METTLER TOLEDO

APR510

Label Printer

User's Guide

For printers 64090256
64090257
64090258
64090259

www.mt.com

64090364
(08/2012) R00

Note: The APR510 printer is designed and manufactured by Datamax Corporation for METTLER TOLEDO. All issues related to product quality and performance and technical information should be directed to METTLER TOLEDO.

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FCC Notice

This device complies with FCC CFR 47 Part 15 Class A. Operation is subject to the following conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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

RoHS Compliance Statement.

The majority of our products fall within categories 8 and 9. Those categories currently do not fall within the scope of the Directive 2002/95/EG (RoHS) of January 27, 2003. If our products are intended for use in other products which themselves fall within the scope of the RoHS Directive, compliance requirements have to be separately negotiated contractually.

Those products which fall within categories 1-7 and 10 will be in compliance with the EU RoHS Directive from no later than July 1, 2006.

If it is not possible for technical reasons to replace any non-RoHS-compliant substances in any of the above products as required, we plan to inform our customers in a timely manner

Statement regarding harmful substances

We do not make direct use of harmful materials such as asbestos, radioactive substances or arsenic compounds. However, we purchase components from third party suppliers, which may contain some of these substances in very small quantities.

Agency Compliance and Approvals

UL60950-1, Second Edition, Information Technology Equipment
CSA C22.2 No. 60950-1-03, Second Edition

EN60950-1 (2001) 1st Edition
IEC60950-1 (2001) 1st Edition

The manufacturer declares under sole responsibility that this product conforms to the following standards or other normative documents:
EMC: EN 55022 (2006) Class A
EN 50024 (1998)
IEC 60950-1 :2001, Second Edition
Safety: This product complies with the requirements of IEC 60950-1:2001, Second Edition

Gost-R

GB4943-2001, GB9254-1998, GB17625-1-2003

CUSTOMER FEEDBACK

Your feedback is important to us! If you have a problem with this product or its documentation, or a suggestion on how we can serve you better, please fill out and send this form to us. Or, send your feedback via email to: quality_feedback.mtwt@mt.com. If you are in the United States, you can mail this postpaid form to the address on the reverse side or fax it to (614) 438-4355. If you are outside the United States, please apply the appropriate amount of postage before mailing.

Your Name:		Date:
Organization Name:		METTLER TOLEDO Order Number:
Address:		Part / Product Name:
		Part / Model Number:
		Serial Number:
		Company Name for Installation:
Phone Number: ( )	Fax Number: ( )	Contact Name:
E-mail Address:		Phone Number:

Please check the appropriate box to indicate how well this product met your expectations in its intended use?	
	Met and exceeded my needs
	Met all needs
	Met most needs
	Met some needs
	Did not meet my needs

Comments/Questions:

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☐ Retail ☐ Light Industrial ☐ Heavy Industrial ☐ Custom

RESPONSE: Include Root Cause Analysis and Corrective Action Taken.

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POSTAGE WILL BE PAID BY ADDRESSEE

Mettler-Toledo, LLC
Quality Manager - MTWT
P.O. Box 1705
Columbus, OH 43216
USA

Please seal with tape

PRECAUTIONS

This printer has been carefully designed to provide years of safe reliable performance. As with all types of electrical equipment, however, there are a few basic precautions that should be taken to avoid personal injury or damage to the device:

- Carefully read the installation and operating instructions provided with the printer.
- Read and follow all warning and instruction labels on the printer.
- Place the printer on a flat, stable surface.
- Do not insert anything into the ventilation slots or openings on the printer.
- Do not place the printer on or near a heat source.
- Do not use the printer near water. Never spill liquid into the printer.
- Be certain the power source is within the voltage rating and frequency listed for the printer. If you are unsure, check with your dealer, an electrician, or local power company.
- Do not place the power cord where it can be stepped on. If the power cord becomes damaged or frayed, replace it immediately.
- Only qualified, trained service technicians should attempt to repair the printer.

IMPORTANT

Cut-outs on the base of the printer are **not** intended for use in wall-mounting the printer.

APR510 Label Printer

METTLER TOLEDO Service

Essential Services for Dependable Performance of Your APR510 Printer

Congratulations on choosing the quality and precision of METTLER TOLEDO. Proper use of your new equipment according to this Manual and regular calibration and maintenance by our factory-trained service team ensures dependable and accurate operation, protecting your investment. Contact us about a service agreement tailored to your needs and budget. Further information is available at www.mt.com/service.

There are several important ways to ensure you maximize the performance of your investment:

Register your product: We invite you to register your product at www.mt.com/productregistration so we can contact you about enhancements, updates and important notifications concerning your product.

Contact METTLER TOLEDO for service: The value of a measurement is proportional to its accuracy – an out of specification scale can diminish quality, reduce profits and increase liability. Timely service from METTLER TOLEDO will ensure accuracy and optimize uptime and equipment life.

a. **Installation, Configuration, Integration and Training:** Our service representatives are factory-trained, weighing equipment experts. We make certain that your weighing equipment is ready for production in a cost effective and timely fashion and that personnel are trained for success.

b. **Initial Calibration Documentation:** The installation environment and application requirements are unique for every industrial scale so performance must be tested and certified. Our calibration services and certificates document accuracy to ensure production quality and provide a quality system record of performance.

c. **Periodic Calibration Maintenance:** A Calibration Service Agreement provides on-going confidence in your weighing process and documentation of compliance with requirements. We offer a variety of service plans that are scheduled to meet your needs and designed to fit your budget.

Contents

Chapter 1

Introduction

This chapter covers
- Introduction
- Unpacking the Printer

Introduction

The APR510 printer (hereafter referred to as "the printer") is user-friendly thermal printing device that blends quality and durability in an affordable package to meet all of your labeling needs. This manual provides the information necessary to operate and maintain the printer.

To begin printing labels or tags, refer to the instructions included with your software labeling program. For your convenience, a Windows® printer driver can be found on the included APR510/APR710 Resource CD-ROM. If you wish to write custom programs or label formats, a copy of the **APR510/APR710 Programmer's Guide** is also included for your reference.

METTLER TOLEDO recommends using LabelBLAZER software to create label formats quickly and easily. This program may be purchased from METTLER TOLEDO or from an authorized METTLER TOLEDO representative.

Unpacking the Printer

Items included

After removing the printer from the packaging material, check the contents. The items shown and listed in Figure 1-1 should be included.

- Printer
- Power Cord
- Resource CD-ROM
- Any special or additionally purchased items

Figure 1-1: Unpacking the APR510

- It is a good idea to save all packaging material for use in the event it is necessary to ship the printer.

Chapter 2

Printer Setup

This chapter covers

- Introduction
- Connecting the Printer
- Loading Media
- Loading the Ribbon

Introduction

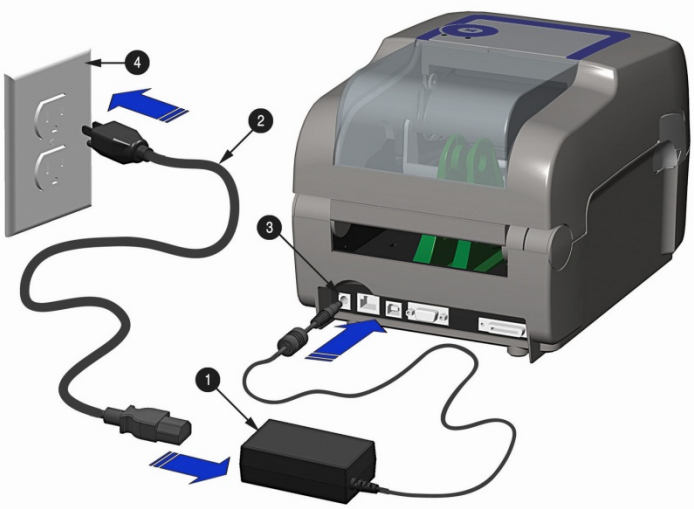
This chapter explains how to connect your printer and load media (including ribbon, if equipped for thermal transfer operation).

Connecting the Printer

Power Connection

The printer is powered by an external auto-ranging power supply, which connects between the printer and an electrical outlet. Ensure that the operating ranges of the power supply are compatible with your electrical service, (refer to Appendix A for details) then connect power as follows:

- Before connecting power to the printer, ensure that the Power Switch is in the OFF (O) position.



1: Power supply
2: AC Power Cord
3: Power Jack
4: Electrical outlet

Figure 2-1: Power Connection

1. Connect the Power Supply to the printer's Power Jack

2. Connect the AC Power Cord to the Power Supply.
3. Connect the AC Power Cord to an electric outled.

Interface Connections

The printer can be connected to the host system via the parallel, serial, Ethernet or USB ports.

- Before connecting power to the printer, ensure that the Power Switch is in the OFF (O) position.

Before connecting interface cables to the printer, ensure that the Power Switch is in the OFF (O) position.

1: Ethernet Port
2: USB Port
3: Serial Port
4: Parallel Port

Figure 2-2: Interface Connections

Cable Requirements

Choose the correct cable when interfacing the printer to the host:

- The Ethernet Port supports Wired LAN communications (refer to Appendix B for information).
- The USB Port supports high-speed serial communications and requires a standard USB interface cable.
- The Serial Port supports RS-232C communications via a DB-9 connector with specific pin-outs (interface cable part numbers and pin-outs are shown in Figure 2-3; contact your METTLER TOLEDO representative to order). Serial port settings are menu-selectable and must match the host settings.

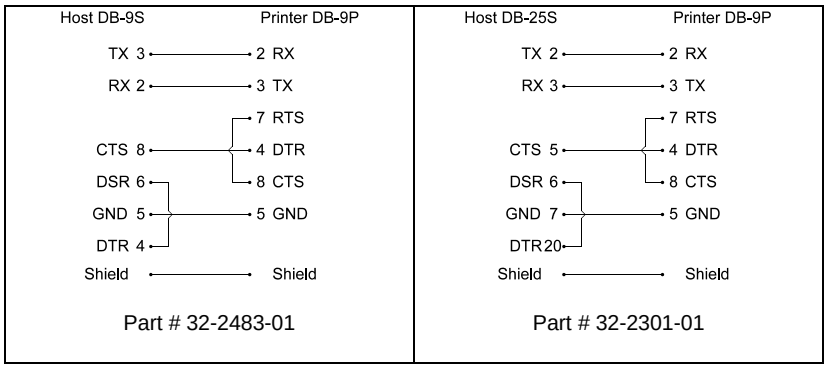


Figure 2-3: Interface Cables

- The Parallel Port supports parallel communications via a 36-pin male mini-Centronics® connector. Bi-directional communications (forward and reverse channels) is supported when an IEEE 1284 compliant cable and supporting host software is used.

- The printer automatically establishes communications with the first port through which valid data is received. Afterward, a timeout period must be exceeded (or power must be cycled OFF and ON) to change the established communications port.

Loading Media

- If the printer is equipped with an Adjustable Media Sensor it may require adjustment to match your media choice. If the printer is equipped with this type of sensor, proceed to the **Adjustable Media Sensor** section in Chapter 4.

Loading Roll Media

Load media as follows:

1. Slide the Media Guides outward.
2. Slide the Media Hangers outward and insert the Roll Media as shown. Allow the Media Hangers to retract and grasp the media roll.

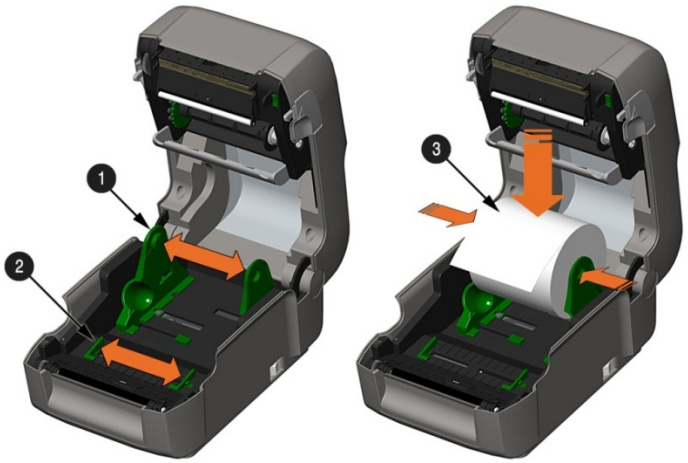


Figure 2-4: Loading Roll Media, 1

3. Pull out enough media to exit the front of the printer. Adjust the Media Guides so they are lightly touching the edge of the media.

