

# Meto mr-4

**Label Printer**

**Operator's Manual**



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## Agency Compliance and Approvals:



**UL60950** Information Technology Equipment  
**C22.2 No. 950-M93**



### **EN60950**

For 230 Volt Operation (Europe): 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

Für 230 Volt (Europa): 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.



As an Energy Star Partner, the manufacturer has determined that this product meets the Energy Star guidelines for energy efficiency.



The manufacturer declares under sole responsibility that this product conforms to the following standards or other normative documents:

EMC: EN 55022 (1993) Class B  
EN 50024 (1998)

Safety: This product complies with the requirements of EN 60950  
/A11:1997



Gost-R

**FCC:** This device complies with FCC CFR 47 Part 15 Class A.

✍ **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 own expense.

## 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.

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# Printer Overview

## 1.0 Introduction

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Congratulations on your purchase of an mr-4 printer. The mr-4, 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 printers, available in direct and optional thermal transfer configurations, use unique front panel designs to simplify operation, while its USB, RS232 serial, IEEE 1284 compliant parallel, and an optional internal printserver (*MR-4208 and MR-4306 only*) interfaces 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.checkpointeurope.com](http://www.checkpointeurope.com)) or on the included CD-ROM. If you wish to write a custom program, a copy of the *Class Series Programmer’s Manual* can also be found on the CD-ROM.

## 1.1 About this Printer

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This printer offers the following standard and optional features:

### 1.1.1 Standard Features

#### **Printing**

- ✂✂ Direct Thermal Printing
- ✂✂ On Demand and Batch Printing
- ✂✂ 203 DPI (MR-4206 and MR-4208) 300 DPI (MR-4306) Printhead
- ✂✂ Date and Time Stamp
- ✂✂ AGFA Scalable Font Engine
- ✂✂ 2 Resident Scaleable fonts, CG Triumvirate™ regular and bold-condensed (*MR-4208 and MR-4306 only*)

#### **Memory**

- ✂✂ 2 MB FLASH Memory  
(256K available to user, designated: Module B)
- ✂✂ 4 MB DRAM Memory (*MR-4206*)
- ✂✂ 8 MB DRAM Memory (*MR-4208 and MR-4306*)

#### **Interfaces**

- ✂✂ USB interface
- ✂✂ DB-9 RS-232 serial interface
- ✂✂ IEEE 1284 Centronics<sup>®</sup> parallel interface

#### **Operational**

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

## 1.1.2 Optional Features

### ***Thermal Transfer***

A printing method that uses ribbon to produce exceptional image clarity, as compared to most direct thermal media types. This option must be specified for use with either ‘coated side in’ ribbon or ‘coated side out’ ribbon.

### ***Media Cutter***

A rotary-type mechanism to automatically cut material with a maximum thickness of .010” (.254 mm) into minimum lengths of 1.25 inches (31.8 mm). Designed for ease of operation, the Media Cutter is automatically detected, configured, and enabled when installed on the printer.

### ***Peel and Present Mechanism (requires the Internal Rewind option)***

An output control device that automatically separates printed labels from the backing material and allows subsequent printing to occur only after the removal of a previously printed label. Minimum label length is 1.5 inches (38 mm). Designed for ease of operation, the Peel and Present Mechanism is automatically detected, configured, and enabled when installed on the printer.

### ***Internal Rewind***

An internal mechanism to wind four-inch outer diameter rolls of printed labels, or the label backing material when using the Peel and Present option.

### ***Present Sensor***

An output control device that allows subsequent printing to occur only after the removal of a previously printed label. Designed for ease of operation, the Present Sensor is automatically detected, configured, and enabled when installed on the printer.

### ***FLASH Memory Expansion (requires new main PCB)***

An optional main PCB assembly is available with 4MB (*MR-4206*) 8MB (*MR-4208 and MR-4306*) 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 DMX100 External Print Server is an external Network Interface Controller (NIC) that enables the printer to provide Ethernet<sup>®</sup> 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<sup>®</sup> connectivity. Features include:

- ✂✂Automatic selection of 10Base2 (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).
- ✂✂E-mail notification of printer errors to specified addresses.
- ✂✂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

## 2.0 Before Using the Printer

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### 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.

<p>☞ <b>Note:</b> It is a good idea to save all packaging materials in the event that shipping the printer is ever required.</p>
--

## 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.



## Additional Requirements

The following items are necessary for generating labels from your printer. Contact your 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 Media
- ✓✓Applicable Software



# Setting Up the Printer

## 3.0 Introduction

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

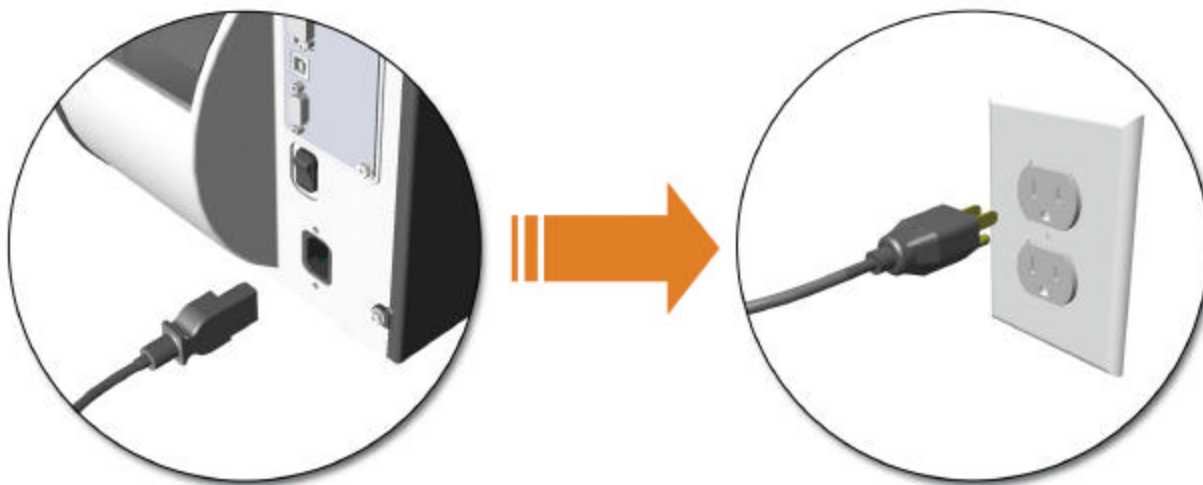
## 3.1 Connecting the Printer

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### 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.)



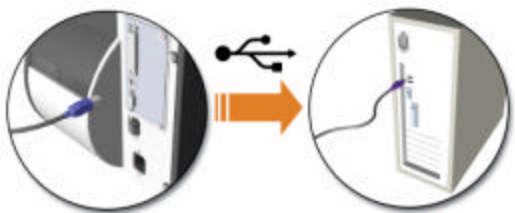


3.1.2 Interface Connection

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.



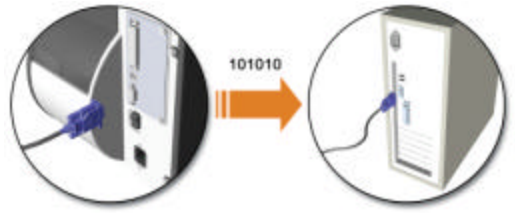
Parallel Connection:

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.



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).

Host DB 9S	Printer DB 9P	Host DB 25S	Printer DB 25P
TX 3	2 RX	TX 2	2 RX
RX 2	3 TX	RX 3	3 TX
CTS 8	7 RTS	CTS 5	7 RTS
DSR 6	4 DTR	DSR 6	4 DTR
GND 5	3 CTS	END 7	8 CTS
DTR 4	5 GND	DTR 20	5 GND
Shield	Shield	Shield	Shield
Part # 32-2483-01		Part # 32-2301-01	

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

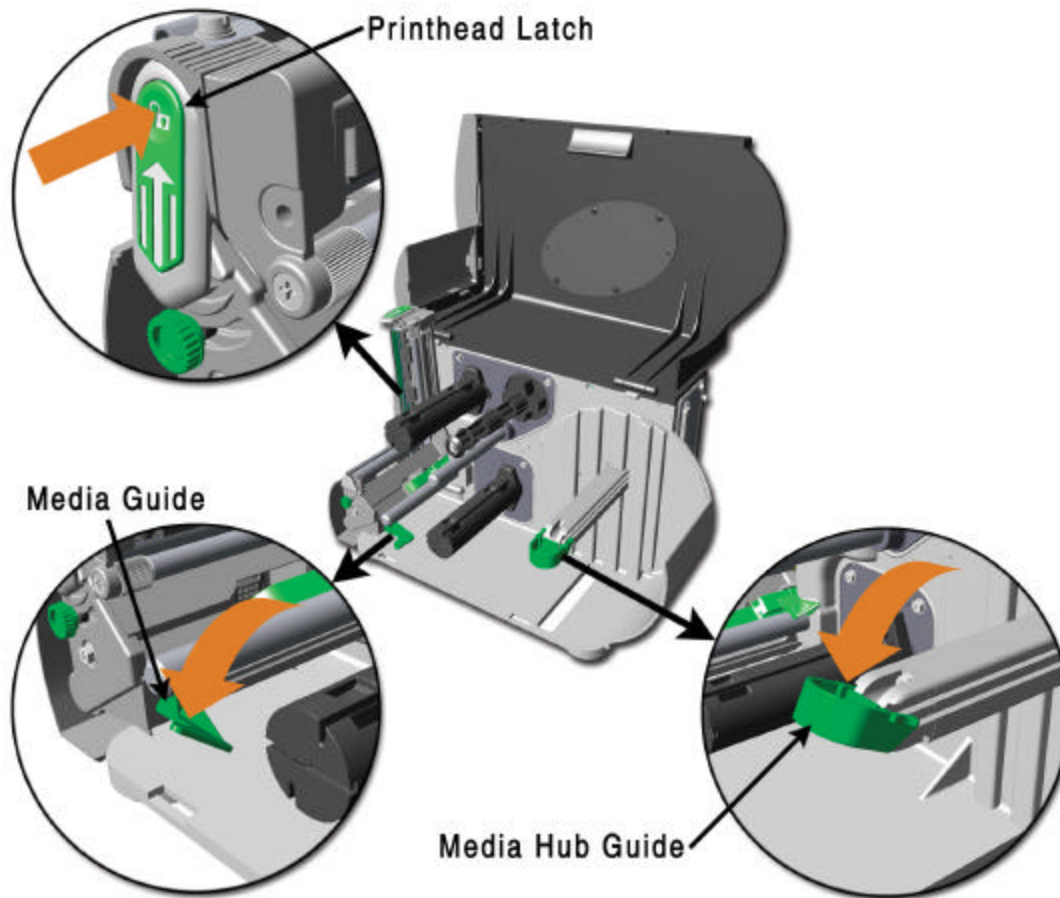
The printer is available with an optional Internal Ethernet Print Server. When using this connection please refer to Appendix C or the instructions included with the option for proper setup and configuration.

## 3.2 Loading Media

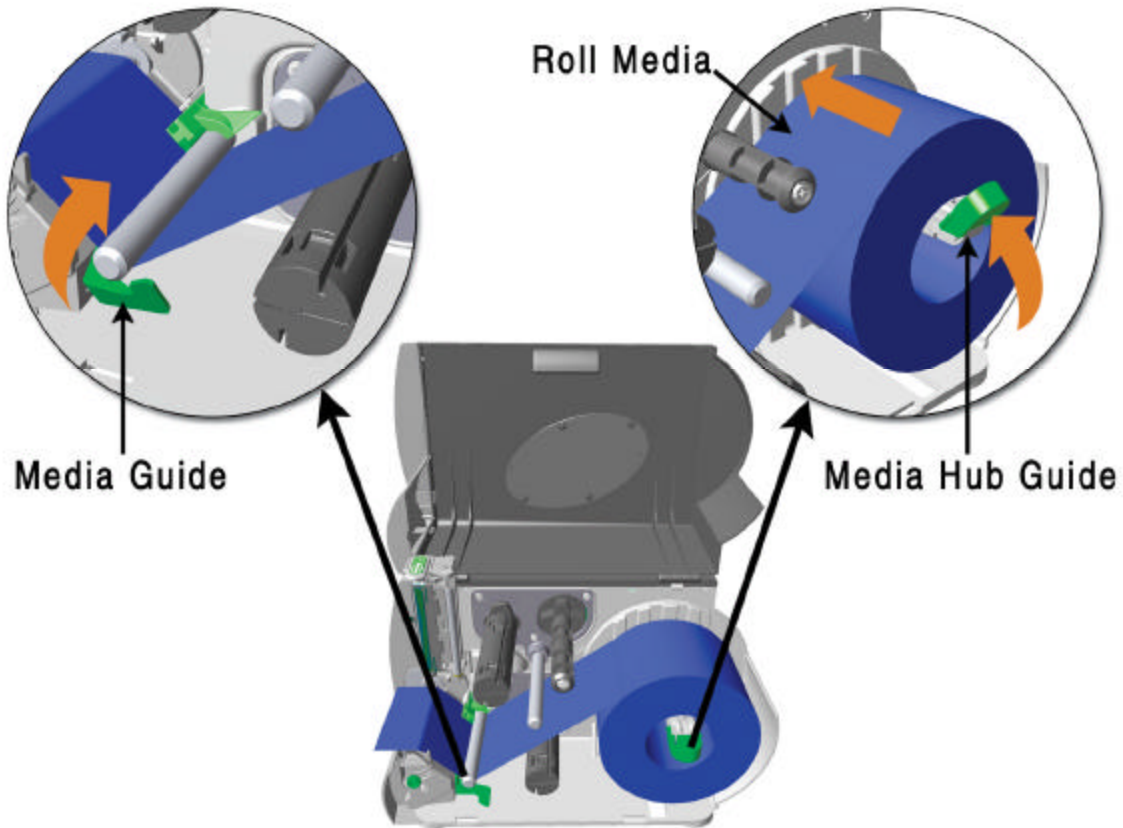
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Load media into the printer as follows:

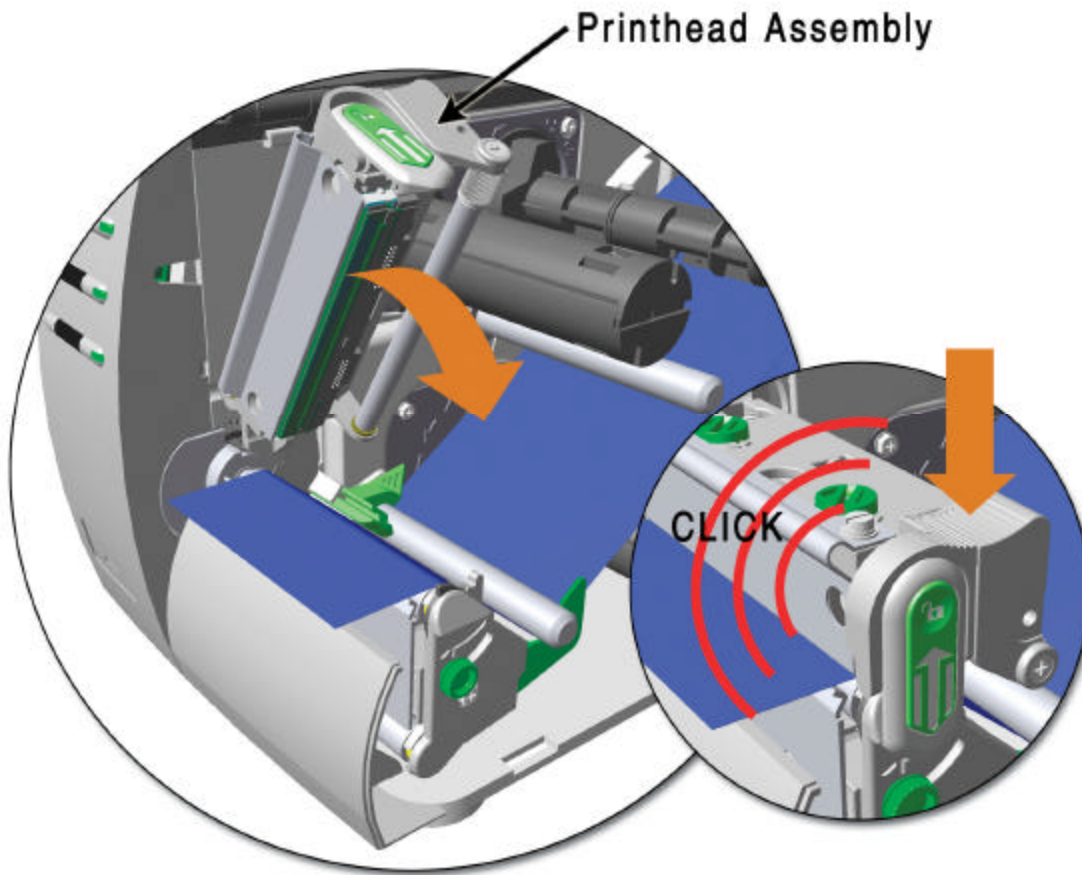
1. Open the media cover and lower the Media Hub Guide and Media Guide.
2. Press in on the Printhead Latch and raise the Printhead Assembly.





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 Calibration Procedure, 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 width of media/ribbon, please refer to section 6.2.

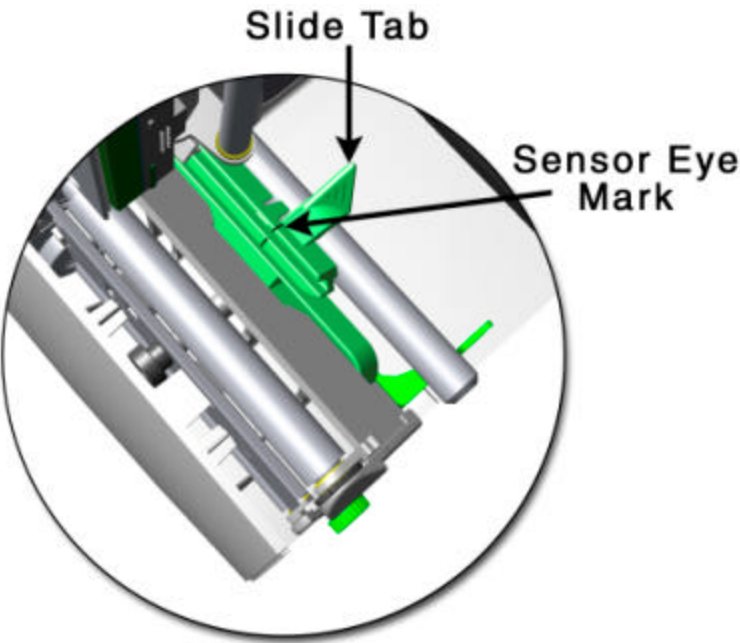
### 3.3 Media Sensor Adjustment

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:

- ✎✎ 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.
- ✎✎ If loading media, return to the media loading instructions.

