

User's Guide



EasyCoder[®] PD42 Printer

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There are U.S. and foreign patents as well as U.S. and foreign patents pending.

Contents

Before You Begin	vii
Safety Information	vii
Global Services and Support	vii
Warranty Information	vii
Web Support	viii
Telephone Support	viii
Who Should Read This Manual	ix
Related Documents	ix

1 Using the Printer 1

Introducing the EasyCoder PD42 Printer	2
Features of the Printer	2
Front View of the Printer	2
Back View of the Printer	3
Media Compartment and Print Mechanism	4
Firmware	5
Working With the Print Button and LED Indicators	6
Working With the Display and the Soft Keys	7

2 Installing the Printer 9

Connecting the Printer to Your System	10
Connecting the Printer Through the USB Interface	10
Connecting the Printer Through the Serial Port	11
Connecting the Printer Through the Parallel Port	11
Connecting the Printer to a Network	11
Connecting Peripherals Through USB Host	12
Connecting a Mass Storage Device	12
Connecting a Keyboard	12
Connecting a Bar Code Scanner	13
Connecting a USB Hub	14
Loading Media	14
Loading Media for Tear-Off (Straight-Through) Operation	14
Loading Media for Peel-Off (Self-Strip) Operation	17

Loading Thermal Transfer Ribbon	19
Plugging in the Printer	22
Printing Test Labels	23
Creating and Printing a Label	24

3 Configuring the Printer 25

Understanding Printer States	26
Understanding the Printer Startup Sequence	30
Changing Configuration Settings	31
Changing Configuration Settings From the Display	31
Changing Configuration Settings With PrintSet 4	33
Changing Configuration Settings From the Printer Home Page	33
Changing Configuration Settings Using the Command Line	33
Running Testmode and Extended Testmode	34
Running Testmode	34
Running Extended Testmode	36
Upgrading the Firmware	38

4 Troubleshooting and Maintaining the Printer 39

Printer Operation Problems	40
Print Quality Problems	44
Troubleshooting Communication Problems	45
Using the Line Analyzer (Fingerprint)	45
Using Dumpmode (IPL)	46
Contacting Product Support	47
Adjusting the Printer	47
Preventing Ribbon Wrinkling	47
Clearing Media Jams	49
Adjusting the Printhead	49
Adjusting Printhead Balance	50
Adjusting Printhead Pressure	51

Adjusting Printhead Dot Line	51
Adjusting the Label Gap Sensor	53
Maintaining the Printer	56
Cleaning the Printhead	57
Cleaning the Media Compartment	58
Cleaning the Exterior of the Printer	58

A Specification, Interfaces, and Options..... 59

Printer Specifications	60
Interfaces	63
RS-232 Serial Interface	63
Protocol	63
Interface Cable	63
USB Interface	64
USB Host Interface	65
EasyLAN Ethernet Interface	65
Parallel IEEE 1284 Interface	66
Interface Cable	66
Options	66
EasyLAN Ethernet Interface	66
Parallel IEEE 1284 Interface	67
Cutter Kit	67
Internal Rewinder	67
Printhead Kit	67
Real Time Clock	67

B Media Specifications..... 69

Media Roll Sizes	70
Core	70
Internal Roll	70
Ribbon Size	71
Paper Types and Sizes	72
Non-Adhesive Strip	72
Self-Adhesive Strip	73
Self-Adhesive Labels	74
Tickets With Gaps	76
Tickets With Black Mark	78

C	Setup Parameters (Fingerprint)	81
	Setup Description	82
	Navigating the Setup Tree	82
	Serial Communication Setup	87
	Com Setup	89
	Emulation Setup	89
	Feed Adjust Setup	90
	Media Setup	91
	Print Defs Setup	96
	Network Setup	97
D	Setup Parameters (IPL)	99
	Setup Description	100
	Printing Test Labels With IPL Commands	100
	Navigating the Setup Tree	100
	Serial Communication Setup	104
	Com Setup	106
	Test/Service Setup	107
	Media Setup	109
	Configuration Setup	112
	Network Setup	113
	Returning to Factory Default Setup	113

Before You Begin

This section provides you with safety information, technical support information, and sources for additional product information.

Safety Information

Your safety is extremely important. Read and follow all warnings and cautions in this document before handling and operating Intermec equipment. You can be seriously injured, and equipment and data can be damaged if you do not follow the safety warnings and cautions.

This section explains how to identify and understand warnings, cautions, and notes that are in this document.



A warning alerts you of an operating procedure, practice, condition, or statement that must be strictly observed to avoid death or serious injury to the persons working on the equipment.



A caution alerts you to an operating procedure, practice, condition, or statement that must be strictly observed to prevent equipment damage or destruction, or corruption or loss of data.



Note: Notes either provide extra information about a topic or contain special instructions for handling a particular condition or set of circumstances.

Global Services and Support

Warranty Information

To understand the warranty for your Intermec product, visit the Intermec web site at www.intermec.com and click **Service & Support > Warranty**.

Before You Begin

Disclaimer of warranties: The sample code included in this document is presented for reference only. The code does not necessarily represent complete, tested programs. The code is provided “as is with all faults.” All warranties are expressly disclaimed, including the implied warranties of merchantability and fitness for a particular purpose.

Web Support

Visit the Intermec web site at www.intermec.com to download our current manuals (in PDF). To order printed versions of the Intermec manuals, contact your local Intermec representative or distributor.

Visit the Intermec technical knowledge base (Knowledge Central) at intermec.custhelp.com to review technical information or to request technical support for your Intermec product.

Telephone Support

These services are available from Intermec.

Services	Description	In the USA and Canada call 1-800-755-5505 and choose this option
Order Intermec products	<ul style="list-style-type: none">Place an order.Ask about an existing order.	1 and then choose 2
Order Intermec media	Order printer labels and ribbons.	1 and then choose 1
Order spare parts	Order spare parts.	1 or 2 and then choose 4
Technical Support	Talk to technical support about your Intermec product.	2 and then choose 2

Services	Description	In the USA and Canada call 1-800-755-5505 and choose this option
Service	<ul style="list-style-type: none">• Get a return authorization number for authorized service center repair.• Request an on-site repair technician.	2 and then choose 1
Service contracts	<ul style="list-style-type: none">• Ask about an existing contract.• Renew a contract.• Inquire about repair billing or other service invoicing questions.	1 or 2 and then choose 3

Outside the U.S.A. and Canada, contact your local Intermec representative. To search for your local representative, from the Intermec web site, click **Contact**.

Who Should Read This Manual

This user's guide is for the person who is responsible for installing, using, configuring, and maintaining the PD42 printer.

This document provides you with information about the features of the PD42, and how to install, configure, operate, maintain, and troubleshoot it.

Related Documents

This table contains a list of related Intermec documents and their part numbers.

Document Title	Part Number
<i>Intermec Fingerprint Programmer's Reference Manual</i>	937-005-xxx
<i>IPL Programmer's Reference Manual</i>	066396-xxx
<i>EasyLAN User's Guide</i>	1-960590-xx

The Intermec web site at www.intermec.com contains our documents (as PDF files) that you can download for free.

Before You Begin

To download documents

- 1** Visit the Intermec web site at www.intermec.com.
- 2** Click **Service & Support > Manuals**.
- 3** In the **Select a Product** field, choose the product whose documentation you want to download.

To order printed versions of the Intermec manuals, contact your local Intermec representative or distributor.



1 Using the Printer

This chapter includes the following sections:

- Introducing the EasyCoder PD42 Printer
- Features of the Printer
- Working With the Print Button and LED Indicators
- Working With the Display and the Soft Keys

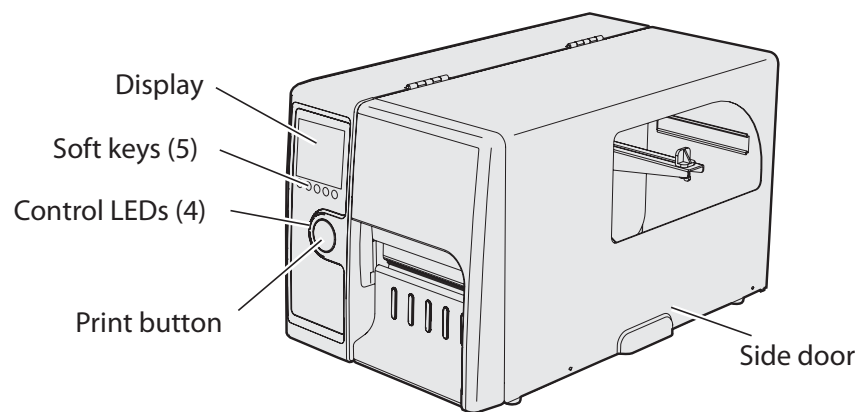
Introducing the EasyCoder PD42 Printer

The EasyCoder PD42 printer is a dependable and versatile printer suitable for medium-duty applications in manufacturing, transportation and warehouse environments. It has all-metal chassis and covers, proven printing mechanics, and powerful electronics providing sturdiness, performance, and reliability. It features an intuitive user interface with a large graphical display and programmable buttons.

Features of the Printer

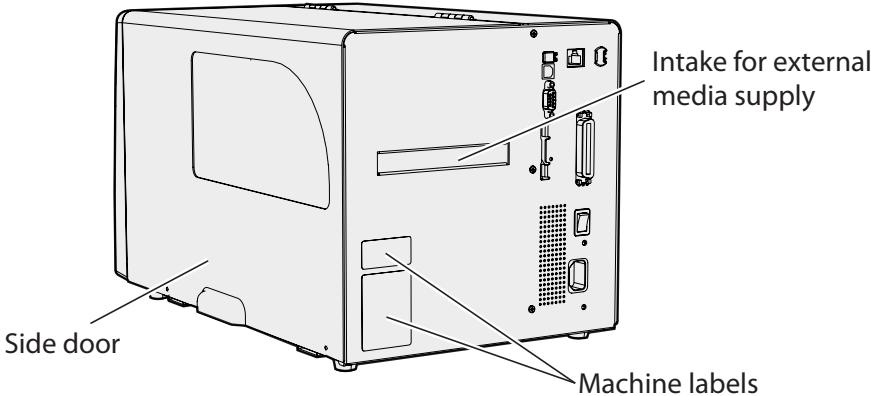
This section describes the exterior of the printer, connectors, and the media compartment.

Front View of the Printer

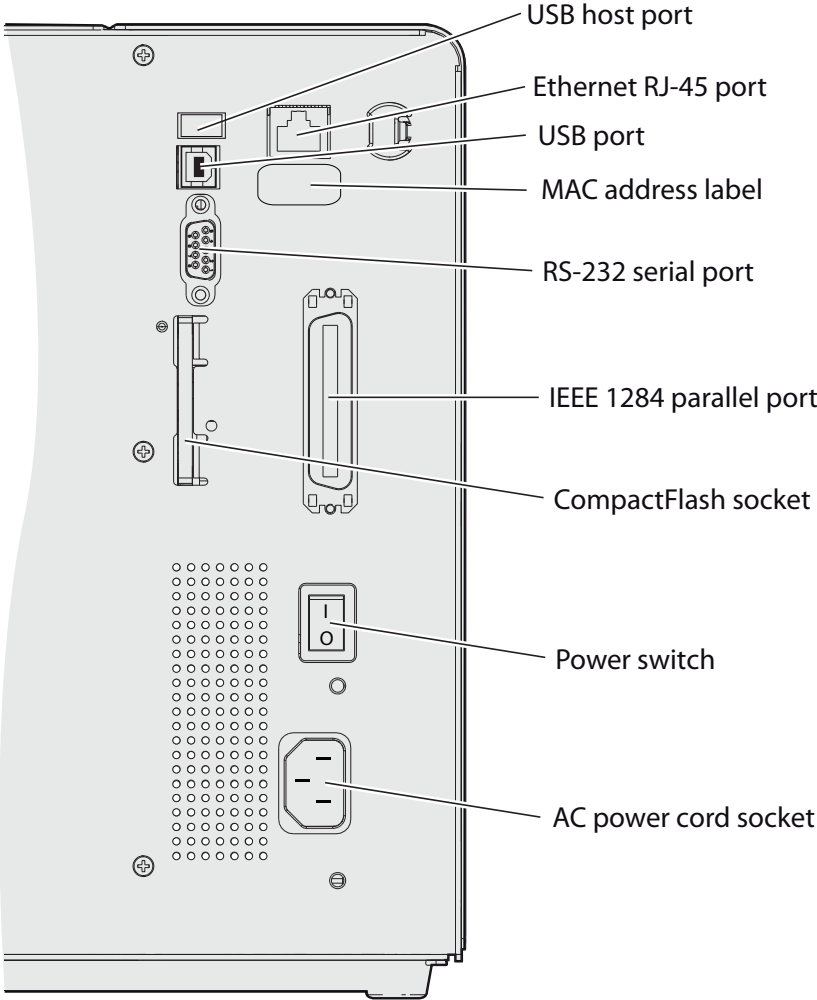


Front View

Back View of the Printer

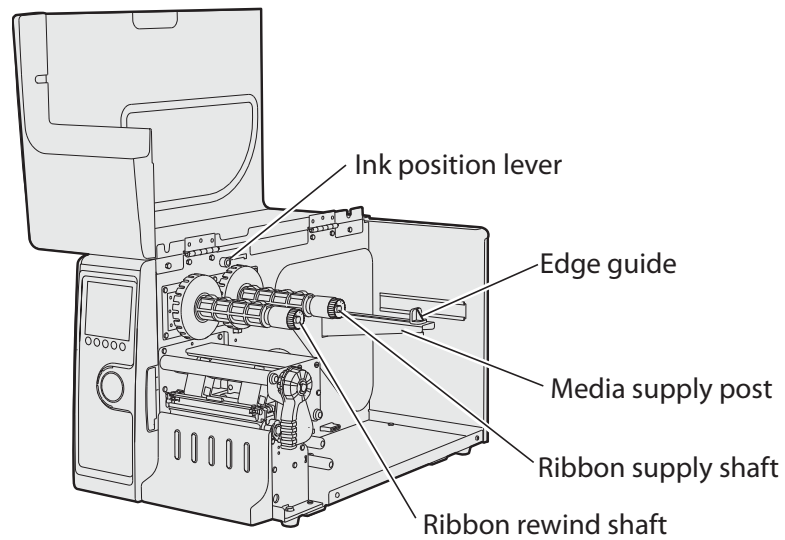


Back View

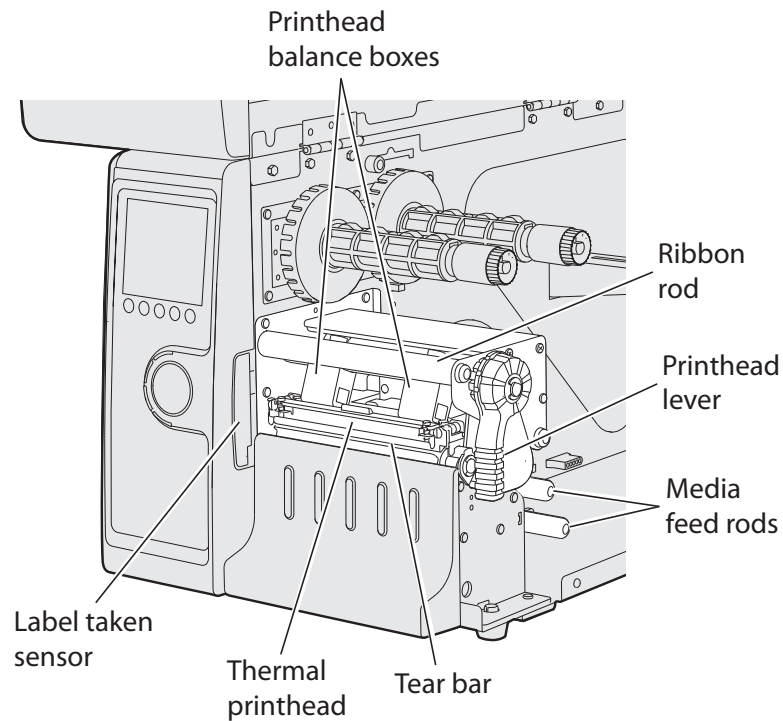


Back View: Connectors

Media Compartment and Print Mechanism



Media Compartment

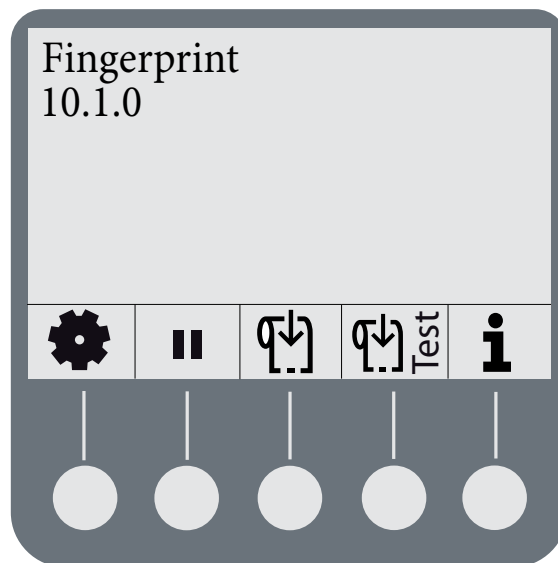


Print Mechanism

Firmware

Your PD42 printer comes with either Fingerprint or IPL (Intermec Printer Language) firmware. The choice of firmware affects the functionality of the printer and how you interact with it. This manual contains information that applies exclusively to the type of firmware, so it is strongly recommended that you familiarize yourself enough with your PD42 to know whether it runs Fingerprint or IPL.

The current firmware type and version is displayed on the printer's LCD, when the printer is fully operational and in "idle" mode (awaiting print jobs).

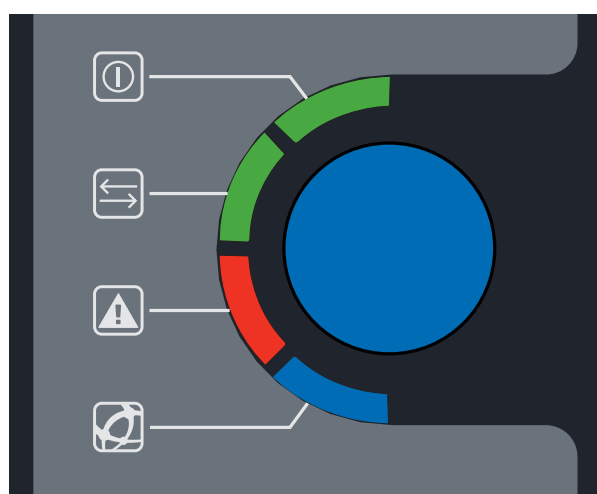


The display window of a PD42 running Fingerprint firmware.

Working With the Print Button and LED Indicators

The blue button on the front panel is the **Print** button. The primary function of the **Print** button is to feed media and pause print jobs. However, the functionality varies depending on which state the printer is in, and which firmware it is running. All this is explained in detail in “[Understanding Printer States](#)” on [page 26](#).


There are four LEDs (Light Emitting Diodes) surrounding the **Print** button.



LEDs and the Print Button

Control LEDs

Symbol	LED	Color	Function
	Power	Green	Power indicator
	Ready/Data	Green	Printer ready
	Error	Red	Error indicator
	Ready-to-Work™	Blue	Intermec Ready-to-Work™ indicator

The four LED indicators are on, off, or flashing depending on which state the printer is in. The Power LED () is always on for all states except Power Off.

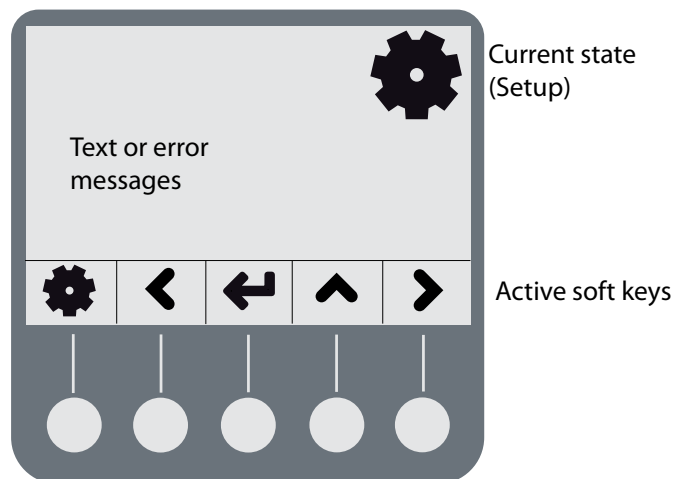
The blue Ready-to-Work LED (🔵) shows the operational status of the printer. In simple terms, it is turned on when the printer is operational. The indicator is set to flash when the printer is receiving data or under certain “mild” error conditions, for example when the printer is awaiting an IP address from the network, when the printhead is lifted, or when media is loaded incorrectly. It also flashes when the printer is in Setup mode, Testmode, and Extended Testmode (see Chapter 3, “[Configuring the Printer.](#)”).