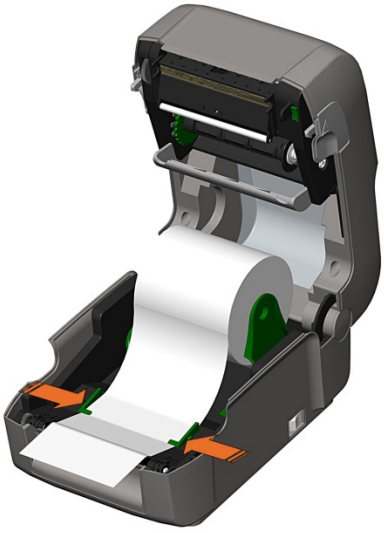
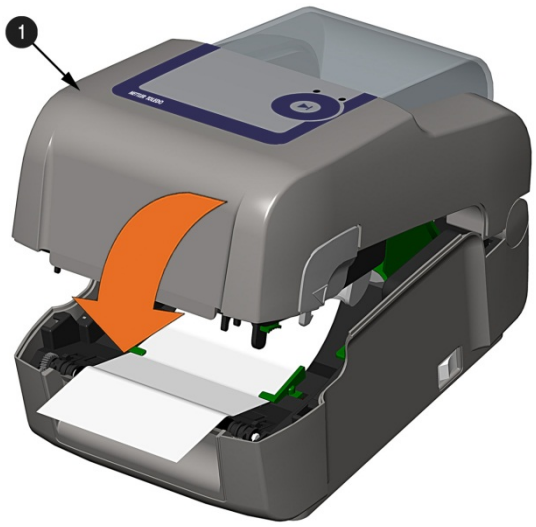


Figure 2-5: Loading Roll Media, 2

4. If using thermal transfer media (ribbon) proceed to Section 2.4 Loading Ribbon. Otherwise close the printer's Cover and press downward until latched.



1: Cover

Figure 2-6: Loading Roll Media, 3

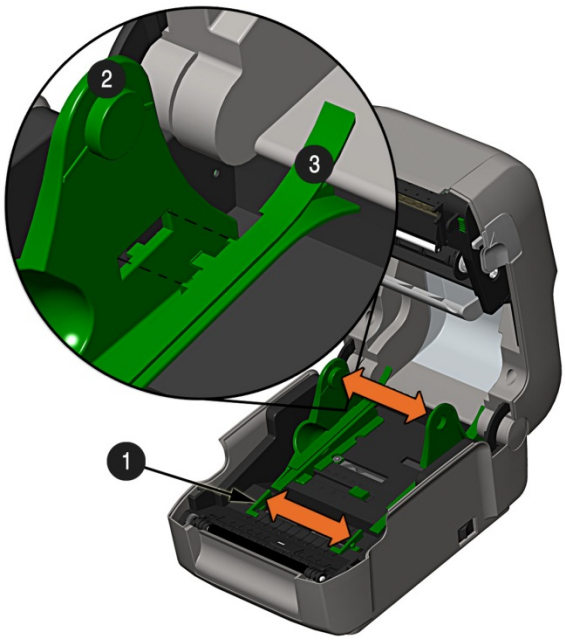
5. Press the ▶| button several times to advance the media. (If the Fault Light is lit, refer to the **Media Calibration** section in Chapter 3.)

- The printer is factory set to use gap media. If using another media type (for example, continuous media), printer setup must be reconfigured; refer to the **Printer Configuration Tools** section of Chapter 3.

Loading External or Fan-Fold Media

Load media as follows:

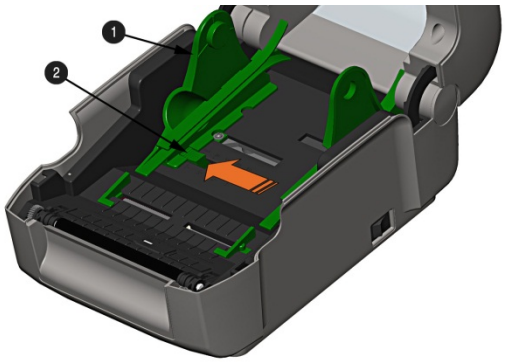
1. Slide the Media Guides outward.
2. Slide the Media Hangers outward and install the two Media Chute Guides into the Media Hangers.



1: Media Chute
2: Media Hangers
3: External Media Guide

Figure 2-7: Loading External or Fan Fold Media, 1

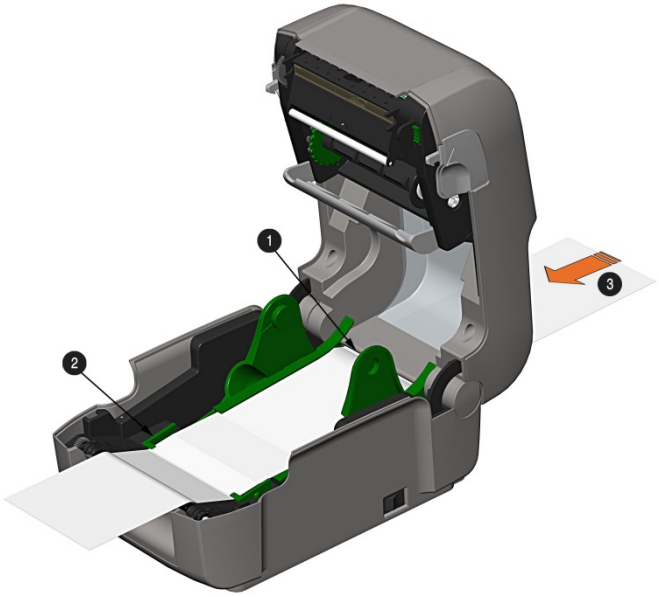
3. Position the Media Hangers to match the width of the media being used. Slide the Hanger Lock against the Media Hanger to hold this position.



1: Media Hangers
2: Hanger Lock

Figure 2-8: Loading External or Fan Fold Media, 2

4. Route the media through the External Media Slot in the rear of the printer. Pull out enough media to exit the front of the printer. Adjust the Media Guides so they are lightly touching the edge of the media.



1: External Media Slot
2: Media Guides
3: External Media Supply

Figure 2-9: Loading External or Fan Fold Media, 3

5. If using Thermal Transfer media (ribbon) proceed to the Loading Ribbon section on page 2-9. Otherwise close the printer's cover and press downward until latched.
6. Press the ▶| button several times to advance the media (if the Fault Light is lit, refer to the **Media Calibration** section in Chapter 3.)

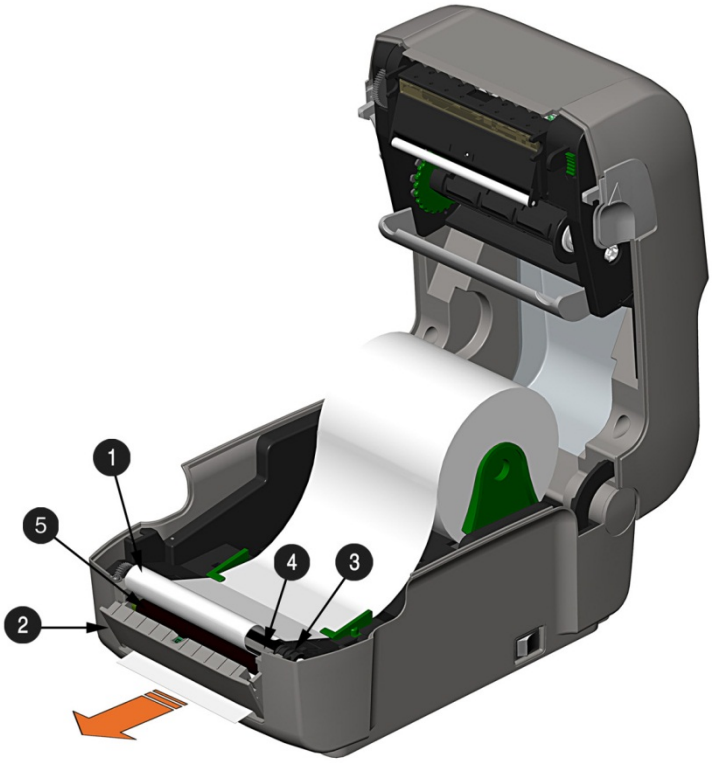
- The printer is factory set to use gap media. If using another media type (for example, continuous media), printer setup must be reconfigured; refer to the **Printer Configuration Tools** section of Chapter 3.

Loading Media with the Peel and Present Option

Load media for peeling (if the printer is equipped with the option) as follows:

- When using the Peel Mechanism do not exceed a print speed of 4 IPS.
- To use "Tear mode" with Peel and Present Option installed; move the Peeler Door to its open position.

1. Load media as described in steps 1 to 3 of **Loading Roll Media**, on page 2-3.
2. Remove about 8 inches (200mm) of labels from the Media Backing.
3. Open the Peeler Door. Route the Media Backing over the Platen Roller and Peel Bar, and then behind the Peel Roller and Peeler Door, as shown below.



1: Media Backing
2: Peeler Door
3: Platen Roller
4: Peel Bar
5: Peel Roller

Figure 2-10: Loading Peel and Present Media

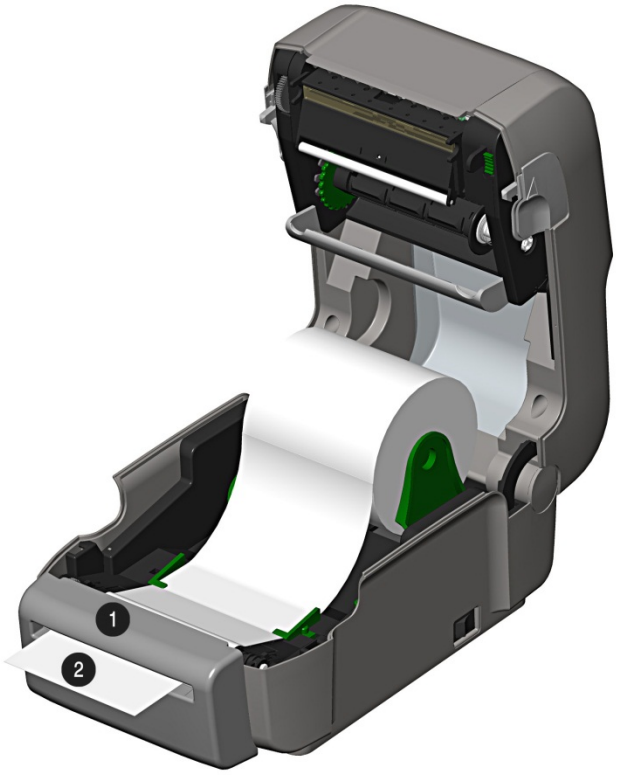
4. Close the Peeler Door.
5. If using Thermal Transfer media (ribbon) proceed to Section 2.4 Loading Ribbon. Otherwise close the printer's Cover and press downward until latched.
6. Press the ▶| button several times to advance the media (if the Fault Light is lit, see Section 3.7.)
7. The printer will now peel each label and present it to the operator for removal. The indicator light will flash orange and the next label will not feed/print until the previous label is removed.

- The printer is factory set to use gap media. If using another media type (for example, continuous media), printer setup must be reconfigured; refer to the **Printer Configuration Tools** section of Chapter 3.

Loading Media with the Cutter Option

Load media for cutting (if the printer is equipped with the option) as follows:

1. Load media as described in steps 1 to 3 of **Loading Roll Media**, on page 2-3.
2. Route the media through the opening in the Cutter.



1: Cutter
2: Media

Figure 2-11: Loading Cut Media

3. If using Thermal Transfer media (ribbon) proceed to Section 2.4 Loading Ribbon. Otherwise close the printer's Cover and press downward until latched.
4. Press the ▶| button several times to advance the media (if the Fault Light is lit, refer to the **Media Calibration** section in Chapter 3.). The printer will now cut each label as it exits from the printer.
5. The printer will now peel each label and present it to the operator for removal.

- If the printer is equipped with the Present Sensor Option, the indicator light will flash orange and the next label will not feed/print until the previous label is removed.

- The printer is factory set to use gap media. If using another media type (for example, continuous media), printer setup must be reconfigured; refer to the **Printer Configuration Tools** section of Chapter 3.

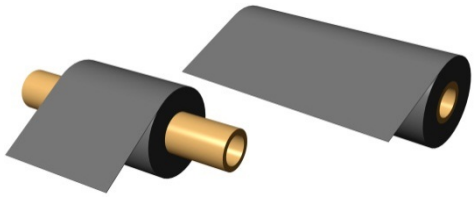
Loading Ribbon

The printer is capable of using C.S.I (Coated Side In) and C.S.O (Coated Side Out) ribbons in the following configurations:

½" Core Ribbons

Ribbon Core Width: 4.3 inches (110mm)

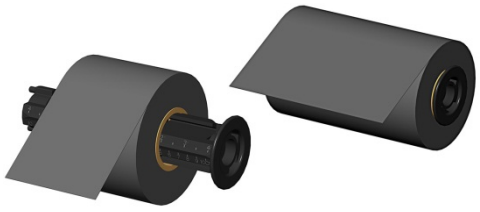
Ribbon Width: 1.0 - 4.3 inches (25 - 110mm); Centered on core



1" Core Ribbons
(with Ribbon Core Adapters; refer to **Using Ribbon Adapters**, below)

Ribbon Core Width: 1.0 - 4.3 inches (25 - 110mm); Centered on Ribbon Core Adapters

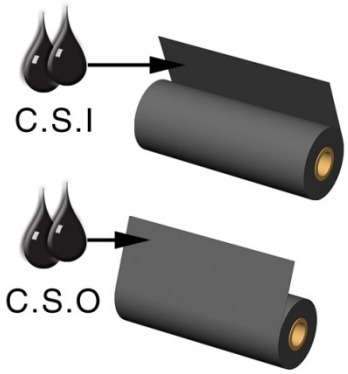
Ribbon Width: 1.0 - 4.3 inches (25 - 110mm); Centered on core



Load ribbon as follows:

- If equipped with the thermal transfer option, the printer is factory set to use ribbon; refer to the **Printer Configuration Tools** section in Chapter 3 to change this setting if using direct thermal media.