<i>Media Sensor Selection and Adjustment</i>		
Media Type	Sensor Eye Mark Position	Sensing Required*
Die-cut	Near the middle of the label	Gap
Notched	Centered over the notch	Gap
Reflective	Centered over the black mark	Reflective
Continuous	Near the middle of the media	Continuous

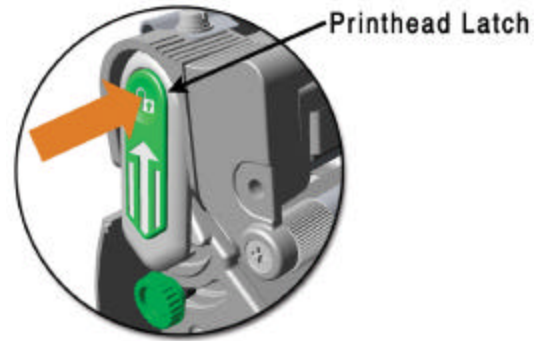


## 3.4 Loading Ribbon

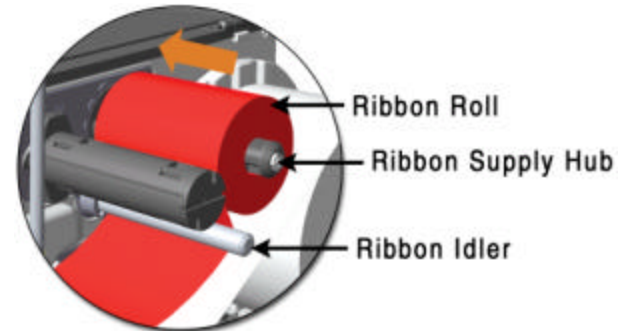
Ribbon is required with thermal transfer media. It is recommended that the width of the ribbon be slightly wider than the media being used. Depending upon the type of Ribbon Supply Hub (see 3.4.1 for examples), the printer must use either ribbons with the 'coating side in' or ribbons with the 'coating 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.*

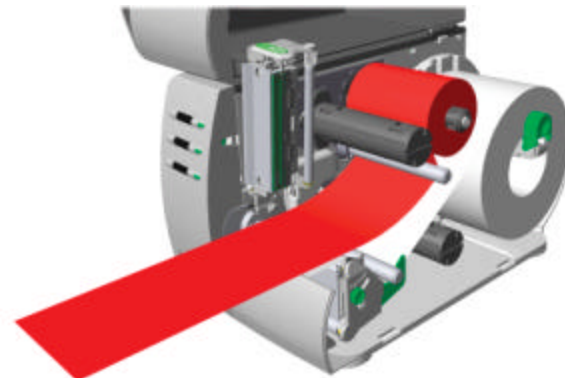
1. Open the media cover. Press in on the Printhead Latch and raise the printhead assembly.



2. Slide the Ribbon Roll onto the Ribbon Supply Hub until it rests against the hub's flange. Ensure the ribbon unwinds in the correct direction (see 3.4.1 for examples). Illustrations depict a 'Coated Side In' assembly.

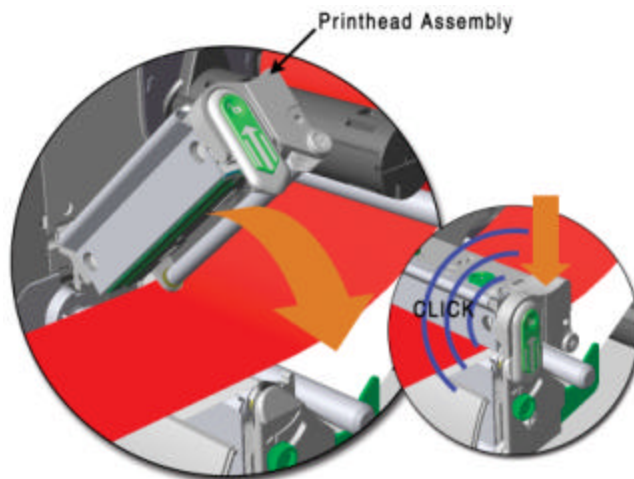


3. Route the ribbon under the Ribbon Idler and then out the front of the printer approximately 12 inches.

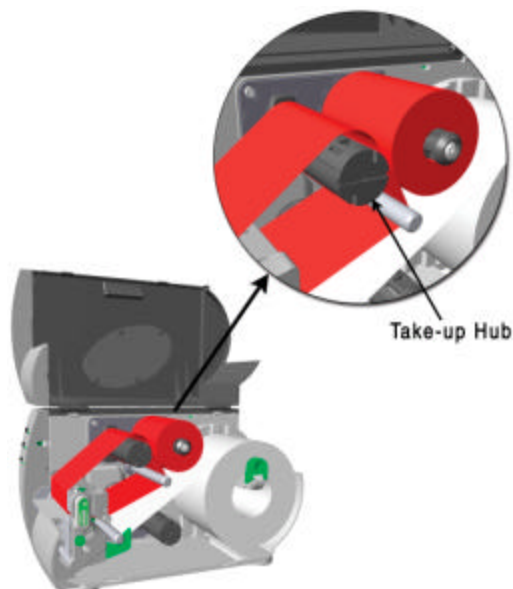





4. Close the Printhead Assembly and press down until it locks into place.



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.

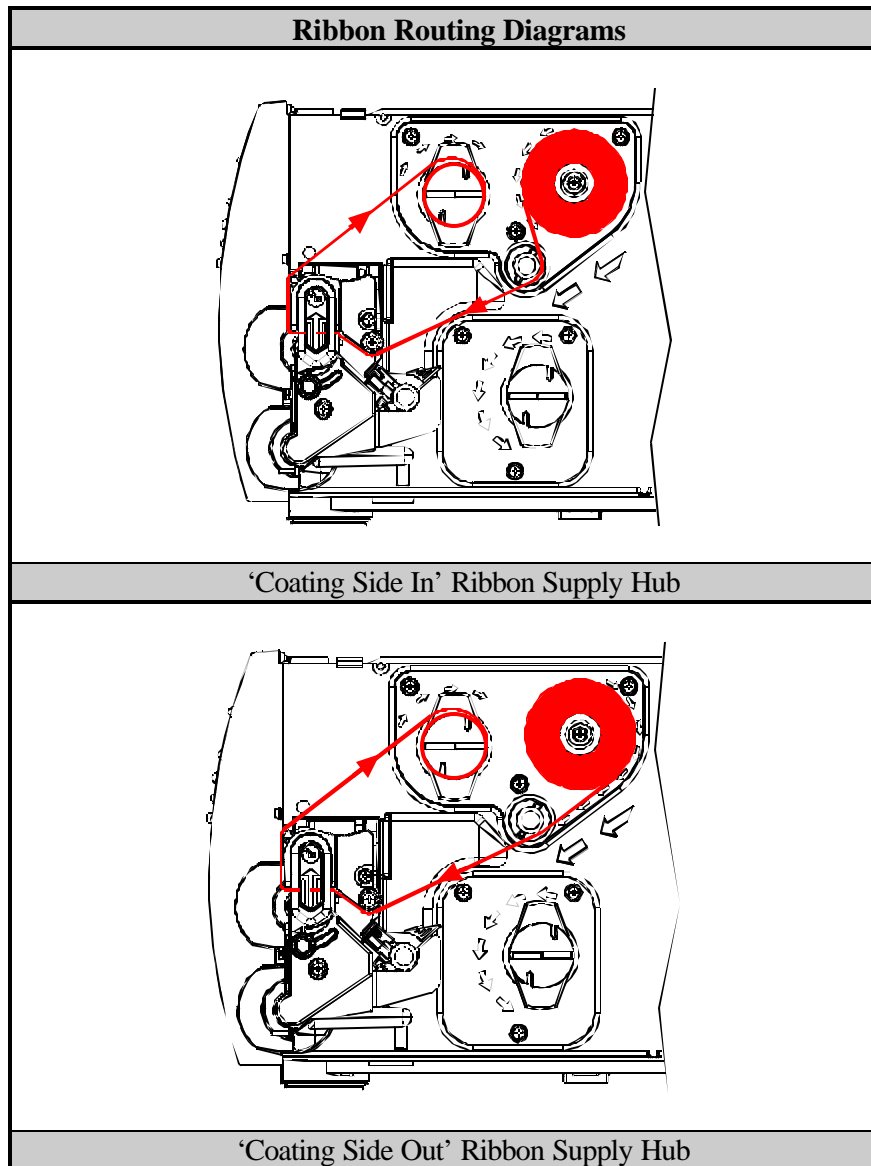


6. Close the cover and press the  FEED button several times to position the ribbon and ensure proper tracking.
7. The 'Media Type' setting within the printer's setup must be set to 'Thermal Transfer' to print using a ribbon;  
*Printers without front display:* See section 4.5.2  
*Printers with front display:* See section 5.1.2

### 3.4.1 Ribbon Routing (Coated Side In & 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)

### 4.0 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.



#### 4.01 DMXConfig

?

**DMXConfig** (located on the MR-class CD-ROM) is a windows based configuration utility that can simplify the printer setup process. This application allows the user to make changes to the existing printer setup without using the front panel buttons.

##### **DMXConfig Features:**

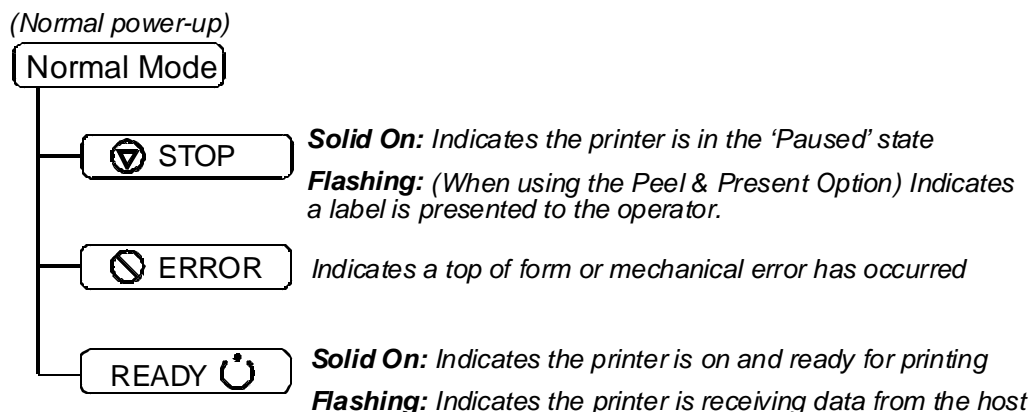
- ✍ Simplify Printer Setup Process
- ✍ Allows Real-Time Control/Query of Printer Configuration
- ✍ Define and Save Optimal Configurations for Applications i.e. Ribbon / Label Stock Combinations
- ✍ Saved Configurations can be Shared with other Printers and Sent via Email
- ✍ Download Files, Formats and Fonts
- ✍ Query Memory Modules



(sample screenshot)

## 4.1 Lights

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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.

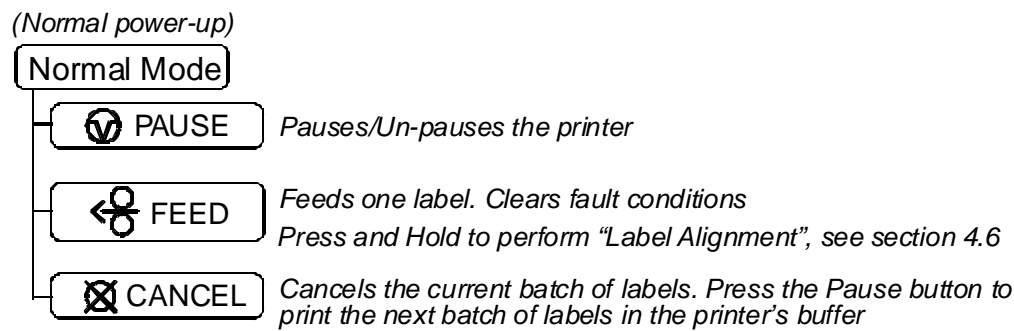
**Express Setup:** Allows quick access to the most common printer settings, (Sensor Type, Media Type, and Option Control. See Section 4.4.

**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.



**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 Dot Check Labels, see Section 4.8.1

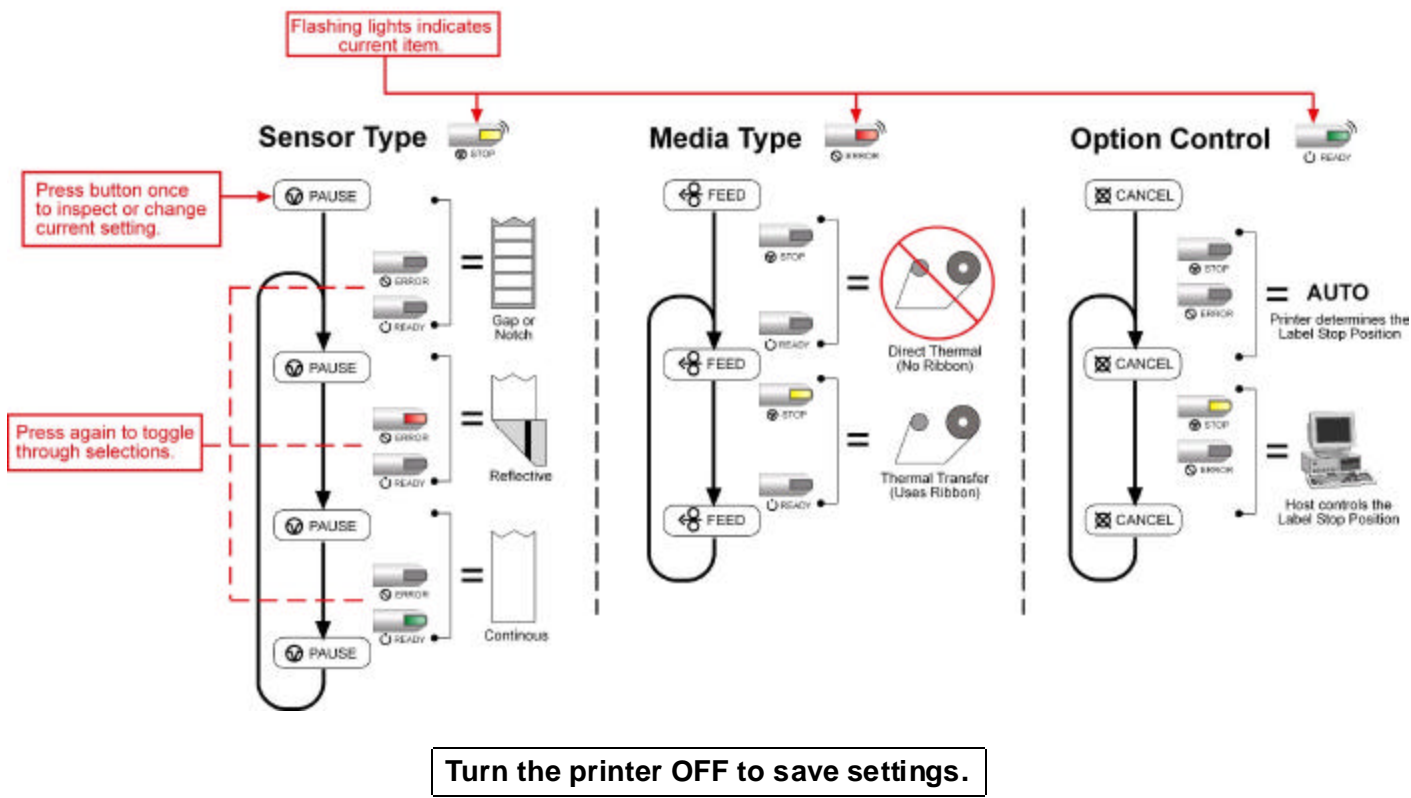
## 4.4 Express Setup Mode - Button Functions

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  &  buttons and turn the printer ON. 

Continue to hold the buttons, release when all lights flash, approx. 17 seconds

Use the    buttons for setup.



# 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.

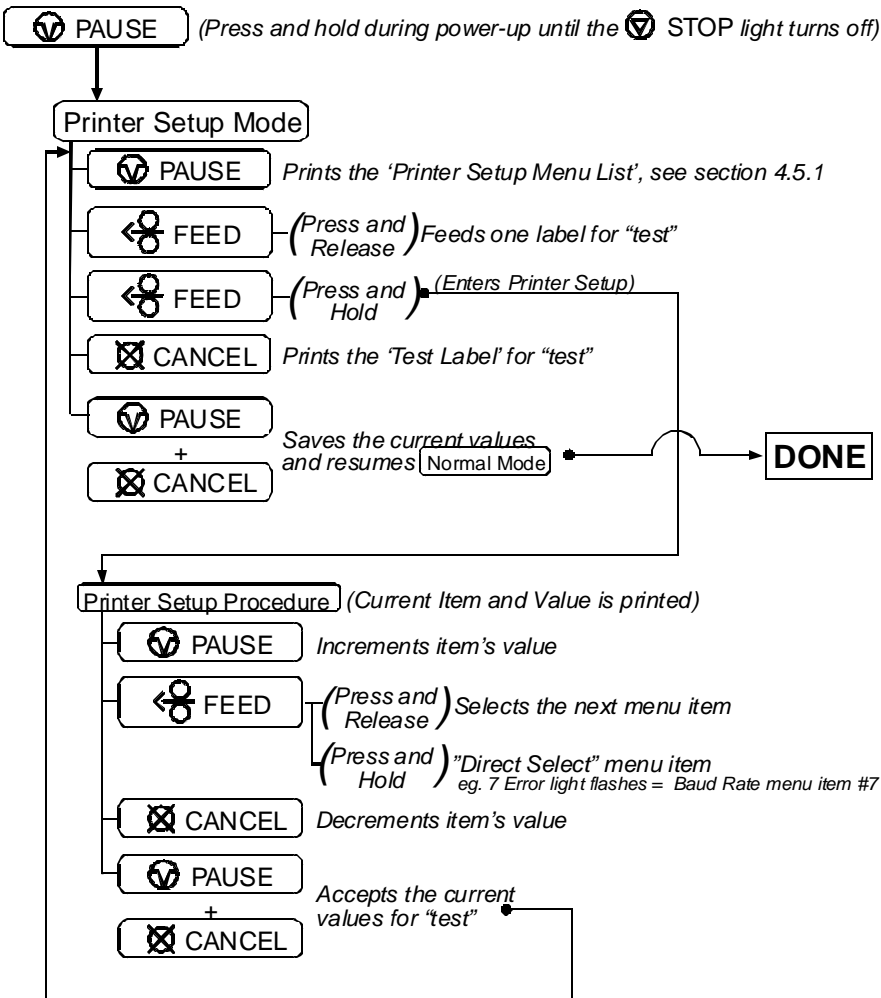
**Notes:** It is recommended that the Printer Setup Mode not be entered while in Peel Mode or with the optional Present Sensor enabled. Depending on label size this can cause unpredictable results.

