Intermec

User's Guide

EasyCoder PF2i Bar Code Label Printer

(IPL Version)

Intermec Printer AB

Idrottsvägen 10

P.O. Box 123

S-431 22 Mölndal

Sweden

Service support: +46 31 869500

Contents

FCC Notice (United States of America)

WARNING

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

DOC Notice (Canada)

Canadian Dept. of Communication

REGULATIONS COMPLIANCE (DOC-A)

This digital apparatus does not exceed the class A limits for radio noise emissions from a digital apparatus as set out in the radio interference regulations of the Canadian Department of Communication.

Ministère des Communications du Canada

CONFORMITE DE REGLEMENTS (DOC-A)

Le présent appareil numérique n'émet pas de bruits radio-électriques dépassant les limites applicables aux appareils numériques de classe A prescrites dans le règlement sur brouillage radioélectrique édicté par le Ministère des Communications du Canada.

GS Notice (Germany)

ALLGEMEINE VORSCHRIFT

Reparaturen oder sonstige Eingriffe, die sich nicht auf normale Bedienung der Maschine beziehen, dürfen ausschließlich nur von einem ausgebildeten, zuständigen Fachmann vorgenommen werden.

EU Standard EN 55022 (The European Union)

WARNING

This is a Class A ITE product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Declaration of Conformity (CE)

We,

Intermec Printer AB
Box 123
S-431 22 Mölndal
Sweden

declare under our sole responsibility[1] that the product

EasyCoder PF2i

to which this declaration relates is in conformity with the following standards

EMC:
EN 61000-6-4:2001
EN 61000-6-2:2001

Electrical Safety:
EN 60 950

following the provisions of Directives

89/336/EEC and 73/23/EEC

Mölndal 2003-03-12

.....

Per-Ove Jacobsson

[1]/. Intermec assumes no responsibility regarding the CE Directive if the printer is handled, modified, or installed in other manners than those described in Intermec's manuals.

1 Introduction

This chapter introduces the EasyCoder PF2i printer. The chapter covers the following topics:

- Description of EasyCoder PF2i
- Safety summary
- Product identification

Description of EasyCoder PF2i

The EasyCoder PF2i is a sturdy medium-duty direct thermal printer with a printhead resolution of 8 dots per mm (203.2 dots per inch) and a maximum print width of 56 mm (2.2 inches). Optionally, it can be provided with a thermal transfer mechanism. The EasyCoder PF2i offers a large number of useful features, such as:

- Flash memory SIMMs for firmware, fonts, bar codes, and application programs
- Built-in CompactFlash memory card adapter for firmware upgrading
- Built-in RS-232 interface
- Provision for extra interface boards including wired and wireless EasyLAN connections
- Keyboard and display with backlight for improved user interface.

A large number of factory-installed or field-installable options are available, so the printer can be configured for a wide range of applications. See Chapter 8 and Appendix A for more information.

The EasyCoder PF2i supports the Intermec Programming Language (IPL v2.10). A version of EasyCoder PF2i, that supports Intermec Fingerprint Programming v8.10, is described in a special User's Guide.

Safety Summary

Intermec assumes no responsibility regarding the CE Directive if the printer is handled, modified, or installed in any way other than that described in Intermec's manuals.

- Read this manual carefully before connecting the printer.
- Moving parts are exposed when the side door is open, so ensure that the door is closed before you operate the printer.
- Do not open the front/left-hand cover. Dangerous voltage!
- Do not remove the bottom plate. Dangerous voltage!
- Do not put your fingers inside the print mechanism when the power is on.
- Place the printer on an even surface which can support its weight of approximately 5.5 kg (12 pounds) plus supplies.
- Do not spray the printer with water. If you are using a hose to clean the premises in an industrial environment, remove the printer or protect it carefully from spray and moisture.
- Carefully read the warning text on the envelope before using a cleaning card.

Product Identification

The machine label is attached to the printer's rear plate and contains information on type, model, and serial number as well as AC voltage. It also contains various signs of approval.

2 Installation

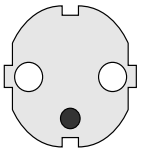
This chapter explains how to unpack and install the EasyCoder PF2i printer and also describes the printer's various parts in detail. It covers the following topics:

- Unpacking the printer
- Parts on the printer's front
- Parts on the printer's rear plate
- Parts in the media compartment
- Parts in the print mechanism
- Connecting the printer
- Using the controls and understanding the indicators

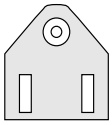
Unpacking the Printer

Before you install the printer, examine the package for possible damage or missing parts:

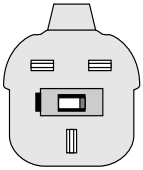
- Open the box and lift the printer out.
- Check that the printer has not been visibly damaged during transportation. Keep the packing materials in case you need to move or reship the printer.
- Check the label on the printer's rear plate, which gives the voltage, the part number, and the serial number.
- Check that any options you ordered are included.
- Check that all the accessories are included. As standard, the box contains:
  - Intermec EasyCoder PF2i printer
  - One set of Quick-Load Guides
  - Power cord
  - Quality check card
  - Cleaning card
  - Short strip of labels
  - Starter pack of thermal transfer ribbon (thermal transfer models only)
  - This User's Guide
  - Supporting software and product information on CD.
- Check that the power cord is appropriate for the local standard. The printer works within 90 to 265 VAC, 50 to 60 Hz.



European-type 230 VAC plug



US/Canadian-type 115 VAC plug



GB-type 230 VAC plug

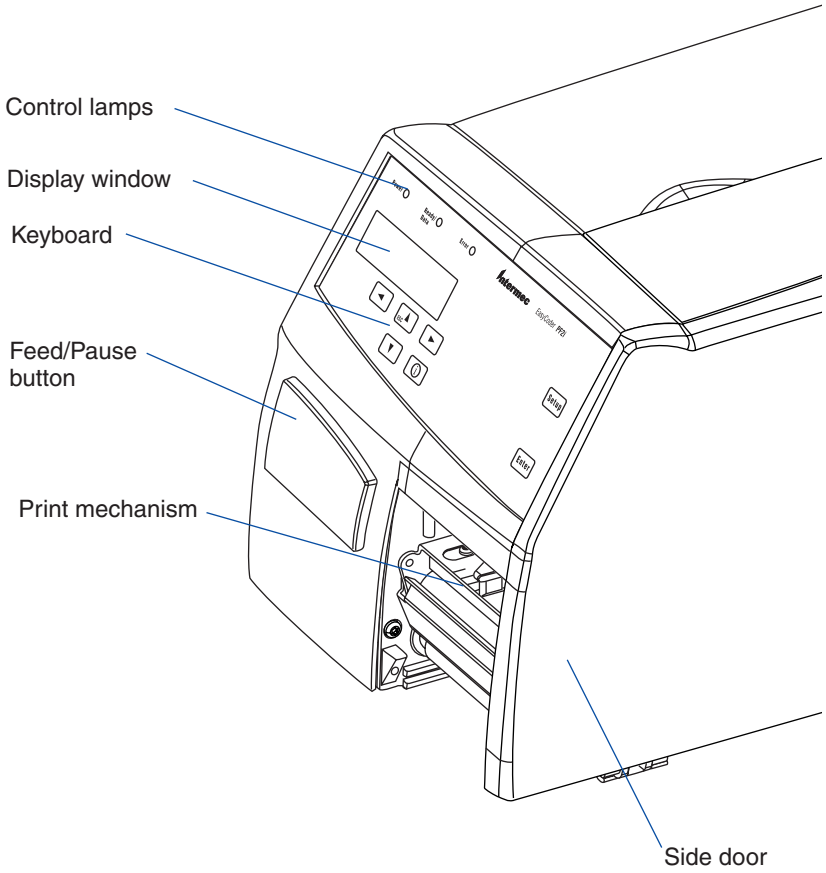
If the printer has been damaged in any way during transportation, complain to the carrier immediately.

If the delivery is incorrect or any parts are missing, report it immediately to the distributor.

Front View

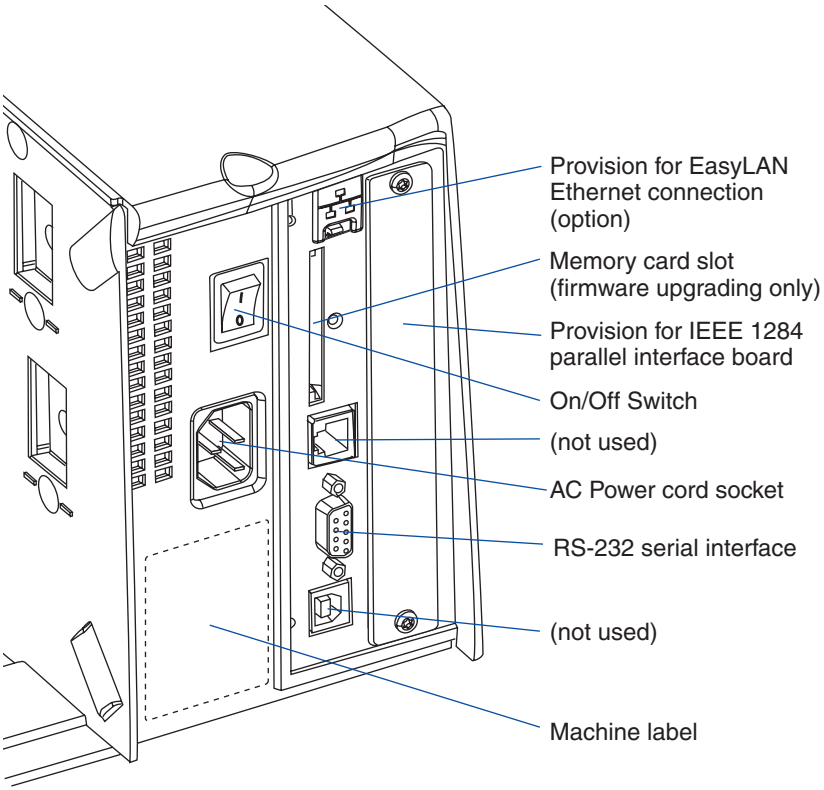
At the front of the printer are the display window, the control lamps, and the keyboard. These features allow the operator to control and set up the printer manually.

The printed labels, tickets, or tags are presented at the front of the print mechanism.



Rear View

The rear plate contains the On/Off switch, the AC power cord socket, and various interface connectors and slots.



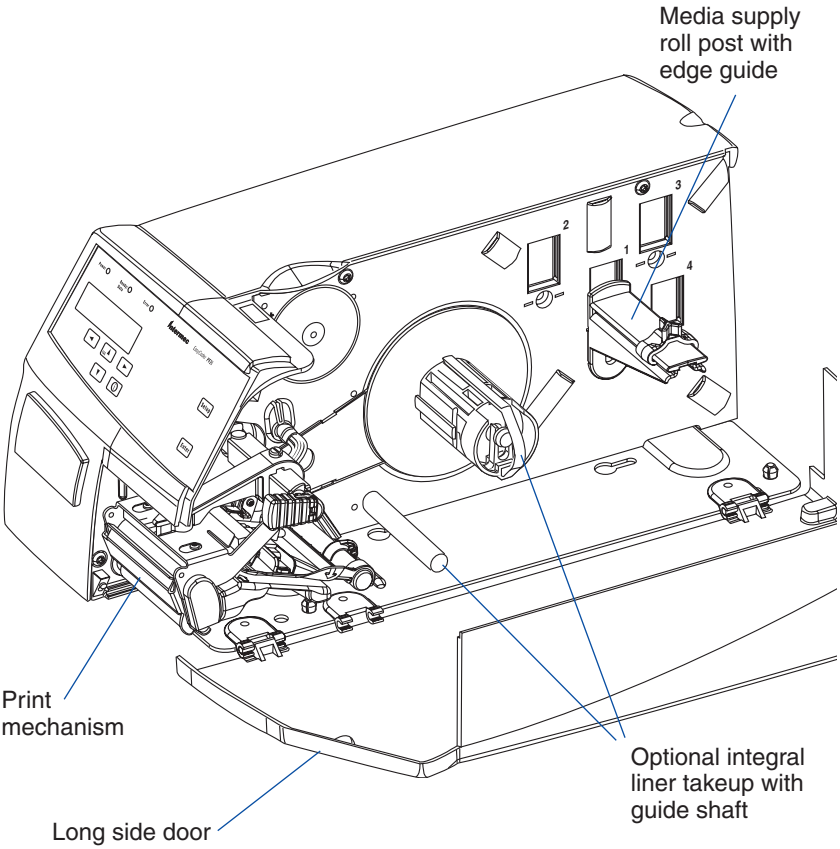
Media Compartment

Description

The media compartment is either covered by a long side door that completely encloses the print mechanism and media compartment, or a short side door that only covers the print mechanism and gives easy access to the media stock. The door is held by a magnetic lock. It can be opened 180° to provide full access to the media compartment.

The media supply can be from a supply post, or from an external supply of fan folds behind the printer. There is also an optional rotating media supply hub.

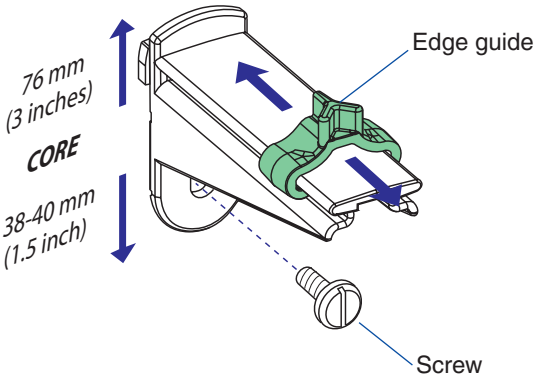
Also see Chapter 8, “Options.”



The EasyCoder PF2i uses a media supply roll post that can be fitted in three different positions inside the media compartment. The position depends on the type of side door (long or short) and whether or not the printer is fitted with an integral liner takeup. Alternatively, an external media supply (for example a box of fan-folded tickets) behind the printer can be used. A rotating media supply hub is also available as an option, see Chapter 8, “Options.”

Media Supply Roll Post

The media supply roll post fits both 38-40 mm (1.5 inches) and 76 mm (3.0 inches) cores since it can be moved vertically in the slot in the center section. The bottom position is intended for small cores and the top position is for large cores. The post is locked by a straight-slot screw and has a moveable edge guide to fit various media widths.



Caution

Make sure to adjust the position of the post according to the size of the media roll core. When the post is fitted in the top position, the head of the screw will interfere with small (38 mm/1.5 inches) cores, causing media misalignment.

To move the post to a different slot; remove the screw, twist the post a quarter of a turn, and pull it out.

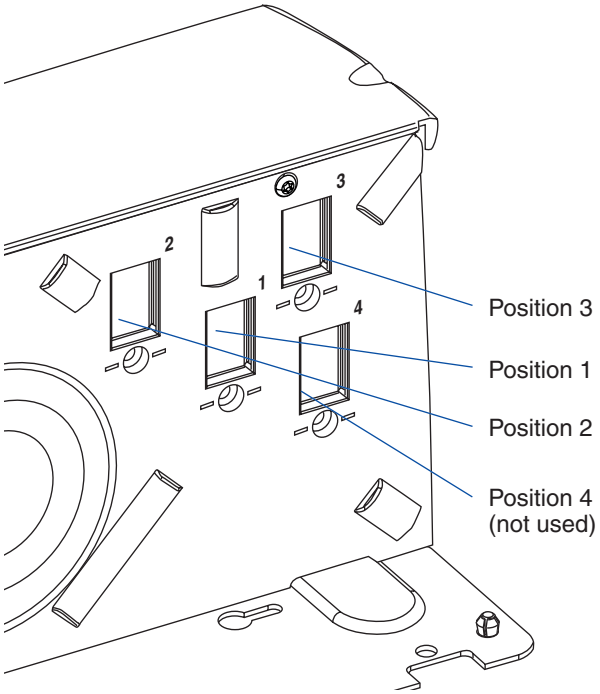
To fit the post; rotate it a quarter of a turn, insert it into the appropriate slot in the center section (see next page), and twist back so the lips engage the cutouts in the sides of the slot. Move it up (large core) or down (small core) as far as it goes and secure it with the screw.

Media Supply Positions

There are four sets of threaded holes and slots in the printer's center section for the media supply roll post or rotating hub (optional). These slots allow the largest possible roll size to fit, given the limitations of any liner takeup and/or the full enclosure provided by the long side door. The positions are indicated by numbers engraved in the center section.