1. Determine the type of ribbon (C.S.I. or C.S.O.) in use.



C.S.I.: Coated Side In
C.S.O.: Coated Side Out

Figure 2-12: Ribbon Types

- Make sure the inked side of the ribbon faces toward the label media, **not** the print head.

2. Push out the Supply Hub and load the Supply Roll into the printer as shown. Depending on the size of the Supply Roll, the Media Bouncer may need to be pushed out of the way.

3. Once the Supply Roll is loaded, slide the Ribbon Handler Latch downward to unlatch the Ribbon Handler Assembly.

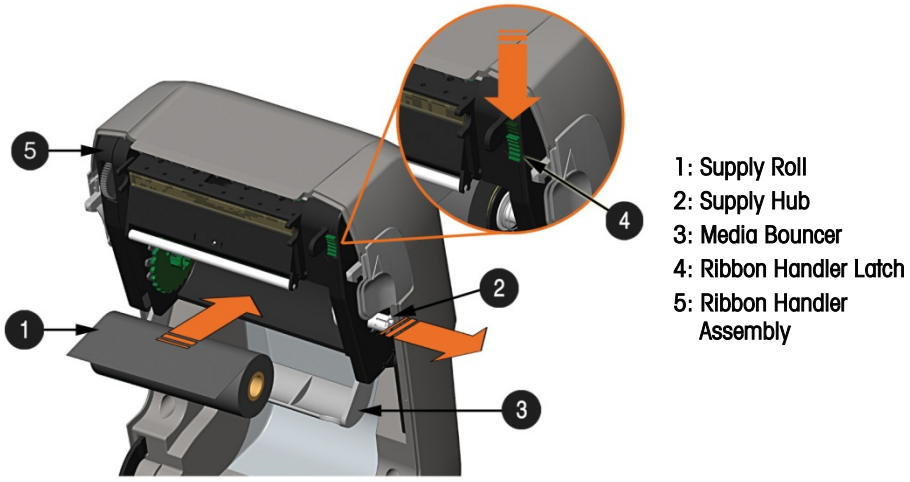


Figure 2-13: Ribbon Handler Assembly

4. Push out the Take-up Hub and load an empty Ribbon Core into the printer as shown.

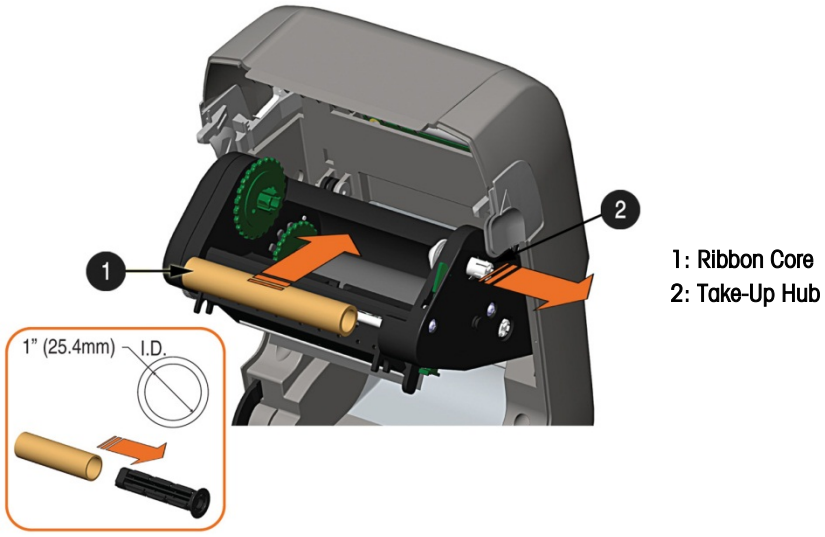
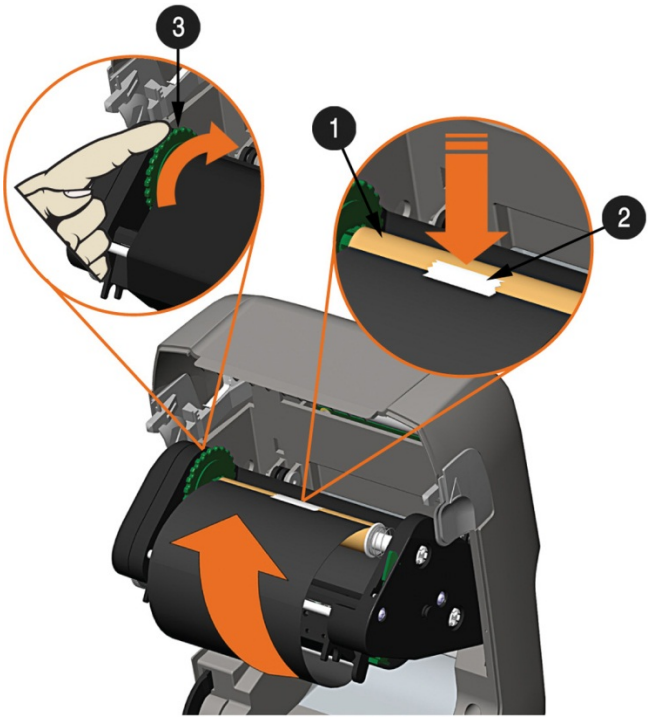


Figure 2-14: Loading Empty Ribbon Core

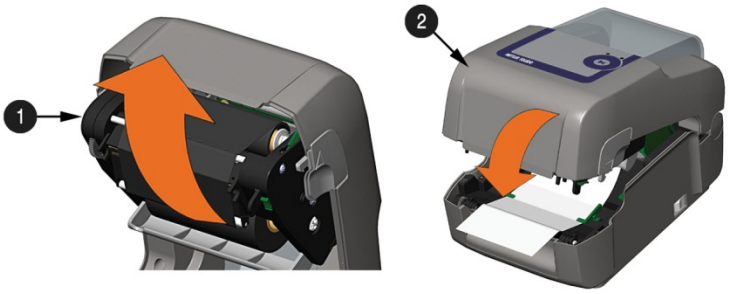
5. Route the ribbon from the supply roll to the Ribbon Core, as shown below.
6. If not already attached, affix the leader of the ribbon to the Ribbon Core using Tape. Rotate the Take-up Hub Wheel several times to secure the ribbon.



1: Ribbon Core
2: Tape
3: Take-Up Hub Wheel

Figure 2-15: Securing Ribbon to Take-Up Hub

7. Raise and latch the Ribbon Handler Assembly. Close the cover and press the ▶| button several times to advance the media (if the Fault Light is lit, refer to the **Media Calibration** section of Chapter 3.)



1: Ribbon Handler Assembly
2: Take-Up Hub Wheel

Figure 2-16: Securing Ribbon to Take-Up Hub

Using the Ribbon Core Adapters

When using ribbons with a 1" (25.4mm) I.D. core, a Core Adapter must be used.

1. Slide the Ribbon Roll (with the leader positioned as shown above) onto a Core Adapter. Slide an empty Ribbon Core onto the remaining Core Adapter.

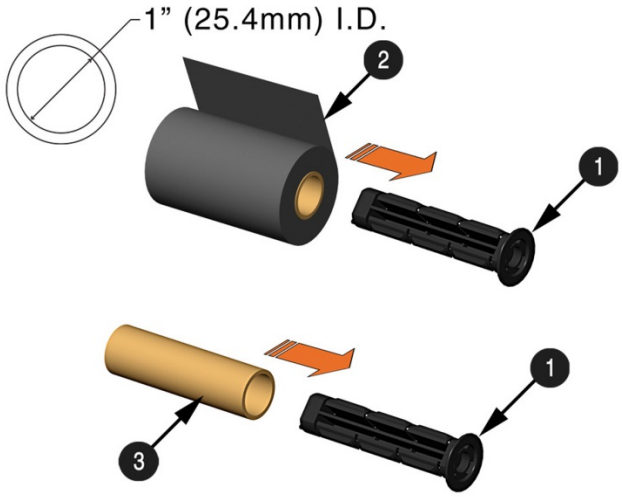


Figure 2-17: Ribbon Core Assembly

2. If using a narrow ribbon, position the Ribbon Roll so that it is centered on the Core Adapter. The Core Adapters are marked in both inches and centimeters to aid in proper positioning.

Figure 2-18: Ribbon Core Adapter Markings

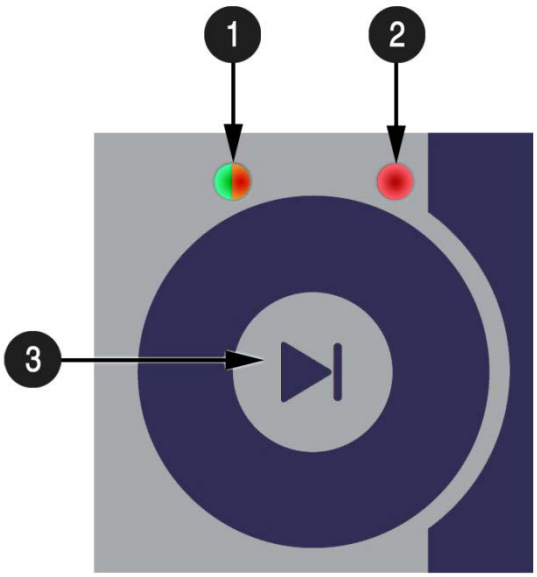
Chapter 3

Printer Operation

This chapter covers
- Front Panel
- Windows Driver
- Media Calibration

Introduction

The front panel consists of two indicator lights and one multi-function button (Figure 3-1).



1: Green/Orange Status LED

2: Red Error LED

3: Multi-Function Button

Figure 3-1: Multi-Function Button and Indicator LEDs

LED Indicators

Two LED indicator lights provide a quick visual reference of printer operations and conditions, as defined in Table 3-1.

Table 3-1: LED Indicator Interpretation

	LED 1		LED 2
Color	**Green**	**Orange**	**Red**
Solid	Ready to print	Paused or Present Sensor is blocked.	TOF sensing error. Next TOF not Found.
Flashing	Processing/busy	Paused/busy	Out of stock\labels or printer jam.
Off	No power		No Error

- Both indicators will be ON during power-up initialization and following a reset.

Multi-Function Button

The multi-function button performs different functions depending upon the mode of the printer.

Table 3-2: Multi-Function Button Actions

Button Action	LED 1 – Green Ready/Idle	LED 1 – Green Printing	LED 1 – Orange Paused	LED 2 – Red Faulted
Momentary Press	Printer feeds media to the next label.	Pauses Printer	Resumes printing	Clears Fault
Press and hold for 5 seconds (release when LED blinks orange)	Prints Network Report Label		Cancel Batch	Cancel Batch
Press and hold for 10 seconds (release when LED blinks green)	Performs the Quick Media Calibration		Performs the Quick Media Calibration	Performs the Quick Media Calibration
Press and hold for 20 seconds	Performs a 'warm reset'. Does not affect any stored printer settings.			

Printer Configuration Tools

The printer contains many user-adjustable parameters. These parameters are configurable using a few methods. The table below lists the most popular ways of configuring the printer and the advantages of each. Choose the method that best addresses your application.

