'. See section, *Installing the Printer Driver and Port* in this document.

C.3 Configuration Using a Static IP Address

Once the Ethernet Print Server has been installed, plug in the power cord, but do not connect the Ethernet cable, then turn the printer's power switch 'On'.

1. Verify the printer is in the 'Ready Mode'





WED 10:16A 02J
UL 2007
READY

2. Press the  MENU button to enter the printer's menu.





MENU MODE
MEDIA SETTINGS

3. Using the  button scroll to 'COMMUNICATIONS' and press the  button.





MENU MODE
COMMUNICATIONS

4. Using the  button scroll to 'NIC ADAPTER' and press the  button.





COMMUNICATIONS
ADAPTER

5. Using the  button scroll to 'IP DISCOVERY' and press the  button.






NIC ADAPTER
IP DISCOVERY

6. Using the  button scroll to 'DISABLED' and press the  button.







IP DISCOVERY
*DISCOVERED

7. Press the  button once to return to the 'NIC ADAPTER' menu level. Then use the  button scroll to 'IP ADDRESS' and press the  button.




NIC ADAPTER
IP ADDRESS

8. Use the FWD  and REV  buttons to increment/decrement the flashing value. Press the ENT  button to move to the next field. Once all fields are correct press the ESC  button once. The value will automatically be saved.


```
IP ADDRESS
*192.000.000.192
```

```
SUBNET MASK
*000.000.000.000
```

```
GATEWAY
*000.000.000.000
```

You can then use the FWD  to scroll to the 'SUBNET MASK' and 'GATEWAY' menu items and set those values in the same manner as the 'IP ADDRESS' was set.

Note: When the menu item 'IP DISCOVERY' is set to enabled you will not be able to change the values for the "IP ADDRESS", 'SUBNET MASK', or 'GATEWAY' menu items. The values displayed are for reference only and will become active once 'IP DISCOVERY' set to disabled.

9. Once you have the proper addresses set, press the ESC  button repeatedly until you have exited the printer's menu. Turn OFF the printer and then back ON.

```
WED 10:16A 02JU
L2007
READY
```

Once you have entered your IP settings into the printer you can then install the port and printer driver using the Windows® 'Add a Printer Wizard'. See section, *Installing the Printer Driver and Port* in this document.

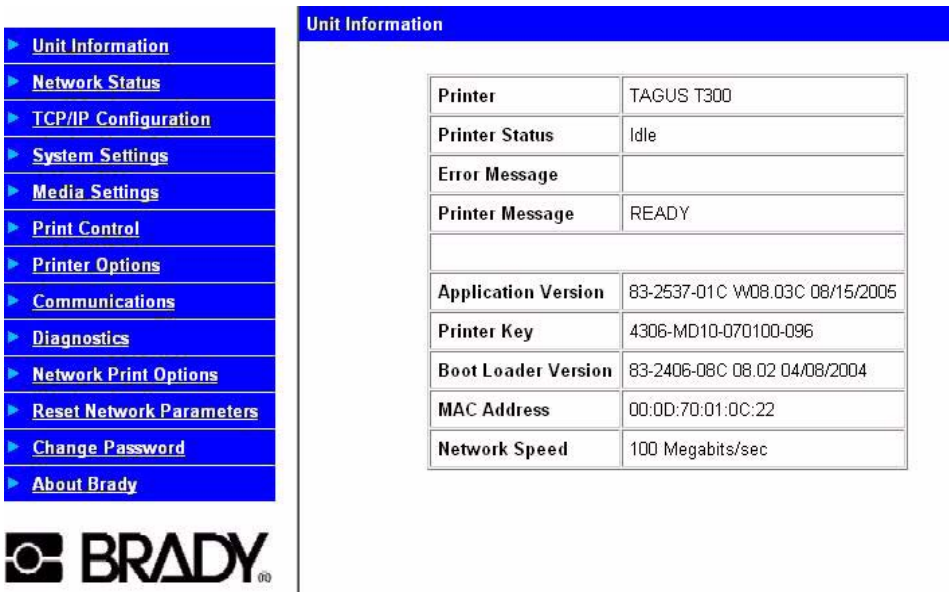
C.4 Using the HTML Pages

The printer has resident HTML (Web) pages that allow configuration of network and printer settings as well as performing status queries and diagnostic tests. To configure the Print Server and other internal printer settings you can access the printer via HTML pages using any Web browser.

1. In your Web browser, choose **File -> Open**.
2. Enter the IP address of the Print Server and press Enter. (The default IP Address is: 192.0.0.192)

Note: Consult with your system administrator for all necessary address, printer, and protocol information. To change these settings you will be asked for an authentication password. Type `sysadm` and click "Apply".

Next you should see the Print Server's **Unit Information** page:



The screenshot shows the 'Unit Information' page. On the left is a vertical menu with the following items: Unit Information, Network Status, TCP/IP Configuration, System Settings, Media Settings, Print Control, Printer Options, Communications, Diagnostics, Network Print Options, Reset Network Parameters, Change Password, and About Brady. The main content area contains a table with the following data:

Printer	TAGUS T300
Printer Status	Idle
Error Message	
Printer Message	READY
Application Version	83-2537-01C W08.03C 08/15/2005
Printer Key	4306-MD10-070100-096
Boot Loader Version	83-2406-08C 08.02 04/08/2004
MAC Address	00:0D:70:01:0C:22
Network Speed	100 Megabits/sec

At the bottom left of the page is the BRADY logo.

Note: The Unit Information screen contains an overview of the printer's type and status. It also contains the printer's firmware version, as well as its serial number and MAC address.

Network Status

Unit Information

- ▶ **Unit Information**
- ▶ **Network Status**
- ▶ **TCP/IP Configuration**
- ▶ **System Settings**
- ▶ **Media Settings**
- ▶ **Print Control**
- ▶ **Printer Options**
- ▶ **Communications**
- ▶ **Diagnostics**
- ▶ **Network Print Options**
- ▶ **Reset Network Parameters**
- ▶ **Change Password**
- ▶ **About Brady**

BRADY

Network Information


MAC Address	00:00:70:01:0C:22
Network Topology	Ethernet
Network Speed	100 Megabits/sec

TCP/IP Status

Frame Type	Ethernet II
IP Address	172.20.20.36
Subnet Mask	255.255.0.0
Default Gateway	172.20.20.1
Destination Port	9100
SNMP Trap Destination	0.0.0.0
IP Discovery	<i>Disabled</i>
Primary Server Logged in	0.0.0.0
Secondary Server Logged in	0.0.0.0

Note: The Network Information screen contains an overview of the current network settings including discovery methods, address settings, network topology and speed.