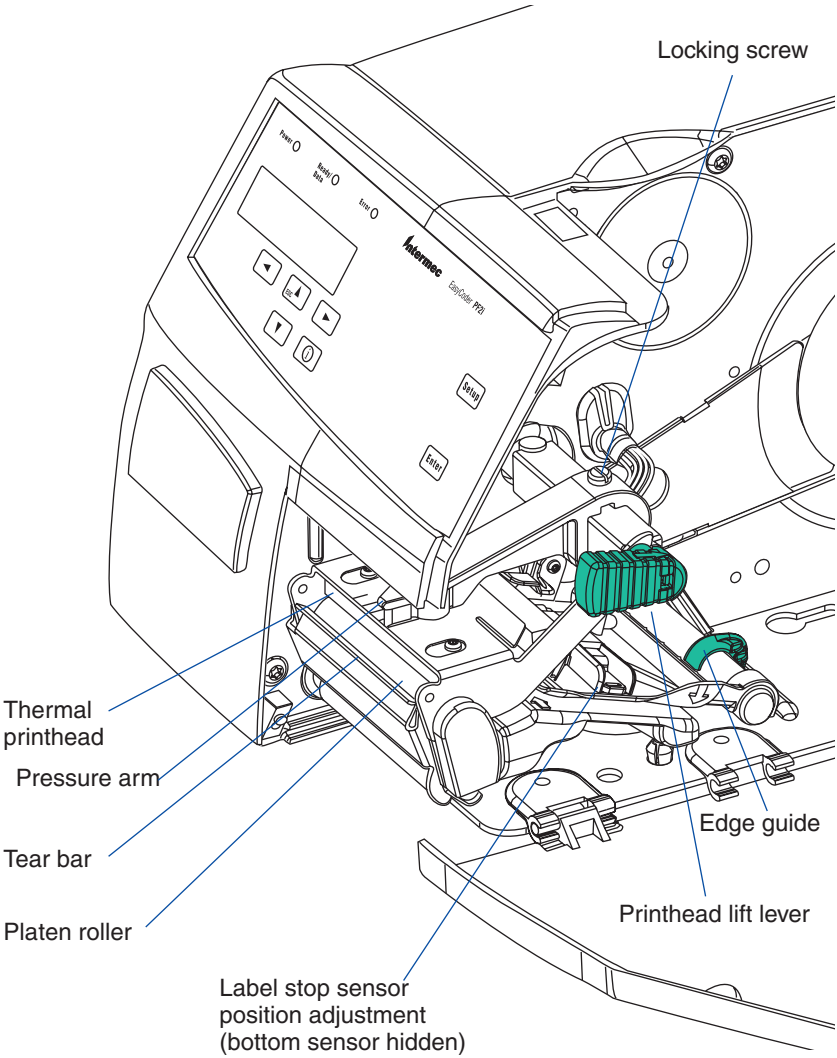
- Position 1 is used when the media compartment is fully enclosed by a long side door, regardless of the existence of any integral liner takeup unit. Maximum roll size is 152 mm (6 inches).
- Position 2 is used when the printer has a short side door that only encloses the print mechanism, but does not have an integral liner takeup unit. Maximum roll size is 203 mm (8.00 inches).
- Position 3 is used when the printer has a short side door and an integral liner takeup unit. Maximum roll size is 213 mm (8.38 inches).
- Position 4 is not used.

The printer can also use an external media supply located behind the printer.



Print Mechanism

The print mechanism features a high-performance 8 dot/mm (203.2 dots/inch) thermal printhead with quick-mount fittings to facilitate replacement. Refer to Chapter 5 "Thermal Transfer Printing" and Chapter 8 "Options" for illustrations of the thermal transfer mechanism, which is partly integrated with the print mechanism.



Connections

Power

1. Place the printer on a level surface, near an AC outlet. You should be able to easily access the printer to load media and to remove the printout.
2. Check that the printer is switched off.
3. Connect the power cord from the socket on the rear plate to an electrical outlet (90 to 265 VAC).

Computer

The Easycoder PF2i is fitted with one 9-pin D-style subminiature (DB9) socket for the RS-232 serial interface port (see Appendix C).

RS-232 Serial Interface

Before you can use the serial interface, you may need to set up the communication parameters, such as baud rate, parity, etc. as described in Chapter 6, "Setting Up the Printer."

Optional Interface and Network Boards

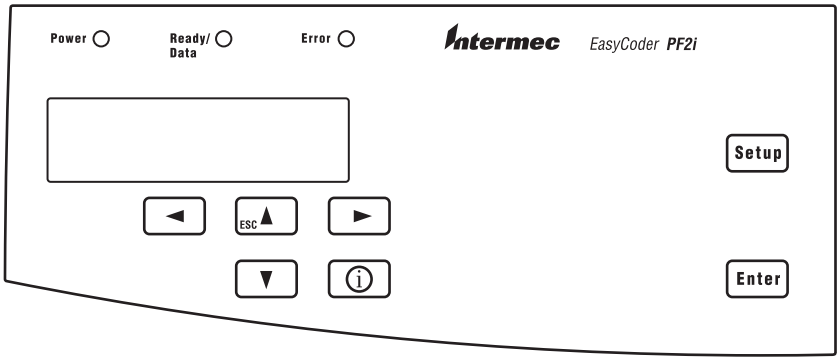
Several types are available (see Chapter 8, "Options"). Refer to Appendix C and the separate documentation delivered with the boards for connection and setup instructions.

The printer scans all communication ports for incoming data and automatically switches to that port.

Switch off both PC and printer before connecting them together.

Controls and Indicators

The EasyCoder P24i has several ways of communicating directly with its operator: three control lamps, a display window, a membrane-switch keyboard with 7 keys, a big button on the printer's front, and a beeper.



Control Lamps

The control lamps are colored LEDs (Light Emitting Diodes) and are used for the following purposes:

- Power (green) indicates that the power is on.
- Ready/Data (solid green) indicates that the printer is ready.
  Ready/Data (flashing green) indicates that the printer is receiving or transmitting data.
- Error (solid red) indicates that an error is detected.
  Error (off) indicates that the printer is OK.

Display

The display window contains an LCD (Liquid Crystal Display) with background illumination and two lines of text, each with 16 characters. It shows a message when certain errors occur and guides the operator through upgrading, startup, and setup.

The following errors are reported:

Error	Displayed message
Printhead too hot	Printhead hot
Empty/Paused	Paused
Out of media	Paper out
Out of ribbon	Ribbon out
Printhead lifted	Print Head UP/Press Feed

Keyboard

The keyboard is of the membrane-switch type and has 7 keys. The keyboard is supplemented by a large "Feed/Pause" button on the printer's front. Some keys have hard-coded functions in the startup and setup modes:

Feed/Pause button	Feed/Pause a print job. Repeat last printed label.
Setup	Enter the Setup Mode (see Chapter 7).
ⓘ	Show communication settings in the display window.
F1 ◄ F3 ►	Browse between communication channels after having pressed the <i> key.

Keyboard Color Code

Yellow	Operation of the printer (operator level)
Green	Setup or service (site or service technician level)
White	Data input to printer (operator or technician level)

Beeper

The beeper acknowledges that a key has been pressed. Optionally, an audible alarm can be enabled using an IPL command. It will start beeping at paper out and ribbon out and continue beeping until the start of reload.

3 Starting Up

This chapter explains how to start up the printer after installation or after the printer has been switched off.

Switching On the Printer

Before switching on the printer, make the necessary connections and check that the printhead is engaged.

Switch on the power using the On/Off switch on the rear plate. The "Power" control lamp on the front panel lights up when the power is on. Wait for a few moments, while the printer loads the program and runs some self-diagnostic tests:

```
   Starting
■■■■■■
```

After a short time, the printer is initialized. The progress of the initialization is indicated by an increasing number of colons on the lower line in the display:

```
Initializing
:::
```

When the initialization is completed, a label is fed out. The following message appears, indicating that the printer is ready for operation.

```
IPL  2.10
```

The message indicates the IPL version number.

4 Media Load

This chapter explains how to load the printer with media, that is labels, tickets, tag, or strips, for the following modes of operation:

- Tear-Off (straight-through)
- Tear-Off with Quick-Load (straight-through)
- Peel-Off (self-strip)
- External supply (fan-folds)

Tear-Off (Straight-through)

The EasyCoder PF2i can print on labels, tickets, tags, and continuous stock in various forms. This section describes the case when the media is torn off manually against the printer's tear bar. This method is also known as "straight-through printing."

Tear-off can be used for:

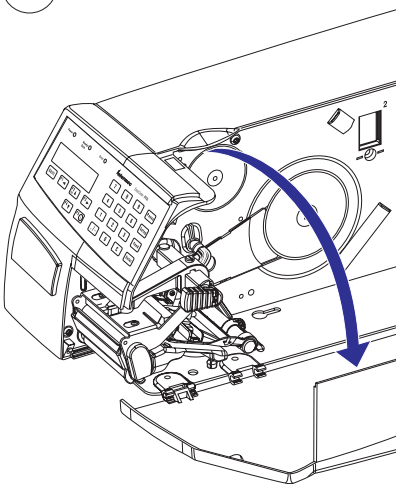
- Non-adhesive continuous stock
- Self-adhesive continuous stock with liner
- Self-adhesive labels with liner
- Tickets with gaps, with or without perforations
- Tickets with black marks, with or without perforations

An optional label taken sensor can hold the printing of the next copy in the batch until the present copy has been removed, see Chapter 8, "Options."

Note: Save the label indicating the sensitivity number attached to the media roll. You will need this number to set the media sensitivity, see Appendix E.

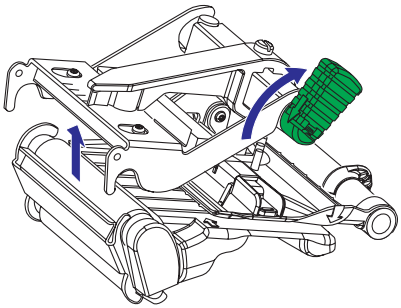
Tear-Off, cont.

1



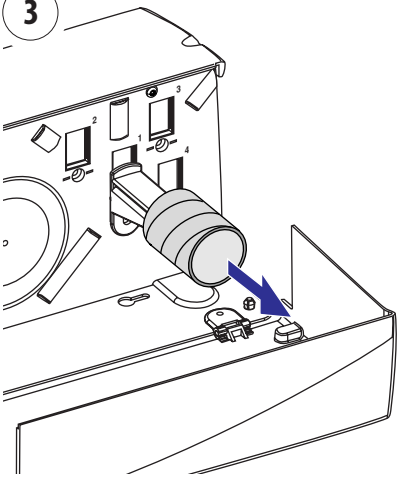
Open the side door.

2



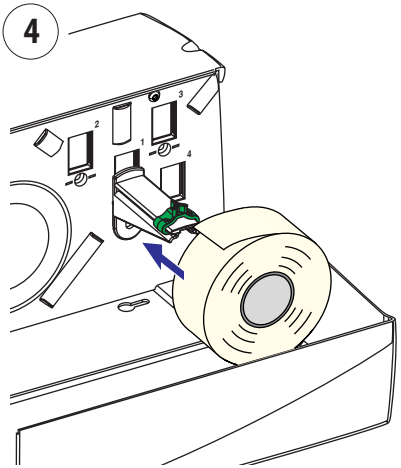
Turn the printhead lift lever clockwise to raise the printhead.

3



Remove any empty core from the media supply roll post.

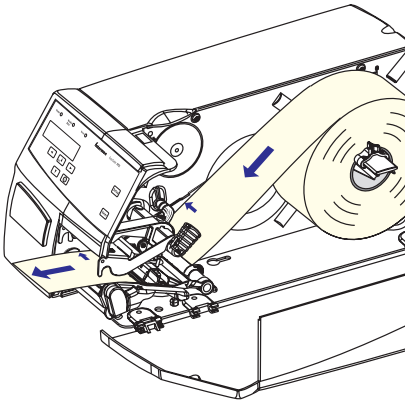
4



Fit a new roll of media on the supply post and adjust the edge guide so the roll becomes flush with the center section.

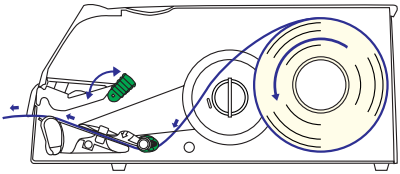
Tear-Off, cont.

5



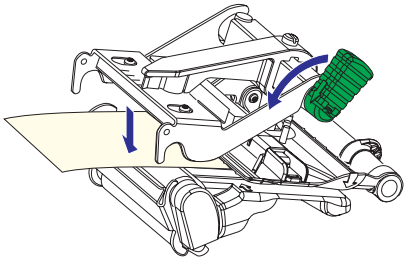
Route the media through the print mechanism. Then push it inwards as far as it will go.

6



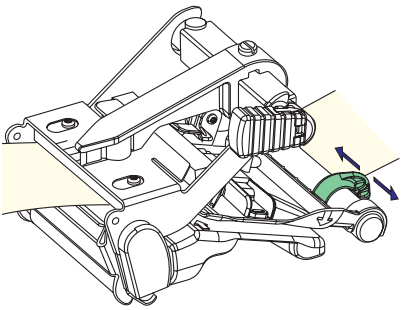
This diagram shows the media path.

7



Turn the printhead lift lever counter-clockwise to engage the printhead.

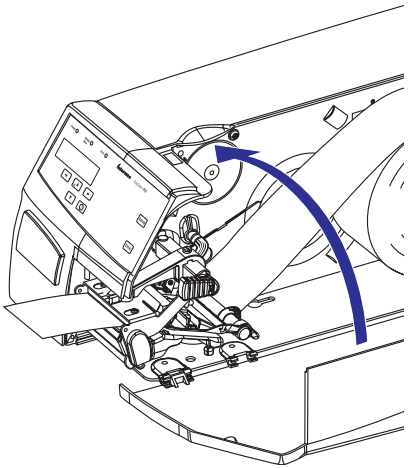
8



Adjust the position of the green edge guide so the media is guided with a minimum of play.

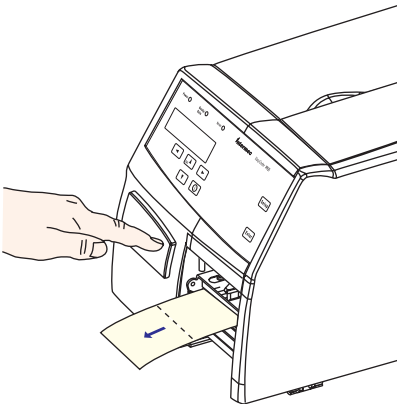
Tear-Off, cont.

9



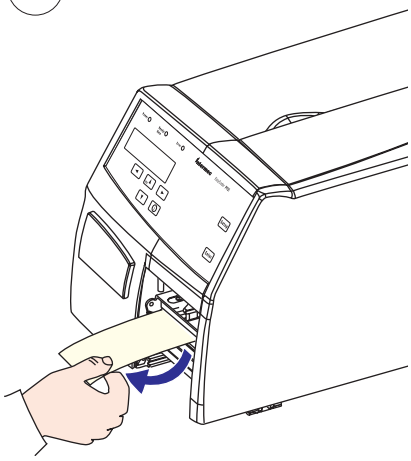
Close the side door.

10



Press the Feed/Pause button to advance the media and adjust the media feed.

11



To tear off the media, grab the outer edge and pull downwards.

Tear-Off with Quick-Load (Straight-through)

In addition to the media load procedure for tear-off (straight-through) operation described earlier in this chapter, the EasyCoder PF2i can optionally be fitted with a set of Quick-Load guides that makes media load much easier and quicker, especially if the printer has a short side door. See Chapter 11, "Adjustments" for installation instructions.

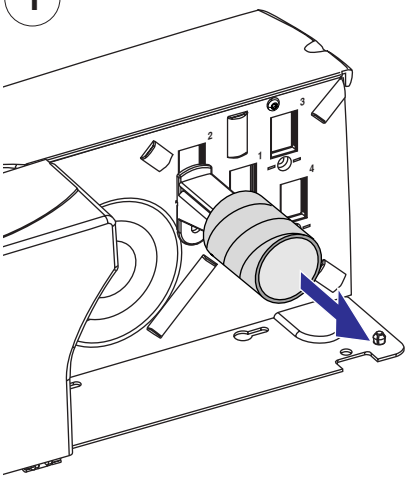
Quick-Load cannot be combined with peel-off (self-strip) operation.

An optional label taken sensor can hold the printing of the next copy in the batch until the present copy has been removed, see Chapter 8, "Options."

Note: Save the label indicating the sensitivity number attached to the media roll. You will need this number to set the media sensitivity, see Appendix E.

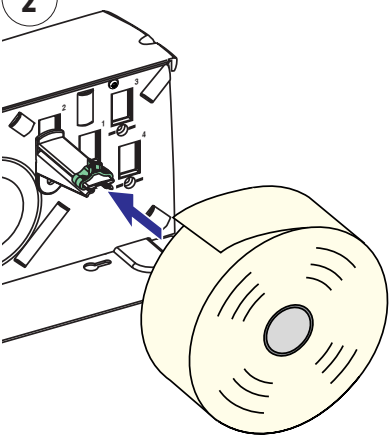
Tear-Off with Quick-Load, cont.

1



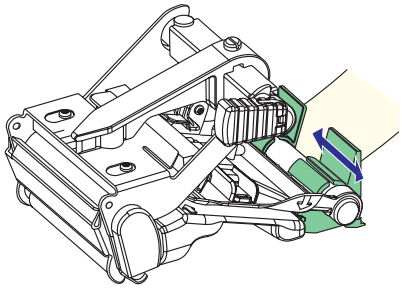
Remove any empty core from the media supply roll post.

2



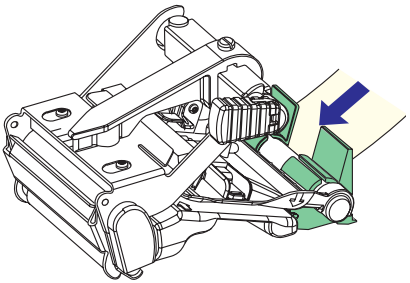
Fit a new roll of media on the supply post and adjust the edge guide so the roll becomes flush with the center section.

3



If necessary, adjust the outer Quick-Load guide to fit the width of the media.