Table 3-3: Printer Configuration Methods

Method	Description	Pros	Cons	For More Info
DMXConfig Program*	DMXConfig (located on the Resource CD-ROM) is a Windows-based configuration utility that allows the user to make changes to the existing printer setup via a direct connection to the host computer's serial, USB, or parallel connection.	Easy to use, gives the user the most control of the printer.	Software must be installed on a Windows based host computer.	Refer to **Printer Configuration Utility**, page **Error! Bookmark not defined.**
Internal Web Pages*	Internal web pages are simple HTML pages that can be accessed with any web browser via the optional Ethernet port.	Easy to use. Printer can be configured from any host connected to the network regardless of physical location or host operating system. No additional software required.	Printer must be equipped with an Ethernet option. Depending on the complexity of the network, initial connection may not be possible until network parameters are set via another method.	Refer to **Appendix B**
Windows Driver	The Windows printer driver (located on the Accessories CD-ROM).	Many applications require use of driver for printing from 3rd party applications. This can be an all in one solution for some users who do not require advanced setups.	Requires installation of a driver on a Windows-based host. Only basic parameters can be configured.	Refer to **Windows Driver**, page 3-3

Method	Description	Pros	Cons	For More Info
DPL Programming Commands	DPL Programming Language commands can be built into custom label formats or sent individually to the printer.	DPL commands can be built directly into label formats to configure the printer on the fly.	DPL programming knowledge needed.	Refer to the APR510/APR710 Programmer's Guide

* Recommended methods

Windows Driver

The Windows driver is located on the Accessories CD-ROM included with your printer. For updates, please contact your METTLER TOLEDO service provider.

Installing the Windows Driver:

1. Place the Accessories CD-ROM included with your printer into your computers CD-ROM drive.

Figure 3-2: Insert the Resource CD-ROM

2. Once the CD-ROM starts select your printer model then "Install Driver" from the menu and follow the instructions on the screen to install.
3. When prompted, select your printer from the list, (i.e. METTLER TOLEDO APR510). Continue to follow the on-screen instructions to install the driver.

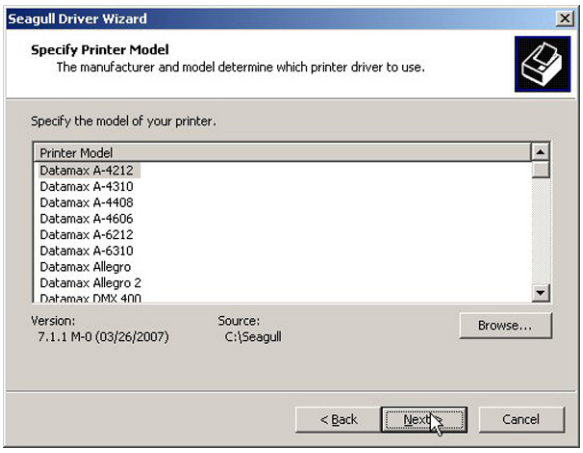


Figure 3-3: Selecting the Printer Model

Important Notes

The Windows driver functions the same as any other Windows printer. While built-in help files provide information on all settings, there are some important setting parameters that should be observed for trouble free printing:

Page Setup Tab: Stock

It is important that the **Stock** setting matches the size of the label you are using. If you cannot find a match for your label in the **Page Setup** tab of the **Printing Preferences** dialog (Figure 3-7), click **New** and enter the dimensions of your label.

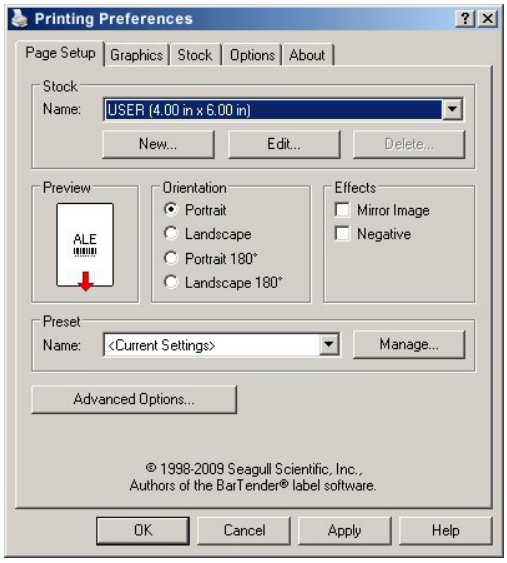


Figure 3-4: Printing Preferences Dialog

Print Speed and **Print Head Temperature**, set in the **Options** tab of the **Printing Preferences** dialog (Figure 3-8), have the greatest effect on print quality. Some label stocks will require more heat and slower print speeds to generate a quality image.

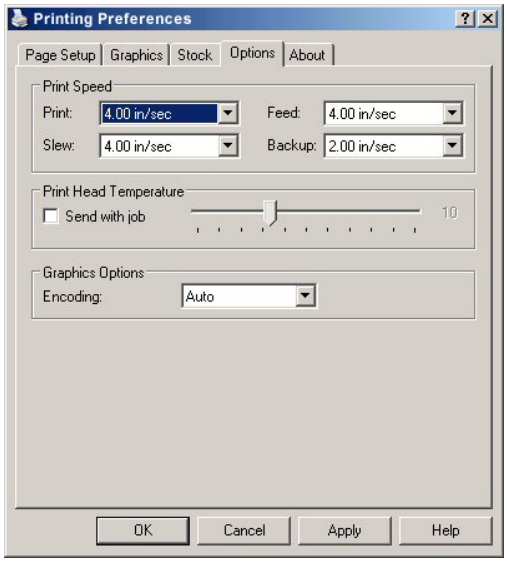


Figure 3-5: Printing Preferences – Options

The Windows application software used to create the label format will likely have a "Page Setup" screen. This will also need to match the size of the label you are using.

Media Calibration

Calibration ensures correct media detection.

Quick Calibration

The Quick Calibration can be performed using the DMXConfig Utility (refer to page **Error! Bookmark not defined.**) or by holding down the multi-function button (refer to page 3-2) . Once the DMXConfig utility is installed and the printer properly loaded with media, proceed with calibration as follows:

- This calibration is not necessary when using continuous stock.
- Media containing large gaps may require a change in the Paper Out Distance before proceeding.

1. Connect the host to the printer with a serial, parallel, or (USB cable if driver is installed).
2. Turn ON the printer and launch the DMXConfig utility.
3. Click on the port or the printer you wish to connect to from the list.

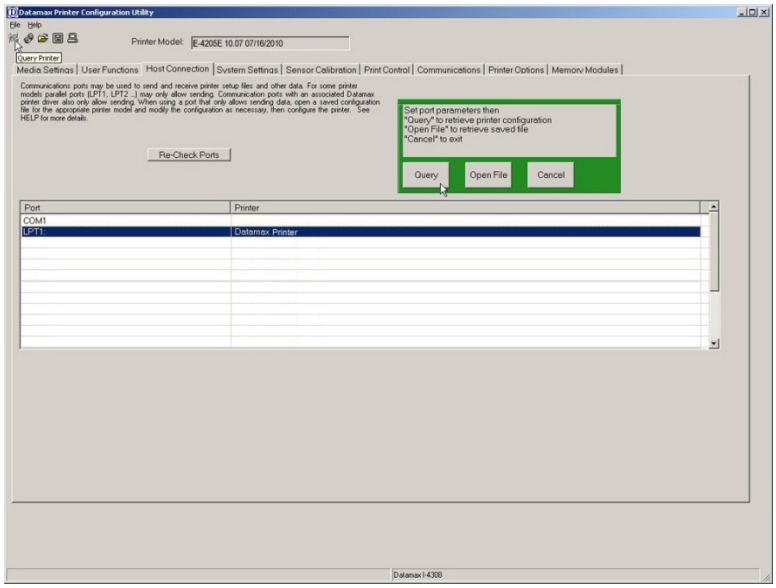


Figure 3-6: DMXConfig Utility Printer Selection List

4. Query the printer by using the Query Printer toolbar button (top-left) or the large 'Query' button in the green box. This will connect to the printer and get the current printer settings.

5. Select the Sensor Calibration Tab (Figure 3-10) and then click the Quick Media Calibration button. When prompted click OK to start the Quick Calibration.

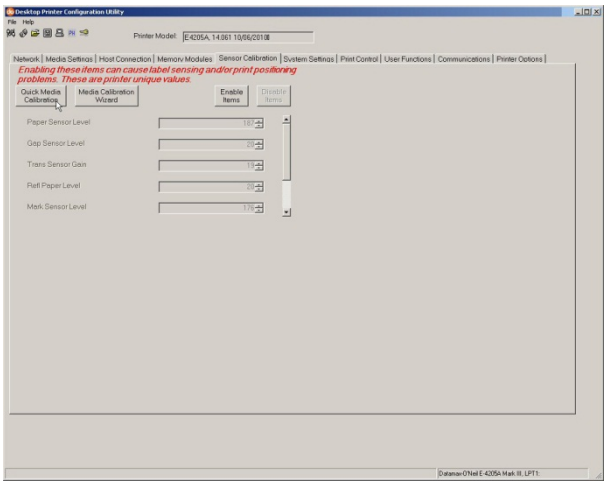


Figure 3-7: Sensor Calibration Tab

6. Wait for the printer to process the data. There are two possible outcomes:

   Green Light = Successful calibration

   Red Light = Unsuccessful calibration, try again. If the calibration continues to fail, proceed to the Media Calibration Wizard section on page 3-6.

Media Calibration Wizard

The Media Calibration Wizard can be performed using the DMXConfig Utility (refer to page **Error! Bookmark not defined.**). Once you have installed the DMXConfig utility and the printer is properly loaded with media, proceed with calibration as follows:

1. Connect the host to the printer with a serial, parallel, or (USB cable if driver is installed).
2. Turn ON the printer and launch the DMXConfig utility.
3. Click on the port or the printer you wish to connect to from the list.
4. Query the printer by using the Query Printer toolbar button (top-left in Figure 3-11) or the large 'Query' button in the green box. This will connect to the printer and get the current printer settings.

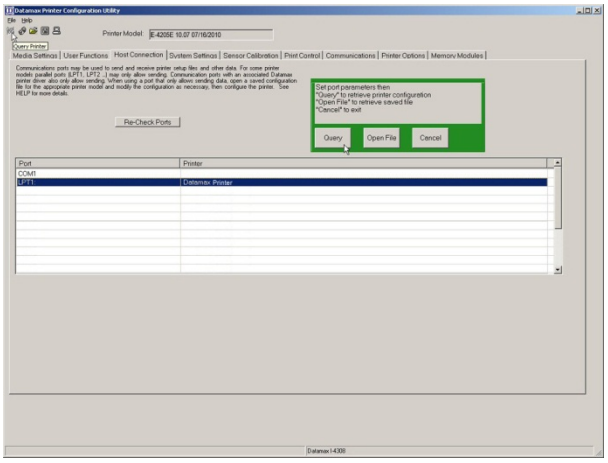


Figure 3-8: Querying the Printer

5. Select the Sensor Calibration Tab (Figure 3-12) and then click the Media Calibration Wizard button. When prompted click OK to start the calibration wizard.

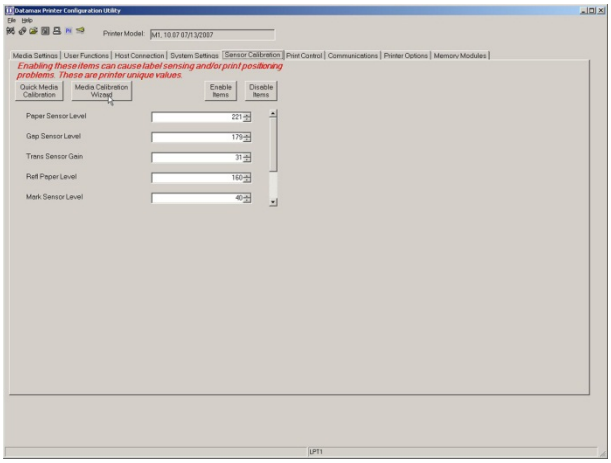


Figure 3-9: Sensor Calibration Tab

6. The Calibration Wizard will now prompt to **Remove Stock**. Remove media and backing from the printer. Close the cover and click OK.

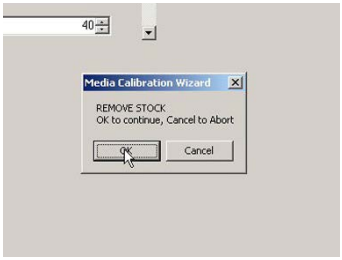


Figure 3-10: "Remove Stock" Prompt

7. The Calibration Wizard will now prompt to Load Backing. Peel off a few labels and position the backing material over the media sensor. Close the cover and click OK.

Figure 3-11: "Load Backing" Prompt

8. The Calibration Wizard will now prompt to Load Stock. Ensure that media is properly loaded in the printer then close the cover and click OK.

Figure 3-12: "Load Stock" Prompt

9. The Calibration Wizard will now respond with Passed Calibration (Figure 3-16) and green light on the printer; click OK. Each press of the ▶| button should advance one label.

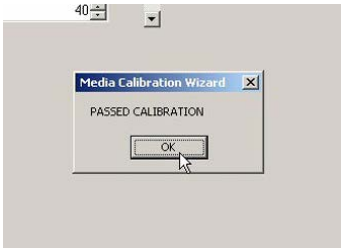


Figure 3-13: "Passed Calibration" Prompt

10. If the calibration was unsuccessful, retry the procedure beginning at Step 5.

Internal Labels

This section details the resident information and test labels.