TCP/IP Configuration


Unit Information	TCP/IP Configuration
Network Status	Static IP Settings
TCP/IP Configuration	IP Address: [172] . [20] . [20] . [36] ← 1
System Settings	Subnet Mask: [255] . [255] . [0] . [0] ← 2
Media Settings	Default Gateway: [172] . [20] . [20] . [1] ← 3
Print Control	
Printer Options	
Communications	DHCP Settings
Diagnostics	Enable IP Discovery (DHCP, BOOTP, etc.) <input type="checkbox"/> ← 4
Network Print Options	Port Number: [9100]
Reset Network Parameters	SNMP Trap Destination Address: [0] . [0] . [0] . [0]
Change Password	
About Brady	NetBIOS (WINS) Settings ← 5
	NetBIOS Name: [DMX_010C22]
	Primary WINS Server: [0] . [0] . [0] . [0]
	Secondary WINS Server: [0] . [0] . [0] . [0]
	A password is required to perform this function
	<input type="password"/>
	<input type="button" value="Apply"/> <input type="button" value="Clear"/>

Notes:

- * Fixed IP Address users define the address here (usually printers in a network get a fixed IP Address because they are referred to by address rather than by name).
 - * Enter a subnet mask. Printer responses can only get across address ranges (subnet mask) if the Printer Server sends them to the network's gateway server, which transfers messages from one address range to another.
 - * Enter the address of the system's gateway. Networked printers are addressed from other points in their network as well, which means that the Printer Server needs to know a gateway address. Most print protocols (like lpr) establish a point-to-point connection to get responses from the printer. Without a gateway address, the printer doesn't seem to respond and is "not there."
 - Enable IP DISCOVERY if you want to use a boot-protocol (DHCP, BootP, or RARP) and not a fixed IP Address.
- * These items will be greyed-out when IP Discover is enabled. The values listed are stored in the printer's memory.


C.5 System Settings, Media Settings, and Print Control

Many of the printer's internal menu settings can be controlled from the following next six screens. This allows the user to adjust many of the printer's settings remotely without using the printer's front panel. For more information on the function of these settings see the Tagus Operator's Manual.

System Settings																																																																
▶ Unit Information																																																																
▶ Network Status																																																																
▶ TCP/IP Configuration																																																																
▶ System Settings																																																																
▶ Media Settings																																																																
▶ Print Control																																																																
▶ Printer Options																																																																
▶ Communications																																																																
▶ Diagnostics																																																																
▶ Network Print Options																																																																
▶ Reset Network Parameters																																																																
▶ Change Password																																																																
▶ About Brady																																																																
																																																																
	<table border="1"> <tr> <td></td> <td>Internal Module-D:</td> <td><input type="text" value="512"/> KB</td> </tr> <tr> <td>Default Module:</td> <td><input type="text" value="D"/></td> <td>Scaleable Font Cache:</td> <td><input type="text" value="192"/> KB</td> </tr> <tr> <td>Single Byte Symbols:</td> <td><input type="text" value="PM"/></td> <td>Double Byte Symbols:</td> <td><input type="text" value="UC"/></td> </tr> <tr> <td>Absolute Counter:</td> <td><input type="text" value="331"/></td> <td>Date:</td> <td><input type="text" value="0/-2143952860/-2331"/></td> </tr> <tr> <td>Resettable Counter:</td> <td><input type="text" value="331"/></td> <td>Date:</td> <td><input type="text" value="0/-2143952860/-20"/></td> </tr> <tr> <td>Format Attributes:</td> <td> <input checked="" type="radio"/> XOR <input type="radio"/> Opaque <input type="radio"/> Transparent </td> <td>Label Rotation:</td> <td> <input type="radio"/> Enabled <input checked="" type="radio"/> Disabled </td> </tr> <tr> <td>Imaging Mode:</td> <td> <input type="radio"/> Single Label <input checked="" type="radio"/> Multi-Label </td> <td>Pause Mode:</td> <td> <input type="radio"/> Enabled <input checked="" type="radio"/> Disabled </td> </tr> <tr> <td>Peel Mode:</td> <td> <input type="radio"/> Enabled <input checked="" type="radio"/> Disabled </td> <td>Select Security:</td> <td> <input type="radio"/> Secure Menu <input checked="" type="radio"/> Disabled </td> </tr> <tr> <td>Input Mode:</td> <td> <input checked="" type="radio"/> DPL <input type="radio"/> Line </td> <td>Units of Measure:</td> <td> <input checked="" type="radio"/> Imperial <input type="radio"/> Metric </td> </tr> <tr> <td>SOP Emulation:</td> <td> <input type="radio"/> 110 (Prod. Plus) <input type="radio"/> 220 (Allegro) <input type="radio"/> 250 (Prodigy) <input checked="" type="radio"/> Disable </td> <td>DPL Emulation:</td> <td> <input type="radio"/> Allegro <input type="radio"/> Prodigy Plus <input type="radio"/> Prodigy <input checked="" type="radio"/> Standard </td> </tr> <tr> <td>Back After Print:</td> <td> <input type="radio"/> Enabled <input checked="" type="radio"/> Disabled </td> <td>Font Emulation:</td> <td> <input checked="" type="radio"/> Standard Fonts <input type="radio"/> CG Times <input type="radio"/> User ID S50 </td> </tr> <tr> <td>Menu Language:</td> <td><input type="text" value="English"/></td> <td>Upgrade Printer Code:</td> <td><input type="text"/></td> </tr> <tr> <td>Column Emulation:</td> <td><input type="text" value="203"/> dots (180-203)</td> <td>Unlock Feature:</td> <td><input type="text"/></td> </tr> <tr> <td colspan="4" style="text-align: center;">Fault Handling</td> </tr> <tr> <td>Level:</td> <td><input type="text" value="Standard"/></td> <td>Void Distance:</td> <td><input type="text" value="0.50"/> inches (.10 - 2.00)</td> </tr> <tr> <td>Retry Count:</td> <td><input type="text" value="1"/></td> <td></td> <td></td> </tr> </table>		Internal Module-D:	<input type="text" value="512"/> KB	Default Module:	<input type="text" value="D"/>	Scaleable Font Cache:	<input type="text" value="192"/> KB	Single Byte Symbols:	<input type="text" value="PM"/>	Double Byte Symbols:	<input type="text" value="UC"/>	Absolute Counter:	<input type="text" value="331"/>	Date:	<input type="text" value="0/-2143952860/-2331"/>	Resettable Counter:	<input type="text" value="331"/>	Date:	<input type="text" value="0/-2143952860/-20"/>	Format Attributes:	<input checked="" type="radio"/> XOR <input type="radio"/> Opaque <input type="radio"/> Transparent	Label Rotation:	<input type="radio"/> Enabled <input checked="" type="radio"/> Disabled	Imaging Mode:	<input type="radio"/> Single Label <input checked="" type="radio"/> Multi-Label	Pause Mode:	<input type="radio"/> Enabled <input checked="" type="radio"/> Disabled	Peel Mode:	<input type="radio"/> Enabled <input checked="" type="radio"/> Disabled	Select Security:	<input type="radio"/> Secure Menu <input checked="" type="radio"/> Disabled	Input Mode:	<input checked="" type="radio"/> DPL <input type="radio"/> Line	Units of Measure:	<input checked="" type="radio"/> Imperial <input type="radio"/> Metric	SOP Emulation:	<input type="radio"/> 110 (Prod. Plus) <input type="radio"/> 220 (Allegro) <input type="radio"/> 250 (Prodigy) <input checked="" type="radio"/> Disable	DPL Emulation:	<input type="radio"/> Allegro <input type="radio"/> Prodigy Plus <input type="radio"/> Prodigy <input checked="" type="radio"/> Standard	Back After Print:	<input type="radio"/> Enabled <input checked="" type="radio"/> Disabled	Font Emulation:	<input checked="" type="radio"/> Standard Fonts <input type="radio"/> CG Times <input type="radio"/> User ID S50	Menu Language:	<input type="text" value="English"/>	Upgrade Printer Code:	<input type="text"/>	Column Emulation:	<input type="text" value="203"/> dots (180-203)	Unlock Feature:	<input type="text"/>	Fault Handling				Level:	<input type="text" value="Standard"/>	Void Distance:	<input type="text" value="0.50"/> inches (.10 - 2.00)	Retry Count:	<input type="text" value="1"/>		
	Internal Module-D:	<input type="text" value="512"/> KB																																																														
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Imaging Mode:	<input type="radio"/> Single Label <input checked="" type="radio"/> Multi-Label	Pause Mode:	<input type="radio"/> Enabled <input checked="" type="radio"/> Disabled																																																													
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Back After Print:	<input type="radio"/> Enabled <input checked="" type="radio"/> Disabled	Font Emulation:	<input checked="" type="radio"/> Standard Fonts <input type="radio"/> CG Times <input type="radio"/> User ID S50																																																													
Menu Language:	<input type="text" value="English"/>	Upgrade Printer Code:	<input type="text"/>																																																													
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A password is required to change settings																																																																
<input type="text"/>																																																																