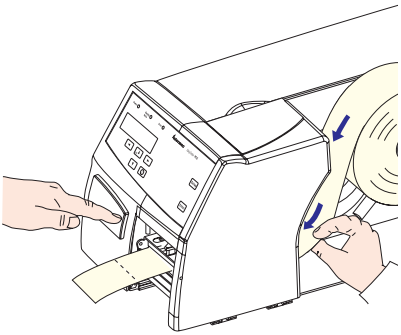
4



Insert the media between the guides and feed it forward until the media reaches the platen roller and cannot be inserted any further.

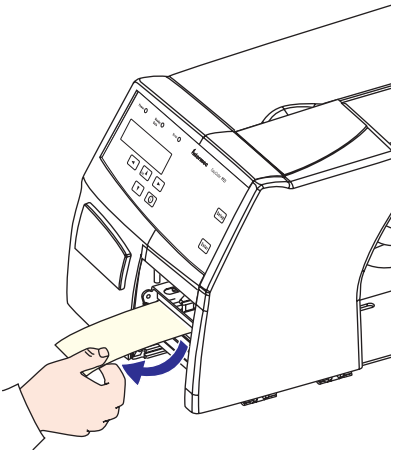
Tear-Off with Quick-Load, cont.

5



Keep pushing the media forward while pressing the Feed/Pause button.

6



To tear off the media, grab the outer edge and pull downwards.

Peel-Off (Self-strip)

The EasyCoder PF2i can print on labels, tickets, tags, and continuous stock in various forms. This section describes the case when self-adhesive labels are separated from the liner immediately after printing. The liner is then wound up on an integral liner takeup hub. This is also known as "Self-strip" operation.

Peel-off operation cannot be performed when Quick-Load guides are fitted.

Peel-off can only be used for:

- Self-adhesive labels with liner

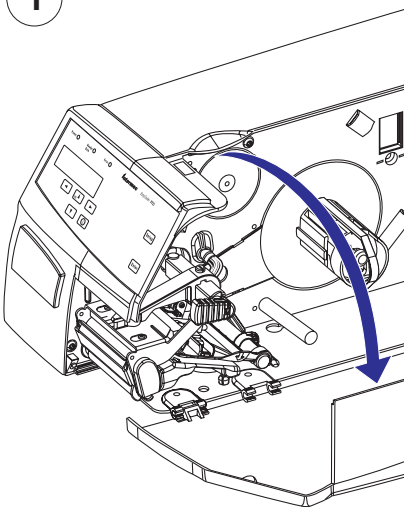
An optional label-taken sensor can hold the printing of the next label in a batch until the present label has been removed, see Chapter 8, "Options."

Note: Save the label indicating the sensitivity number attached to the media roll. You will need this number to set the media sensitivity, see Appendix E.

Note: Peel-off operation sets high demands on the media in regard of label stiffness, release characteristics of the adhesive and liner, resistance against electrostatic charging etc., so the labels will be dispensed properly. Consult your media supplier or test the media to ascertain that it is suitable for your application.

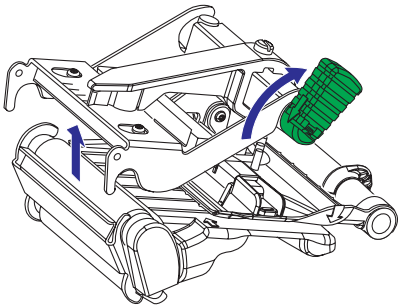
Peel-Off, cont.

1



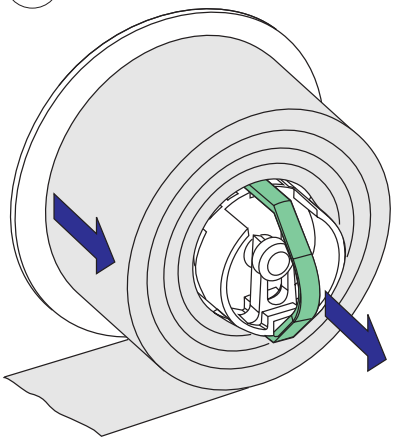
Open the side door.

2



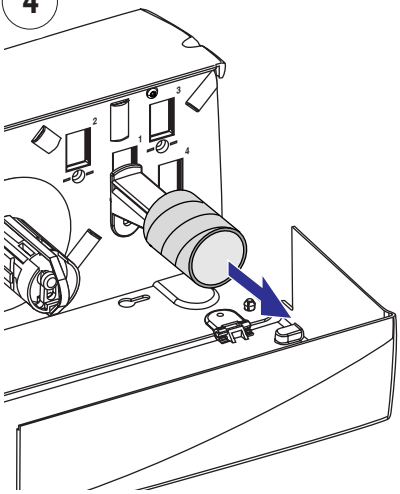
Turn the printhead lift lever clockwise to raise the printhead.

3



Pull out the handle to collapse the take-up hub, then remove any liner.

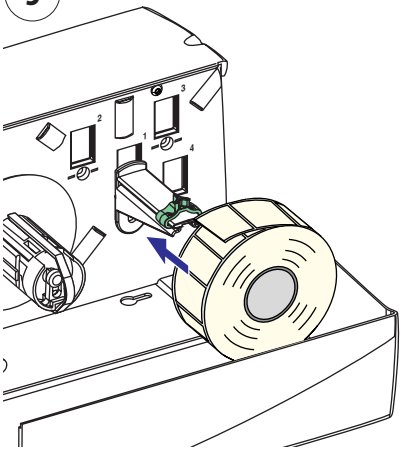
4



Remove any empty core from the media supply roll post.

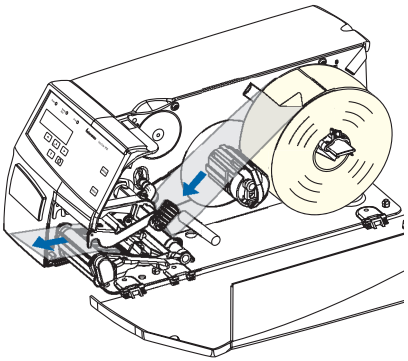
Peel-Off, cont.

5



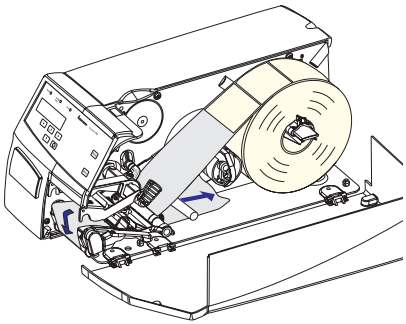
Fit a new roll of labels on the supply post and adjust the edge guide so the label roll becomes flush with the center section.

6



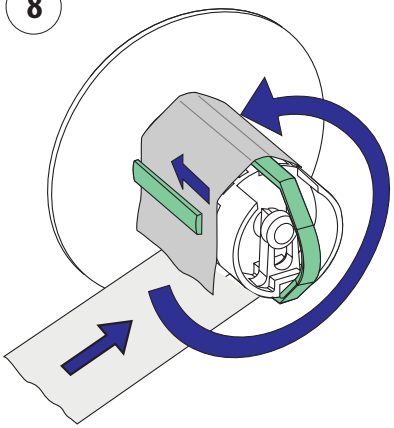
Remove labels from the first 50 cm (20 inches) of the liner. Route the liner through the print mechanism and push it inwards.

7



Route the liner around the tear bar and the liner drive roller and back under the print mechanism and guide shaft.

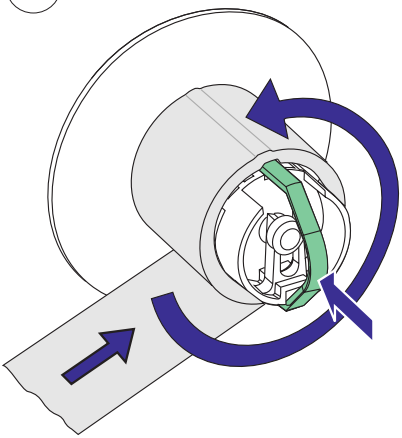
8



Insert the start of the liner under the lip of the takeup hub, then rotate the hub counterclockwise a few turns to wind up some of the liner.

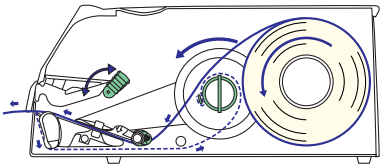
Peel-Off, cont.

9



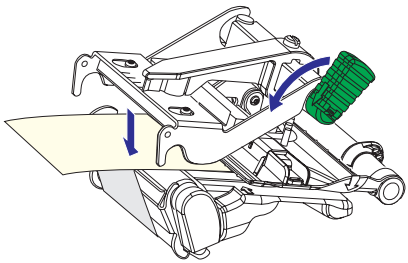
Press the handle to expand the takeup hub and secure the liner. Then rotate the hub counterclockwise until the liner becomes tight.

10



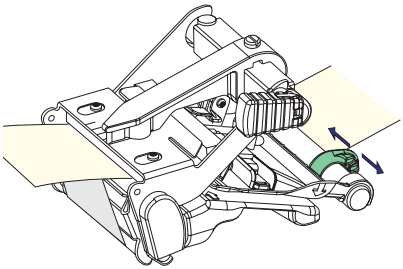
This diagram shows the media and liner paths.

11



Turn the printhead lift lever counter-clockwise to engage the printhead.

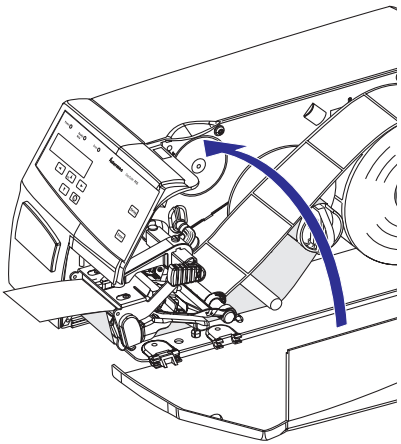
12



Adjust the position of the green edge guide so the media is guided with a minimum of play.

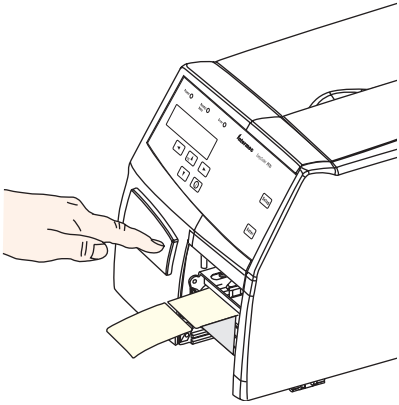
Peel-Off, cont.

13



Close the side door.

14



Press the Feed/Pause button to advance the media and adjust the media feed.

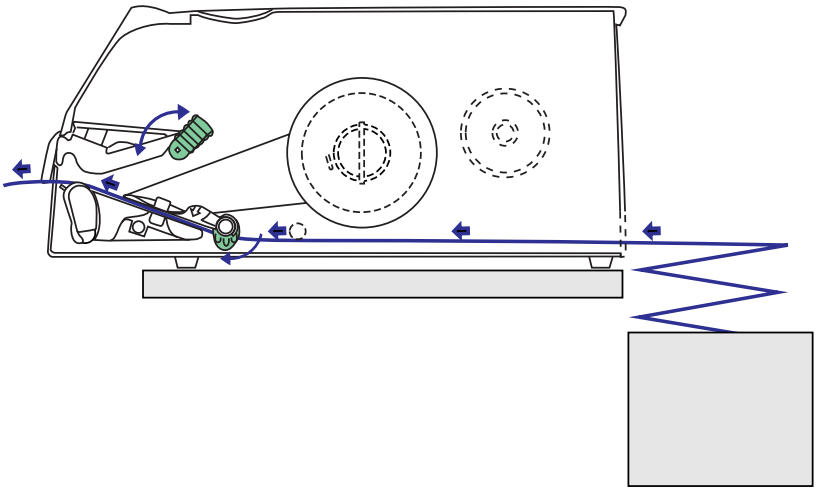
External Supply (Fan-fold)

The EasyCoder PF2i can print on labels, tickets, tags, and continuous stock in various forms. This section describes the case when the media supply is placed behind the printer, usually in the form of fan-folded tickets or tags. External supply can be used with tear-off (straight-through) printing–preferably with Quick-Load.

External supply can be used with both short and long side doors and there is no need to remove the media supply roll post.

When using an external media supply, take care to protect the media from dust, dirt or other foreign particles, that can impair the printout quality or cause unnecessary wear to the printhead.

Depending on brand and quality, all direct thermal media are more or less sensitive to heat, direct sunlight, moisture, oil, plasticizers, fat, and other substances. You should protect them accordingly.



This diagram shows the media path from an external supply. In case of the standard edge guide (as opposed to Quick-Load guides), turn it to vertical position.

5 Thermal Transfer Printing

This chapter explains how to load the printer with ribbon for thermal transfer printing when the printer is fitted with an optional transfer ribbon mechanism.

Ribbon Load

The EasyCoder PF2i can print on labels, tickets, tags, and continuous stock using either direct thermal printing on special heat-sensitive media or thermal transfer printing using a special ink-coated ribbon. For thermal transfer printing, the printer must be fitted with a transfer ribbon mechanism.

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

The EasyCoder PF2i can use transfer ribbon rolls wound with the ink-coated side facing either outward or inward. Illustrations in this manual show the ink-coated side facing inward.

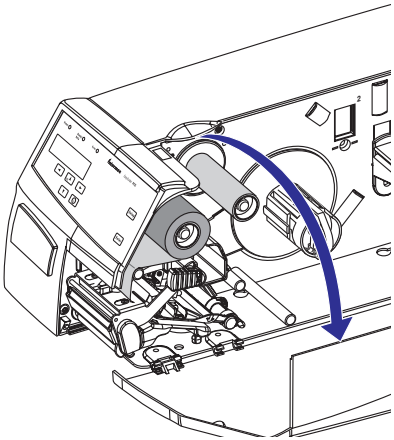
Even if ribbon usually is loaded in connection with media replenishment, no loaded media are shown in the illustrations in this chapter in order to give a clearer view of the ribbon path. Refer to Chapter 4 for media load instructions.

Most transfer ribbons do not smear at room temperature.

Note: Save the label indicating the sensitivity number attached to the ribbon roll. You will need this number to set the media sensitivity, see Appendix E.

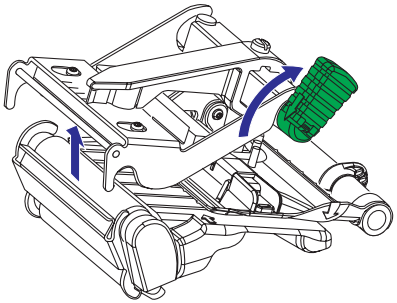
Ribbon Load, cont.

1



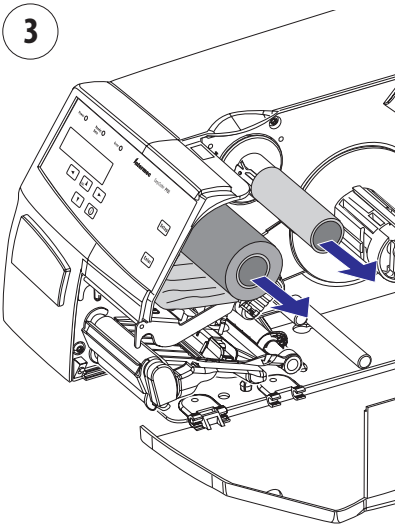
Open the side door.

2



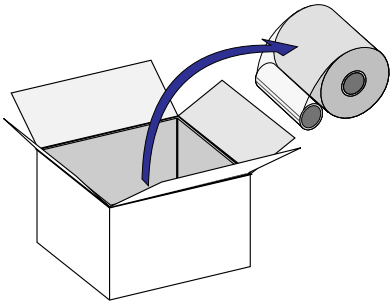
Turn the printhead lift lever clockwise to raise the printhead.

3



In case of ribbon reload, remove any used ribbon and empty ribbon core.

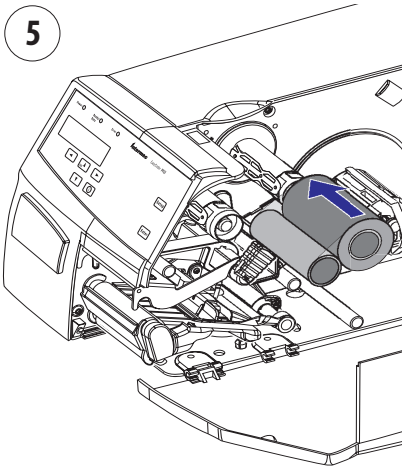
4



Unpack a roll of original Intermec thermal transfer ribbon.

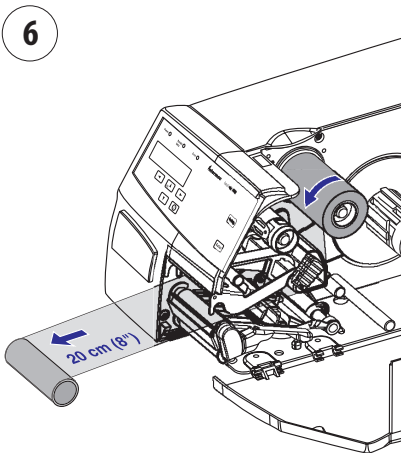
Ribbon Load, cont.