Database Configuration Label

The Database Configuration Label (Figure 3-16) provides information including the printer firmware version, memory allocations, enabled options, and label-counter data.

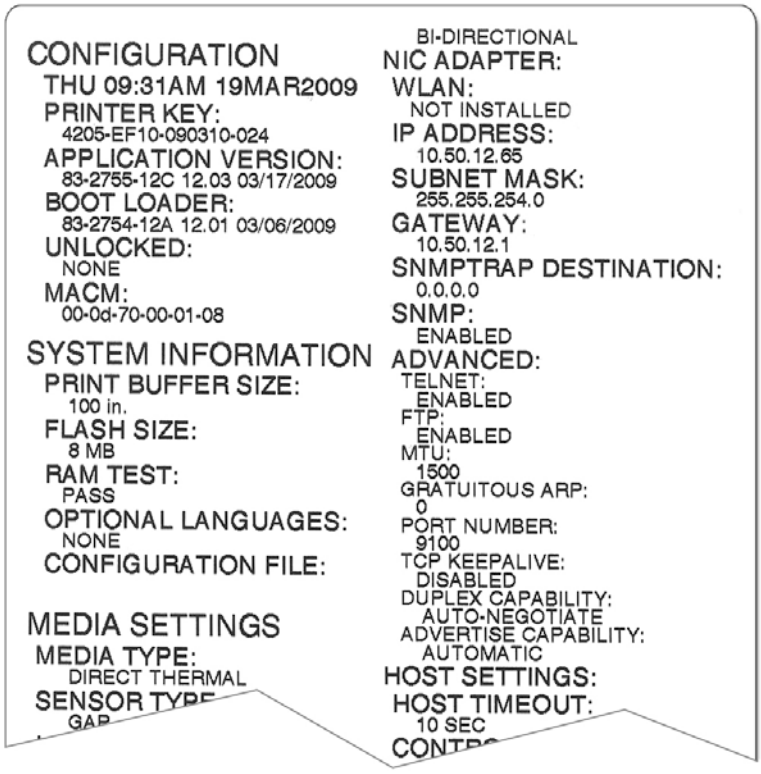


Figure 3-14: Database Configuration Label

Print a Database Configuration Label as follows:

1. Load with media (4 inch wide) and ribbon (if printing with thermal transfer media).
2. Turn the printer on. Both LEDs will be on.
3. When the right LED turns off, press and hold the ▶| button until the Database Configuration Label begins to print.

Chapter 4

Maintenance and Adjustment

This chapter covers

- Introduction
- Cleaning the Print Head
- Ribbon Tension Adjustment
- Adjustable Media Sensor
- Print Head Replacement
- Platen Roller Replacement
- Downloading Firmware and Fonts

Introduction

This section details the cleaning, adjusting, and troubleshooting tips for the printer. Table 4-1 outlines the recommended maintenance schedule for the various printer parts.

Table 4-1: APR510 Recommended Maintenance Schedule

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

* A solvent containing isopropyl alcohol is recommended for use.

WARNING

Isopropyl alcohol is a flammable solvent. Always take proper precautions when it is used.

Cleaning the Print Head

- Never use a sharp, hard or abrasive object on the print head.

If print quality declines (symptoms can include unreadable bar codes or streaks through text and graphics), the typical cause is debris buildup on the print head which, left unattended, can lead to premature dot failure. Depending upon the supplies and printing parameters used, different cleaning methods are recommended.

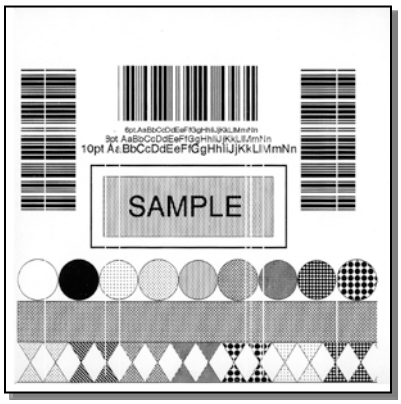


Figure 4-1: Example of Problems Caused by Dirty or Faulty Print Head

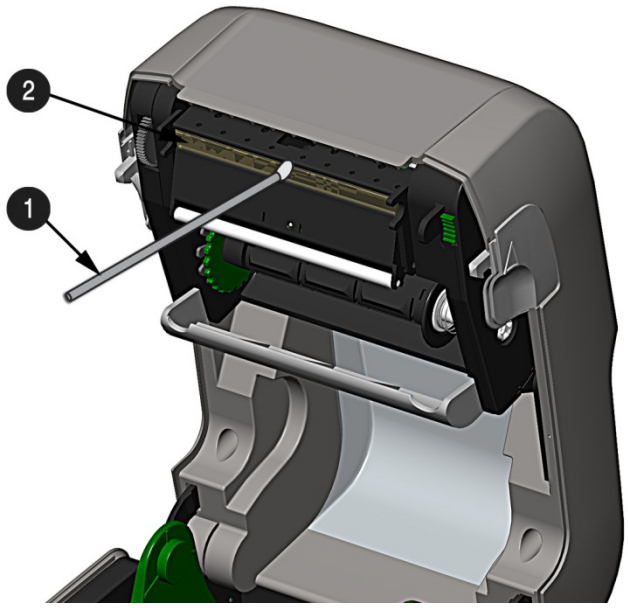
- Streaks can indicate a dirty or a faulty print head.

Proper cleaning is critical. To maintain peak performance of the printer, METTLER TOLEDO offers a complete line of cleaning products including pens, cards, films and swabs. To learn more visit our website.

Cotton Swab Procedure

If printing with direct thermal media or thermal transfer media with wax ribbon, clean the print head as follows:

1. Turn OFF the power switch and unplug the printer. Open the printer. Wait briefly for the print head to cool.
2. Remove any installed media and ribbon.
3. Using a Cotton Swab moistened (not soaked) with isopropyl alcohol, thoroughly clean the Print head (Figure 4-2).



1: Cotton swab with solvent
2: Print Head

Figure 4-2: Cleaning the Print Head with a Cotton Swab

Cleaning Card Procedure

If printing with direct thermal media, thermal transfer media with wax/resin ribbon combinations, or if the Cotton Swab technique was not successful, clean the print head as follows:

1. Open the printer. Wait briefly for the print head to cool.
2. Remove media and ribbon then place a Cleaning Card under the Print head (part number **085461020**).
3. Close the cover then press the ▶| Button to initiate cleaning.
4. After the cleaning card has been run through the printer, reinstall media (and ribbon, if needed). Plug in and turn ON the printer. Run a few sample labels and examine them. If streaking is still present, use the Cleaning Film Procedure, below; otherwise, this completes cleaning.

Cleaning Film Procedure

If printing with thermal transfer media and resin ribbon, when printing with a Heat Value of 22 or higher, or when other methods prove unsuccessful, clean the print head as follows:

1. Open the printer. Wait briefly for the print head to cool.
2. Remove media and ribbon then place a sheet of Cleaning Film under the print head (part number **085453020**).
3. Close the cover then press ▶| Button to initiate cleaning.
4. After the cleaning film has been run through the printer, turn OFF the Power Switch and unplug the printer. Open the cover and wait briefly for the print

head to cool. Using a cotton swab moistened (not soaked) with isopropyl alcohol, clean the Print head then allow it to dry.

5. Reinstall media (and ribbon, if needed). Plug in and turn ON the printer. Run a few sample labels and examine them. If streaking is still present, the print head may need to be replaced; refer to Print Head Replacement on page 4-6.

Ribbon Tension Adjustment

The adjustable ribbon handler feature, found on printers equipped with the thermal transfer option, allows the optimum amount tension to be supplied by the ribbon supply hub. Adjust the ribbon tension as follows:

1. Turn 'off' the printer.
2. Hold the ribbon/ribbon hub to prevent it from turning. Then push in and rotate the Ribbon Tension Adjustment Knob to the position that matches the core size of the ribbon in use.

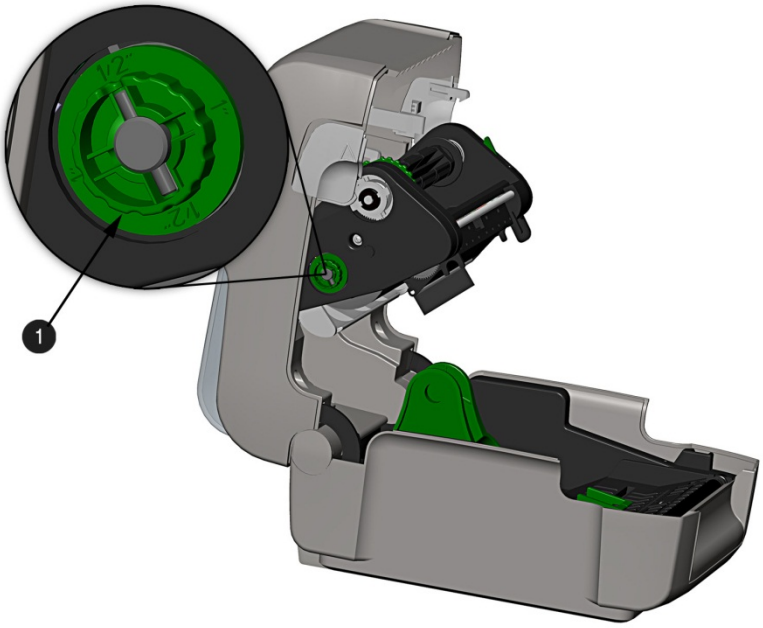


Figure 4-3: Ribbon Tension Adjustment

Adjustable Media Sensor

The optional Adjustable Media Sensor (AMS) allows the printer to accept a wider variety of media configurations. The table below defines general AMS positions for various media and Top of Form (TOF) types.

AMS Positioning		
Media Type	**Sensor Location**	**TOF Sensing Method**
Continuous	Center of the Media	Continuous
Die-Cut	Center of the Label	Gap
Notched	Center of the Notch	
Reflective	Center of the Mark	Reflective

Position the AMS as follows:

1. On the Bottom AMS Sensor, identify the proper Indicator for use with your media.

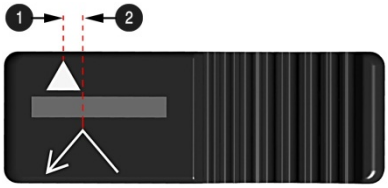
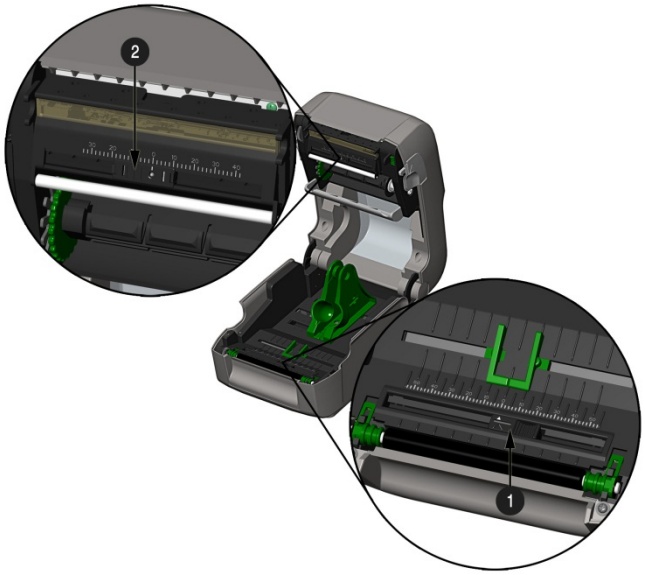


Figure 4-4: AMS Sensor Indicator

2. Slide the Bottom AMS sensor so the Indicator is in line with the center of the notch, gap, or reflective (mark) of the installed media.
3. Slide the Top AMS Sensor over to the same setting as the Bottom AMS Sensor, (this is not necessary if using reflective media).



1: Bottom AMS sensor
2: Top AM sensor

Figure 4-5: AMS Sensor Locations

4. Load media – refer to the Loading Media section in Chapter 2.

Print Head Replacement

If the print head becomes damaged or worn, replace it as follows:

Removal

- Always follow proper ElectroStatic Discharge procedures when replacing the print head.

1. Turn OFF the printer and remove the ribbon if installed.
2. Lower the Ribbon Handler Assembly.
3. Press outward on the two print head Carrier Tabs and rotate the print head Carrier down.