System Settings, Media Settings, and Print Control (continued)

<ul style="list-style-type: none"> ▶ Unit Information ▶ Network Status ▶ TCP/IP Configuration ▶ System Settings ▶ Media Settings ▶ Print Control ▶ Printer Options ▶ Communications ▶ Diagnostics ▶ Network Print Options ▶ Reset Network Parameters ▶ Change Password ▶ About Brady 	Media Settings			
	Media Type:	<input type="radio"/> Direct Thermal <input checked="" type="radio"/> Thermal Transfer	Sensor Type:	<input checked="" type="radio"/> Gap <input type="radio"/> Reflective <input type="radio"/> Continuous
	Label Length:	<input type="text" value="2.00"/> inches <small>(0 - 99.99)</small>	Maximum Label Length:	<input type="text" value="3.25"/> inches <small>(0 - 99.99)</small>
	Paper Out Distance:	<input type="text" value="6.91"/> inches <small>(0 - 99.99)</small>	Label Width:	<input type="text" value="3.00"/> inches <small>(.75 - 4.16)</small>
	Ribbon Low Diameter:	<input type="text" value="1.10"/> inches <small>(1.00 - 2.00)</small>		
	Sensor Calibration			
	Paper Sensor Level:	<input type="text" value="204"/> <small>(0-255)</small>	Gap Sensor Level:	<input type="text" value="148"/> <small>(0-255)</small>
	Tran Sensor Gain:	<input type="text" value="5"/> <small>(0-255)</small>	Refl Paper Level:	<input type="text" value="175"/> <small>(0-255)</small>
	Mark Sensor Level:	<input type="text" value="70"/> <small>(0-255)</small>	Refl Sensor Gain:	<input type="text" value="7"/> <small>(0-255)</small>
	Empty Sensor Level:	<input type="text" value="8"/> <small>(0-255)</small>		
A password is required to change settings				
<input style="width: 80px;" type="text"/>				
<input type="button" value="Apply"/> <input type="button" value="Clear"/>				

<ul style="list-style-type: none"> ▶ Unit Information ▶ Network Status ▶ TCP/IP Configuration ▶ System Settings ▶ Media Settings ▶ Print Control ▶ Printer Options ▶ Communications ▶ Diagnostics ▶ Network Print Options ▶ Reset Network Parameters ▶ Change Password ▶ About Brady 	Print Control			
	Heat:	<input type="text" value="18"/> <small>(0 - 30)</small>	Print Speed:	<input type="text" value="2.0 ips - 50.8 mm/sec"/> ▼
	Feed Speed:	<input type="text" value="2.0 ips - 50.8 mm/sec"/> ▼	Reverse Speed:	<input type="text" value="2.0 ips - 50.8 mm/sec"/> ▼
	Row Offset:	<input type="text" value="0.00"/> inches <small>(0 - 99.99)</small>	Column Offset:	<input type="text" value="0.00"/> inches <small>(0 - 99.99)</small>
	Present Distance:	<input type="text" value="0.00"/> inches <small>(0 - 04.00)</small>		
	Custom Adjustments			
	Darkness:	<input type="text" value="32"/> <small>(1 - 64)</small>	Contrast:	<input type="text" value="32"/> <small>(1 - 64)</small>
	Row Adjust:	<input type="text" value="0"/> dots <small>(-150 - 150)</small>	Column Adjust:	<input type="text" value="0"/> dots <small>(0 - 128)</small>
	Present Adjust:	<input type="text" value="64"/> dots <small>(0 - 128)</small>		
	A password is required to change settings			
<input style="width: 80px;" type="text"/>				
<input type="button" value="Apply"/> <input type="button" value="Clear"/>				

C.6 Printer Options, Communications, and Diagnostics

- ▶ [Unit Information](#)
- ▶ [Network Status](#)
- ▶ [TCP/IP Configuration](#)
- ▶ [System Settings](#)
- ▶ [Media Settings](#)
- ▶ [Print Control](#)
- ▶ [Printer Options](#)
- ▶ [Communications](#)
- ▶ [Diagnostics](#)
- ▶ [Network Print Options](#)
- ▶ [Reset Network Parameters](#)
- ▶ [Change Password](#)
- ▶ [About Brady](#)



Printer Options

Present Sensor:	<input type="radio"/> Auto <input type="radio"/> Enabled <input checked="" type="radio"/> Disabled	Cutter:	<input checked="" type="radio"/> Auto <input type="radio"/> Enabled <input type="radio"/> Disabled
Retract Delay:	<input type="text" value="70"/> x 10ms (1 - 255)		

A password is required to change settings

Printer Options, Communications, and Diagnostics (continued)

- ▶ [Unit Information](#)
- ▶ [Network Status](#)
- ▶ [TCP/IP Configuration](#)
- ▶ [System Settings](#)
- ▶ [Media Settings](#)
- ▶ [Print Control](#)
- ▶ [Printer Options](#)
- ▶ [Communications](#)
- ▶ [Diagnostics](#)
- ▶ [Network Print Options](#)
- ▶ [Reset Network Parameters](#)
- ▶ [Change Password](#)
- ▶ [About Brady](#)