5



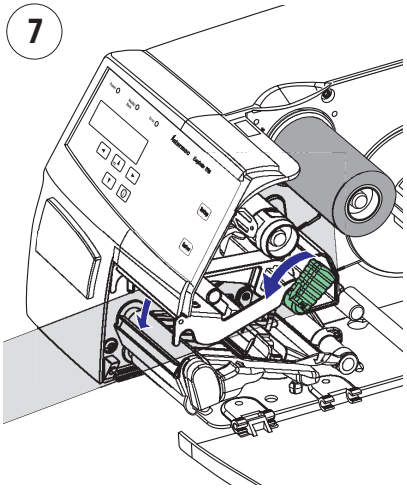
Slide the ribbon roll onto the supply hub so the ink-coated side faces down when the ribbon is routed through the print mechanism.

6



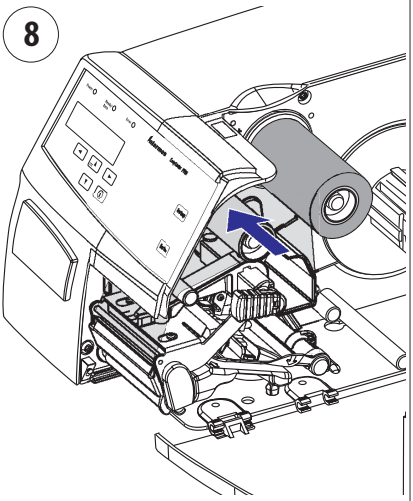
Route the ribbon through the print mechanism and pull out approximately 20 cm (8 inches) of ribbon.

7



Without releasing the ribbon, turn the printhead lift lever counterclockwise to engage the printhead and lock the ribbon.

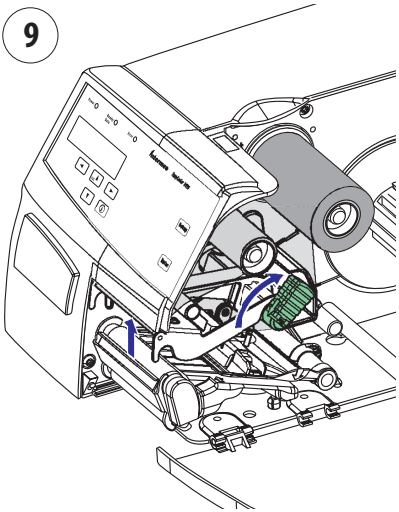
8



Slide the empty cardboard core onto the ribbon rewind hub so the ribbon is wound up when the hub rotates counterclockwise.

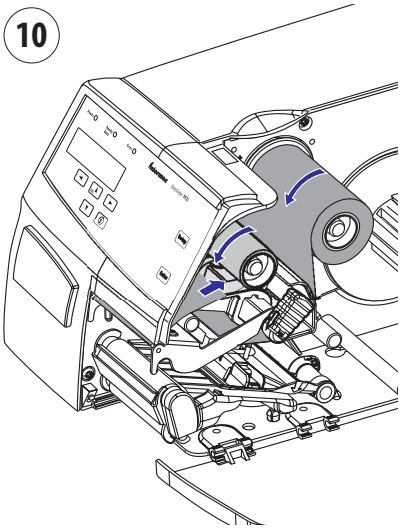
Ribbon Load, cont.

9



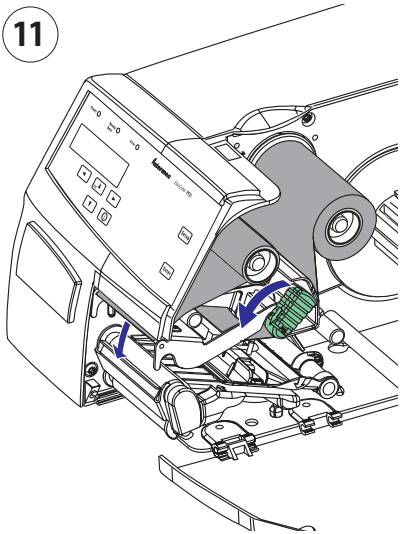
Turn the printhead lift lever clockwise to raise the printhead and release the ribbon.

10



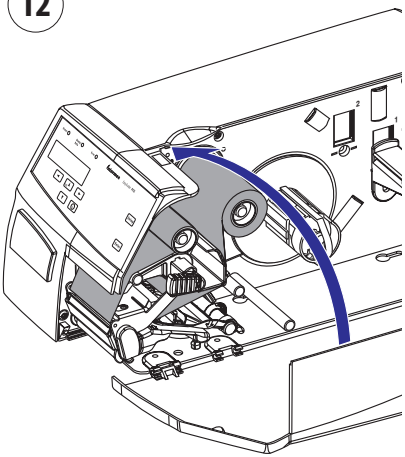
Manually advance the ribbon until all of the transparent leader has passed the printhead and the ribbon becomes tight.

11



Turn the printhead lift knob counter-clockwise to engage the printhead.

12



Close the side door.

6 Setting Up the Printer

This chapter describes the various parameters that are used in the Setup Mode (see Chapter 7) or in the various application programs to configure the printer for the user's specific requirements. It covers the following topics:

- Description
- Default setup
- Setup Parameters in regard of communication, test/service, media, and configuration.

Description

The setup controls the printer in regard of serial communication, test and service operations, and specifies which type of media and (optionally) ribbon is loaded in the printer.

Check the list of the printer's default setup parameters on the next page to see if they match your requirements. If not, you will have to change the setup. To enter the Setup Mode, press the <**Setup**> key on the printer's built-in keyboard and follow the instructions in Chapter 7, "Setup Mode".

Default Setup

The printer's default setup is listed below (no opions included):

Ser-Com	
Baud rate	9600 bps
Data bits	8 bits
Parity	None
Stop bits	1 bit
Protocol	XON/XOFF
Test/Service	
Testprint	not applicable
Data dump	No
Memory reset	not applicable
Media	
Media type	Gap
Paper type	DT
Label length	1200 dots
Sensitivity	420
Darkness	0%
Label rest point	0
Form adj dots X	0
Form adj dots Y	0
Configuration	
Emulation	None
Print speed	4 in/sec
Cutter	Not installed
Label taken sensor	Not installed

Setup Parameters

Serial Communication

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

Note: The serial communication parameters have no effect on parallel or EasyLAN communications.

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 8 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.

- 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 four 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

Intermec Standard Protocol

The Intermec 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 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

Test/Service

Testprint

This part of the Setup Mode allows you to print various types of test labels. Go to the desired option and press <Enter>. The printer will start printing the test label or labels. Press the <Feed/Pause> button to hold the printing temporarily. To resume printing, press the <Feed/Pause> button again. The following options are available:

Configuration

Select between software (SW), hardware (HW), and network.

The Software Configuration Label contains:

- 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:

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

The Network Configuration Label contains:

- WINS Name
- MAC Address
- IP Selection
- IP Address
- Netmask
- Default Router
- Name Server
- Mail Server
- Primary WINS Server
- Secondary WINS Server
- Network Statistics

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 prints all data and protocol characters received on the serial port. An ASCII and hexadecimal representation of each character is printed.

Memory Reset

There are two options. The memory will be reset to factory default as soon as an option has been selected and <Enter> is pressed. Select between "All", which resets the entire memory and "Configuration" which just resets the configuration part of the memory.

Media

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

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.

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.

Label Length

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. A selection of values is presented as a loop. Select the value that comes closest. Default is 1200 dots.

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 print-head and the print speed. Standard supplies from Intermec are labeled with a 3-digit media sensitivity number (see Appendix E) which specifies the media grade. A selection of values is presented as a loop. Select the value that comes closest. Default is 420 for direct thermal printing and 567 for thermal transfer printing. The media sensitivity number can also be changed using PrintSet, third-party software, or an IPL command (`<SI>gn[,m]`).

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 quality. By selecting from a series of options, 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. A selection of values is presented as a loop. 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. A selection of values is presented as a loop.

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. A selection of values is presented as a loop.

Configuration

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 latest version of the *IPL Programming, Reference Manual*(P/N 066396-XXX).

To return from emulation mode, select emulation "none" (default).

Print Speed

You can select the print speed from 4 in./sec. (100 mm/sec.) to 8 in./sec. (200 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. Some direct thermal media or ribbon/media combinations may not allow the highest alternatives without the printout quality being adversely affected.

Cutter

There is no cutter for the EasyCoder PF2i printer. Thus, "Not Installed" is always displayed as a read-only message.

Label Taken Sensor (option)

To make the printer work in self-strip mode, that is, waiting for a label to be removed before the next label is printed, the self-strip mode must be enabled. This can also be done by executing the following commands:

`<STX>R<ETX>`	enter print/configuration mode
`<STX><SI>tn<ETX>`	n=1 enables self-strip, n=0 disables self-strip.

If the label taken sensor does not work properly, the sensitiviy can be calibrated in the Setup Mode. Select "LTS Calibration" and follow the instructions in the display. Make sure that no direct sunlight or interior lighting interferes with the the label taken sensor.

7 Setup Mode

This chapter describes how to navigate in the setup mode, and provides overviews of the Setup Mode.

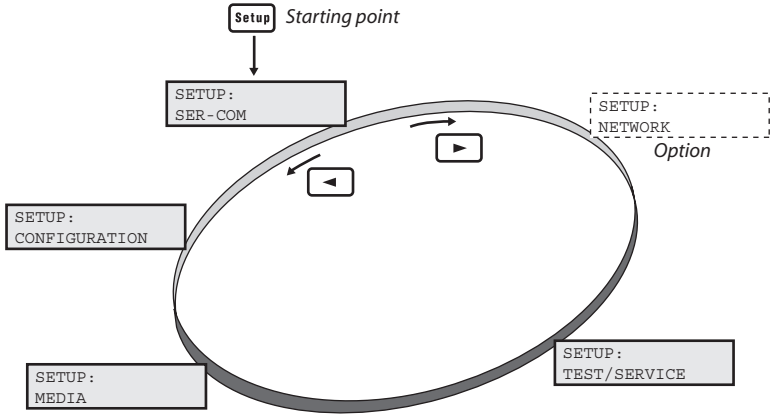
Navigating in Setup Mode

Enter the Setup Mode by pressing the <Setup> key on the printer's front panel. While going through the setup procedure, you are guided by texts in the printer's display. You can navigate between setup menus, acknowledge displayed values, select or enter new values, etc. by using the keys on the printer's keyboard.

◄	Move one step back on the same level.
ESC ▲	Move up one level and escape without changing the setting.
►	Move forward on the same level.
▼	Move down one level.
Enter	Acknowledge and move to next menu.
Setup	Exit the Setup Mode. Can be used anywhere in Setup Mode.

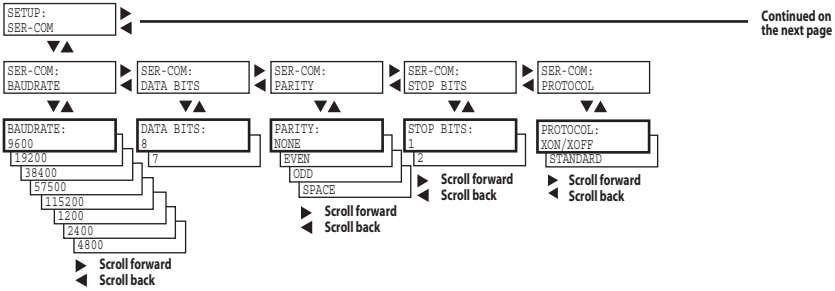
The Setup Mode is organized as an endless loop, from which you can select a number of sub-categories. At startup, the firmware determines if options such as a label taken sensor, a cutter, or an interface board is installed in the printer. Only installed options are shown in the Setup Mode.

The diagram below shows the options in the main loop. Detailed overviews are shown on the pages that follow.



Setup Mode; Serial Communication

(IPL v2.10)



Legend:

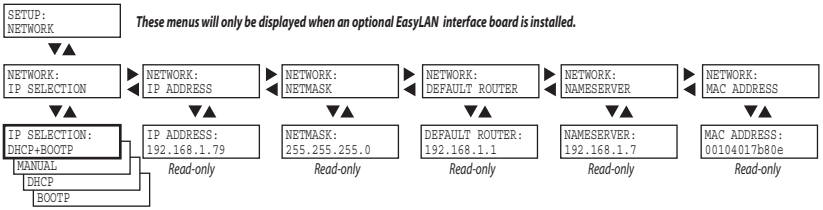
Dotted boxes and lines indicate options.

Thick boxes indicates default options.

Values inside brackets indicate default settings.

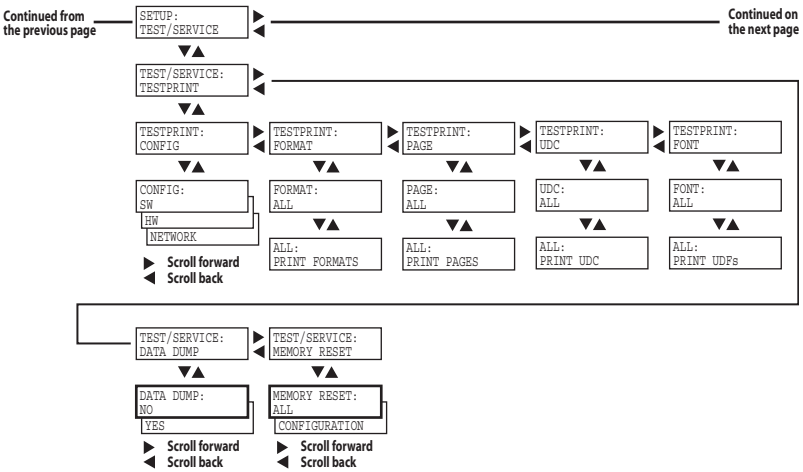
Setup Mode; Network (option)

(IPL v2.10)



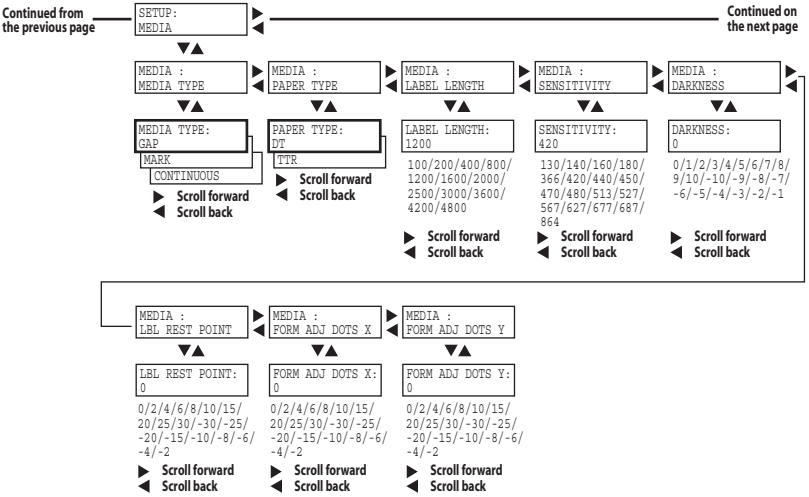
Setup Mode; Test/Service

(IPL v2.10)



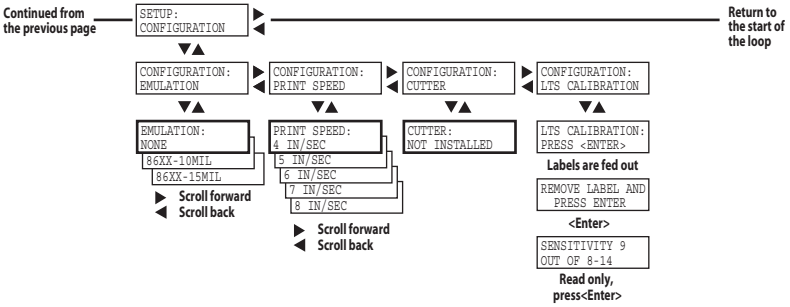
Setup Mode; Media

(IPL v2.10)



Setup Mode; Configuration

(IPL v2.10)

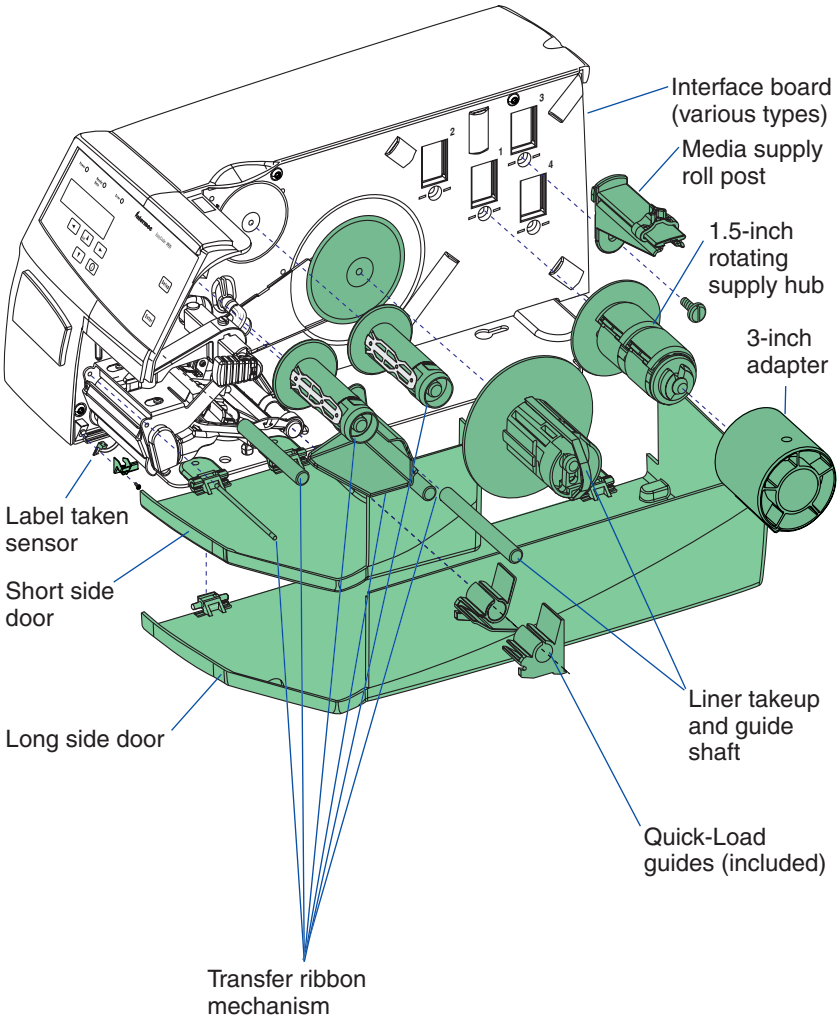


8 Options

This chapter describes the options available for the EasyCoder PF2i printer. The options can be factory installed, field-installed by an authorized service technician, or in some cases installed by the operator.