Printer and cutter faults are disabled during Printer Setup Procedure, but can still occur while printing “test” labels.

If at any time you wish 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 "\*" denotes the default setting.

<b>1) MEDIA TYPE</b>  Sets printing for direct thermal (no ribbon) or thermal transfer (ribbon) media.  <i>Possible Values:</i> * DIRECT THERMAL THERMAL TRANSFER	<b>2) SENSOR TYPE</b>  Selects the sensor type used to detect the media's Top Of Form (TOF) mark.  <i>Possible Values:</i> * EDGE: gap / notch TOF marks REFL (Reflective): black marks CONT (Continuous): no TOF marks	<b>3) PRESENT SENSOR</b>  Enables/Disables the optional Present Sensor feature.  <i>Possible Values:</i> * AUTO NO YES
<b>4) CUTTER EQUIPPED</b>  Enables/Disables the optional Media Cutter feature.  <i>Possible Values:</i> * AUTO NO YES	<b>5) SOP ADJUST</b>  Sets the start of print (SOP) location, relative to the top of form.  <i>Possible Values:</i> Range: 0 – 255; nominal = *128 (0 = close to edge; 255 = farthest from edge)	<b>6) PRESENT ADJUST</b>  Specifies an additional amount to feed the label after printing.  <i>Possible Values:</i> Range: 0 – 255; nominal = *128 (0 = close to edge; 255 = farthest from edge)
<b>7) BAUD RATE</b>  Sets the serial port baud rate. (Must match the host setting).  <i>Possible Values:</i> 600 to 38.4k; default = *9600 BPS	<b>8) DATA BITS</b>  Sets the serial data word length (Must match the host setting).  <i>Possible Values:</i> * 8 7	<b>9) CONTROL CODES</b>  Allows code selection listed in Programmer's manual.  <i>Possible Values:</i> * (STD) Standard Codes (ALT) Alternate Codes
<b>10) CONT FORM LENGTH</b>  Sets the page (label) size when the 'SENSOR TYPE' is set to continuous media.  <i>Possible Values:</i> Range: 0 – 9999; default = *100 (Units = .01 inch)	<b>11) OOS MAXVOLT</b>  Sets the media sensor level for the Out Of Stock condition.  <i>Possible Values:</i> Range: 0 – 16; nominal = *2 (Units = .1 volt)	<b>12) TOF GAIN</b>  Sets media sensor Top of Form gain value.  <i>Possible Values:</i> Range: 0 – 15; nominal = *10

<p><b>13) TOF DELTA</b></p> <p>Sets the minimum media sensor change required to signify a label gap or mark.</p> <p><b>Possible Values:</b></p> <p>Range: 0 – 50; nominal = *10 (Units = .1 volt)</p>	<p><b>14) TOF LOW</b></p> <p>Sets the minimum media sensor reading for paper (gap/notch) or mark (reflective).</p> <p><b>Possible Values:</b></p> <p>Range: 0 – 50; nominal = *0 (Units = 0.1 volt)</p>	<p><b>15) LABEL WIDTH</b></p> <p>Sets the label width.</p> <p><b>Possible Values:</b></p> <p>Range: 75 – 426; default = *426 (Units = .01 inch)</p>
<p><b>16) SCALABLE FONT</b></p> <p>Sets the number of memory blocks to allocate for scalable fonts.</p> <p><b>Possible Values:</b></p> <p>Range: 0 – 128; default = *64 (Units = 4K Bytes)</p>	<p><b>17) INTERNAL MODULE</b></p> <p>Sets the number of memory blocks to allocate for the internal RAM module.</p> <p><b>Possible Values:</b></p> <p>Range: 0 – 128; default = *128 (Units = 4K Bytes)</p>	<p><b>18) LABEL ALIGNMENT</b></p> <p>Sets the label alignment method (<i>see Section 4.6</i>).</p> <p><b>Possible Values:</b></p> <p>YES (user manually determines 'ALIGN LENGTH')</p> <p>AUTO (printer determines 'ALIGN LENGTH')</p> <p>* NO (no Label Alignment used)</p>
<p><b>19) ALIGN LENGTH</b></p> <p>Leading edge distance of two successive labels. Must be entered if 'LABEL ALIGNMENT' is set to Yes (<i>see Section 4.6</i>).</p> <p><b>Possible Values:</b></p> <p>0 – 999; default = 100* (Units = .01 inch)</p>	<p><b>20) OPTION CONTROL</b></p> <p>Sets label stopping (and in certain cases the starting) location for different printer configurations.</p> <p><b>Possible Values:</b></p> <p>* 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.)</p> <p>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>	








<p><b>21) INPUT MODE</b></p> <p>Selects between the standard or template interpretation of incoming data.</p> <p><b>Possible Values:</b></p> <ul style="list-style-type: none"> <li>* DPL (printer constructs the label using the standard DPL commands)</li> <li>LINE (printer constructs the label using a preloaded template form)</li> </ul>	<p><b>22) DPL EMULATION</b></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><b>Possible Values:</b></p> <ul style="list-style-type: none"> <li>* STANDARD</li> <li>ALLEGRO (Allegro Emulation)</li> <li>P PLUS (Prodigy Plus Emulation)</li> <li>PRODIGY (Prodigy Emulation)</li> </ul>
<p><b>23) HEAT</b></p> <p>Controls the ‘burn-time’ of the printhead. This is the equivalent of Heat Setting on most label software programs.</p> <p><b>Possible Values:</b></p> <p>Range: 0 – 30; default = *10</p>	<p><b>24) EXACT TIME</b></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><b>Possible Values:</b></p> <p>YES or NO; default = *NO</p>
<p><b>25) GPIO</b></p> <p>Sets the printer’s option port to function for GPIO applications, (see Appendix F for more information).</p> <p><b>Possible Values:</b></p> <p>YES or NO; default = *NO</p>	<p><b>26) NO REPRINT</b></p> <p>When a fault conditions 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 <i>not</i> reprinted.</p> <p><b>Possible Values:</b></p> <p>YES or NO; default = *NO</p>

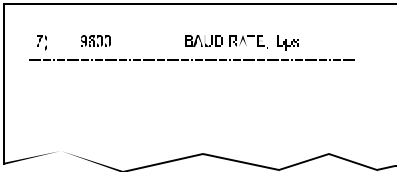
✍ **Note:** All of the menu items listed in the previous section are stored in non-volatile memory.


### 4.5.3 Step by Step Modification of the Printer Setup

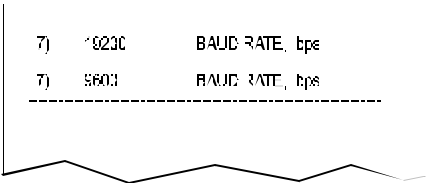
The following is an example of Printer Setup modification. Although this example will detail how to modify the serial Baud Rate, the same method can be used to change any of the printer's menu item settings.




 **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:








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



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 wish 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 16, 2003 21:41:31 323  
VER: M4206 - 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  
RIEN 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

# 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

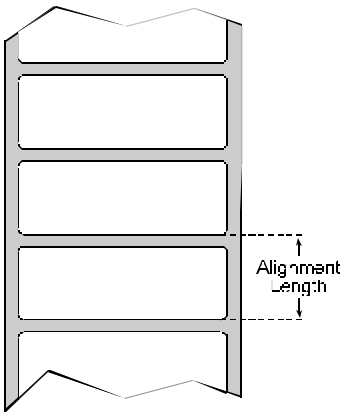
The Label Alignment function is chosen via the menu system (see Section 4.5) or by host commands. The three possible modes, YES, AUTO, and NO, are detailed in the following sections.


## 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).

### *Auto Alignment with the Present Sensor enabled:*






If the printer is equipped with the Present Sensor option and that feature is enabled, while the label length is calculated the printer will pause and illuminate the  STOP light after each movement. The operator must press the  PAUSE button for the alignment to continue. This allows the operator to remove any labels as required; however, labels should not be forcibly removed since they may not actually be positioned for removal, but at an interim position required for measurement.
















## 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
Attempting to perform Label Alignment results in no paper movement.	With the Present Sensor enabled, Label Alignment cannot be performed without a Label Length.	<p>⚡ Set Label Alignment to AUTO, press and hold  FEED until media moves for the automatic length measurement.</p> <p><b>~OR~</b></p> <p>⚡ 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>Alignment Length is too long.</p> <p><b>~OR~</b></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>	<p>⚡ Set Label Alignment to AUTO, press and hold  FEED until paper moves for automatic Label Alignment length measurement.</p> <p><b>~OR~</b></p> <p>⚡ Re-measure Label Alignment Length, use Menu Setup to set new length, ensure desired length has been set.</p> <p>⚡ 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.	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>⚡ Set Label Alignment to AUTO. Press and hold  FEED until paper moves for automatic Label Alignment Length measurement.</p> <p><b>~OR~</b></p> <p>⚡ 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>

Problem	Possible Cause	Solution
Label Alignment is incorrect. Pressing  FEED successively results in a label length longer than actual, one-inch.	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>  Set Label Alignment to AUTO. Press and hold  FEED until paper moves for automatic Label Alignment length measurement.</p> <p style="text-align: center;"><b>~OR~</b></p> <p>  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>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 style="text-align: center;"><b>~OR~</b></p> <p>The Present Adjust value is not correct.</p>	<p>  Disable the Present Sensor.</p> <p style="text-align: center;"><b>~OR~</b></p> <p>  Ensure the host computer is not providing a Present Distance shorter than is required for the Tear Bar.</p> <p> 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>Another present position has been determined.</p> <p style="text-align: center;"><b>~OR~</b></p> <p>The Present Adjust value is not correct.</p>	<p> Ensure the host computer is not providing a Present Distance longer than is required for the Tear Bar.</p> <p> Use the Setup Menu to modify the Present Adjust value.</p>
The  ERROR light illuminates during label alignment.	The label supply is empty	 Load media.

# 4.7 Calibration Mode – Button Functions

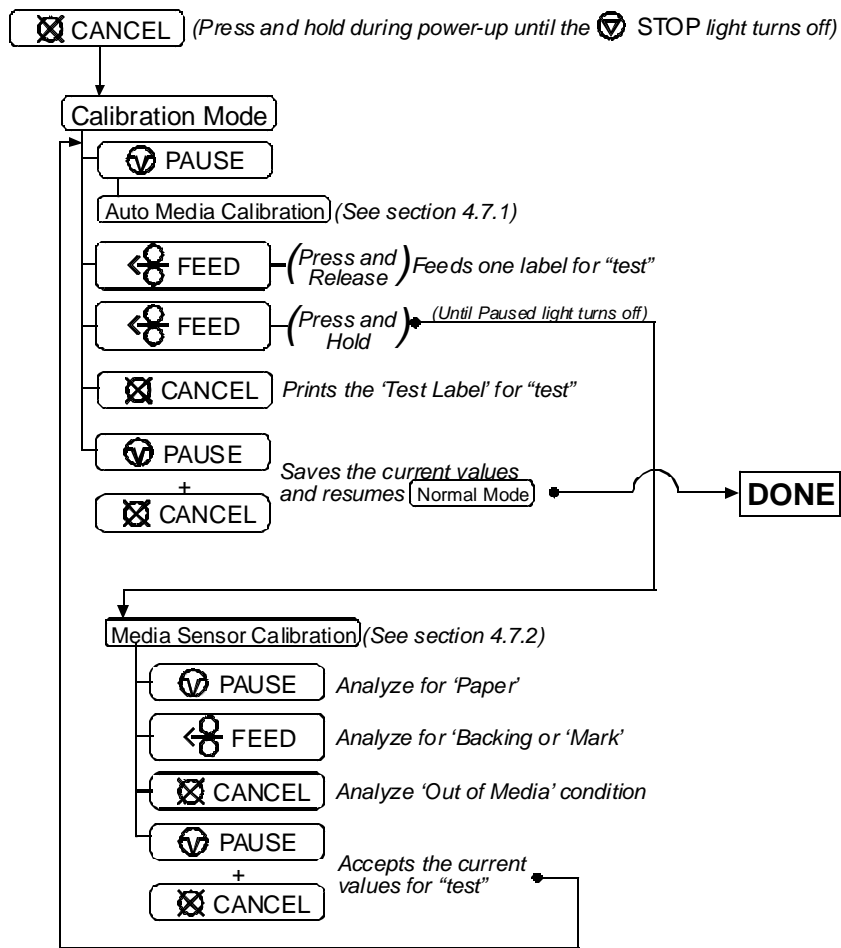
In ‘Calibration’ mode, the buttons allow the printer to adjust to the media being used. Calibration can be performed either automatically or manually, as detailed below.

**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, 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 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 or the black (reflective) mark 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:** If you wish to discard the changes and revert back to the previous calibration simply 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 Dot Check 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 Dot Check 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

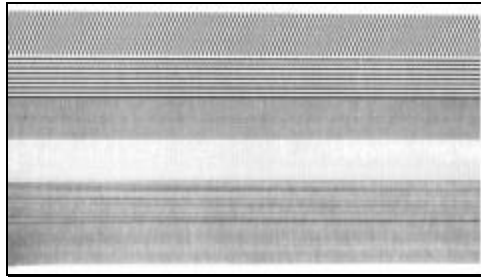
WED NOVEMBER 10, 2003 21:41:31 323	
VER: M4206 - 05.08 11/07/03	
BOOT 83-2383-05E	COUNTER INFORMATION
CODE 83-2385-05H	ABSOLUTE VALUES 7-16-2003
FPGA 83-2384-05B	LENGTH_____ 773 INCHES
FONT 83-2460-01C	TIME_____ 20 HOURS
UMOD 83-2472-01A	RESETTABLE VALUES 7-16-2003
256K FLASH MODULE B	LENGTH_____ 969 INCHES
SYSTEM FLASH SIZE_____2 MBYTES	TIME_____ 56 HOURS
SYSTEM RAM CHECKS_____ GOOD	
SYSTEM RAM SIZE_____ 4096 KBYTES	MEMORY CONFIGURATION
SYSTEM RAM AVAIL_____ 3180 KBYTES	INTERNAL MODULE A_____ 128
	SCALABLE FONTS_____ 64
AUTO DETECTION	LABEL SIZE 0426:10912 IN
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	
RIEN_____ 237	
TEMP_____ 64	

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

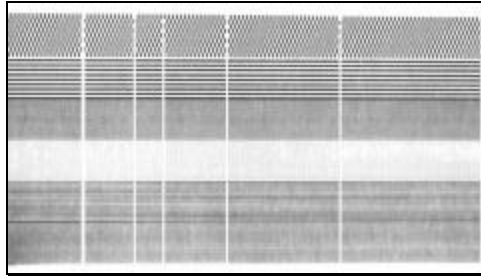
VOLT\_\_\_\_\_ 218  
PRESENT SENSOR\_\_\_\_\_ 0

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



**Good Dot Check Label:**

*Even pattern consistency indicates that the printhead is operating normally.*





**Faulty Dot Check Label:**

*Streaks in the patterns indicate a dirty or faulty printhead (see Section 6).*

## 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 (display printers)

## 5.0 Introduction

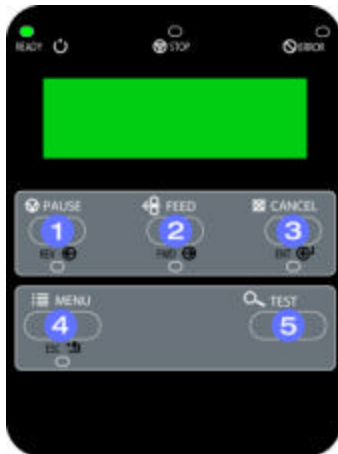
### Controlling Printer Settings with the Internal Printserver

If your printer is equipped with the optional Internal Printserver, 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.

#### 5.0.1 Ready Mode: Normal Operation (Ready Light 'On')



##### **PAUSE**

The PAUSE Key temporarily suspends printing. Pressing it again will return the printer to normal operation.

##### **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.

##### **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).

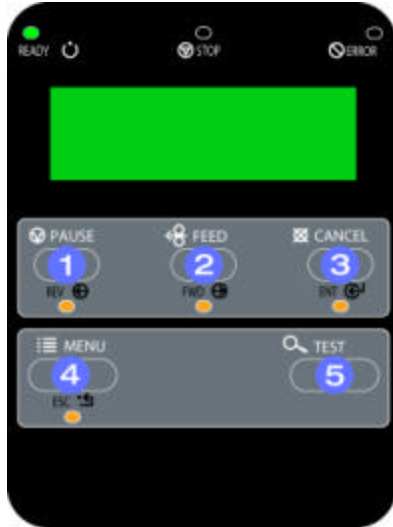
##### **MENU**

The MENU Key toggles between the Ready and Menu Modes. In the Ready Mode, pressing and holding four seconds will change the display contrast.

##### **TEST**

The TEST Key enters (or exits) the Quick Test Menu.

## 5.02 Menu Mode: Configuration (Ready Light 'Flashing')



### REV ⏮

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

### FWD ⏭

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

### ENT ↵

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

### ESC ↶

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

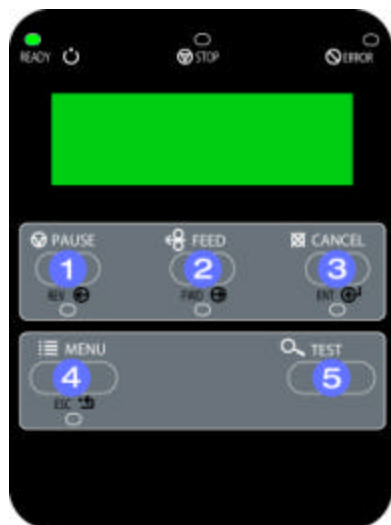
### TEST 🔍

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.



### 5.0.3 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.



✍ REV ⬇

The DOWN ARROW Key scrolls to the previous test function.

✍ FWD ⬆

The UP ARROW Key scrolls to the next test function.

✍ 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.

✍ ESC ↵

The ESCAPE Key will exit the Quick Test Mode without printing.

✍ ✍ 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).

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

# 5.0.4 Indicator Lights



## ✂️ **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.

## ✂️ **STOP**

‘On’ indicates a ‘Paused’ condition.

## ✂️ **ERROR**

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

# 5.0.5 LCD



## ✂️ **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.

# 5.1 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 will be 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. Consult the Class Series Programmer’s Manual for specific information.

## 5.1.1 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.

<b>MENU MODE</b>	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. <i>Default password is: 1 2 3 4</i>
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.
⚡ <b>Note:</b> If changes have been made that require a reset, the printer will automatically invoke that reset.	