When more serious errors occur, the indicator turns off completely, and the red Error LED (🔴) turns on or flashes. There are a number of conditions that can cause this behavior; for help, see Chapter 4, “Troubleshooting and Maintenance.”

The green Ready/Data LED (🟢) turns on, off, or flashes depending on the current state of the printer. A more thorough description of this behavior can be found in “[Understanding Printer States](#)” on page 26.

Working With the Display and the Soft Keys

The display communicates detailed information about the current state of the printer. Using the display, the printer tells you if a specific error has occurred or if it is waiting for input from you.



The different areas of the display and the soft keys.

Chapter 1 — Using the Printer

Below the display are five buttons that act as “soft keys,” which means that the function of each button depends on the state of the printer. The function is indicated with a small icon in the display just above the key itself.

You can use the buttons for things like pausing a print job, running a testfeed or changing setup parameters.



Note: If the printer is running a Fingerprint application, access to Setup mode is controlled by the application.

The function of each soft key is described below.

Soft Key Functions

Soft Key	Function	Soft Key	Function
F1 to F5	Defined by Fingerprint application	➤	Right/next state
⚙	Enter/Exit setup	✎	Edit value
⏪	Feed	⊗	Exit editing/cancel/exit test mode/exit dumpmode
⏪ _{Test}	Testfeed	—	Decrease selected digit
i	Enter/Exit i-mode	+	Increase selected digit
⏪	Left/previous state	⏸	Pause
⏩	Up	➡	Continue
↵	apply/acknowledge/select	📄	Save to file



2 Installing the Printer

This chapter contains the following sections:

- Connecting the Printer to Your System
- Connecting Peripherals Through USB Host
- Loading Media
- Loading Thermal Transfer Ribbon
- Plugging in the Printer
- Printing Test Labels
- Creating and Printing a Label

Connecting the Printer to Your System

There are a number of ways you can connect the PD42 to your system. As a standard, the printer is equipped with:

- one USB Type B connector for the USB interface port.
- one USB Type A connector for the USB host interface port.
- one 9-pin D-style subminiature (DB9) socket for the RS-232 serial interface port.

Optional interfaces include:

- one 36-pin socket for the parallel (IEEE 1284) port.
- one RJ-45 socket for the Ethernet network connection.

Information on the socket and connector types can be found in Appendix A, “[Specification, Interfaces, and Options.](#)”



Note: USB and Parallel IEEE 1284 cannot be used at the same time. Select the active interface in Setup (see “[Changing Configuration Settings](#)” on page 31).

There are advantages and disadvantages associated with each of these interfaces, which are described in the following sections. Your current system setup will most likely tell you what connection method is most suitable.

Connecting the Printer Through the USB Interface

To use the USB connection, you need to install the Intermec InterDriver software on your computer. To ensure you get the latest version, check the Intermec web site first. This software can also be found on the PrinterCompanion CD along with instructions on how to install it. The USB interface is not suitable for terminal connections and thus not for programming.

Connecting the Printer Through the Serial Port

You can use the serial connection with either LabelShop or the Intermec InterDriver. You can also use it to send commands directly to the printer through a terminal connection, for instance with Telnet. The printer's default serial communication settings are: baud rate 9600, 8 data bits, no parity, 1 stop bit and no flow control. Appendixes C and D contain information about serial communication setup parameters for IPL and Fingerprint, respectively.

Connecting the Printer Through the Parallel Port

You can use the parallel connection with LabelShop or the Intermec InterDriver. The parallel port supports Windows plug-n-play and additional status reporting through IEEE 1284 nibble ID mode. Cable is not included with the kit.

Connecting the Printer to a Network

With an optional EasyLAN Ethernet card installed in your PD42, you can set it up as a network printer. The printer is set to automatically retrieve an IP number from the network (DHCP) once it is turned on. You can use the network connection either with LabelShop or the Intermec InterDriver. You can also use it to directly send commands to the printer through a terminal connection (Telnet), or you can send instructions via FTP. For terminal connections, it utilizes the Raw TCP protocol through port 9100.

To connect the PD42 to your network

- 1 Plug a connected Ethernet cable into the Ethernet port in the rear of the printer.
- 2 Turn the printer on. Wait for the blue Ready-to-Work LED to stop blinking, and for the message "IP configuration error" to disappear from the screen.
- 3 Enter **i-mode** by pressing (**i**).

i-mode cycles through the interfaces installed on the printer in five-second intervals and displays them on the screen. The IP address is displayed under **net1:** in Fingerprint and **net** in IPL.

Chapter 2 — Installing the Printer

- 4 Enter the printer's IP address in the address field of your web browser (for example `http://255.255.255.001`). This brings up the printer's home page, where it is possible to check and modify various printer settings. Modifying settings requires a login name and a password: by default, these are set to "admin" and "pass" respectively.

Please refer to the *EasyLAN User's Guide* (P/N 1-960590-xx) for more information on how to set up and operate the PD42 in your network environment.

If your network does not assign IP numbers automatically, or the Ready-to-Work indicator is flashing to indicate a network error, you can use PrintSet 4 (available on the PrinterCompanion CD) to correct the network settings. Alternatively, set up a terminal connection through the serial interface and use the Fingerprint Setup command. See ["Changing Configuration Settings" on page 31](#), or refer to the *Intermec Fingerprint Programmer's Reference Manual* (P/N 937-005-xxx).

Connecting Peripherals Through USB Host

The USB host interface supports the following external devices:

- Mass storage device
- Keyboard
- Bar code scanner
- USB hub

Connecting a Mass Storage Device

You can use a USB mass storage device (the "thumbdrive" or "dongle" type) to store additional fonts and images. You can also use the device to upgrade your firmware (see ["Upgrading the Firmware" on page 38](#)).

Connecting a Keyboard

You can use an external USB keyboard to:

- input data in Fingerprint applications. Some applications may require more complex input from users than the simple push of a button.

- manage setup in Fingerprint/Direct Protocol and IPL. In the installed keyboard layouts, the arrow keys on the keyboard are mapped to the up/down/right/left functions in the Setup menu. The five function keys **F1-F5** correspond to the five soft keys on the front panel, starting from the left. The **Enter** key will have the same apply/acknowledge function.

The printer comes with four keyboard layouts installed (US, Swedish, French, and German).

To change keyboard layout

- 1 Plug your USB-keyboard into the USB connector in the back of the printer.
- 2 Turn the printer on.
- 3 Press **Setup** (⚙️).
- 4 Navigate to COM > USB KEYBOARD.
- 5 Choose a keyboard layout.
- 6 Exit Setup by pressing (⚙️).

Fingerprint users can create their own custom keyboard layouts. For help, see the *Fingerprint Programmer's Reference Manual* (P/N 937-005-xxx).

Connecting a Bar Code Scanner



Note: Only printers running Fingerprint firmware can use a bar code scanner.

You can connect a bar code scanner of HID (Human Interface Device) type to the printer. The scanner will send data to the “console:” device in the same way as a USB keyboard. This data can then be used in a Fingerprint application.

The keyboard map chosen in setup (see above) applies for connected scanners as well.

Connecting a USB Hub

A USB hub makes it possible to connect several USB devices to the printer at the same time.



Note: Only one of the devices connected to the USB hub can be a mass storage device, and only one device can be a Human Interface Device (keyboard or bar code scanner).

Loading Media

The EasyCoder PD42 can print on labels, tickets, tags, and continuous stock in various formats. Refer to Appendix B, “[Media Specifications](#)” for more detailed information about media types, media dimensions and other media specifications.

Loading Media for Tear-Off (Straight-Through) Operation

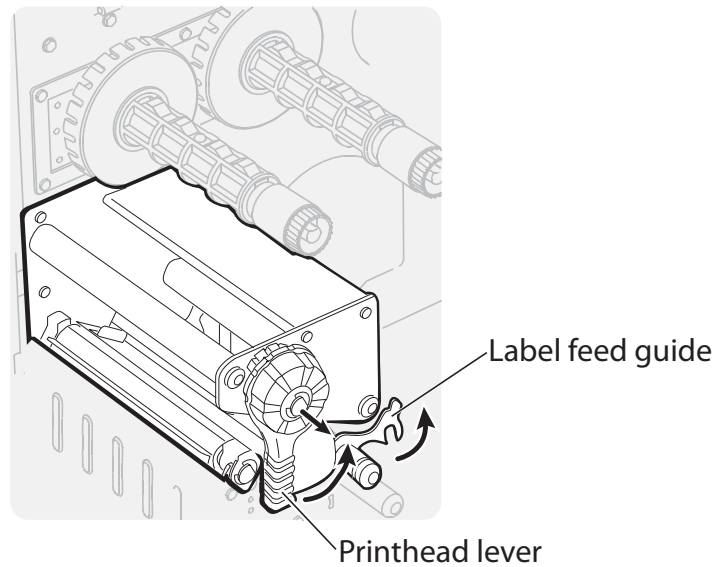
This section describes the case when media is torn off manually against the printer’s tear bar. This method is also known as “straight-through” printing. You can use different types of media in Tear-Off operation:

- Non-adhesive continuous stock
- Self-adhesive continuous stock with liner
- Self-adhesive labels with liner
- Tickets with gaps, with or without perforations
- Tickets with black marks, with or without perforations

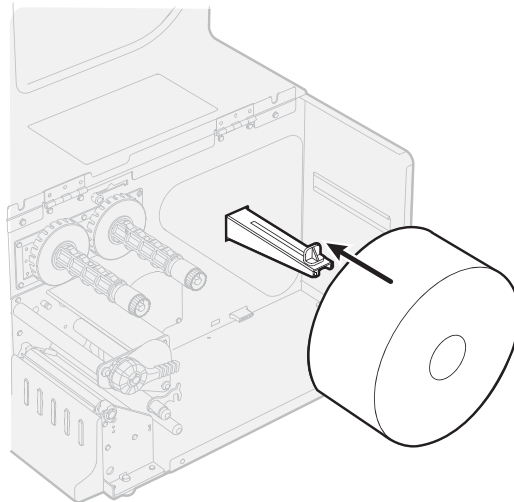
To load media for tear-off operation

- 1 Open the printer’s side door.

- 2** Pull out the printhead lever and turn it counterclockwise. Lift the label feed guide.

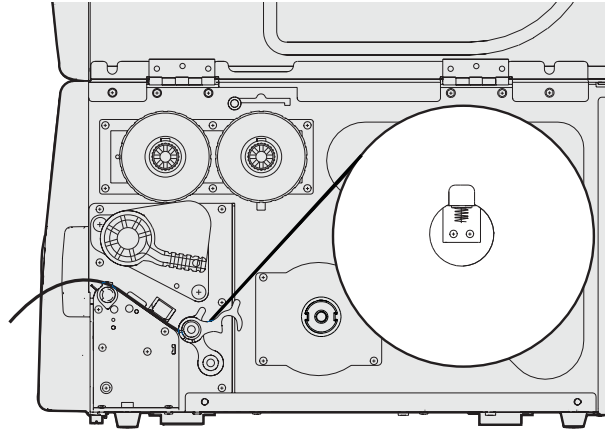


- 3** Load a media roll onto the media supply hub. Be sure to push it all the way in.

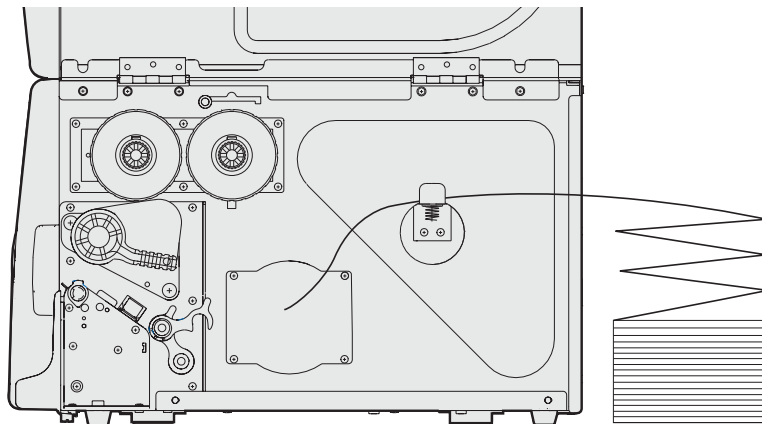


Chapter 2 — Installing the Printer

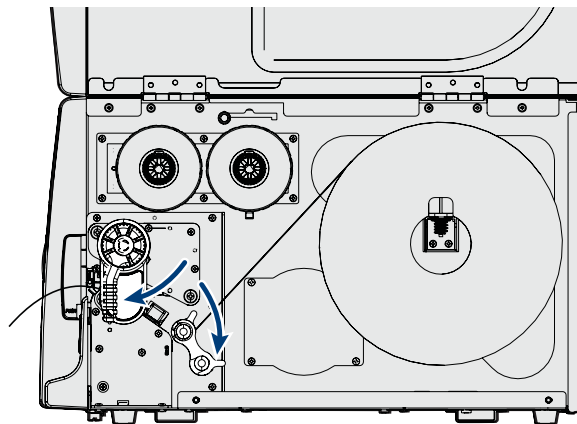
- 4 Route the media through the print mechanism.




- 5 If you are using fan-fold media, load it through the rear intake and route it the same way as you would a media roll.



- 6 Reset the label feed guide and the printhead lever.



- 7 Close the side door.

- 8 Press the **Print** button to advance the media (“Feed”). If you are switching to a new type of media, for instance going from tickets with gaps to ticket with black marks, you must run a “Testfeed” () to calibrate the printer’s sensors.

Loading Media for Peel-Off (Self-Strip) Operation

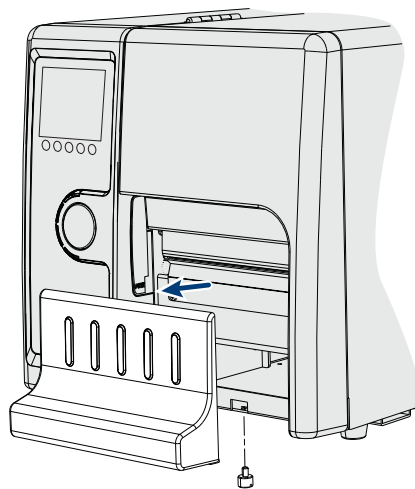
This section describes the case when self-adhesive labels are separated from the liner immediately after printing. This method is also known as self-strip operation. The label-taken sensor can hold the printing of the next label in a batch until the present label has been removed. You can only use self-adhesive labels with liner in peel-off operation. Use the same procedure when installing media for Batch Takeup, with the difference that both label and liner is rewound, and the label-taken sensor is not used.



Note: These modes of operation require an internal rewinder unit, for more information see Appendix A, “[Specification, Interfaces, and Options.](#)”

To load media for peel-off operation

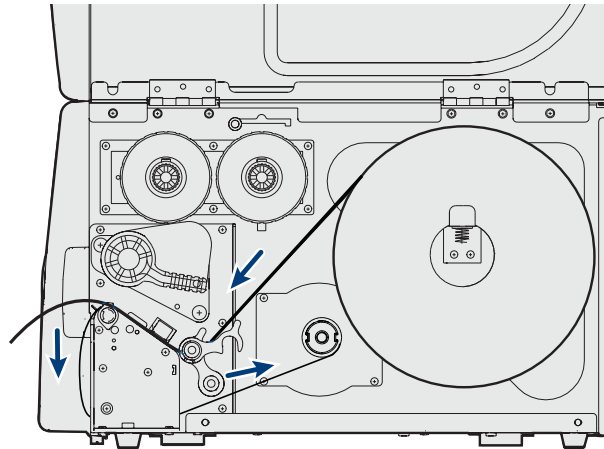
- 1 Remove the thumbscrew to remove the front cover.



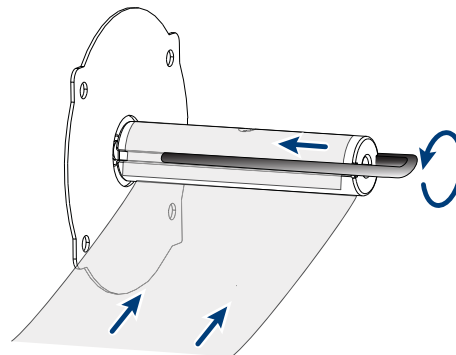
- 2 Open the side door, mount the media roll, and route the media through the media feed rods (refer to Steps 1-4 in “[To load media for tear-off operation](#)” on page 14).

Chapter 2 — Installing the Printer

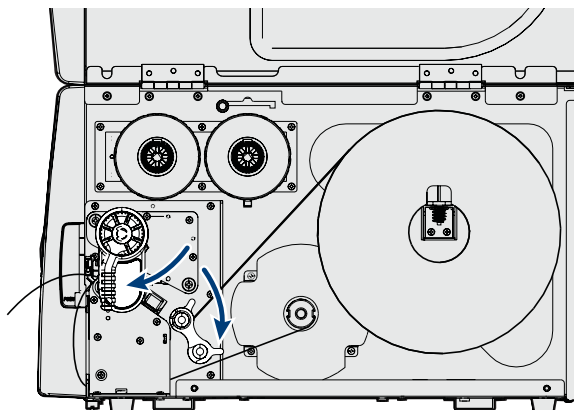
- 3 Route the label liner through the print mechanism and back into the media compartment.



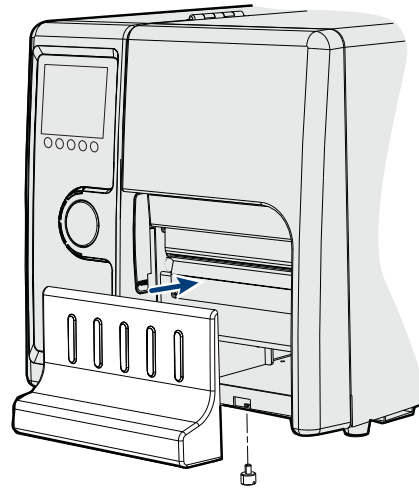
- 4 Wrap the liner around the takeup roll and lock it in place.



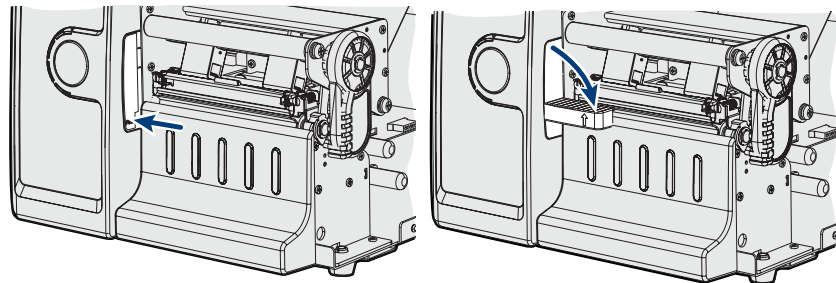
- 5 Reset the label feed guide and the printhead lever.



- 6 Reattach the front cover.



- 7 Push in on the lower part of the label-taken sensor and bring it out to a fully horizontal position.



- 8 Close the side door.
- 9 Press the **Print** button to advance the media.

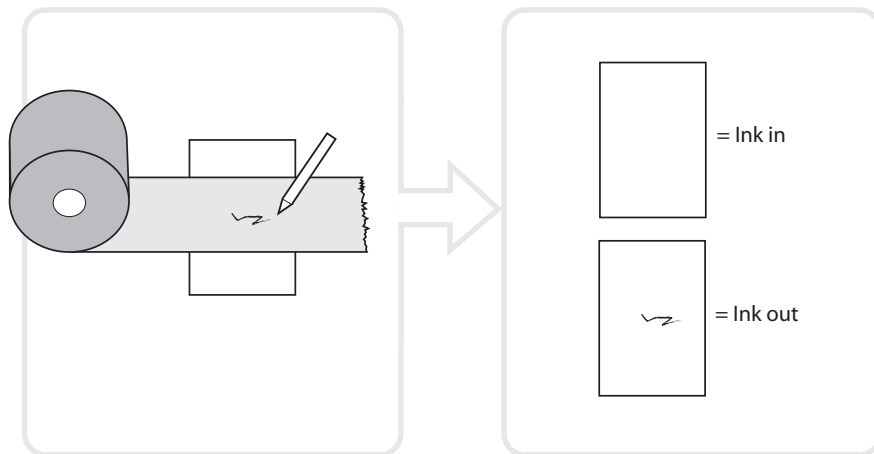
Loading Thermal Transfer Ribbon

Thermal transfer printing makes it possible to use a wide range of receiving face materials and gives a durable printout that is less vulnerable to fat, chemicals, heat, sunlight and so on than direct thermal printing. Make sure to select a ribbon type that matches the type of receiving material and set up the printer accordingly.

The ribbon is normally loaded at the same time as a new media roll. For clarity, the following illustrations do not show the media roll. See the previous sections for information on how to load media for your type of operation.