Introduction

The EasyCoder PF2i provides a high degree of flexibility because it has a modular design. By adding options to the basic printer, the EasyCoder PF2i can be adapted for a variety of applications. Most options can easily be installed by the operator, however a few should be installed by an authorized service technician or are only available as factory-installed options.



Transfer Mechanism

The thermal transfer mechanism is only available as a factory-installed option. It allows the use of both direct thermal and thermal transfer supplies.

Side Doors

The EasyCoder PF2i comes with either a short side door, which only covers the print mechanism or with a long side door, which encloses the entire media compartment. The long side door has a slot for external media supply. The long side door is generally illustrated throughout this manual, but pictures of the short side door can be found at the start of this chapter and in Chapter 4.

Integral Liner Takeup Unit

The integral liner takeup unit is an optional device for peel-off (self-strip) operation, which means the labels are separated from a liner (backing paper) after printing and the liner is wound up on an internal hub. The unit also includes a guide shaft. Peel-off cannot be combined with Quick-Load guides, see below.

Media Supply Hub

The rotating media supply hub is designed to fit media roll cores with an internal diameter of 38-40 mm (1.5 inch). The hub can be fitted in the same positions as the supply roll post, see Chapter 2. Being factory installed, the position of the media supply hub is not intended to be changed by the operator.

3-inch Adapter

The 3-inch/76 mm adapter is used with a rotating media supply hub and makes it possible to use media rolls with 3 inch/76 mm inner diameter cores. The adapter is pressed onto the hub and secured by a screw. Not used with a media supply roll post.

Label Taken Sensor

The Label Taken Sensor (LTS) is a photoelectric sensor that enables the printer's firmware to detect if the latest printed label, ticket, tag, etc. has been removed before printing another copy.

Interface Boards

A number of interface boards are available for use with the EasyCoder PF2i. The interface boards are either factory-fitted or can easily be fitted by an authorized service technician.

The EasyCoder PF2i can accommodate one EasyLAN interface board plus one Parallel Interface Board (IEEE 1284).

9 Troubleshooting

This chapter lists various possible cases of inferior printout quality, describes possible causes, and suggests remedies.

Symptom	Possible Cause	Remedy	Refer to
Overall weak print-out	Wrong media grade	Change parameter	Chapter 6, Appendix E
	Contrast value too low	Change parameter	Chapter 6
	Printhead pressure too low	Adjust	Chapter 11
	Worn printhead	Replace printhead	Chapter 10
	Wrong printhead voltage	Replace CPU board	☎ Call Service
Printout weaker on one side	Uneven printhead pressure	Adjust arm align-ment	Chapter 11
Weak spots	Foreign particles on media	Clean or replace	Chapters 4 & 5
	Media/ribbon don't match	Change to matching media	Chapter 6
	Poor media or ribbon quality	Select a better brand of media/ribbon	Appendix E
	Worn printhead	Replace printhead	Chapter 10
	Worn platen roller	Check/replace	☎ Call Service
Overall dark print-out	Wrong media grade	Change parameter	Chapter 6, Appendix E
	Contrast value too high	Change parameter	Chapter 6
	Printhead pressure too high	Adjust	Chapter 11
	Wrong printhead voltage	Replace CPU board	☎ Call Service
Excessive bleeding	Wrong media grade	Change parameter	Chapter 6, Appendix E
	Contrast value too high	Change parameter	Chapter 6
	Printhead pressure too high	Adjust	Chapter 11
	Faulty energy control	Replace CPU board	☎ Call Service

Dark lines along media path	Foreign objects on printhead	Clean printhead	Chapter 10
White vertical lines	Printhead dirty	Clean printhead	Chapter 10
	Missing printhead dots	Replace printhead	Chapter 10
Large part of dot line missing	Failing printhead	Replace printhead	Chapter 11
	Failing strobe signal	Check CPU-board	☎ Call Service
Printout missing along inner edge	Bad media alignment	Adjust	Chapter 4
	Small core & supply post in upper pos.	Move post to lower pos.	Chapter 2
	X-start parameter value too low	Increase	Chapter 6
Transfer ribbon breaks	Ribbon not fitted correctly	Reload ribbon	Chapter 5
	Wrong media grade	Change parameter, then clean printhead	Chapter 6, Chapter 10
	Bad energy control	Adjust	☎ Call Service
Transfer ribbon wrinkles	Faulty ribbon break shaft adjustment	Adjust	Chapter 11
	Incorrect edge guide adjustment	Adjust	Chapter 4
	Too strong printhead pressure	Adjust	Chapter 11
No thermal transfer printout	Ink-coated side does not face media	Reload ribbon	Chapter 5
Media feed not working properly	Changed media characteristics	Press the Print button	Chapter 4
	Wrong label rest dots paramerter	Check/change	Chapter 6
	Wrong Media Type parameter	Check/change	Chapter 6
	Wrong LSS position	Check/change	Chapter 11
	Dirty sensors	Clean media guides	Chapter 10
	Faulty sensors	Replace	☎ Call Service
Compressed text or bar code	Too high speed for large media roll	Lower print speed	Chapter 6

10 Maintenance

This chapter describes how the operator can maintain the printer. Regular maintenance is important for the printout quality and for the life of the printhead. The chapter covers the following topics:

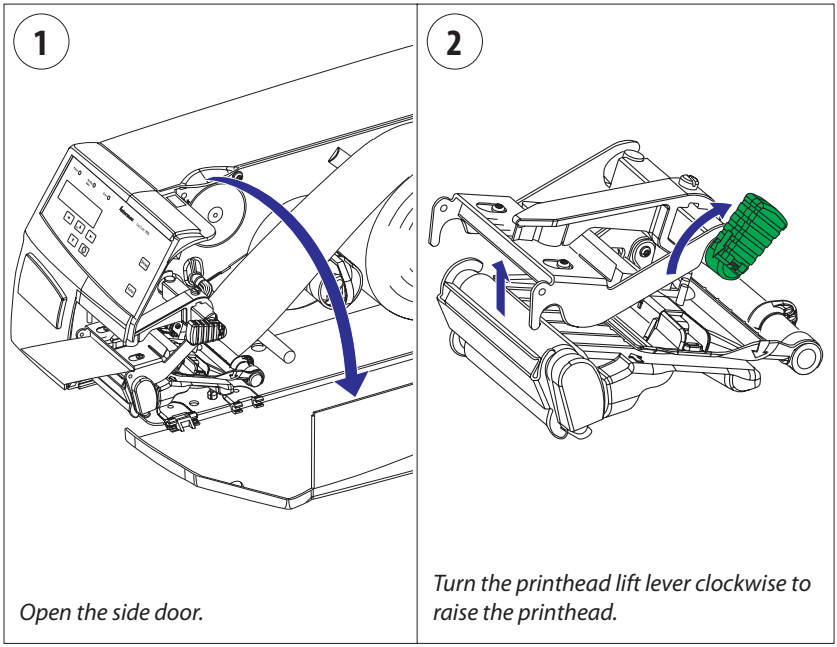
- Printhead cleaning
- External cleaning
- Cleaning the media guides
- Printhead replacement
- Media jams

Printhead Cleaning

Cleaning the printhead on a regular basis is important for the life of the printhead and for the printout quality. You should clean the printhead each time you replace the media. This section describes how to clean the printhead using cleaning cards. If additional cleaning is required, for example removing adhesive residue from the platen roller or tear bar, use a cotton swab moistened with isopropyl alcohol.

Warning

Isopropyl alcohol [$(CH_3)_2CHOH$; CAS 67-63-0] is a highly flammable, moderately toxic, and mildly irritating substance.

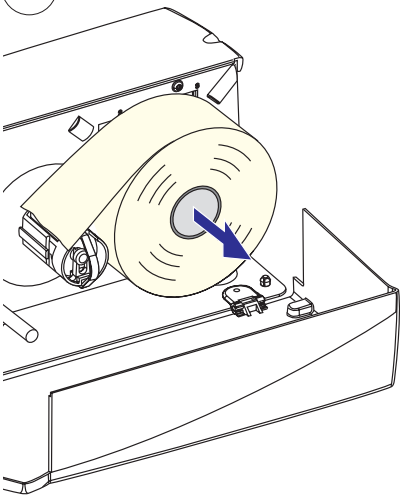


Open the side door.

Turn the printhead lift lever clockwise to raise the printhead.

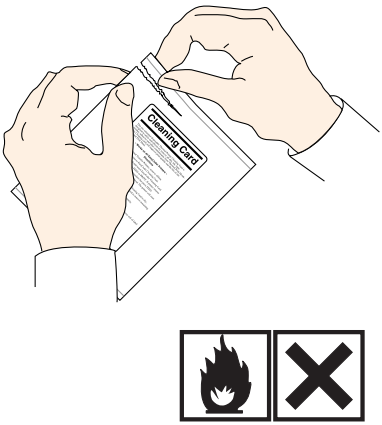
Printhead Cleaning, cont.

3



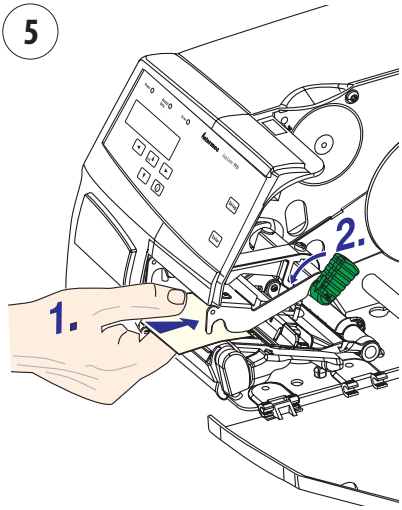
Remove any media (and ribbon).

4



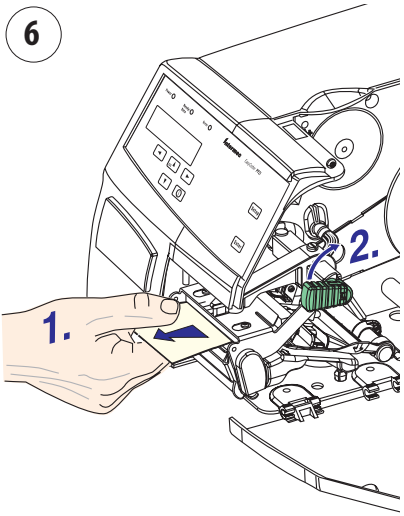
Open the cleaning card envelope and pull out the cleaning card. Read the warning text.

5



Insert most of the cleaning card under the printhead (1). Engage the printhead (2).

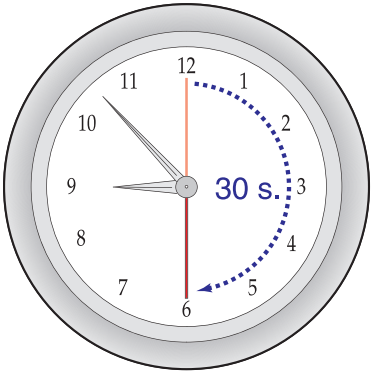
6



Pull out the cleaning card (1) and raise the printhead (2).

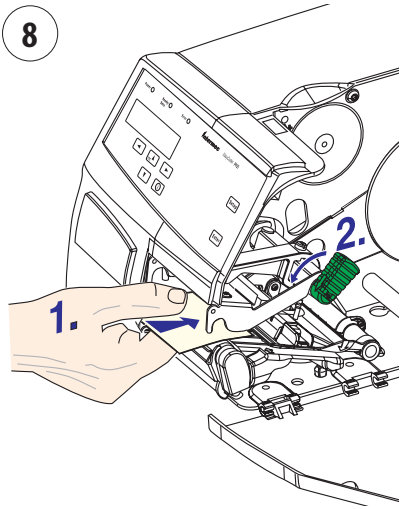
Printhead Cleaning, cont.

7



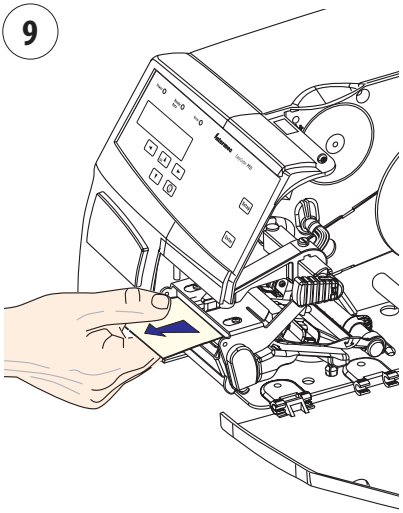
Wait for approx. 30 seconds to allow the cleaning fluid to dissolve the residue.

8



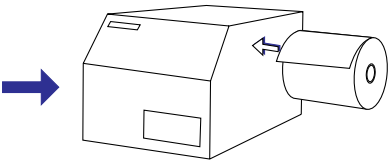
Insert most of the cleaning card under the printhead (1). Engage the printhead (2).

9



Pull out the cleaning card. If necessary, repeat the process with a fresh cleaning card.

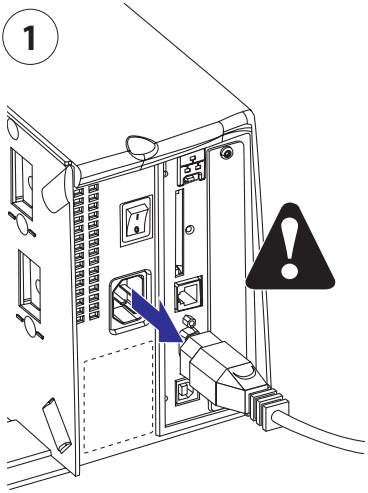
10



Allow the cleaned parts to dry before loading any media (and ribbon).

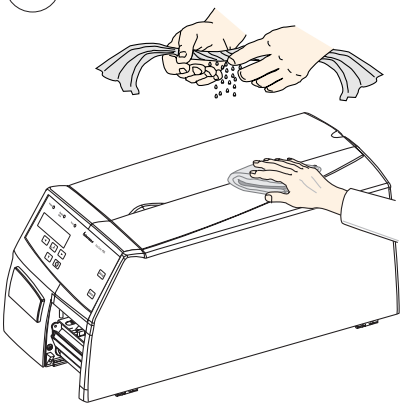
External Cleaning

1



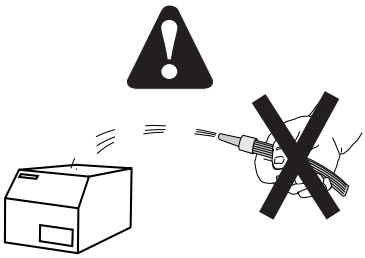
Always remove the power cord before cleaning!

2



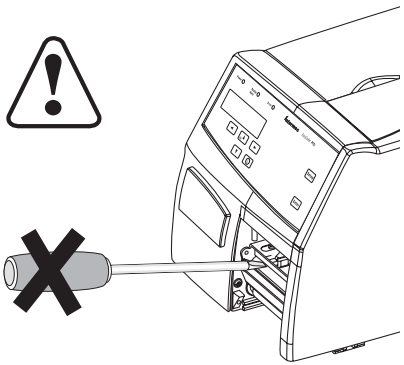
Wipe external surfaces with a soft cloth slightly moistened with water or a mild detergent.

3



Never spray the printer. Protect it from water when cleaning the premises.

4



Never use any sharp tools for removing stuck labels. The printhead and rollers are delicate.

Cleaning the Media Guides

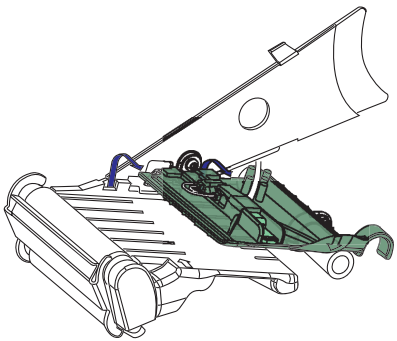
Both parts of the label stop sensor, which controls the media feed, are covered by plastic guides. The guides are transparent to allow the light to pass between the two parts of the label stop sensor. These areas (indicated by a shade of gray in illustration #2 below) must be kept clean from dust, stuck labels, and adhesive residue.