## 5.1.2 Media Settings

<b>MEDIA TYPE</b>	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.
<b>SENSOR TYPE</b>	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 .
<b>LABEL LENGTH</b> ✎04.00in (0-99.99)	When the Sensor Type is set to Continuous, this value is used to determine the TOF.
<b>MAXIMUM LABEL LENGTH</b> ✎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.
<b>PAPER OUT DISTANCE</b> ✎00.25in (0-99.99)	Sets the length of travel before an out of stock condition is declared.
<b>LABEL WIDTH</b> 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.
<b>RIBBON LOW DIAMETER ?</b> ✎1.38 in (1.00-2.00)	Sets the threshold for a low ribbon indication.
<b>SENSOR CALIBRATION ?</b>	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.

<b>PRINthead CLEANING</b>	Controls the printhead cleaning routine.
CLEAN HEAD SCHEDULE <div> <div> 000 in. (* 1000) </div> </div>	<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> <div> <div> <i>Notes:</i> The default value (zero) disables this function. Also, the number specified is multiplied by one thousand. </div> </div>
CLEAN HEAD COUNTER <div> <div>0 in.</div> </div>	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> <div> <div> <i>Notes:</i>  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. </div> </div>







### 5.1.3 Print Control

<b>HEAT</b> ⚙10 (0-30)	Controls the 'burn-time' of the printhead. This is the equivalent of Heat Setting on most label software programs.
<b>PRINT SPEED</b> M-4206 > ⚙6 in/s (2-6) M-4208 > ⚙8 in/s (2-8) M-4306 > ⚙6 in/s (2-6)	Controls the rate of label movement during the printing process.
<b>FEED SPEED</b> M-4206 > ⚙6 in/s (2-6) M-4208 > ⚙8 in/s (2-8) M-4306 > ⚙6 in/s (2-6)	Controls the rate of label when the FEED Key is pressed.
<b>REVERSE SPEED</b> M-4206 > ⚙4 in/s (2-5) M-4208 > ⚙4 in/s (2-5) M-4306 > ⚙4 in/s (2-5)	Controls the rate of label movement during backup positioning for start of print, cutting or present distance.
<b>ROW OFFSET</b> ⚙00.00in (0-99.99)	Shifts the vertical start of print position. This is the user setting for row adjustment.
<b>COLUMN OFFSET</b> ⚙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.
<b>PRESENT DISTANCE</b> ⚙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.
<b>CUSTOM ADJUSTMENTS ?</b>	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.
<b>DARKNESS</b> ⚙32 (1-64)	Controls the printhead strobe time to fine-tune the HEAT setting.
<b>CONTRAST</b> ⚙32 (1-64)	It allows relative print edge (gray) adjustment for the print quality, which allows fine-tuning for specific media/ribbon mix.
<b>ROW ADJUST</b> ⚙000 DOTS (-100 -100)	Shifts the vertical start of print position in dots upward or downward to fine-tune the ROW OFFSET setting.
<b>COLUMN ADJUST</b> ⚙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.
<b>PRESENT ADJUST</b> ⚙064 DOTS (0-128)	Adjusts the label stopping position in dots to fine-tune the PRESENT DISTANCE setting.

## 5.1.4 Printer Options

<b>MODULES</b>		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.
<b>PRESENT SENSOR</b>		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 (1-255ms)	Time delay prior to moving label to next start of print
<b>CUTTER</b>		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.

### 5.1.5 System Settings

<b>CONFIGURATION FILE ?</b>		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. <div> <b>Note:</b> A currently activated file can not be deleted.</div>
	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.
<b>INTERNAL MODULE</b>  <b>1024 KB</b> (100-5120)		Sets the number of 1K blocks allocated for the internal RAM 'D' module.
<b>DEFAULT MODULE</b>  <b>D</b>		Sets the default module used to store files when no other module is specified. Available choices are G=FLASH memory or D=RAM memory
<b>SCALEABLE FONT CACHE</b>  <b>0312 KB</b> (100-5120)		Sets the number of 1K blocks allocated for the scaleable font engine. Available memory dependent upon model.
<b>SINGLE BYTE SYMBOLS</b>		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 <i>Class Series Programmer's Manual</i> for details.
<b>DOUBLE BYTE SYMBOLS</b>		When equipped with the ILPC option, this selects the code page used to print double byte fonts unless otherwise specified in DPL; see the <i>Class Series Programmer's Manual</i> .
	 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










<b>TIME AND DATE</b>	Allows the user to set the time and date.
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## System Settings (continued)

<b>MEDIA COUNTERS ?</b>	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.
<b>PRINT CONFIGURATION</b>	<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>
<b>CONFIGURATION LEVEL ?</b>	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> <ul style="list-style-type: none"> <li>vvv - represents the model number of the application loaded</li> <li>cwx - represents the hardware / software feature level, where: <ul style="list-style-type: none"> <li>- represents the printer class.</li> <li>v - represents hardware feature level of the main board.</li> <li>x - represents the software feature level: <ul style="list-style-type: none"> <li>10 = Standard DPL</li> <li>20 = Internal CG Times Font</li> </ul> </li> </ul> </li> <li>Software feature levels are accepted up to the ‘xx’ value (increases beyond this level require an authorization code).</li> <li>yyyyy - s a manufacturing date code</li> <li>zz - s a unique time stamp</li> </ul>
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. Meto authorization is required.
UNLOCK FEATURE	This function is used to unlock the additional optional features within the printer.

Meto authorization is required.

## System Settings (continued)

<b>SET FACTORY DEFAULTS</b>	Parameters in this menu listing with the ‘  ’ symbol are the designated defaults.
SET FACTORY DEFAULTS	<p>Overwrite the current settings with the factory default settings or, if selected, will restore the Factory Setting File.</p> <p> <b>Note:</b> 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.</p>
<b>FORMAT ATTRIBUTES</b>	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.)
<b>LABEL ROTATION ?</b>	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.
<b>IMAGING MODE ?</b>	<p>Instructs the printer whether to pre-image the label format.</p> <p> <b>Note:</b> This selection can affect the accuracy of time-stamped labels and label throughput.</p>
 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.
<b>PAUSE MODE</b>	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)

<b>PEEL MODE</b>		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.
<b>SECURITY ?</b>		Provides the user with the ability to password-protect all settings available through the User Interface. <b><i>Default password is: 1 2 3 4</i></b>
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 (these buttons will be shaded, indicating that security is enabled).
SECURE MENU		The Menu area will require a password before access is granted (the button will be shaded, indicating that security is enabled).
⌘DISABLED		All menu items are accessible without protection.
MODIFY PASSWORD		Modify the numeric password required to access the menu system when security is enabled.
<b>UNITS OF MEASURE</b>		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.
<b>INPUT MODE ?</b>		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)

<b>DPL EMULATION ?</b> (not available with M-4306)	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	<b><i>Allegro, Prodigy Plus, and Prodigy emulations enabled:</i></b> ??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). <b><i>Allegro Only:</i></b> ??The row position is calculated based on 194 DPI.
PRODIGY PLUS	
PRODIGY	
<b>COLUMN EMULATION ?</b> * Not available in M-4306	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)

<b>SOP EMULATION ?</b>	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 <sup>®</sup> printer.
220 (ALLEGRO)	Emulates the Allegro <sup>®</sup> printer.
250 (PRODIGY)	Emulates the Prodigy <sup>™</sup> printer.
⌘DISABLED	No emulation: natural start of print position. (System Commands <STX>O and <STX>f are ignored).
<b>BACK AFTER PRINT</b>	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.
<b>FONT EMULATION ?</b>	The selected font is substituted for all Meto 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	
<b>MENU LANGUAGE ?</b>	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).

## System Settings (continued)

<b>FAULT HANDLING?</b>	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"> <li>? If the Retry Count setting has not been exceeded, 'VOID' is printed on the label in process and reprinting occurs automatically;</li> <li>? 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,</li> <li>? If the CANCEL Key is pressed the operator now has the option of canceling the reprint:</li> </ul> <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> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>↗ <b>Note:</b> 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> </div>
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.



## 5.1.6 Communications

<b>SERIAL PORT A ?</b>		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
<b>PARALLEL PORT A?</b>		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)

<b>NIC ADAPTER?</b>		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.
<div>Not available when IP Discovery is enabled</div>	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	<p>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.</p> <div>⚡ <b>Note:</b> For faster NIC Adapter boot times, disable any discovery methods not used.</div>
⚡ ENABLED		<p>Default. Modifications to IP, Subnet Mask, or Gateway addresses will not be allowed.</p> <div><b>WARNING!</b> An IP Address assigned by a server has precedence over any static IP Address stored in the NIC Adapter.</div>
DISABLED		<p>Disables IP Discovery.</p> <div>⚡ <b>Note:</b> Select this option to ensure that any stored static IP is used by the NIC Adapter.</div>
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.
<b>HOST SETTINGS ?</b>		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).
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.)

## Communications (continued)

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 Meto 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.
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.

5.1.7 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).

### 5.1.8 MCL Options

<b>MCL AT POWER-UP ?</b>	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.
<b>START MCL ?</b>	MCL with be started after exiting from the menu.

# 5.2 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)

## 5.2.1 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)
<div>?</div> <div>??????????????</div>	The printer is trying to clear a fault condition.	Occurs when the FEED Key is pressed after the correction of a fault.
<div></div> <div>??????????????</div>	A media calibration is being performed.	The FEED Key was pressed and held.
<div>????????????????</div> <div>????????????????</div>	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.
<div>????????????????</div> <div>????????????????</div>	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.




<div><div></div><div>?????</div></div>	The printer is paused or offline.	The printer is in a paused condition.
--	-----------------------------------	---------------------------------------



User Prompts and Condition Messages <i>(continued)</i>		
Displayed Message	Description	Condition(s)
<div> <div></div> <div>?????</div> </div>	Ready Mode.	Normal operating mode. The printer is ready to receive and process label formats.
<div> <div></div> <div>????????????</div> </div>	A label is awaiting removal.	The Present Sensor option is enabled and a label blocks the sensor. Remove the label to continue printing.
<div> <div>?????</div> <div>????????????</div> </div>	Normal power-up and soft reset condition.	Follows the ‘SYSTEM RESET IN PROGRESS’ message after a reset or power-up.
<div> <div>????????????</div> <div>????????????</div> </div>	Normal power-up and soft reset condition.	Occurs when the user resets the printer via the host or Front Panel.
<div> <div></div> <div>????????????</div> </div>	The media calibration is not set.	Perform calibration; see Section 5.4.
<div> <div>????????????</div> <div>?????????</div> </div>	The print job is being processed.	Batch status indication, updated with each label printed.









## 5.3 Quick Test Mode

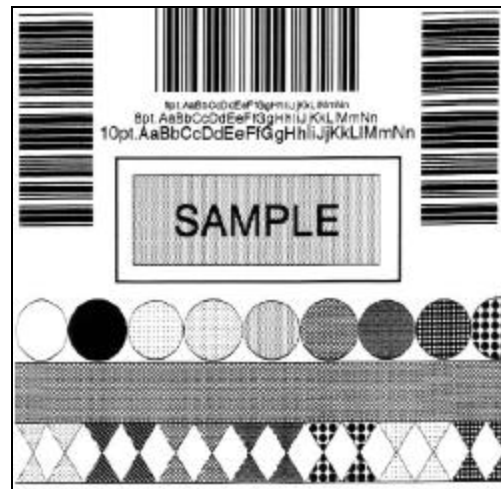
This section explains the functions of the resident Quick Tests, accessible by pressing the  **TEST** Key on the Front Panel.

-  **Notes:**
- (1) 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.
  - (2) During any Quick Test, press the  **TEST** Key or the **ESC**  Key to stop printing.
  - (3) Using the 'Print Test Rate' feature (Section 5.1.7), a time delay can be set for printing labels in Quick Test Mode.

### 5.3.1 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:


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




## 5.3.2 Configuration Label

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

To print a Configuration Label:

➤➤ Press the  **TEST** Key.

➤➤ Use the **FWD**  Key to scroll to ‘Print Configuration’.

➤➤ 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**  
FRI 09:38PM 21NOV2003  
PRINTER KEY:  
4208MD104309S-198  
APPLICATION VERSION:  
83-2407-08B 8.01 1/14/2004  
MCL Version: 1.03  
BOOT LOADER:  
83-2406-08B 08/01 01/14/2004

**SYSTEM INFORMATION**  
PRINT BUFFER SIZE:  
117 in.  
FLASH SIZE:  
2 MB  
RAM TEST:  
PASS  
OPTIONAL LANGUAGES:  
NONE  
CONFIGURATION FILE:  
NONE

**MEDIA SETTINGS**  
MEDIA TYPE  
RIBBON TRANSFER  
SENSOR TYPE  
GAP  
LABEL LENGTH  
04.00 in.  
MAXIMUM LABEL LENGTH  
16.00 in.  
PAPER/OUT DISTANCE  
00.25 in.  
LABEL WIDTH  
4.16 in.  
RIBBON LOW DIAMETER  
1.40 in.  
SENSOR CALIBRATION  
PAPER SENSOR LEVEL  
43  
GAP SENSOR LEVEL  
19  
TRANSFER SENSOR LEVEL  
7  
REFL PAPER LEVEL  
170  
MARK SENSOR LEVEL  
40  
REFL SENSOR LEVEL  
15  
EMPTY SENSOR LEVEL  
9  
CLEAN HEAD SCHEDULE  
000 in. (\*1000)  
CLEAN HEAD COUNTER  
0 in.

**PRINT CONTROL**  
HEAT  
10  
PRINT SPEED  
6.0 in/sec  
FEED SPEED  
6.0 in/sec  
REVERSE SPEED  
4.0 in/sec  
ROW OFFSET  
00.00 inches  
COLUMN OFFSET  
00.00 inches  
PRESENT DISTANCE  
0.00 inches  
CUSTOM ADJUSTMENTS:  
DARKNESS  
32  
CONTRAST  
32  
ROW ADJUST  
0 DOTS  
COLUMN ADJUST  
0 DOTS  
PRESENT ADJUST  
64 DOTS

**PRINTER OPTIONS**  
MODULES  
D: FORMATTED  
G: FORMATTED  
X: FORMATTED  
Y: FORMATTED  
PRESENT SENSOR:  
NOT INSTALLED  
CUTTER  
NOT INSTALLED

**SYSTEM SETTINGS**  
FACTORY SETTING FILE  
NONE  
INTERNAL MODULE  
1024 KB  
DEFAULT MODULE  
0  
SCALE LABEL FONT CACHE  
312 KB  
SINGLE BYTE SYMBOLS  
PC-850 MULTILINGUAL  
DOUBLE BYTE SYMBOLS  
UNICODE  
MEDIA COUNTERS:  
ABSOLUTE COUNTERS  
374 in.  
77MA Y2003  
RESETTABLE COUNTERS  
374 in.  
77MA Y2003

FORMAT ATTRIBUTES  
XOR  
LABEL ROTATION  
DISABLED  
IMAGING MODE  
MULTIPLE LABEL  
PAUSE MODE  
DISABLED  
PEEL MODE  
DISABLED  
SECURITY  
DISABLED  
UNITS OF MEASURE  
STANDARD  
INPUT MODE  
DPL  
DPL EMULATION  
STANDARD  
COLUMN EMULATION  
203 DOTS  
SOP EMULATION  
DISABLED  
BACK AFTER PRINT  
DISABLED  
FONT EMULATION  
STANDARD FONT S  
MENU LANGUAGE  
ENGLISH  
FAULT HANDLING:  
LEVEL  
STANDARD  
VOID DISTANCE  
0.50 in.  
RETRY COUNT  
1

**COMMUNICATIONS**  
SERIAL PORT A:  
BAUD RATE  
9600  
PROTOCOL  
BOTH  
PARITY  
NONE  
DATA BITS  
8  
STOP BITS  
1  
USB PORT  
NOT INSTALLED  
PARALLEL PORT A:  
PORT DIRECTION  
UNI-DIRECTIONAL  
NIC ADAPTER:  
MAC:00-06-70-00-00-09  
IP ADDRESS  
192.000.000.192  
SUBNET MASK  
000.000.000.000  
GATEWAY  
000.000.000.000  
SNMP TRAP DESTINATION  
000.000.000.000  
IP DISCOVERY  
ENABLED





HOST SETTINGS:  
HOST TIMEOUT  
10 sec  
CONTROL CODES  
STANDARD CODES  
FEEDBACK CHARACTERS  
DISABLED  
ESC SEQUENCES  
ENABLED  
HEAT COMMAND  
ENABLED  
SPEED COMMANDS  
ENABLED  
TOP SENSING COMMANDS  
ENABLED  
SYMBOL SET COMMAND  
ENABLED  
CONTROL CODES (DATA)  
ENABLED  
STX-V SW SETTINGS  
ENABLED

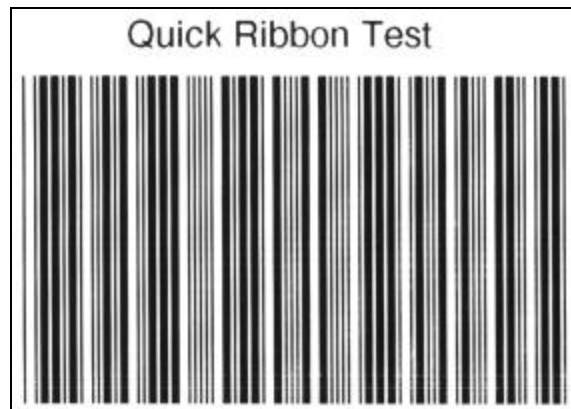
**DIAGNOSTICS**  
HEX DUMP MODE  
DISABLED  
PRINT TEST RATE(min)  
0  
SENSOR READINGS  
THR TRANS RIBB 24/  
19 134 011 171  
PS HD RANK  
000 244 000  
RIBBON SENSOR LIMITS  
RIBBON ADC LOW  
007  
RIBBON ADC HIGH  
232

**MCL OPTIONS**  
MCL AT POWER-UP  
DISABLED

### 5.3.3 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:

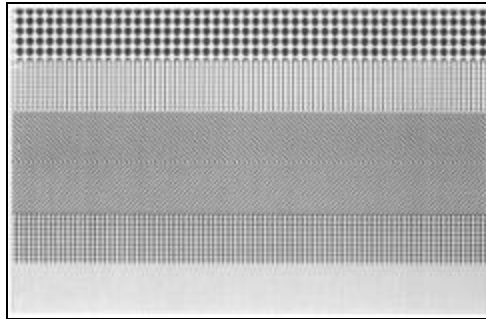
- ✎✎ Press the  **TEST** Key.
- ✎✎ Use the **FWD**  Key to scroll to 'Ribbon Test Label'.
- ✎✎ Use the **ENT**  Key to select a quantity; see Section 5.0.3.
- ✎✎ Press the  **TEST** Key to start printing.