Chapter 2 — Installing the Printer

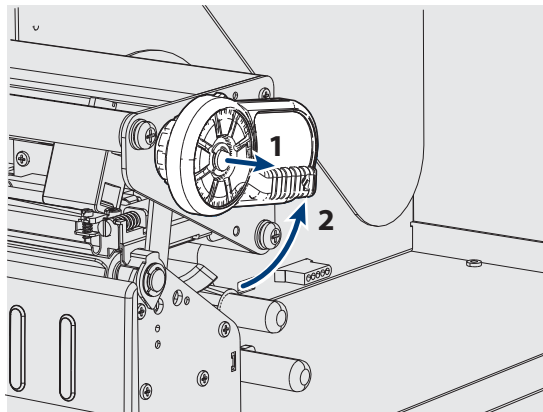
The EasyCoder PD42 can use transfer ribbon rolls wound with the ink-coated side facing either outward or inward. To determine which type of ribbon you have, use a pen or another sharp object to scratch through the ribbon against a piece of paper. If it leaves a mark, your ribbon is wound ink in or ink out according to the following model.



Test to determine whether your transfer ribbon is wound ink-in or ink-out.

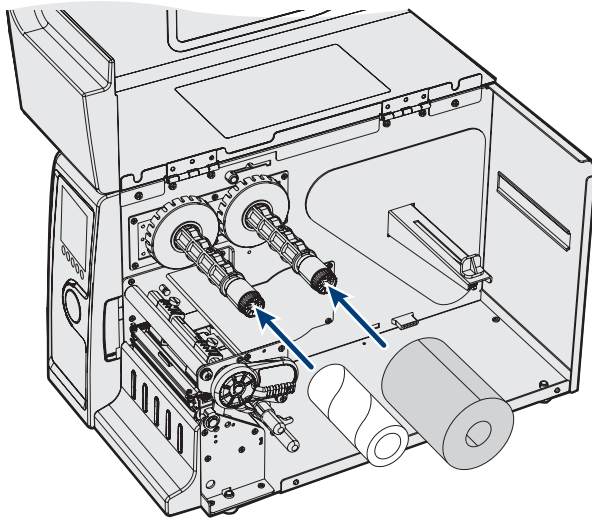
To load thermal transfer ribbon

- 1 Open the side door of the printer.
- 2 Pull out the printhead lever (1) and turn it counterclockwise (2) to raise the printhead.

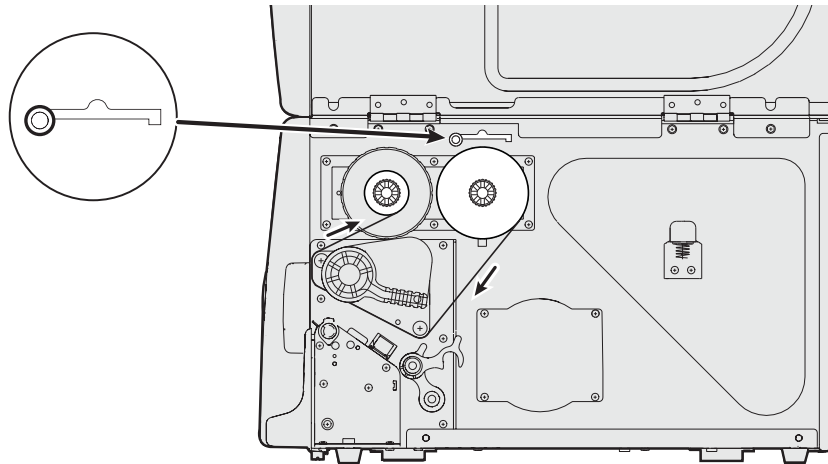


Chapter 2 — Installing the Printer

- 3 Slide the ribbon roll onto the right ribbon hub, and the empty ribbon core on the left hub.

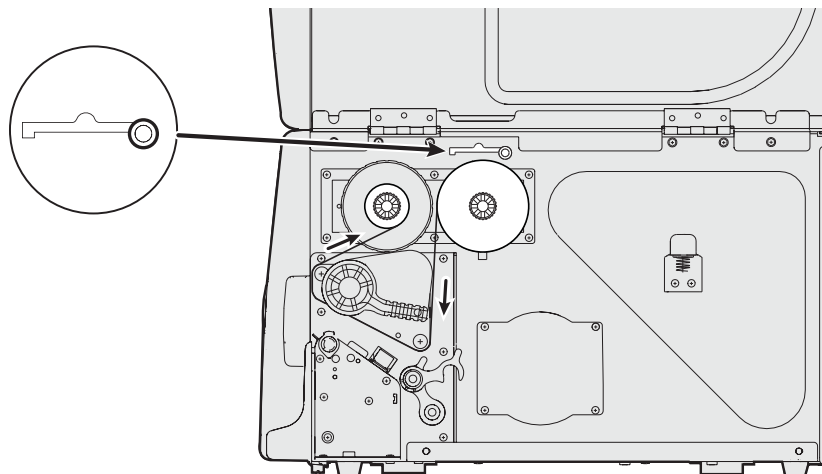


- 4 “Ink out” ribbon only: route the ribbon and set the ink position lever as indicated below.



Chapter 2 — Installing the Printer

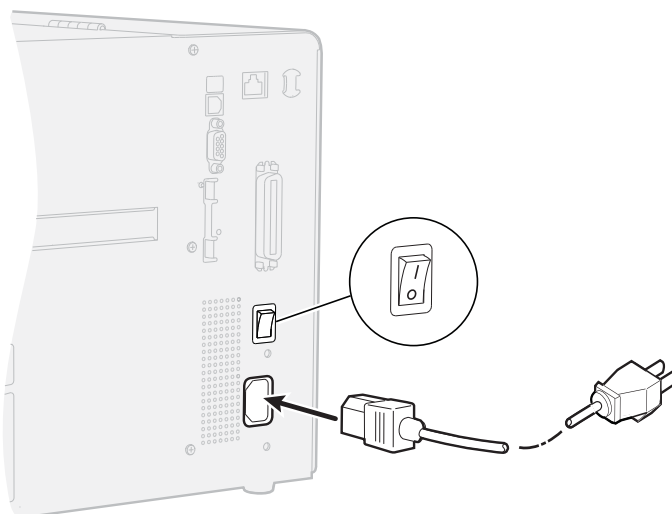
- 5 “Ink in” ribbon only: route the ribbon and set the ink position lever as indicated below.



- 6 Load media in the printer, if you have not already done so.
- 7 Restart the printer and print test labels (See “[Printing Test Labels](#)” on page 23).

Plugging in the Printer

- 1 Make sure the Power switch is turned off.
- 2 Connect the power cable to the printer.
- 3 Plug the power cable into your electrical outlet.



Printing Test Labels

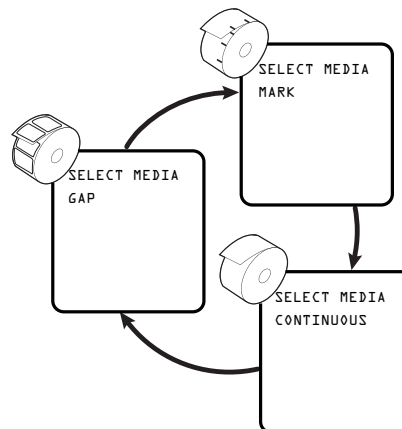
In order to verify that the printer is fully functional and to obtain its current configuration, you can print test labels for the various printer functions (for instance ,hardware and software configuration).

To print a set of test labels from startup

- 1 Make sure the printer is turned off.
- 2 Load media as described in [“Loading Media” on page 14](#).
- 3 Press and hold the blue **Print** button.
- 4 Keep the **Print** button pressed down, and turn on the power switch. After approximately ten seconds the printer enters Testmode and three of the front LEDs start flashing one at a time.

The display window lights up, and the printer runs a media setup routine.

- 5 Continue to press the **Print** button until the printer starts cycling through the selectable media types (Gap/Mark/Continuous). For help, see Appendix B, [“Media Specifications.”](#)
- 6 Select your media type by releasing the **Print** button at the appropriate time.



The printer will print several test labels containing the printer’s setup parameters. It will then enter Dumpmode.

Chapter 2 — Installing the Printer

- 7 Press the **Print** button once, or press **Cancel** (⊗) to exit Dumpmode.

Creating and Printing a Label

There are many different ways you can create a label and send it to your printer. You can design labels in Fingerprint or IPL, use dedicated label design tools (such as LabelShop and XMLLabel), or use word processing software like Microsoft Word. Your choice of design tool will likely be influenced by your system setup and communication interface (Ethernet, USB, serial or parallel). Please refer to the manual of each respective tool for information on how to create and print labels.



3 Configuring the Printer

This chapter contains the following sections:

- Understanding Printer States
- The Printer Startup Sequence
- Changing Configuration Settings
- Running Testmode and Extended Testmode
- Upgrading the Firmware

Understanding Printer States

The PD42 printer can enter a number of different states, which in turn indicate its current mode of operation. Information about the state of the printer is provided via the LEDs and the display.

PD42 Printer States

State	Explanation
Power Off	
Upgrading	Firmware is being upgraded.
TestMode	See page 34 .
Extended TestMode	See page 36 .
Setup Mode	Setup mode is accessed from the display (this may require a password if the printer is running a Fingerprint application). In Setup mode, you can change various printer settings.
i-mode	i-mode is accessed from the display when the printer is idle. In i-mode the printer will cycle through the various interfaces with 5 second intervals.
PUP	Power-UP (starting up)
Idle	The printer is operational and is waiting for print jobs.
Application running	The printer is running a (Fingerprint) application
Printing	
Printing (wait for LTS)	Waiting for Label Taken Sensor to indicate that label has been taken.
Paused	Paused during print job
Error	Error state
Dumpmode	In Dumpmode, the printer listens on all communication ports and prints incoming characters.

The **Print** button has different functionality depending on the state of the printer. Different actions can be carried out by pressing the button less than and more than one second respectively. An empty field means no action is performed.

Print Button Function

State	Button pressed < 1 s	Button pressed > 1 s	“Double-click”
Power Off			
Upgrading			
Testmode	See “ Running Testmode and Extended Testmode ” on page 34	See “ Running Testmode and Extended Testmode ” on page 34	
Extended Testmode	See “ Running Testmode and Extended Testmode ” on page 34	See “ Running Testmode and Extended Testmode ” on page 34	
Setup mode			
Idle (FP)	Formfeed/Printfeed	Testfeed	
Idle (IPL)	Formfeed	Continuous feed while button is pressed	Enter Pause mode
Application running	Defined by application	Defined by application	Defined by application
Printing	Pause print job		
Paused (FP)	Continue print job	Cancel print job	
Paused (IPL)	Continue print job	Continue print job	
Error	See Chapter 4, “ Troubleshooting and Maintaining the Printer. ”		

Chapter 3 — Configuring the Printer

The behavior of the green Data/Ready LED and red Error LED in various states is shown in the table below.

Ready/Data and Error LED Behavior

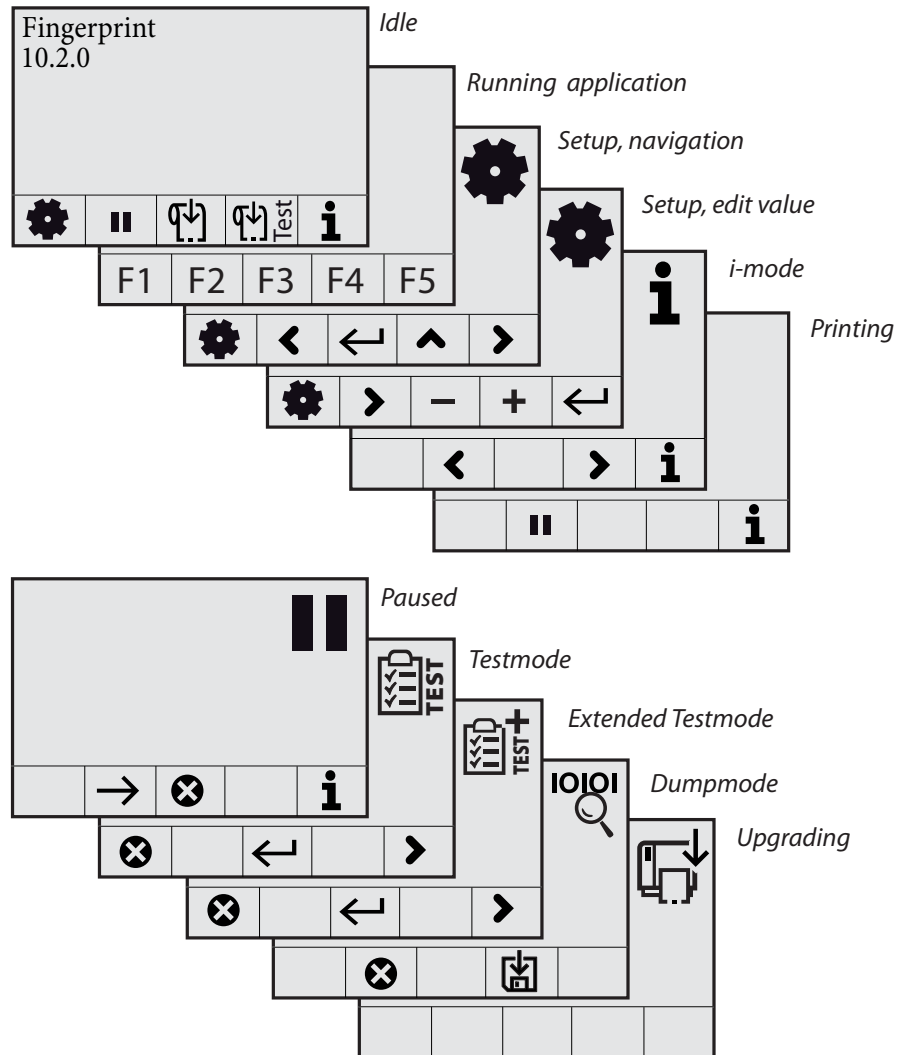
State	Ready/Data LED	Error LED
Power Off	Off	Off
Upgrading	LEDs turned on one after the other.	
Testmode	See Chapter 5 for description.	
Extended Testmode	See Chapter 5 for description.	
PUP	On	Off
Idle	On/Flash ¹	Off
Application running	On	Off
Printing	On/Flash ¹	Off
Printing (wait for LTS)	Quick flashes ²	Off
Paused	Flash ³	Off
Error	Off	On / Flash ⁴

Footnotes:

- 1 Flashing with 50% duty cycle, 0.8 second period when receiving data, synchronized with Ready-to-Work LED.
- 2 Two fast flashes, 1.6 second period.
- 3 Flashing with 50% duty cycle, 0.8 second period, not synchronized with Ready-to-Work LED.
- 4 Error LED will be lit for these conditions: Out of Paper, Out of Ribbon, Head Lifted, Cutter Error, and Testfeed not Done. Will flash as (2), when thermal printhead is too hot. Will flash as (3) for other error conditions caught by the Direct Protocol error handler.

Chapter 3 — Configuring the Printer

The state of the printer also determines what functions/icons are active in the display window:



Active soft keys in different printer states.

Understanding the Printer Startup Sequence

When you switch on the printer, it will go through a sequence of steps in which it determines what settings should be set and what application (if any) should be started. Users that run Fingerprint firmware on their PD42 are given more options and more control over the printer's startup behavior.

Printer Startup Sequence (Fingerprint)

- 1 Check for firmware binary file on CompactFlash card. If found, upgrade.
- 2 Check for firmware binary file on USB mass storage device. If found, upgrade.



Note: The printer will install the firmware stored on the CompactFlash card even if it is older than the version currently loaded on the printer.

- 3 Check if printhead is lifted and button is pressed. If so, go to Extended Testmode, otherwise continue startup with step 3.
- 4 Check for the presence of a startup file (AUTOEXEC.BAT), first on CompactFlash, then on “c/”. If found, run the startup file.
- 5 Check to see if button is pressed. If so, go to Testmode.
- 6 Continue power-up. Check APPLICATION file in “c/” for program file name. If found, run. If empty, go to idle state.

This means you can control the printer's behavior after startup in a variety of ways: you can create an autoexec.bat file and save it on a memory card or in the printer's permanent memory (device “c/”), you can write an application and store the link to it in the APPLICATION file, or you can choose to enter Testmode.

It is recommended to start custom applications by writing the name of the desired program (“ProgramName.PRG”) in the APPLICATION file in “c/”.

Starting a custom application can also be done by creating a startup file (autoexec.bat) which will execute on startup. This file must contain Fingerprint commands that are interpreted immediately. Normal commands are LOAD and RUN. See the *Intermec Fingerprint Programmer's Reference Manual* (P/N 937-005-xxx) to learn how to create and save such a file to the printer.

Printer Startup Sequence (IPL)

- 1 Check for firmware binary on CompactFlash card. If found, upgrade.
- 2 Check for firmware binary on USB mass storage device. If found, upgrade.



Note: The printer will install the firmware stored on the CompactFlash card or USB mass storage device even if it is older than the version currently loaded on the printer.

- 3 Check if printhead is lifted and button is pressed. If so, go to Extended Testmode, otherwise continue startup with step 3.
- 4 Check to see if button is pressed. If so, go to Testmode.
- 5 Continue power-up. Run a testfeed.

The process of entering and using Testmode and Extended Testmode is described later in this chapter.

Changing Configuration Settings

There are several different ways you can change the configuration settings of the printer. You can do it directly from the display, or remotely from the host PC using a USB, serial or ethernet connection.

Refer to Appendixes C and D for a detailed view of the Setup tree in Fingerprint and IPL, and for more extensive information about the various setup parameters.

Changing Configuration Settings From the Display

In order to change configuration settings, you need to enter Setup mode. Access Setup mode from the display by pressing **Setup** (⚙️).

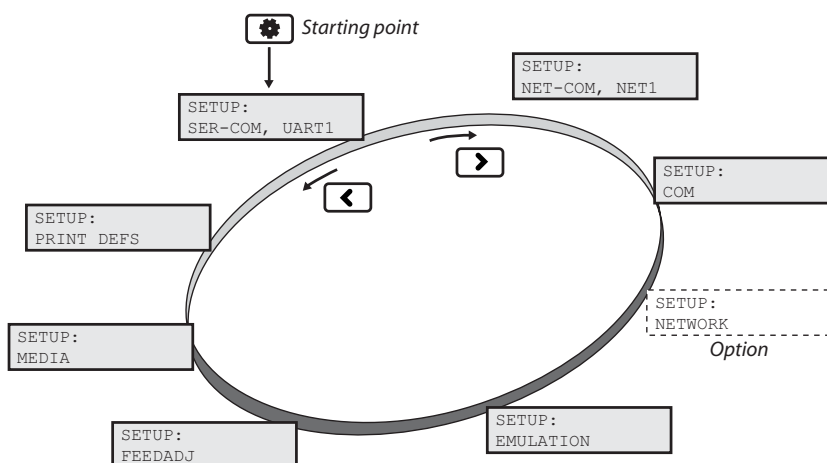
Chapter 3 — Configuring the Printer

While in Setup mode, use the soft keys to navigate through the various options in the setup tree.

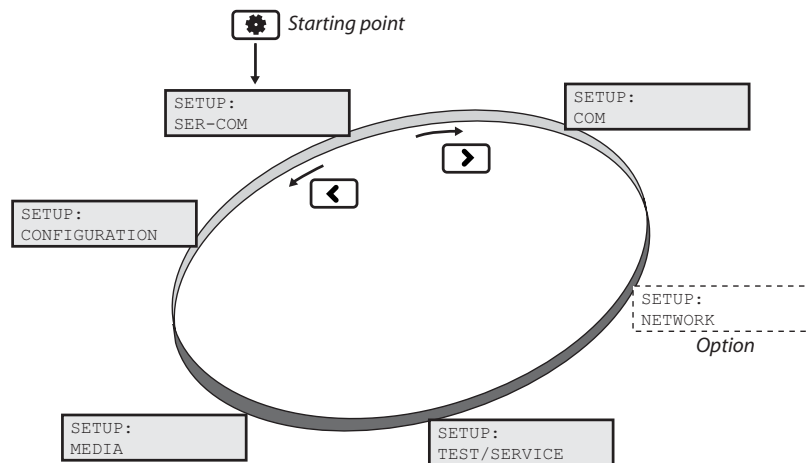
Navigating in Setup Mode

Soft Key	Function
⬅	Move one menu item to the left on the same level.
➡	Move one menu item to the right on the same level.
⬆	Move up one level.
↩	Acknowledge/Move down one level.
✎	Edit value
+	Increase value
-	Decrease value
⚙	Exit Setup mode.

The main nodes of the setup tree are organized in a loop, as shown below (detailed overviews are provided in Appendix C (Fingerprint) and Appendix D (IPL)). Each main node branches out to a number of sub-nodes. At startup, the firmware determines if optional equipment such as a cutter or an interface board is installed in the printer, and these are added to the Setup tree.



The main nodes of the Setup tree (Fingerprint).



The main nodes of the Setup tree (IPL).

Changing Configuration Settings With PrintSet 4

PrintSet 4 is a printer configuration tool which is available on the PrinterCompanion CD, and for download from the Intermec website. PrintSet 4 can communicate with your printer either via a serial cable or a network connection, and works on all PCs running Windows 98 (or later). The program allows you to easily change all of the setup parameters. It also includes setup wizards, which guide you through common configuration tasks.