If the printer starts to feed our labels in an unexpected way, raise the upper guide as described below and check for any object that may block the beam of light (dust, stuck labels, adhesive residue, etc.). If necessary, clean the guides using a cleaning card or a soft cloth soaked with isopropyl alcohol. Do not use any other type of chemical. Be careful not to scratch the guides.

Warning

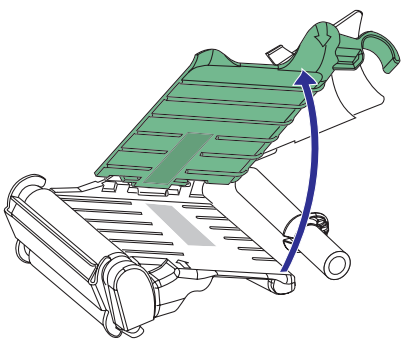
Isopropyl alcohol [$(CH_3)_2CHOH$; CAS 67-63-0] is a highly flammable, moderately toxic, and mildly irritating substance.

1



Lift the inner part of the upper guide and pull it outwards, disengaging it from the lower guide. Take care not to damage the cable.

2



Tilt the upper guide upwards and clean the areas marked with gray. After cleaning, re-assemble in reverse order.

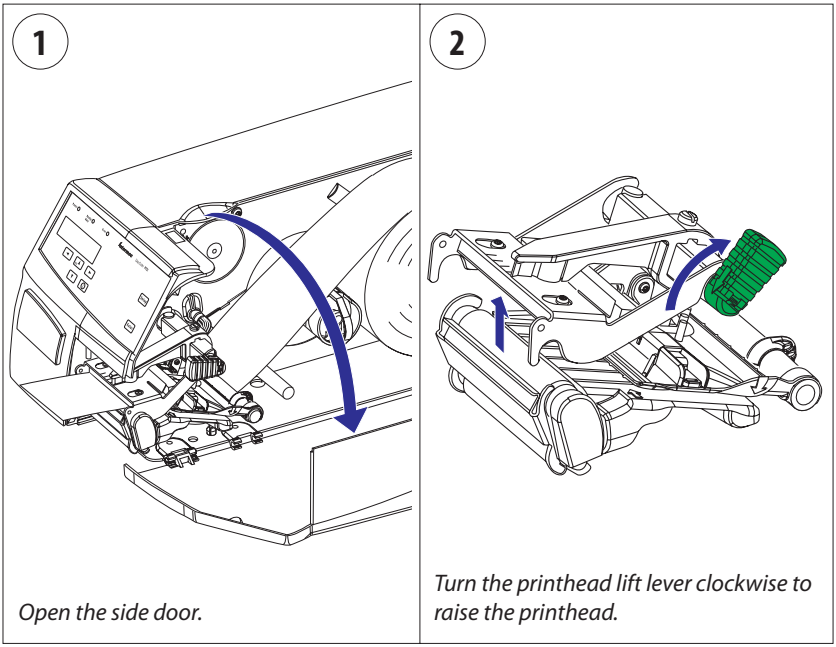
Printhead Replacement

The printhead is subject to wear both from the direct thermal media (or ribbon) and from the rapid heating and cooling process during printing. Thus, the printhead will require periodic replacement.

Time between printhead replacements depends on the print images, the type of direct thermal media (or ribbon) in use, the amount of energy to the printhead, the print speed, the ambient temperature, and several other factors.

Caution

While replacing the printhead, the power must be off. The firmware will not detect the new printhead resistance until the printer has been restarted.

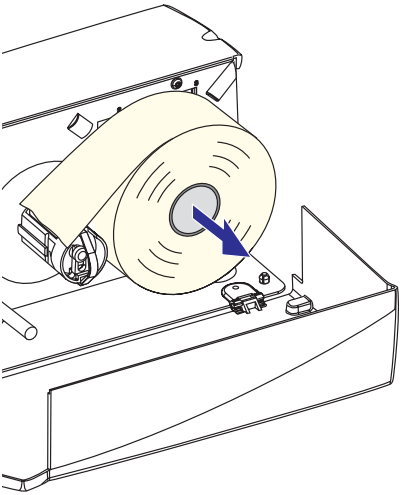


Open the side door.

Turn the printhead lift lever clockwise to raise the printhead.

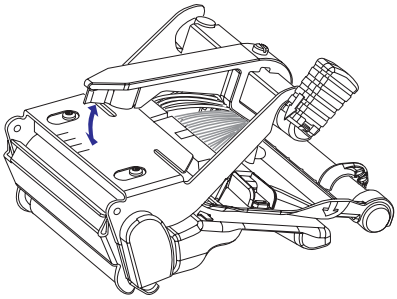
Printhead Replacement, cont.

3



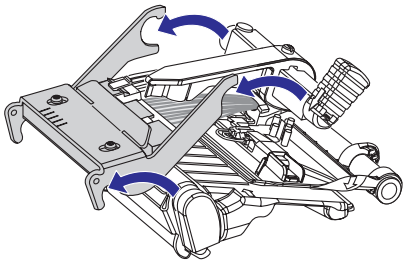
Remove the media (and ribbon).

4



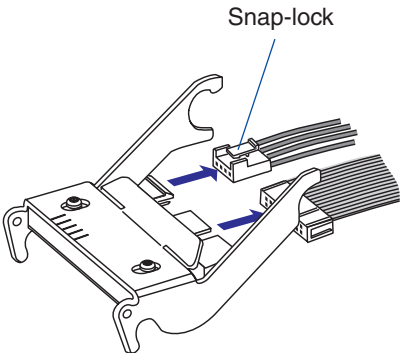
Pull the printhead bracket away from the magnet in the pressure arm.

5



Disconnect the printhead bracket from the print mechanism as indicated by the arrows and pull out the printhead as far as the cables allow.

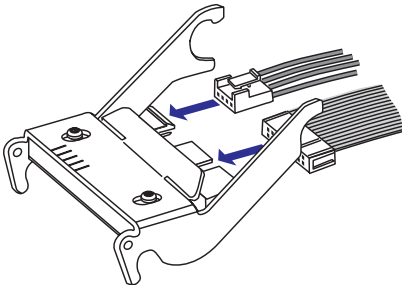
6



Disconnect the cables from the printhead. Note the snap-lock on the inner connector. Pull at the connectors—not at the cables!

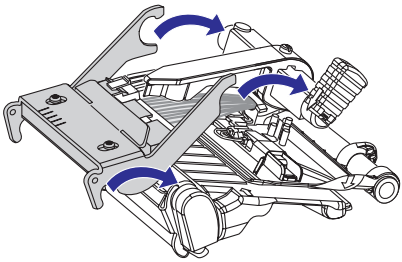
Printhead Replacement, cont.

7



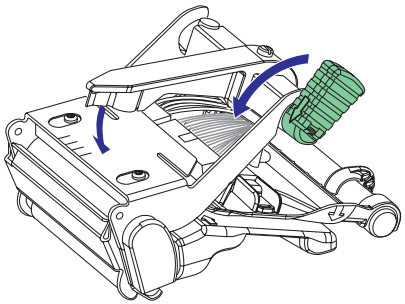
Connect the two cables to the replacement printhead.

8



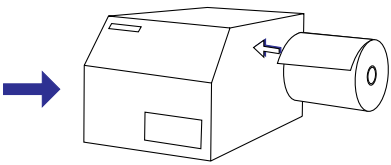
Put back the printhead in reverse order and check that the printhead cables run freely.

9



Turn the printhead lift lever counterclockwise so the magnet engages the printhead bracket.

10



Load a new supply of media (and ribbon), as described earlier in this manual.

Media Jams

Should a media jam occur in the print mechanism, proceed this way to clear it:

- Always switch off the power before starting to clear the jammed media.
- Raise the printhead and pull out the media.
- If the media has been wound up or has stuck on the platen roller, carefully remove it by hand without using any sharp tools that can damage the delicate platen roller or printhead. Avoid rotating the platen roller.

If you must pull away the media by force causing the platen roller to rotate, it is very important that the power has been off for a minute or more. If not, the electronics can be damaged beyond repair.

- Cut off any damaged or wrinkled part.
- Check if there is any adhesive somewhere in the print mechanism, clean using a cleaning card or cotton swab soaked in isopropyl alcohol.

Isopropyl alcohol [$(CH_3)_2CHOH$; CAS 67-63-0] is a highly flammable, moderately toxic, and mildly irritating substance.

- Reload the media as descibed in Chapter 4.
- Switch on the power.
- Readjust the media feed by pressing the <Feed/Pause> key.

11 Adjustments

This chapter describes how the operator can adjust the printer. The chapter covers the following topics:

- Narrow media adjustment
- Label stop sensor position adjustment
- Printhead pressure adjustment
- Ribbon break shaft adjustment
- Quick-Load guides installation

Narrow Media Adjustment

The printer is factory-adjusted for full-size media width. When using media less than full width, it is recommended that you adjust the position of the pressure arm so it becomes centered with the media. Thereby, an even pressure across the media is obtained.

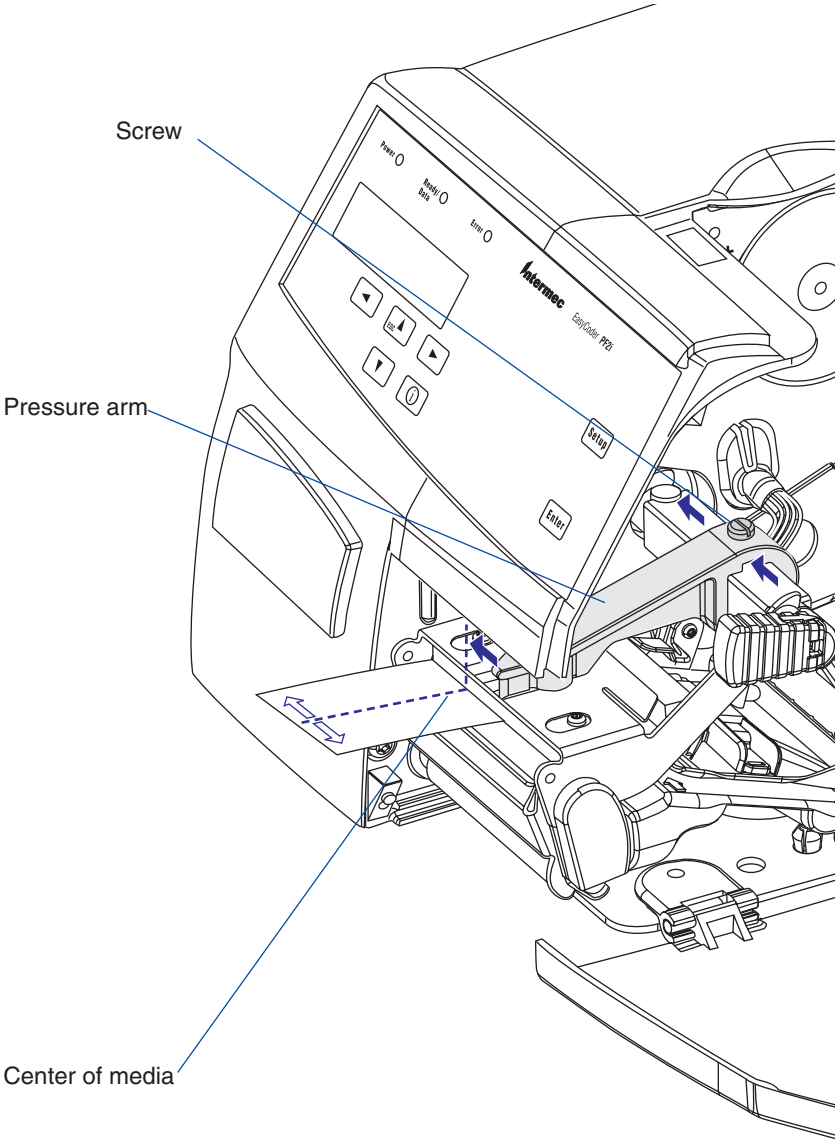
A poorly adjusted pressure arm may be detected by a weaker printout on either side of the media path.

To adjust the pressure arm, proceed as follows:

- Loosen the straight-slot screw that holds the pressure arm. Move the arm inwards or outwards until the arrow on the tip of the arm becomes centered with the media.

  While moving the arm, push at the part where the screw is situated, not at the tip. If the arm is hard to move, lift the printhead and pull the printhead bracket free from the magnet in the arm.

- After having centered the arm, lock it by tightening the screw.


Screw
Pressure arm
Center of media
Power
Ready/ Data
Error
Intermec
EasyCoder PF2i
Esc
Setup
Enter

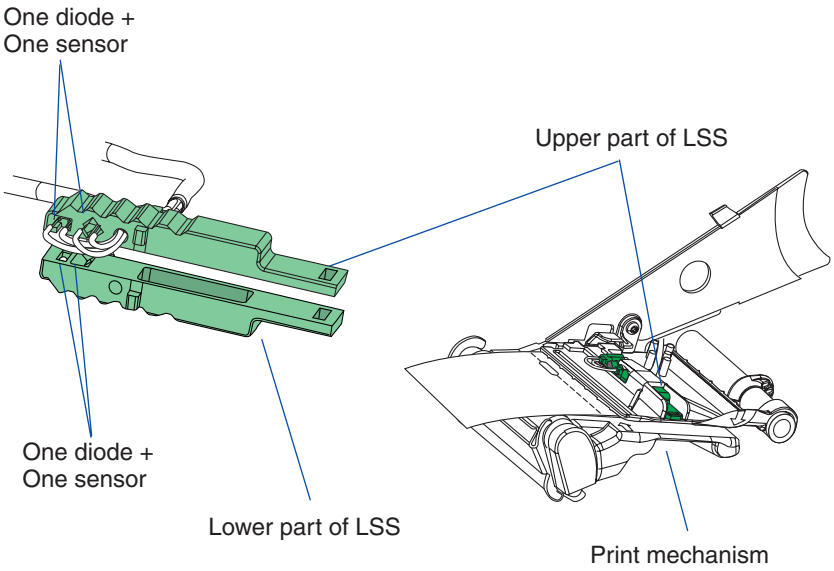
Label Stop Sensor Position Adjustment

The label stop/black mark sensor (LSS) is a photoelectric sensor that controls the printer's media feed by detecting gaps between labels, or slots or black marks in continuous stock, depending on the printer's setup in regard of media type (see Chapter 6, "Setting Up the Printer"). An obvious prerequisite is that the LSS must be aligned with the gaps, slots, or black marks. If using-irregularly shaped labels, align the LSS with the front tips of the labels.

The LSS can be moved laterally between 5 fixed positions. There is one part of the sensor on top of the upper media guide and another part underneath the lower guide. These must be adjusted individually to the same position. Using a small screwdriver, push them inwards as far as they go and then pull them out—one at the time—while counting the clicks from the snap-locks.

The various detection points of the sensor in relation to the inner edge of the media are as follows:

One click out	3 mm	.118 inches
Two clicks out	8 mm	.315 inches
Three clicks out	12 mm	.472 inches
Four clicks out	16 mm	.639 inches
Five clicks out	20 mm	.787 inches



Printhead Pressure

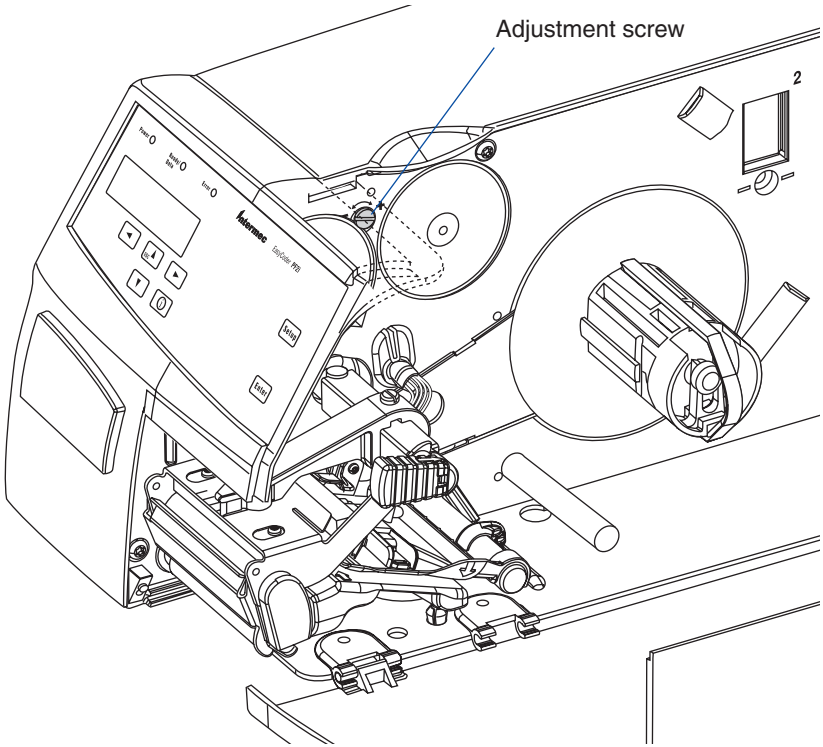
The pressure of the thermal printhead against the direct thermal media is factory-adjusted. However, the use of thicker or thinner media than normal could require the printhead pressure to be readjusted.

Using a straight-slot screwdriver, turn the adjustment screw clockwise for more pressure (+) or counterclockwise for less pressure (-). Print a few labels, preferably test labels (see Chapter 6, "Setting Up the Printer") and check the printout. Increased pressure generally gives a darker printout and vice versa. Repeat until the desired result is obtained.