### 5.3.4 Dot Test Pattern Label

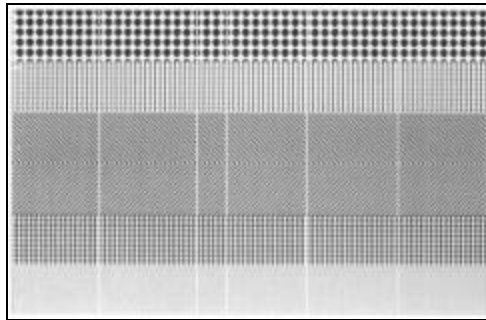
The Dot Test Pattern Label features patterns that exercise the thermal elements of the printhead to indicate its overall condition (see examples below). To print a Dot Test Pattern Label:

- ✎✎ Press the  TEST Key.
- ✎✎ Use the FWD  Key to scroll to 'Dot Test Pattern'.
- ✎✎ Use the ENT  Key to select a quantity; see Section 5.0.3.
- ✎✎ Press the  TEST Key to start printing.



**Good Test Pattern Label:**

*Even pattern consistency indicates correct printhead operation.*







**Faulty Test Pattern Label:**

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

### 5.3.5 Validation Label

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

- ✍✍ Press the  TEST Key.
- ✍✍ Use the FWD  Key to scroll to 'Validation Label'.
- ✍✍ Use the ENT  Key to select a quantity; see Section 5.0.3.
- ✍✍ Press the  TEST Key to start printing.



### 5.3.6 User Defined Label

The User Defined Label reprints the last format printed. The format can be any of the Quick Tests, a label from the host, or a label recalled from a memory module .

✍ **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 not reprint the previous label.*

## 5.4 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.


### 5.4.1 Quick Calibration



*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:

✍ ✍ 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.


✍ ✍ 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).

5.4.2 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.	<div>?</div> <div>???????????</div>	Wait until the printer initializes (about six seconds).
2	Press the  MENU Key.  Raise the printhead assembly.	<div>?????????</div> <div>???????????????</div> <div>?</div>	You are entering Menu Mode.
3	Press the ENT  Key to enter the Media Settings menu.	<div>???????????????</div> <div>???????????</div> <div>?</div>	See Section 5.1.2 for menu layout.
4	Press the FWD  Key and scroll to ‘Sensor Calibration’.	<div>???????????????</div> <div>???????????????????</div> <div>?</div>	Press the ESC  Key to abort this procedure.
5	Press the ENT  Key.	<div>???????????????????</div> <div>???????????????????</div>	You are beginning the standard calibration procedure.



6	Press the ENT  Key. Remove the media from the Media Sensor then press any key.	<div>?</div> <div>????????????????</div> <div>????????????????</div>	<div>This sets the parameter for the ‘empty’ value.</div> <div>Where ‘yyy’ is a numerical value representing the current sensor reading.</div>
---	--	--	--

Standard Calibration (continued)

Step	Operator Action	Displayed Message	Comment
7	<p>Proceed according to your media type:</p> <p><b>Die-cut stock:</b> 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><b>Notched stock:</b> adjust the Sensor Eye Mark over the center of the notch.</p> <p><b>Reflective stock:</b> Adjust the Sensor Eye Mark over the center of the facedown black mark.</p> <p><b>Continuous stock:</b> go to Step 8.</p> <p>Press any key to continue.</p>	<div>??????????</div> <div>????????????????????</div> <p>Or, for reflective media:</p> <div>?????????</div> <div>????????????????????</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> <p>⚠ <b>Note:</b> Never position the sensor over a perforation when recording a sensor reading.</p>
⚠ <b>Note:</b> Do NOT move the position of the Media Sensor after it has been adjusted.			
8	<p>Position the label (and backing, if any) under the Sensor Eye Mark.</p> <p>⚠ <b>Note:</b> If using preprinted media, ensure the label area under the sensor is free of preprinted text, graphics or borders.</p> <p>Press any key to continue.</p>	<div>??????????</div> <div>????????????????????</div>	<p>This sets the parameter for the ‘paper’ value.</p> <p>Where ‘yyy’ is a numerical value representing the current sensor reading.</p>

Standard Calibration (continued)

Step	Operator Action	Displayed Message	Comment
9	Observe the display.	<div>???????</div> <div>????????????????????</div> <div>Or, for reflective media:</div> <div>????????????????</div> <div>????????????????????</div> <div>Or, for continuous media:</div> <div>????????????????</div> <div>????????????????????</div>	<div>The calibration was successful.</div> <div>See note below if another message was displayed.</div>
10	<div>Exit upon successful calibration:</div> <div>Back out of the menu tree by repeatedly pressing the ESC➡ Key.</div> <div>If using gap or reflective media, press and hold the ⏮ FEED Key.</div> <div>The printer will begin advancing media; allow at least one label gap (or mark) to advance under the sensor.</div>	<div>?</div> <div>?????</div>	<div>The printer is now ready to begin printing.</div> <div>If this calibration was unsuccessful, go to Section 5.4.3.</div>

⚠ **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.

5.4.3 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.

?









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.	<div>?</div> <div>???????????</div> <div></div>	Wait until the printer initializes (about six seconds).
2	Press the  MENU Key.  Raise the printhead assembly.	<div>?????????</div> <div>???????????????</div> <div>?</div>	You are entering Menu Mode.
3	Press the ENT  Key to enter the Media Settings menu.	<div>???????????????</div> <div>???????????</div> <div>?</div>	See Section 5.1.2 for menu layout.
4	Press the FWD  Key and scroll to ‘Sensor Calibration’.	<div>???????????????</div> <div>???????????????????</div> <div>?</div>	Press the ESC  Key to abort this procedure.
5	Press the ENT  Key.	<div>???????????????????</div> <div></div>	You are entering the calibration submenu.

		<table><tr><td>????????????????</td></tr><tr><td></td></tr></table>	????????????????		
????????????????					

Advanced Entry Calibration (continued)

Step	Operator Action	Displayed Message	Comment
6	Press the FWD  Key to scroll to 'Advanced Entry'.	<div>????????????????</div> <div>????????????????</div>	You are entering Advanced Entry Calibration.
7	Press the ENT  Key.	<div>????????????????</div> <div>????????????????</div> <div>?</div>	Press the ESC  Key to abort this procedure.
8	Press the FWD  Key.	<div>????????????????</div> <div>????????????????</div> <div>?</div>	You are beginning the Advanced Entry Calibration.
9	Press the ENT  Key.  Place the label under the Sensor Eye Mark and lower the printhead assembly.	<div>????????????????</div> <div>????????????????</div> <div>-OR-</div> <div>????????????????</div> <div>????????????????</div>	If using preprinted media, ensure the label area under the sensor is free of preprinted text, graphics or borders.
10	Press the ENT  Key to select the setting (denoted by an ‘*’) and then record the sensor reading (the ‘yyy’ value) in a table similar to the one shown after Step 12, as a <b>Label Value</b> .  Next, press the FWD  Key to increment the Gain Number.  Repeat this step for each of the Gain Numbers (00-32).	<div>????????????????</div> <div>????????????????</div> <div>-OR-</div> <div>????????????????</div> <div>????????????????</div>	<div>Where ‘yyy’ is a numerical value representing the current sensor reading: useful in locating the best sensor position.</div> <div> <b>Note:</b> Never position the sensor over a perforation when recording a sensor reading.</div>

Advanced Entry Calibration (continued)

Step	Operator Action	Displayed Message	Comment
11	<p>Proceed according to your media type:</p> <p><b>Die-cut stock:</b> 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><b>Notched stock:</b> adjust the Sensor Eye Mark over the center of the notch.</p> <p><b>Reflective stock:</b> Adjust the Sensor Eye Mark over the center of the facedown black mark.</p> <p>Press the <b>ENT</b>  Key to select the setting and then record the sensor reading in a table similar to the one shown after Step 12, as a <b>TOF Value</b>.</p> <p>Next, press the <b>FWD</b>  Key to increment the Gain Number.</p> <p>Repeat for each of the Gain Numbers (00-32).</p>	<div>????????????????</div> <div>????????????????</div> <p><i>Or, for reflective media:</i></p> <div>????????????????</div> <div>????????????????</div>	<p>Where ‘yyy’ is a numerical value representing the current sensor reading: useful in locating the best sensor position.</p> <div>⚠ <b>Note:</b> Never position the sensor over a perforation when recording a sensor reading.</div>

⚠ **Note:** Do NOT move the position of the Media Sensor after it has been adjusted.

Advanced Entry Calibration (continued)








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 <b>Difference Values</b>.</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>????????????????????</div> <div>????????????</div> <p>Or, for reflective media:</p> <div>????????????????????</div> <div>????????????</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



Advanced Entry Calibration (continued)

Step	Operator Action	Displayed Message	Comment
13	Using the FWD  Key, select the Gain Number determined in Step 12. Press the ENT  Key to select the setting.	<div>????????????????????</div> <div>???????????</div> <div>Or, for reflective media:</div> <div>????????????????????</div> <div>???????????</div>	Selection is denoted with an ‘*’.
14	<div> Place the media in the Media Sensor. Record the sensor reading and label it ‘P’ (paper).</div> <div> Place the backing, mark, or notch in the Media Sensor. Record the sensor reading and label it ‘G’ or ‘M’ (Gap or Mark).</div> <div> Remove all media. Record the sensor reading and label it ‘E’ (Empty).</div>	<div>????????????????????</div> <div>???????????</div> <div>Or, for reflective media:</div> <div>????????????????????</div> <div>???????????</div>	Where ‘yyy’ is a numerical value representing the current sensor reading.
15	Press the ESC  Key. Then press the FWD  Key.	<div>???????????????</div> <div>???????????????</div>	The sensor readings must be manually entered into the printer now.

Advanced Entry Calibration (continued)

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' (or 'Mark') and 'Empty' levels.</p>	<div>????????????????</div> <div>????????????????</div> <div>↵</div> <div>????????????????</div> <div>????????????????</div> <div>↵</div> <div>????????????????</div> <div>????????????????</div> <div>Or, for reflective media:</div> <div>????????????????</div> <div>????????????????</div> <div>↵</div> <div>????????????????</div> <div>????????????????</div> <div>↵</div> <div>????????????????</div> <div>????????????????</div>	<p>The selection will flash and the display heading will change to indicate the item for entry.</p>
17	<p>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.</p>	<div>????????????????</div> <div>????????????????</div>	<p>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.

*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

## 6.0 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.



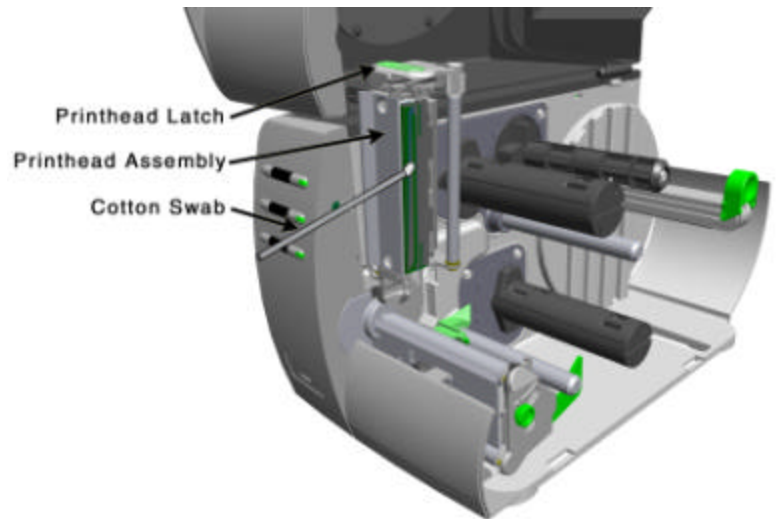
Isopropyl alcohol is a flammable solvent, always take the proper precautions when using this substance.

## 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 (*printers with display only*)

1. Remove media and ribbon.
2. Place a Meto Cleaning Card, part number 70-2013-01 under the printhead. Lower and lock the printhead. Ensure that the Leveling Cam is not engaged (positioned in its 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.

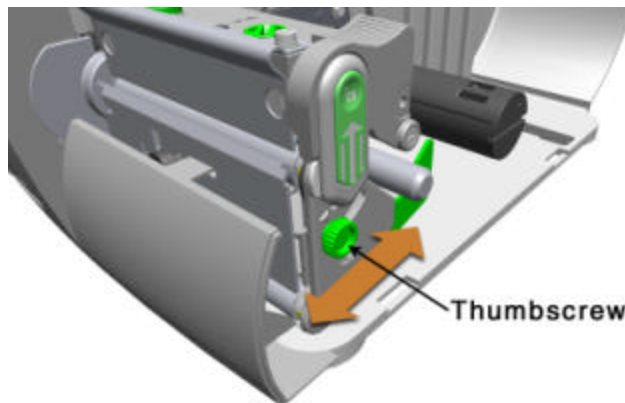
*Non-display printers:*

Press the  FEED +  CANCEL buttons simultaneously)

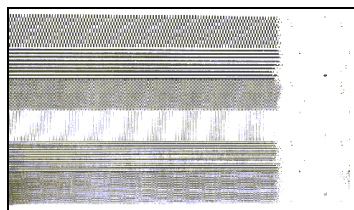
*Display printers:*

See Section 5.3.4

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.

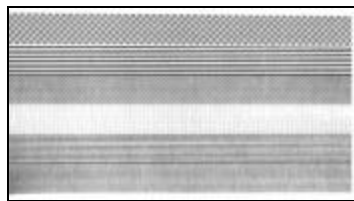


*When changing to a different width of label, readjust the Leveling Cam.*




*Example 1 – Over adjustment:*

*Too much adjustment produces an image that fades across the label. To correct this, move the Thumbscrew to the right.*



*Example 2 – Correct adjustment:*

*The proper adjustment produces a complete image with even print contrast across the label (see note below).*

 **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

The Burn Line has been adjusted at the factory for strict compliance using 6.5-mil (.0065 inch) media, ensuring print quality across a majority of media types. In extreme cases, however, if media of a different thickness or rigidity is used (for example, heavy tag stock), print quality can change. Typically, thicker media requires a slight forward adjustment, while thinner media requires a slight backward adjustment.

? *If you have questions, contact a qualified technician or Meto Technical Support before proceeding.*

To adjust the Burn Line:

1. Load the printer with your media (and ribbon, if required).
2. Loosen the two Locking Screws approximately ¼ turn counter-clockwise.
3. Turn the Adjustment Screws counter-clockwise until the burn line is past the platen roller vertex. Print a test label, the label should look light and uneven.


*Non-display printers:*

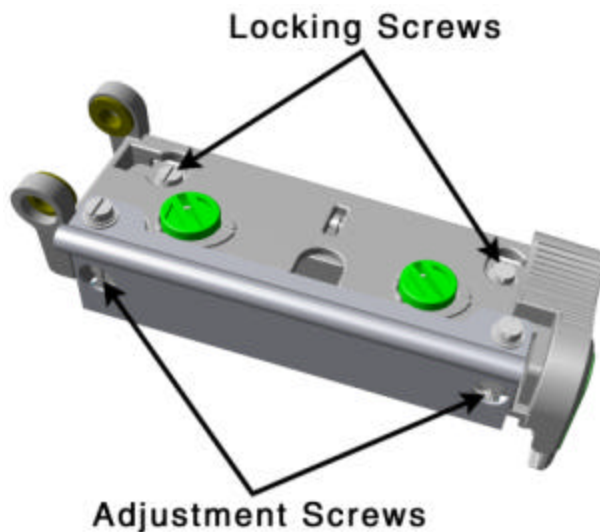
Press the  PAUSE +  FEED buttons simultaneously)

*Display printers:*

See Section 5.3.5

4. Tighten the Locking Screws just until they are 'snug' (tight enough to remove any play in the printhead assembly, yet loose enough to allow the Adjustment Screws to move the printhead).
5. Turn each Adjustment Screw clockwise about a ¼ turn (or an 1/8 turn for finer adjustments, see note below). Print another test label and examine the print quality. Repeat this step until the labels are produced with even print contrast and acceptable print quality are produced.

 **Note:** When the Locking Screws are 'snug', turning the Adjustment Screws counter-clockwise will NOT move the printhead outward; if you have adjusted the printhead too far inward, restart the entire procedure.



6. Tighten the Locking Screws. Print a final Test label to verify the adjustment.

## 6.4 Printhead Pressure Adjustment

To accommodate a variety of media types, the pressure applied by the printhead assembly is adjustable. This pressure is factory set to work with most media types, so this adjustment should only be performed after attempting to improve print quality through the use of the (1) heat and/or (2) print speed. When adjusting, use only the minimum pressure necessary for better imaging. To adjust:

1. Load at least 4" (102mm) wide media and ribbon, see Section 3.2.
2. Ensure the Media Width Adjustment is set to its "left most" position, see Section 6.2.
3. Print a 'Configuration/Dot Check' test label.

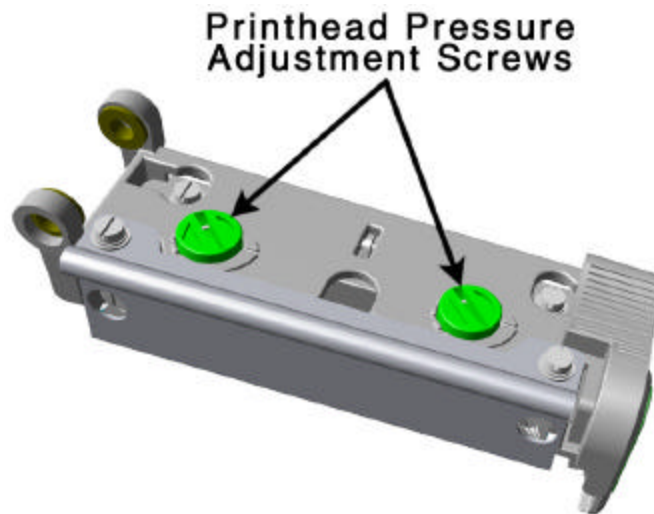
*Non-display printers:*


Press the  FEED +  CANCEL buttons simultaneously)


*Display printers:*

See Section 5.3.4

4. Turn the Printhead Pressure Adjustment Screws counterclockwise to increase the applied pressure or clockwise to decrease it. Make equal adjustments to each screw to achieve even print contrast across the media.



 **Note:** When using narrow media it is sometimes necessary to increase the pressure on the inner (closest to centerplate) Printhead Pressure Adjustment Screw to prevent ribbon smudging.

 **Note:** Excessive pressure can reduce the service life of the printhead and platen roller.  
Unequal pressure may cause ribbon and label tracking problems.