Changing Configuration Settings From the Printer Home Page

If you have an optional EasyLAN network card and the printer is connected to your network, you can use your web browser to browse to the printer home page and make any desired setup changes there. Follow the instructions provided in [“Connecting the Printer to a Network”](#) on page 11.

Once on the home page, click **Configuration** on the left side of the screen to access the setup parameters of the printer.

Changing Configuration Settings Using the Command Line

You can change setup parameters by sending commands directly to the printer using your terminal program (either through serial or network connection). The Fingerprint command to use is `SETUP`, followed by the node, subnode and parameter setting. For example, to set your media settings to labels with gaps, send the following instruction:

```
SETUP "MEDIA, MEDIA TYPE, LABEL (w GAPS)"
```

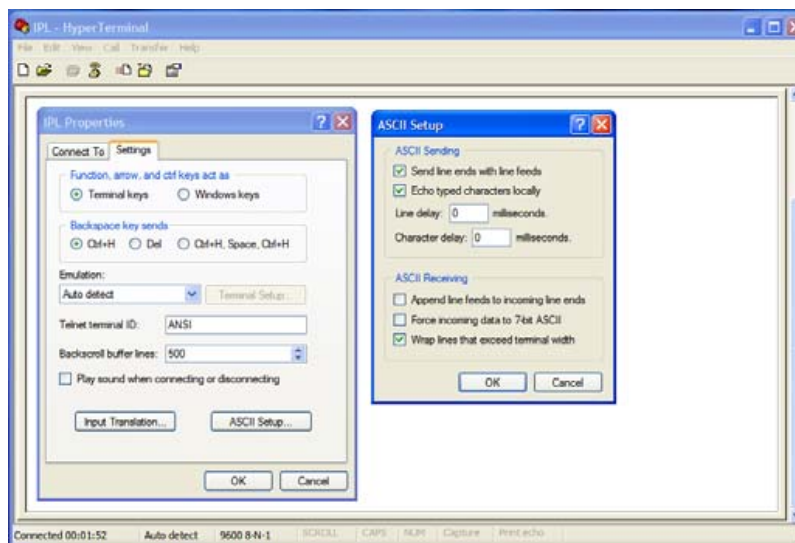
Chapter 3 — Configuring the Printer

The corresponding instruction in IPL is:

```
<STX><SI>T1<ETX>
```



Note: IPL users should first verify that they have the correct HyperTerminal settings. See the screen capture below.



Hyperterminal settings (IPL only)

For more information on how to change setup parameters, see the *Fingerprint Programmer's Reference Manual* (P/N 937-005-xxx), or the *IPL Programmer's Reference Manual* (P/N 066396-xxx).

Running Testmode and Extended Testmode

Use Testmode and Extended testmode when you want to verify printer settings, print test labels, restore factory default settings, or enter Dumpmode for troubleshooting purposes. Two testmodes are available, Testmode and Extended Testmode. Testmode is a simple linear sequence which requires little input, while Extended Testmode gives the user more options.

Running Testmode

Testmode performs the following sequence:

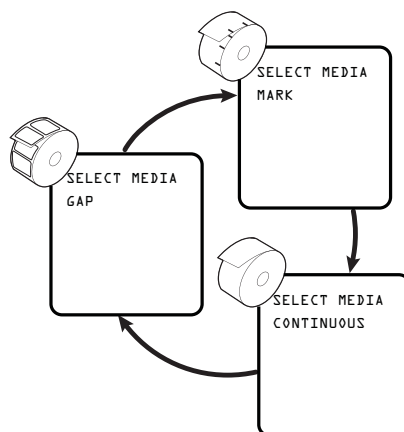
- 1 Select media type (gaps/mark/continuous).

- 2 Perform a sensor calibration (Testfeed).
- 3 Print test labels.
- 4 Enter Dumpmode.

To run testmode

- 1 Make sure the printer is turned off, loaded with media and that the printhead is lowered.
- 2 Press and hold the blue **Print** button.
- 3 Keep the **Print** button pressed down, and turn on the power switch. After approximately ten seconds the printer enters Testmode and three of the front LEDs start flashing one at a time. The display window lights up, and the printer runs a media setup routine.

As long as you keep the **Print** button pressed, the printer cycles through the selectable media types (Gap/Mark/Continuous).



- 4 Select your media type by releasing the **Print** button at the appropriate time.


The printer automatically performs a sensor calibration (Testfeed) based on your selection, and selects thermal transfer printing if ribbon is installed, otherwise direct thermal is selected as default.

The printer prints several test labels containing the printer's setup parameters. To skip test labels, tap the **Print** button.

Chapter 3 — Configuring the Printer

The printer is now in Dumpmode and scans the communication ports. Any characters received on the communication ports will be printed on a label when Dumpmode is exited.

- 5 Press the **Print** button once to exit Dumpmode.

You also have the option to save the dump by pressing **Save** ()

For more information about Dumpmode, see “[Troubleshooting Communication Problems](#)” on page 45

The printer will start as on rebooted status. Once operational, the Data/Ready and Ready-to-Work LEDs light up.

Running Extended Testmode

Extended Testmode can be used to run additional tests. This includes the option to print test labels, running a testfeed in slow mode, entering Dumpmode, and resetting to factory defaults.

To run Extended Testmode

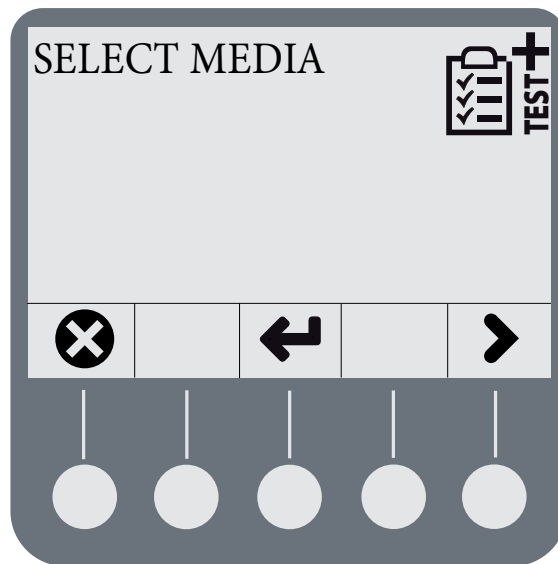
- 1 Make sure the printer is turned off, loaded with media, and that the printhead is lifted.
- 2 Press and hold the blue **Print** button.
- 3 Keep the **Print** button pressed down, and turn on the power switch. After approximately ten seconds the printer enters Extended Testmode.

All three LEDs flash rapidly four times to signal that Extended testmode is activated.

- 4 Release the **Print** button.
- 5 Lower the printhead.
- 6 You are now in Extended Testmode. Press **Right** (➤) to cycle through the different options.

To select a test function, press **Acknowledge** (←).

To exit Extended Testmode, press **Cancel** (⊗).



Functions in Extended Testmode

Function	Description
Select Media	This is the same media setup function as in Test mode, with the important difference that the printer performs a <i>slow</i> sensor calibration (slow testfeed). Performing a Slow testfeed can be a way to resolve gap/mark detection problems.
Test Labels Setup Info	Print configuration labels, one at a time. Press Acknowledge (←) to print the next label. The display indicates which test label is next.
Dumpmode	Enter Dumpmode. For more information about running Dumpmode, see “Troubleshooting Communication Problems” on page 45 .
Factory Default	Restore factory default settings. Select the option, and follow instructions in the display.
Setup and Exit	Exit Extended Testmode, enter Setup mode.
Exit	Exit Extended Testmode.

Upgrading the Firmware

The latest firmware and software is always available for download from the Intermec web site at www.intermec.com.

To download firmware updates

- 1 Visit the Intermec web site at www.intermec.com.
- 2 Click **Service & Support > Downloads**.
- 3 In the **Select a Product** field, choose the EasyCoder PD42 and you will be presented with the latest software available.
- 4 Download the latest firmware version to your computer.
- 5 Extract the zip file to a folder on your computer. Normally, three versions of the firmware are included with the following differences and naming conventions:
 - No suffix: Normal firmware upgrade.
 - FD suffix: Firmware upgrade resetting Factory Default. Only applicable when upgrading through a CompactFlash card.
 - NU suffix: Boots with new firmware, yet printer returns to previous firmware version on reboot (No Upgrade). Only applicable when upgrading through a Compact Flash card.

To upgrade your printer with new firmware

- Use PrintSet 4 and follow the firmware upgrade procedure.
- If you have a network connection, browse to the printer's home page (see "[Connecting the Printer to a Network](#)" on page 11), and select **Maintenance**. Upload the firmware file.
- Copy the firmware binary file to a CompactFlash card. Turn the printer off, insert the card into the printer's CompactFlash socket and switch on the printer. The printer will be upgraded automatically.
- Copy the firmware binary file to a USB mass storage device. Put the firmware binary file in a directory named /d/upgrade, and the printer will use that file to upgrade unless the printer is already running that firmware. The printer will look for a file named FIRMWARE.BIN first. If there is no such file, it will look for any firmware file.



4 Troubleshooting and Maintaining the Printer

This chapter covers the following topics:

- Printer Operation Problems
- Print Quality Problems
- Troubleshooting Communication Problems
- Contacting Product Support
- Adjusting the Printer
- Maintaining the Printer





Printer Operation Problems

The following tables list problems that affect the ability of the printer to operate.






Note: Fingerprint users can obtain an error diagnosis with the command `SYSHEALTH$`. Enter the line `PRINT SYSHEALTH$` through a terminal connection to receive the printer's Ready-to-Work status.



Display Error Messages (Blue Ready-to-Work LED Blinks)

Error Symbol	Error Message	Solution
	Printhead lifted.	Lower printhead.
	Maintenance.	The printer is upgrading its firmware. Wait for it to complete the task.
	IP link error.	Check if the network cable has been unplugged
	Press feed not done.	Press Feed(📄) or Testfeed(📄) (📄)







Display Error Messages (Blue Ready-to-Work LED Blinks)

Error Symbol	Error Message	Solution
	Label not taken.	Printing has been halted because a label is obstructing the LTS sensor. Remove label to resume printing.
	LSS too high, LSS too low.	These errors can occur when you run a testfeed without any media installed, or if you have incorrect media settings. Load the printer with media (see “Loading Media” on page 14). Restart the printer in Test mode (see “Running Testmode” on page 34) and select the appropriate media type.
	IP Configuration Error.	The printer is trying to acquire an IP address from the network. Wait for it to complete the task.

Display Error Messages (Error LED Blinks)

Error Symbol	Error Message	Solution
	Field out of label.	You are attempting to print in an area that extends beyond the “print window.” See appendices C (Fingerprint) and D (IPL) information on how to set the media parameters.
	Out of media.	Load media in printer. See “Loading Media” on page 14 .

Display Error Messages (Error LED Blinks) (continued)

Error Symbol	Error Message	Solution
	Ribbon empty.	Load transfer ribbon. See “Loading Thermal Transfer Ribbon” on page 19 . This error could also occur if you have just switched to direct thermal media, and the printer is expecting ribbon to be loaded. If this is the case, change Paper Type in Setup.
	Label not found.	The printer does not find a label gap or black mark. <ul style="list-style-type: none"> Go into Setup mode and verify that the label length parameter is correct (see “Media Setup” on page 91 for Fingerprint and page 109 for IPL). Verify that the Media type settings are correct. This error can occur if you are, for instance, using continuous media but your media settings are set to labels with gaps.
	Printhead hot.	The printhead is overheated and needs to cool down. Wait for printing to be resumed automatically.
	Testfeed not done.	Press Testfeed (Ⓣ).
	Cutter not found.	A cut-command has been sent but the printer cannot find the cutter. Check that the cutter is installed properly.
	Cutter not responding.	Check that the cutter is installed properly.

Other Printing Operation Problems

Problem	Solution / Reason
The Power control LED is not lit when power is switched on.	Check that the power cable is correctly connected to the printer and electrical outlet.
Error LED is turned on after printing.	<ul style="list-style-type: none"> • Check if printer is out of media or ribbon. • Check if media is jammed or tangled. • Check that the print mechanism is locked and closed correctly. • Check the cutter. • Check application.
Label is jammed after printing.	Clear the media jam (see “Clearing Media Jams” on page 49). If the label is stuck on the thermal printhead, clean the printhead (see “Cleaning the Printhead” on page 57).
When printing, labels are skipped.	<ul style="list-style-type: none"> • Run a new testfeed (press (F4) (F5)). • Check if label gap sensor is disturbed by dust or foreign particles (see “Adjusting the Label Gap Sensor” on page 53).
When using cutter, label is not cut straight.	<ul style="list-style-type: none"> • Check whether the media thickness exceeds 0.25mm (9.8 mils). • Check that the media is loaded correctly. Check that the media runs as close to the center section of the printer as possible, and that the paper path is straight.
When using cutter, label cannot feed or abnormal cutting occurs.	<ul style="list-style-type: none"> • Check that the cutter is installed properly. • Check if paper feed rods are sticky. Clean if needed (see “Cleaning the Media Compartment” on page 58).
When using internal rewinder, abnormal function occurs.	Check that media is loaded correctly.
Printer keeps printing or feeding when it should stop.	<ul style="list-style-type: none"> • Check media settings. • Check label gap sensor position. • Clean if sensors need cleaning.
Printing is slow.	Check application.

Print Quality Problems

Print Quality Problems

Problem	Solution / Reason
Printout is faded or weak.	<ul style="list-style-type: none">• Fingerprint users: Adjust the media settings: Constant, Factor and Contrast.• IPL users: Adjust the Sensitivity setting.• Check if printhead needs cleaning, see “Cleaning the Printhead” on page 57.• Check printhead pressure, see “Adjusting Printhead Pressure” on page 51.• Check printhead dotline position, see “Adjusting Printhead Dot Line” on page 51.
Printer is working but nothing is printed.	<ul style="list-style-type: none">• Printing on Direct Thermal media: check that media is loaded with the heat-sensitive side facing the printhead.• Printing with Thermal Transfer ribbon: Check that the ink-side of the ribbon faces the media. See “Loading Thermal Transfer Ribbon” on page 19.• Select the correct media type (labels with gaps, black mark or continuous), and the correct paper type (direct thermal or thermal transfer).• Check that the printhead is correctly connected to the print mechanism.
Only partial labels are printed.	Check printhead balance, see “Adjusting Printhead Balance” on page 50 .
Part of the images is not printed along the feed direction.	<ul style="list-style-type: none">• Check if printhead needs cleaning, see “Cleaning the Printhead” on page 57• Check that the ribbon does not wrinkle, see “Preventing Ribbon Wrinkling” on page 47.

Print Quality Problems (continued)

Problem	Solution / Reason
Printout darkness is uneven across media path.	<ul style="list-style-type: none">• Check printhead balance, see “Adjusting Printhead Balance” on page 50.• Check printhead pressure, see “Adjusting Printhead Pressure” on page 51.
Printout is not in desired position.	<ul style="list-style-type: none">• Check for errors in software application.• Check if label gap sensor is disturbed by media, dust or ribbon.• Check the lateral position of label gap sensor.• Check the edge guide and media guide.• Check the media (insufficient transparency, interfering preprint lines in black mark operation, and so on).• Check if platen roller needs cleaning or replacement.

Troubleshooting Communication Problems

Use Dumpmode to verify that the printer is receiving data from the host correctly.

Using the Line Analyzer (Fingerprint)

In Dumpmode, the printer runs a Fingerprint program called Line Analyzer. As the name implies, the Line Analyzer captures incoming characters on the communication ports and prints them on one or more labels. Line Analyzer uses “autohunt” which means the program scans all applicable ports for data.

The easiest way to enter Dumpmode is through Testmode or Extended Testmode (see [“Running Testmode and Extended Testmode” on page 34](#))

When Dumpmode has been entered, the Printer will tell you this by printing “DumpMode entered” on a label. The display shows the Dumpmode icon, and the printer is ready to receive data.

Chapter 4 — Troubleshooting and Maintaining the Printer

While the printer is receiving data, the Ready/Data LED blinks. There is a half-second timeout which means that if no more characters have been received after 0.5 seconds, the program considers the transmission terminated and prints out a label.

Printable characters are printed in black-on-white, whereas control characters and space characters (ASCII 000–032 dec) are printed in white-on-black.

As long as a continuous string of characters is being received, the program wraps the lines until the label is full and then starts to print another label. After each character transmission, the following information is printed:

- Page number
- Number of characters printed on the label
- Total number of characters received so far

Before you exit Dumpmode, you can choose to save the dump in the printer's internal memory. The printer prints a label with the location of the saved file (the maximum size of the saved file is 128 kB).

When you exit Dumpmode, a final label with the text “Exit from Dump Mode” is printed.

Using Dumpmode (IPL)

When Dumpmode is activated, the printer captures incoming characters on the communication ports and prints them on one or more labels.

Users that run IPL firmware on their printer can access Dumpmode in two different ways, which produce slightly different results:

- Access Dumpmode through Testmode or Extended Testmode and you will receive printouts that look exactly as those produced with the Line Analyzer program on Fingerprint-operated machines. See [“Using the Line Analyzer \(Fingerprint\)” on page 45](#) for information on how to interpret the labels.
- Access Dumpmode from Setup, and characters will be printed on a continuous line, along with corresponding hexadecimal numbers.

To enter Dumpmode from Setup

- 1 Enter Setup by pressing (⚙️).
- 2 Navigate to **Test/Service > Data Dump**.
- 3 Select **Yes**.
- 4 To exit Dumpmode, reboot the printer.

Contacting Product Support

If you cannot find the answer to your problem in the “Troubleshooting and Maintaining the Printer” section, you can visit the Intermec technical knowledge base (Knowledge Central) at intermec.custhelp.com to review technical information or to request technical support. If you still need help after visiting Knowledge Central, you may need to call Product Support. To talk to an Intermec Product Support representative in the U.S.A. or Canada, call:

1-800-755-5505

Outside the U.S.A. and Canada, contact your local Intermec representative.

Before you call Intermec Product Support, make sure you have information about your printer model ready.

The machine and serial number labels are attached to the printer’s rear plate, and contain information on type, model and serial number as well as AC voltage and frequency.

Adjusting the Printer

This section describes some of the adjustments you can perform to solve problems related to printout quality.

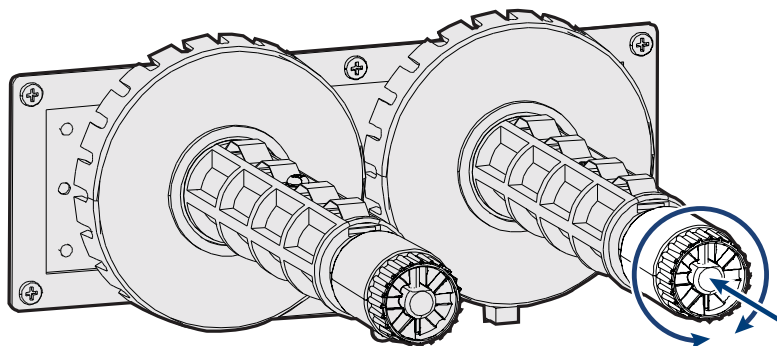
Preventing Ribbon Wrinkling

If you have problems with transfer ribbon getting wrinkled, you can attempt to adjust ribbon tension or ribbon shield.

To adjust ribbon tension

- 1 Push the knob on the ribbon supply hub.
- 2 Rotate it clockwise to increase breaking force or counterclockwise to decrease breaking force.

Chapter 4 — Troubleshooting and Maintaining the Printer

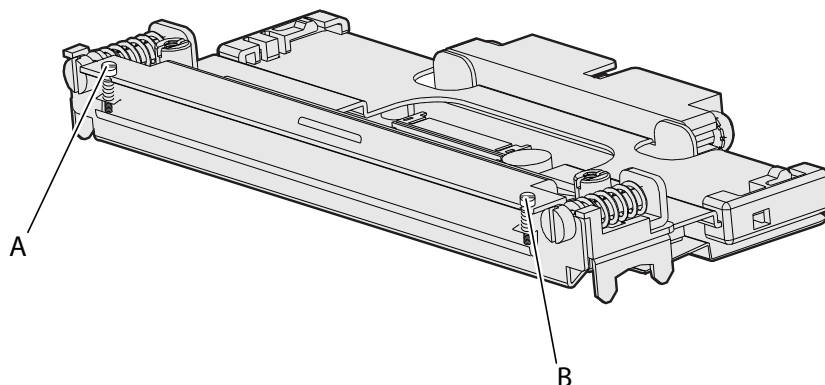


If your labels look as depicted below, you may want to try adjusting the ribbon shield.



Printouts of low quality caused by ribbon wrinkling.

The ribbon shield mechanism is located on the thermal printhead. It has two adjustable screws, A and B, as shown below.



Ribbon shield adjustment screws

To adjust ribbon shield

- 1 If the label printout matches Test label A, turn screw A clockwise. If the printout matches Test label B, turn screw B clockwise.