Communications

Serial Port A		Serial Port B	
Baud Rate:	<input type="text" value="9600"/> bps	Baud Rate:	<input type="text" value="9600"/> bps
Protocol:	<input type="text" value="Both"/>	Protocol:	<input type="text" value="Both"/>
Parity:	<input checked="" type="radio"/> None <input type="radio"/> Odd <input type="radio"/> Even	Parity:	<input checked="" type="radio"/> None <input type="radio"/> Odd <input type="radio"/> Even
Data Bits:	<input type="radio"/> 7 <input checked="" type="radio"/> 8	Data Bits:	<input type="radio"/> 7 <input checked="" type="radio"/> 8
Stop Bits:	<input checked="" type="radio"/> 1 <input type="radio"/> 2	Stop Bits:	<input checked="" type="radio"/> 1 <input type="radio"/> 2
Parallel Port A		Parallel Port B	
Port Direction:	<input checked="" type="radio"/> Uni-directional <input type="radio"/> Bi-directional	Port Direction:	<input type="radio"/> Uni-directional <input checked="" type="radio"/> Bi-directional

Host Settings

Host Timeout:	<input type="text" value="10"/> Seconds	Control Codes (Data):	<input checked="" type="radio"/> Enabled <input type="radio"/> Disabled
Feedback Characters:	<input type="radio"/> Enabled <input checked="" type="radio"/> Disabled	ESC sequences:	<input checked="" type="radio"/> Enabled <input type="radio"/> Disabled
Heat Command:	<input checked="" type="radio"/> Enabled <input type="radio"/> Disabled	Speed Commands:	<input checked="" type="radio"/> Enabled <input type="radio"/> Disabled
TOF Sensing Commands:	<input checked="" type="radio"/> Enabled <input type="radio"/> Disabled	Symbol Set Command:	<input type="radio"/> Enabled <input type="radio"/> Disabled
STX-V SW Settings:	<input type="radio"/> Enabled <input checked="" type="radio"/> Disabled		
Host Control Codes:	<input checked="" type="radio"/> Standard <input type="radio"/> Alternate <input type="radio"/> Alternate 2 <input type="radio"/> Custom	SOH 0x <input type="text" value="01"/> STX 0x <input type="text" value="02"/> CR 0x <input type="text" value="0d"/> COUNT BY 0x <input type="text" value="5e"/>	

A password is required to change settings

Apply Clear

Printer Options, Communications, and Diagnostics (continued)

- ▶ Unit Information
- ▶ Network Status
- ▶ TCP/IP Configuration
- ▶ System Settings
- ▶ Media Settings
- ▶ Print Control
- ▶ Printer Options
- ▶ Communications
- ▶ Diagnostics
- ▶ Network Print Options
- ▶ Reset Network Parameters
- ▶ Change Password
- ▶ About Brady



Diagnostics

Hex Dump Mode:	<input type="radio"/> Enabled <input checked="" type="radio"/> Disabled	Print Test Rate (Min.):	<input type="text" value="0"/>
-----------------------	--	--------------------------------	--------------------------------

Sensor Readings						
THR	TRAN	RIBM	24V	PS	HD	RANK
182	196	012	164	000	247	009

Ribbon Sensor Limits			
Ribbon ADC Low	009	Ribbon ADC High	249

A password is required to change settings

C.7 Network Print Options

Network Print Options

Print

- None
- Status Page
- Test Page

A password is required to perform this function

Apply

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Note: This page will allow the user to print either a Status or Test label from the printer.


C.8 Reset Network Parameters

Reset Network Parameters

A password is required to change settings


Reset Restore TCP/IP Defaults

Unit Information
Network Status
TCP/IP Configuration
System Settings
Media Settings
Print Control
Printer Options
Communications
Diagnostics
Network Print Options
Reset Network Parameters
Change Password
About Brady

 BRADY®

Note: This page will allow the user to reset all network settings to factory defaults.

C.9 Change Password

<ul style="list-style-type: none">▶ Unit Information▶ Network Status▶ TCP/IP Configuration▶ System Settings▶ Media Settings▶ Print Control▶ Printer Options▶ Communications▶ Diagnostics▶ Network Print Options▶ Reset Network Parameters▶ Change Password▶ About Brady 	<h3>Change Password</h3> <p>Customer Key</p> <p>Old Password <input type="text"/></p> <p>New Password <input type="text"/></p> <p>Retype New Password <input type="text"/></p> <hr/> <p><input type="button" value="Apply"/> <input type="button" value="Clear"/></p>
---	---

Note: To change the default password of the Print Server (sysadm), enter the old password, the new password and confirmation here.



Appendix D

D. Menu System Multi-Language Support (printers with display only)

This printer provides the user with the ability to download new menu system languages and/or replace the Brady provided translations. A Microsoft® Excel Spreadsheet defines the menu dictionary – the user adds a new language column or modifies an existing column in the spreadsheet, clicks on the ‘Generate DPL file(s)’ radio button and sends the generated DPL file(s) to the printer.

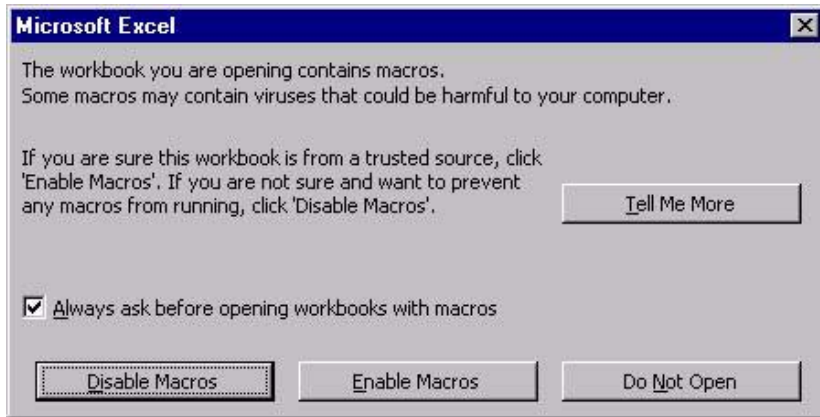
Here are the highlights and restrictions of the feature:

- The printer can register up to 10 different display languages, including EFIGS.
- The EFIGS languages and any additional languages are stored on Module Y: a 64KB Flash Module located on the Main PCB.
- It is okay to download menu files generated for a lesser firmware revision to new firmware – any messages that are not defined are displayed in English.
- For the procedures below, the printer will accept the menu downloads from any available port.
- The language creation programs support Windows® 95, Windows® 98, Windows® NT, and Windows® 2000.

Required Software	Comment
Microsoft® Excel 97	Must be purchased by user.
Img2dl.exe**	Program used during the process to create DPL file.
Gemmsgxls.xls**	Menu Dictionary
**Brady recommends that the Img2dl.exe and Gemmsgxls.xls files reside in the same directory.	