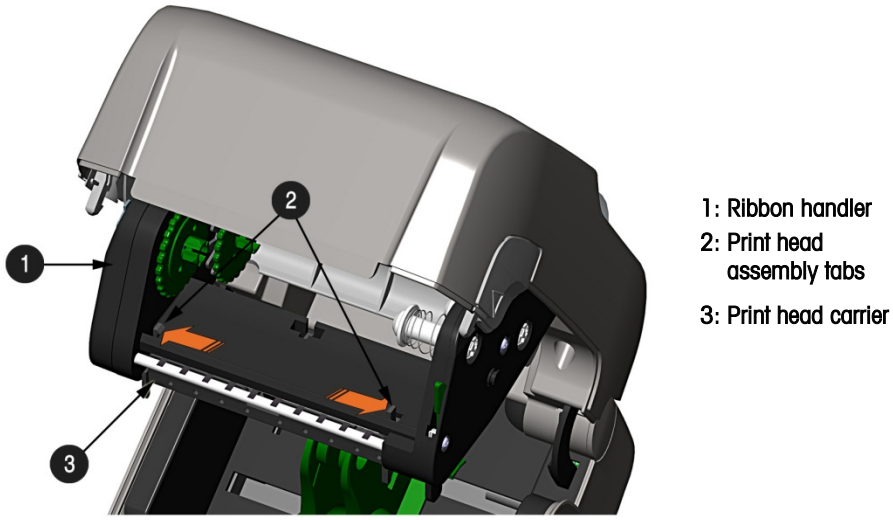
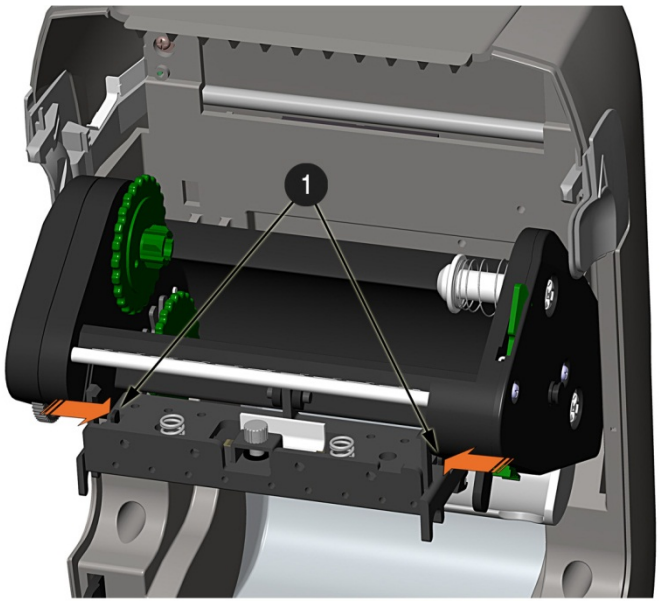


Figure 4-6: Print Head Removal, 1

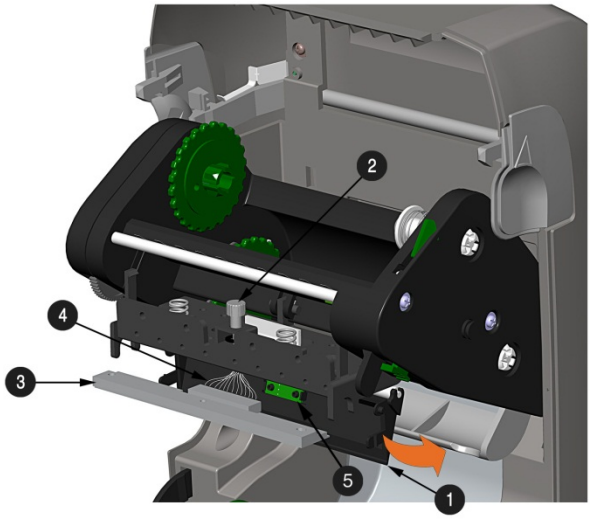
4. Press inward on the two print head Shield Tabs and rotate the print head Shield down.



1:Print head shield tabs

Figure 4-7: Print Head Removal, 2

5. Loosen the print head Screw and allow the print head to fall free.
6. Remove the print head Cable.



1: Print head shield
2: Print head screw
3: Print head
4: Print head cable
5: Sensor

Figure 4-8: Print Head Removal, 3

Installation

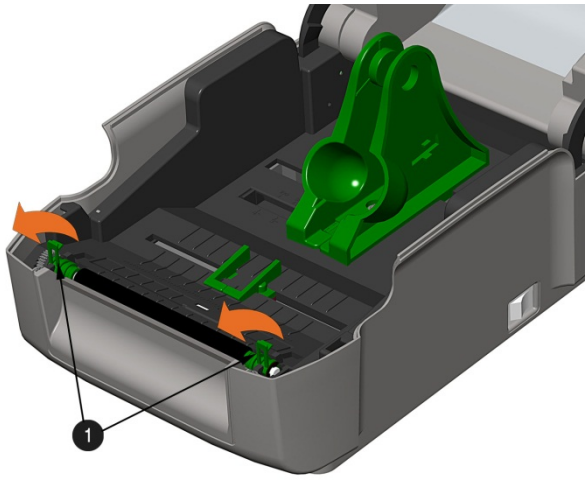
1. Carefully connect the print head Cable to the new print head.
2. Position the print head in the print head Carrier and tighten the print head Screw.
3. Ensure the Sensor properly seated and rotate the print head Shield upward until it snaps into place.
4. Rotate the print head Carrier upward until it snaps into place.

Platen Roller Replacement

The Platen Roller can be easily removed for cleaning, replacement, or clearing media jams.

Removal

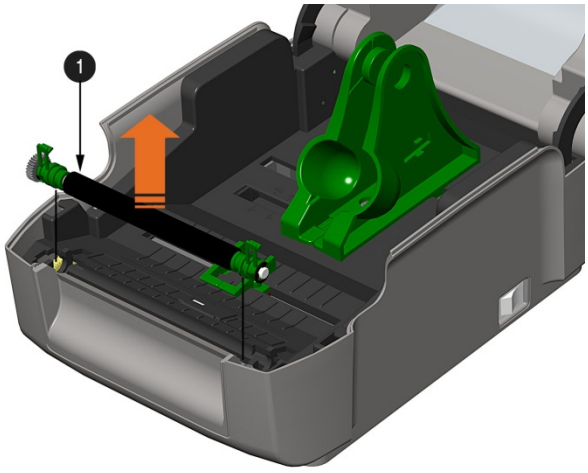
1. Turn OFF the printer and remove the media if installed.
2. Lift up on the two Platen Roller Tabs.



1: Platen roller tabs

Figure 4-9: Platen Roller Removal, 1

3. Remove the Platen Roller Assembly from the printer.



1: Platen roller assembly

Figure 4-10: Platen Roller Removal, 2

Installation

1. Position the Platen Roller Assembly into the printer.
2. Rotate the two Platen Roller Tabs downward until they snap into place.

Chapter 5

Troubleshooting

This chapter covers
- Introduction
- Troubleshooting Tips

Introduction

Occasionally, situations arise that require troubleshooting. Possible problem situations and potential solutions are listed below. Contact a qualified technician for problems that persist or problems not covered in this section.

Troubleshooting Tips

This section lists the symptoms and the associated topics covered in this manual. While not every situation is addressed, you may find some tips helpful. After a corrective action is taken press the FEED button to clear the alarm.

Unacceptable print quality

- Dirty printhead: Clean the printhead (refer to **Cleaning the Print Head**, in Chapter 4).
- The temperature setting may be incorrect for the media being used: Use the software program or DPL commands adjust the Heat Setting and Print Speed.
- A mismatched incorrect ribbon/media combination is being used: Check the types being used.
- Faulty printhead: Replace it (refer to **Print Head Replacement**, in Chapter 4) or call for service.

The printer does not print or prints several labels at once

- The labels are incorrectly loaded: See the loading instructions on the inside cover of the printer, or in the **Loading Media** section of Chapter 2.
- The media is not calibrated: Calibrate it (refer to **Media Calibration** in Chapter 3).
- The media sensor or sensor circuitry may be defective: Call for service.

The ribbon does not advance

If the paper advances, but the ribbon does not:

- The ribbon may be installed incorrectly: Ensure that the inked side of the ribbon faces the labels. With most ribbons this can be verified by rubbing paper against the ribbon; the ink should smudge the paper. Or, if using label stock, the sticky side of a label will pull off the ink.
- A mismatched ribbon/paper combination is resulting in an insufficient amount of friction between paper and ribbon: Ensure that the correct type of ribbon is being used with the media.

Skips every other label

If print quality is good, but every other label is skipped:

- The label is formatted too close to the top edge of the label: Leave white space equal to 8-dot rows (about .02 inch [.5mm]) at the top of the label.
- The media is not calibrated: Calibrate it (refer to **Media Calibration**, in Chapter 3
- The media sensor or media sensor circuitry may be defective: Call for service.

Unable to print rotations

- The characters are formatted outside the dimensions of the label: Check that the row/column values provide enough room for the height of the image being printed.

Light print on the right side of the label

- The printer's cover is not latched down: Latch it.
- The print head is not properly aligned: Call for service.

Printer fails to power ON

- The AC wall outlet may be faulty: Try another outlet.
- The power supply may be faulty: Replace it.
- Possible defective power switch: Call for service.

Label advances 1-2 inches before a fault indication:

- The ribbon may be incorrectly installed. Ensure that the inked side of the ribbon faces the labels. With most ribbons this can be verified by rubbing paper against the ribbon; the ink should smudge the paper. Or, if using label stock, the sticky side of a label will pull off the ink.

- A mismatched ribbon/paper combination is resulting in an insufficient amount of friction between paper and ribbon: Ensure that the correct type of ribbon is being used with the media.

Label advances 12 inches before a fault indication:

- The media may not be properly loaded: Reload it (refer to **Loading Media**, in Chapter 2). When loading media ensure that the media hangers and media guides are against the media and that gaps or marks in the labels are in line with the media sensor.
- The media sensor or media sensor circuitry may be defective: Call for service.

Labels move excessively from side to side during printing

- The media may not be properly loaded: Reload it (refer to **Loading Media**, in Chapter 2). When loading media ensure that the media hangers and media guides are against the media and that gaps or marks in the labels are in line with the media sensor.

Appendix A

Specifications

Mechanical

Width	8.01 inches (20.4 cm)
Depth	7.36 inches (28.2 cm)
Height	11.10 inches (28.2 cm)
Weight	5.25 pounds (2.4 kg)
Operating Temperature	40° to 95° F (4° to 35° C)
AC Input Voltage	Power Supply: 105 VAC to 250 VAC / 50-60 Hz

Printing

Print Method	Direct Thermal; Thermal Transfer (optional)
Print Speed	2 - 4 IPS (50.8 - 101mm/s)
Resolution	203 DPI Models: 203 DPI (8 dots/mm) 300 DPI Models: 300 DPI (11.8 dots/mm)
Tear Bar	Tear up
DRAM Memory	16MB
FLASH Memory	64MB

Media / Ribbon

Media Types	Roll-Fed, Die-Cut, Continuous, Fan-Fold
Max. Media Width	4.4 inches (110mm)
Min. Media Width	0.75 inches (19mm)
Max. Print Width	203 DPI Models: 4.25 inches (108mm) 300 DPI Models: 4.12 inches (106mm)
Print Length Range	.236 – 99 inches (6 - 2514mm)

Minimum Label Height	Tear: 0.5 inches (12mm) Peel: 1.0 inches (25mm) Cut: 1.18 inches (30mm)
Media Thickness Range	.0025 - .01 inches (.064 - .254mm); up to .005 inches (.127mm) with optional Cutter
Media Supply Roll Capacity	5 inches (127mm) O.D. on a 1 inch (25.4mm) core
Ribbon Width Range	½" Core Ribbons Ribbon Core Width: 4.3 inches (110mm) Ribbon Width: 1.0 - 4.3 inches (25 - 110mm); Centered on core 1" Core Ribbons With Ribbon Core Adapters, see section 2.4.1.) Ribbon Core Width: 1.0 - 4.3 inches (25 - 110mm); Centered on Ribbon Core Adapters Ribbon Width: 1.0 - 4.3 inches (25 - 110mm); Centered on core
Ribbon Roll Capacity	0.5" (13mm) core with 361' (110m) long ribbon or 1" (25mm) core with 984' (300m) long ribbon

Communications

Interface Ports (standard)	USB, RS-232 (DB-9), & IEEE 1284 Type C compliant mini-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

9 Bit Mapped Fonts rotated 0, 90, 180, and 270 degrees.

Embedded Bar Codes

32 embedded barcodes (refer to the APR510/APR710 Programmer's Guide for a detailed listing).

Approved Media

To achieve optimum print quality and maximum print head life, METTLER TOLEDO specifies the use of METTLER TOLEDO brand media and ribbons. These supplies are specially formulated for use in our printers; use of other 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 your local METTLER TOLEDO sales and service office (www.mt.com/contact).