Chapter 4 — Troubleshooting and Maintaining the Printer

- 2 Twist the screw half a turn and perform a new test print.
- 3 Continue until you achieve a smooth printout quality.

Screw adjustment must not exceed two full turns or paper may not feed smoothly. In such a case, turn the screws counterclockwise completely and start over.

Clearing Media Jams

To clear media jam in print mechanism

- 1 Switch off the power to the printer.
- 2 Pull the printhead lever out and turn it counterclockwise to lift the printhead.
- 3 Pull out the media from the print mechanism.

If the media has been wound up or is stuck on the platen roller, carefully remove it by hand without using any sharp tools that can damage the platen roller or the printhead. Avoid rotating the platen roller.



Caution

Take care to avoid causing the platen roller to rotate. The electronic components may be damaged permanently.

- 4 Cut off any damaged or wrinkled part of the media.
- 5 Check to see if there adhesive is sticking to parts of the print mechanism. If so, clean as described in [“Maintaining the Printer” on page 56](#).
- 6 Reload the media as described in [“Loading Media” on page 14](#).
- 7 Switch on the power.
- 8 Press the **Print** button to readjust the media feed.

Adjusting the Printhead

Keeping the printhead properly balanced is crucial for obtaining printouts of high quality.

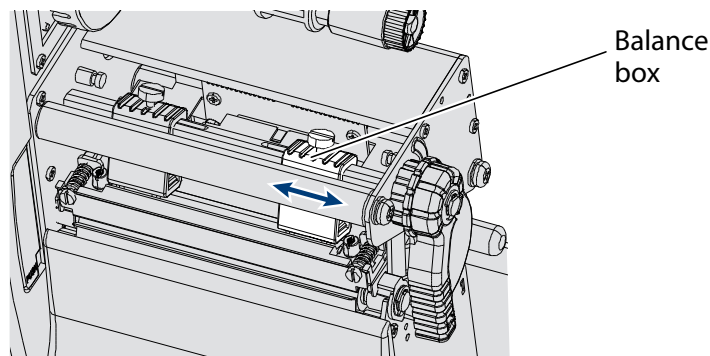
Chapter 4 — Troubleshooting and Maintaining the Printer

Adjusting Printhead Balance

The printer is factory-adjusted for full-size media width. If you are using media with less than full media width, Intermec recommends that you adjust the position of the printhead balance boxes so that the printhead is appropriately pressured against the media. If your printouts are weaker on one side than on the other, this is most likely due to an unbalanced printhead.

To adjust the printhead balance

- 1 Open the side door.
- 2 If transfer ribbon has been installed, remove it.
- 3 Lift the printhead by pulling the printhead lever out and turning it a quarter of a turn counterclockwise.
- 4 Move the balance box on the right side (outer) to the right (outward) for wider media, and inwards (to the left) for narrower media.



- 5 Engage the printhead and load the ribbon.
- 6 Test and readjust if necessary. (Tip: Use direct thermal media to avoid loading and unloading of ribbon multiple times.)

Adjusting Printhead Pressure

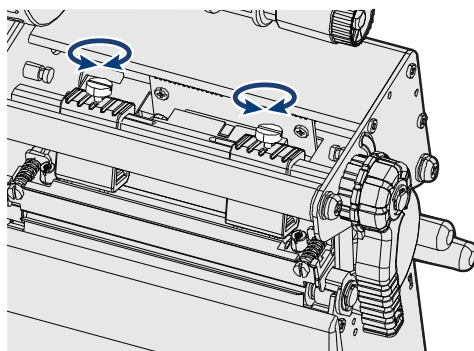
The pressure of the thermal printhead against the platen roller is factory-adjusted. However, if the printing is weaker on one side of the media, or if the thermal transfer ribbon starts to crease (indicated by unprinted white streaks along the media feed direction), it may be necessary to readjust the printhead pressure.



Note: Before readjusting the printhead pressure, try to move the outer balance box as described in the previous Adjusting Printhead Balance procedure.

To adjust printhead pressure

- 1 Open the side door.
- 2 Remove the ribbon.
- 3 Lift the printhead by pulling the printhead lever out and flipping it a quarter of a turn counterclockwise.
- 4 Use a straight-slot screwdriver to turn the screw at the top of the balance boxes clockwise to increase the pressure, or counterclockwise to decrease the pressure.



- 5 Engage the printhead and load the ribbon.
- 6 Test and readjust if necessary. (Tip: Use direct thermal media to avoid loading and unloading of ribbon multiple times.)

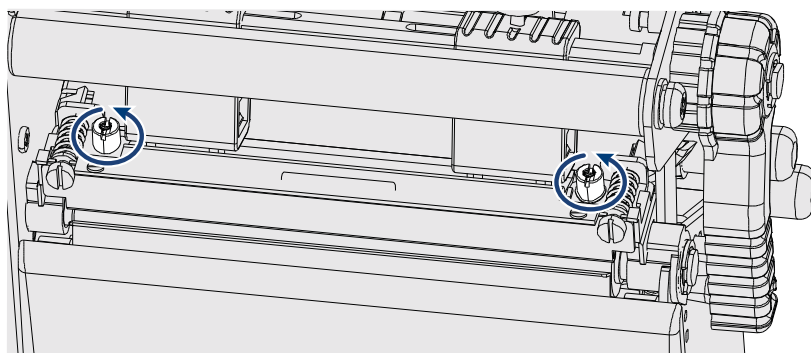
Adjusting Printhead Dot Line

When using thick or stiff media, the printhead needs to be moved forward so the dot line is aligned precisely with the top of the platen roller. It is also important to ensure that the printhead dot line and the platen roller are parallel.

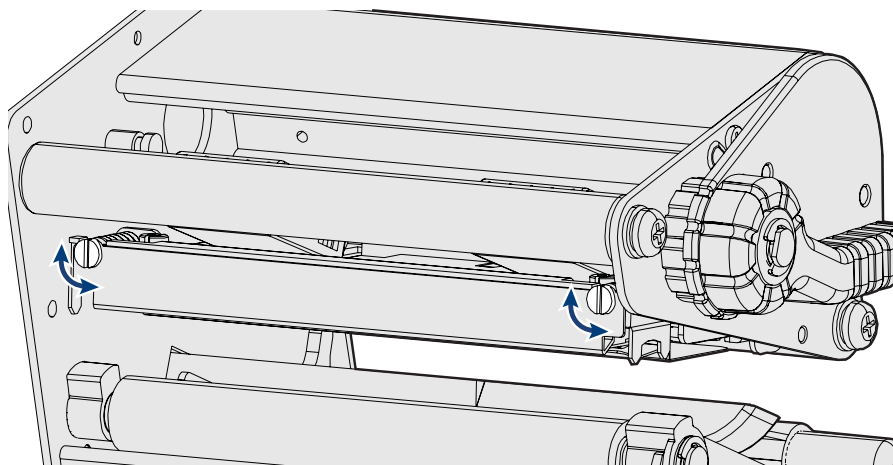
Chapter 4 — Troubleshooting and Maintaining the Printer

To adjust printhead dot line

- 1 Open the side door.
- 2 Remove the ribbon and engage the printhead.
- 3 Use a straight-slot screwdriver to turn the two screws at the top of the printhead bracket counterclockwise a single turn.



- 4 Lift the printhead by pulling the printhead lever and flipping it counterclockwise a quarter of a turn.
- 5 Carefully turn both screws at the front of the printhead clockwise **a quarter of a turn** at a time (a full turn corresponds to 0.55 mm, which is a lot). Make sure to make identical adjustments on both screws. If you are unsure, tighten both screws completely by turning them counterclockwise as far as they go and start over.



- 6 Engage the printhead and lock it by tightening the two screws at the top of the printhead bracket, that is, the reverse action of Step 3.

Chapter 4 — Troubleshooting and Maintaining the Printer

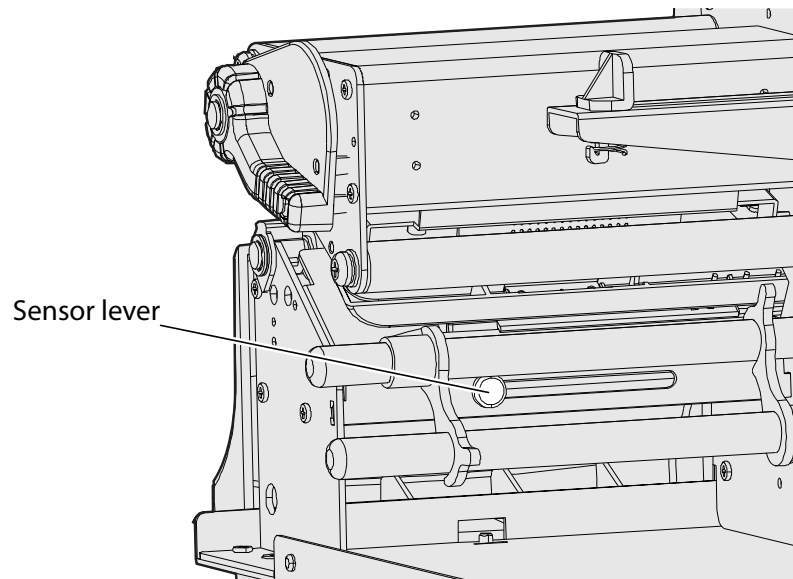
- 7 Load the ribbon (if any).
- 8 Test and readjust if necessary. (Tip: Use direct thermal media to avoid loading and unloading of ribbon multiple times.)

Adjusting the Label Gap Sensor

The label gap/black mark sensor (also called Label Stop Sensor or LSS) is a photoelectric sensor that controls the media feed by detecting gaps between labels, or slots or black marks in continuous stock. This requires the label gap sensor to be aligned with the gaps, slots or marks on the media. If you are using irregularly shaped labels, align the sensor with the front tip of the labels.

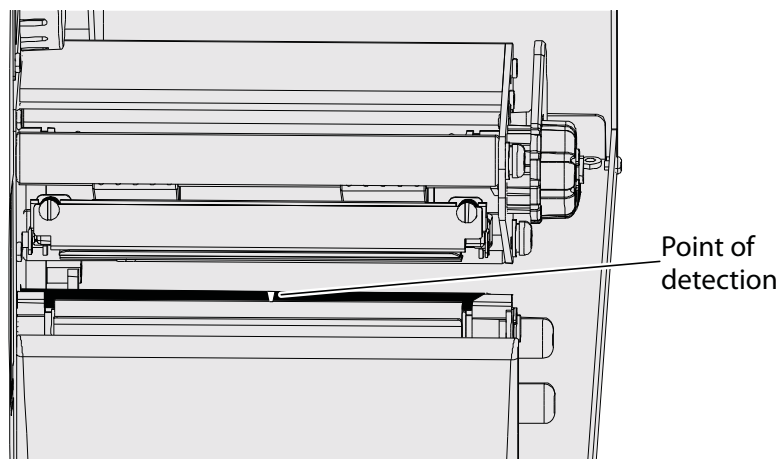
To adjust the label gap sensor position

- 1 Use the sensor lever at the rear side of the print mechanism to move the sensor inward or outward.



- 2 Check the point of detection from the front (with the printhead lifted.)

Chapter 4 — Troubleshooting and Maintaining the Printer



If you are having detection problems, you can test the LSS in Setup mode. The tests can determine if the sensor unit is not in position, if it is blocked by dust or stuck labels, or is defective in some way. There are two test functions:

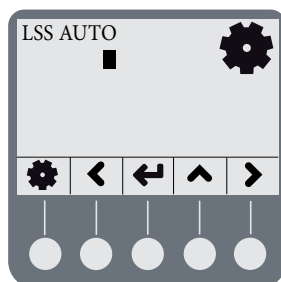
- LSS Auto – this is the standard function for checking that the label stop sensor works properly and is able to detect gaps, slots and black marks.
- LSS Manual – shows the sensor setting established by the latest Testfeed. It is also possible to try other settings. LSS Manual is intended for service and is not described in this document.

To run the LSS Auto test function

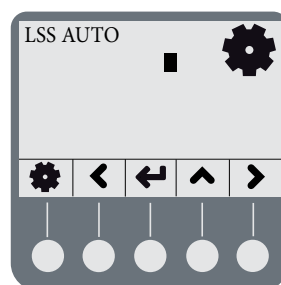
- 1 Check that the printer is correctly set up for the type of media loaded in the printer (**Setup** (⚙️) > **Media** > **Media Type**).
- 2 Press **Testfeed** (🖨️_{Test}).
- 3 Make sure that there is a label—not a gap or mark—at the sensor (“point of detection” as described above)
- 4 Check that the media runs as close to the center of the printer as the guides allow.
- 5 Press **Setup** (⚙️).

Chapter 4 — Troubleshooting and Maintaining the Printer

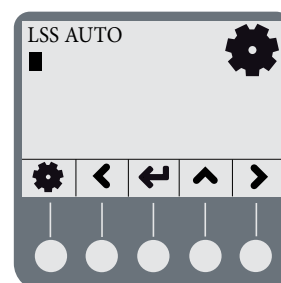
- 6 Navigate to **Print Defs > LSS Test > LSS Auto**. The cursor should be placed in the center, as below.



- 7 **Gap or slot detection:** Lift the printhead and slowly pull out the media (in the media feed direction). When the LSS detects a gap or a detection slot, the cursor moves to the right.



- 8 **Black mark detection:** Lift the printhead and slowly pull out the media (in the media feed direction). When the LSS detects a black mark, the cursor moves to the left.



- 9 If the cursor behaves as described in Steps 7 and 8, the LSS is working and is properly aligned with the gaps, slots or black marks.
- 10 If the cursor does not react on a gap, slot or black mark, control the following:
 - Is the LSS laterally aligned with the slots or black marks?

Chapter 4 — Troubleshooting and Maintaining the Printer

- Is the transfer ribbon properly loaded so it does not interfere with the LSS? (see “[Loading Thermal Transfer Ribbon](#)” on page 19).
- Are the LSS guides clean, or are there partial labels or residue stuck on them? If so, clean as described in the next section.
- Does the media have some kind of preprint that can make detection harder?
- Is there too little difference between the black marks and the surrounding areas?
- Is the label liner not transparent enough?
- Does the LSS work with another type of media? (Remember to change the Media Type setup and perform a new Testfeed.)

Maintaining the Printer

In order to attain high productivity and a long life for your printer, Intermec recommends that you regularly inspect the printer and its environment to ensure that it is operated under optimal conditions.

Keep the printer in a dry area, away from larger electrical motors, welders and similar which might affect printer operation.

Clean your printer regularly, as described in the procedures below, in order to maintain the quality of your labels and extend the life of your printer.



If you open the electronics cover, you will void the warranty and may cause damage to the internal components. Opening the electronics cover exposes the user to shock hazards which may result in injury or death.



Always unplug the power cord before cleaning the printer.

Cleaning the Printhead

Cleaning the printhead on a regular basis prolongs the life of the printhead and ensures you maintain high printout quality. You should clean the printhead with cleaning cards or a cotton swab moistened with isopropyl alcohol. Ideally, you should do this every time you load a new supply of transfer ribbon.



Warning

Isopropyl alcohol [(CH₃)₂CHOH] is a highly flammable, moderately toxic, and mildly irritating substance.

To clean the printhead

- 1 Open the side door.
- 2 Remove the media and ribbon.
- 3 Pull out the printhead lever and flip it counterclockwise a quarter of turn.
- 4 Use a cleaning card or a soft cotton swab moistened with isopropyl alcohol to dissolve any contamination on the line of heat-emitting dots at the front/bottom of the printhead.
- 5 Wait 30 seconds and carefully rub off any contamination. Repeat if necessary.



Caution

Never use any hard or sharp tools to peel away stuck labels or similar,. The printhead is delicate and can easily be damaged.

- 6 Allow the printhead to dry for a minute or more before loading a new supply of media and ribbon.

Cleaning the Media Compartment

Regular cleaning of the printer's media compartment ensures smoother printing operation and avoids problems with media jams.

Use a soft cloth moistened with isopropyl alcohol to clean the inside of the printer. Be sure to keep the following parts clean:

- Drive roller and tear bar
- Media edge guides and media path
- Label sensors



Isopropyl alcohol [(CH₃)₂CHOH;CAS67-63-0] is a highly flammable, moderately toxic, and mildly irritating substance.

If there are stuck labels, or adhesive residue from labels, peel as much as possible with your fingers, and then use isopropyl alcohol to dissolve the remaining adhesive.

Cleaning the Exterior of the Printer

Make sure to keep the exterior of the printer clean, this will reduce the risk of dust or foreign particles reaching the inside of the printer and affect printer functionality.

Use a soft cloth, possibly moistened with water or a mild detergent when cleaning the printer externally. Make sure to keep the surface surrounding the printer clean as well.



If the printer is used in an environment where the premises are cleaned by a water hose or steam, move the printer to another room or cover it very carefully with a plastic sheet and make sure that the power cord is unplugged.



A Specification, Interfaces, and Options

This appendix contains a general technical specification, as well as information about the printer interfaces and available options.

Printer Specifications

Printer Specifications

Physical Dimensions		
Dimensions (WxLxH)	276 x 454.4 x 283.0 mm (10.9 x 17.9 x 11.2 in)	
Weight (excl. media)	13 kg (28.7 pounds)	
Power Supply		
Input rating	~100-240V 2-1A 50/60 Hz	
Power consumption	<ul style="list-style-type: none"> • Stand-by: 12 W • Normal operation/printing: 80 W • Peak: 250 inW 	
Printing		
Print technique	Direct Thermal/Thermal Transfer	
Printhead resolutions	8 dots/mm (203.2 dpi) or 11.8 dots/mm (300 dpi)	
Print speed		
8 dots/mm (203 dpi)	50.8 to 152.4 mm/sec (2 to 6 in/sec)	
11.8 dots/mm (300dpi)	50.8 to 101.6 mm/sec (2 to 4 in/sec)	
Print Width Max.		
8 dots/mm (203 dpi)	104 mm (4.1 in)	
11.8 dots/mm (300dpi)	105.7 mm (4.2 in)	
Print Length Max.	Fingerprint	IPL
8 dots/mm (203 dpi)	1270 mm (50 in)	600 mm (23 in)
11.8 dots/mm (300dpi)	558.2 mm (22 in)	406.4 mm (16 in)
Modes of Operation		
Tear-off (straight-through)	Yes	
Cut-off	Option with cutter	
Peel-off (self-strip)	Option with internal rewinder	
Firmware (Fingerprint)		
Operating system	Fingerprint v10.x.x	Includes Direct Protocol

Printer Specifications (continued)

Smooth fonts	TrueType and TrueDoc fonts
Resident scaleable fonts	15
Character sets	<ul style="list-style-type: none"> • 23 single-byte character sets standard. • UTF-8 support as standard.
Resident bar codes	61
Firmware (IPL)	
Operating system	IPL v10.x.x
Smooth fonts	TrueType and TrueDoc fonts
Resident scaleable fonts	13 (+21 simulated bitmap)
Character sets	<ul style="list-style-type: none"> • 23 single-byte character sets standard • UTF-8 support as standard
Resident bar codes	31
Environment	
Operating temperature	+5°C to +40°C (+41°F to 104°F)
Storage temperature	-20°C to 70°C (-4°F to 122°F)
Operating humidity	20 to 80% non-condensing
Storage humidity	10 to 90% non-condensing
Media	
Media width	25 to 118 mm (1 to 4.6 in) Max 114 mm (4.5 in) with cutter
Media roll diameter	213 mm (8.4 in) max. 190 mm (7.5 in) with internal rewinder
Internal rewinder diameter	Max 140 mm (5.51 in)
Media roll core diameter	38.1 to 76.2 mm (1.5 to 3 in)
Media thickness	60 µm to 250 µm (2.3 to 9.8 mils)
Transfer Ribbon	
Material	Wax, hybrid, or resin
Winding	Ink on either inside or outside of roll
Ribbon width	30 to 110 mm (1.18 to 4.33 in)
Ribbon roll diameter (outer)	76 mm (2.99 in) equivalent to 450 m (1471 ft) of ribbon.

Appendix A — Specification, Interfaces, and Options

Printer Specifications (continued)

Inner core diameter	25.2 to 25.6 mm (1 in)
Sensors	
Label gap/black mark/ out of media	Yes
Printhead lifted	Yes
Label taken	Yes
Ribbon end	Yes
Controls	
Graphical display	LCD, 240*160 pixels with LED backlight
LED indicators	Power, Data/Ready, Error, Ready-to-Work™
Keys	1 Print Button + 5 Soft Keys
Electronics	
Microprocessor	ARM 9
Standard memory	8 MB flash, 16 MB SDRAM.
Interfaces	
RS-232 serial	Yes
USB	Yes
Ethernet	Option
IEEE 1284 parallel	Option
CompactFlash	Yes
USB host	Yes
Accessories and Options	
Internal rewinder and batch takeup	
Cutter	
Printhead 203/300 dpi	
EasyLAN ethernet interface	
Parallel IEEE 1284 interface	
Real time clock	

Interfaces

This section describes the standard interfaces, as well as the optional kits that add functionality to your EasyCoder PD42.