D.1 Creating a Menu Language:

1. Start Excel and open the gemmsglst.xls file. Excel opens the file and the following screen appears.



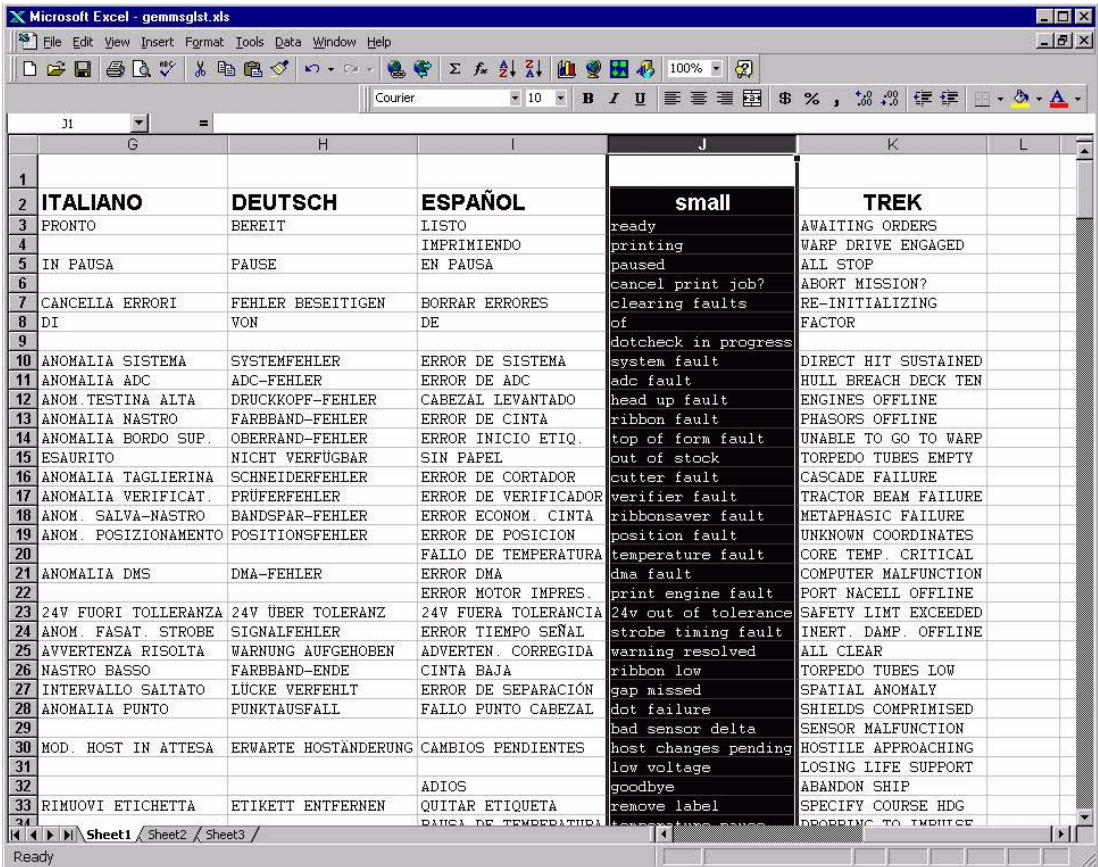
2. Click the “Enable Macro” box and the following appears:

	A	B	C	D	E	F	G
1				Generate Source Files	Generate DPL File(s)		
2	NID	COMMENTS	MAX	MESSAGE ID	ENGLISH	FRANCAIS	ITALIANO
3	0000	System Messages	20	MID_READY	READY	PRET	PRONTO
4	0001		20	MID_PRINTING	PRINTING		
5	0002		20	MID_PAUSED	PAUSED	PAUSE	IN PAUSA
6	0003	1Aa	20	MID_CANCEL_PRINT_JOB	CANCEL PRINT JOB?		
7	0004		20	MID_CLEARING_FAULTS	CLEARING FAULTS		CANCELLA ERRORI
8	0005		10	MID_OF	OF	DE	DI
9	0006		20	MID_DOTCHECK_IN_PROGRESS	DOTCHECK IN PROGRESS		
10	0007	Faults	20	MID_SYSTEM_FAULT	SYSTEM FAULT	DEFAILLANCE SYSTEME	ANOMALIA SISTEMA
11	0008		20	MID_ADC_FAULT	ADC FAULT	DEFAILLANCE ADC	ANOMALIA ADC
12	0009		20	MID_HEAD_UP_FAULT	HEAD UP FAULT	TETE NON VEROUILLÉE	ANOM TESTINA ALTA
13	0010		20	MID_RIBBON_FAULT	RIBBON FAULT	DEFAILLANCE RUBAN	ANOMALIA NASTRO
14	0011		20	MID_TOP_OF_FORM_FAULT	TOP OF FORM FAULT	DEFAIL. DEBUT D'IMP.	ANOMALIA BORDO SUP
15	0012		20	MID_OUT_OF_STOCK	OUT OF STOCK	RUPTURE PAPIER	ESAUROITO
16	0013		20	MID_CUTTER_FAULT	CUTTER FAULT	DEFAILLANCE COUTEAU	ANOMALIA TAGLIERIN
17	0014		20	MID_VERIFIER_FAULT	VERIFIER FAULT	DEFAILLANCE VERIFIC.	ANOMALIA VERIFICAT
18	0015		20	MID_RIBBONSAVER_FAULT	RIBBONSAVER FAULT	DEFAIL. ECONOM. RUBAN	ANOM. SALVA-NASTRO
19	0016		20	MID_POSITION_FAULT	POSITION FAULT	DEFAILLANCE POSITION	ANOM. POSIZIONANEN
20	0017		20	MID_TEMPERATURE_FAULT	TEMPERATURE FAULT		
21	0018		20	MID_DMA_FAULT	DMA FAULT	DEFAILLANCE DMA	ANOMALIA DMS
22	0019		20	MID_PRINT_ENGINE_FAULT	PRINT ENGINE FAULT	DEFAILLANCE MOTEUR	
23	0020		20	MID_24V_OUT_OF_TOLERANCE	24V OUT OF TOLERANCE	DEPASS. TOLERANCE 24V	24V FUORI TOLLERAN
24	0021		20	MID_STROBE_TIMING_FAULT	STROBE TIMING FAULT	DEFAIL. DUREE D'IMP	ANOM. FASAT STROE
25	0022	Warnings	20	MID_WARNING_RESOLVED	WARNING RESOLVED	AVERTISSEMENT RESOLU	AVVERTENZA RISOLTA
26	0023		20	MID_RIBBON_LOW	RIBBON LOW	RUBAN FAIBLE	NASTRO BASSO
27	0024		20	MID_GAP_MISSED	GAP MISSED	INTERVALLE MANQUANT	INTERVALLO SALTATC
28	0025		20	MID_DOT_FAILURE	DOT FAILURE	DEFAULT IMPRESSION	ANOMALIA PUNTO
29	0026		20	MID_BAD_SENSOR_DELTA	BAD SENSOR DELTA		
30	0027		20	MID_HOST_CHANGES_PENDING	HOST CHANGES PENDING		MOD. HOST IN ATTES
31	0028		20	MID_LOW_VOLTAGE	LOW VOLTAGE		
32	0029		20	MID_GOODBYE	GOODBYE		
33	0030	Conditions	20	MID_REMOVE_LABEL	REMOVE LABEL	ENLEVER ETIQUETTE	RIMUOVI ETICHETTA
34	0031		20	MID_TEMPERATURE_RAISE	TEMPERATURE RAISE		

3. Click On Column J and enter your new language, or modify an existing one.

Notes:

- A) Message Size – When entering new messages, reference the ‘MAX’ column: this is the maximum number of characters allowed for this field. Warnings are displayed when the number of characters is exceeded or when trying to modify the MAX value. Beware that “cutting” and “pasting” fields could defeat this warning system.
- B) Two Line Messages – Some of the message are displayed as two lines. These are indicated in the comment fields.
- C) Comments – This field can be modified with no effect.