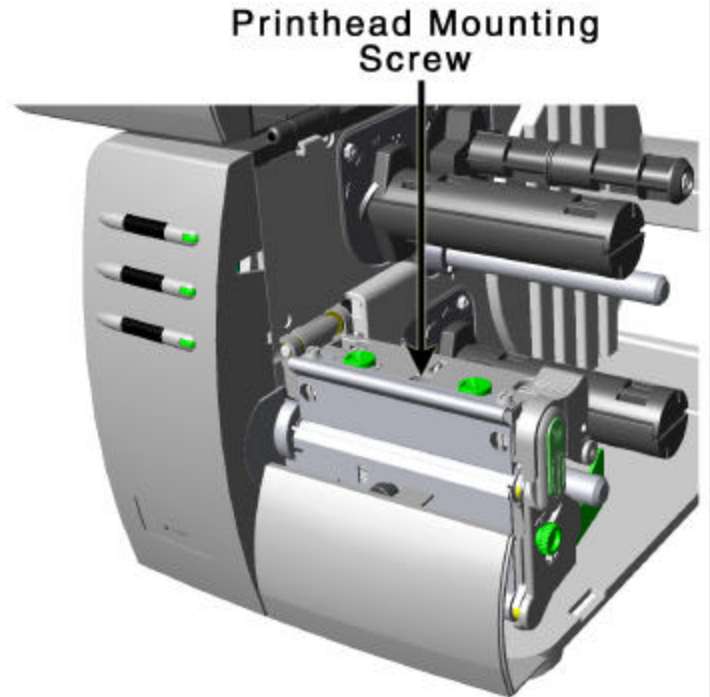


## 6.5 Printhead Replacement

### 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 Meto 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).

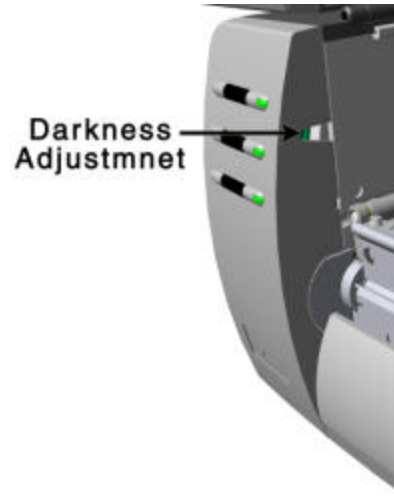


## 6.6 Darkness Adjustment *(non-display printers only)*

---

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.



## 6.7 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:

✍✍ Turn 'Off' the printer.

✍✍ 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:

✍✍ Turn 'Off' the printer.

✍✍ 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 can be found in Section 5.1.



## 6.8 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:

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<sup>®</sup> 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

## 7.0 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 Meto Technical Support.

If experiencing this problem...	Try this solution...
Can not 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.
Can not load media through the optional cutter:	<div><b>WARNING!</b> Use extreme care. Turn ‘Off’ and unplug the printer before proceeding.</div> 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; <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):	?? 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 <sup>2</sup> will not print:	Intellifont <sup>2</sup> format is Little/Big Endian specific. The printer uses Big Endian. Refer to your font supplier for information.
Light print on the right side (facing the printer) of the label:	??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.

If experiencing this problem...	Try this solution...
Missing information in the printed label:	<p>??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.</p> <p>??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</p> <p>??If using serial communications, ensure that the interface cable meets the requirements found in Section 3.1.2.</p>
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’):	<p>??Verify that the AC power cord connection has been made at both the outlet and the printer; also, ensure the power switch is ‘On’.</p> <p>??Verify that the AC outlet is functioning, or try moving the printer to another AC circuit.</p> <p>??The AC cord may be damaged; replace it.</p> <p>??The line fuse may be blown; call for service.</p>
Nothing is printing (labels advance normally, but no image is printed):	<p>Examine the used ribbon for an image:</p> <p><b>If there is an image on the used ribbon:</b></p> <p>??Verify that the ribbon was properly loaded per Section 3.4.</p> <p>??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.</p> <p><b>If there is no image on the used ribbon:</b></p> <p>??Print any Internal Test Label; <i>non-display printers</i> see Section 4.8, <i>display printers</i> see Section 5.3. If an image printed, then check the protocol and port settings for both the printer and host. These must match.</p> <p>??The heat setting may be too low. Make an adjustment in the software program or through the Front Panel.</p> <p>??The media/ribbon combination may be incorrect. Contact a Media Representative.</p> <p>??The printhead or printhead cable(s) may be loose; power ‘Off’ the printer then reconnect.</p>

If experiencing this problem...	Try this solution...
Nothing happens when trying to print using a software program:	<p>??Ensure that the printer is at READY.</p> <p>??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.</p> <p>??Ensure the interface cable meets the requirements found in Section 3.1.2.</p>
Poor print quality:	<p>??The printhead may need cleaning; see Section 6.1.</p> <p>??Adjust the Heat and Print Speed settings through the Front Panel or by host commands; <i>non-display printers</i> see Section 4.5.2, <i>display printers</i> see Section 5.1.3.</p> <p>??The media/ribbon combination may not be compatible; contact a Media Representative.</p> <p>??The Printhead Leveling Cam may be incorrectly adjusted; see Section 6.2.</p> <p>??The Platen Roller may be dirty or worn; clean or call for service.</p> <p>??The Printhead Burn Line may need adjusting; see Section 6.3.</p>
Skips labels when printing:	<p>??Media Calibration may be needed; <i>non-display printers</i> see Section 4.7, <i>display printers</i> see Section 5.4.</p> <p>??The Media Sensor may be out of position; readjust the position; see Section 3.3.</p> <p>??The format may be within 1/8 inch of the label's edge. Try reducing or moving the format slightly.</p>
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. See the <i>Class Series Programmer's Manual</i> for details.

# 7.1 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.

Printer Fault Messages		
Displayed Message	Description	Possible Solution(s)
<div> </div> <div>????????????????</div> <div> </div>	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.
<div> </div> <div>????????</div> <div> </div>	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.
<div> </div> <div>????????????</div> <div> </div>	The printer has detected a cutter mechanism fault.	<b>WARNING!</b> Use extreme care. Turn ‘Off’ and unplug the printer before proceeding.
<div> </div> <div> </div>		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.
<div> </div> <div>????????</div> <div> </div>	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.
<div> </div> <div>????????</div> <div> </div> <div>????????????????</div> <div> </div>	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.



<div>???????</div> <div>???????????</div>	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.
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Printer Fault Messages (continued)		
Displayed Message	Description	Possible Solution(s)
<div> <div></div> <div>???????????</div> </div>	The printer can not detect media.	Try the following: <ol style="list-style-type: none"> <li>1) Load media.</li> <li>2) Ensure that the labels are passing through the Media Sensor.</li> <li>3) Readjust the Media Sensor over the TOF mark; see Section 3.3.</li> <li>4) If using media with large gaps, adjust the Paper Out Distance; see Section 5.1.2.</li> <li>5) Calibrate the printer; see Section 5.4.</li> </ol>
<div> <div></div> <div>???????????????</div> </div>	Two possible causes: (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: (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.
<div> <div></div> <div>???????????????????</div> </div>	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.
<div> <div></div> <div>??????????</div> </div>	The system has detected a RAM failure.	Try cycling the printer power 'Off' and 'On'. If the fault does not clear, call for service.
<div> <div>???????????????????</div> <div>???????????????????</div> </div>	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.
<div> <div>???????????????????</div> <div>???????????????????</div> </div>	Try the following: 1) Ensure that ribbon is	

<p>Consistently high sensor readings were detected.</p> <p>Press any key to continue.</p> <p>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.</p> <p><b>Printer Fault Messages</b> <i>(continued)</i></p> <p><b>Displayed Message Description Possible Solution(s)</b></p> <p>????????????</p> <p>The ribbon sensor values have changed, or the printer detects no or only sporadic ribbon supply hub movement.</p>	<p>correctly loaded and that the printhead assembly is latched.</p> <ol style="list-style-type: none"> <li>2) Check the ribbon supply and ribbon take up hubs for obstructions that may be stopping movement.</li> <li>3) Ensure that the ribbon core fits snugly on the ribbon supply hub.</li> <li>4) Ensure that the media and paper combination is not slipping (usually caused by an incorrect match).</li> </ol>	
<div> <div></div> <div>????????????????</div> </div>	<p>The printer has shutdown to allow the printhead temperature to cool.</p>	<p>Turn ‘Off’ the printer until cool to prevent permanent damage due to an excessive printhead temperature.</p>
<div> <div></div> <div>????????????????</div> </div>	<p>The printer could not find the TOF mark within the maximum label length setting or it found a TOF in an</p>	<p><b>If media is moving:</b></p> <ol style="list-style-type: none"> <li>1) Press the FEED Key. It may be necessary to re-calibrate the printer; see Section 5.4.</li> </ol>

	<p>unexpected place.</p> <div data-bbox="418 142 777 267"><p>✍ <b>Note:</b> When the printer is set for reflective media, this fault is given for an out of stock condition.</p></div>	<ul style="list-style-type: none"><li>2) The Media Sensor may be out of position. Readjust it; see Section 3.3.</li><li>3) The media may not be properly loaded. Reload media, also ensure that the Media Guide is positioned properly; see Section 3.2.</li><li>4) The Leveling Cam may be improperly adjusted; see Section 6.2.</li><li>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.</li><li>6) The Media Sensor may be obstructed. Check and carefully remove any obstruction (labels, paper dust, adhesive, etc).</li></ul> <p><b>If media is not moving:</b></p> <p>The printhead assembly may not be latched; close it.</p>
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**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)
<div> </div> <div> </div> <div> </div>	The printer has detected defective printhead elements.	Replace the printhead if the print quality becomes unacceptable.
<div> </div> <div> </div> <div> </div>	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.
<div> </div> <div> </div> <div> </div>	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.
<div> </div> <div> </div> <div> </div>	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 (in DPL), or to discard changes perform a Soft Reset; see Section 6.7.
<div> </div> <div> </div> <div> </div>	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.
<div> </div> <div> </div> <div> </div>	The printer was unable to save settings in permanent memory.	Possible faulty Main PCB. If the condition persists, call for service.
<div> </div> <div> </div> <div> </div>	A high printhead temperature has been detected.	No action required. Printing will resume after the printhead cools.

# 7.2 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). To decode this information, the *Class Series Programmer's Manual* is an essential reference. 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.

## Non-display printers:

### To print the Hex Dump Label:

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 the printer on. 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 simply turn the printer off and then back on.

## Display printers:

### To print the Hex Dump Label:

To begin, go to the Diagnostics menu and enable Hex Dump Mode; see Section 5.1.7. Exit the menu and save the changes. Now, '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.

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 Meto Technical Support with any questions.

0000	02	4C	0D	44	31	31	00	31	^L D11.1
0006	36	31	31	30	30	30	30	33	61100003
0010	32	30	30	30	31	30	46	4F	200010FO
0016	4E	54	20	36	3A	20	41	4C	NT 6: AL
0020	4C	20	56	41	4C	49	44	20	L VALID
0026	20	20	20	20	20	20	20	20	
0030	20	20	20	20	31	36	31	31	1611
0036	30	30	30	30	32	30	30	30	00002800
0040	30	31	30	20	20	20	20	20	010
0046	20	20	20	43	40	41	52	41	CHARA
0050	43	54	45	52	53	3A	0D	31	CTERS: 1
0056	36	31	31	30	30	30	30	32	61100002
0060	34	30	30	30	31	30	23	24	400010#\$
0066	25	26	20	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	90 – 132 or 180 – 264 VAC @ 47–63 Hz, auto-ranging.

## Printing

Print Method	Direct Thermal; Thermal Transfer (optional)
Print Speed	2 - 6 IPS (50 - 152 mm/s) <i>M-4206 and M-4306</i> 2 - 8 IPS (50 - 203 mm/s) <i>M-4208</i>
Resolution	203 dpi (8 dots/mm) <i>M-4206 and M-4208</i> 300 dpi (11.8 dots/mm) <i>M-4306</i>
Tear Bar	Tear Down
DRAM Memory	4MB <i>M-4206</i> 8MB <i>M-4208 and M-4306</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) <i>M-4206</i> & <i>M-4208</i> 4.16" (106 mm) <i>M-4306</i>
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

<i>Non-display printers</i>	<i>Display Printers</i>
 9 Bit Map Fonts; rotated 0, 90, 180, 270 degrees.  10 smooth bitmap fonts 6pt – 48pt	 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

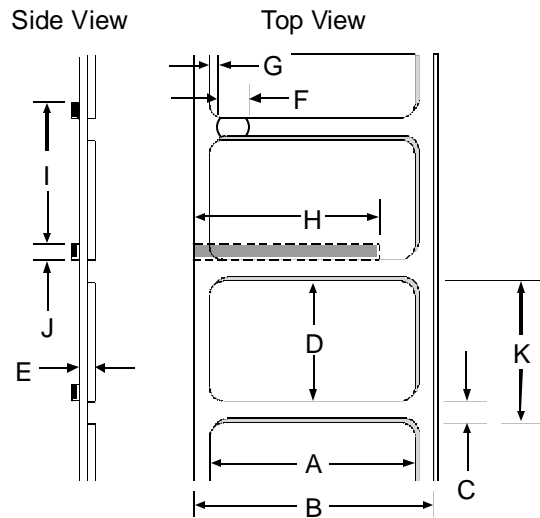
Code 39, Interleaved 2 of 5, Code 128 A, B & C, Codabar, LOGMARS, UPC-A, UPC-E, UPC 2&5, EAN-8, EAN-13, EAN 2&5, UPC Random Weight, Code 93, Plessey, USCS, Code 128 MOD 43, Postnet, Uss/EAN-128 Random Weight, Telepen, UPS Maxicode, PDF417, DataMatrix, Aztec, QR Code, MicroPDF417, and TLC39



# Approved Media

To achieve optimum print quality and maximum printhead life, Meto specifies the use of *METO*<sup>?</sup> brand media and ribbons. These supplies are specially formulated for use in our printers; use of non-Meto 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 Media Representative at (407) 523-5650.



Media Dimensions			
Designator	Description	Maximum <sup>[1]</sup>	Minimum <sup>[1]</sup>
A	label width	4.65	1.00
B	liner width	4.65	1.00
C	gap (or notch) between labels <sup>[3]</sup>	.25	.100
D	label length <sup>[3]</sup>	–	.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 (black) mark width <sup>[2]</sup>	4.65	.500
I	distance between reflective marks <sup>[3]</sup>	–	.500
J	reflective mark length <sup>[3]</sup>	–	.100
K	label repeat distance <sup>[3]</sup>	–	.350

<sup>[1]</sup> Units of measure given in inches.

<sup>[2]</sup> The reflective (black) mark must be carbon based, placed on the backside of the stock, and the reflectance shall be less than 10% at wavelengths of 950 and 640 nm.

<sup>[3]</sup> The maximum allowable length of the combined label and gap (or mark) measurement can not exceed 99.99 inches.



# Appendix A

## ASCII Control Code Chart

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	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

Ch ar	Dec	Hex	Char	Dec	Hex	Char	Dec	Hex	Char	Dec	Hex
Ç	128	80	á	160	A0		192	C0	Ó	224	E0
ü	129	81	í	161	A1		193	C1	ß	225	E1
é	130	82	ó	162	A2		194	C2	Ô	226	E2
â	131	83	ú	163	A3		195	C3	Õ	227	E3
ä	132	84	ñ	164	A4		196	C4	ö	228	E4
à	133	85	Ñ	165	A5		197	C5	Û	229	E5
â	134	86	ª	166	A6	ã	198	C6	µ	230	E6
ç	135	87	º	167	A7	Ã	199	C7	¶	231	E7
ê	136	88	¿	168	A8		200	C8	¸	232	E8
è	137	89	®	169	A9		201	C9	Ù	233	E9
è	138	8A		170	AA		202	CA	Ú	234	EA
ï	139	8B	1/2	171	AB		203	CB	Û	235	EB
î	140	8C	1/4	172	AC		204	CC	ý	236	EC
ì	141	8D	¡	173	AD		205	CD	ÿ	237	ED
Ä	142	8E		174	AE		206	CE		238	EE
Å	143	8F	–	175	AF		207	CF		239	EF
É	144	90		176	B0	Ò	208	D0		240	F0
Æ	145	91		177	B1	Ɔ	209	D1	±	241	F1
Æ	146	92	²	178	B2	Ê	210	D2		242	F2
ô	147	93	³	179	B3	Ë	211	D3	¾	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	Â	182	B6	Í	214	D6	÷	246	F6
ù	151	97	À	183	B7	Î	215	D7	¸	247	F7
ÿ	152	98	©	184	B8	Ï	216	D8	°	248	F8
Ö	153	99	¹	185	B9		217	D9	²	249	F9
Ü	154	9A		186	BA		218	DA	³	250	FA
Ø	155	9B	»	187	BB		219	DB		251	FB
£	156	9C		188	BC		220	DC		252	FC
Ø	157	9D	¢	189	BD		221	DD		253	FD
x	158	9E	¥	190	BE	Ì	222	DE		254	FE
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 Meto standard for resident bit-mapped fonts 0,1,2,3,4,5,6, and 9 (CG Triumvirate).



# Appendix B

## Embedded Fonts and Barcodes

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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.

### 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	
9	32-126, 128-169, 171-173, 181-184, 189, 190, 198, 199, 208-216, 222, 224-237, 241, 243, 246-250,255	Smooth Font
*9	Dependent upon selected symbol set; see the Programmers Manual.	Downloadable Scalable Font

*\* Not available on non-display printers*

The table below lists the font sizes. The numbers indicate the number of dots.

FONT	HEIGHT	WIDTH	SPACING
Font 0	7	5	1
Font 1	13	7	2
Font 2	18	10	2
Font 3	27	14	2
Font 4	36	18	3
Font 5	52	18	3
Font 6	64	32	4
Font 7	32	15	5
Font 8	28	15	5

**Font 0** 96-character alphanumeric, upper and lower case.

Font 0  
!"#\$%&'()\*+,-./0123456789:;<=>?@  
ABCDEFGHIJKLMN  
OPQRSTUVWXYZ[\]^\_`  
abcdefghijklmnopqrstuvwxyz  
PQRSTUVWXYZ{;}~

**Font 1** 145-character upper and lower case alphanumeric w/ descenders and ascenders.

Font 1:  
!"#\$%&'()\*+,-./0123456789:;<=>?@  
ABCDEFGHIJKLMN  
OPQRSTUVWXYZ[\]^\_`  
abcdefghijklmnopqrstuvwxyz  
CueaaaaaCeeei i iAAE#f.ooo  
uuY0U0ef0xfaiouaN@a0%kB

**Font 2** 138-character alphanumeric, upper and lower case.

Font 2:  
!"#\$%&'()\*+,-./0123456789:;<=>?@  
ABCDEFGHIJKLMN  
OPQRSTUVWXYZ[\]^\_`  
abcdefghijklmnopqrstuvwxyz  
CueaaaaaCeeei i iAAE#f.ooo  
uuY0U0ef0xfaiouaN@a0%kB

**Font 3** 62-character alphanumeric, uppercase.

FONT 3:  
!"#\$%&'()\*+,-./0123456789:  
ABCDEFGHIJKLMN  
OPQRSTUVWXYZ  
CAAE0Uf0NzB

**Font 4** 62-character  
alphanumeric, uppercase.

FONT 4:  
#\$/&()\*+,-./0123456789:  
ABCDEFGHIJKLMNOPQRSTUVWXYZ  
ÇÀÆÖÜ£ØÑ¿ß

**Font 5** 62-character  
alphanumeric, uppercase.

FONT 5:  
#\$/&()\*+,-./0123456769:  
ABCDEFGHIJKLMNOPQRSTUVWXYZ  
ÇÀÆÖÜ£ØÑ¿ß

**Font 6** 62-character alphanumeric, uppercase.

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

**Font 7** OCR-A, size I.

**Font 8** OCR-B, size III.

Font 7:

! " # \$ % & ' ( ) \* + , - . /  
0 1 2 3 4 5 6 7 8 9 : ; < = > ? @  
A B C D E F G H I J K L M N O  
P Q R S T U V W X Y Z [ \ ] ^ \_ `   
a b c d e f g h i j k l m n o  
p q r s t u v w x y z { | } ~

Font 8:

0 1 2 3 4 5 6 7 8 9  
< > C E N S T X Z I

**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 ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz  
14 pt ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz  
18 pt ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz  
24 pt ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz  
30 pt ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz  
36 pt ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz  
48 pt ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz

## 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 3 of 9	Varies	No	32, 36, 37, 42, 43, 45-57, 65-90
B / b	UPC-A	11	Yes	48-57 Numeric only Option V used in the 6th & 7th position
C / c	UPC-E	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	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	I 2 of 5 with modulo 10 checksum & bearer bars	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	UCC/EAN Code 128	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 Code 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

Continued...