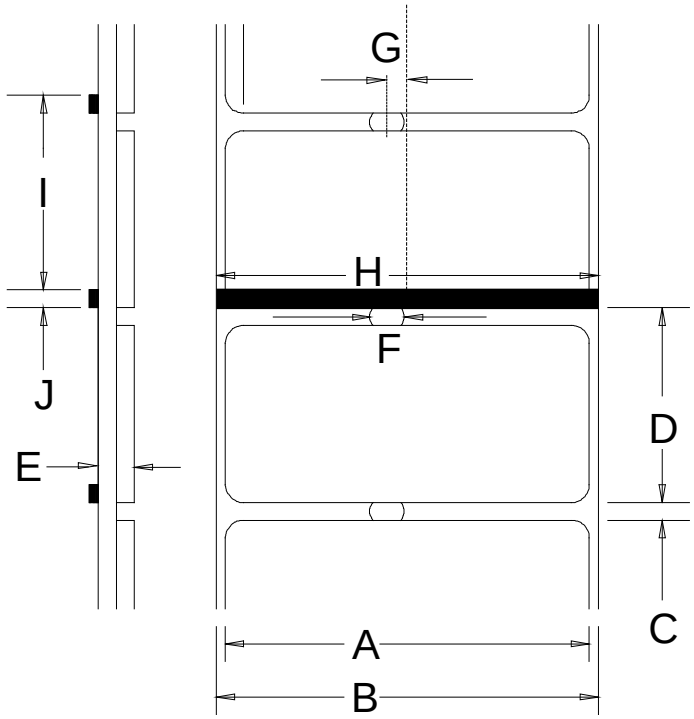


Figure 6-1: Media Dimensions Reference Guide

Table 4-1: Media Dimensions

	Description	Max [1]	Min [1]
A	Label width	203 DPI: 4.25 300 DPI: 4.12	.75
B	Backing width	4.4	.75
C	Gap between labels	.25	.10
D	Label length	24[3]	.25[4]
E	Total thickness	.010[6]	.0025
F	Notch opening width	--	.20
G	Distance from the center of the media to the center of media sensor aperture	.1875	--

	Description	Max [1]	Min [1]
	with the Adjustable Media Sensor option	Adjustable across full media width	
H	Reflective mark width[2]	4.4	.50
I	Distance between reflective marks	24[3]	.25[5]
J	Reflective mark length	.25	.10

[1] Units of measure are in inches.

[2] 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.

[3] The label length may vary up to 99 inches with printable area not exceeding the maximum label length.

[4] This distance is inclusive of the minimum gap between labels. Min length of 1.25 inches (31.8mm) with optional Cutter installed.

[5] This distance is inclusive of the minimum reflective mark.

[6] .007 inches (.117mm) with Standard Cutter.

Appendix B

Ethernet Setup

Network Card Setup

The Print Server makes IP requests at power-up, so before making a network connection to the printer consider how your IP addressing needs to be assigned. The IP addressing of the Internal Ethernet Print Server can be configured in one of two ways: Using a static IP Address or Using IP Discovery (DHCP, BootP, or RARP). At factory default settings, IP DISCOVERY is enabled.

1. With Printer Off, connect the network cable then turn ON Printer.
2. The printer will now search for a DHCP server. Allow up to 90 seconds for the printer to retrieve an IP address.
3. At this point it is recommended to print a Network Report. This Network Report is generated by the printer and lists important default information such as the IP and MAC Addresses. To print the Network Report, press and hold the ▶| button for 5 seconds (release when LED blinks orange).

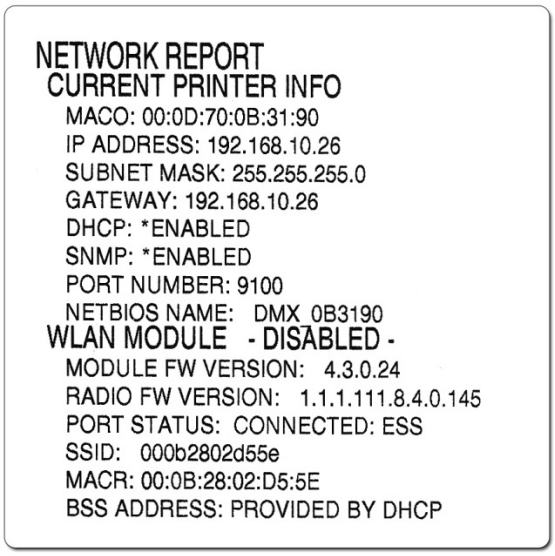


Figure B-1: Network Report

4. Verify that the printer has obtained a valid IP address for your network. If a valid IP address was not obtained or you wish to use a different static address, refer to Wired Configuration, below.

   The information given in this label will vary depending on your configuration and firmware version.

Once the previous steps have been successfully completed you may now use the IP Address to:

Install a printer driver, and start printing from your Windows® applications; refer to Installing the Printer Driver, on page B-7.

or

Browse to the internal web pages for advanced configuration; refer to Printer's Internal Web pages, on page B-4.

Wired Configuration - Static IP Address:

DMXConfig (located on the Accessories CD-ROM) is a Windows based configuration utility that allows the user to make changes to the existing printer setup via a direct connection to the host computers serial and parallel connection. This is a vital tool for the use and configuration of wired and wireless printer setup.

- The following example uses the DMXConfig software utility to configure the printer.

1. Connect the host to the printer with a serial, parallel, or (USB cable if driver is installed). Also connect the network cable to the rear of the printer.
2. Turn ON the printer and launch the DMXConfig utility.

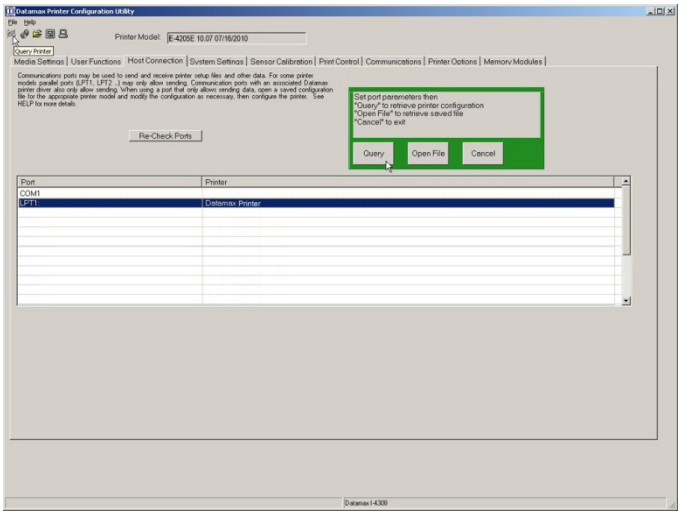


Figure B-2: DMXConfig Utility

3. Click on the port or the printer you wish to connect to from the list.
4. Query the printer by using the Query Printer toolbar button (top-left) or the large 'Query' button in the green box. This will connect to the printer and get the current printer settings.
5. Click on the "Network" Tab, then click on the Network Report button.

   The Network Report will list the current network settings of the printer, including the MAC and IP Addresses.

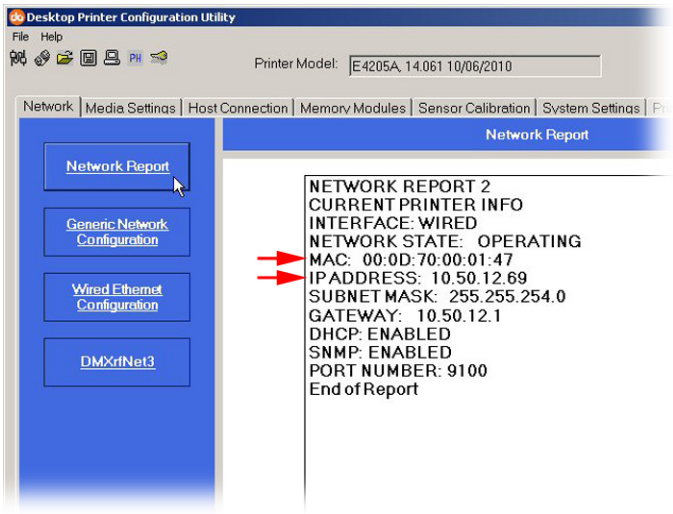


Figure B-3: Network Report

If DHCP is running on your network you may use the IP address displayed in the Network Report to:

Install a printer driver, and start printing from your Windows applications; refer to **Installing the Printer Driver** on page B-7.

or

Browse to the internal web pages for advanced configuration; Refer to Printer's Internal Web Pages on page B-4.

If you wish to assign a static IP Address continue to step 6.

6. Click on the Wired Ethernet Configuration button. First select the 'Disabled' radio button. Then enter valid values (within your network's range) for the following fields:

   Printer IP Address

   Printer Subnet Mask

   Printer Gateway

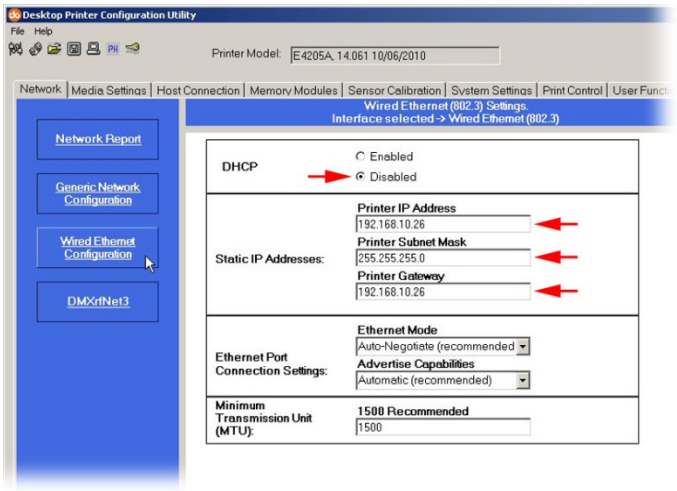


Figure B-4: Wired Ethernet Configuration

7. Send the settings to the printer using the Configure Printer toolbar button.
8. The printer will reset and will connect to your network with the values you specified.

   Once the previous steps have been successfully completed you may now use the IP Address to:

   Install a printer driver, and start printing from your Windows applications; refer to **Installing the Printer Driver** on page B-7.

   or

   Browse to the internal web pages for advanced configuration; refer to **Printer's Internal Web Pages**, below.

Printer's Internal Web Pages

1. Open a web browser. Type in the IP Address of the printer. The Default IP is: 192.168.10.26.

   - If a different IP address has been assigned to the printer, use that address.

2. The page shown in Figure B-5 will appear:

Figure B-5: Internal Web Pages, Home Page

The printer's fourteen internal web pages are accessible via the navigation bar on the left-hand side.

The **Generic Network Configuration** and **Wired Ethernet Configuration** pages contain many items associated with the setup of the network card. The following tables provide information on each of the items listed on these pages.

- You must provide a password to change any settings; the default password is sysadm
- When changes from any web page have been sent to the printer, the printer must be reset in order for the changes to take effect. This can be done from the **Reset Network Parameters** web page.
- If any address parameters were changed such as IP address, subnet or gateway, the printer might not be viewable from the current host if they are no longer on the same subnet.

Generic Network Configuration Page

NetBIOS (WINS) Settings	
NetBIOS Name	Is the name used to reference the printer instead of the IP address. A WINS or DNS server is required for this capability.
Primary WINS Server	The IP address of the primary WINS Server.
Secondary WINS Server	The IP address of a secondary WINS Server.

TCP Print Services	
TCP Port Number	Selects the Port to use for all network communications; the default is 9100.

LPD Print Services	
Enable/Disable LPD Print Services	• Enables the Line Printer Daemon (LPD) Service. • Disables the Line Printer Daemon (LPD) Service

SNMP Services	
Enable/Disable SNMP Service	Allows management protocols, where: • Sends messages to SNMP-compliant devices. • Sends no messages.
SNMP Server Address	Is the Server address in standard octet format where SNMP traps will be sent when SNMP service is installed on your receiver. When zeroed, no traps are sent.
SNMP Trap Address	Is the address in standard octet format where SNMP traps will be sent when SNMP service is installed on your receiver. When zeroed, no traps are sent.

Telnet Services	
Enable/Disable Telnet Services	Allows Telnet protocol to transfer data, where: • Telnets to remote computers or server systems. • Disables Telnet.

FTP Services	
Enable/Disable FTP Services	Allows FTP protocol to transfer data, where: • Enables FTP • Disables FTP

HTTP (WWW) Services	
Enable/Disable HTTP (WWW) Services	Allows HTTP (WWW) protocol to transfer data, where: • Enables HTTP • Disables HTTP

Netcenter Services	
Enable/Disable Netcenter Services	Allows Netcenter Services to transfer data, where: • Enables Netcenter Services • Disables Netcenter Services

Gratuitous ARP	
Gratuitous ARP (Minutes) (Disabled=0)	Sets time interval for ARP transmission packets, where: (0-2048 minutes); the default is Disabled.