4. When editing has been completed, highlight all of the columns you desire to create (more than one language may be selected) by pressing the letter above the column.
5. Press the Generate DPL File(s) radio button. A file will be generated for each of the selected columns and Excel will provide confirmation. (Example: small.ls)



6. Download the generated files to the printer – one method is the DOS copy command:

```
copy small.ls lpt1: /b
```
7. Reset the printer by pressing and holding the CANCEL Key for approximately four seconds.
8. Verify the operation by printing a Configuration Label (see Section 5.3.2) The new font selection will be printed on the label under SYSTEM INFORMATION / OPTIONAL LANGUAGES or select the new language in the SYSTEM SETTINGS / MENU LANGUAGE in the printer's menu.

This is the only method to determine whether the download was successful. If the menu system displays the new language selection, but all displayed messages remain in English an error has occurred. Re-check the process. Contact Brady Technical Support if problems continue (be prepared to provide the Gemmsglst.xls and the DPL download file that you have created). Other possible error messages are as follows:

Menu Language Error Message	Description
Please select the entire column(s) or the desired language(s), by clicking on the column letter(s)	After pressing the Generate DPL File(s) radio button, the languages to convert were not correctly selected.
Message text may not exceed MAX = xx designated characters for this MID	The entered message exceeds the number of characters specified in column C. You may not modify this number.

D.2 Advanced File Handling Information

- The Standard Brady Printer leaves the factory with EFIGS loaded into module Y. At this point, Module Y is LOCKED and will only accept additional Language Downloads.
- After downloading a language update, Module Y is left UNLOCKED until the printer is reset or power is cycled. In this state, Module Y will accept font, image and label format downloads. The module will also honor the Clear Module request. Therefore, following an update it is recommended that a reset be performed to lock the module; otherwise, a software package may 'Clear All Modules' thus destroying the new menu language(s).
- Module Y can be UNLOCKED by sending this DPL string: <STX>KpY0.
- To restore the factory generated EFIGS image, download the file 832296.08A to the printer. This file is located on the Brady FTP site. The letter at the end of the file name (e.g., A) specifies the revision. The latest revision will be available on the FTP site.
- Downloading the same language twice will automatically delete the first occurrence, but will not free the memory space. Use the Pack Module feature (see Section 5.1.4) or reload the FIGS file to free the space.
- Deletion of the selected language will set the printer to English.
- The total number of languages that the printer can now accept is limited to 10, but this number is dependent upon the size of each language translation. The translation size will vary with the number of messages that are translated for that particular language. Current complete language files are about 7,000 bytes each but with product growth, the total number of languages is expected to drop to seven.



Appendix E

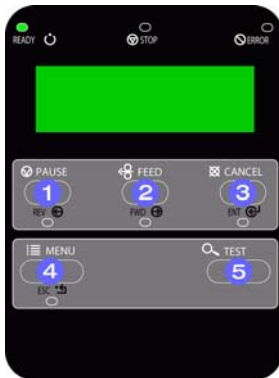
E.1 Saving a Configuration File (printers with display only)

The printer can save and restore complete printer settings, including media calibration parameters, as internal Configuration Files. Here are the highlights and restrictions of this feature:

- Configuration files eliminate the need to repeat the manual steps of a special printer setup, making future changeovers faster and easier.
- Configuration files can be setup, saved, and restored either from the host or via the front panel as ‘C-type’ files on Module Y under unique filenames that can be up to nineteen characters in length.
- Configuration files enable the host, via special DPL commands, to control parameters previously accessible only from the front panel.
- Regular host settings can not be saved using the front panel menu.

Note: Configuration files will typically correspond to a particular printer and media application. If a file will be shared among printers, do NOT include unique parameters (such as calibrations and adjustments) because those settings will vary from one unit to another.

When using the front panel to save a configuration file the keypad functions within the 'Save Setting As' submenu are as follows:



1 REV ←

The DOWN ARROW Key scrolls down through the alphanumeric, underscore, and delete character.

2 FWD →

The UP ARROW Key scrolls up through the alphanumeric and underscore characters, and the delete function.














3 ENT ↵

The ENTER Key accepts the displayed character and advances the cursor.

4 ESC ↵

Saves the displayed file.

To save a manually entered setup (for example, an application that required an Advanced Entry Calibration before beginning) as a configuration file using the front panel:

Step	Displayed Message	Operator Action	Comment(s)
1	READY	Press the  MENU Key.	You are entering 'Menu Mode'.
2	MENU MODE MEDIA SETTING	Use the FWD  Key to scroll to 'System Settings'.	The REV  Key can also be used.
3	MENU MODE SYSTEM SETTINGS	Press the ENT  Key to select 'System Settings'.	You are entering the 'System Settings' menu.
4	SYSTEM SETTINGS CONFIGURATION FILE	Press the ENT  Key to select 'Configuration File'.	You are entering the 'Configuration File' submenu.
5	CONFIGURATION FILE RESTORE AS CURRENT	Press the FWD  Key to scroll to 'Save Setting As'.	The REV  Key can also be used.
6	CONFIGURATION FILE SAVE SETTINGS AS	Press the ENT  Key.	Press the ESC  Key to exit this selection.
7	SAVE SETTINGS AS 1	Enter a file name using the REV  Key to scroll through the characters.	The FWD  Key can also be used.
		Note: To change an accepted character, select the delete function (solid flashing block) and press ENTER.	
8	SAVE SETTINGS AS SPECIAL 1	Use the ENT  Key to accept the character.	Continue entering the file name in this manner ("SPECIAL STOCK" has been used as an example).
		Note: To abort the "save setting" function, delete all entered characters in the file name and press the ESCAPE Key.	
9	SPECIAL STOCK SUCCESSFUL	Press the ESC  Key repeatedly to save the file name and return to 'Ready'.	Save complete. (To restore a saved file using the front panel see Section 5.1.5.)