RS-232 Serial Interface

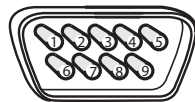
Protocol

Parameter	Default
Baud rate	9600
Character Length	8 bits
Parity	None
Stop bits	1
Handshaking	XON/XOFF and RTS/CTS

To change the serial settings, see Chapter 3, “[Configuring the Printer.](#)”

Interface Cable

The computer end of the cable depends on the computer model. The printer end is a DB9 pin plug, as shown below.



RS-232 DB9 pins

DB-9	Signal	Meaning
1		External +5V DC Max 500 mA
2	TXD	Transmit data
3	RXD	Receive data
4		
5	GND	Ground
6		
7	CTS	Clear to send
8	RTS	Request to send
9		

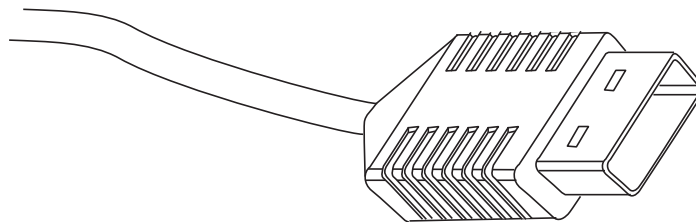
USB Interface

The printer supports USB v1.1 (also called USB 2.0 full speed). To use the USB interface to print from a PC, you need to have the Intermec USB printer driver installed on your PC. You will find this driver (InterDriver) on the PrinterCompanion CD along with installation instructions.

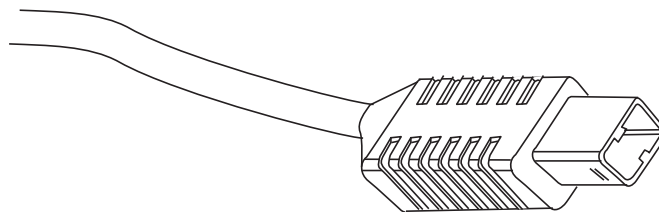
The printer is a “self-powered device.” Intermec recommends that you only connect one printer to each USB port on the host, either directly or via a hub. Other devices, like a keyboard and a mouse, can be connected to the same hub. If you need more than one Intermec USB printer to a host, you should use different USB ports.

The USB cable included with the EasyCoder PD42 has a USB Type A connector on one end to connect to a PC, and a USB Type B connector to connect to the printer.

There is no communication setup for the USB port.



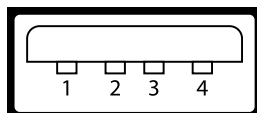
USB Type A Connector (Connects to PC or Hub)



USB Type B Connector (Connects to Printer)

USB Host Interface

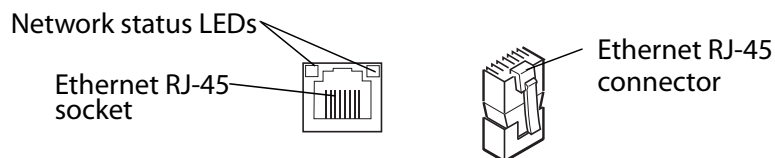
The PD42 printer is equipped with a USB host interface, which means you can connect various USB devices (bar code scanners and keyboards of HID type, memory sticks and USB hubs) for use with the printer.



Pin	Function
1	VBUS
2	D-
3	D+
4	Gnd

EasyLAN Ethernet Interface

The EasyLAN Ethernet interface has an RJ-45 socket for use with a standard RJ-45 cable. The interface supports 10/100 Mbps Fast Ethernet (10BASE-T, 100BASE-TX) and is fully compliant with the IEEE 802.3u standard. The network card MAC address can be found on the label below the socket.



One yellow and one green LED indicate the network status as follows:

Network Status LEDs		
Green	On	Link
	Off	No link
Yellow	Blinking	Activity
	On	100BASE-TX
	Off	10BASE-T

Parallel IEEE 1284 Interface

The parallel port supports Windows plug-n-play and additional status reporting through IEEE 1284 nibble ID mode.

Interface Cable

Parallel (shielded) cable compatible with PC.

Pin	Function	Transmitter	Comment
1	nStrobe	host	
2-9	Data 0-7	host	
10	nAcknowledge	printer	
11	Busy	printer	
12	Perror	printer	
13	Select	printer	
14	nAutoFd		
15-16	Not connected		
17	Chassis ground		
18	External +5V DC		Max 500mA
19-30	Signal ground		
31	nInit		
32	nFault	printer	
33	Signal ground		
34-35	Not connected		
36	nSelectIn		

Options

This section describes the options that add functionality to your EasyCoder PD42 Printer. For a complete description and installations instructions, see the respective installation instructions document for each kit. Please note that several of these options can only be factory-installed or installed by an authorized service technician.

EasyLAN Ethernet Interface

The EasyLAN Ethernet Interface kit adds network capability to your printer. See [“EasyLAN Ethernet Interface” on page 65](#).

Parallel IEEE 1284 Interface

This kit adds a Parallel IEEE 1284 port to your printer. See [“Parallel IEEE 1284 Interface” on page 66](#).

Cutter Kit

The cutter is designed to cut off continuous paper-based stock or liner between labels. The paper cutter can be controlled using the instructions CUT, CUT ON and CUT OFF in Fingerprint (and Direct Protocol).

Internal Rewinder

The Internal Rewinder (and Batch Takeup) kit is an optional device for peel-off (self-strip) operation, which means that the labels are separated from the liner (backing paper) after printing and the liner is wound up on an internal hub (See [“Loading Media for Peel-Off \(Self-Strip\) Operation” on page 17](#)). It can also be used to roll up complete batches of label rolls. The unit also includes a guide shaft.

Printhead Kit

The printer can be fitted with either a 203 dpi or 300 dpi printhead. These printheads use different PCBs (Printed Circuit Board). The printhead kit is available as a replacement kit (printhead only), or as a complete kit (printhead plus PCB).

Real Time Clock

The Real time clock circuit (RTC) relieves the operator or the host from having to set the clock/calendar using the Intermec Fingerprint instructions DATE\$ and TIME\$ after each power up. The RTC has its own backup battery that will last 10 years or more.

Appendix A — Specification, Interfaces, and Options

A decorative graphic consisting of two overlapping circles. The larger circle is light gray and partially encloses the smaller circle. The smaller circle is also light gray and has a small solid gray dot at its center. The circles are positioned to the left of the main title.

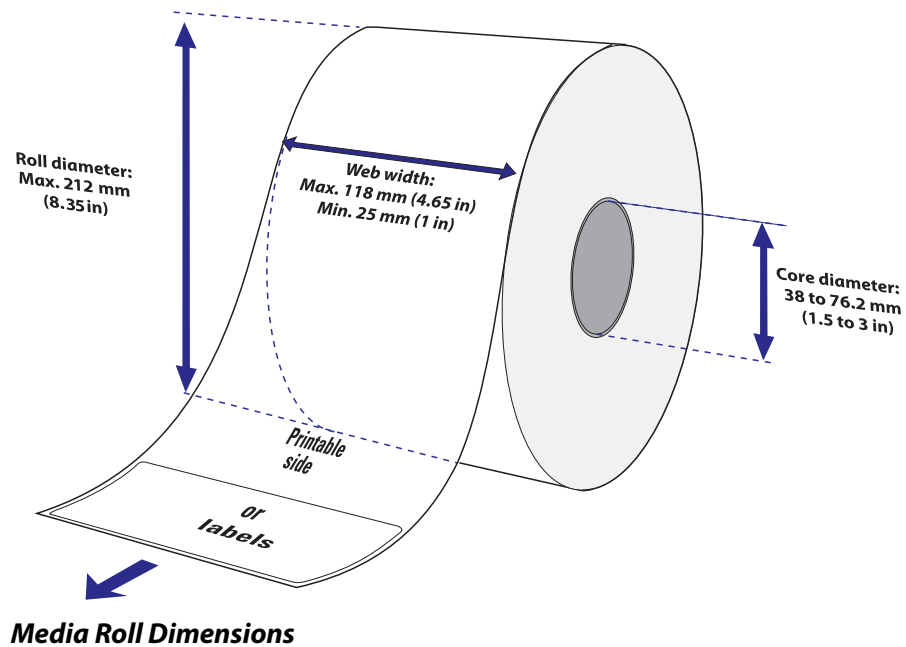
B Media Specifications

This appendix explains the different media types the EasyCoder PD42 can operate with, and states the allowed dimensions of the paper, ribbon and rolls. This appendix covers the following topics:

- Media Roll Sizes
- Paper Types and Sizes

Media Roll Sizes

The media roll must comply with the following dimensions:



Core

Diameters: 38 to 76.2 mm (1.5 to 3 inches)
Width: Must not protrude outside the media.

Internal Roll

Max. diameter	212 mm	8.35 inches
Max diameter with internal rewinder	190 mm	7.5 inches
Max. width	118 mm	4.65 inches
Max. width with cutter	114 mm	4.49 inches
Min. width	25 mm	1.00 inches
Thickness	60 to 250 μ m	2.3 to 9.8 mils

Thicker media may be used, but print quality will be reduced. the stiffness is also important, and must be balanced against thickness to maintain print quality.

Appendix B — Media Specifications

The media supply must not be exposed to sand, dust, grit etc. Any hard particles, no matter how small, can damage the printhead.

Ribbon Size

The core of the ribbon must be 25.2-25.6 mm (1 inch), as the empty ribbon core included in the box. The outer dimensions of the ribbon roll may be:

Max. diameter	76 mm	2.99 inches
Max. width	110 mm	4.33 inches
Min. width	30 mm	1.18 inches

Paper Types and Sizes

Non-Adhesive Strip

a: Media Width

Maximum:	118.0 mm	4.65 inches
Minimum:	25.0 mm	1.00 inches

Paper Type Setup

- Variable length strip
- Fixed length strip



Non-Adhesive Strip

Self-Adhesive Strip

a: Media Width

Maximum:	118.0 mm	4.65 inches
Minimum:	25.0 mm	1.00 inches

b: Liner

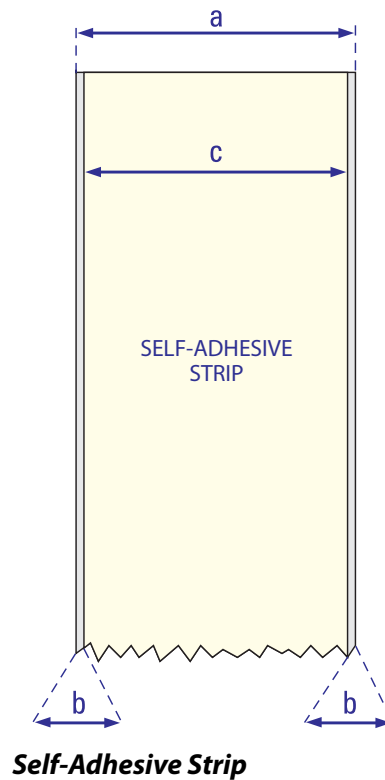
The liner must extend evenly on both sides and not more than a total of 1.6 mm (0.06) inches outside the face material.

c: Media Width (excluding liner)

Maximum:	116.4 mm	4.58 inches
Minimum:	23.8 mm	0.94 inches

Paper Type Setup

- Variable length strip
- Fixed length strip



Appendix B — Media Specifications

Self-Adhesive Labels

a: Media Width

Maximum:	118.0 mm	4.65 inches
Minimum:	25.0 mm	1.00 inches

b: Liner

The liner must extend evenly on both sides and not more than a total of 1.6 mm (0.06) inches outside the face material.

c: Label Width (Excluding Liner)

Maximum:	116.4 mm	4.58 inches
Minimum:	23.8 mm	0.94 inches

d: Label Length

Fingerprint

IPL

8 dots/mm (203 dpi)

Maximum:	1270 mm (50 in.)*	600 mm (23 in.)
Minimum:	6 mm (0.2 in.)	6 mm (0.2 in.)

11.81 dots/mm (300 dpi)

Maximum:	558.8 mm (22 in.)*	406.4 mm (16 in.)
Minimum:	6 mm (0.2 in.)	6 mm (0.2 in.)

* This is the print length limit set by memory constraints.

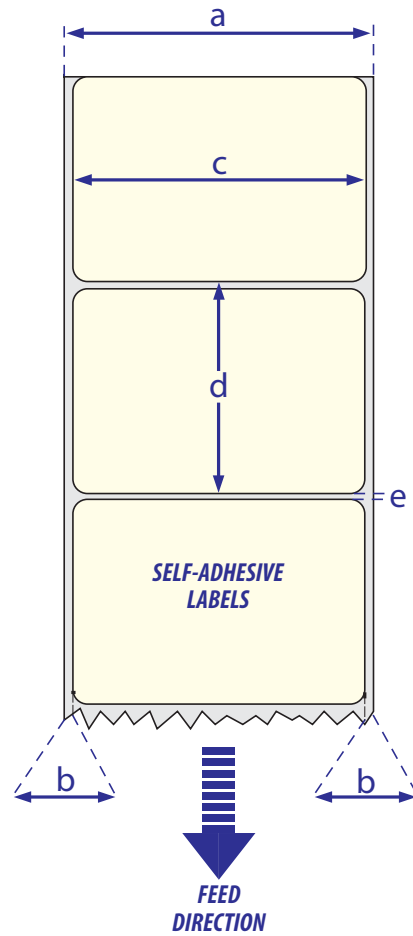
e: Label Gap

Maximum:	26.0 mm	1.02 inches
Minimum:	1.2 mm	0.05 inches
Recommended:	3.0 mm	0.12 inches

The Label Gap sensor must be able to detect the front edges of the labels. It can be moved 0 to 57 mm (0 to 2.24 inches) from the inner edge of the media.

Paper Type Setup

- Labels with Gaps



Self-Adhesive Labels

Tickets With Gaps

a: Media Width

Maximum:	118.0 mm	4.65 inches
Minimum:	25.0 mm	1.00 inches

b: Copy Length

Fingerprint

IPL

8 dots/mm (203 dpi)

Maximum:	1270 mm (50 in.)*	600 mm (23 in.)
Minimum:	6 mm (0.2 in.)	6 mm (0.2 in.)

11.81 dots/mm (300 dpi)

Maximum:	558.8 mm (22 in.)*	406.4 mm (16 in.)
Minimum:	6 mm (0.2 in.)	6 mm (0.2 in.)

* This is the print length limit set by memory constraints.

c: Detection Position

Variable:	0 to 57 mm	0 to 2.24 inches
-----------	------------	------------------

d: Detection Slit Length

The length of the detection slit (excluding corner radius) must be minimum 2.5 mm (0.10 inches) on either side of the detection position.

e: Detection Slit Height

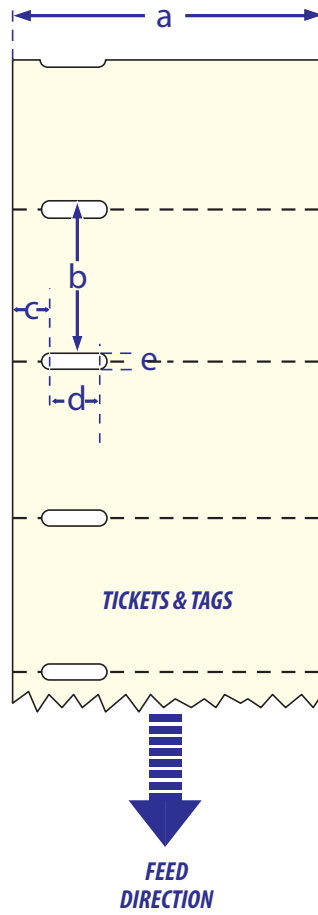
Maximum:	26.0 mm	1.02 inches
Minimum:	1.2 mm	0.05 inches
Recommended:	3.0 mm	0.12 inches

Paper Type Setup

- Tickets with Gaps



Note: Do not allow any perforation to break the edge of the media as this may cause the media to split and jam the printer.



Tickets With Gaps

Tickets With Black Mark

a: Media Width

Maximum:	118.0 mm	4.65 inches
Minimum:	25.0 mm	1.00 inches

b: Copy Length

Fingerprint

IPL

8 dots/mm (203 dpi)

Maximum:	1270 mm (50 in.)*	600 mm (23 in.)
Minimum:	6 mm (0.2 in.)	6 mm (0.2 in.)

11.81 dots/mm (300 dpi)

Maximum:	558.8 mm (22 in.)*	406.4 mm (16 in.)
Minimum:	6 mm (0.2 in.)	6 mm (0.2 in.)

* This is the print length limit set by memory constraints.

c: Detection Position

Variable:	0 to 57 mm	0 to 2.24 inches
-----------	------------	------------------

d: Black Mark Width

The detectable width of the black mark should be at least 5.0 mm (0.2 inches) on either side of the Label Gap Sensor detection point.

e: Black Mark Length

Maximum:	25.0 mm	0.98 inches
Minimum:	3 mm	0.12 inches
Common:	5 mm	0.2 inches

f: Black Mark Y-Position

It is recommended that you place the black mark as close to the front edge of ticket as possible and use a negative Stop Adjust value to control the media feed, so the tickets can be properly torn off.

Paper Type Setup

- Tickets with Mark

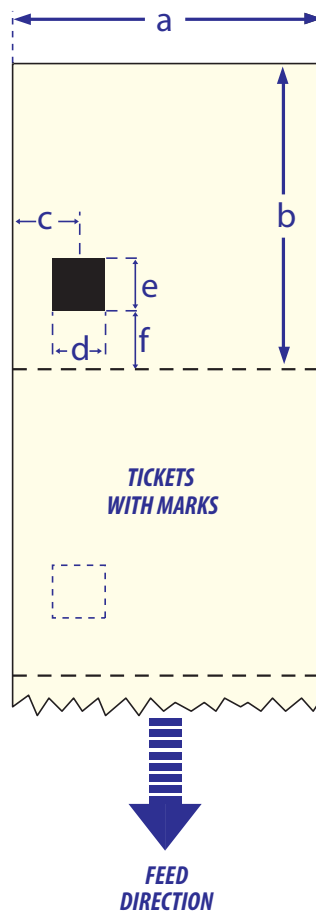
Appendix B — Media Specifications



Note: Preprint that may interfere with the detection of the black mark should be avoided.



Note: The black mark should be non-reflective carbon black on a white or near-white background. Do not allow any perforations to break the edge of the media as this may cause the media to split and jam the printer.



Tickets With Black Mark

Appendix B — Media Specifications



C Setup Parameters (Fingerprint)

This appendix lists all of the setup parameters that you can configure to fit your operating environment. This appendix covers the following topics:

- Setup Description
- Navigating the Setup Tree
- Serial Communication Setup
- Com Setup
- Emulation Setup
- Feed Adjust Setup
- Media Setup
- Print Defs Setup
- Network Setup

Setup Description

The printer's Setup parameters control the way the printer operates. The setup parameters can be accessed and changed in a variety of ways, see “[Changing Configuration Settings](#)” on [page 31](#) for more information.



Note: The recommended way to set your printer's configuration parameters is to use the PrintSet 4 program, which is included on the PrinterCompanion CD. PrintSet 4 can communicate with your printer either via a serial cable or a network connection.

Navigating the Setup Tree

This section provides an overview of the branches and nodes in the setup tree, as it is presented in the display window.



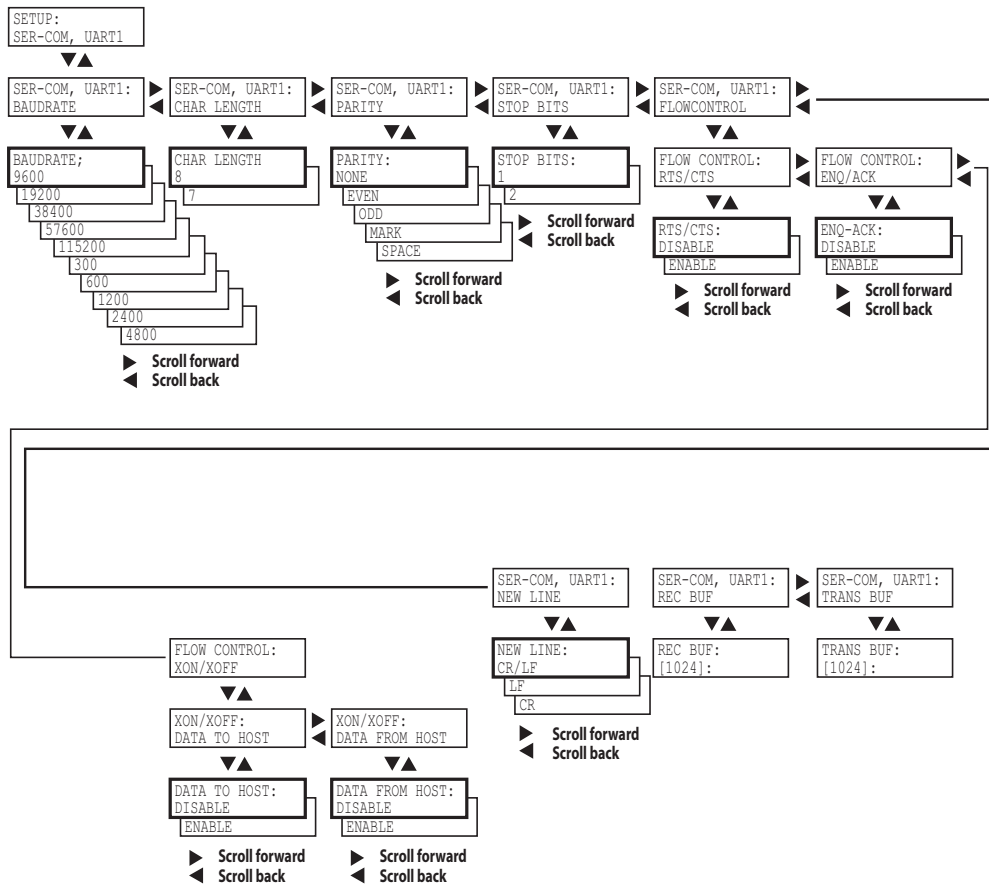
Note: The setup tree is shown as it exists in Fingerprint 10.2.0.