Barcode ID	Type	Length	Check-sum	Valid ASCII Characters, decimal value representation
*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 3 of 9



**Barcode B** UPC-A



**Barcode C** UPC-E



**Barcode D** Interleaved 2 of 5



**Barcode E** Code 128



**Barcode F** EAN-13



**Barcode G** EAN-8



**Barcode H** Health Industry  
Barcode (HIBC)



**Barcode I** Codabar



**Barcode J** Interleaved 2 of 5  
w/module 10 checksum



**Barcode K** Plessey



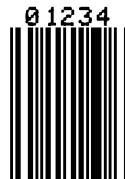
**Barcode L** Interleaved 2 of 5  
w/module 10 checksum and  
shipping bearer bars



**Barcode M** 2 Digit UPC  
addendum



**Barcode N** 5 Digit UPC  
addendum



**Barcode O** Code 93

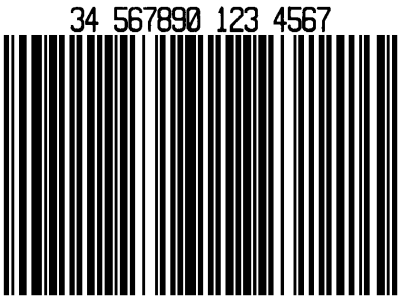


**Barcode p** Postnet

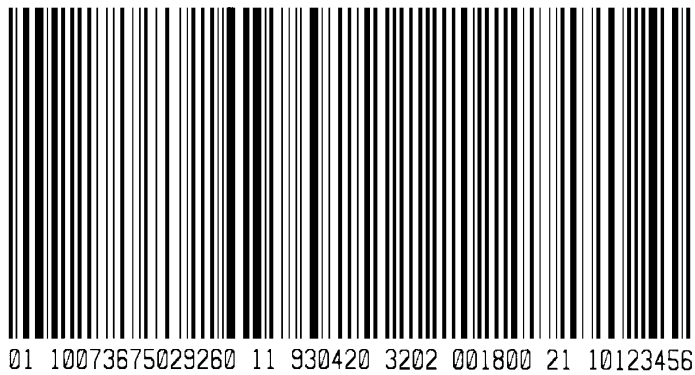


**Barcode Q** UCC/EAN Code  
128

**Barcode R** UCC/EAN Code  
128  
KMART NON EDI



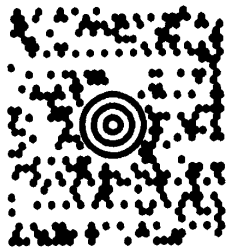
**Barcode S** UCC/EAN Code 128 Random Weight



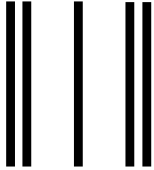
**Barcode T** Telepen



**Barcode u** UPS MaxiCode



**Barcode v FIM**



**Barcode z PDF417**



**Bar Code W1c: DataMatrix**



**Bar Code W1d: QR Code**



**Bar Code W1f: Aztec**



**Bar Code W1g: USD-8 (Code 11)**



**Bar Code WI: EAN128**  
(Code 128 with Auto Subset Switching  
between B/C)



**Bar Code WJ: Code 128 Auto**



**Bar Code W1k: RSS**  
(Reduced Space Symbology)



**Bar Code W1z: MicroPDF417**



**Bar Code W1T: TCIF Linked**  
Barcode 3 of 9 (TLC39)





## Appendix C

### Optional Internal Ethernet Printer Server *(printers with display only)*

---

#### **Indicators and Connector**

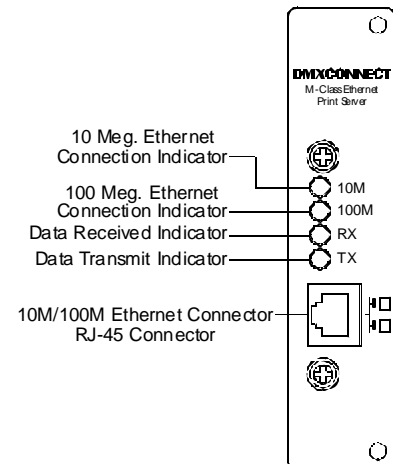
---

**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 printserver.

**TX** Flashes when data is being transmitted by the printserver.



#### **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 Sever has been installed and connected, plug in the power cord and Ethernet cable then turn the printer's power switch 'On'.

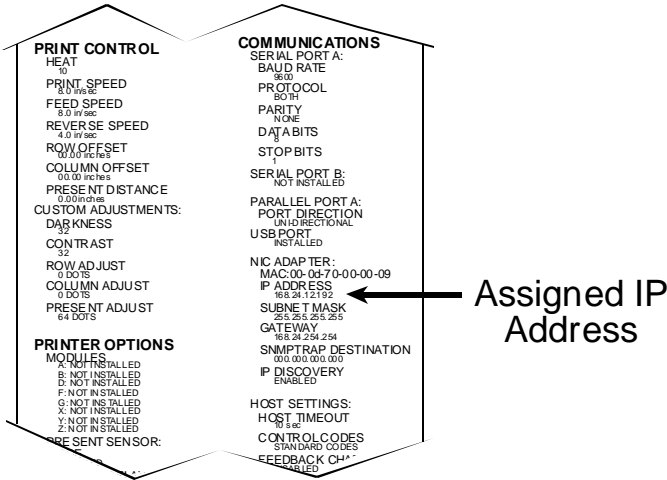
DHCP, BootP, and RARP are server services that provide a method for assigning and maintaining IP addresses. The Print Server obtains IP information from this service.

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:













With the printer on, loaded with media (at least 4 inches wide) and ribbon (if printing with thermal transfer media). 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.

**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'	<div>????????????????????</div> <div>?????</div>
2. Press the  MENU button to enter the printer's menu.	<div>?????????</div> <div>????????????????</div>
3. Using the FWD  button scroll to 'COMMUNICATIONS' and press the ENT  button.	<div>?????????</div> <div>????????????????</div>
4. Using the FWD  button scroll to 'NIC ADAPTER' and press the ENT  button.	<div>????????????????</div> <div>?????????????</div>
5. Using the FWD  button scroll to 'IP DISCOVERY' and press the ENT  button.	<div>?????????????</div> <div>????????????????</div>
6. Using the FWD  button scroll to 'DISABLED' and press the ENT  button.	<div>?????????????</div> <div>???????????</div>
7. Press the ESC  button once to return to the 'NIC ADAPTER' menu level. Then use the FWD  button scroll to 'IP ADDRESS' and press the ENT  button.	<div>?????????????</div> <div>?????????????</div>

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.

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.

????????????????????

?????

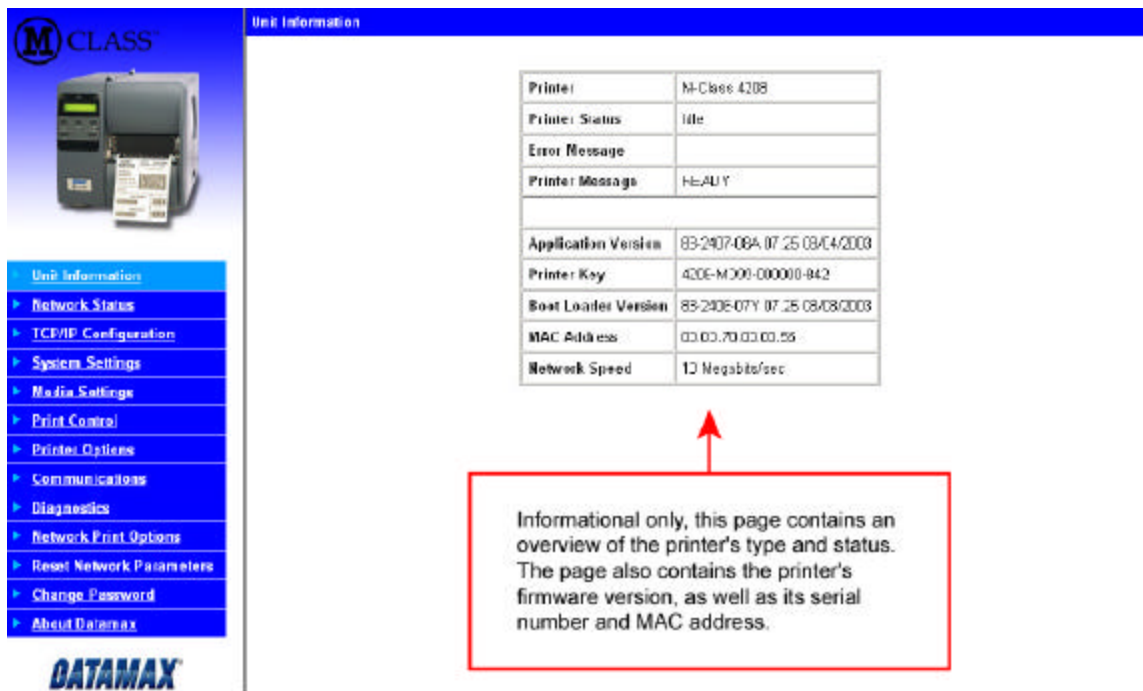
Once you have entered your IP settings into the printer you can then install the port and printer driver using the Windows? 'Add a Printer Wizard'. See section, *Installing the Printer Driver and Port* in this document.

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:





**Unit Information**


Printer	M-Class 4208
Printer Status	Idle
Error Message	
Printer Message	HEALTHY
Application Version	88-2907-08A 07.25.08/04/2008
Printer Key	4006-M000-000000-842
Boot Loader Version	88-2908-07Y 07.25.08/08/2008
MAC Address	00.00.70.00.00.55
Network Speed	10 Megabits/sec

Informational only, this page contains an overview of the printer's type and status. The page also contains the printer's firmware version, as well as its serial number and MAC address.

Network Status



- 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 Datamax



Network Information

MAC Address	00:20:70:00:00:55
Network Topology	Ethernet
Network Speed	10 Megabits/sec

TCP/IP Status

Frame Type	Ethernet II
IP Address	10.12.0.204
Subnet Mask	255.255.0.0
Default Gateway	10.12.254.254
Destination Port	9100
IP Discovery	Disabled
Make IP Parameters Temporary	Disabled
Primary Server Logged in	0.0.0.0
Secondary Server Logged in	0.0.0.0

Informational only, this page contains an overview of the current network settings including discovery methods, address settings, network topology and speed.

## TCP/IP Configuration

**MR-CLASS**

**TCP/IP Configuration**

Enable TCP/IP: ☐ IP

**Static IP Settings**

IP Address: [10] [12] [0] [254]

Subnet Mask: [255] [255] [0] [0]

Default Gateway: [10] [12] [254] [254]

Use IP Parameters Temporarily: ☐

**DHCP Settings**

Enable IP Discovery (DHCP, BOOTP, etc.): ☐

Port Number: [8100]

**NetBIOS (WINS) Settings**

NetBIOS Name: [LPR1, LPR2, etc.]

Primary WINS Server: [0] [0] [0] [0]

Secondary WINS Server: [0] [0] [0] [0]

A password is required to perform this function.

[Apply] [Over]

**Callout Boxes:**

- \*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 Print 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 the network as well, which means that the Print 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.
- To use Windows Internet Name Service (WINS) instead of an IP Address, specify a NetBIOS Name (such as the Print Server serial number with a three-letter prefix of 'DMX') assign its Primary WINS Server address (for example, 199.92.187.171). Optionally, assign the IP address of a Secondary WINS Server.
- \* These items will be greyed-out when IP Discovery is enabled. The values listed are stored in the printer's memory.

# 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 Mr-4 Operator's Manual.



- Unit Information
- Network Status
- ICLIP Configuration
- System Settings
- Media Settings
- Print Control
- Printer Options
- Garment Database
- Registration
- Network Print Options
- Reset Network Parameters
- Change Password
- About DATAMAX



System Settings

Internal Modules: [ROM] [RS]	
Default Module: [0]	Scaleable Font Caster: [112] [118]
Single Byte Symbolic: [M]	Double Byte Symbolic: [UC]
Absolute Counters: 440	Units: DATE, MCF, OCT
Resettable Counters: 211	Units: DATE, MCF, SET
Fastest Attributes: <input checked="" type="checkbox"/> XOR <input type="checkbox"/> Output <input type="checkbox"/> Transparent	Imaging Mode: <input type="checkbox"/> Single Label <input checked="" type="checkbox"/> Multi-Label
Pause Mode: <input type="checkbox"/> Enabled <input checked="" type="checkbox"/> Disabled	Select Security: <input type="checkbox"/> Enabled <input checked="" type="checkbox"/> Disabled
Input Mode: <input checked="" type="checkbox"/> DPL <input type="checkbox"/> Line	Units of Measure: <input checked="" type="checkbox"/> Imperial <input type="checkbox"/> Metric
SOP Emulation: <input type="checkbox"/> 110 (Prod. Plus) <input type="checkbox"/> 220 (Wings) <input type="checkbox"/> 220 (Pro 4.0) <input checked="" type="checkbox"/> Default	DPL Emulation: <input type="checkbox"/> Allgo <input type="checkbox"/> Bridge Plus <input type="checkbox"/> Prolog <input checked="" type="checkbox"/> Standard
Block After Print: <input type="checkbox"/> Enabled <input checked="" type="checkbox"/> Disabled	
Home Language: [English]	Upgrade Printer Code: [ ]
Custom Emulation: [03] [88, 202]	Unlock Feature: [ ]
Font Handling	
Level: [Standard]	Valid Bitmaps: [0-53] [inches] [10 - 200]
Retry Count: [ ]	

A password is required to change settings.  
[ ]  
[Apply]



- Unit Information
- Network Status
- ICLIP Configuration
- System Settings
- Media Settings
- Print Control
- Printer Options
- Garment Database
- Registration
- Network Print Options
- Reset Network Parameters
- Change Password
- About DATAMAX





Media Settings


Media Type: <input type="checkbox"/> Direct Thermal <input checked="" type="checkbox"/> Thermal Transfer	Sensor Type: <input checked="" type="checkbox"/> Gap <input type="checkbox"/> Reflective <input type="checkbox"/> Continuous
Label Length: [4.00] inches [0 - 99.99]	Maximum Label Length: [10.00] inches [0 - 99.99]
Paper Out Distance: [1.25] inches [0 - 99.99]	Label Width: [4.25] inches [0 - 4.25]
Ribbon Low Character: [1.08] inches [0.03 - 3.00]	
Sensor Calibration	
Paper Sensor Level: [10] [0-255]	Gap Sensor Level: [10] [0-255]
Trim Sensor Gain: [0] [0-255]	Roll Paper Level: [100] [0-255]
Mark Sensor Level: [10] [0-255]	Roll Sensor Gain: [0] [0-255]
Empty Sensor Level: [0] [0-255]	

A password is required to change settings.  
[ ]  
[Apply] [Clear]

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



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



Print Control

Heat:	<input type="text" value="10"/> (0 - 30)	Print Speed:	<input type="text" value="8.0 ips - 203.2 mm/sec"/>
Feed Speed:	<input type="text" value="8.0 ips - 203.2 mm/sec"/>	Reverse Speed:	<input type="text" value="4.0 ips - 101.6 mm/sec"/>
Row Offset:	<input type="text" value="0.00"/> inches (0 - 99.99)	Column Offset:	<input type="text" value="0.00"/> inches (0 - 99.99)
Present Distance:	<input type="text" value="0.00"/> inches (0 - 64.00)		

Custom Adjustments



Darkness:	<input type="text" value="32"/> (1 - 64)	Contrast:	<input type="text" value="32"/> (1 - 64)
Row Adjust:	<input type="text" value="0"/> dots (-100 - 100)	Column Adjust:	<input type="text" value="0"/> dots (0 - 120)
Present Adjust:	<input type="text" value="54"/> dots (0 - 120)		

A password is required to change settings


Apply

Clear

Printer Options, Communications, and Diagnostics



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



Printer Options

Present Sensor:	<input checked="" type="radio"/> Auto <input type="radio"/> Enabled <input 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

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 Datamax




### Communications

Serial Port A		Serial Port B	
Baud Rate:	9600 bps	Baud Rate:	9600 bps
Parity:	Even	Parity:	Even
Data Bits:	8	Data Bits:	8
Stop Bits:	1	Stop Bits:	1
Parallel Port A		Parallel Port B	
Port Direction:	Bi-directional	Port Direction:	Bi-directional


### Host Settings

Host Timeout:	10 Seconds	Control Codes (Data):	Enabled
Feedback Characters:	Disabled	ESC sequence:	Enabled
Host Command:	Enabled	Speed Command:	Enabled
TOF Sending Command:	Enabled	Symbol Set Command:	Enabled
Host Control Codes:	Standard	SOB 0x:	01
	Alternate	STX 0x:	02
	Alternate 2	CR 0x:	0d
	Custom (Hexadecimal)	COUNT BY 0x:	0a

A password is required to change 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 Datamax



### Diagnostics

Max. Dump Mode: ☐ Enabled ☒ Disabled

Print Test Rate (Min.):

Sensor Readings						
THR	TRAN	RBM	24V	PS	HD	RANK
192	171	218	172	000	243	008

Ribbon Sensor Limits	
Ribbon ABC Low	009
Ribbon ABC High	221

A password is required to change settings.