To return to the factory setting, tighten the screw (+) as far as it goes and then loosen it (-) six full turns.

Caution

Do not use a higher printhead pressure than necessary, because it may increase the wear of the printhead and shorten its life.



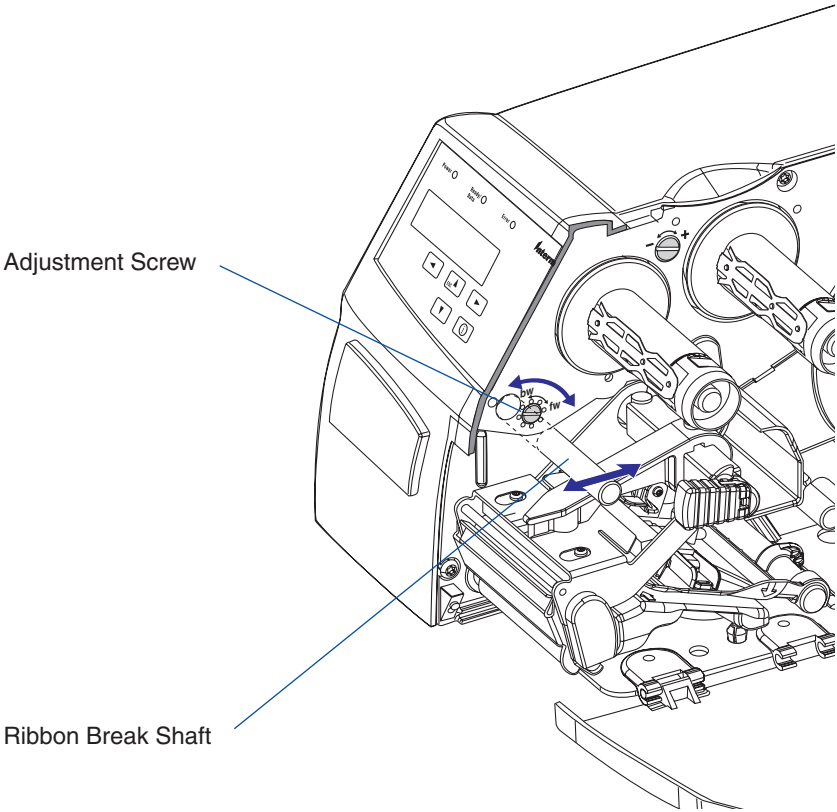
Ribbon Break Shaft (option)

If ribbon wrinkling occurs, you may need to adjust the alignment of the front ribbon break shaft so that it runs parallel to the printhead and the ribbon supply and rewind hubs. The adjustment is done using a straight-slot screw that is located immediately behind the front ribbon break shaft.

- If the ribbon tends to slide outwards, turn the screw carefully clockwise (fw) to move the outer end of the break shaft forward.
- If the ribbon tends to slide inwards, turn the screw carefully counterclockwise (bw) to move the outer end of the break shaft backward.

Caution

Before readjusting the break shaft, make sure that there is no other cause for the wrinkling of the ribbon. (See Chapter 10, "Troubleshooting.")



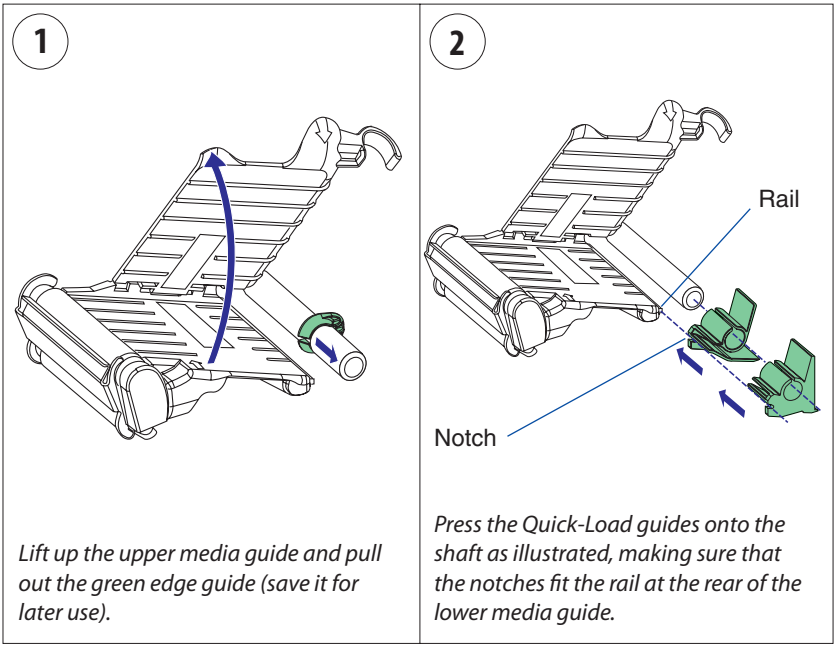
Installing the Quick-Load Guides

The Quick-Load guides may, depending on model, be factory-installed or be enclosed in the box for optional installation by the user. They replace the standard edge guide.

The Quick-Load guides facilitate media load from behind the print mechanism and help guiding the media when using an external supply. Quick-Load guides cannot be used for peel-off operation.

The standard ring-shaped edge guide is used when you want to load the media from the side rather than from behind and is necessary for peel-off operation

The Quick-Load guides can be used with media that is 40-60 mm (1.57-2.36 in.) wide. The inner guide should be fitted flush to the center section, whereas the outer of the guide is adjustable for various media widths. Refer to Chapter 4, "Media Load/Tear-Off with Quick-Load Guides" for loading instructions.



Lift up the upper media guide and pull out the green edge guide (save it for later use).

Press the Quick-Load guides onto the shaft as illustrated, making sure that the notches fit the rail at the rear of the lower media guide.

A Technical Data

This appendix lists the technical data for the printer. Please note that Intermec reserves the right to change without prior notice and that this information does not represent a commitment on the part of Intermec.

Printing		
Print Technique	Direct Thermal (Thermal Transfer as option)	
Printhead Resolution	8 dots/mm (203.2 dpi)	
Print Speed (variable)	100 to 200 mm/sec. (≈ 4 to 8 in./sec.)	
Print Width (max)	56 mm (2.2 inches)	= 448 dots
Print Length (max)	32767 dots = 409.5 cm (161.25 inches)[1]	
Media Width (min/max)	25 to 60 mm (1 to 2.36 inches)	Standard edge guide
Media Width (min/max)	40 to 60 mm (1.57 to 2.36 inches)	Quick-Load guides
Media Roll Diameter (max)	213 mm (8.38 inches)	
Media Roll Core Diameter	38 to 40 mm (1.5 inches) or 76 mm (3 inches)	
Ribbon Width (min/max)	25 to 60 mm (1 to 2.36 inches)	
Ribbon Roll Diameter (outer)	65 mm (2.56 inches) equivalent to 240-300 m (787-985 ft) of ribbon	Depending on ribbon thickness
Ribbon Roll Core Diameter (inner)	25.4 mm (1.00 inches)	
Print Directions	4	
Modes of Operation		
Tear-Off (Straight-through)	Yes	
Peel-Off (Self-strip)	Optional	With liner takeup unit
Firmware		
Operating System	IPL, v2.10	
Smooth Fonts	13 scaleable + 21 simulated bitmap	
Built-in bar codes (std)	31	
Physical Measures		
Dimensions (W x L x H)	194 x 397 x 178 mm (7.64 x 15.63 x 7.00 inches)	With long side door
Weight (excluding media)	approx. 5.5 kg (12 pounds)	
Ambient Operating Temperature	+5°C to +40°C (+41°F to +104°F)	
Humidity	20 to 80% non-condensing	

Electronics		
Microprocessor	32 bit RISC	
On-board Flash SIMMs	2 sockets for 4MB or 8MB each	Std. 1 x 4MB
On-board SDRAM SIMM	1 socket for 8MB or 16MB	Std. 8MB
Power Supply		
AC Voltage	90 to 265 VAC, 45 to 65 Hz	
PFC Regulation	IEC 61000-3-2	
Power Consumption	Standby 15W; Peak 300W	
Sensors		
Gap/Mark/Out of Media	Yes	5 fixed positions
Printhead Lifted	Yes	
Ribbon End	Thermal transfer model only	
Controls		
Control Lamps	3	
Display	2 x 16 character LCD	Background light
Keyboard	7 keys membrane-switch type	
Feed/Pause button	1	
Beeper	Yes	
Data Interfaces		
Serial	1 x RS-232	
Connection for Optional Interface Boards	1 + 1	1 for EasyLAN 1 for IEEE 1284
Memory Card Adapter	1	Firmware upgrade only
Accessories and Options		
Transfer Ribbon Mechanism	Option	
Integral Self-strip Unit with Liner Takeup	Option	For peel-off operation
Rotating Media Supply Hub	Option	Replaces supply post
3-inch Adapter	Option	
Short Side Door	Option[2]	
Long Side Door	Option[2]	

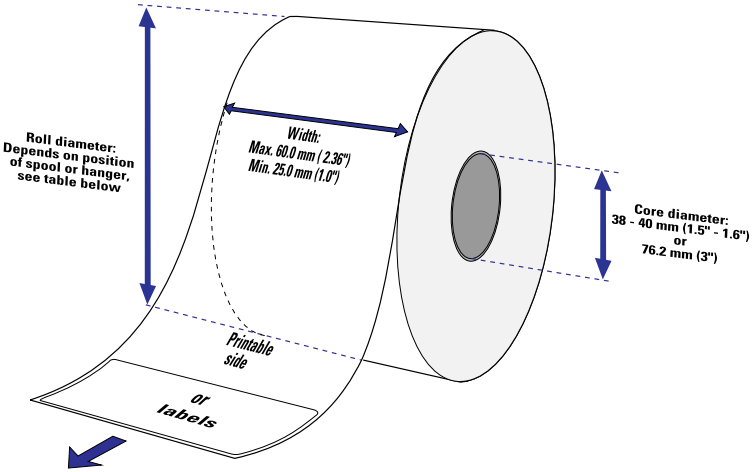
Label Taken Sensor	Option	
RS-232 Cable	Option	
Parallel Interface Cable	Option	
Parallel Interface Board	Option	IEEE 1284
EasyLAN Ethernet Interface	Option	
EasyLAN Wireless Interface	Option	
CompactFlash Cards	Option	8MB-1GB

[1]/. The max. print length is also restricted by the amount of free SDRAM memory.
[2]/. Depending on model, the printer may be delivered with either a long or a short side door.

B Media Specifications

This appendix specifies the physical measures for various types of media.

Media Roll Size



Core

Diameters:	38-40 mm (1.5 inches) or 76.2 mm (3 inches)
Width:	Must not protrude outside the media.

The media must be wound up on the core in such a way that the printer can pull the end free.

Roll

Max. diameter:

• Position 1	152 mm	(6.00 inches)
• Position 2	203 mm	(8.00 inches)
• Position 3	213 mm	(8.38 inches)
Max. width:	60 mm	(2.36 inches)
Min. width (standard):	25 mm	(1.00 inches)
Min. width (Quick-Load):	40 mm	(1.57 inches)

The maximum recommended media thickness is 175µm (0.007 inches). 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.

Media rolls to be loaded inside the printer should be wound with the printable side facing outwards.

The media supply must not be exposed to dust, sand, grit, etc. Any hard particles, however small, can damage the printhead.

Media

Non-Adhesive Strip

⇐ a ⇒ Media Width

Maximum:	60.0 mm (2.36 inches)
Minimum (standard):	25.0 mm (1.00 inches)
Minimum (Quick-Load):	40.0 mm (1.57 inches)

Media Type Setup

- Fix length strip
- Var length strip

Self-Adhesive Strip

⇐ a ⇒ Media Width (including liner)

Maximum:	60.0 mm (2.36 inches)
Minimum (standard):	25.0 mm (1.00 inches)
Minimum (Quick-Load):	40.0 mm (1.57 inches)

⇐ b ⇒ Liner

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

⇐ c ⇒ Media Width (excluding liner)

Maximum:	58.4 mm (2.30 inches)
Minimum:	23.8 mm (0.94 inches)

Media Type Setup

- Fix length strip
- Var length strip

Self-Adhesive Labels

⇐ a ⇒ Media Width (including liner)

Maximum:	60.0 mm (2.36 inches)
Minimum (standard):	25.0 mm (1.00 inches)
Minimum (Quick-Load):	40.0 mm (1.57 inches)

⇐ b ⇒ Liner

The backing paper must not extend more than a total of 1.6 mm (0.06 inches) outside the labels and should protrude equally on both side. Recommended minimum transparency: 40% (DIN 53147).

⇐ c ⇒ Label Width (excluding liner)

Maximum:	58.4 mm (2.30 inches)
Minimum:	23.8 mm (0.94 inches)

⇐ d ⇒ Label Length

Maximum:	depends on SDRAM size
Minimum:	8.0 mm (0.32 inches)

Under ideal circumstances, a minimum label length of 4 mm (0.16 inches) could be used. It requires the sum of the label length (d) and the label gap (e) to be larger than 7 mm (0.28 inches), that batch printing is used, and that no pull back of the media is performed. Intermec does not guarantee that such short labels will work, but it is up to the user to test this in his unique application.

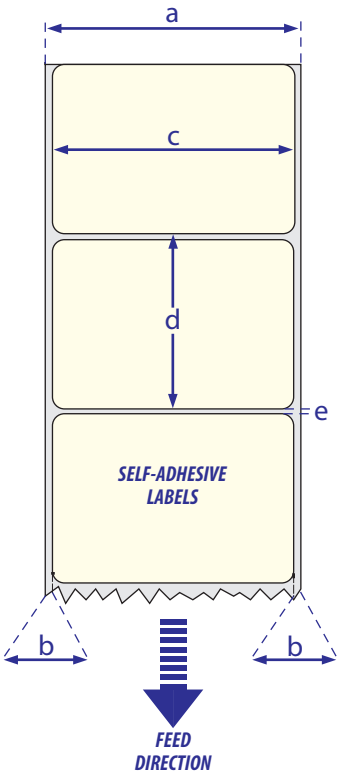
⇐ e ⇒ Label Gap

Maximum:	21.3 mm (0.83 inches)
Recommended:	3.0 mm (0.12 inches)
Minimum:	1.2 mm (0.05 inches)

The Label Stop Sensor must be able to detect the extreme front edges of the labels. It can be moved between 5 fixed positions (see Chapter 12).

Media Type Setup

- Label (w gaps)


a
c
d
e
SELF-ADHESIVE
LABELS
b
b
FEED
DIRECTION

Tickets with Gaps

⇐ a ⇒ Media Width

Maximum:	60.0 mm (2.36 inches)
Minimum (standard):	25.0 mm (1.00 inches)
Minimum (Quick-Load):	40.0 mm (1.57 inches)

⇐ b ⇒ Copy Length

Max. length between slots:	depends on SDRAM size
Min. length between slots:	8.0 mm (0.32 inches)

Under ideal circumstances, a minimum ticket length of 4 mm (0.16 inches) could be used. It requires the sum of the copy length (b) and the detection slit height (e) to be larger than 7 mm (0.28 inches), that batch printing is used, and that no pull back of the media is performed. Intermec does not guarantee that such short tickets will work, but it is up to the user to test this in his unique application.

⇐ c ⇒ LSS Detection Position

Five fixed positions, see Chapter 12.

⇐ d ⇒ Detection Slit Length

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

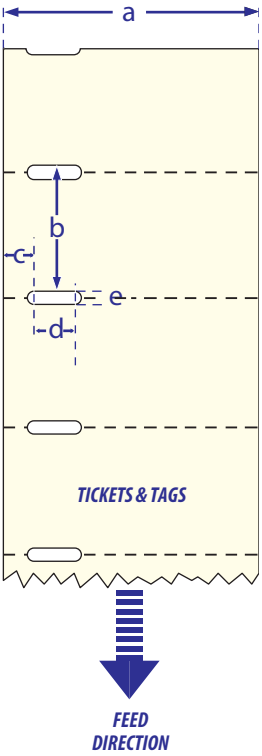
⇐ e ⇒ Detection Slit Height

Maximum:	21.3 mm (0.83 inches)
Recommended:	1.6 mm (0.06 inches)
Minimum:	1.2 mm (0.05 inches)

Media Type Setup

• Ticket (w 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.


a
b
c
d
e
TICKETS & TAGS
FEED
DIRECTION

Tickets with Black Mark

⇐ a ⇒ Media Width

Maximum:	60.0 mm (2.36 inches)
Minimum (standard):	25.0 mm (1.00 inches)
Minimum (Quick-Load):	40.0 mm (1.57 inches)

⇐ b ⇒ Copy Length

Minimum:	20.0 mm (0.8 inches)
Maximum:	depends on SDRAM size

⇐ c ⇒ LSS Detection Position

Five fixed positions, see Chapter 12.

⇐ 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 LSS detection point.