Dotted boxes indicate features that are only available on printers equipped with optional equipment.

Boxes with thick frames indicate default settings.

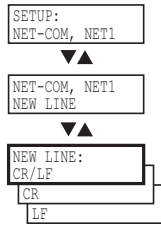
Values inside brackets can be modified to any value specified by the user.

Setup Mode: Serial Communication (Ser-com, Uart1)

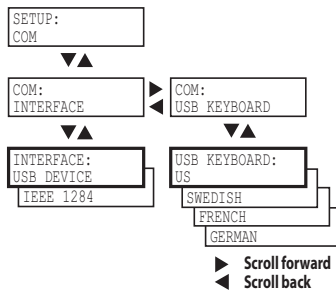


Appendix C — Setup Parameters (Fingerprint)

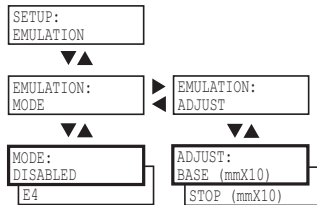
Setup Mode: Net-com, Net1



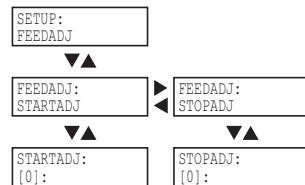
Setup Mode: Com



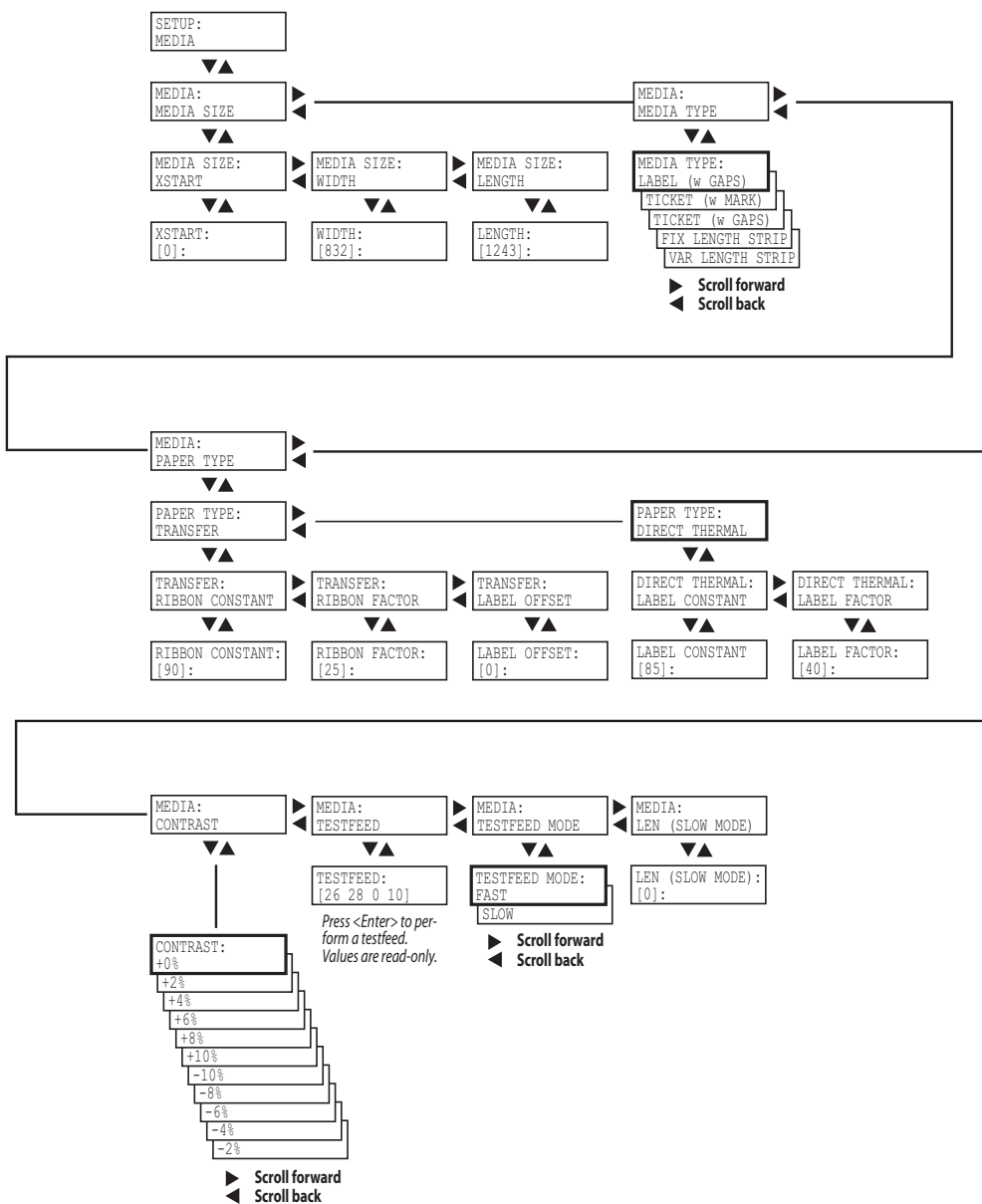
Setup Mode: Emulation



Setup Mode: Feedadjust

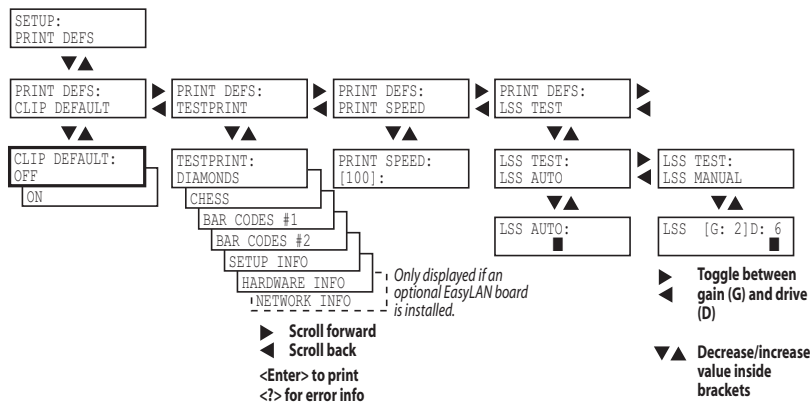


Setup Mode: Media

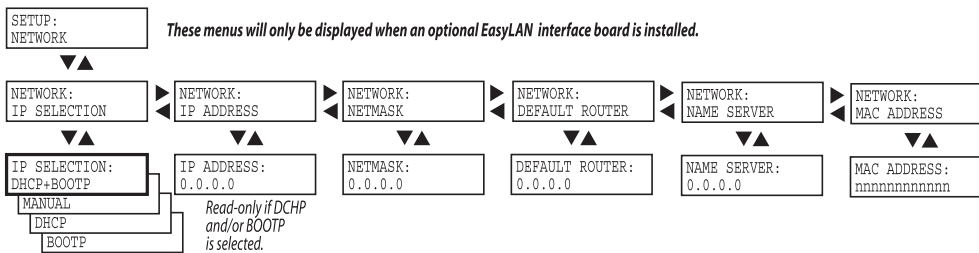


Appendix C — Setup Parameters (Fingerprint)

Setup Mode: Print Defs



Setup Mode: Network (Option)



Serial Communication Setup

The serial communication parameters control the communication between the printer and the connected computer or other devices on the standard serial port, referred to as "uart1:".

For the serial communication channel ("uart1:"), the following parameters can be set. Make sure they match the setup of the connected device or vice versa. If the setup of the printer and the setup of the host do not match, the response from the printer to host will be garbled.

Baud Rate

The baud rate is the transmission speed in bits per second. There are 10 options:

- 300
- 600
- 1200
- 2400
- 4800
- 9600 (default)
- 19200
- 38400
- 57600
- 115200

Character Length

The character length specifies the number of bits that will define a character. Eight bits are recommended, since that option allows more special characters and characters that are used exclusively in foreign languages. Refer to the *Intermec Fingerprint Programmer's Reference Manual* (P/N 937-005-xxx) for more information.

There are two options:

- 7 (Characters ASCII 000 to 127 decimal)
- 8 (Characters ASCII 000 to 255 decimal) (default)

Appendix C — Setup Parameters (Fingerprint)

Parity

The parity decides how the firmware will check for transmission errors. There are five options:

- None (default)
- Even
- Odd
- Mark
- Space

Stop Bits

The number of stop bits specifies how many bits will define the end of a character. There are two options:

- 1 (default)
- 2

Flow Control

RTS/CTS is a protocol in which communication is controlled via currents through separate lines in a cable that are set either to HIGH or LOW. By default, this option is disabled.

CTS on the Printer is connected to RTS on the PC and vice versa. CTS HIGH from the printer indicates that the unit is ready to receive data.

CTS LOW from the printer indicated that the receive buffer is full (see XON/XOFF). In some computer programs, for example Microsoft Windows HyperTerminal, RTS/CTS is designated “Hardware.”

XON/XOFF is a protocol in which communication is controlled by the control characters XON (ASCII 17 dec.) and XOFF (ASCII 19 dec.) transmitted on the same line as the data. XON/XOFF can be enabled/disabled separately for data received from the host by the printer (printer sends XON/XOFF) and for data transmitted to the host from the printer (host sends XON/XOFF).

New Line

Selects the character or characters transmitted from the printer to indicate a new line. There are three options:

- CR/LFASCII 13 + 10 dec. (default)

- LFASCII 10 dec.
- CRASCII 13 dec.

Receive Buffer

The Receive buffer stores the input data before processing. The size is 8192 bytes and cannot be changed.

Transmit Buffer

The transmit buffer stores the input data before processing. Default size is 8192 bytes and this value cannot be changed.

Com Setup

The parameters under the Com node control interface and external keyboard use.

Interface

If you have an optional Parallel IEEE 1284 interface installed in the printer, it cannot be used at the same time as the USB Device interface. In this menu, you can choose which interface is active.

USB Keyboard

You can choose between a number of different keyboard layouts, that can be applied to an external USB keyboard connected to the printer through the USB host interface.

Emulation Setup

It is possible to run the PD42 printer as an E4 printer through software emulation.

Mode

Switch between these options:

- Disabled (default)
- E4

In E4 mode, the following commands are available:

BARFONTSLANT
BARFONTSIZE
FONTDSLANT
FONTDSIZE
FONTD
FONTSLANT
FONTSIZE

Appendix C — Setup Parameters (Fingerprint)

Refer to the *EasyCoder E4 Direct Protocol Programmer's Reference Manual* (P/N 1-960419-xx) for more information about the commands, syntax, etc.

Adjust

The user can modify the Base and Stop parameters, which are functionally similar to Start Adjust and Stop Adjust as described under “**Feed Adjust Setup**” on page 90. The unit is different however; instead of being given in dots, Base and Stop values are defined as the distance in millimeters multiplied by 10:

- Base (mmX10)
Default value is +88, which equals a distance of 8.8 mm or roughly 0.35 inches.
- Stop (mmX10)
Default value is +55, which equals a distance of 5.5 mm or roughly 0.22 inches.

Feed Adjust Setup

The Feed adjust part of Setup Mode controls how much of the media is fed out or pulled back before and/or after the actual printing. These settings are global and will be effected regardless of which program is run.



Note: The firmware uses the front edges of labels with gaps, the ends of detection slots, and the forward edges of black marks for detection, all seen in relation to the feed direction.

Start Adjust

The Start Adjust value is given as a positive or negative number of dots. The default value is 0, which places the origin a certain distance back from the front edge of the copy:

- A positive start adjustment means that the specified length of media will be fed out before the printing starts. Thus, the origin is moved further back from the forward edge of the copy.
- A negative start adjustment means that the specified length of media will be pulled back before the printing starts. Thus, the origin is moved towards the forward edge of the copy.

Stop Adjust

The Stop Adjust value is given as a positive or negative number of dots. The default value is 0, which stops the media feed in a position suitable for tear off operation:

- A positive stop adjustment means that the normal media feed after the printing is completed will be increased by the specified value.
- A negative stop adjustment means that the normal media feed after the printing is completed will be decreased by the specified value.

Media Setup

The media parameters tell the firmware the characteristics of the media that will be used, so that the printout will be positioned correctly and attain the highest possible quality.

Media Size

The size of the printable area is defined by three parameters; X-Start, Width, and Length.

X-Start

Specifies the position of the origin along the dots on the printhead.

The default X-start value prevents printing outside the labels when the liner is slightly wider than the labels. If you want to maximize the print width, reset the X-start value to its default value 0.

By increasing the value for the X-start parameter, the origin will be moved outwards, away from the inner edge of the media path. In other words, the larger X-start value, the wider inner margin and the less available print width.

Width

Specifies the width of the printable area in number of dots from the origin. Thus, the sum of the X-start and width values gives the outer margin of the printable area. The width should be set to prevent printing outside the media, which may harm the printhead.

Appendix C — Setup Parameters (Fingerprint)

Length

Specifies the length of the printable area in number of dots from the origin along the Y-coordinate and allocates memory space for two identical image buffers in the printer's temporary memory.

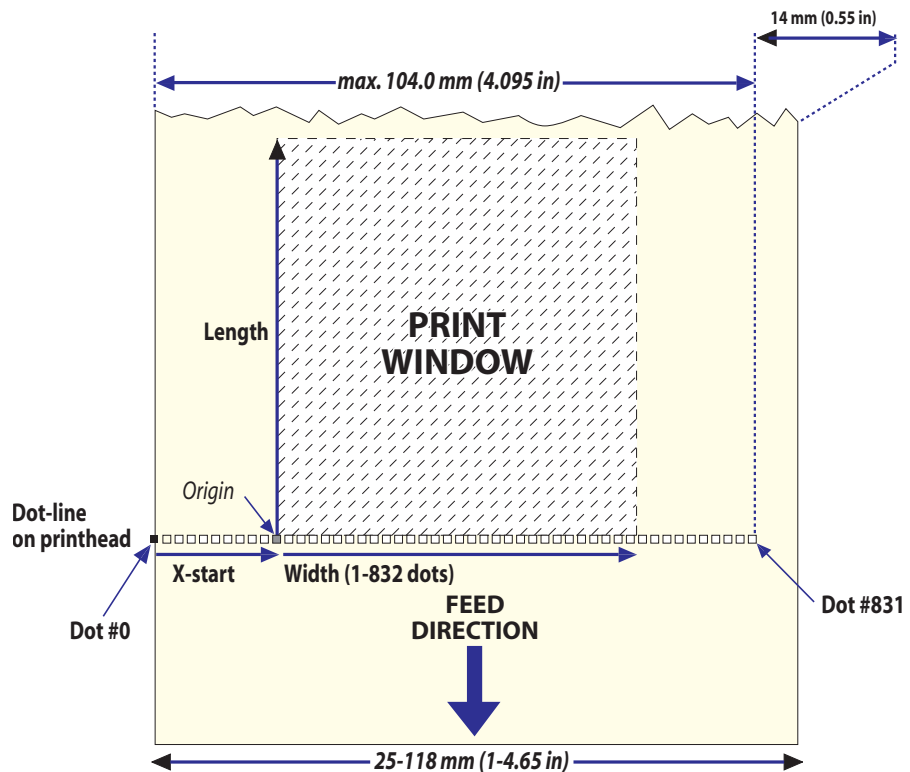
The size of each buffer can be calculated using this formula:

Buffer size (bits) = [Print length in dots] x [Printhead width in dots]

- The length setup also decides the amount of media feed when using “fix length strip.”
- The length setup creates an emergency stop, which works when the printer is set up for “Label (w gaps)”, “Ticket (w mark)”, or “Ticket (w gaps).” If the label stop sensor has not detected a gap or mark within 150% of the set length, the media feed is automatically stopped to avoid feeding out a whole roll of media, due to sensor malfunction.

By setting up the X-start, the Width, and the Length, you will create a print window inside which printing can be performed. Any object or field extending outside the print window in any direction will either be clipped or cause an error condition (Error 1003 “Field out of label”), see *Intermec Fingerprint Programmer's Reference Manual* (P/N 937-005-xxx).

Appendix C — Setup Parameters (Fingerprint)



Print Window: 8 dots/mm standard printhead

Media Type

The Media Type parameter controls how the label stop sensor (LSS) and the media feed work. There are five media type options, see also Appendix B, “Media Specifications”:

- **Label (w gaps)** is used for adhesive labels mounted on liner.
- **Ticket (w mark)** is used for labels, tickets, or continuous stock provided with black marks at the back.
- **Ticket (w gaps)** is used for tickets and tags with detection slits.
- **Fix length strip** is used for continuous stock where the length of the print window decides the length of media to be fed out.
- **Var length strip** is used for continuous stock. The size of the print images decides the length of each copy.

Appendix C — Setup Parameters (Fingerprint)

It is important to select the correct media type, so the printer can communicate the following error:

- Error 1005 “Out of paper” indicates that the last ordered copy could not be printed because of an empty media stock.
- Error 1031 “Next label not found” indicates that the last ordered label or ticket was successfully printed, but no more labels/tickets can be printed because of an empty media stock.

Paper Type

The Paper Type parameters control the heat emitted from the printhead to the direct thermal media or, optionally, the transfer ribbon in order to produce the dots that make up the printout image.

Labels, tickets, tags, strip, and ribbons for various types of application are available from Intermec. To attain optimal printout quality and extending the life of the printhead, use Intermec supplies.

As a general rule, high energy and/or high print speed will shorten the life of the printhead. Never use incorrect paper type settings or higher print speed settings than necessary for obtaining an acceptable printout quality and throughput speed.

If the ambient temperature is lower than +15°C (+59°F), decrease the print speed by 50 mm/sec.

Start by choosing between two alternatives:

- Direct Thermal printing (option)
- Thermal Transfer printing (default)



Note: It is highly recommended to use PrintSet 4 to set the Paper Type setup parameters. PrintSet 4 includes a Print Quality Wizard that guides you through the process of improving printout quality.

Your choice will decide which parameters to enter next:

Direct Thermal Printing

- Label Constant (range 50 to 115). Default is 85.
- Label Factor (range 10 to 50). Default is 40.

Appendix C — Setup Parameters (Fingerprint)

The following table gives initial recommendations for suitable settings.

Direct Thermal Recommended Settings

Paper sensitivity	Label Constant	Label Factor	Max Print Speed (203 dpi)	Max Print Speed (300 dpi)
Low	100	40	75	50
Standard	90	40	100	75
High	80	40	125	100
Ultra High	70	40	150	100

Use the above settings as initial settings and adjust the Label Constant if necessary.

Thermal Transfer printing

- Ribbon Constant (range 50 to 115). Default is 90.
- Ribbon Factor (range 10 to 50). Default is 25.
- Label Offset (range -50 to 50). Default is 0.

The following tables gives initial recommendations for suitable settings.

Thermal Transfer Recommended Settings

Ribbon	Ribbon Constant	Ribbon Factor	Max Print Speed (203 dpi)	Max Print Speed (300 dpi)
Wax	80	20	75	75
Hybrid (Wax/Resin)	90	25	100-150	75-100
Resin	100	30	150	100

The receiving material has been excluded from this table, since the ribbon has the largest impact for heat settings for thermal transfer settings.

Use the above settings as initial values, and adjust the Ribbon Constant if necessary.

Appendix C — Setup Parameters (Fingerprint)

Contrast

Use the contrast parameter to make minor adjustments of the blackness of the printout, for example to adapt the printer to variations in quality between different batches of the same media. The options are values between -10% to 10% in steps of 2. Default value is 0%. The contrast is reset to the default value whenever a new paper type is specified, regardless which method has been used.

Testfeed

The Testfeed is a read-only parameter that indicates internal parameters for the Label Stop Sensor. These are automatically set when running a Testfeed. It is very important to run a testfeed when switching from one media type to another.

Testfeed Mode

In certain unusual cases, a Testfeed may have been unable to successfully identify gaps or marks in the media. It is thus possible to set the Testfeed mode to Slow to allow the Label Stop Sensor to more easily identify media gaps/marks. The options are Slow and Fast (default).