Appendix F

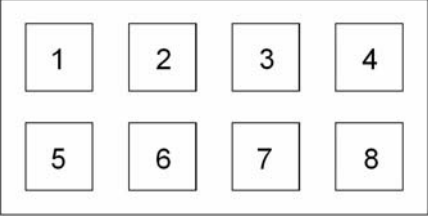
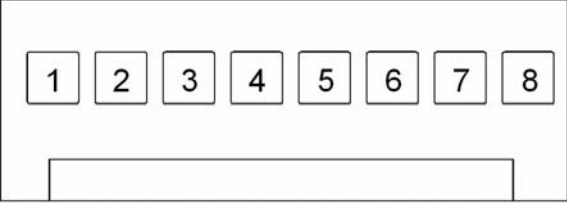
F. GPIO Port Description

The printer can easily be programmed to interface with most applicator devices. The GPIO functions are enabled and configured using the menu system of the printer (see Section 5.1.4). These parameters are stored in non-volatile memory and saved for subsequent power-ups.

When the GPIO is enabled, the printer will not print a label unless the Start of Print signal is active. When a label is ready to print and the printer is waiting for the Start of Print signal the printer will display “WAITING FOR SIGNAL”.

F.1 GPIO Port Configuration

The connection to the GPIO signals is accessed via the option port connector on the front of the printer or the J6 connector on the Main PCB. Requires firmware version 5.07 or greater. The option port connector is an 8-pin Molex Microfit 3.0 P/N 44300-800. The J6 connector is an AMP connector P/N 640456-8. Each GPIO pin's function is detailed in the table below:

Options Port Connector	Main PCB Connector J6
 <p>The diagram shows an 8-pin connector with pins numbered 1 through 8. Pins 1-4 are in the top row, and pins 5-8 are in the bottom row.</p>	 <p>The diagram shows an 8-pin connector with pins numbered 1 through 8 in a single row. A horizontal line is drawn below the pins, spanning from pin 1 to pin 8.</p>

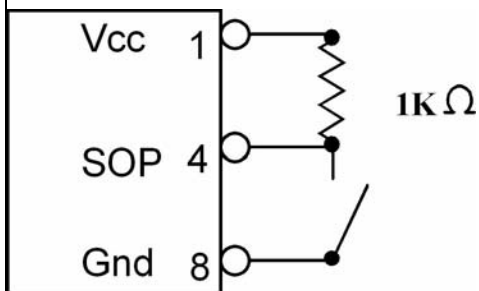
GPIO Port Connections and Functions				
Pin #	Signal Names	Signal State	Signal Direction [1]	Signal Description
1	Vcc	+5 VDC	Output	Printer +5 VDC
2	Printer Fault	Low	Output	Goes low if the printer detects any fault. Applicable only if cutter not equipped. . To activate set GPIO Option to “YES” and Cutter Equipped to “NO” [2].
3	Spare	Reserved	Input	N/A
4	Start of Print (SOP)	Low Level	Input	For applicators, it is recommended to only set the SOP signal to ACTIVE LOW. When ready to print a label, the applicator should set this signal low for at least 50ms or until the EOP signal goes not active. (See sample circuit next page.) To activate set the PRESENT SENSOR Option to “YES” [2]. ☑ Note: If a label is ready to print, the printer will blink the STOP LED signifying “WAITING FOR SIGNAL” until it receives the applicator’s Start of Print signal.
5	End of Print (EOP)	Low Level	Output	Goes low when printed label reaches the presented position. Minimum signal time 20msecs. To activate set GPIO Option to “YES” [2].
6	Signal Ground	Ground	N/A	N/A
7	+24V	1.6 Amp Fused (MPCB)	Output	N/A
8	Signal Ground	Ground	N/A	N/A

¹ Signal direction given relative to the printer.

² Selection for this option can be set via the Printer Set Configuration Command <STX>Kc or the Printer Setup Function. The Printer Set Configuration Parameter Mnemonics are “PS” for Present Sensor (N,Y,A(Auto)); “CE” for Cutter Equipped (N,Y,A(Auto)) and “GE” for GPIO (N,YorA(Applicator)). The Printer Setup selections are: Item #3 PRESENT SENSOR; Item #4 CUTTER EQUIPPED; and Item #25 GPIO.

External Start of Print Control Circuit Sample

Connections for an external Start of Print control can be made (1) directly to Pin 4 using a TTL-level input or (2) with an interface circuit similar to the one shown here (for additional interfacing data, see the table below).



GPIO Port Specifications

$V_{in\ max}$	5.5 VDC maximum input into any pin
V_{IH}	3.8 VDC minimum (high level input voltage)
V_{IL}	1.65 VDC maximum (low level input voltage)
I_{OH}	-8 mA typical, - 25 mA maximum (high level output current)
I_{OL}	8 mA typical 25 mA maximum (low level output current)
V_{OH}	$I_{OH} = -8\ mA$, minimum 3.8 VDC
V_{OL}	$I_{OL} = 8\ mA$, maximum .44 VDC



Appendix G

G. Warranty Information

G.1 Limited Warranty

- A. Warranty and Warranty Periods. Brady Worldwide, Inc. (“Brady”) warrants only to the original end user that the products and parts set forth below will be free from defects in material and workmanship from the date of purchase for the applicable warranty periods set forth below:

PRODUCT OR PART	APPLICABLE WARRANTY PERIOD
PRINTERS (excluding specific parts listed below)	12 MONTHS
PRINT SERVERS	36 MONTHS
PRINTHEADS	6 MONTHS OR 1,000,000 LINEAR INCHES OF USE (whichever comes first)
BATTERIES AND SPARE PARTS	3 MONTHS
ACCESSORIES	1 MONTH
STAND-ALONE KEYBOARDS	12 MONTHS

- B. Brady’s Obligation Under Warranty. Brady’s sole obligation under the above warranty shall be to repair or replace products and parts during the warranty period. Brady does not assume responsibility for delays in replacement or repair of products or parts. Products and parts repaired or replaced by Brady under warranty shall be warranted for the balance of the original warranty period or ninety (90) days, whichever is longer.
- C. Printheads. The thermal printhead warranty is valid only if a Brady approved thermal label media is used, as defined in the Brady list of approved thermal/thermal transfer media in use at the time of the warranty claim, a copy of which is available from Brady upon request. Failure to use Brady-approved media may void the thermal printhead warranty. Printhead warranty, including thermal printhead, does not cover printheads that have been misused, altered, neglected, handled carelessly, or damaged due to improper cleaning or unauthorized repairs.
- D. DISCLAIMER OF ALL OTHER WARRANTIES. NO OTHER WARRANTIES, EXPRESS OR IMPLIED, ARE GIVEN, AND BRADY EXPRESSLY DICLAIMS ALL OTHER WARRANTIES, INCLUDING AND WITHOUT LIMITATION, ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Some jurisdictions do not allow limitations on how long an implied warranty lasts, so the above limitations may not apply to particular end users.