⇐ e ⇒ Black Mark Length

Maximum:	21.3 mm (0.83 inches)
Common:	12.5 mm (0.5 inches)
Minimum:	5.0 mm (0.2 inches)

⇐ f ⇒ Black Mark Y-Position

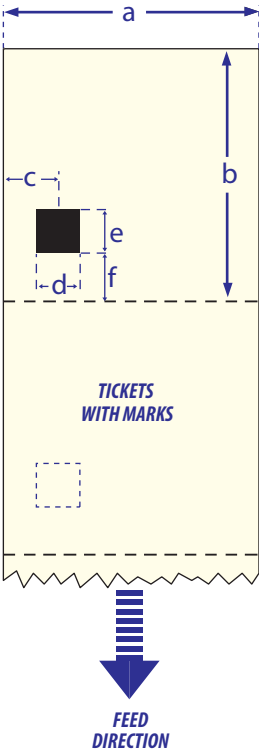
It is recommended that you place the black mark as close to the front edge of the ticket as possible and control the media feed, so the tickets can be properly torn off.

Media Type Setup

• Ticket (w mark)

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 whitish 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.


a
b
c
d
e
f
TICKETS
WITH MARKS
FEED
DIRECTION

C Interfaces

This appendix describes the interface connectors found on the printer's rear plate. It covers the following topics:

- RS-232 interface
- Optional interface boards

RS-232 Interface

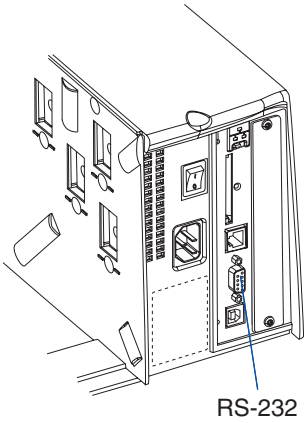
Protocol

Default setup:
Baud rate: 9600
Char. length 8 bits
Parity: None
Stop bits: 1
RTS/CTS Disabled
ENQ/ACK: Disabled
XON/XOFF: Disabled (both ways)
New Line: CR/LF

To change the RS-232 interface settings, see Chapter 6, "Setting Up the Printer."

Signals on printer's serial port:

DB-9	Signal	Meaning
1		External +5V DC*
2	TXD	Transmit data
3	RXD	Recieve data
4	DSR	Data set ready
5	GND	Ground
6	DTR	Data terminal ready
7	CTS	Clear to send
8	RTS	Request to send
9	–	Not used



*/. The external +5V is limited to 500 mA and is automatically switched off at overload.

Interface Cable

Computer end: Depends on computer model
Printer end: DB-9pin plug

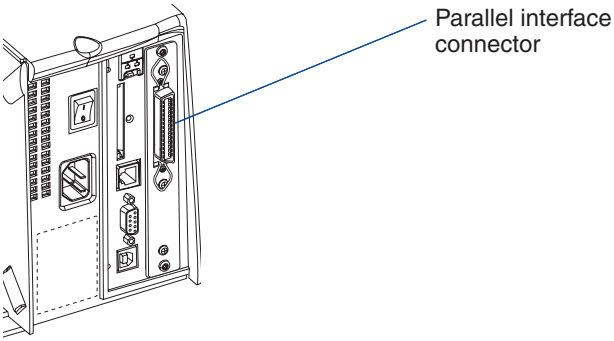
Optional Interfaces

The printer can optionally be fitted with an IEEE 1284 Parallel Interface Board at the right-hand side of the printer's rear plate.

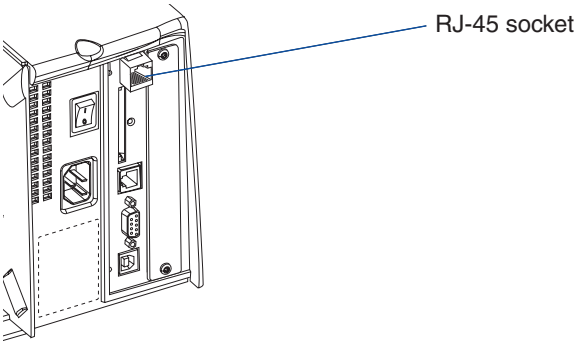
Regardless of if any Parallel Interface Board is installed, the printer can also be fitted with one of the following EasyLAN interface boards for connection to a Local Area Network (LAN):

- EasyLAN Ethernet Interface
- EasyLAN Wireless Interface

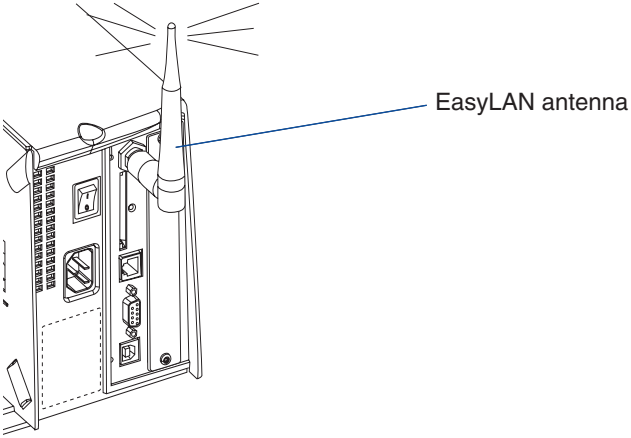
IEEE 1284 Parallel Interface Board



EasyLAN Ethernet Interface



EasyLAN Wireless Interface



D Supported IPL Commands

This appendix lists the IPL commands supported by the printer in alphabetic order. For more information on the commands, refer to the *IPL Programming, Reference Manual*.

IPL Command	Syntax
Abort Print Job	<EM>
Access to Control Panel, Enable or Disable	<SI>A
Advanced Mode, Select	<ESC>C
Alphanumeric Field Separator	<GS>
Amount of Storage, Define	<SI>N
Audible Alarm, Enable or Disable	<SI>a
Auto-Transmit 1, Enable	<ESC>j
Auto-Transmit 2, Enable	<ESC>d
Auto-Transmit 3, Enable	<ESC>e
Auto-Transmit 1, 2, and 3, Disable	<ESC>k
Bar Code, Select Type	c
Bar Code Field, Create or Edit	B
Batch Count, Set	<US>
Bitmap Cell Height for Graphic or UDF, Define	y
Bitmap Cell Width for Graphic or UDF, Define	x
Bitmap User-Defined Font, Clear or Define	T
Border Around Human-Readable Text, Define	b
Box Field, Create or Edit	W
Character Bitmap Origin Offset, Define	X
Character Rotation or Bar Code Ratio, Define	r
Clear All Data	<CAN>
Clear Data From Current Field	<DEL>
Code 39 Prefix Character, Define	p
Command Tables, Load	C
Command Terminator	;
Command Terminator 1	<NUL>
Command Terminator 2	<LF>
Communication Port Configuration, Set	<SI>P
Configuration Parameters, Transmit	<ESC>p
Current Edit Session, Save	N
Cut	<SO>
Cutter, Enable or Disable	<SI>c
Dark Adjust	K
Dark Adjust, Set	<SI>d
Data Shift - International Characters	<SUB>
Data Source for Format in a Page, Define	e
Direct Graphics Mode, Select	<ESC>g
Emulation Mode, Enter	<ESC>c
Emulation or Advanced Mode on Power-Up	<SI>C
End-of-Print Skip Distance, Set	<SI>D

IPL Command	Syntax
Error Code, Request	<BEL>
Factory Defaults, Reset	D
Field, Delete	D
Field, Select	<ESC>F
Field Data, Define Source	d
Field Decrement, Set	<ESC>D
Field Direction, Define	f
Field Increment, Set	<ESC>I
Field Origin, Define	o
First Data Entry Field, Select	<ACK>
Font, Transmit	<ESC>v
Font Character Width, Define	Z
Font Type, Select	c
Form Feed	<FF>
Format, Create or Edit	A or F
Format Direction in a Page, Define	q
Format, Erase	E
Format, Select	<ESC>E
Format, Transmit	<ESC>x
Format Direction in a Page, Define	g
Format Offset Within a Page, Define	O
Format Position From Page, Delete	m
Format Position in a Page, Assign	M
Formats, Print	f
Graphic Type, Select	c
Graphic or UDC, Define	u
Hardware Configuration Label, Print	h
Height Magnification of Bar, Box, or UDC, Define	h
Human-Readable Field, Create or Edit	H
IBM Language Translation, Enable or Disable	<SI>i
Increment and Decrement, Disable	<ESC>N
Intercharacter Space for UDF, Define	z
Interpretive Field, Edit	I
Interpretive Field, Enable or Disable	i
Label and Gap Length, Transmit	<ESC>L
Label Path Open Sensor Value, Transmit	L
Label Rest Point, Adjust	<SI>f
Label Retract, Enable or Disable	<SI>R
Label Retract Distance, Set	<SI>r
Label Stock Type, Select	<SI>T

IPL Command	Syntax
Label Taken Sensor Value, Transmit	T
Length of Line or Box Field, Define	l
Line Field, Create or Edit	L
Maximum Label Length, Set	<SI>L
Media Fault Recovery Mode, Set	<SI>e
Media Sensitivity, Select	<SI>g
Memory Usage, Transmit	<ESC>m
Next Data Entry Field, Select	<CR>
Number of Image Bands, Set	<SI>I
Numeric Field Separator	<FS>
Options Selected, Transmit	<ESC>O
Outline Font, Clear or Create	J
Outline Font, Download	j
Page, Create or Edit	S
Page, Delete	s
Page, Select	<ESC>G
Page, Transmit	<ESC>y
Pages, Print	p
Pitch Label, Print	C
Point Size, Set	k
Postamble, Set	<EOT>
Preamble, Set	<SOH>
Print	<ETB>
Print Line Dot Count Limit, Set	v
Print Quality Label, Print	Q
Print Speed, Set	<SI>S
Printer Language, Select	<SI>l
Printhead Loading Mode, Select	<SI>h
Printhead Parameters, Transmit	<ESC>H
Program Mode, Enter	<ESC>P
Program Mode, Exit	R
Program Number, Transmit	<ESC>M
Quantity Count, Set	<RS>
Reflective Sensor Value, Transmit	M
Remaining Quantity and Batch Count, Transmit	<ESC>Q
Reset	<DLE>
Self-Strip, Enable or Disable	<SI>t
Slashed Zero, Enable or Disable	<SI>z
Software Configuration Label, Print	s
Start and Stop Codes (Code 39), Print	<ESC><SP>

IPL Command	**Syntax**
Status Dump	<VT>
Status Enquiry	<ENQ>
Test and Service Mode, Enter	<ESC>T
Test and Service Mode, Exit	R
Top of Form, Set	<SI>F
Transmissive Sensor Value, Transmit	G
User-Defined Characters (UDC) and Graphics, Print	g
User-Defined Character, Clear or Create	G
User-Defined Character Field, Create or Edit	U
User-Defined Characters, Transmit	<ESC>u
User-Defined Font Character, Create	t
User-Defined Fonts, Print	t
Warm Boot	<BS>
Width of Line, Box, Bar, or Character, Define	w

E Intermec Supplies

This appendix describes the supplies offered by Intermec for use with this printer, that is, direct thermal media, thermal transfer ribbons, and receiving face materials for thermal transfer printing

Direct Thermal Media

Intermec offers two quality grades of **direct thermal** media for the Easy-Coder printers:

Premium Quality

Top-coated media with high demands on printout quality and resistance against moisture, plasticisers, and vegetable oils. Examples:

Europe	North America
Thermal Top Board	Duratherm II
Thermal Top	Duratherm II Tag
Thermal Top High Speed	Duratherm Ltg.
	Duratherm IR

Economy Quality

Non top-coated media with less resistance to moisture, plasticisers, and vegetable oils. In all other respects, it is equal to Premium Quality. Examples:

Europe	North America
Thermal Eco	–
Thermal Eco Board	

Thermal Transfer Media

Intermec offers **stock** labels for thermal transfer printing in a wide range of quality grades.

Uncoated Papers

Economical high-volume printing. To be used with GP/TMX 1500 ribbons. Examples:

Europe	North America
TTR Uncoated	–

Coated Papers

Various coat-weight, smoothness, and gloss. To be used with HP/TMX 2200/2500 and GP/TMX1500 ribbons. Examples:

Europe	North America
TTR Coated	Duratran II
TTR Premium	Duratran II Tag
TTR Premium Board	Valeron Tag
TTR High Gloss White	

Polyethylene Plastics

These media have better resistance to water and many common chemicals than uncoated and coated papers. They can be use outdoors and offer good tear resistance. Most often used with HP/TMX 2200/TMX 2500 ribbons. Examples:

Europe	North America
TTR Polyethylene	Kimdura
TTR Gloss Polyethylene	Syntran

Polyesters

These media give high resistance to chemicals, heat, and mechanical abrasion with HR/TMX 3200 ribbons. Examples:

Europe	North America
TTR High Gloss Polyester	PET Gloss

Transfer Ribbons

Intermec offer three ranges of thermal transfer ribbons optimized for different purposes:

- ***General Purpose (GP/TMX 1500)*** transfer ribbons allow high speed printing and give a good printout, but are somewhat sensitive to smearing. They may be the best choice for uncoated and coated papers.
- ***High Performance (HP/TMX 2200, TMX 2500)*** transfer ribbons allow high speed printing and give a highly readable and defined printout on most face materials with smooth surfaces. They have good "smear resistance" and are most suitable for intricate logotypes and images on matte-coated papers and synthetic face materials.
- ***High Resistance (HR/TMX 3200)*** transfer ribbons give an extremely durable printout, which is resistant to most chemical agents and high temperatures. However, such transfer ribbons set high demands on the receiving face material, which must be very smooth, such as polyesters.

  The use of HR/TMX 3200 ribbons requires the print speed and the energy supplied by the printhead to be controlled with great accuracy according to the receiving face material. Custom-made setup options adapted for special applications can also be created. Consult your Intermec distributor.

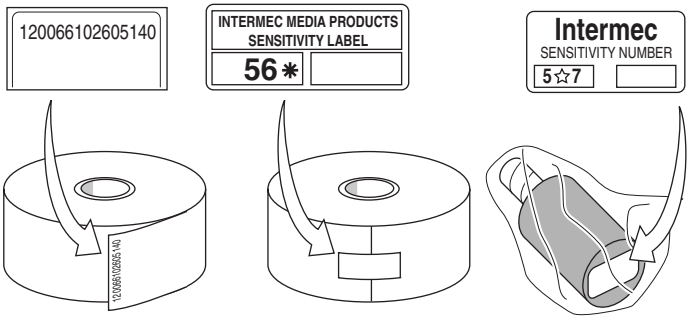
Note: Intermec thermal transfer ribbons are engineered specifically for the EasyCoder printheads.

Setting the Media Sensitivity Number

Media sensitivity is important because you use it to optimize print quality and print speed. The three-digit sensitivity specifies the amount of heat required by the printhead to image a label. The amount of heat that each roll of media or ribbon requires is unique due to different chemistries and manufacturing processes.

Intermed has developed heating schedules (the amount of heat required to image a label) to produce the highest possible print quality for Intermec media and ribbon combinations on Intermec printers. Look for the three-digit media sensitivity number on:

- The side of the media roll. Use the last three digits (140 in the example below) 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.



Use this three-digit number to optimize print quality and print speed on your printer. You can achieve the best print quality on the printer by using Intermec ribbon and media products.

The default printer setting for direct thermal media is 420. For thermal transfer media, the default setting is 567. Use the information on the packaging that you saved when loading media and ribbon to determine the correct sensitivity number.

Use the Setup Mode (see "Sensitivity" in Chapter 6-7), PrintSet, your third-party software, or the Intermec printer language (IPL) command set to change the media sensitivity number. For help on how to set the media sensitivity number using the printer command set, see the DOS example on the following page.

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

To set the sensitivity rating for direct thermal media, use the three-digit sensitivity rating located on the roll of media or listed later in this chapter.

Use DOS to set the media sensitivity number on a PC like this:

1. At the DOS prompt, type the following command and press Enter:

   `MODE COM1 96,E,7,1,N`

2. Type the following command lines and press Enter:

   `COPY CON COM1`

   `<STX><SI>g1,567<ETX>^Z`

   where:

   `<SI>g1,567` sets the media sensitivity number to 567.

Direct Thermal Media Sensitivity Settings

Approximate Sensitivity Ratings	Setting	Direct Thermal Media
400 Series Medium Sensitivity	480	Duratherm Lightning IR Tag
	470	Duratherm Lightning-2
	460	European IR
	450	Duratherm IR Lightning-1
	440	European Thermal
	420	Duratherm Lightning-1
100 Series Low Sensitivity	180	Duratherm Lightning II-1
	170	European Tag
	160	Duratherm II Tag
	140	European Top
	130	Duratherm II-2

Thermal Transfer Media and Ribbon Sensitivity Settings

Approximate Sensitivity Ratings	Setting	Media/Ribbon Stock
800 Series High Sensitivity (Paper)	864	European Uncoated/Standard
600 Series Medium Sensitivity (Plastic)	687	Duratran TTR Poly. or Valeron/ Premium-3/6/7
	677	Duratran Syntran/Premium-3/6/7
	633	European Polyethylene/Premium
	627	Duratran Kimdura/Premium-3/6/7
	623	European Duratran Kimdura/ Premium
500 Series Medium Sensitivity (Paper)	567	Duratran II-1/Premium-3/6/7
	527	Duratran II Tag-7mil/ Premium-3/6/7
	513	European Coated/Premium
300 Series Low Sensitivity (Plastic)	366	Super Prem. Poly./Super Prem.-7

Intermec Printer AB
Idrottsvägen 10, P.O. Box 123
S-431 22 Mölndal, Sweden
tel +46 31 869500
fax +46 31 869595
www.intermec.com

EasyCoder PF2i—User's Guide (IPL version)

1-960585-01