Wired Ethernet Configuration Page

DHCP	
DHCP	Controls IP Address discovery, where: • Enabled: Broadcasts over the network to receive addresses from the responsible server at startup. Manual modifications to IP Address, Subnet Mask, or Gateway are not allowed; and, if no server is found, the specified static value will be used. • Disabled: Uses the stored static IP, Subnet Mask, and / or Gateway Address.

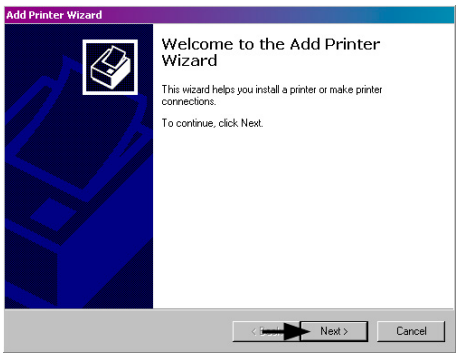
Static IP Settings	
Printer IP Address	These are the static address the printer will use when DHCP is set to disabled or a valid IP could not be retrieved from a DHCP server.
Printer Subnet Mask	
Printer Gateway	

Ethernet Port Connection Settings	
Duplex Capability	Allows the User to specify the line duplex and speed of the wired Ethernet connection. • Auto-Negotiate (default) • 100 BaseT Full Duplex • 100 BaseT Half Duplex • 10 BaseT Full Duplex • 10 BaseT Half Duplex
Advertise Capability	Selects the method in which the Duplex Capability setting is advertised, where: • Automatic (advertises the selected Duplex Capability setting) • All Capabilities (advertises all capabilities)

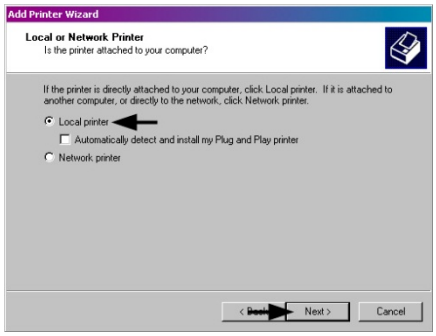
Installing the Printer Driver

Install the Printer Driver as follows (screen shots below are samples taken using Windows 2000; other versions will be similar):

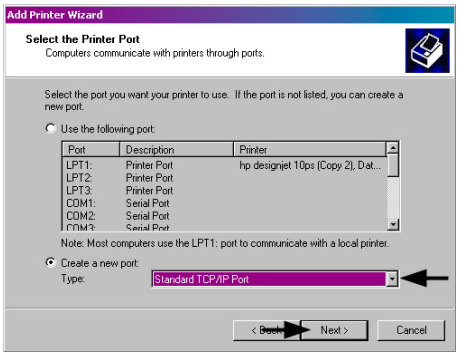
1. Start the Windows Add Printer Wizard. The following screen should appear, and then click Next>.



2. Make sure that Local Printer is selected and then click Next>.

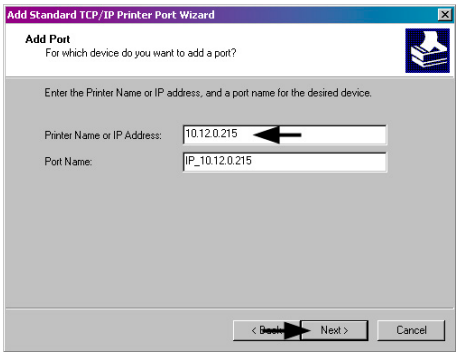


3. Select Create a new port: and then select Standard TCP/IP Port from the drop down menu. Click Next>.

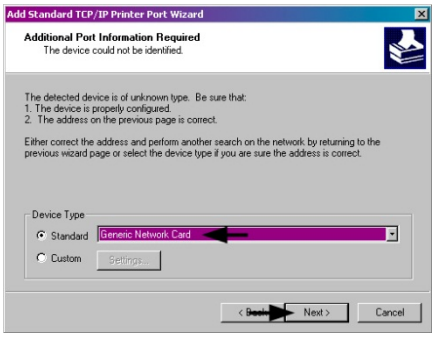


4. Click Next>.

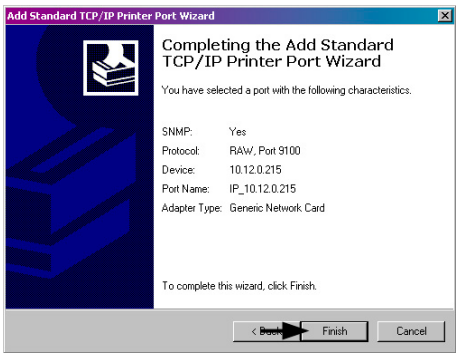
5. In the Printer Name or IP Address: field, enter the IP address of your printer. The Port Name field does not need to be changed. When finished click Next>.



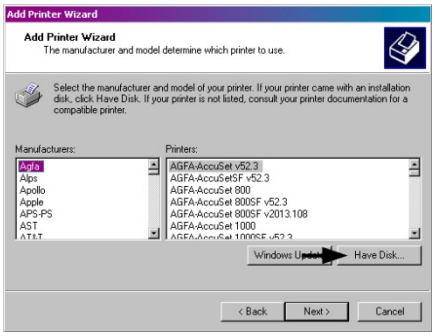
6. Make sure Standard is selected and then click Next>.



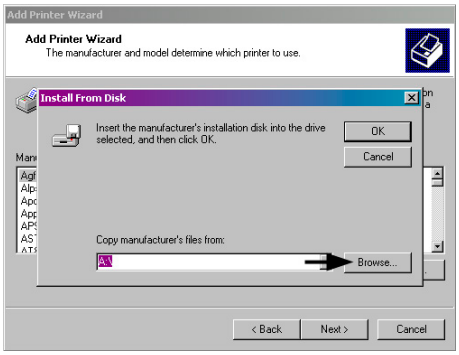
7. Confirm your settings and then click Finish.



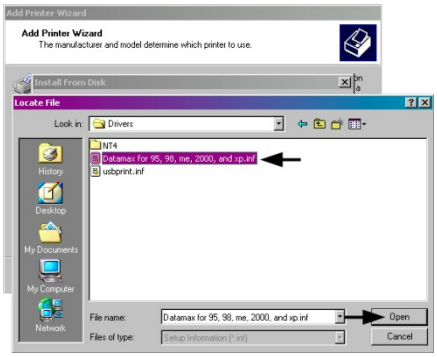
8. Click Have Disk.



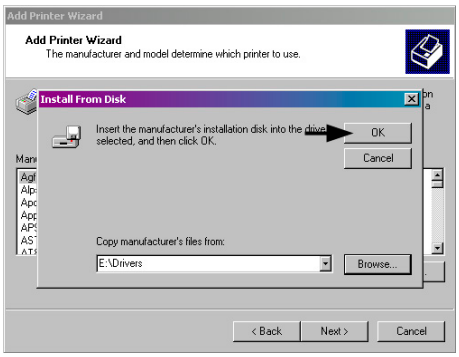
9. Insert the Accessories CD-ROM and click Browse.



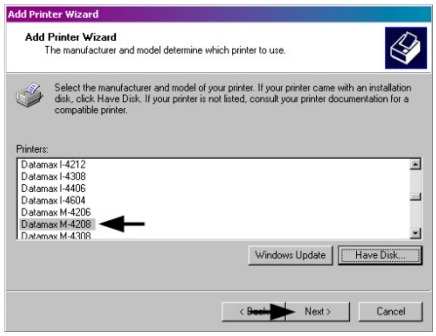
10. Browse to the \DRIVERS\ folder on the CD-ROM. Ensure the file "METTLER TOLEDO.inf" is selected then click OK.



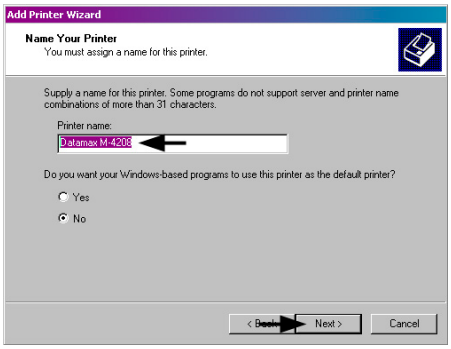
11. Click OK.



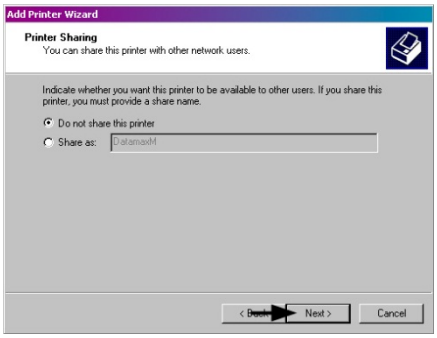
12. Choose your printer from the list and then click Next>.



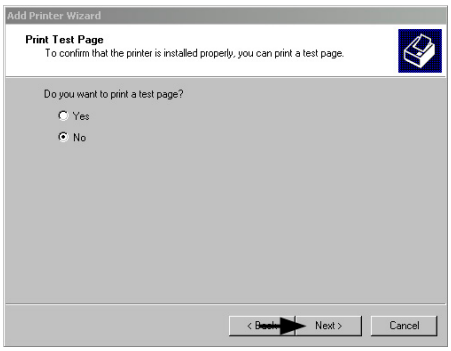
13. Assign a name in the Printer name field and select whether or not it is to be your default printer then click Next>.



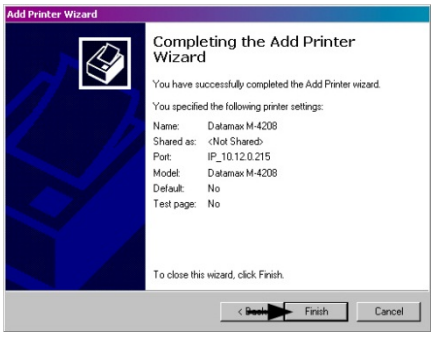
14. Select whether or not to share this printer on your network. Then click Next>.



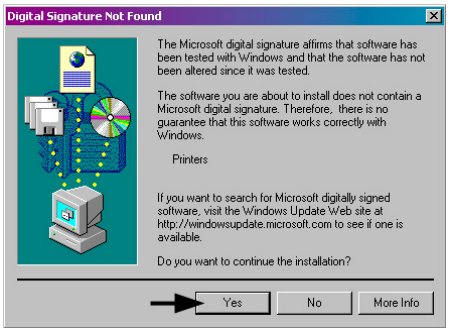
15. Select No then Click Next>.



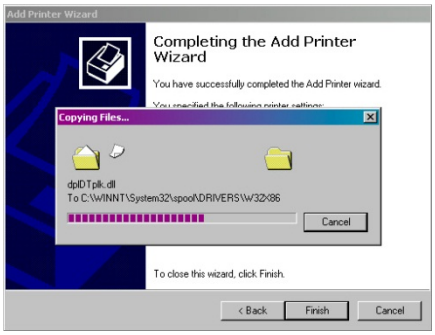
16. Confirm your settings and then click Finish.



17. If prompted with the Digital Signature Not Found window, click Yes to continue installation.



18. Your computer will now copy the necessary files from the CD-ROM.



The driver and port installation is now complete. The printer can be selected through any Windows application.

Appendix C

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 print head 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 heat sensitive media and the heat produced from the print head 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 print head. Also referred to as "resolution".
DPL Programming Language	The programming commands used specifically for control of and label production with METTLER TOLEDO desktop printers. A complete listing can be found in the APR510/APR710 Programmer's Guide
fan-fold	Media that is folded and stacked.
feed speed	The speed at which the media moves under the print head 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 as media travels under the print head.
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 indicator of the media.
media	Generalized term for printing material.

media hub	Device in the printer used to support roll media.
media sensor	An electronic device equipped with photo sensors 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, flood coating, 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 print head 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 produced from the print head.
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.

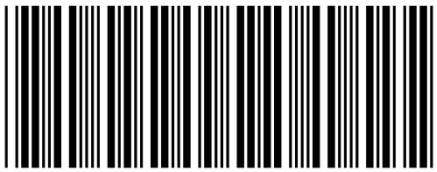
Appendix D

Parts and Accessories

The following parts and accessories are available from METTLER TOLEDO.

085437020	US Power Cord
085438020	European power cord
085439020	Australian power cord
085408020	RS232 Serial Data Cable DP09
085440020	Fan-fold/external media guide, 1 set
085441020	Auto-ranging power supply
085442020	1" Ribbon core adapters
085443020	M3 packing box assembly
085444020	See-through assembly PCB
085445020	Movable label sensor assembly kit
085446020	Main board assembly kit, advanced models
085447020	Cutter kit, guillotine, with sensor (not compatible with Basic model)
085448020	Label peeler kit with sensor
085449020	Printhead, 203 DPI
085450020	Printhead, 300 DPI
085451020	Platen roller assembly kit

METTLER TOLEDO
1900 Polaris Parkway
Columbus, Ohio 43240



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