- E. Limitations. No salesperson, representative, or agent of Brady is authorized to make any guarantee, warranty or representation that contradicts the terms contained in this Limited Warranty. Any waiver, alteration, addition, or modification to the warranties contained herein must be in writing and signed by an executive officer of Brady to be valid, binding, and enforceable. The Limited Warranty shall not apply to the use or compatibility of any Brady product or part with other equipment. Character or page yield is also not a covered warranty service, as it is influenced by customer application, printer contrast settings, operating environments, printer conditions, and paper type. All statements, technical information, or recommendations relating to the products or parts are based upon tests believed to be reliable, but do not constitute a guaranty or warranty. BRADY SHALL NOT UNDER ANY CIRCUMSTANCES WHATSOEVER BE LIABLE TO ANY PARTY FOR LOSS OF PROFITS, DIMUNITION OF GOOD WILL, OR ANY OTHER SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES WHATSOEVER WITH RESPECT TO ANY CLAIM IN CONNECTION WITH BRADY PRODUCTS AND/OR PARTS. Brady's maximum liability for warranty claims is limited to the invoice price of the product claimed defective. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to particular end users, but, in such event, all other terms and conditions of this Limited Warranty shall remain in full force and effect.
- F. What May Void Warranty. This Limited Warranty shall be null and void in the following circumstances:
1. Modification or repair of any covered product or part by the end user or any non-authorized Brady service provider; or
 2. Improper use or installation, failure to conduct regular maintenance or cleaning, or damage by accident or neglect, of any covered product or part by the end user or any third party; or
 3. Failure of the end user or any third party to exercise caution to protect any covered product or part from electrostatic discharge, adverse temperature and humidity conditions, or physical abuse; or
 4. Failure by the end user or any third party to use Brady printheads or other parts; or
 5. Failure by the end user or any third party to use only Brady media if use of such media causes or contributes to the damage for which warranty service is sought; or
 6. Failure by the end user to follow the Return Appointment Process set forth below.
- G. Repair Process. In order to avail itself of this Limited Warranty, and as a condition precedent thereto, the end user must:
1. Obtain a return material authorization ("RMA") from Brady, which will include an RMA number that must be prominently displayed on the outside of the shipping container. Returns without an RMA number must be rejected by Brady and immediately returned to end user, freight collect.
 2. Ship the items being returned to Brady, freight prepaid, together with a written description of the claimed defect.
 3. Pack the items being returned in the original packing carton or equivalent. Damage in transit is end user's responsibility and may be cause to void the warranty claim.
- H. Transportation Costs. Brady will pay surface freight to return products or parts covered by this Limited Warranty. However if Brady determines in the exercise of its reasonable but sole discretion that the product or part returned for warranty service is not defective, or does not otherwise qualify for warranty service, end user shall be liable for all costs of handling and transportation.

Last Revised 3/13/07



Glossary

GL. Glossary of Terms

alphanumeric: Consisting of alphabetic, numeric, punctuation and other symbols.

backing material: The silicon-coated paper carrier material to which labels with adhesive backing are affixed. Also referred to as “liner”.

bar code: A representation of alphanumeric information in a pattern of machine-readable marks. The basic categories are divided into one-dimensional (UPC, Code 39, Postnet, etc.) and two-dimensional barcodes (DataMatrix, MaxiCode, PDF417, etc.).

BPL (Brady Programming Language): Programming commands used specifically for control of and label production in Brady printers. A complete listing of commands can be found in the *Programmer's Manual*.

burn line: The row of thermal elements in the printhead that create the images on the media.

calibration: The process through which sensor readings are entered into the printer for correct sensor function (for example, detection of a given media type) and TOF positioning.

character set: The entire complement of alphanumeric symbols contained in a given font.

checksum: An alphanumeric error detection method used in many bar code symbologies for informational security.

continuous media: An uninterrupted roll or box of label or tag media that contains no gap, notch, or mark to separate individual labels or tags.

core diameter: The inside diameter measurement of the cardboard core at the center of a ribbon or media roll.

cutter: A mechanical device with a rotary or guillotine type blade used to cut labels or tags following printing.

defaults: The functional setting values returned following a factory reset of the printer.

diagnostics: Programs used to locate and diagnose hardware problems.

die-cut media: Media that has been cut into a pattern using a press, where the excess paper is removed leaving individual labels, with gaps between them, attached to a backing material.

direct thermal: The printing method that uses a heat sensitive media and only the heat of the thermal printhead to create an image on the label.

direct thermal media: Media coated with special chemicals that react and darken with the application of heat.

DPI (dots per inch): A measurement of print resolution, rated in the number of thermal elements contained in one inch of the printhead. Also referred to as “resolution.”

fan-fold: Media that is folded and stacked.

feed speed: The speed at which the media moves under the printhead in non-printed areas and between labels.

Flash memory Non-volatile memory (does not require printer power to maintain data) that can be erased and reprogrammed, used to hold the printer’s operating programs.

font: A set of alphanumeric characters that share a particular typeface.

gap: A space between die-cut or notched labels used to sense the top of form.

IPS (inches per second) Imperial measurement of printer speeds.

label: A paper or synthetic printing material, typically with a pressure sensitive adhesive backing.

label length: The distance from the top of the label to the bottom of the label as it exits the printer.

label repeat: The distance from the top of one label to the top of the next label.

label tracking: Excessive lateral (side to side) movement of the media as it travels under the printhead.

label width: The left to right measurement of the label as it exits the printer.

mark: Generalized term to indicate the label top of form light.

media: Generalized term for all types of printing stocks, including: roll fed, continuous, die-cut, reflective, and fanfold.

media hub: Device in the printer used to support roll media.

media sensor: An electronic device equipped with photosensors to detect media and the top of form on die-cut, notched or reflective media.

notched stock: Media, typically tag stock, with holes or notches in the material that is used to signal the top of form. The printer must be set to ‘gap’ to use this media type.

preprinted media: Label stock that contains borders, text, or graphics, floodcoating, etc.

perforation: Small cuts extending through the backing and/or label material to facilitate their separation. Also referred to as “perf.”

print speed: The speed at which the media moves under the printhead during the printing process.

reflective media: Media imprinted with carbon-based black marks on the underside of the material, which is used to signal the top of form when the ‘reflective’ sensor is enabled.

registration: Repeatable top to bottom alignment of printed labels.

reverse speed: The backward rate of media motion into the printer during tear-off, peel and present and cutting operations for positioning the label at the start of print position.

ribbon: An extruded polyester tape with several layers of material, one of which is ink-like, used to produce an image on the label. Also referred to as “foil.”

ribbon wrinkle: An undesirable overlapping of the ribbon during the printing process that leads to voids on the printed label, typically caused by an improper ribbon width adjustment.

roll media: A form of media that is wound upon a cardboard core.

start of print: The position on the label where the printing actually begins.

tag stock: A heavy paper or synthetic printing material, typically featuring a notch or black mark for TOF and no adhesive backing.

thermal transfer: The printing method that creates an image by transferring ink from a ribbon onto the media using the heat from the thermal printhead.

TOF (top of form): The start of a new label as indicated by a label gap, notch, mark or programming.

void: An undesirable blank space in a printed image.