## Network Print Options

The screenshot shows the 'Network Print Options' web page. On the left is a sidebar with a list of menu items: Unit Information, Network Status, TCP/IP Configuration, System Settings, Media Settings, Print Control, Printer Options, Communications, Diagnostics, Network Print Options (highlighted), Reset Network Parameters, Change Password, and About Datamax. Above the list is an image of a Datamax printer. The main content area has a blue header 'Network Print Options'. Below it, under the 'Print' section, are three radio buttons: 'None' (selected), 'Status Page', and 'Test Page'. A grey bar with the text 'A password is required to perform this function.' contains a password input field and an 'Apply' button. A red-bordered text box at the bottom states: 'This page will allow the user to print either a Status or Test label from the printer.'

**Network Print Options**

Print

☒ None

☐ Status Page

☐ Test Page

A password is required to perform this function.

Apply

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

## Reset Network Parameters

The screenshot shows the 'Reset Network Parameters' web page. The sidebar on the left is identical to the previous page, with 'Reset Network Parameters' highlighted. The main content area has a blue header 'Reset Network Parameters'. Below it, a grey bar with the text 'A password is required to change settings.' contains a password input field. Below this are two buttons: 'Reset' and 'Restore TCP/IP Defaults'. A red-bordered text box at the bottom states: 'This page will allow the user to reset all network settings to factory defaults.'



**Reset Network Parameters**

A password is required to change settings.


Reset Restore TCP/IP Defaults

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

## Change Password



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



### Change Password

Customer Key

Old Password

New Password

Retype New Password

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



## Appendix 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 Meto 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

\*\*Meto recommends that the Img2dl.exe and Gemmsgxls.xls files reside in the same directory.

Creating a Menu Language:

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



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

		Generate Source Files	Generate DCL File(s)	ENGLISH	FRANCAIS	ITALIANO
1						
2	NID	COMMENTS	MAX	MESSAGE ID		
3	0001	System Messages	20 NID_READY	READY	PRÊT	PRONTO
4	0001		20 NID_PRINTING	PRINTING		
5	0002		20 NID_PAUSED	PAUSED	PAUSE	IN PAUSA
6	0003 1Aa		20 NID_CANCEL_PRINT_JOB	CANCEL PRINT JOB		
7	0004		20 NID_CLEARING_FAULTS	CLEARING FAULTS		CANCELLA ERRORI
8	0005		10 NID_OF	OF	DE	DI
9	0006		20 NID_DOTCHECK_IN_PROGRESS	DOTCHECK IN PROGRESS		
10	0007 Faults		20 NID_SYSTEM_FAULT	SYSTEM FAULT	DEFAILLANCE SYSTEME	AVONALIA SISTEMA
11	0008		20 NID_ADC_FAULT	ADC FAULT	DEFAILLANCE ADC	AVONALIA ADC
12	0009		20 NID_HEAD_UP_FAULT	HEAD UP FAULT	DEFAILLANCE TETE NON VEROTILLER	AVON TESTINA ALTA
13	0010		20 NID_RIBBON_FAULT	RIBBON FAULT	DEFAILLANCE RUBAN	AVONALIA NASTRO
14	0011		20 NID_TOP_OF_FORM_FAULT	TOP OF FORM FAULT	DEFAIL. DEBUT D'IMP.	AVONALIA BORDO SUP
15	0012		20 NID_OUT_OF_STOCK	OUT OF STOCK	RUPTURE PAPIER	ESANITO
16	0013		20 NID_CUTTER_FAULT	CUTTER FAULT	DEFAILLANCE COUTEAU	AVONALIA TAGLIERIN
17	0014		20 NID_VERIFIER_FAULT	VERIFIER FAULT	DEFAILLANCE VERIFICAT	AVONALIA VERIFICAT
18	0015		20 NID_RIBBONSAVER_FAULT	RIBBONSAVER FAULT	DEFAIL. ECONOM RUBAN	AVONALIA SALVA-NASTRO
19	0016		20 NID_POSITION_FAULT	POSITION FAULT	DEFAILLANCE POSITION	AVON. POSIZIONAMEN
20	0017		20 NID_TEMPERATURE_FAULT	TEMPERATURE FAULT		
21	0018		20 NID_DNA_FAULT	DNA FAULT	DEFAILLANCE DNA	AVONALIA DNS
22	0019		20 NID_PRINT_ENGINE_FAULT	PRINT ENGINE FAULT	DEFAILLANCE MOTEUR	
23	0020		20 NID_24V_OUT_OF_TOLERANCE	24V OUT OF TOLERANCE	DEFAILL. TOLERANCE 24V	AVONALIA TOLLERAN
24	0021		20 NID_STORAGE_TYING_FAULT	STORAGE TYING FAULT	DEFAIL. FORCE D'IMPULSION	AVONALIA FORCA STROG
25	0022 Warnings		20 NID_WARNING_RESOLVED	WARNING RESOLVED	AVERTISSEMENT RESOLU	AVONALIA RISOLTA
26	0023		20 NID_RIBBON_LOW	RIBBON LOW	RIBBAN FAIBLE	NASTRO BASSO
27	0024		20 NID_GAP_MISSED	GAP MISSED	INTERVALLE MANQUANT	INTERVALLO SALTATO
28	0025		20 NID_DOT_FAILURE	DOT FAILURE	DEFAUT IMPRESSION	AVONALIA PUNTO
29	0026		20 NID_BAD_SENSOR_DELTA	BAD SENSOR DELTA		
30	0027		20 NID_HOST_CHANGES_PENDING	HOST CHANGES PENDING		MOD. HOST IN ATTE
31	0028		20 NID_LOW_VOLTAGE	LOW VOLTAGE		
32	0029		20 NID_GOODBYE	GOODBYE		
33	0030 Conditions		20 NID_REMOVE_LABEL	REMOVE LABEL	RELEVER ETIQUETTE	REMOVER ETICHETTA
34	0031		20 NID_CANNONIZATION_READY	CANNONIZATION READY		

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

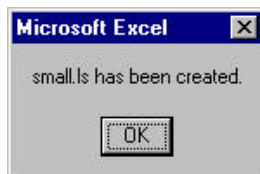
### Tips:

- 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.

	ITALIANO	DEUTSCH	ESPAÑOL	small	TREK
1					
2	ITALIANO	DEUTSCH	ESPAÑOL		
3	PRONTO	BEREIT	LISTO	ready	AWAITING ORDERS
4			IMPRIMENDO	printing	WARP DRIVE ENGAGED
5	IN PAUSA	PAUSE	EN PAUSA	paused	ALL STOP
6				cancel print job?	ABORT MISSION?
7	CANCELLA ERRORI	FEHLER BEHEBEN	BORRAR ERRORES	clearing faults	RE-INITIALIZING
8	DI	VON	DE	of	FACTOR
9				dotcheck in progress	
10	ANOMALIA SISTEMA	SYSTEMFEHLER	ERROR DE SISTEMA	system fault	DIRECT HIT SUSTAINED
11	ANOMALIA ADC	ADC-FEHLER	ERROR DE ADC	adc fault	WILL BREACH DECK TEN
12	ANOM TESTIMA ALTA	DRUCKKOPF-FEHLER	CADEZAL LEVANTADO	head up fault	ENGINES OFFLINE
13	ANOMALIA NASTRO	FARBEND- FEHLER	ERROR DE CINTA	ribbon fault	PHASORS OFFLINE
14	ANOMALIA BORDO SHIP	ORDEWAND-FEHLER	ERROR INICIO ETIQ	top of form fault	UNABLE TO GO TO WARP
15	ESMANTITO	NICHT VERFÜGBAR	SIN PAPEL	out of stock	TORPEDO TUBES EMPTY
16	ANOMALIA TAGLIERINA	SCHNEIDERFEHLER	ERROR DE CORTADOR	cutter fault	CASCADE FAILURE
17	ANOMALIA VERIFICAT	FEHLERFEHLER	ERROR DE VERIFICADOR	verifier fault	TRACTOR BEAM FAILURE
18	ANOM. SALVA-NASTRO	BAHNSPAR-FEHLER	ERROR ECONOM CINTA	ribbonrunner fault	NETAPHASIC FAILURE
19	ANOM. POSIZIONAMENTO	POSITIONSFEHLER	ERROR DE POSICION	position fault	UNKNOWN COORDINATES
20			FALLO DE TEMPERATURA	temperature fault	CORE TEMP. CRITICAL
21	ANOMALIA OMS	DWA-FEHLER	ERROR DWA	dma fault	COMPUTER MALFUNCTION
22			ERROR MOTOR INERES	print engine fault	PORT MACEIL OFFLINE
23	24V FUORI TOLLERANZA	24V UNTER TOLERANZ	ERROR FUERA TOLERANCIA	24v out of tolerance	SAFETY LIMIT EXCEEDED
24	ANOM. PAGAT. STROBE	SIGNALFEHLER	ERROR TIEMPO SEÑAL	strobe timing fault	INERT. DAMP OFFLINE
25	AVVERTENZA RISOLTA	WARNING AUFGEBOHEN	ADVERTEN CORREGIDA	warning resolved	ALL CLEAR
26	NASTRO BASSO	FARBEND-ENDE	CINTA BAJA	ribbon low	TORPEDO TUBES LOW
27	INTERVALLO SALTATO	LÜCKE VERFEHLT	ERROR DE SEPARACIÓN	gap missed	SPATIAL ANOMALY
28	ANOMALIA PUNTO	PUNKTUSFALL	FALLO PUNTO CADEZAL	dot failure	SHIELDING COMPROMISED
29				bad sensor delta	SENSOR MALFUNCTION
30	MOD. HOST IN ATTESA	ENWARTS KOSTÄNDERUNG	CAMBIOES PENDIENTES	host changes pending	HOSTILE APPROACHING
31				low voltage	LOGGING LIFE SUPPORT
32			ADIOS	goodbye	ABANDON SHIP
33	RINVIORI ETICHETTA	ETIKETT ENTFERNEN	QUITAR ETIQUETA	seacore label	SPECIFF COURSE HDG
34			BATIDA DE TROMBONATIKA		

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.

Press the Generate DPL File(s) radio the selected columns and Excel will provide



button. A file will be generated for each of confirmation. (Example: small.ls)

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

```
copy small.ls lpt1: /b
```

✍✍Reset the printer by pressing and holding the CANCEL Key for approximately four seconds.

✍✍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 Meto 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.

## Advanced File Handling Information

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- ✂ The Standard Meto 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 Meto 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

### Saving a Configuration File *(printers with display only)*

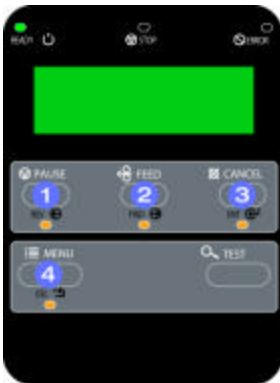
---

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 (consult the *Class Series Programmers Manual* for details).
- ?? 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:



✍ REV ⬇

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

✍ FWD ⬆

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













✍ ENT ↵


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

✍ 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	<div>?</div> <div>????</div>	Press the  MENU Key.	You are entering 'Menu Mode'.
2	<div>?????????</div> <div>?????????????</div>	Use the FWD  Key to scroll to 'System Settings'.	The REV  Key can also be used.
3	<div>?????????</div> <div>?????????????</div>	Press the ENT  Key to select 'System Settings'.	You are entering the 'System Settings' menu.
4	<div>?????????????????</div> <div>?????????????????</div>	Press the ENT  Key to select 'Configuration File'.	You are entering the 'Configuration File' submenu.
5	<div>?????????????????</div> <div>?????????????????</div>	Press the FWD  Key to scroll to 'Save Setting As'.	The REV  Key can also be used.
6	<div>?????????????????</div> <div>?????????????????</div>	Press the ENT  Key.	Press the ESC  Key to exit this selection.
7	<div>?????????????????</div> <div>?</div>	Enter a file name using the REV  Key to scroll through the characters.	The FWD  Key can also be used.
		<i>⚠ Note: To change an accepted character, select the delete function (solid flashing block) and press the ENTER Key.</i>	
8	<div>?????????????????</div> <div>?????????</div>	Use the ENT  Key to accept the character.	Continue entering the file name in this manner ("SPECIAL STOCK" has been used as an example).
		<i>⚠ Note: To abort the "save setting" function, delete all entered characters in the file name and press the ESCAPE Key.</i>	

9	<div data-bbox="159 115 428 159">???????????</div> <div data-bbox="159 172 428 215">?????????</div>	Press the <b>ESC</b>  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.)
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## Appendix F

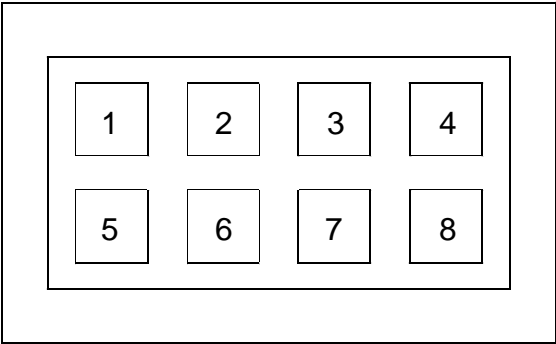
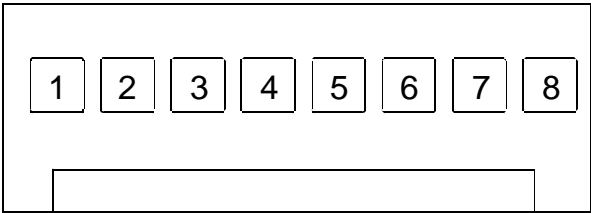
### GPIO Port Description

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”.

### 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
	

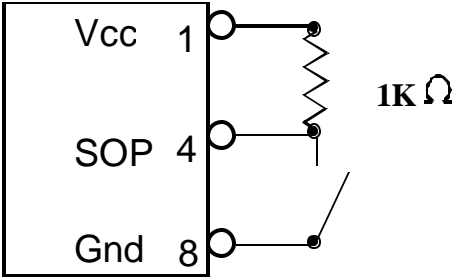
<b>GPIO Port Connections and Functions</b>				
<b>Pin #</b>	<b>Signal Name</b>	<b>Signal State</b>	<b>Signal Direction<sup>[1]</sup></b>	<b>Signal Description</b>
1	Vcc	+5 VDC	Output	Printer +5 VDC
2	Printer Fault	Low	Output	Goes low if the printer detects any fault. Applicable only if cutter not equipped. . To activate set GPIO Option to “YES” and Cutter Equipped to “NO” <sup>[2]</sup> .
3	Spare	Reserved	Input	N/A
4	Start of Print (SOP)	Low Level	Input	<p>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”<sup>[2]</sup> .</p> <div style="border: 1px solid black; padding: 5px;"> <p>⚠ 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.</p> </div>
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” <sup>[2]</sup> .
6	Signal Ground	Ground	N/A	N/A
7	+24V	1.6 Amp Fused (MPCB)	Input	N/A
8	Signal Ground	Ground	N/A	N/A

<sup>1</sup> Signal direction given relative to the printer.

<sup>2</sup> 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)
$V_{OH}$	$I_{OH} = -8\text{ mA}$ , minimum 3.8 VDC
$V_{OL}$	$I_{OL} = 8\text{ mA}$ , maximum .44 VDC



## *Appendix G*

### **Checkpoint Systems Barcode Products Limited Warranty Statement**

#### **mr-4™ Printer**

#### **Printer**

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Checkpoint Systems warrants to Purchaser that under normal use and service, the mr-4 Printer, (with the exception of the thermal printhead) purchased hereunder shall be free from defects in material and workmanship for a period of (365) days from the date of shipment by Checkpoint Systems.

Expendable and/or consumable items or parts such as lamps, fuses, labels and ribbons are not covered under this warranty. This warranty does not cover equipment or parts which have been misused, altered, neglected, handled carelessly, or used for purposes other than those for which they were manufactured. This warranty also does not cover loss, damages resulting from accident, or damages resulting from unauthorized service.

#### **Thermal Printhead**

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This warranty is limited to a period of one year, (365 days), or 1,000,000 linear inches of use, whichever comes first, for the Mr-4™ thermal printhead. This one year (365 days) warranty is valid only if a Checkpoint Systems - approved thermal label media is used, as defined in the then current Checkpoint Systems list of approved thermal/thermal transfer media, a copy of which is available from Checkpoint Systems. Failure to use Checkpoint Systems -approved media is justification for invalidation of this thermal printhead warranty. This warranty does not cover printheads which have been misused, altered, neglected, handled carelessly, or damaged due to improper cleaning or unauthorized repairs.

## Warranty Service Procedures

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If a defect should occur during the warranty period, please contact your local Checkpoint System office. A Return Material Authorization (RMA) number must be issued before the product can be returned. To open an RMA please call the Checkpoint Systems Customer Service Department. Include a contact name, action desired, a detailed description of the problem(s), and examples when possible with the defective unit. Checkpoint Systems shall not be responsible for any loss or damages incurred in shipping. Any warranty work to be performed by Checkpoint Systems shall be subject to Checkpoint Systems confirmation that such product meets Checkpoint Systems warranty. In the event of a defect covered by its warranty, Checkpoint Systems will return the repaired or replaced product to the Purchaser at Checkpoint Systems cost.

With respect to a defect in hardware covered by the warranty, the warranty shall continue in effect until the end of the original warranty period, or for sixty (60) days after the repair or replacement, whichever is later.

## General Warranty Provisions

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Checkpoint Systems makes no warranty as to the design, capability, capacity or suitability of any of its hardware, supplies, or software.

Software is licensed on an “as is” basis without warranty. Except and to the extent expressly provided in this warranty and in lieu of all other warranties, there are no warranties, expressed or implied, including, but not limited to, any warranties of merchantability or fitness for a particular purpose.

Purchaser shall be solely responsible for the selection, use, efficiency and suitability of Checkpoint Systems products.

## Limitation of Liability

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In no event shall Checkpoint Systems be liable to the purchaser for any indirect, special or consequential damages or lost profits arising out of or relating to Checkpoint Systems products, or the performance or a breach thereof, even if Checkpoint Systems has been advised of the possibility thereof. Checkpoint Systems liability, if any, to the purchaser or to the customer of the purchaser hereunder shall in no event exceed the total amounts paid to Checkpoint Systems hereunder by the purchaser for a defective product.

In no event shall Checkpoint Systems be liable to the purchaser for any damages resulting from or related to any failure or delay of Checkpoint Systems in the delivery or installation of the computer hardware, supplies or software or in the performance of any services.

Some states do not permit the exclusion of incidental or consequential damages, and in those states the foregoing limitations may not apply. The warranties here give you specific legal rights, and you may have other legal rights which vary from state to state.





# Glossary

**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.).

**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”.

**DPL (Meto Programming Language)** programming commands used specifically for control of and label production in Meto printers. A complete listing of commands can be found in the *Programmer’s Manual*.

**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.