LEN (Slow Mode)

When the Testfeed mode is set to slow, the printer will sample the media length plus 10mm. You can change the sample length by specifying the number of dots in LEN(Slow Mode), the minimum being the number of dots corresponding to 10mm. The default (media length plus 10 mm) is specified by the value 0.

Print Defs Setup

Clip default

The Clip Default parameter determines whether text, bar codes, images, lines and box fields that extend outside the print window (see page 93) should be printed or not.

- OFF (default). If any objects are found to extend outside the print window, printing will be stopped and error 1003 “Field out of label” is issued.
- ON. This disables Error 1003, and partial objects can be printed.

Testprint

The test labels "Diamonds", "Chess", "Bar Codes #1", and "Bar Codes #2" are used to check the printout quality and facilitate adjustment of the printhead pressure, see ["Adjusting the Printer" on page 47](#). The test labels "Setup Info" and "Hardware Info" list the printer's current setup and the installed electronic devices. Test label "Network Info" is only printed if the printer has an optional EasyLAN interface board. If the information does not fit on one label, two or more labels will be printed.

Print Speed

The Print Speed is specified in mm/second. Allowed values are 50-150 mm/s (2-6 ips) for the 203dpi printhead and 50-100 mm/s (2-4 ips) for the 300 dpi printhead. Default is 100 mm/s (4 ips) and 75 mm/s (3 ips) for 203 and 300 dpi printheads respectively.

LSS Test

The function on the label stop sensor (LSS) can be tested automatically or manually as described in ["Adjusting the Label Gap Sensor" on page 53](#).

Network Setup

Please refer to the EasyLAN User's Guide (P/N 1-960590-xx) for information on the network setup parameters.

Appendix C — Setup Parameters (Fingerprint)



D Setup Parameters (IPL)

This appendix lists all of the setup parameters that you can configure to fit your operating environment. This appendix covers the following topics:

- Setup Description
- Printing Test Labels With IPL Commands
- Navigating the Setup Tree
- Serial Communication Setup
- Com Setup
- Test/Service Setup
- Media Setup
- Configuration Setup
- Network Setup
- Returning to Factory Default Setup

Setup Description

The printer's setup parameters control the way the printer operates. The setup parameters can be accessed and changed in a variety of ways, see “[Changing Configuration Settings](#)” on [page 31](#) for more information.



Note: The recommended way to set your printer's configuration parameters is to use the PrintSet 4 program, which is included on the PrinterCompanion CD. PrintSet 4 can communicate with your printer either via a serial cable or a network connection.

Printing Test Labels With IPL Commands

Test labels that give detailed information about the printer's software, hardware and network settings can be printed in testmode or extended testmode, but also by sending commands through the terminal window. For example, the following commands print a software configuration label, and then returns the printer to print mode:

```
<STX><ESC>T;s;R;<ETX>
```

Please refer to the *IPL Programmer's Reference Manual* (P/N 066396-xxx) for more information on how to print test labels.

Navigating the Setup Tree

This section provides an overview of the branches and nodes in the setup tree, as it is presented in the display window.



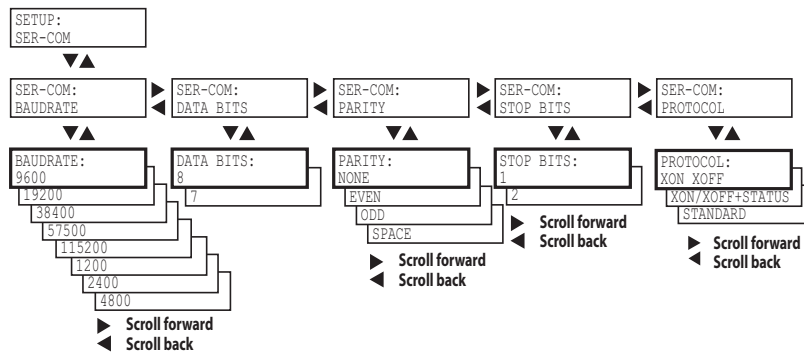
Note: The setup tree is shown as it exists in IPL 10.2.0.

Dotted boxes indicate features that are only available on printers equipped with optional equipment.

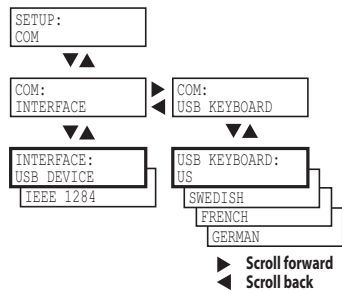
Boxes with thick frames indicate default settings.

Values inside brackets can be modified to any value specified by the user.

Setup Mode: Ser-Com

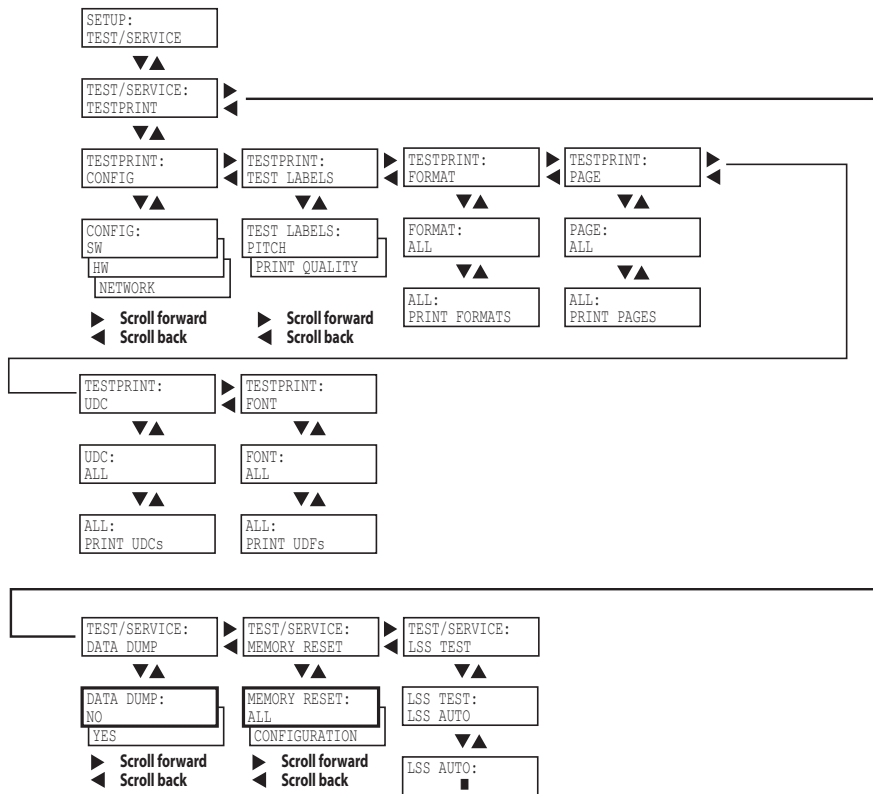


Setup Mode: Com

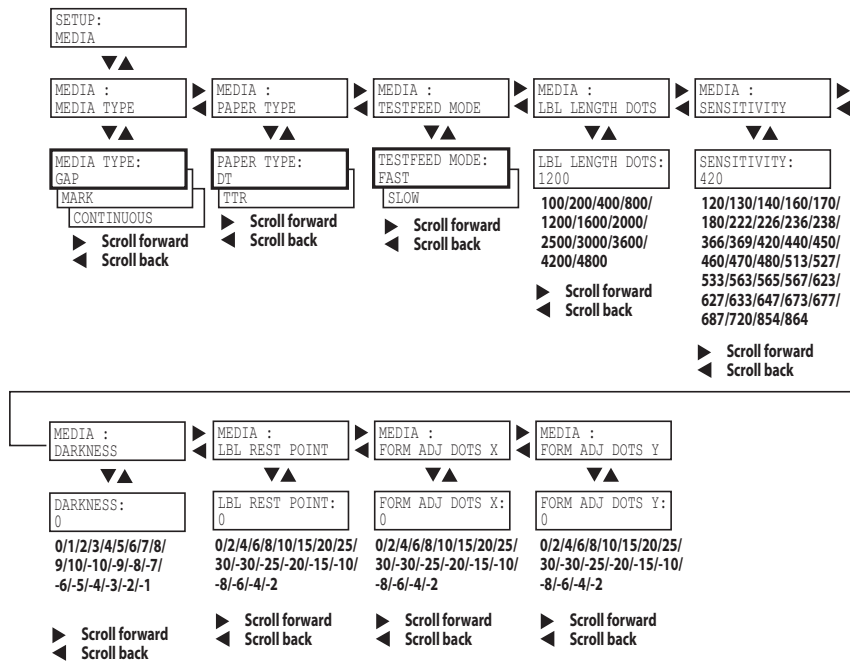


Appendix D — Setup Parameters (IPL)

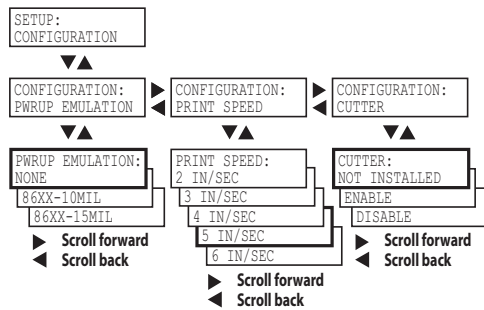
Setup Mode: Test/Service



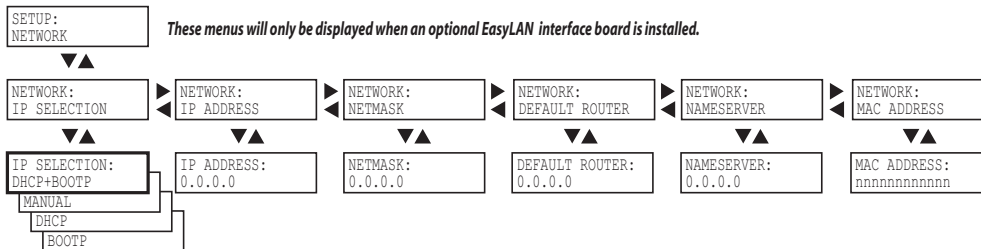
Setup Mode: Media



Setup Mode: Configuration



Setup Mode: Network (Option)



Serial Communication Setup

The serial communication parameters control the communication between the printer and the connected computer or other devices on the standard serial port.

Make sure the printer's communication parameters match the setup of the connected device or vice versa. If the setup of the printer and the setup of the host do not match, the response from the printer to host will be garbled.

Baud Rate

The baud rate is the transmission speed in bits per second. There are eight options:

- 1200
- 2400
- 4800
- 9600 (default)
- 19200
- 38400
- 57600
- 115200

Data Bits

The Data Bits parameter specifies the number of bits that will define a character. Eight bits are recommended, since this option allows more special characters and characters that are used exclusively in foreign languages. Refer to the *IPL Programmer's Reference Manual* (P/N 066396-xxx) for more information.

- 7 (Characters ASCII 000 to 127 decimal)
- 8 (Characters ASCII 000 to 255 decimal) (default)

Parity

The parity decides how the firmware will check for transmission errors. There are five options:

- None (default)
- Even
- Odd

- Space

Stop Bits

The number of stop bits specifies how many bits will define the end of a character. There are two options:

- 1 (default)
- 2

Protocol

- XON/XOFF (default)

In the XON/XOFF protocol, data flow control is achieved by using XON (DC1) and XOFF (DC3) characters. Message blocks are not required to be bracketed by the Start of Text (STX) and End of Text (ETX) characters. However, at power up or after a reset all characters except ENQ or VT will be ignored until an STX is detected. The message length in this protocol is unrestricted. That is, the printer processes information as it is being downloaded and stops when there is no more information.

XON/XOFF protocol conforms to generally accepted industry standards. No end-of-message response is sent to the host other than XOFF. An XON will be sent on power up.

Since DC1 and DC3 are used for data flow control, the printer status characters are different than those of the Standard Protocol. If the host ignores the printer's XOFF, the printer will resend an XOFF after receiving every 15 characters from the host.

Condition	Character
Buffer already full	GS
Printhead raised	US
Ribbon fault	US
No label stock	EM
Buffer now full	DC4
Printhead hot	SI
Label at strip pin	FS
Label skipping	DC2
Printing	DC2

Appendix D — Setup Parameters (IPL)

- XON/XOFF+Status
- Intermecc Standard Protocol

The Intermecc Printer Standard Protocol is a half-duplex protocol. All data transmissions to the printer consist of status inquiry (ENQ), status dump (VT), or message blocks. Each message block starts with the Start of Text (STX) character and ends with the End of Text (ETX) character. Each message block must be 255 characters or less, including the STX and ETX characters. The printer responds to each status inquiry or message block with the printer status. The host should check the printer status before downloading a message block to the printer. ENQ causes the printer to transmit its highest priority status, while VT instructs the printer to transmit all status that applies in the order of their priority. The next table lists the possible printer status in descending priorities are

Condition	Character
Buffer already full	GS
Printhead raised	US
Ribbon fault	US
No label stock	EM
Buffer now full	DC3
Printhead hot	SI
Label at strip pin	FS
Label skipping	DC1
Ready	DC1
Printing	DC1

Com Setup

The parameters under the Com node control interface and external keyboard use.

Interface

If you have an optional Parallel IEEE 1284 interface installed in the printer, it cannot be used at the same time as the USB Device interface. In this menu, you can choose which interface is active.

USB Keyboard

You can choose between a number of different keyboard layouts, that can be applied to an external USB keyboard connected to the printer through the USB Host interface.

Test/Service Setup

Testprint

This part of the Setup Mode allows you to print various types of test labels.

Config

Choose between software (SW), hardware (HW), and Network test labels (Network is only available if the printer is equipped with an EasyLAN Network card).

The Software Configuration Label contains this information:

- Current configuration parameters stored in the printer's memory
- Defined pages
- Defined formats
- Defined graphics
- Defined fonts
- Any installed printer options

The Hardware Configuration Label contains this information:

- Printer memory information
- Printer mileage
- Printhead settings
- Firmware checksum, program, and version number

The Network Configuration Label contains this information:

- WINS Name
- MAC Address
- IP Selection
- IP Address
- Netmask

Appendix D — Setup Parameters (IPL)

- Default Router
- Name Server
- Mail Server
- Primary WINS Server
- Secondary WINS Server
- Network Statistics

Test Labels

Choose between Pitch and Print Quality:

- The Pitch label contains an even pattern of small dots that reveals failing printhead dots and variations of printout darkness because of uneven printhead pressure or poor energy distribution to the printhead.
- The Print Quality label contains number of bar codes with different characteristics and useful information on printer model, program version, print speed, and media sensitivity setup.

Format

The Format Label contains a single format that you can use to evaluate the print quality of a particular format. This option prints labels for all the formats stored in the printer's memory.

Page

The Page Label tests the ability of the printer to receive and print single or multiple pages of label data that is sent from the host. This option prints labels for all the pages stored in the printer's memory.

UDC

The UDC Label tests the ability of the printer to receive and print single or multiple user-defined characters (bitmap graphics) that are sent from the host. This option prints labels for all the UDCs stored in the printer's memory.

Font

The Font Label contains all the characters in a single font. This option prints labels for all the user-defined fonts (UDF) stored in the printer's memory.

Data Dump

If data dump is enabled by selecting the “Yes” option, the printer listens on all ports and prints all data and protocol characters received. An ASCII and hexadecimal representation of each character is printed.

Memory Reset

This feature allows you to reset the factory default settings of the printer. There are two options:

- All. Select this option to reset the entire memory.
- Configuration. Select this option to reset the Configuration part of the memory only.

LSS Test

This function allows you to test that the Label Gap Sensor (also referred to as Label Stop Sensor, or LSS) is working properly. Please see [“Adjusting the Label Gap Sensor” on page 53](#).

Media Setup

The media parameters tell the firmware the characteristics of the media that will be used, so the printout will be positioned correctly with optimal quality.

Media Type

The Media Type parameters control how the label stop sensor (LSS) and the media feed work. There are three media type options:

- Gap is used for adhesive labels mounted on liner (backing paper) or continuous paper stock with detection slots. Default.
- Mark is used for labels, tickets, or strip provided with black marks at the back.
- Continuous is used for continuous stock without any detection slots or black marks.

Appendix D — Setup Parameters (IPL)

Paper Type

The Paper Type parameters control how the transfer ribbon mechanism and the ribbon sensor work. There are two paper type options:

- DT (Direct Thermal) is used for heat-sensitive media without any need for a thermal transfer ribbon. Default.
- TTR (Thermal Transfer) is used for non heat-sensitive receiving face materials in combination with a thermal transfer ribbon.

Testfeed Mode

In certain unusual cases, a Testfeed may have been unable to successfully identify gaps or marks in the media. It is thus possible to set the Testfeed Mode to Slow to allow the Label Stop Sensor to more easily identify media gaps/marks. The options are Slow and Fast (default).

Label Length Dots

The Label Length setup specifies the length in dots of each copy along the media feed direction (X-coordinate). This is used for “label-out” detection.

Sensitivity (Media Sensitivity Number)

This setup parameter specifies the characteristics of the direct thermal media or combination of receiving face material and thermal transfer ribbon, so the printer’s firmware can optimize the heating of the printhead and the print speed. Standard supplies from Intermec are labeled with a 3-digit media sensitivity number which is used to specify the media grade. Look for the media sensitivity number on:

- the side of the media roll. Use the last three digits of the 15-digit number stamped on the roll for the media sensitivity number.
- a small label attached to the roll of media.
- a small label attached to the plastic bag of your ribbon roll.

Appendix D — Setup Parameters (IPL)

The sensitivity number on each roll of thermal transfer media or ribbon has an asterisk (*) in place of one of the digits. To optimize the sensitivity number for thermal transfer media, you combine the digits as in this example.

Media or Ribbon	Sensitivity Rating	Description
Thermal transfer media	56*	The asterisk for the third digit is reserved to identify the ribbon's sensitivity number.
Thermal transfer ribbon	5*7	The asterisk for the second digit is reserved to identify the media's sensitivity number.
	=567	Optimum sensitivity rating

The media sensitivity number can also be changed using PrintSet, the printer's home page, third-party software, or an IPL command with the following syntax:

```
<STX><SI>gn[ ,m] <ETX>
```

where:

n specifies direct thermal(*n*=0) or thermal transfer(*n*=1) media.

m specifies the sensitivity.

The default sensitivity number is 420 for direct thermal printing and 567 for thermal transfer printing.

To find heat settings for different ribbon and media (North America)

- 1 Go to www.intermec.com.
- 2 Navigate to **Products > Printers > Printers Fixed > EasyCoder PD42**.
- 3 Scroll to the bottom of the page and click **PD41/PD42 Heat Settings (PDF)**.

Users outside the U.S.A. and Canada should visit the Intermec regional website, or contact their Intermec sales representative.

Appendix D — Setup Parameters (IPL)

Darkness

Use this parameter to make minor adjustments of the blackness in the printout, for example to adapt the printer to variations in quality between different batches of the same media type. The value can be set within the range -10% to +10% where -10 is the lightest and 10 is the darkest. Default value is 0%.

Label Rest Point

Specifies where labels stop for removal. Use this for peel-off (self-strip) applications. Allowed range is -30 (furthest back) to 30 (furthest forward). Default is 0. Also available as an IPL command (<SI>fn).

Form Adj Dots X

Specifies where the X-position of the origin should be placed on the label. Allowed range is -30 (closest to the leading edge) to 30 (furthest from the leading edge). Default is 0.

Form Adj Dots Y

Specifies where the Y-position of the origin should be placed on the label. Allowed range is -30 (closest to the center section) to 30 (furthest from the center section). Default is 0.

Configuration Setup

Power-Up Emulation

Emulation mode lets you print bar code labels that were originally designed on an 86XX printer in multiples of 10 or 15 mil. When the printer is working in emulation mode, not all IPL commands are supported. For a complete list of commands available during emulation mode, see the the *IPL Programmer's Reference Manual* (P/N 066396-xxx).

Default emulation mode is “none”.

Print Speed

You can select the print speed from 2 in./sec. (50 mm/sec.) to 6 in./sec.(100 mm/sec.) with an interval of 1 in./sec. The higher the print speed, the more wear on the printhead, so do not use a higher print speed than necessary. For some direct thermal media or ribbon/media combinations, setting the highest print speed may reduce print quality significantly.

Cutter (option)

Once a cutter has been installed in the printer, it must also be enabled in the firmware. IPL commands are used to enable/disable the cutter in configuration mode:

<STX>R<ETX> Enter print/configuration mode

<STX><SI>c1<ETX> Enable cutter

<STX><SI>c0<ETX> Disable cutter

Network Setup

Please refer to the *EasyLAN User's Guide* (P/N 1-960590-xx) for information on the network setup parameters.

Returning to Factory Default Setup

You can restore all the printer's default settings in Extended testmode (see [page 36](#)), or by using the Factory Default Wizard in PrintSet 4.

Appendix D — Setup Parameters (IPL)



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EasyCoder PD42 Printer User's Guide



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